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To the Members

Incandescent reflector lamp setting fire to timber in Cargo Hold

On 1 November 2018, the New Zealand Transport Accident Investigation Commission (TAIC) published the report "Final report MO-2017-205" regarding the Fire in Cargo Hold after completion of loading operation during berthing.
In the report, TAIC recommended to consider the lessons learned from this accident which there is the potential risk to ship safety posed by lights that radiate high levels of heat.

We quote the important items from the investigation report.

Outline of Accident
In September 2017, the multipurpose/container vessel was loading tiers of timber at Port in New Zealand. At 1.5 hours later from the completion of cargo loading, the ship's smoke-detection system alarmed. The crew response to the fire included activating the ship's fixed carbon dioxide (CO2) fire-extinguishing system to release liquid CO2 into the cargo hold. After several hours the temperatures had decreased, so the timber packs were unloaded for the further investigation. TAIC found that the timber had been stowed close to the lamp and the cargo hold lights had not been switched off on completion of loading. In April 2018, the Commission conducted a simulation to establish the temperatures generated by the reflector lamp.

Key lessons
Key lessons arising from this inquiry included:

- Some lamp types generate a substantial amount of heat that can be a fire hazard. Ship owners and operators should consider using other types of lamp that do not generate high heat in locations where the risk of fire is present (see attachment)
- Safety procedures such as switching off cargo hold lights should be documented and include systems for checking that they have been carried

Please refer to the following links for "Final report MO-2017-205"
https://taic.org.nz/sites/default/files/inquiry/documents/MO-2017-205 Final.pdf

Yours faithfully,

The Japan Ship Owners' Mutual Protection & Indemnity Association
Loss Prevention and Ship Inspection Department
Phone: +81 3 3662 7229 Email: lossprevention-dpt@piclub.or.jp
Fax: +81 3 3662 7107 Website: https://www.piclub.or.jp

Attachment: Post-fire examination and testing, (Excerpt) "Final report MO-2017-205"

Post-fire examination and testing

The face of the lamp was 40 mm away from the inside of the protective cage and the protective cage was set in 5 mm from the edge of the recess. The timber packs had been tightly stowed to minimise the risk of the cargo shifting at sea. The ends of the timber packs were loaded up against the side of the hold and across the light recesses and would have been about 45-50 mm from the face of the lamps.

Figure 1
Cargo hold light in recess (inset, the reflector lamp)

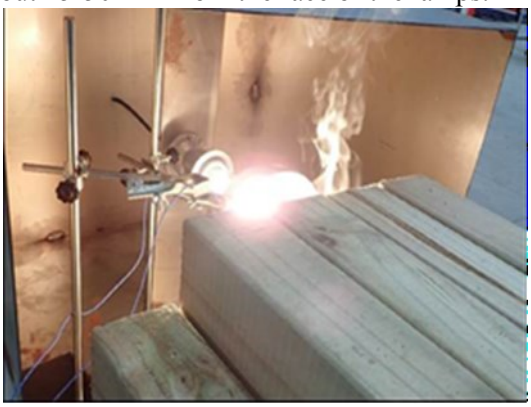

Figure 2
Lamp test set-up

At 40 seconds after rising the surface temperature, the smoke was first seen. At that time the temperature of the lamp was 155°C (degrees Celsius) and the temperature at the surface of the timber was 114°C.

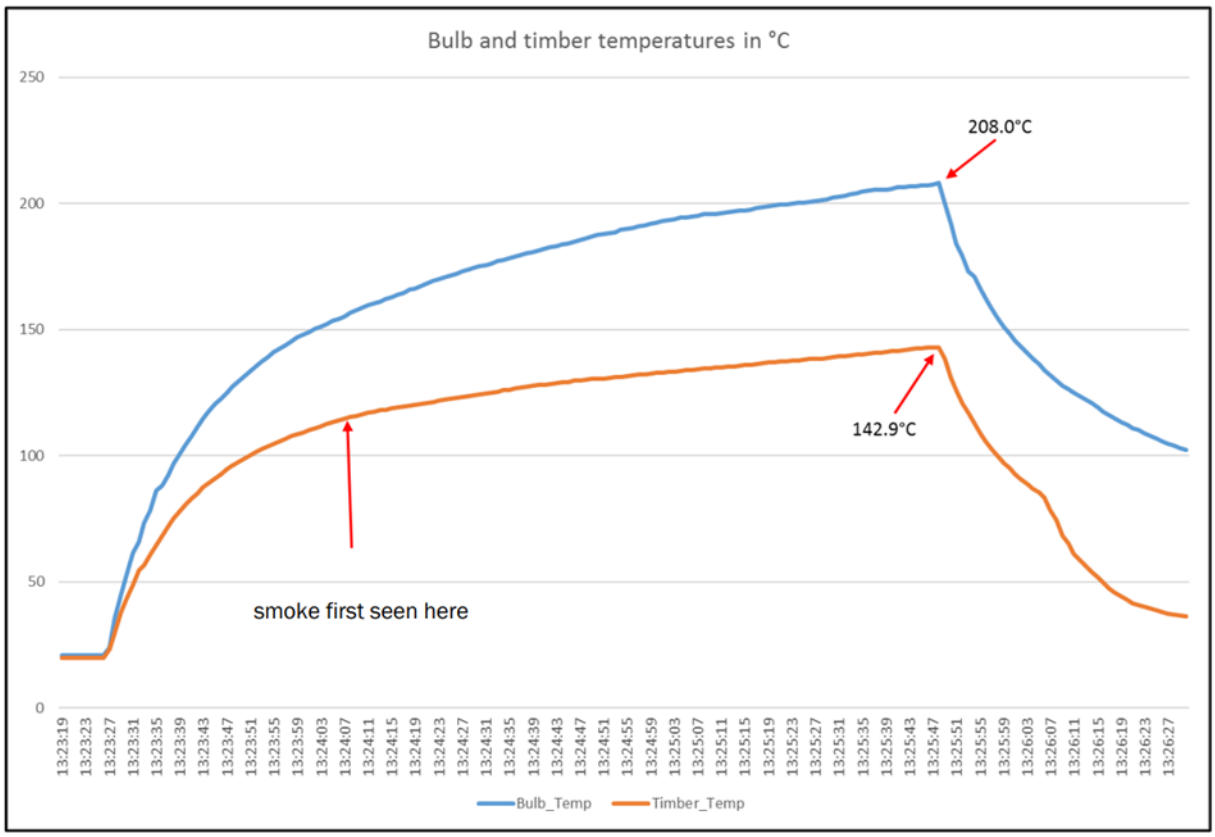

Figure 3 Graph showing temperatures recorded by test thermocouples

(Excerpt) "Final report MO-2017-205"