




Hong Kong Housing Authority


Site Safety Seminar for Works Contracts and Property Services Contracts

Safe Operation of Mobile Crane

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Paul Y



Safe Operation of Mobile Crane

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Failure Modes

- Management System Pressures
- Social Pressures
- Unsafe Conditions
- Unsafe Acts
- Personal Factors
- Conflicting Motivation
- Task Beyond Mental Capacity

Safe Operation of Mobile Crane

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Practices

- Environment
- Lifting Training
- Workshop for Lifting
- Plant Checking
- Thoroughly Examine & Test by RPE
- Working Permit
- Mat & Timber Blocking
- Checking Lifting Gears
- Supervision
- Position of Mobile Crane
- Foundation

Spectacular Crane accident

Watch



Subscribe

Options



Safe Operation of Mobile Crane

Failure Modes

Management System Pressures

- financial restriction
- lack of commitment
- lack of policy
- lack of standards
- lack of knowledge & information
- lack of supervision

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Failure Modes

Social Pressure

- group attitudes
- trade customers
- tradition
- society attitude to risk-taking
- “acceptable” behavior in the workplace

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Failure Modes

Unsafe Conditions

- inadequate or missing safety devices
- defective parts / components
- inadequate warning
- ineffective housekeeping
- adverse weather conditions
- inadequate illumination
- inadequate soil bearing capacity

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Failure Modes

Unsafe Conditions

- equipment factors - normal wear & tear
 - abnormal wear & tear
 - design factors
- poor working practices
- inadequate or careless maintenance
- group norm

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Failure Modes

Unsafe Acts

- working without authority
- failure to warn others of danger
- leaving equipment in a dangerous condition
- using equipment at the wrong speed
- disconnecting safety devices
- using defective equipment
- using equipment the wrong way or for wrong task

Safe Operation of Mobile Crane

Failure Mode

Unsafe Acts

- overloading of equipment
- failure to hoist load correctly
- being in an unauthorized place
- unauthorized servicing & maintaining equipment

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Personal Factors

Personal Factors

- knowledge & skill deficiencies
- lack of hazard awareness
- lack of job knowledge
- lack of job skill
- lack of adequate instruction

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Failure Modes

Conflicting Motivations

- saving time & effort
- avoiding discomfort
- attracting attention
- asserting independence
- expressing resentment

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Failure Modes

Task Beyond Mental Capacity

- information overload
- poorly plan / design task
- beyond ability of individual

Safe Operation of Mobile Crane

Environment

Safety Notice & In-house Safety Rules



Appointed Competent Persons



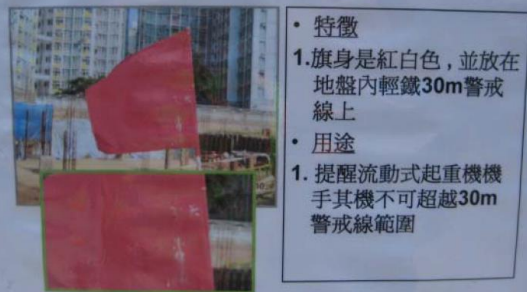
Safe Operation of Mobile Crane

Environment

放在流動式起重機旁的紅旗



在地盤內劃分與輕鐵30m距離的紅旗



Fence Off Hazardous Zone

Safety Notice

Safe Operation of Mobile Crane

Environment



Rigging Method for
Material Hoisting

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Lifting Training



Safety Training

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Workshop for Lifting



Planning



Paul Y

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Plant Checking



Reversing Video Device (RVD)

Closed Circuit Television
(CCTV) Camera



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Plant Checking

Anti-collision Rod



Flashing Light

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Plant Checking

Checking Team led by Plant
Superintendent



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Thoroughly Examine and Test by RPE



Loading Test by RPE



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Working Permit

Checking & Issuing Working Permit



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Working Permit

Debriefing



Safe Operation of Mobile Crane

Mat or Timber Blocking

Mat or Timber Blocking at least 3 times larger in area than the float



Safe Operation of Mobile Crane

Mat or Timber Blocking

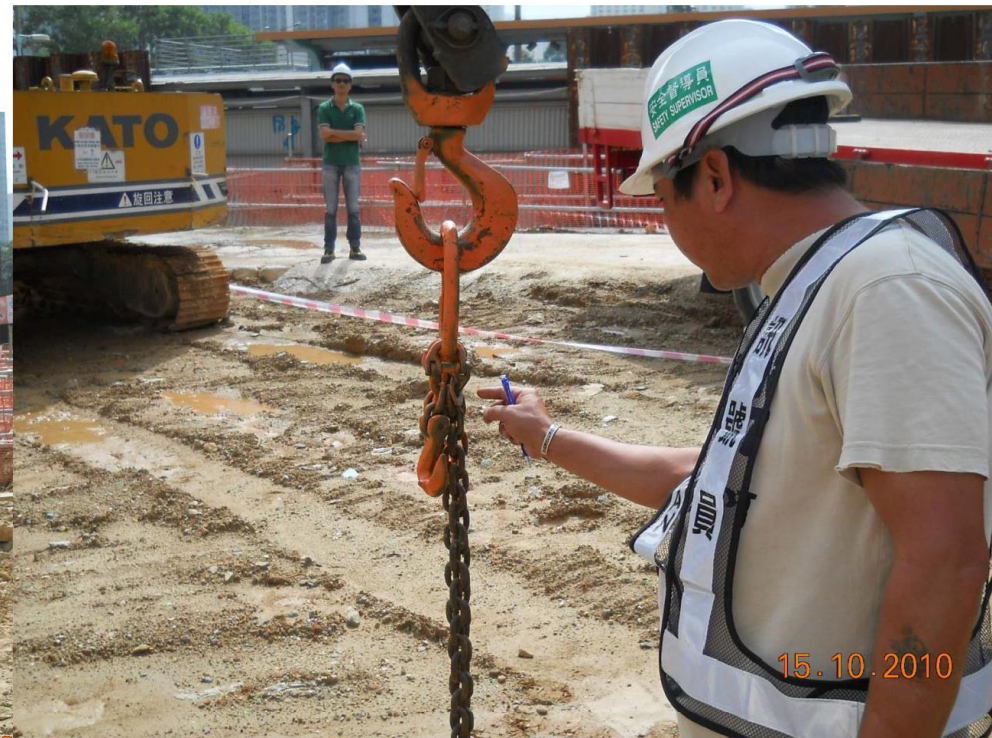


Steel Plate

Safe Operation of Mobile Crane

Checking Lifting Gears

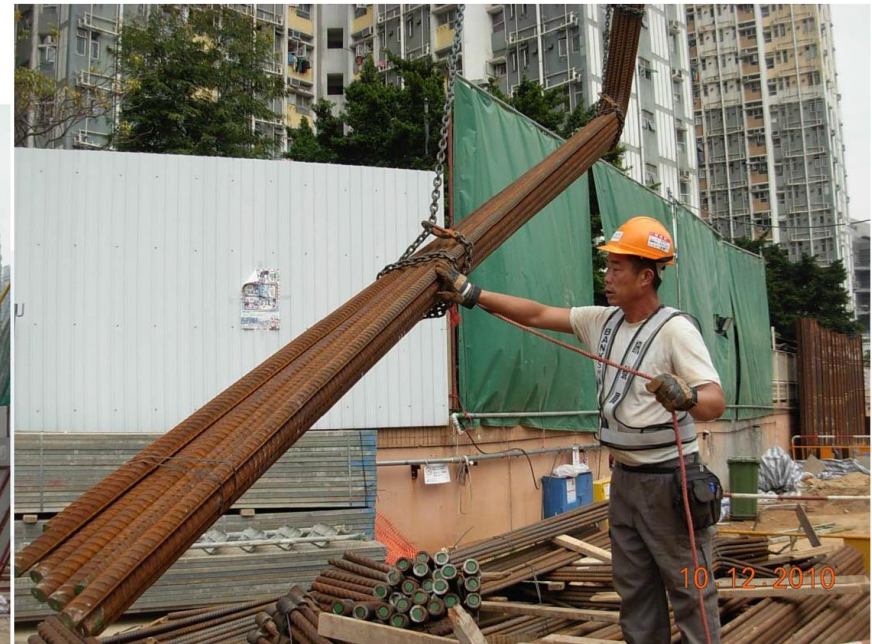
Checking & Inspection of Lifting Gears



Safe Operation of Mobile Crane

Supervision

Lifting Supervisor Oversee
Lifting Operation on the Spot



Safe Operation of Mobile Crane

Position of Mobile Crane

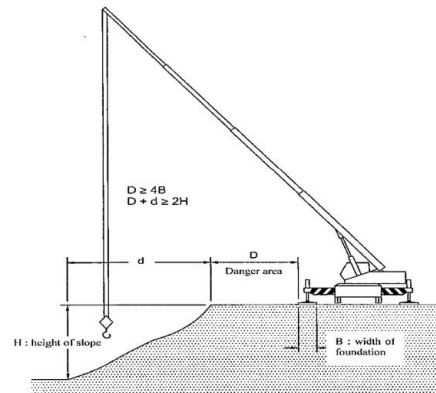


Fig. 4 Position of mobile crane

9.3 Proximity hazards

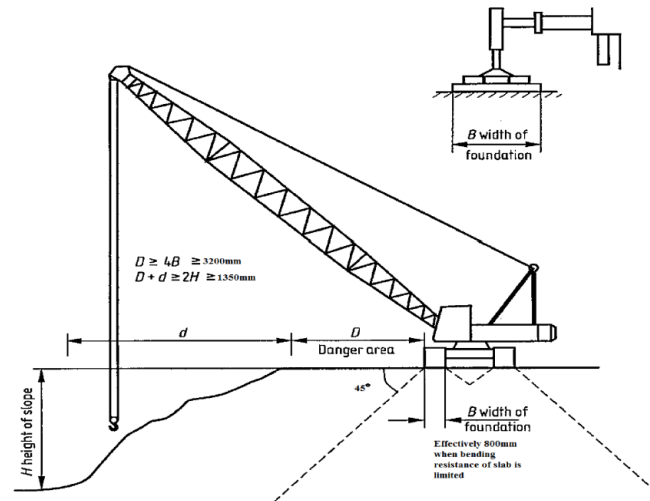
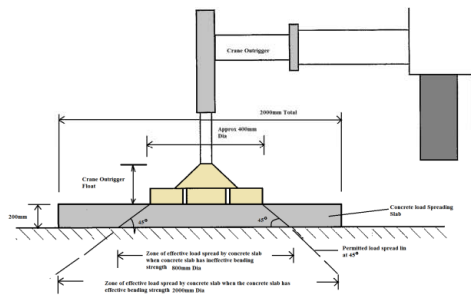
- 9.3.1 Consideration should be given to the proximity hazards such as overhead electricity lines and conductors, power cables, radio frequency wave transmitting tower, nearby structure and building, hoists, stacked materials, other construction works, the flight paths of airfields, the routes of aerial ropeway and other cranes, and public access areas including highways and railways.
- 9.3.2 As far as possible mobile cranes should be sited to avoid loads being handled over occupied premises, highways, the route of aerial ropeway, other construction works, or railways. The danger to or from underground services, such as gas mains or electric cables, should not

Reference Documents

CoP for Safe Use of
Mobile Crane issued
by Labour Department

Safe Operation of Mobile Crane

Foundation



Reference Documents

BS 7121-3:2000
CoP for Safe Use of
Crane Part 3 :
Mobile Crane

CIRIA C703
Crane Stability on
Site – Introductory
Guide 2E 2003

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END

THANK YOU