BRITANNIA LOSS PREVENTION

GUIDANCE

OCTOBER 2025

PRECAUTIONS FOR HOT WORK

THE INTERNATIONAL MARITIME ORGANIZATION (IMO) DEFINES HOT WORK AS *"...any work requiring the use of electric arc or gas welding equipment, cutting burner equipment or other forms of naked flame, as well as heating or spark generating tools, regardless of where it is carried out on board a ship"*.

It is likely that each shipping company will have a similar definition, although it may differ in some ways and should be confirmed. For example, in the tanker industry, a common definition includes the use of non-intrinsically safe equipment.

A company's Safety Management System (SMS) should define hot work and provide adequate guidance on how to safely control and conduct hot work onboard.

There are many occasions when hot work may be required onboard a ship, either by necessity or choice. Hot work is a hazardous operation, and where possible it should be avoided or delayed to the most suitable juncture.

HOT WORK REQUIRED

REPAIRS, MODIFICATIONS, ADDITIONAL SECURING POINTS, MAINTENANCE ETC ARE ALL REASONS HOT WORK MAY BE REQUIRED.

Whenever hot work is considered as being a possible solution to an issue, a general assessment should be conducted to decide how risk of an incident can be lowered.

Amongst the general considerations are:

- Can cold work repairs be conducted instead?
- Can a suitable temporary repair be conducted, or procedure implemented that will be sufficient until the ship is in a more suitable location or condition, for example the next scheduled dry dock?
- Can the hot work be done by ship's crew with the equipment available on board, or are specialist skills and facilities required?
- Is the hot work required on an item or area that is covered by the ship's classification society?
- Will the ship be required to deviate from its current voyage?
- Can hot work be done with cargo onboard?
- If hot work is required on a piece of equipment or fitting, can the equipment/fitting be feasibly moved to the designated hot work location (often the machinery space workshop) or a less hazardous area?
- Is the hot work required in a hazardous location, for example within a confined/enclosed space or involving work at height?

Conducting a high-level assessment will determine the next course of action and clarify the options that are available.

PLANNING HOT WORK

WHEN HOT WORK MUST BE CONDUCTED, AS THE ONLY REASONABLE ACTION, IT MUST BE PROPERLY PLANNED TO REDUCE THE RISK TO AS LOW AS REASONABLY PRACTICABLE (ALARP) ACCORDING TO THE COMPANY'S OWN DETAILED RISK MATRIX.

The starting point for planning hot work should always be to review and follow the procedures contained within the company's SMS. Note that if the scenario a ship faces is not covered in the SMS, this means it is either prohibited or requires a standalone procedure that must involve liaison with the managing office.

Many ships will have a designated space for hot work, often within the machinery space workshop, where conditions are considered to be generally safe after risk assessment. Hot work within this location(s) will be subject to strict controls, and may still be prohibited under certain circumstances, such as during bunkering, or whilst in port. Sufficient warning signage, ventilation, and protective fireproof curtains should be available to prevent any unnecessary exposure to personnel in the vicinity. Hot work within this location will usually not require the issue of a hot work permit – although each company may have its own policy in this regard.

PERMIT TO WORK

ANY HOT WORK OUTSIDE OF A DESIGNATED AREA MUST BE CONTROLLED BY USING A PERMIT TO WORK SYSTEM.

A hot work permit is the final step in authorising hot work onboard the ship. Before this can be issued, preparation will be required. A full risk assessment should be conducted to identify the hazards and determine the risks involved in the intended operation.

The danger from the type of hot work planned should be considered. For example, using an oxy-acetylene torch is highly likely to ignite solid materials or a combustible atmosphere during normal

operation. Therefore, extensive planning and preparation are required to carry out this work safely. In contrast, the possibility of a spark from non-intrinsically safe equipment having enough energy to create a hazardous situation is less likely, so less stringent controls are typically required.

It will also depend upon the ship type and status at the time of the planned hot work. Generally, a laden ship presents more hazard than a ship in ballast. There are the obvious hazards, such as the risk of fire or explosion when carrying flammable goods such as on oil tankers, and then there are the hazards of damaging the cargo being carried, for example in the break bulk trade.

IF HOT WORK IS REQUIRED WHILST LADEN, AND THERE IS ANY POTENTIAL IMPACT ON THE CARGO, THE CLUB SHOULD BE INFORMED.

In circumstances such as this, additional insurance may be required, as this may not be covered within the rules of the Club. This is also true, should the ship require to deviate from its current voyage.

When considering the extent of the hot work required, some other parties may require to be notified, some examples are noted below:

HULL AND MACHINERY INSURER: Notify them of any significant repairs, especially those carried out in a repair yard, where ship repairers' liability insurance might be necessary.

HEAD OWNER: Report any damage to the paint coating that may need to be rectified prior to redelivery.

Elements that should be considered in the risk assessment include:

- How close is the nearest ignition source – consider bunker tank vents, hydraulic oil lines, contents of containerised cargo, IMDG, etc
- How will the atmosphere be proven safe for hot work – does the ship have a calibrated gas detector available?
- The type of isolation and cleaning that may be required – for example oil tankers require extensive cleaning and gas freeing works if hot work is required
- Is temporary fire protection (e.g. fireproof blankets) required to provide protection to other equipment or cargo carried?
- Will any combustible material be required to be removed?
- Is there any insulation on the bulkhead at the hot work area or at adjacent compartment? Does removal of these insulation materials render statutory breach?
- How many fire watch locations are necessary? – noting that the heat generated from hot work can be conducted in many directions over substantial distance particularly when steelwork is involved
- What level of firefighting equipment is considered sufficient; will more be required? Is there any additional requirement to comply with the Emergency Schedules (EmS) for IMDG cargo onboard?
- Is ventilation of the area of hot work adequate, are temporary enhancements needed?
- Do the personnel conducting the work have the competence and training required to safely accomplish the task? Is additional personal protective equipment (PPE) required?
- Is the work being carried out in port or anchorage? Will permission be required from the local authorities, operators or owners? Is a gas free certificate required by an independent tester?
- Is the work to be conducted by external contractors or at a repair yard? Will their safety standards and procedures match the ships? Is a bridging document and ship's safety familiarisation required to clarify the safety procedures?
- Will fire detection be inhibited or isolated? How will this function be replaced during the works duration?
- Are there any additional hazards to contend with, for example enclosed space entry, work at height with temporary access?

Once a risk assessment has been completed, and the level of risk is considered acceptable, a written plan for carrying out the work should be completed. This plan should cover all the necessary preparations involved, the safety procedures required for each step of the work, and the method statement of how the work will be completed.

The responsibility of each person involved in the hot work must be made clear, and a toolbox talk, or standalone safety meeting, should be conducted with all stakeholders prior to commencement by the

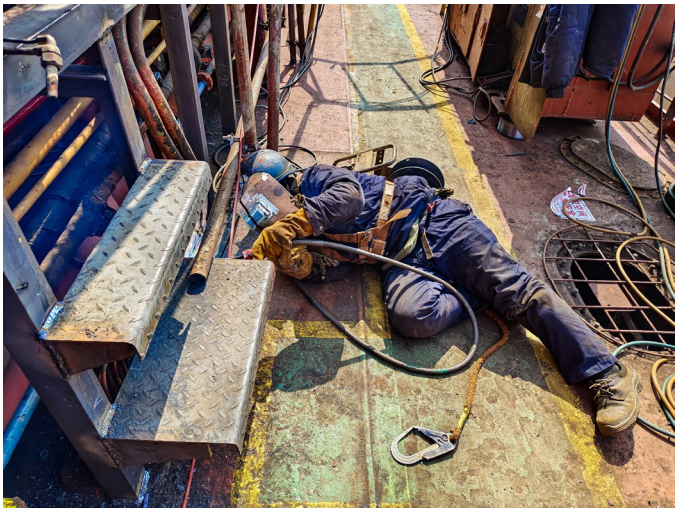
responsible safety officer.

The hot work permit should be issued as close to the commencement of work as possible. If there are any substantial delays to starting work, all safety measures should be re-checked and recorded prior to starting work.

COMPLETION OF HOT WORK

ALL HOT WORK SHOULD BE CONDUCTED IN ACCORDANCE WITH THE METHOD STATEMENT AND PLAN, WHILST FOLLOWING ANY RESTRICTIONS INCORPORATED IN THE HOT WORK PERMIT.

Should the conditions change, or a deviation from the plan be necessary, the hot work permit should be withdrawn, and the work stopped until the way forward is agreed.



The hot work permit should be time limited, typically no more than 12 hours. Our advice is to suspend or cancel the permit during any substantial break or shift change, before reconfirming all safety measures and reissuing the permit prior to recommencing work.

Any ongoing safety monitoring such as fire watching, or atmosphere testing required for the work should be documented. Ideally fire watchers should be provided with radio communications, fire extinguisher and regular status checks should be confirmed. Personnel should be swapped out on a regular basis.

Fire watch and firefighting equipment such as fire hose or fire extinguisher, should remain in place for a pre-determined time after hot work. Where situation allows, the fire hoses should be pressurised throughout the hot work period and ready for fire fighting in any case of emergency. The fire detection system should be reactivated as soon as practicable after completion of work.

Completion of the hot work permit is a critical step, where the responsible person, must confirm that all temporary safeguards have been returned to normal, following completion of the work.

FOR FURTHER INFORMATION

For further information, please do not hesitate to email **lossprevention@tindallriley.com**.

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