Fire to welding return cable in cargo tank

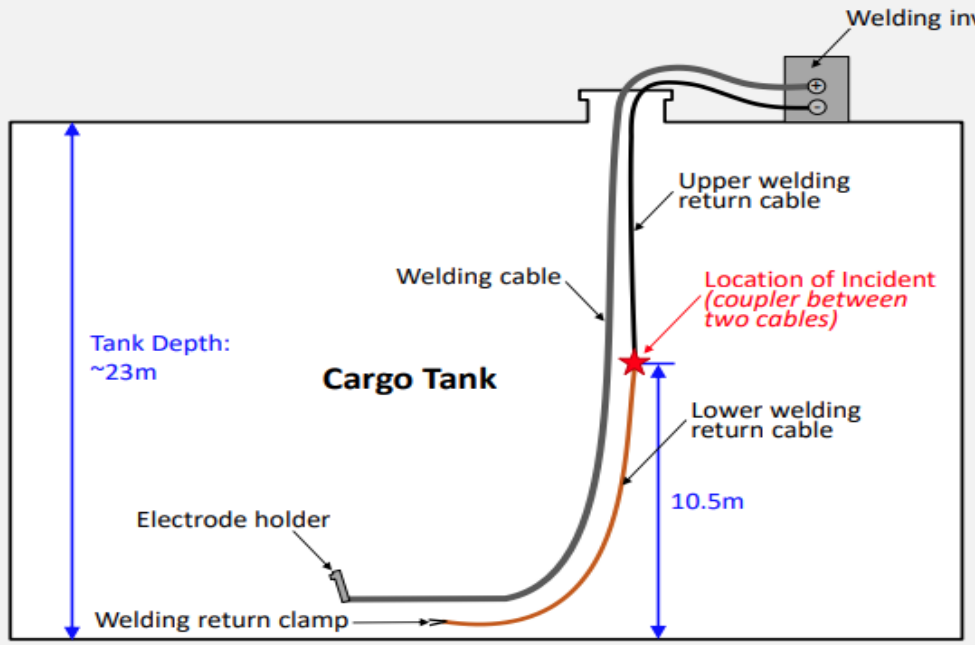
SAFETY ALERT

Description of Incident:

During planned hotwork welding activities within a cargo oil tank onboard a floating facility, a small fire was identified to a coupling between two lengths of welding return cable.

The coupling was located at approximately 10.5m height from the bottom of the tank. It was noted that the two cables were 'knotted' together in way of the coupling; a common technique used when joining welding cables together to prevent accidental detachment of the coupling and reduce strain to the couplers.

The fire was minor and extinguished with ease following appropriate firefighting techniques. No persons were harmed during this event and no damage noted to the structure as a result of this incident.



Findings / Cause:

The fire was likely a result of increased resistance across the mating faces of the cable couplers, generating excessive heat as current was passed across the coupler.

Although the welding cables were subject to PUWER checks and examined for damage prior to offshore mobilisation, they were not uniquely identified and tracked in the contractor's maintenance management system. Evidence of deterioration to the sheathing in way of the couplers, degradation to the cable terminations within the cable couplers, and tarnishing/dirt noted to the faces of the brass coupler components.

Good Practice:

- Check all welding cables in use for damage/deterioration to cable couplers:

(1) Where damage noted to cables, these cables should be removed from service and quarantined.

(2) Where tarnishing noted to couplers, this should be cleaned/removed.

(3) Where cable sheathing has retracted from the coupler termination exposing the cable cores, consideration should be given to re-terminating the cable to the coupler.

- Ensure no welding cable couplers are installed within a hazardous area.
- Ensure welding cable couplers are installed at accessible locations, to promote frequent on-site checks.
- Implement a welding cable tagging system for all welding cables.
- Implement inspection, maintenance, and resistance testing regime to all welding cables on a routine basis.
- Consideration should be given to including verification checks of welding cable documentation during equipment release inspections.

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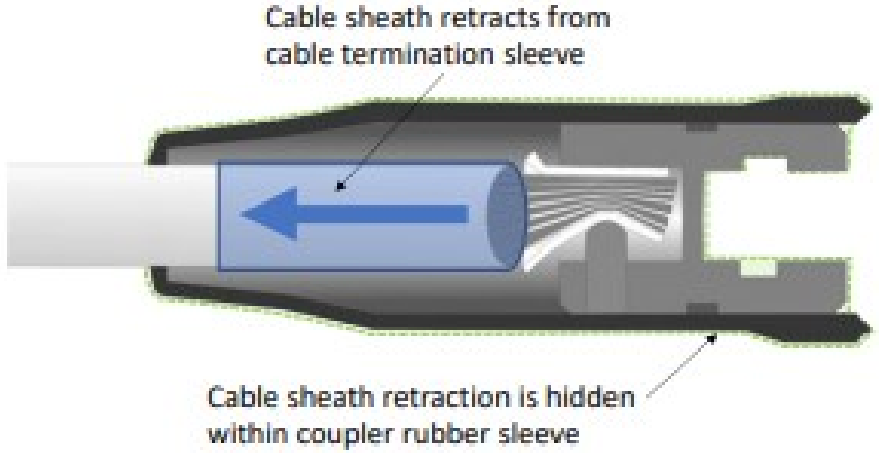
Example photo of welding cable couplers



Overview of typical cable sheath retraction

Photo of fire damaged welding cable

Example of 'knotting' used to join cables together