

The NOV logo is rendered in a large, white, sans-serif font. The letter 'O' is stylized with a curved line through it, resembling a drop or a leaf. The background of the entire slide is a low-angle photograph of a complex industrial steel structure, likely an offshore oil rig, with several yellow cranes visible against a clear sky.

NOV

GLOBAL DROPS

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AGENDA:



Securing Sheave and
Snatch Blocks



practical “DROPS”
of large object



Securing Sheave and Snatch Blocks

Components:
PADEYE
SHACKLE
BLOCK



Securing Sheave and Snatch Blocks

PAD EYE:

- load rated (SWL/WLL)
- 3rd party design approval
- safety factor 4:1
- NDT inspection
- load tested



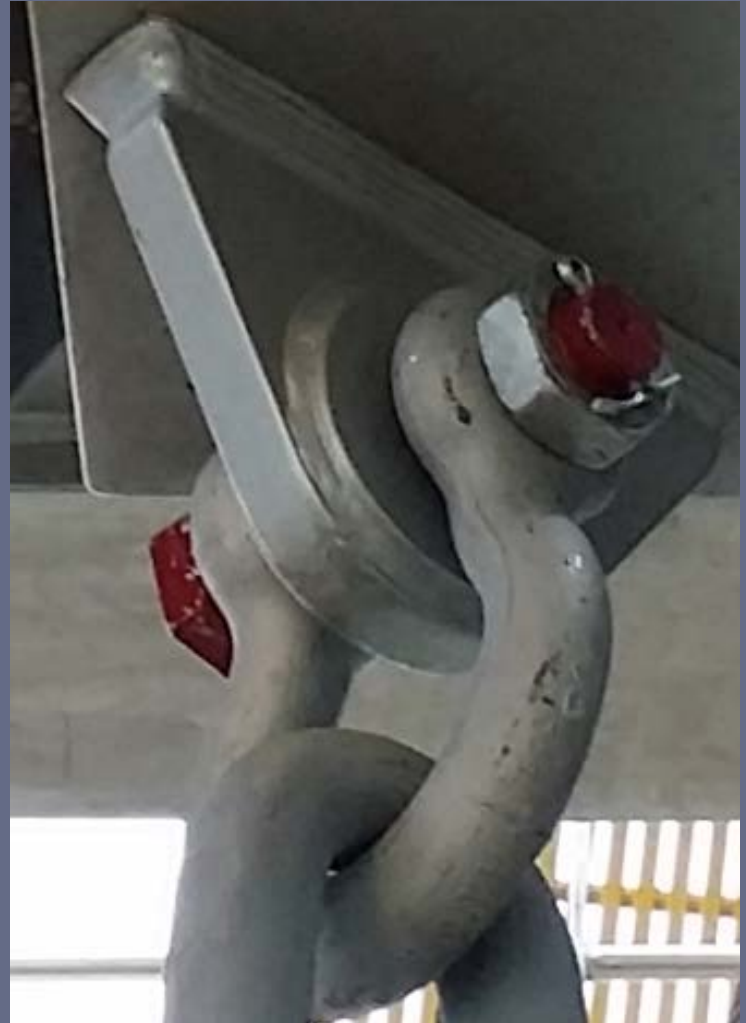
Safe Working Load	Test Load
Up to 20 tonnes	1.25 x SWL
20-50 tonnes	5 tonnes + SWL
Above 50 tonnes	1.1 x SWL

source: DNV Lifting appliances 2.22

Securing Sheave and Snatch Blocks

SHACKLE

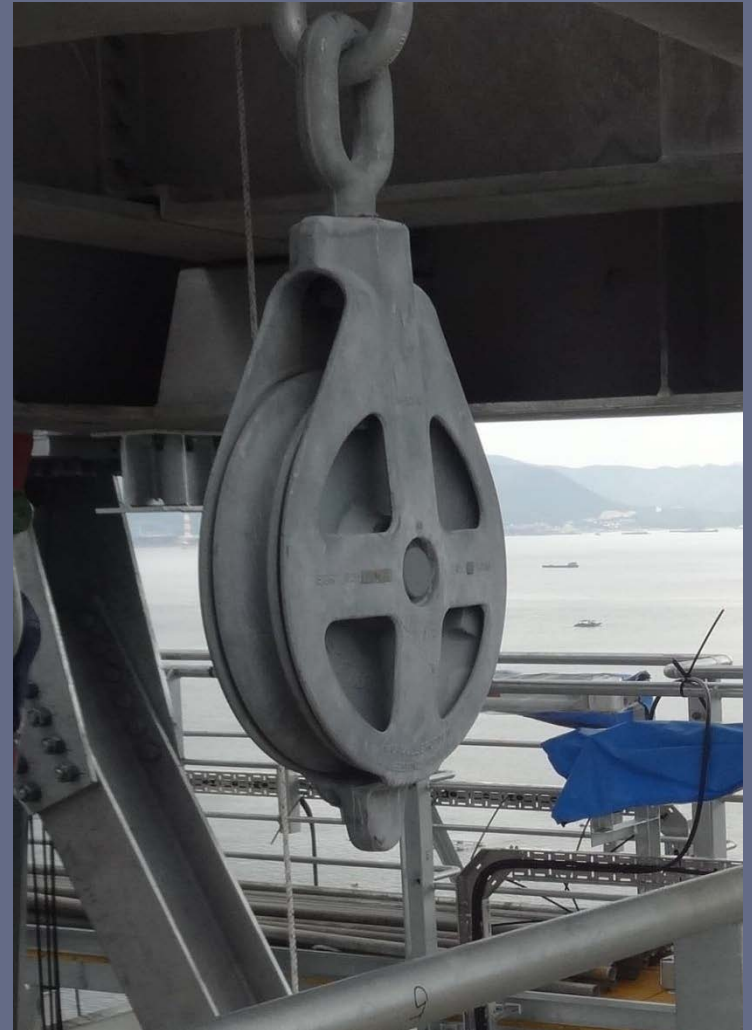
- load rated (SWL/WLL)
- safety factor 6:1
- load test 2x SWL
- delivered with certificate
- secondary retention-4 part shackle



Securing Sheave and Snatch Blocks

SHEAVE BLOCK

- load rated (SWL/WLL)
- safety factor 5:1
- load tested (4xSWL)
- delivered with certificate
- secondary retention in shaft
- secondary retention in head fitting



Securing Sheave and Snatch Blocks

SCENARIO:

BLOCK Fail under static load

10T Block SWL

0,5m free fall

0,005m (5mm) deformation

49000J kinetic energy at end of free fall

~9800kN (1000 tonnes) - force acting on
deformation distance to dissipate kinetic
energy

200 g deceleration (Earth gravity)

Securing Sheave and Snatch Blocks

1000 tonnes - force acting on deformation
distance to dissipate kinetic energy

CONCLUSION:

Do you have thick enough wire?

Do you have structure strong enough to take
the load?

Example:

Bridon Dyform 34x19 ø66 MBL 400tonnes

Securing Sheave and Snatch Blocks

SUMMARY:

existing barriers

design - primary fixing

secondary retention integrated

securing slings function (if installed) is to prevent the block to fall during installation, move or maintenance

securing sling can not prevent the block to fall under the nominal (block SWL) load

Securing Sheave and Snatch Blocks

Consider consequences of safety slings installation .





Preventing drop of large object

Hydra Racker Guide Head

weight: c.a. 180 kg

potential drop height
35m

energy: 63000J



Preventing drop of large object

“stiff wire”

- 180 kg object weight
- 0,25m free fall
- 0,005m (5mm) deformation

441 J kinetic energy at end of free fall

~90kN (9 tonnes) force acting on deformation distance to dissipate kinetic energy

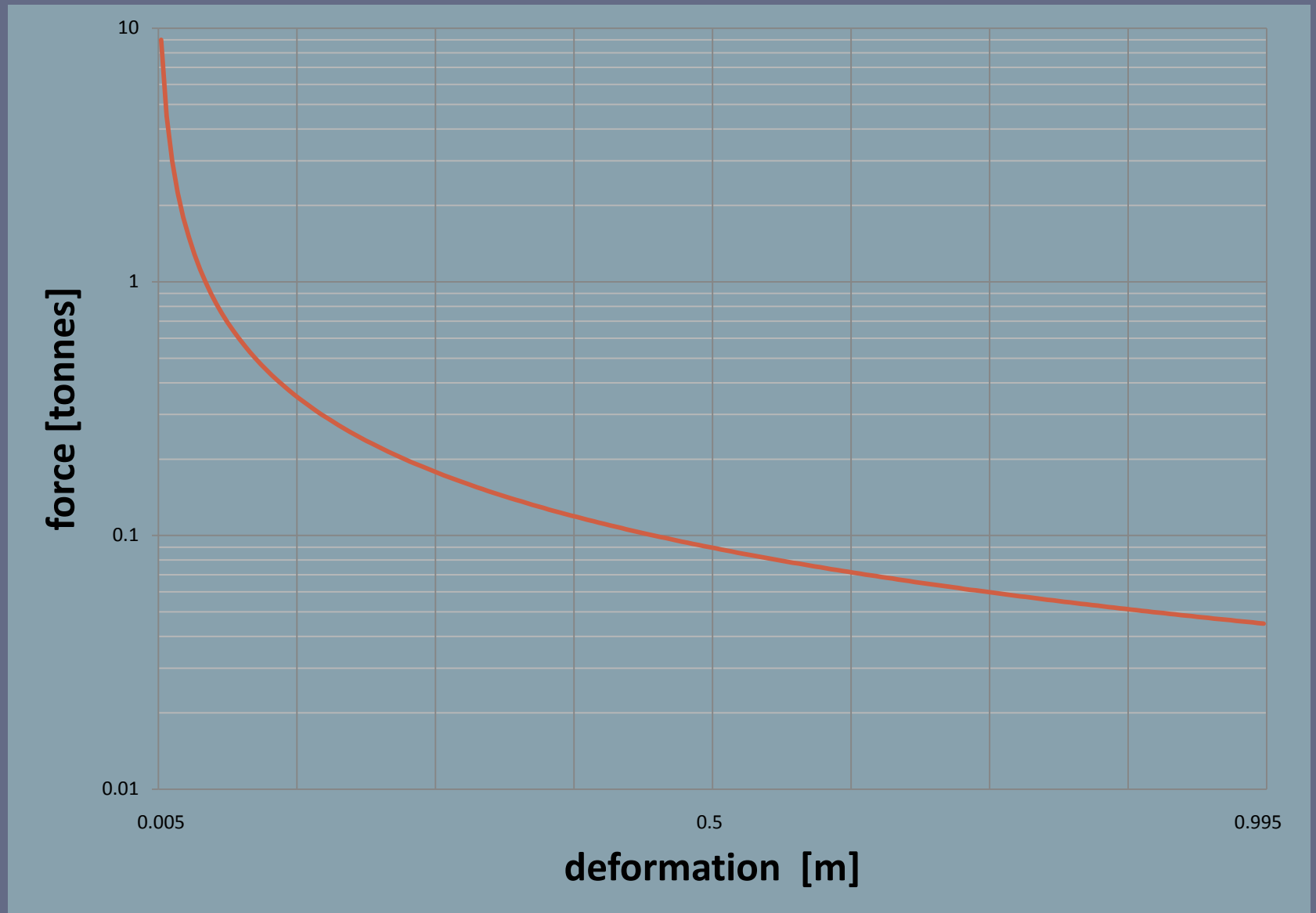
“dynamic link”

- 180 kg object weight
- 0,25m free fall
- 0,25m deformation

441 J kinetic energy at end of free fall

~1,76kN (0,18 tonnes) force acting on deformation distance to dissipate kinetic energy

Preventing drop of large object



Preventing drop of large object



Preventing drop of large object





Questions?



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