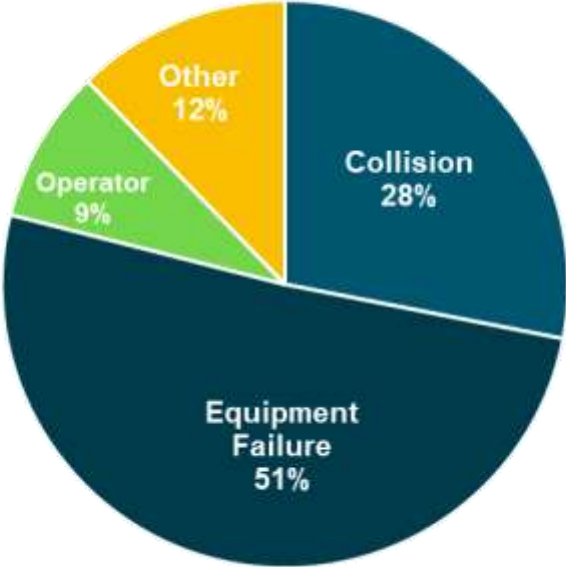


Restricted Access Zone Management

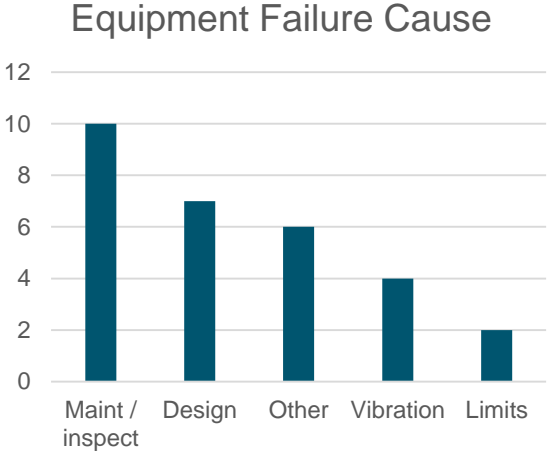
Sep 2019



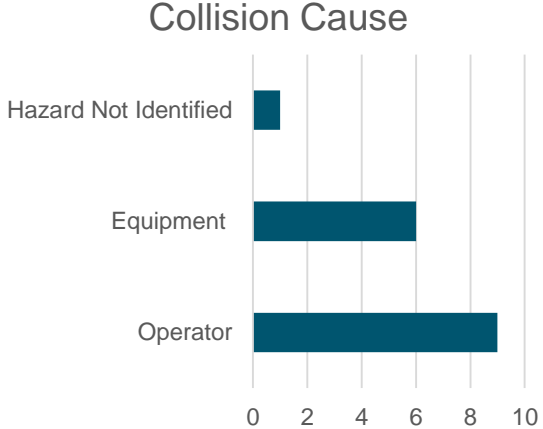
Dropped Objects Analysis



Equipment Failure and **Collisions** were the two main causes of dropped objects, accounting for over ¾ of all events.

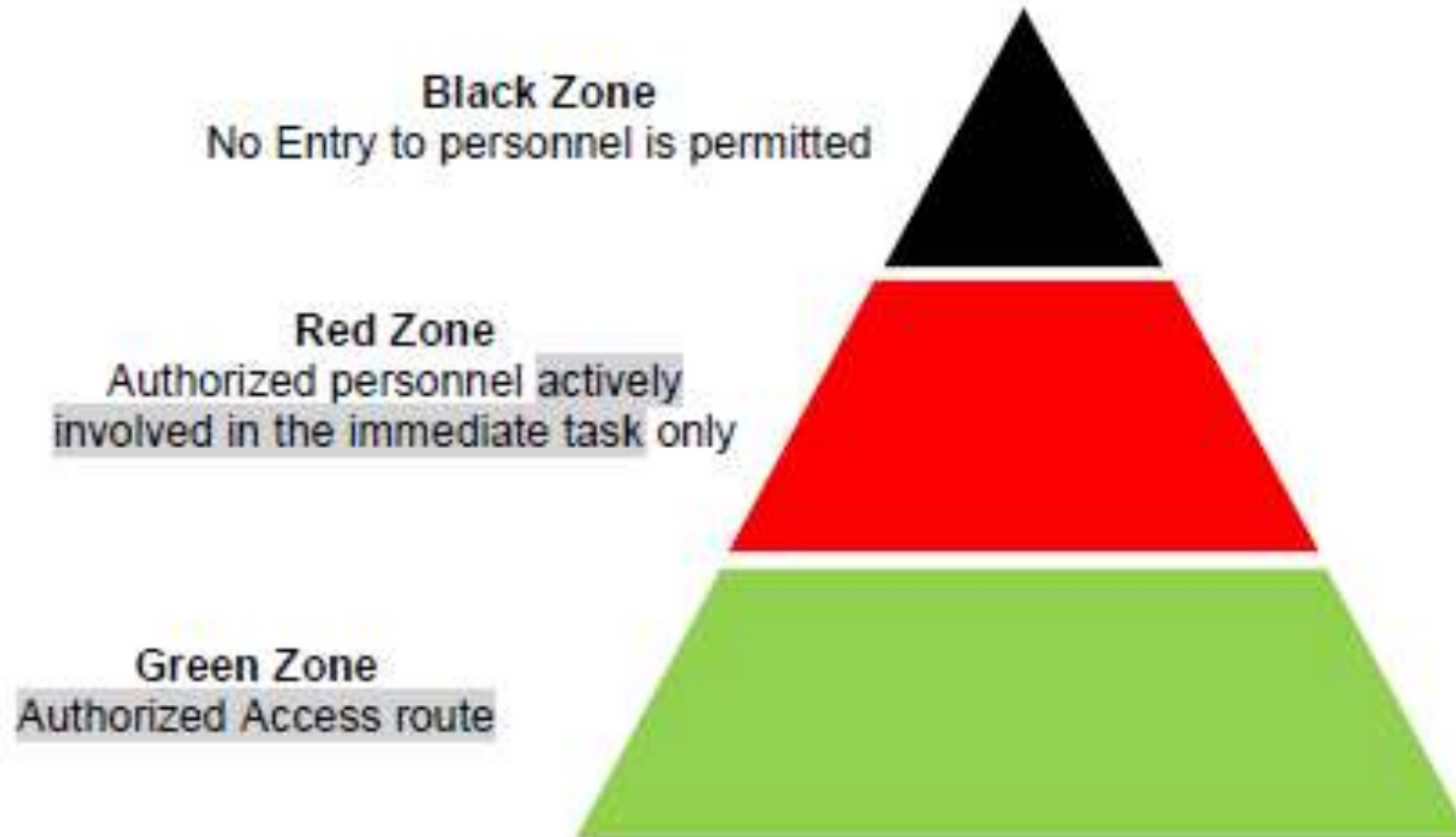


Equipment Failures were primarily attributed to inadequate maintenance or inspection regimes.



Collisions predominantly resulted from inadvertent or unintended operator action.

Drill Floor Restricted Access Zones:



Black Zone:

- Personnel must not enter a black zone under any circumstances unless in an emergency.
- Black Zones must have a locked, permanently installed, physical barrier at all access points to the area. Keys must be retained by the OIM or designated Area Authority.
- Access to Black Zones must be fitted with a “weak link” connection that can be broken in an emergency.
- Where access is required in to a Black Zone it must be downgraded to a Red Zone and additional controls implemented, for example suspending operations or isolating moving equipment.
- Downgrading a Black Zone to a Red Zone in order to gain access to the area must be approved using the Control of Work Planning process and authorized using a Permit to Work.

Red Zone:

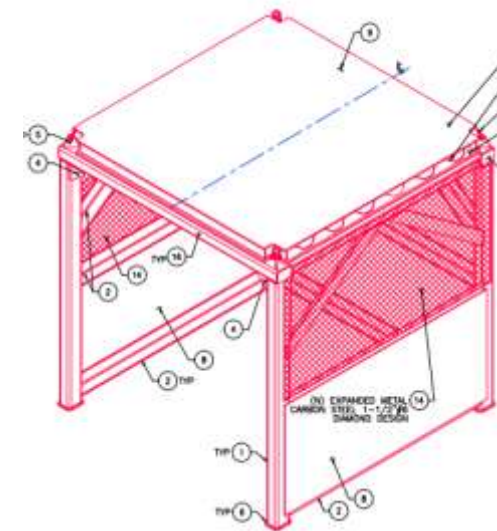
- Personnel must not enter a red zone unless they are required for the immediate task and verbal approval has been given by the Area Authority.
Note: Verbal approval to access Red Zones within the drill floor, may be given by the Driller.
- All access points must have a physical barrier marking the point at which personnel cannot proceed without authorization. The physical barrier may be, for example, a chain, gate or door.
- When personnel are no longer required for the immediate operation they must leave the Red Zone immediately.
- Areas classified as Red Zones must not be downgraded at any time regardless of the equipment status within.

Green Zone:

- A Green Zone provides an authorized route(s) of access and egress within a work area.
- Unless identified otherwise, the green zone is unrestricted and anyone may enter without prior approval.
- Green Zones must be identified using for example signs, colored handrails or walkways.

Improvement Opportunities 2019

- Access to and egress from the drill floor must only be via a Green Zone(s) direct to the Driller's control cabin without passing through the drill floor red zone.
- Crew members, when not required for the immediate task, must leave the Drill Floor Red Zone completely or move to a “**Step Back**” area or **shelter**:
 - Must be constructed as per a Company approved design (2 or 4 person)
 - Clear routes to “Step Back“ areas must be defined during the Toolbox Talk)
 - Step Back areas must not be used for any other purpose
 - Located with consideration to line of sight of the operation and operating equipment
 - Protect personnel from the Line of Fire of moving equipment or sudden release of equipment, for example tubulars.
 - Painted in red and white chevrons.
- Temporary Restricted Access - Sentries



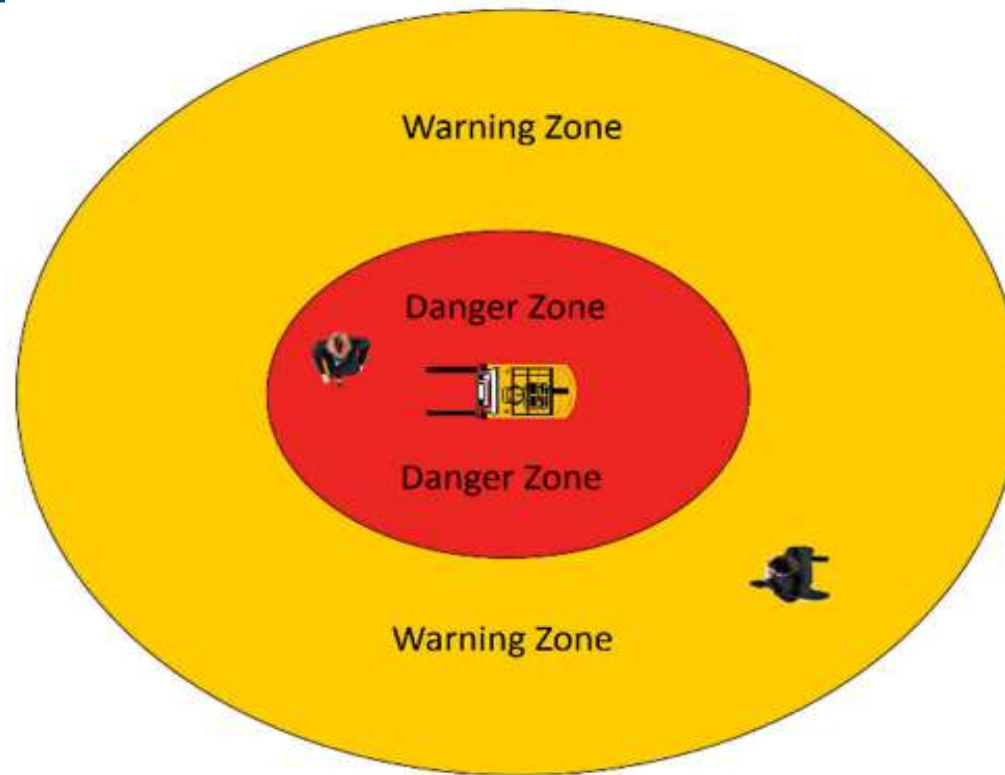
Step Back Areas – Deck Operations

As part of the Task Planning and Risk Assessment Process for all crane lifting operations, a step back area(s) must be established to remove personnel from the Line of Fire – Proximity to Danger.

Step back areas must be:

- Clearly identified by a green painted area of the deck large enough for Load Handlers to stand and labelled “Lifting Operations Step Back Area.”
- Assessed prior to every lift to ensure the step back area cannot be compromised
- Communicated to all personnel involved in the task during the Toolbox Talk
- Located a minimum of:
 - - 40 feet (12m) away from the load path for tubulars
 - - 20 feet (6m) away from the load path for all other loads

Forklift Proximity Detection System



10 feet Danger Boundary from forklift
20 feet Warning Boundary from forklift

<https://vimeo.com/282907777/d5e0bf59a5>



- Identify Non-Authorized Personnel
- Issue a Personal Warning when in close proximity
- General Area Alarm if Personal Warning is ignored
- Stop the Moving Equipment
- **“Teach” Machines to Avoid People**



We Love to Think About the Future

