



DROPS Guidance & Best Practices

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DROPS
DROPPED OBJECTS
PREVENTION SCHEME

- Background and scope of DROPS Guidance and Best Practice
- Overview of DROPS Guidance and Best Practice:
 - Survey and Inspection
 - Red Zones
 - PreTask Checklists
 - Tools at Height
- Q&A



- 'Best Practice', as agreed by general consensus of the members of the DROPS Workgroup
- Certain processes and procedures detailed in these documents may require modification to suit specific locations, activities or facilities
- Guidelines are considered best practice and are a recommended component of any integrated dropped object management scheme.
- Subject to regular review and update in response to improved methodologies and technologies.



- Best Practice - Tools at Height
- DROPS Guidance – Survey and Inspection
- DROPS Guidance – Red Zones
- DROPS Guidance – PreTask Checklist



- Applies to all subcontractor personnel conducting third party Independent Dropped Objects Surveys.
- The purpose of these Guidelines is to:
 - establish minimum requirements for subcontractor personnel with regards to Independent Dropped Objects Surveys / Inspections
 - provide guidance on the completion of Dropped Objects Survey Reports and Dropped Objects Inspection Books
 - provide templates for independent Dropped Objects Survey Reports
 - provide further supporting guidance for planning and management
- Link to document :
<http://www.dropsonline.org/index.asp?id=1&refID=155&refID2=158&contentID=158>

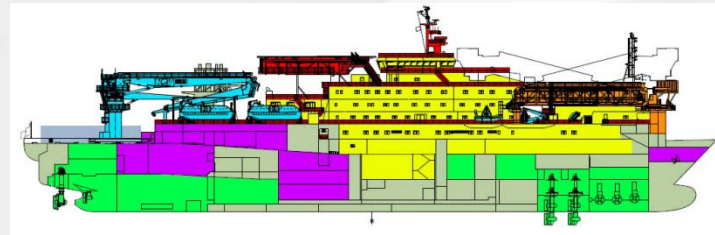




DROPS Guidance: Survey and Inspection 2







- Basic Requirements – Specifies personnel competency requirements of 3rd party independent Dropped Objects surveyors/inspectors
- Independent Dropped Object Survey Criteria (ensures consistency in surveys)
 - Inspection Areas
 - The Survey
 - What to look out for
 - Required survey tasks
 - Deliverables
 - Dropped Objects Survey Report
 - Failed Item List
 - Dropped Objects Inspection Book
- Responsibilities for survey and inspection









- Survey tasks:
 - Document equipment location by Inspection Area
 - Photograph each item surveyed
 - Include unique identification number to each item (tag numbers)
 - Describe each item surveyed
 - Inspect and document Primary Securing method(s)
 - Inspect and document Secondary Retention method(s)
 - Record equipment condition as Pass or Fail, including comments (ie Satisfactory or Reason for Failure)
 - Record inspection frequency (ie weekly, monthly) as recorded in the Equipment Family Inspection Criteria
 - Generate a Failed Items List



Dropped Objects Survey Report - Crown and Water table - Area 1



Photo	Ref	Description / Location	Fastening Method	Condition	Control
	CWN010	Crown block sheaves and pins, central crown	Primary Securing : Bolted with lock nuts Secondary Retention: Lock wire	Condition : (X) Pass () Fail Comments : Satisfactory	Monthly
	CWN012	Dead line deflector sheave, Aft Crown	Primary Securing : Bolted with lock nuts Secondary Retention: Lock wire	Condition : (X) Pass () Fail Comments : Satisfactory	Monthly
	CWN014	Fast line sheaves, Fwd Crown	Primary Securing : Bolted with lock nuts Secondary Retention: Lock wire and safety chain	Condition : (X) Pass () Fail Comments : Satisfactory	Monthly
	WTT006	Timber block crown saver, underside of crown	Primary Securing : Bolted with lock nuts Secondary Retention: Lock wire, safety chain and 4 part shackle	Condition : (X) Pass () Fail Comments : Satisfactory	Monthly

Typical Support Vessel Dropped Object Survey Report


INSPECTION AREA A : TELESCOPIC GANGWAYS (Port and Starboard)									
ITEM	PHOTOGRAPH	REF	DESCRIPTION	FASTENING METHOD	CONDITION	COMMENTS	FREQUENCY	HOW TO INSPECT	NAME
1		QVFL 001	Gangway Access Control Lamps (Port and Starboard)	Primary Securing: Bolted to gangway structure on welded brackets Secondary Retention: Lock Nuts fitted to bolts.	PASS	Securing wires could be attached to lamp housings fixed back to gangway structure.	050 Days	Check all securing bolts/lock nuts are in place. Check for signs of corrosion.	AS
2		QVPA 001	Gangway PA System (Port and Starboard)	Primary Securing: Bolted to brackets. Brackets bolted to gangway structure. Secondary Retention: Lock Nuts fitted to bolts.	PASS	Satisfactory	060 Days	Check all securing bolts/lock nuts are in place. Check for signs of corrosion.	JZ
3		QVCT 001	Cable trays, Cable conduit pipe runs & cable clamps	Primary Securing: Cable trays with beam clamps to gangway structure. Secondary Retention: Plastic Tie wraps used on cable runs.	FAIL	Plastic tie wraps used on cable runs. Remove and replace with stainless tie wraps.	120 Days	Check all securing bolts/lock nuts are in place on clamps. Check for signs of corrosion. Remove all debris.	JZ
4		QVHP 001	Hydraulic and pneumatic piping (LP & HP)	Primary Securing: U-clamped to brackets. Brackets bolted to gangway structure. Secondary Retention: All bolts include lock washers.	PASS	Satisfactory	090 Days	Check all securing bolts/lock nuts are in place. Check for signs of corrosion. Remove all debris.	AS
5		QVAL 001	Gangway Maintenance Platform	Primary Securing: Welded to gangway structure c/w bolts. Secondary Retention: Lock Nuts fitted to bolts.	PASS	Satisfactory	030 Days	Check all securing bolts/lock nuts are in place. Check for signs of corrosion. Check hinges on access swing gate. Remove all debris.	DE
6		QVLF 001	Gangway Landing Foot	Primary Securing: Bolted to gangway structure c/w bolts. Secondary Retention: Lock Nuts fitted to bolts. Safety Chain fitted.	PASS	Satisfactory	007 Days	Check all securing bolts/lock nuts are in place. Check for signs of corrosion. Check integrity of safety chain. Remove all debris.	JZ



Dropped Objects Fail List - Crown and Water table - Area 1

Photo	Ref	Description / Location	Fastening Method	Condition
	CWN010	Crown block sheaves and pins, central crown	Primary Securing : Bolted Secondary Retention: None	Condition : () Pass (X) Fail Reason for failure: No secondary retention, requires lock nuts / lock wire
	CWN012	Dead line deflector sheave, aft Crown	Primary Securing : Bolted with lock nuts Secondary Retention: Lock wire	Condition : () Pass (X) Fail Reason for failure: Lock wire broken, need to replace lock wire
	CWN014	Fast line sheaves, fwd Crown	Primary Securing : Bolted with lock nuts Secondary Retention: Lock wire and safety chain	Condition : () Pass (X) Fail Reason for failure: Safety chain broken, requires new chain
	WT1006	Timber block crown saver, underside of crown	Primary Securing : Bolted with lock nuts Secondary Retention: Lock wire, safety chain and 2 part shackle	Condition : () Pass (X) Fail Reason for failure: Replace 2 part shackle with 4 part shackle





Typical Support Vessel Dropped Object Survey Failed Items List

INSPECTION AREA A: TELESCOPIC GANGWAYS (Port and Starboard)									
AREA SPECIFIC DESCRIPTION									
ITEM	PHOTOGRAPH	REF	DESCRIPTION	FASTENING METHOD	CONDITION	COMMENTS	FREQUENCY	HOW TO INSPECT	NAME
3		GMCT 001	Cable trays, Cable conduit pipe runs & cable clamps	Primary Securing: Cable FAIL trays with beam clamps to gangway structure. Secondary Retention: Plastic Tie wraps used on cable runs.	FAIL	Plastic tie wraps used on cable runs. Remove and replace with stainless tie wraps.	120 Days	Check all securing bolts/Rock nuts are in place on clamps. Check for signs of corrosion. Remove all debris.	JZ





Survey Report \ Failed Items / Inspection Book /



Dropped Objects Inspection Book- Crown and Water table - Area 1 - Monthly

Photo	Ref	Equipment	Fastening Method	How to Inspect	Signature
	CWN010	Crown block sheaves and pins, central crown	Primary Securing : Bolted with lock nuts Secondary Retention: Lock wire	Inspection Procedure: Check all bolts and self locking nuts are secure, check main pin lock plate and bolts are secure and lock wired. Check condition of line guard and securing bolts. Condition : () Pass () Fail Comments :	Signature
	CWN012	Dead line deflector sheave, Aft Crown	Primary Securing : Bolted with lock nuts Secondary Retention: Lock wire	Inspection Procedure: Check all bolts and self locking nuts are secure, check main pin lock plate and bolts are secure and lock wired. Check condition of line guard and securing bolts. Condition : () Pass () Fail Comments :	Signature
	CWN014	Fast line sheaves, Fwd Crown	Primary Securing : Bolted with lock nuts Secondary Retention: Lock wire and safety chain	Inspection Procedure: Check all bolts and self locking nuts are secure, check main pin lock plate and bolts are secure and lock wired. Check condition of line guard securing bolts and chain Condition : () Pass () Fail Comments :	Signature
	WT006	Timber block crown saver, underside of crown	Primary Securing : Bolted with lock nuts Secondary Retention: Lock wire, safety chain and 4 part shackle	Inspection Procedure: Check condition of safety slings and 4 part shackles. Check retaining bolts/lock washers/nuts are in place and secure and for signs of corrosion. Condition : () Pass () Fail Comments :	Signature

Typical Support Vessel Dropped Object Inspection Book

INSPECTION AREA A : TELESCOPIC GANGWAYS (Port and Starboard)										
AREA SPECIFIC DESCRIPTION										
ITEM	PHOTOGRAPH	REF	DESCRIPTION	FASTENING METHOD	CONDITION	COMMENTS	FREQUENCY	HOW TO INSPECT	NAME	
4		OWLF 001	Gangway Landing Foot	Primary Securing: Bolted to gangway structure c/w bolts. Secondary Retention: Lock Nuts fitted to bolts. Safety Chain fitted.			007 Days	Check all securing bolts/lock nuts are in place. Check for signs of corrosion. Check integrity of safety chain. Remove all debris.		
5		OWAL 001	Gangway Maintenance Platform	Primary Securing: Welded to gangway structure c/w bolts. Secondary Retention: Lock Nuts fitted to bolts.			030 Days	Check all securing bolts/lock nuts are in place. Check for signs of corrosion. Check hinges on access swing gate. Remove all debris.		
1		OWL 001	Gangway Access Control Lamps (Port and Starb)	Primary Securing: Bolted to gangway structure on welded brackets. Secondary Retention: Lock Nuts fitted to bolts.			060 Days	Check all securing bolts/lock nuts are in place. Check for signs of corrosion.		
3		OWCT 001	Cable trays, Cable conduit pipe runs & cable clamps	Primary Securing: Cable trays with beam clamps to gangway structure. Secondary Retention: Plastic Tie wraps used on cable runs.			120 Days	Check all securing bolts/lock nuts are in place on clamps. Check for signs of corrosion. Remove all debris.		



Example Equipment Family Inspection Criteria

AREA 1 : Derrick/Mast and Traveling Equipment

Derrick Equipment Zone 1 (A-Frame / Crown / Water Table)

1	Active heave cylinder hydraulic control lines, support wires Valve block, flex hoses & accumulator bottle	180 days	Hydraulic control lines pipe clamped together and secured to Active Heave Compensator with bolted flanges. Other control lines beam clamped to gin pole structure with turnbuckles and 4 part shackles Accumulator bottle pipe and support wires clamped to framework & beam clamped to gin pole structure. Valve block secured with bolted flanges.	Check beam clamps and bolts are secure and for any signs of corrosion, check all bolted connections and hoses are in good condition. Check support wires, turnbuckles and shackles, ensure shackles are fitted with split pins.
2	Cable trays, Cable conduit pipe runs & cable clamps	180 days	Cable trays with beam clamps to derrick structure. Cables secured with stainless steel tie wraps. Other cables fed through pipe work which is beam clamped to derrick & gin pole structure.	Check cable tray/conduit runs are secure, ensure all brackets are tight and check for signs of corrosion.



- Basic Requirements – Review and risk assessment to determine drop object potential
 - Output : Green, yellow and red zones mapping, risk mitigation plan and risk assessment report
- Area Authorities appointment for yellow and red zones
- Access diagrams/zone maps
- Access to Restricted Areas
- Permission to enter Restricted Areas
- Controlling access to Restricted Areas



DROPS Guidance:
Restricted Access Areas (Red Zones)



- Permanent changes to restriction classification
 - Management of Change process
 - Updating access diagram/zone maps
- Temporary changes to restriction classification
- Link to guidance document :

<http://www.dropsonline.org/index.asp?id=1&refID=155&refID2=159&contentID=159>



- **Green Zone:** where the layout and activities of the area present little likelihood of personnel being exposed to potential dropped objects under normal circumstances.
- **Yellow Zone:** where the layout and activities of the area do present some risk of personnel being exposed to potential dropped objects under normal circumstances.
- **Red Zone:** where the layout and activities of the area present significant risk of personnel being exposed to potential dropped objects under normal circumstances.



- **Green Zones**- anyone may enter as long as no additional barriers are in place.
- **Yellow Zones**- only personnel with specific tasks in that zone may enter. All others require the Area Authority's permission to enter or work in that zone.
- **Red Zones**- personnel may be more exposed to falling objects, the movement of remotely operated equipment, high pressure, and/or other hazards as determined by risk assessment. Personnel in **Red Zone** **must** be required for the current operation and **must** be authorized by the Area Authority.
- Area Authority **must** ensure an appropriate plan is in place for specific operations in a **Red** or **Yellow** Zone



- Every effort should be made to identify and define an access route to the Area Authority's common workplace location within the **Green** Zone to allow personnel access to Area Authority to request authorization into the **Yellow** and **Red** Zones.
- Personnel not required for current operations **must not** be permitted into **Yellow** or **Red** Zones.
- For any activities that require entry to a **Red** Zone, and for non-routine activities within a **Yellow** Zone, a documented risk assessment must be performed before permission is given.



- Access to **Red** or **Yellow** Zones **must** be controlled at all times.
- All access points should be identified and equipped with a physical barrier marking the point at which personnel cannot proceed without approval from the Area Authority.
- The physical barrier may be a chain, gate, door etc. (Emergency egress must not be impeded.)
- The barrier shall always be in place at all access points leading directly to **Yellow** and **Red** Zones, and at any other access points determined by the Area Authority.
- The physical barrier should also include a sign (in both English and the predominant local language) that communicates the zone is a hazardous area and access requires the Area Authority's authorization



- **Scope:**
 - This document details some important considerations, precautions, checks and procedures that should be covered by a DOMS.
 - They are not exhaustive and should be supplemented with additional checks and processes specific to the individual location, task and environment.
- **Static and Dynamic Dropped Objects**
 - Dropped Object Management System (DOMS) effective in reducing frequency of static dropped object incidents

STATIC DROPPED OBJECTS
Preventive Controls
Preventive Maintenance Tasks (ref DROPS Campaign Workpack)
Calendar-based Dropped Objects Inspections (ref DROPS Campaign Workpack)
Primary Securing Devices (ref DROPS Reliable Securing Booklet)
Independent Dropped Object Surveys (ref DROPS Campaign Workpack)
Dropped Object Inspection (Picture) Books (ref DROPS Campaign Workpack)
Mitigating Measures
Secondary Retention (ref DROPS Reliable Securing Booklet)
Effective Use of Barriers (ref DROPS Campaign Workpack)
Restricted Access Areas (ref DROPS Guidelines for Restricted Access Areas)



- Behavioral factors more dominant in controlling dynamic dropped objects

DYNAMIC DROPPED OBJECTS
Preventive Controls
Individual Awareness
Effective Task Planning (incl Lift Plans)
Collision Checklists
Pre-task Assessment and Checks (ref DROPS Prompt Card)
Observation and Vigilance (ref DROPS Training and Hazard Hunts)
Management of Change
Time Out For Safety (TOFS)
Management of Distractions
Tools Aloft Log Book (ref DROPS Guidelines for Tools at Height)
Subcontractor Equipment Inspections
Mitigating Measures
Individual Awareness
Use of Approved Tools for Working at Height (ref DROPS Guidelines for Tools at Height)
PA Announcements / Warnings (eg overhead operations, crane operations, work in derrick, etc)
Effective Use of Barriers (ref DROPS Campaign Workpack)
Restricted Access Areas (ref DROPS Guidelines for Restricted Access Areas)



- Task planning – include assessment of dropped object risk
- Before starting work – important to check and review even though task has been planned earlier
- Working at height – ensure dropped object prevention and mitigation actions are taken. Continuous vigilance
- Tasks involving Loading or Lifting – Lifting Plan is essential
- Task Completion – Housekeeping
- Lift Plan – Consider all aspects for a safe lift
- Collision checklist – should be completed when performing any operations which may cause collision (lifting etc.)
- Appendices – Assorted checklists
- Link to guidance document:
<http://www.dropsonline.org/index.asp?id=1&refID=155&refID2=160&contentID=160>



Driller's Collision Checklist

- Crown (Crown Saver)
- Upper PRS Racking Arms (forward)
- Upper PRS Racking Arms (aft)
- Monkeyboard
- Casing Stabbing Board
- Racking Board Fingers
- Casing Stabbing Arm
- Lower PRS Racking Arms (forward)
- Lower PRS Racking Arms (aft)
- Floor Mounted Manipulator Arm
- Iron Roughneck
- Rotary (Floor Saver)

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Dropped Object Safety Spotlight Asia Pacific Region

Tools Loadout - Preventing Dropped Objects

Preventing Dropped Objects does not just happen within our bases. Each day we send out tools to job sites using our shipping baskets. Dropped objects from our tool baskets can cause severe consequences. What can you do to prevent this?

1. Tools must be properly secured against movement in all directions using proper load securing devices.
2. Check to ensure that the weight of the load does not exceed the load rating of the basket.
3. Baskets must be checked for loose objects prior to load-out. Include checks on any cavities where small objects may exist, for example, fork-lift lifting points.
4. Baskets should be designed and tested to the relevant standard. They should be designed to hold and secure our tools safely and effectively.
5. Slings used must have the right load rating for the expected loaded basket. Slings must also be regularly inspected and certified.
6. Pad eyes must be tested routinely according to relevant standard or client requirement. Make sure that they are properly marked once tested.



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- Issued in 2005, marks the first step towards implementing an appropriate Tools at Height system.
- In 2010, DROPS have initiated a special Focus Group to study the issue in more detail and develop and issue more specific and detailed guidance for the industry.



Adobe Acrobat
Document





Questions?

