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Dropped Object Awareness and Prevention

THE CONSEQUENCES

- **Injuries and Fatalities**

  Still harming, STILL KILLING…
  for some sectors DROPS represents
  over 60% of all HiPo / Serious incidents

- **Asset and Equipment Damage**

  Dropped Objects cause damage to
  plant, equipment and critical systems.
  This includes the SEABED!

- **Environmental Damage**

  Spills, Loss of Containment

- **Reputational Damage**

  Not good for business…

PREVENTING **DROPPED OBJECTS**

- DROPS is an integral part of HSE Planning
- DROPS incorporated into Task Risk Assessments industry wide
- Customer and Industry ‘Prevention of Dropped Objects’ standards and guidance rolled out across well sites and supply chain
- DROPS Guidance documents are in circulation
- DROPS Forums and Focal Points worldwide
- Regular Hazard Hunts undertaken
- Inspections after every extreme activity or scenario…but do we need to revisit the basics?

NOT JUST DRILLING!

Typical DROPS Management System (Content)

- Equipment Inventory Management
- Equipment Integrity (Reliable Securing)
- Maintenance (handover to Ops)
- Surveys and Inspections
- Safety Securing Devices
- Drops Zones
- Tools and Equipment at Height
- Lifting Operations
- Personnel Requirements
- Pre-Task Planning
- Incident Reporting
- Governance

Introduction : PURPOSE

- To **raise awareness** of potential dropped objects
- To understand and define **what is a potential dropped object** and how to **identify the causes**
- To explore methods for the **control and prevention** of dropped objects
- To recognise your personal responsibilities for the **prevention of** dropped objects

WHAT IS A **DROPPED OBJECT?**

“Any object / item that falls from its previous position”




ALSO KNOWN AS:

FALLING OBJECT; MATERIAL FALLING FROM HEIGHT; DROPPED FROM HEIGHT; FALLEN ITEM; LIFTING FAILURE; COLLAPSE; FAILURE OF FIXING

CLASSIFYING **DROPPED OBJECTS**

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STATIC DROPPED OBJECT (GRAVITY)

A solid object, initially at rest that falls from its original position under its own weight.

Eg: Cable tray falls due to failed fittings caused by corrosion.

DYNAMIC DROPPED OBJECT (GRAVITY + MOVING ENERGY)

A solid object that is dislodged or breaks free from its fastenings due to the applied force from the impact of some other equipment or moving object, or combination of continual dynamic forces, movement, vibration, environmental factors etc.

Eg: Cable tray falls after being struck during lifting activity.


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UNDERSTANDING DROPS DEFINITIONS

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Primary Fixing, Secondary Retention and Safety Securing

PRIMARY FIXINGS	Bolted, Clamped, Pinned, Hinged	Brackets, Turnbuckles Welds	PREVENTIVE
SECONDARY RETENTION	Safety Pins Lock Wire	Locking Nuts Locking Washers	PREVENTIVE
SAFETY SECURING	Securing wire Connectors	Nets and Baskets Safety Chains	MITIGATING

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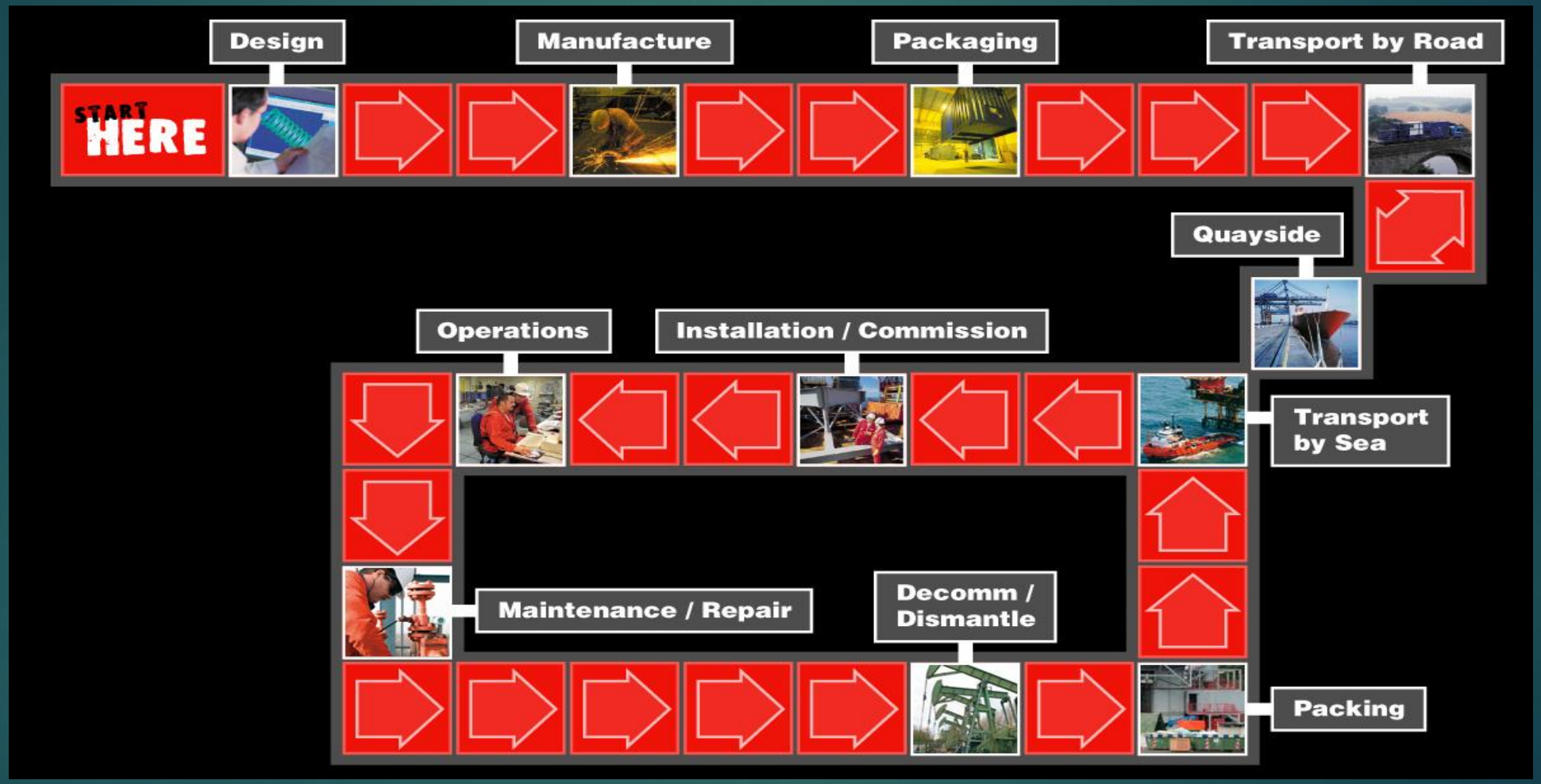
THROUGH THE SUPPLY CHAIN



WHAT CAUSES **DROPPED OBJECTS?**

- **Poor Hazard Identification and Risk Assessment**
- **Failed Fixtures and Fittings / Inappropriate Fixings**
- **Poor Housekeeping** (legacy and current activities)
- Poor Safety Culture
- Performance Shaping Factors (Human Factors / Error Traps)
- Inadequate Design (not addressing Dropped Object potential)
- Inadequate Maintenance / Testing / Certification
- Redundant / Neglected / Homemade Equipment
- Vibration / Corrosion / Loss of Preload
- Inappropriate Procedures / Not Following Procedures
- Inappropriate Storage / Inadequately Secured Equipment
- Environmental Factors (weather, heave, ground conditions)
- Planning and Operational Miscalculations
- Overloading / Improper use of Equipment and Tools
- Any others?

SEARCH 1 – TASK DESIGN & PROCEDURE

GUIDANCE: Break the task into steps and talk about how easy / difficult they are. Think about other activities going on at the same time.

ERROR TRAPS:

- ☐ **Interruptions or distractions**
- ☐ **Procedure time consuming / steps are too complex or difficult**
- ☐ **Communications are difficult**
- ☐ **Safety related information (hazards & controls) and warnings not clear in procedure**
- ☐ **Boring, unimportant or repetitive actions**
- ☐ ***What else may make using the procedure difficult?***

SEARCH 2 – PEOPLE & RESOURCES

GUIDANCE: Talk about how prepared people are for the task, if there is enough time and the right equipment.

ERROR TRAPS:

- ☐ **Not enough people to complete the job**
- ☐ **Not given enough time**
- ☐ **People lack the right experience or knowledge**
- ☐ **The right tools / equipment not available or working properly**
- ☐ ***What else may you need to complete the job successfully?***

HUMAN PERFORMANCE
OIL & GAS

SEARCH 3 – CHANGE

GUIDANCE: Consider what can change since the task was last done or how it may be different to other jobs you are used to. Also think about what can change during the job.

ERROR TRAPS:

- ☐ **New tool confused with previous version**
- ☐ **Task not as expected, e.g. valve opens to the left whereas all other valves open to the right**
- ☐ **Procedure inaccurate / out of date**
- ☐ **A new situation arises that requires improvising or trouble shooting**
- ☐ ***What else is making your job difficult?***

TASK CHECK

Similar to a Hazard Hunt, the objective of this Human Performance Check is to identify factors which cause people to make mistakes when they perform tasks in your workplace.

Pick a task or activity to discuss as a group. Ensure there is an operator or person who currently performs the task to talk about how the work is really performed.

Error Traps are the range of physical, psychological, social or organizational influences which affect Human Performance and how people carry out their activities.

SEARCH 4 – LOCATION, EQUIPMENT & INTERFACES

GUIDANCE: Talk about the environment in the task location and how easy the equipment is to use.

ERROR TRAPS:

- ☐ **Physical working environment difficult to work in (heat, noise, light etc.)**
- ☐ **System interface is difficult to understand**
- ☐ **Controls are easy to activate accidentally**
- ☐ **Controls similar to each other**
- ☐ **Signs and signals are unclear**
- ☐ **Operators cannot easily reverse their actions**
- ☐ ***What else makes using the systems difficult?***

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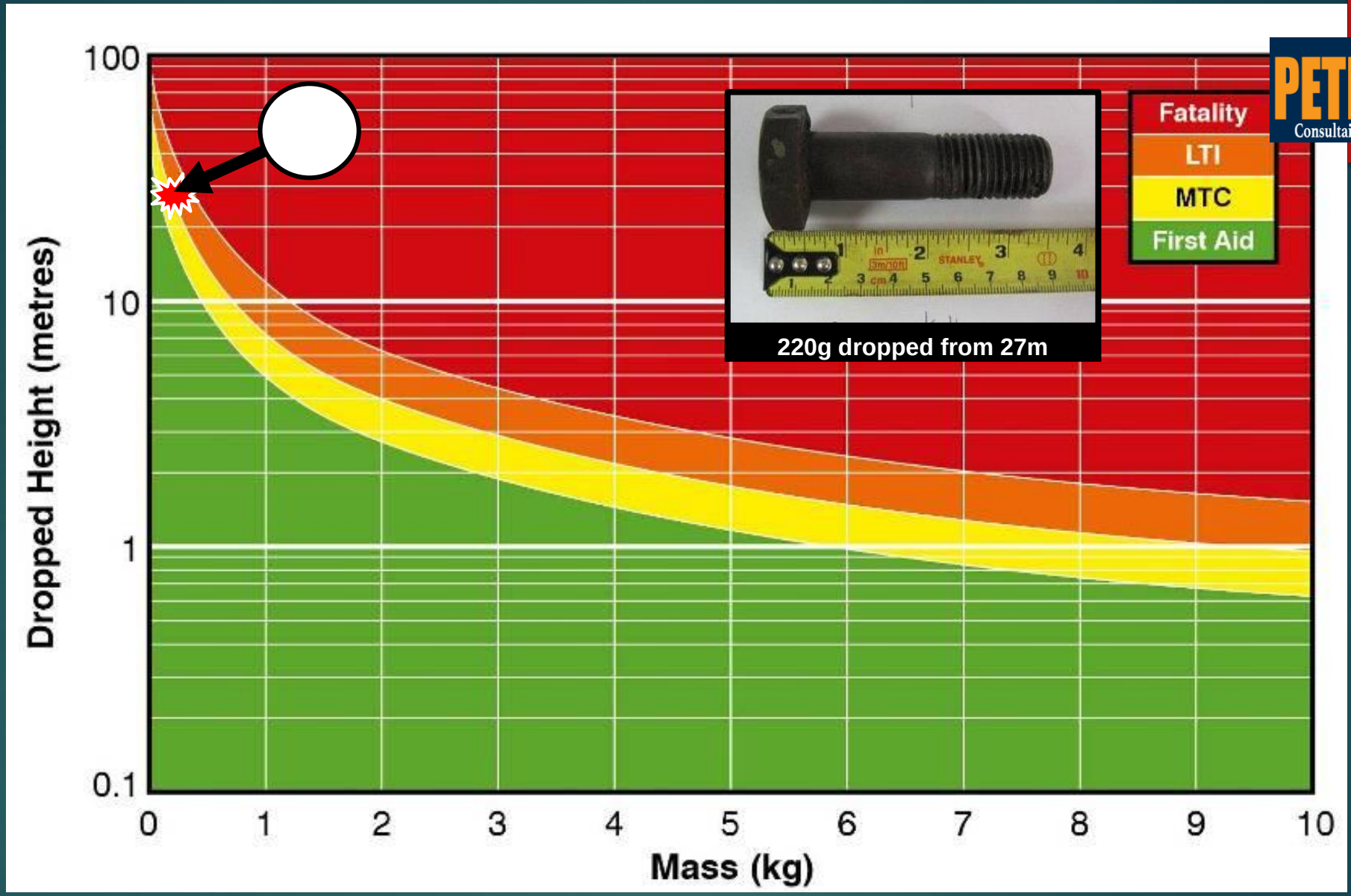

- This bolt would deliver a considerable impact force if dropped from 27m resulting in a medical treatment case. (58J Fall Energy…)

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