Seawell Limited (UK)

SEAWELL

Seawell High Potential Incident

Incident:
Derrick Drilling Machine (DDM) collision with stand of drill pipe – link tilt protection bar dropped to drill floor.

Actual outcome:

Nobody struck by falling object, so no harm to people. Localised damage to DDM. Slight Asset damage. No environmental or reputation consequences

Potential outcome:

Had personnel been in the area, and been struck by the falling object, then a probable fatality would have been the outcome

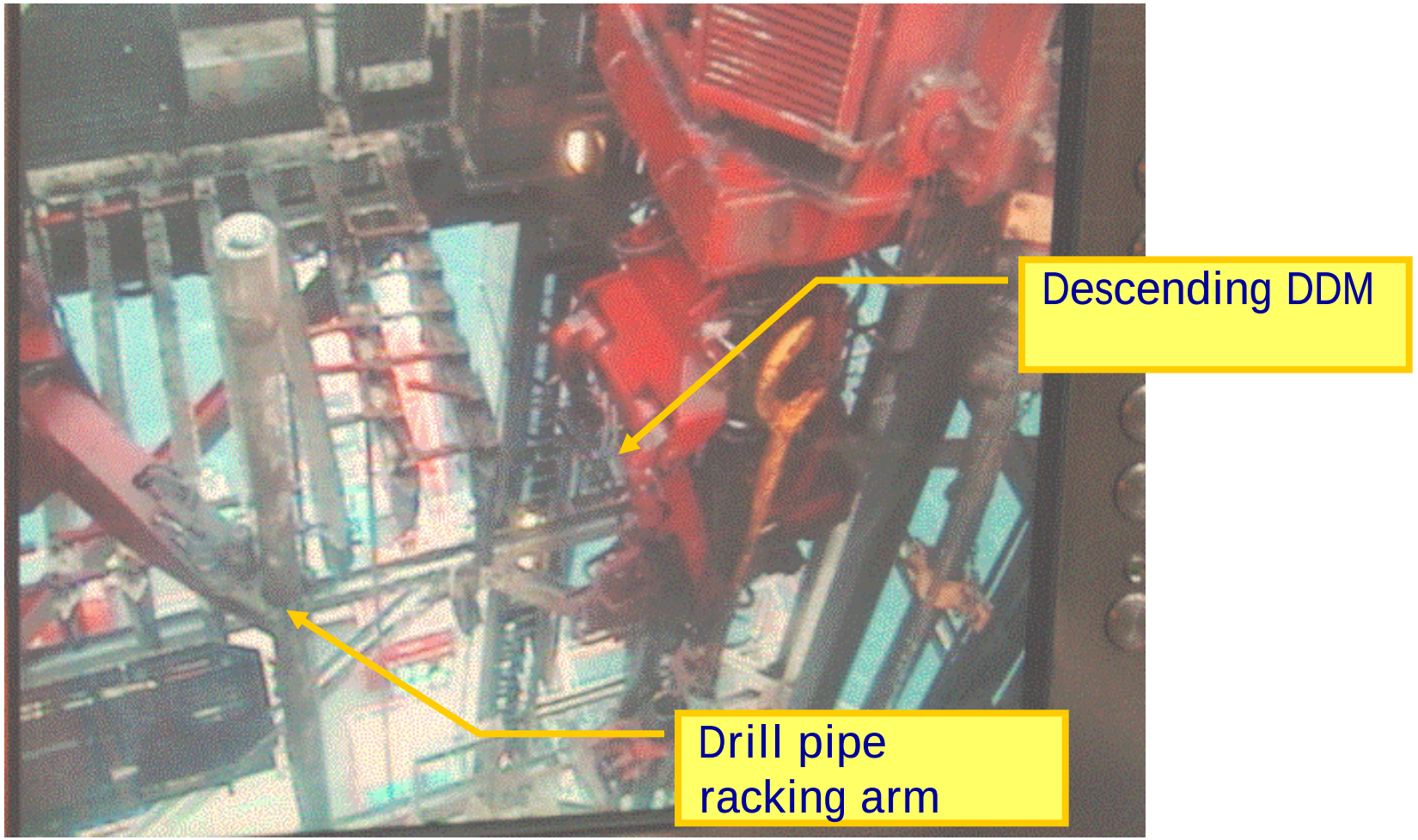
Seawell High Potential Incident

What Happened?

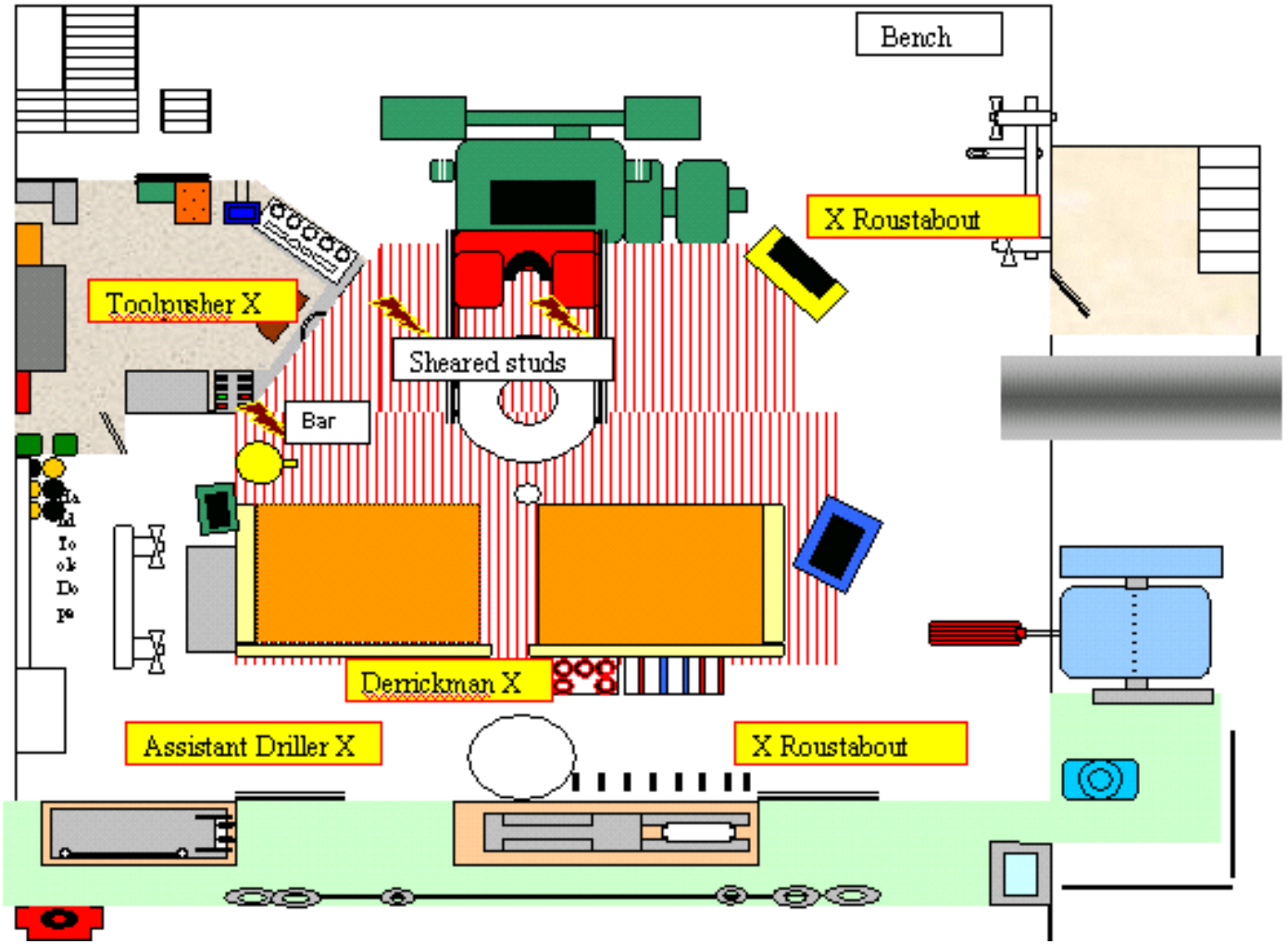
- Tripping pipe out of the well. A stand was disconnected from the string, set down on the drill floor and transferred from DDM elevators to the pipe racking arm ready for racking back into pipe fingers.
- The racking arm operator checked below to ensure clear for lifting the stand.
- Derrickman pulled what he believed to be the stand lift lever, but inadvertently pulled the grip open lever, resulting in the top of the stand swinging free.
- At this time the DDM was being lowered as the Toolpusher (DDM operator) had viewed by remote camera, that the top of the stand had been pulled into the clear zone for the DDM to descend. The stand collided with a link-tilt protection bar on the DDM, shearing the bar mounting bolts.
- The bar (4.25kg), and sheared securing bolts fell 94ft to the drill floor. The top of the stand came to rest against the pipe-rack fingers.
- No one was injured as all drill floor crew were positioned outside of the drill floor 'red zone' (no-go area when there is equipment equipment moving overhead).

SEAWELL

Seawell High Potential Incident

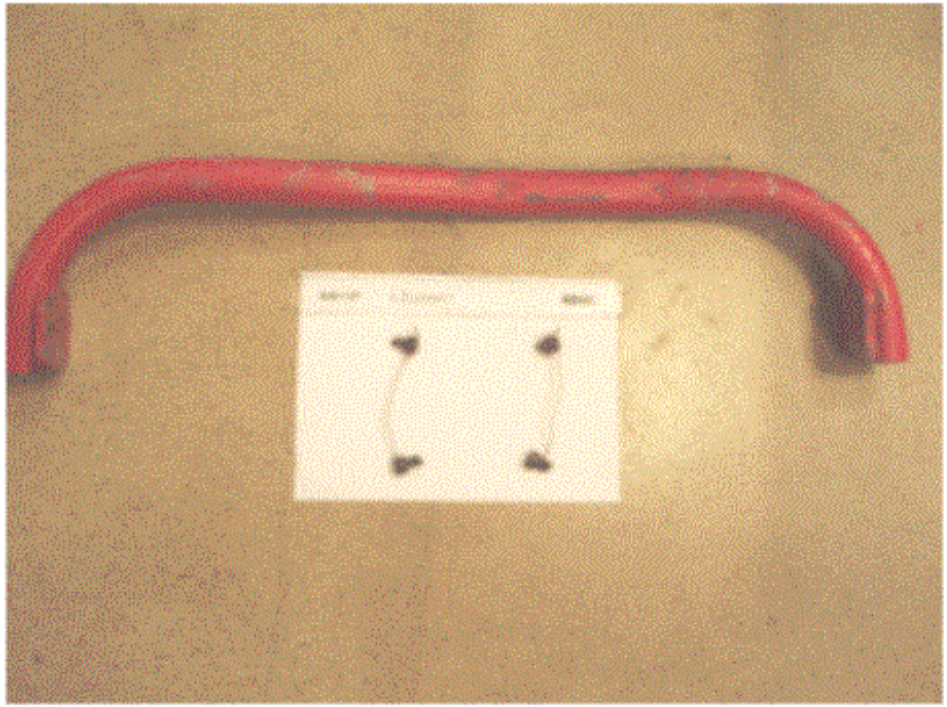


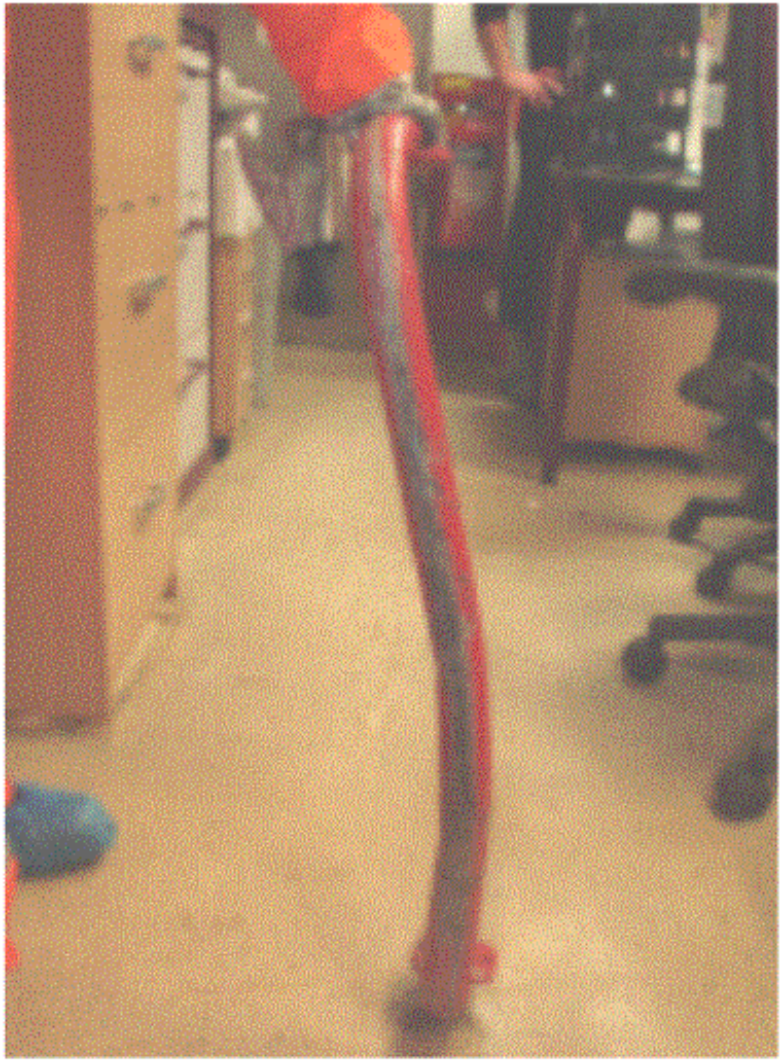
Seawell High Potential Incident



SEAWELL

Seawell High Potential Incident





- Guard bar (4.25kg) and sheared securing bolts (lock-wired)

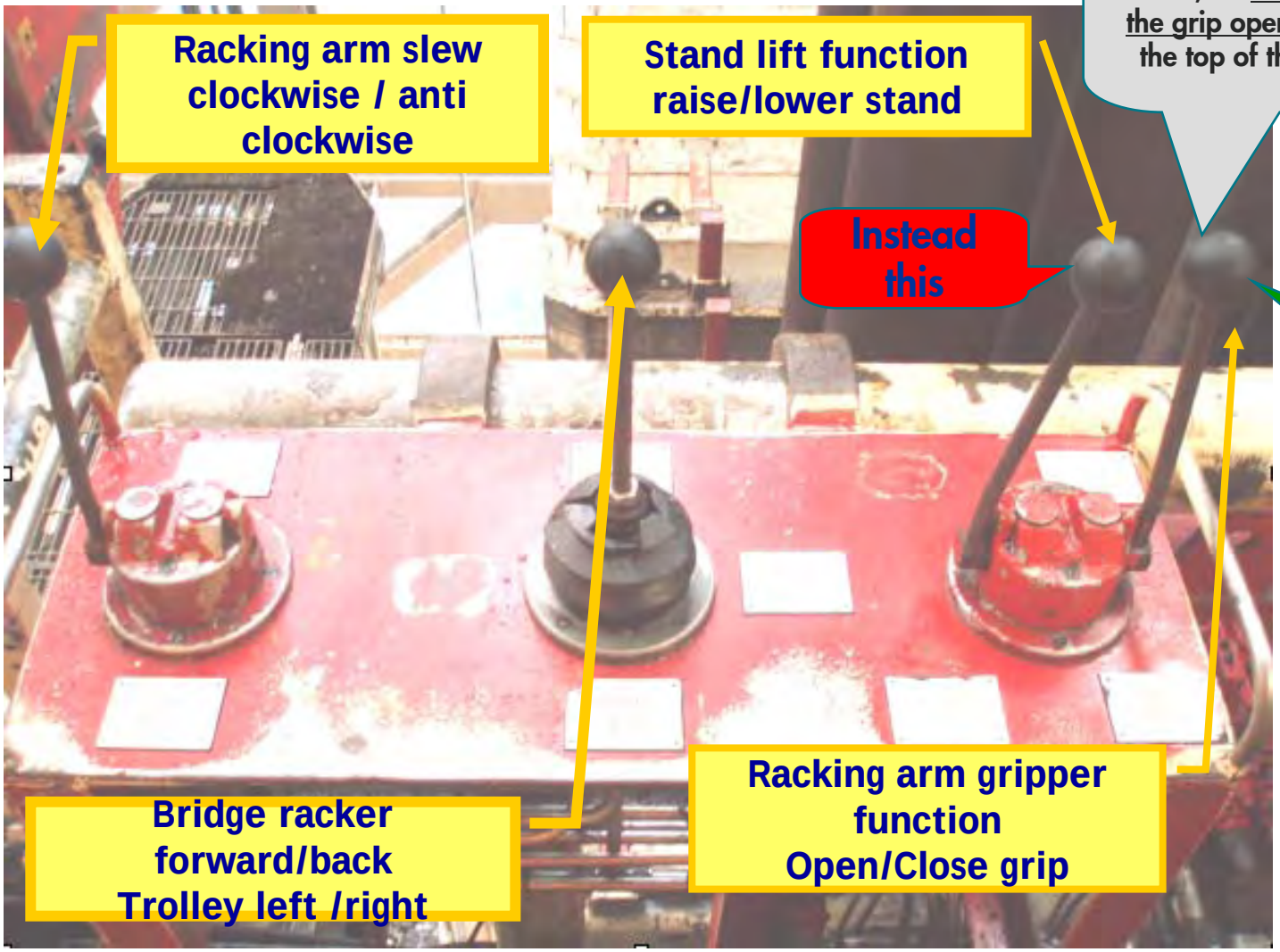
SEAWELL

Seawell High Potential Incident

Bridge racker control levers

SEAWELL

Seawell High Potential Incident



SEAWELL

Seawell High Potential Incident

Investigation Findings:

- The immediate cause of this incident was found to be human error-lapse. The acting Derrickman offered this without qualification, but could give no reason.
- Ergonomic layout of controls considered to be a major contributor to the incident. The close proximity of the 2 racking arm control handles, and the lack of physical differentiation between them. One of these operates the pipe-locking jaw of the racking arm (pull/push to open-close), while the other operates the stand-lift function
- Compliance to Red Zone work practices, were recognised by the investigation team as having prevented potential fatality.
- The Derrickman had been fulfilling this activity, since the start of his trip and was familiar with the equipment.

SEAWELL

Seawell High Potential Incident

Corrective Actions:

Share Seawell Red Zone procedure with all rig Fleet (Considered Best Practice)

Carry out modifications to the twin control lever so as to clearly differentiate the stand lift and grab control levers

Review design to allow installation of secondary mechanism which requires actuation before grab open function can be operated. (Two action function)

Review secondary retention on protection bar

SEAWELL

Sharing Best Practice (Red Zone)

Sketch shall be created, laminated and posted on drill floor.

Work inside the red hatched area is restricted.

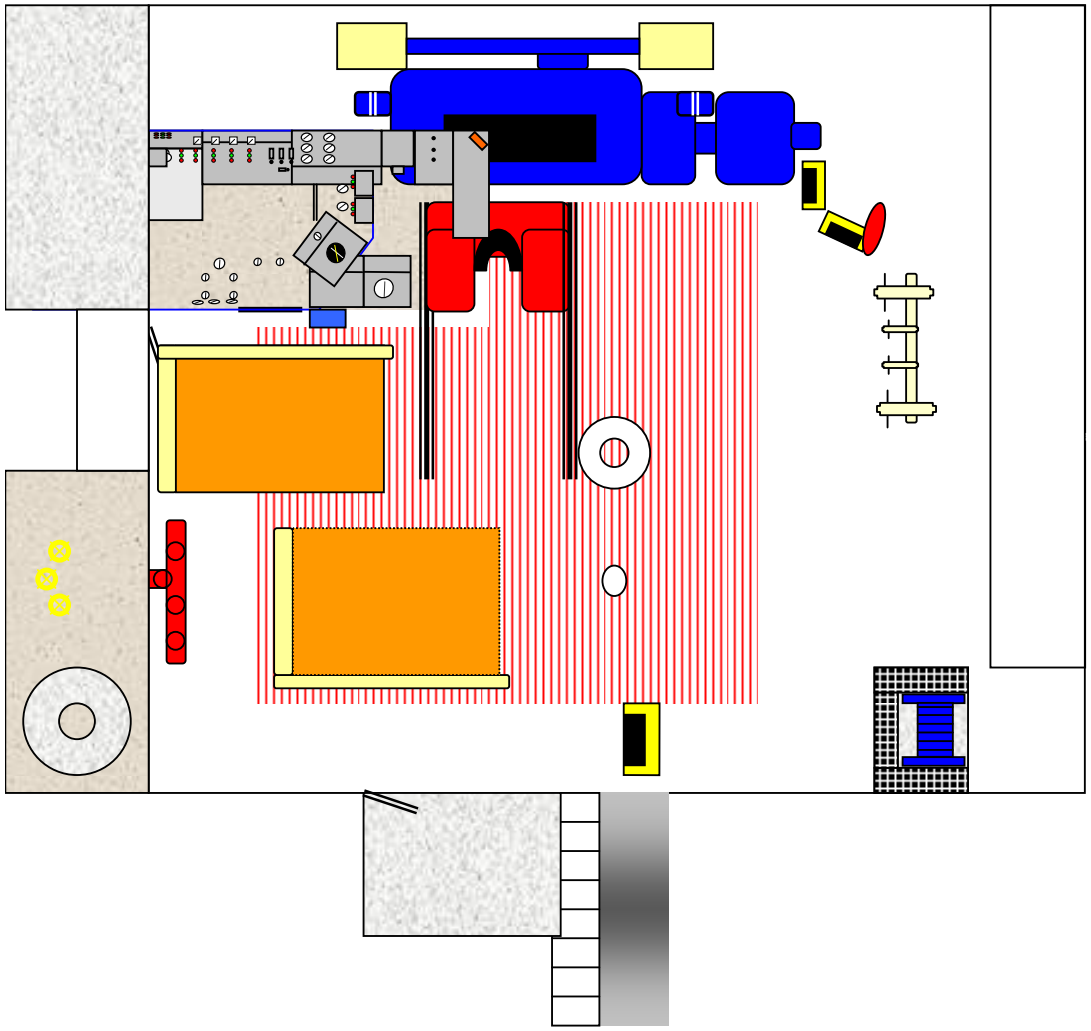
If, for operational or technical reasons, someone has to go inside the red area while more than one item of pipe handling equipment is moving the following applies:

(a) All other equipment must be parked.

(b) 4 point check shall be used.

(c) Personnel must report to and get approval from the person on the brake and in charge of the operation before entering the area, so that particular person always knows and has control over personnel inside the red area.

Sharing Best Practice (Red Zone)



No go area while performing drilling or tripping operations.