

Site Safety Seminar for Capital Works New Works Contracts **新工程合約工地安全講座**

SAFE Lifting Operation of Mobile Crane **流動式起重機安全吊運操作**

Date: 28 April 2025 (Mon)
Speaker: Ir Donald Chow 周贊華工程師
MHKIE FIMechE RSO

Presentation Agenda 演示議程

1. Overview of Safe Lifting / 安全吊運概述
2. Typical Risks in Mobile Crane Operations / 流動式起重機作業的典型風險
3. Safe Lifting Practices / 安全吊運實踐
4. Case Analysis / 案例分析
5. Sharing Lifting Experiences / 分享吊運經驗

1. What is Safe Lifting? / 什麼是安全吊運？

- Definition: Safe lifting involves planning, executing, and supervising lifting operations to minimise risks.
定義：安全吊運包括計劃、執行和監督吊運作業，以最大程度地降低風險。
- Importance: Reduces accidents, injuries, and property damage.
重要性：減少事故、傷害和財產損失。
- Legal and ethical responsibilities.
法律和道德責任。



What combination forms Lifting?

哪些組合形成吊運？

Mobile Crane
流動式起重機



Lifting Gear / Steel Sheet Pile / H-Pile /
Steel Bar / Timber
起重裝置/鋼板樁 / 工字樁 / 鋼筋 / 木材

Lifting Supervisor	吊運督導員
Crane Operator	起重機操作員
Banksman	訊號員
Rigger	吊索工

SAFE LIFTING 安全吊運



4M1E

人 **M**anpower
機 **M**achine
物 **M**aterial
法 **M**ethod
環 **E**nvironment

2. Typical Risks in Mobile Crane Operations

流動式起重機作業的典型風險

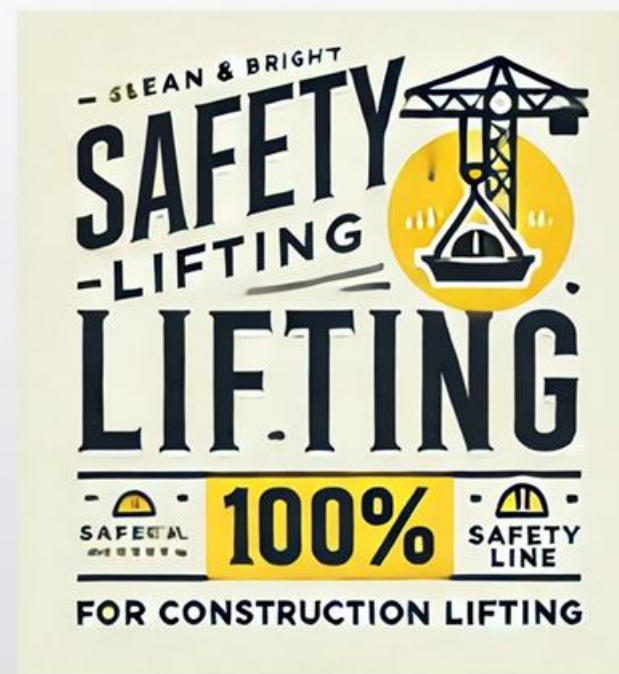
- ❑ Crane Instability / 起重機不穩定
- ❑ Structural Failure / 結構性故障
- ❑ Human Factors / 人為因素
- ❑ Environmental Factors / 環境因素
- ❑ Lifting Method / 吊運方法



3. Safe Lifting Practices 安全吊運實踐

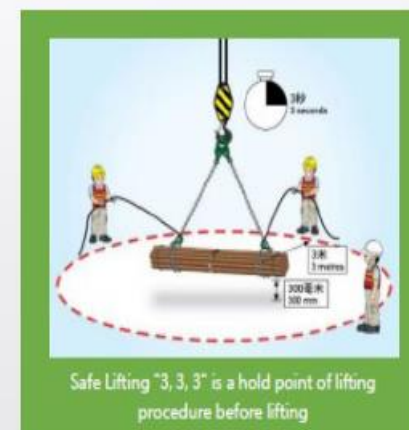
Key Safe Lifting Practices / 關鍵安全吊運實踐

- ✓ Pre-Lifting Check / 吊運前規劃
- ✓ Equipment Inspection / 設備檢查
- ✓ Execution of Lifting Operations/執行吊運操作
- ✓ Communication and Signaling / 通訊和信號
- ✓ Post-Lifting Safety Measure/吊運後安全措施



4. Case Analysis 案例分析

Case 1



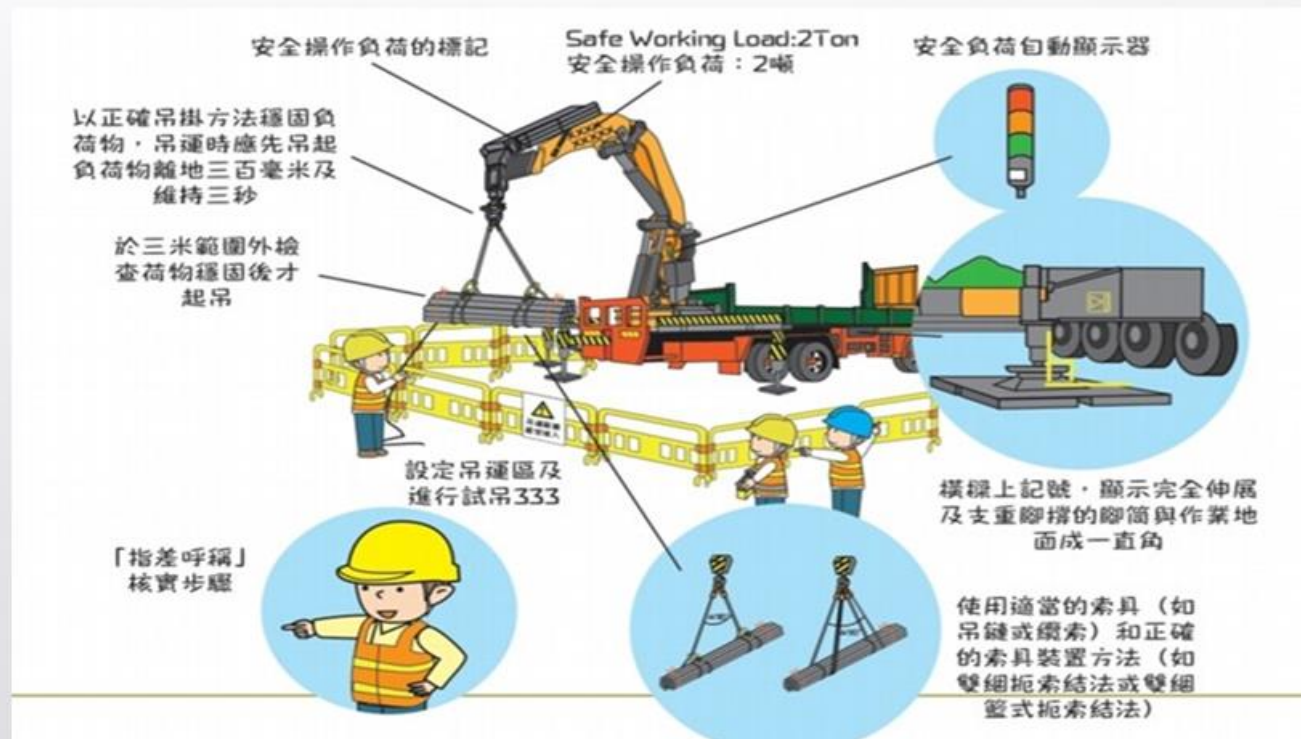
A plant operator was injured while assisting in lifting steel casings to a storage area. The operator stood on the Truck-Mounted crane when the casings moved and hit his right leg, resulting in injury.

一名起重機操作員在協助將鋼管吊運到儲存區域時受傷。操作員站在貨車車斗上操作起重機，鋼管移動時擊中了他的右腿，導致其受傷。

4. Case Analysis 案例分析

Case 1

- Pre-Lifting Check / 吊運前規劃
- Execution of Lifting Operations/執行吊運操作
- Communication and Signalling / 通訊和信號
- Post-Lifting Safety Measure/吊運後安全措施



4. Case Analysis 案例分析

Case 2



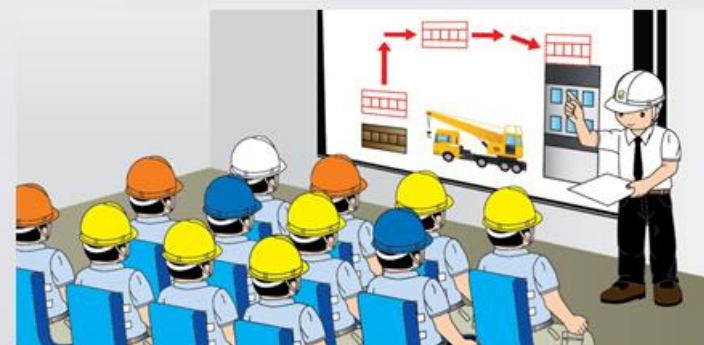
A worker was injured while installing steel fencing using a scissor working platform. A truck-mounted crane operator misunderstood signals due to a malfunctioning walkie-talkie, causing the lifted materials to collide with the platform, which overturned, resulting in injuries.

一名工人在使用工作平台安裝鋼柵欄時受傷。一名貨車吊機操作員因對講機故障而誤解了訊號，導致吊起的物料與工作平台相撞，平台翻倒，造成人員受傷。

4. Case Analysis 案例分析

Case 2

- Pre-Lifting Check / 吊運前規劃
- Equipment Inspection / 設備檢查
- Execution of Lifting Operations / 執行吊運操作
- Communication and Signaling / 通訊和信號



4. Case Analysis 案例分析

Case 3



A Wheeled telescopic mobile crane tilted to the left, with its right wheel off the ground and suspended in the air at an angle of approximately 45 degrees; the crane boom collapsed on the construction site.

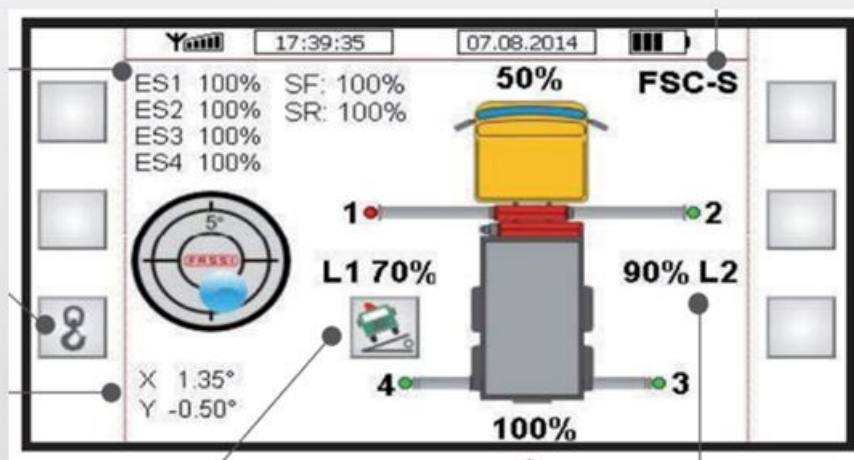
一輛液壓伸縮吊臂起重機向左傾斜，右輪離地，以大約45度角懸在空中；起重機吊臂倒塌在工地上。

<https://www.hk01.com/%E7%A4%A1%E7%99%BC/1031060/%E5%95%9F%E5%B7%E9%AB%94%E8%82%B2%E5%9C%92%E5%9C%B0%E7%9B%A4%E5%90%8A%E8%87%82%E8%BB%8A%E5%82%BE%E5%81%B4-%E5%90%8A%E8%87%82%E5%80%92%E5%A1%8C%E5%82%B3%E5%B7%A8%E9%9F%E6%B6%88%E9%98%B2%E4%BA%8B%E6%95%85%E5%AE%89%E5%85%A8%E9%9A%8A%E5%88%B0%E5%A0%B4>

4. Case Analysis 案例分析

Case 3

- Pre-Lifting Check / 吊運前規劃
- Equipment Inspection / 設備檢查
- Execution of Lifting Operations / 執行吊運操作
- Communication and Signaling / 通訊和信號



- 實時監察吊機嘅起重力矩 (Load Moment)
- 預防吊機超負荷工作，避免翻機或結構損壞
- 根據吊臂長度、角度、吊重自動計算安全負荷
- 一旦超出安全範圍，會發出聲光警報並自動中斷操作

4. Case Analysis 案例分析

Case 4

A truck-mounted crane had an accident due to a failure of the chain sling during the lifting process, and the cargo tilted between the hoarding and the truck.

一輛貨車吊機在吊運過程中，由於吊索鏈條斷裂發生事故，貨物在圍板與貨車之間傾斜。

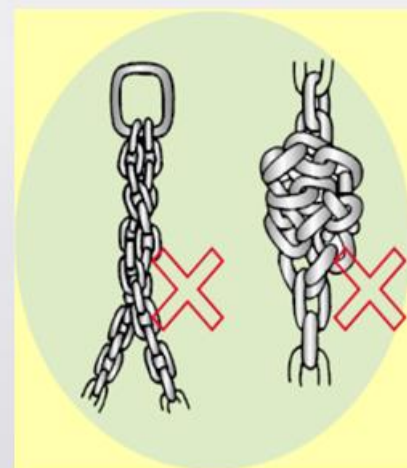
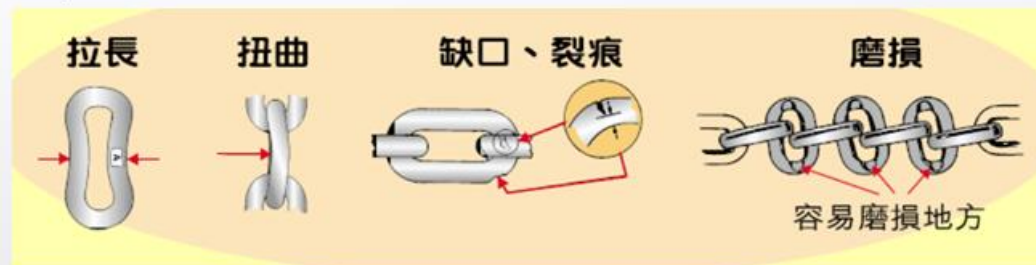


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4. Case Analysis 案例分析

Case 4

- Pre-Lifting Check / 吊運前規劃
- Equipment Inspection / 設備檢查



Jan - Mar 一月至三月	BLUE 藍	
Apr - Jun 四月至六月	YELLOW 黃	
Jul - Sept 七月至九月	GREEN 綠	
Oct - Dec 十月至十二月	ORANGE 橙	
To be removed from the site 不能再使用 待移離工地	RED 紅	
Equipment under quarantine 工具待驗	WHITE 白	
Not used for lifting purpose 不可作吊重用途	BLACK 黑	

5. Sharing Lifting Experiences 分享吊運經驗



Lifting Supervisor
Crane Operator
Banksman
Rigger



Mobile Crane



Lifting Gear /
Steel Sheet pile
/ H-Pile / Steel
Bar / Timber.....



Lifting Plan /
Method



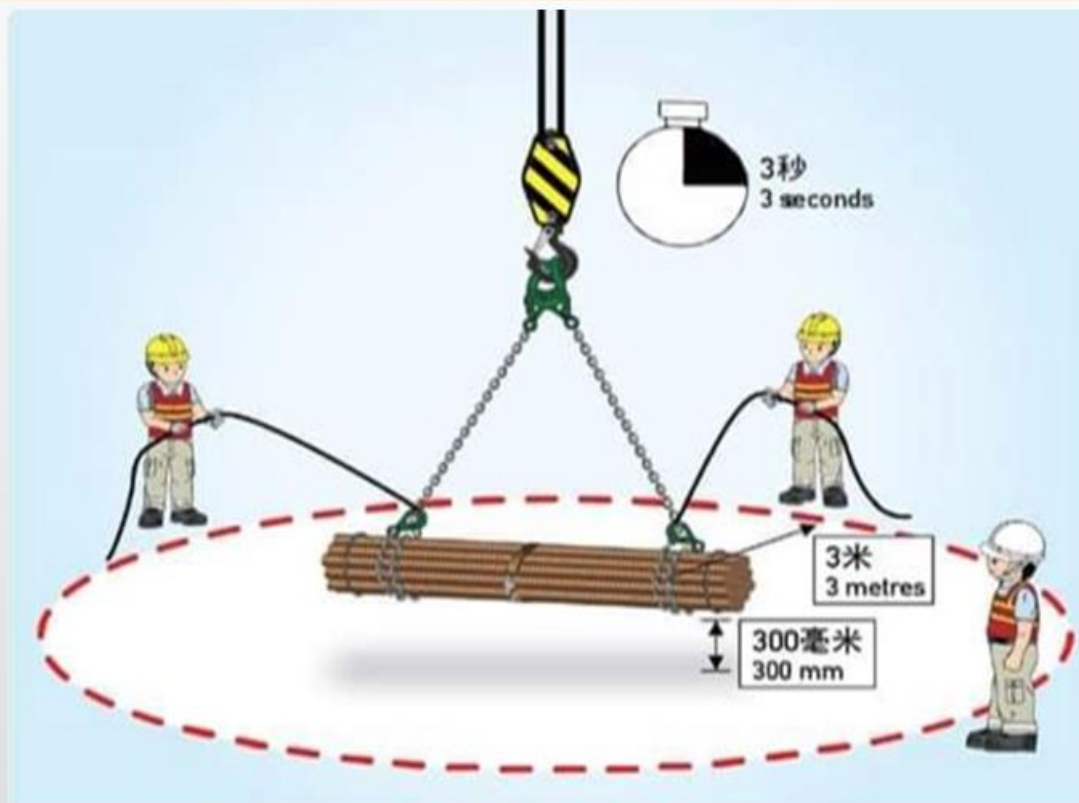
Site Condition



香港專業吊運聯會

Hong Kong Professional Hoisting Engineering Association

吊運重點-人(訊號員及吊索工責任)



在正式吊運前，要先進行試吊程序，以加強保障吊運操作的安全。

「3-3-3」試吊程序是指：

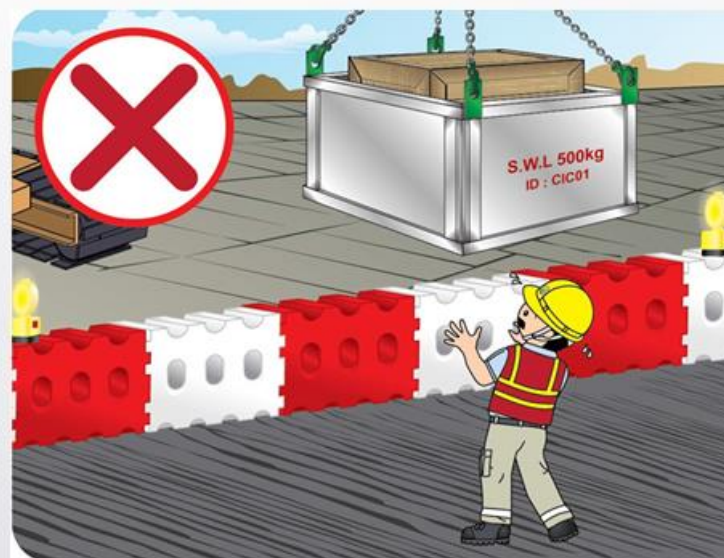
1. 所有人員離開「3」米；
2. 吊起負荷物離地「3」百毫米；
3. 等「3」秒後確定負荷物穩固才可以吊運。

完成試吊程序後先進行起吊程序，還要使用導繩在遠離危險區域的位置，協助控制吊運物在運輸過程中作出微調，這樣便可以安全又安心地進行吊運工序。

吊運重點-人(起重機操作員責任)



不可以快速移動負荷物，特別是接近目的地前
應以較慢速度移動。



吊運物不可在任何人之上方經過。

吊運重點-機(吊機安全系統 基本配置)

吊機安全系統 基本配置

- ✓ 穩定監控功能(Stability Control System)
按支承腿不同的伸展情況，全自動、全方位監控吊臂運作及即時停止在不平穩或超重的情況
下所有操作
- ✓ 力距限制器(Automatic Dynamic Control)
具備全功能顯示屏及全方位監控功能
不設關閉功能

- 貨車式起重機 **EN12999**
- 重型油壓吊機 **EN13000**

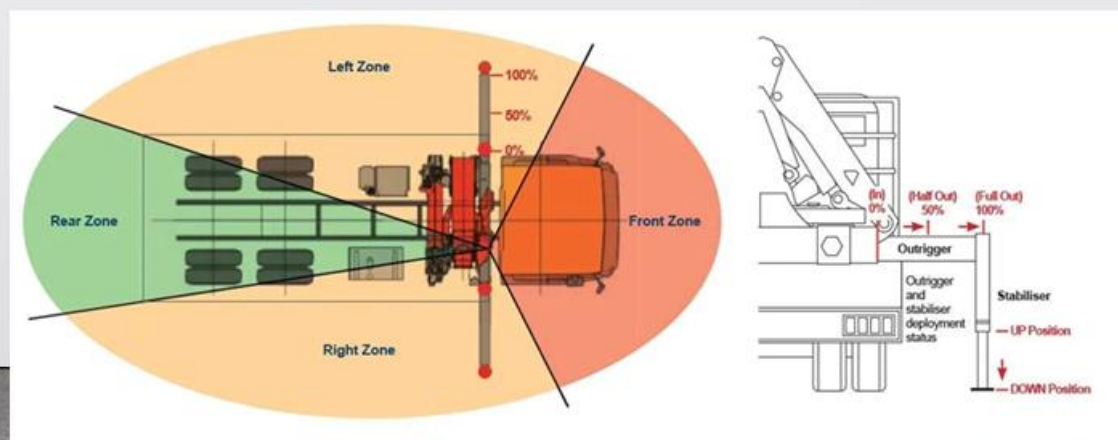
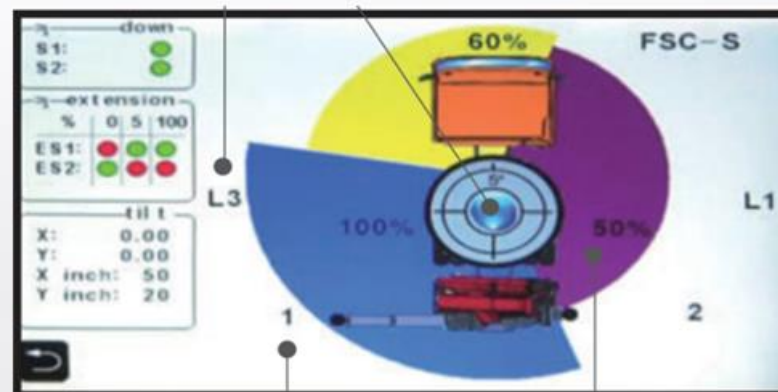


吊運重點-機(智能吊機平衡系統) (FSC – CRANE FLOATING STABILITY CONTROL)

◆ 全自動監控吊機

- 支承腿的伸展與地面接觸時受壓力的情況
- 吊機之平衡及傾斜

◆ 防止超載或吊機因支承腿伸展以導致失去平衡



吊運重點-物



吊具須由合資格檢驗員在首次使用前測試及徹底檢驗及以後每六個月徹底檢驗一次，測試及檢驗目的是要確保吊具的構造良好及功能正常。

Jan - Mar 一月至三月	BLUE 藍	
Apr - Jun 四月至六月	YELLOW 黃	
Jul - Sept 七月至九月	GREEN 綠	
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To be removed from the site 不能再使用 待移離工地	RED 紅	
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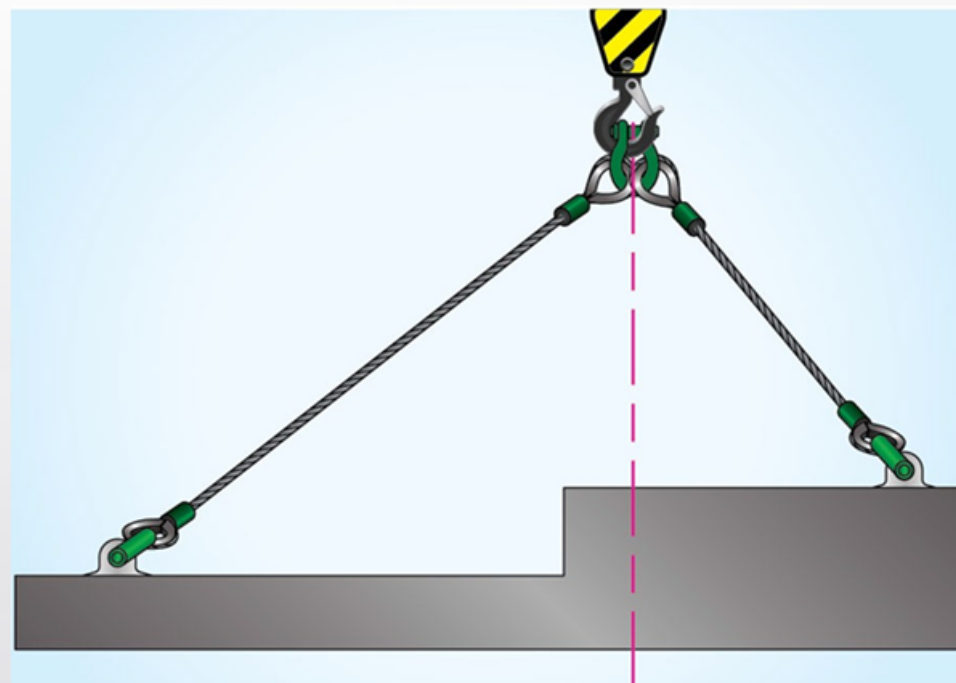
顏色標籤的目的是讓有關人士更容易辨別起重裝置證書是否已過期。當吊具已通過該季度的檢驗後並具有有效證明書，便應噴上該季度的顏色。



吊運重點-物



當吊運不平均重心物件時，吊運前應進行足夠評估。注意負荷物之重心以保持平衡。

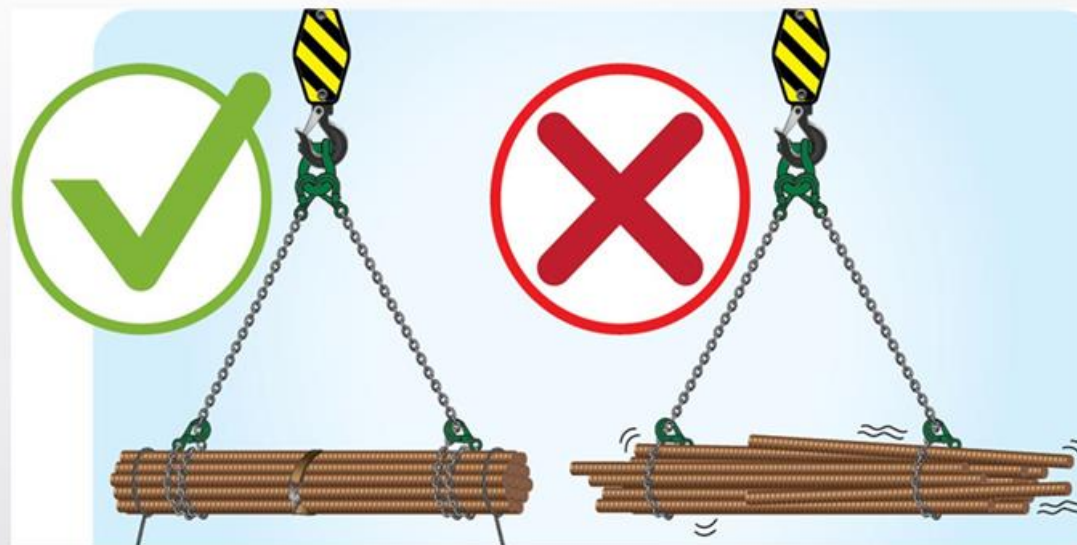


物件的重心必須在吊鈎的正下方，成一垂直線。

吊運重點-法

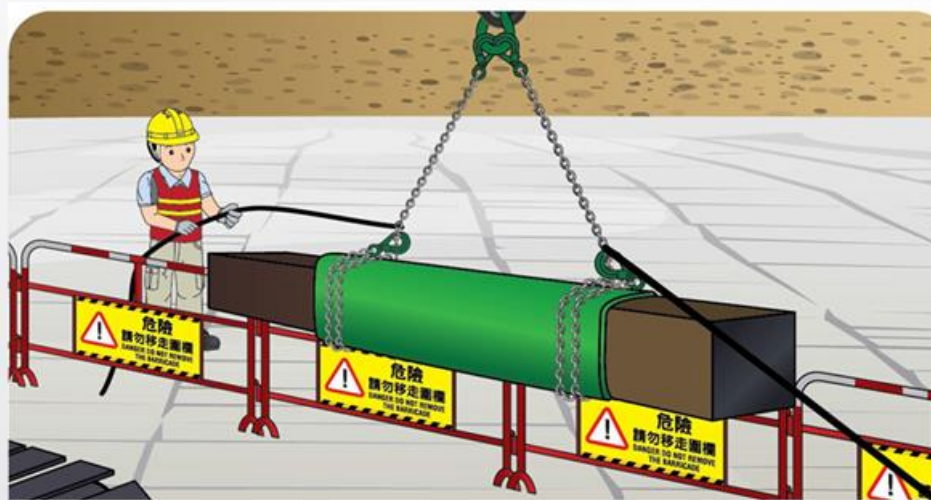


如需要在吊鉤下使用兩條或以上的吊索，必須使用足夠強度的鉤環，環圈或鏈環連接吊具支腳的上端。

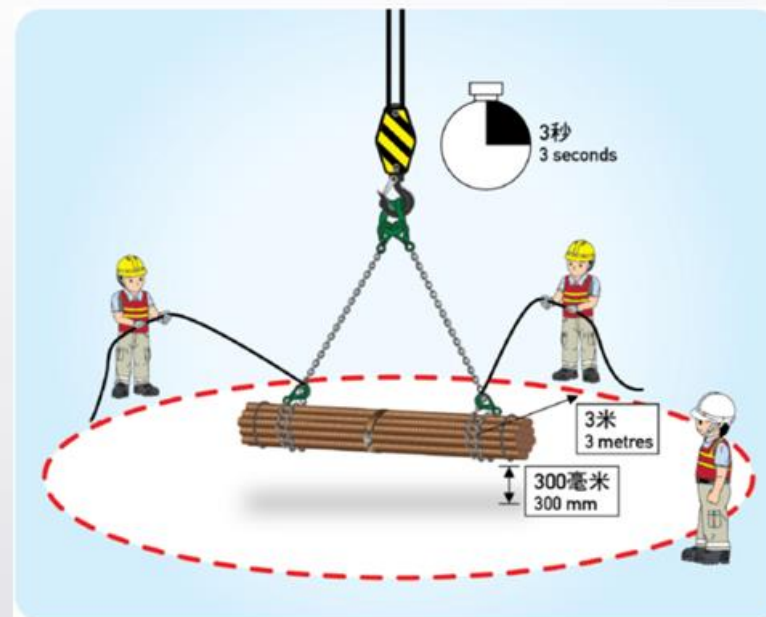


確保負荷物每一部份都平穩牢固地懸吊著，以免有鬆散物料或負荷物於吊運過程中滑落或移位。例如，吊運物料如銅筋、木材等，應使用雙細扼索結法、飛機帶及尾繩作固定。

吊運重點-法

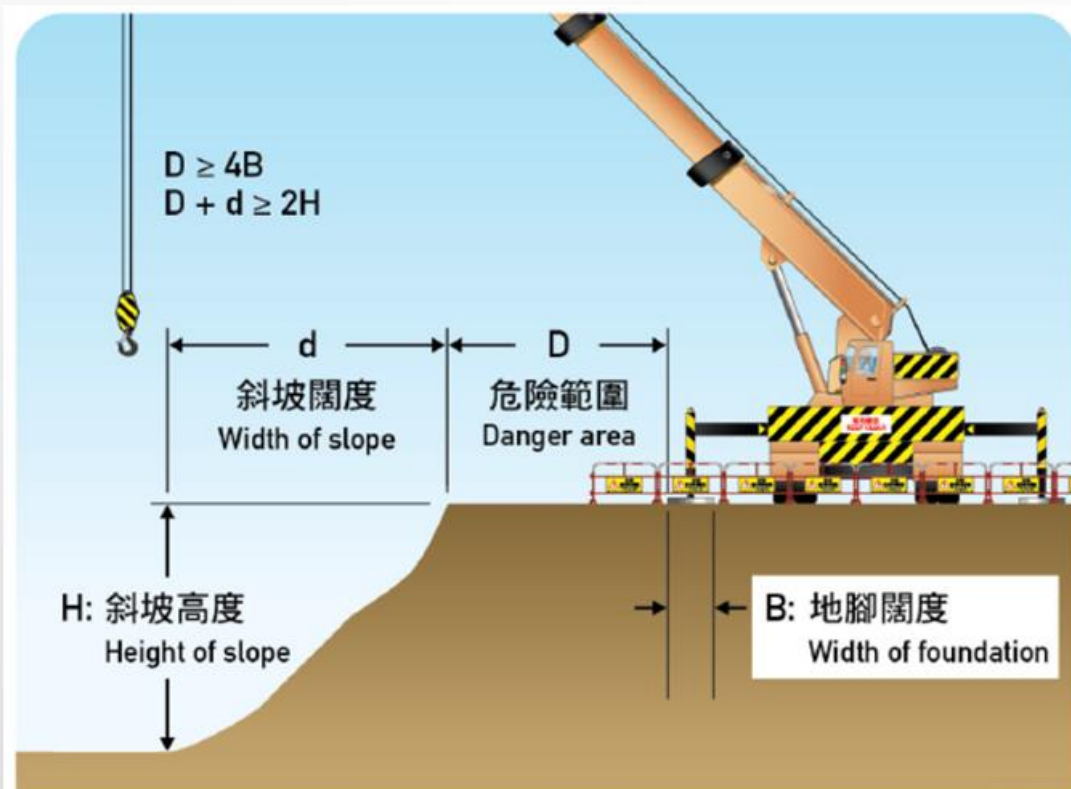


鋒利的物件邊緣應使用保護墊，並不應使用帆布帶吊運。



- 「3-3-3」試吊程序是指：
1. 所有人員離開「3」米；
 2. 吊起負荷物離地「3」百毫米；
 3. 等「3」秒後確定負荷物穩固才可以吊運。

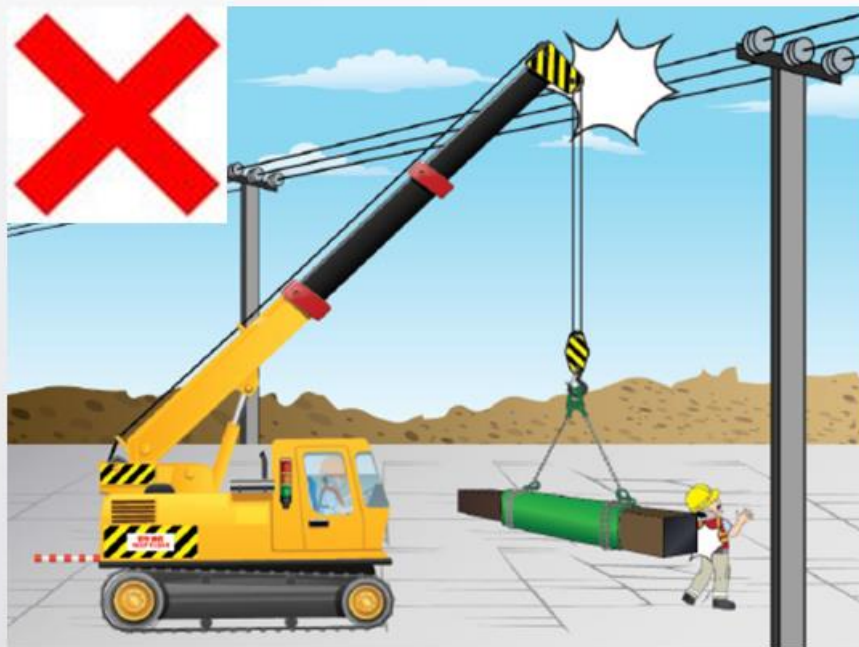
吊運重點-環



應與斜坡邊緣保持安全距離。當在接近泥土制坡邊緣操作時，因該處承重力遠低於遠離邊緣位置，泥土可能塌陷，導致起重機傾倒。工作前，檢查土地情況：

- 起重機在工地工作之前，應先徹底檢查地面情況，以確保起重機所處的地點有足夠承重力。
- 應採取預防措施，以確保起重機所在地並無任何地下設施。否則，應對這些地下設施提供足夠保護，以免受到任何損害。

吊運重點-環



吊運前，需計劃適當的吊運路徑，確保不會碰撞到其他人、物件或架空電纜。



地陷或泥土鬆散或
地面不平



香港專業吊運聯會

Hong Kong Professional Hoisting Engineering Association

Email: enquiry@hkphea.org
Website <https://www.hkphea.org>



Tel : 2408 6489 Fax : 2408 6173
Email : enquiry@hkphea.org Website : www.hkphea.org

謝謝各位!
Thank You!
(完)

This is a clip from the 28 April 2025 recording of the
Hong Kong Housing Authority
“Site Safety Seminar for Capital Works New Works Contracts”
The speaker on stage is Mr Donald CHOW
Committee Member of
Hong Kong Professional Hoisting Engineering Association
His topic is
“Safe Lifting Operation of Mobile Crane”

(00:21)

Good afternoon, everyone
I am Donald CHOW, representative of the Hong Kong Professional
Hoisting Engineering Association
It is my honour to be here today to share with you
practical experience in safe lifting operations with mobile cranes
as well as the related safety knowledge

Today, I will cover the topic in five parts

First, what is safe lifting
Then, we will analyse some typical risks in crane operations
After that, we will talk about the safe lifting practices
Then, through some cases
we will explore the root causes of the problems
Finally, I will share with you some related lifting experience

Safe lifting
is in fact a full-process management approach
It is not simply about lifting up an object
It mainly involves three core actions
planning, execution and supervision
Our objective
is to reduce risks in several aspects

including injuries and fatalities, equipment damage, property loss and delays to the works programme

Safe lifting is not only the responsibility of project management but also a legal responsibility

Under Hong Kong's Occupational Safety and Health Ordinance, Cap 509

employers have the responsibility to provide a safe system of work to protect the safety of employees

A complete and safe lifting operation must include three essential elements like three interlocking gears

If any one of them fails or if we rely on only one of them the system cannot operate effectively

They must work in coordination to form an effective lifting system

We must remember one point

the crane itself does not ensure lifting safety

What truly makes lifting safe is personnel and process management

I believe everyone is very familiar with

the lifting safety framework based on 4M1E

namely Man, Machine, Material, Method and Environment

These five major factors

will influence one another

and safety risks often arise when these factors overlap

Therefore, we need to carry out

comprehensive safety risk assessment

and analysis around these five areas

and then design a safe lifting plan

suitable for the specific construction site

Mobile crane operations involve many typical risks

including the following

instability of the crane itself

structural failure

human factors, environmental factors
and lifting methods

As I mentioned just now, lifting operations involve many risks

So how should we implement measures
to reduce these risks and ensure safety

In fact, there are five important steps

The first step is planning before lifting

We need to consider the

weight, dimensions and centre of gravity of the load

We also need to consider which type of lifting gear should be used

where the lifting points should be set

and where the crane should be positioned

whether the outriggers are extended sufficiently

and whether they need to be fully extended

and whether there are any obstacles near the lifting operation

These are all factors that must be considered before lifting

The second is equipment inspection

including the crane and all lifting gear

such as slings, wire ropes, chains and hooks

Before each use, a visual inspection must first be carried out

to check whether there is any rust, damage or deformation

More importantly, we must check whether valid certificates are available

Next is the execution of the lifting operation

During lifting

we must pay attention to the stability of the load and the lifting speed

and make sure the 3-3-3 trial lift procedure has been carried out

These are all important areas for ensuring safety

When the load approaches its destination

the lifting speed should be reduced

and the load should be lowered gently
to avoid collision and the safety risks that may result

Another important part is communication and signals

The signaller must maintain clear communication with the crane operator
including hand gestures, hand signals and walkie-talkie communication

Throughout the entire lifting process
there should only be one signaller responsible for giving instructions
This is to avoid unclear messages
or inconsistent instructions being passed to the crane operator
which may create danger

The final step is post-lifting safety measures

After each lifting operation is completed
the stability of the lifted object must be checked
because even after the object has been properly placed
there may still be a risk of displacement

We also need to consider whether it may create other potential risks
when the next lifting operation is carried out

In addition, lifting gear must be properly stored to avoid damage
so that it can continue to provide a safe and effective set of lifting tools
for the next operation

Next is case sharing

Let me share the first case with you

During the operation of a crane
an operator was standing on the deck of a lorry
assisting in lifting some steel casings

When the lifting operation began, the steel pipe suddenly shifted
and struck his right foot, causing injury

Based on this accident, there are several points worth noting

Was the planning before lifting sufficient?

During the lifting operation

no one should stand within the lifting zone

including the enclosed lifting area and the lifting operation area
especially underneath the crane
and along the movement path of the load

We must ensure that everyone stays away from these lifted objects
In addition, during the lifting operation
has the 3-3-3 trial lift procedure been carried out?

The 3-3-3 trial lift procedure helps us confirm the stability of the load
It is a preliminary checking step
that helps us determine whether the load is stable
before deciding whether the lifting operation should continue

As for communication and signals
was anyone assigned to act as the signaller at that time?

During lifting
communication between the signaller
and the crane operator is extremely important
because relying on one person alone to observe the site
may not be enough to fully understand all situations
We need to rely on teamwork
to remind and alert one another
so as to prevent accidents from happening

Then there are the safety measures after lifting
Since the steel pipes may shift during lifting
how should we prevent this type of situation from happening again?
In fact, we should pay attention to how the steel pipes are placed
After the previous lifting operation is completed
if clamps are used to properly secure and store the steel pipes
this can prevent other steel pipes from being moved together
when one of the steel pipes is lifted next time
These are effective ways to prevent this type of accident
This accident shows that
clear division of duties within the lifting team is very important

Tasks should not simply be handled by whoever happens to be available
Everyone should have clearly defined responsibilities
and one person should not take on multiple duties at the same time
Only by reminding and alerting one another
can we reduce the chance of accidents occurring

The second case
involves a crane and a mobile elevating work platform (MEWP)
It was an overturning accident involving a MEWP
A worker was installing a steel railing on the MEWP
At that time, he was using a lorry-mounted crane
to lift a steel railing for the installation work

However, because the walkie-talkie failed
the operator misunderstood the signal
and moved the load towards the MEWP
Eventually, the load struck the MEWP
causing the MEWP to overturn and the worker to be injured
We can analyse this accident
from several perspectives

First, was the pre-lift planning adequate?
This operation involved
a lorry-mounted crane and a MEWP
working together to complete the installation
Was there any overlap between their working areas?
Had the division of duties been arranged in advance?
Had the work sequence been clearly planned?

Advance coordination of the two machines
is extremely important
Another aspect is equipment inspection
The walkie-talkie used for communication failed
resulting in a misunderstanding among the lifting personnel

We need to design a backup plan
to deal with the sudden failure of the walkie-talkie
or other alternative arrangements
such as a backup power supply
When there is a problem with communication equipment
the correct practice is to stop the lifting operation immediately
and only resume the lifting operation
after the communication problem has been resolved

As for the lifting operation
when the load approaches the MEWP
the MEWP should first be moved away
We must remember one principle
when an object is moving
no other machinery or personnel should go near it
The operation must first stop
stability and safety must be confirmed
and only then can the next movement be carried out

Therefore, in terms of procedure
everyone must strictly follow
the risk assessment completed in advance
and the pre-planned work procedures
Only in this way can we ensure a safe working environment

For more complex lifting operations of this kind
before the lifting work begins
all personnel involved should first attend a detailed pre-lift briefing
It should clearly explain who will carry out each step
and how the overall workflow should proceed
Clear instructions must be provided to all lifting personnel
so that everyone can carry out the lifting work
according to the proper procedures

The third case

is about a hydraulic telescopic boom crane
which suddenly tilted and collapsed during operation on site
We can analyse this accident from several angles

First, had the crane operating area
and the weight of the lifted object
been fully assessed

Was the position of the crane suitable?

Were the outriggers extended sufficiently?

Were there any obstacles nearby?

It is also necessary to calculate the safe lifting capacity
according to the length and angle of the boom
as well as the weight of the load
so as to select suitable lifting gears
and lifting appliances
to carry out this lifting operation

As for equipment inspection

a thorough inspection must be carried out before every lifting operation

This includes checking whether the outriggers are stable

the proper functioning of the crane's safety system

and whether the load, overload and angle limit cut-out devices
are operating normally

These are all inspection items that

must be completed before the machinery is used

In terms of lifting procedure

for some complicated lifting operations

a "no-load trial lift" is a very effective method

to confirm the stability of the crane

and to prevent the crane from being overloaded

or operating beyond its safe working range

This is one of the methods we can use

Adequate communication between the crane operator and the signaller is also very important

The crane operator, signaller and rigger should jointly assess the weight of the load at the frontline and compare it with the actual lifting capacity of the crane
If the signaller and the crane operator maintain clear communication and give each other timely reminders this also serves as an important safeguard against crane overturning accidents during lifting operations

The next accident involved a lorry-mounted crane during lifting
The chain sling used for lifting broke causing the load tilted between the hoarding and the lorry

Before lifting, it is very important to select suitable lifting gear
We need to confirm whether the safe working load of the lifting gear used at that time was sufficient to carry the lifted object

Before use, careful inspection should be carried out to check whether the lifting gear has been stretched or twisted or whether there are notches, cracks or wear

All these must be carefully inspected

In lifting operations

we often use wire ropes or chains

Before use, they must first be straightened, laid flat and untwisted to avoid certain parts being twisted

crossed over or overlapped

which may result in different lengths on both sides

causing the lifting gear to bear extra stress

and become damaged more quickly

These are all items that we must inspect and pay attention to

In addition, lifting gear should also undergo thorough examination by a registered professional engineer every six months and be issued with a valid certificate

We can also use colour tags to check whether the lifting gear has been inspected in that quarter and whether it is suitable for use during that quarter

These are all measures that can be achieved through system management and can also help to reduce accidents

Next, I would like to share some lifting experience

All lifting operations

involve Man, Machine, Material, Method and Environment

These factors are closely connected and affect one another

We need to assess them carefully

and then develop a suitable lifting method

so that safe lifting operations can be carried out according to the conditions of each site

First, let us talk about personnel

especially the responsibilities of the signaller and the rigger

In lifting operations

people are the most critical factor

especially the two frontline roles

the signaller and the rigger

The rigger is responsible for the rigging work

His responsibility is to ensure that the load is rigged in the correct way

He must first inspect the lifting gear before use

and also check whether the lifting points are suitable

These are very important procedures

As for the signaller

he is responsible for guiding the entire lifting operation

We should make good use of the “3-3-3 trial lift procedure”

that is, keep 3 metres away

lift the load 300 millimetres off the ground, and wait for 3 seconds

This helps confirm the stability of the load

Only after we confirm that it is stable

can we proceed to the next step of the lifting procedure

Another important role

is the crane operator

The crane operator controls the crane

which means site safety is, to a great extent, in his hands

The reason is simple

because when he is lifting an object

the speed he chooses

and whether the load remains stable

are often the key factors in whether an accident will occur

Therefore, crane operators

must remember one principle, and that is to go slowly

especially when working close to the ground, they must go slowly

Only by moving slowly

can the stability of the load be ensured

During lifting

the crane operator must ensure

that the load does not pass over any workers

One of the key points in lifting operations

is the machinery, namely the crane's safety system

Generally, reference can be made to two standards

For lorry-mounted cranes, reference can be made to EN12999

For heavy-duty hydraulic cranes, reference can be made to EN13000

These standards help monitor the stability of cranes

When the system detects abnormal conditions, it will issue a warning

to remind us to suspend the lifting operation

As mentioned just now, if the crane is unstable

an accident can easily occur
and an intelligent crane stability system
can help us manage this risk

This system monitors whether the lifting limit is exceeded
based on the boom angle
and the load weight

For example, if the boom is extended too far
or the load is too heavy
the system will immediately stop the machine
to protect both the crane and the workers

If the outriggers are not properly set on the ground
not fully extended, or under insufficient pressure
the system can also detect this immediately and issue a warning
Therefore, we should make good use of these devices
to safeguard the safety of the entire lifting system

Before lifting gear is used
we must comply with the following three major requirements

First, every item of lifting gear
must be thoroughly examined by a competent examiner
once every six months
in accordance with legal requirements

Second, inspection records
valid certificates and tags must be available

Third, a visual inspection must be carried out before each use
This includes checking whether the lifting chain is stretched,
twisted or knotted
whether the surface of the sling is corroded, visibly damaged or cracked
whether the shackle is deformed,
and whether the lifting point is damaged

All lifting gear, such as shackles and lifting cages
must clearly display their safe working load
Each item of lifting gear must also have
its own identification number and marking
so that we can check at any time
whether it has a valid certificate or whether the certificate has expired

Apart from whether the lifting gear has been inspected
another core risk
is whether the lifting points have been selected correctly

This picture shows
how to ensure that the centre of gravity of the load is properly positioned
so as to prevent loss of balance
If the centre of gravity of the load is not directly below the hook
an unbalanced condition will occur
and the load may tilt as soon as it is lifted
When the lifting gear is unevenly loaded
that is, when one side of the sling is under load
while the other side is under less load
the sling can easily break
This is often how accidents happen

Therefore, designing a correct lifting method
is the most effective way to prevent this type of accident

The following photos
show some common lifting methods
Some show correct practices, while others show incorrect practices

For example, when using hooks
as everyone knows, each link should only take one hook connection
We must not attach two chains
directly to the same hook

Everyone must keep this in mind
If necessary

accessories such as shackles and proper lifting slings should be used to make the proper connection

When lifting loose materials, such as reinforcement bars the correct lifting method must be adopted

Generally, a double-wrap choke hitch should be used as the rigging method to secure the reinforcement bars At the same time cable ties should also be used to fix the reinforcement bars

Finally, a tag line must also be attached This is an indispensable item

However, if the reinforcement bars are of different lengths even if a double-wrap choke hitch is used

I would not recommend handling them in this way

Reinforcement bars of different lengths should instead be placed in a lifting skip for lifting to prevent the load from falling and avoid endangering others or causing accidents

When lifting materials with sharp edges or corners protective rubber pads should be used to protect the lifting gear so as to prevent cutting or tearing

As for the lifting method

I would definitely recommend everyone to use the “3-3-3 trial lift procedure” to ensure the stability of the load and reduce the risk of the load falling or becoming loose during lifting

thereby reducing accidents

Environmental factors

If the crane is positioned close to the edge of a slope or on loose soil

we must handle it with extra care
because loose soil has a lower bearing capacity
and may settle under pressure
When the boom extends outwards
the load moment increases and the centre of gravity shifts outward
making the crane more likely to overturn

Here is a method for calculating the safe distance
for everyone's reference

However, the final safe operating distance
should still be calculated by a qualified professional engineer
based on the conditions of each site
The applicable distance requirements
should then be set according to the actual site conditions

Before lifting, we must also have a clear lifting route
to ensure that the load will not hit cables, working platforms, buildings
or other cranes

The signaller must also watch out for any swinging of the load
and avoid allowing the load to pass over workers

The crane outriggers must also be fully extended
Before doing so, an assessment should first be carried out
to confirm whether the ground has sufficient bearing capacity
to support the crane during operation

This assessment is essential to crane stability
Only in this way can we ensure safe crane operation
and avoid overturning

The above are the key points on safe lifting operations
that I would like to share with you today
I hope that through this sharing
everyone will not only know how to operate
but also know how to prevent risks

because lifting safety is not only about a piece of equipment
It is also a responsibility and a culture

Thank you everyone

Thank you for watching

(33:04)