



# Marine Safety Forum – Safety Flash 15-15

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**Subject: Failure of Floodlight Capacitor**

A vessel recently suffered a failure of a deck floodlight capacitor when an electrical ballast unit caught fire resulting in the triggering of the Fire Detection System. The ship's fire party mustered, the cause of the activation was quickly identified, the circuit isolated and the unit replaced with minimal damage.

The vessel was anchored completing demobilisation activities when at 21:45 LT the Fire Detection System activated indicating there was smoke in the main crane pedestal. The vessel's crew responded as required by the SMS Contingency Plan and the cause of the smoke was found to be from a 1200W low pressure sodium floodlight ballast unit for the lighting on the main crane. This system was electrically isolated and the area was vented of residual smoke. (See Photos).

It was noted that there was some heat damaged material on the deck below the box and an item of Tank/Working at Height Rescue Equipment, which is stowed beneath the box, had been slightly damaged by the hot material that fell. The area was clean and tidy and there was no secondary fire.

A 'post fire' safety watch was maintained in the area and the Fire Detection System checked and re-activated.

The ballast unit comprises of 2 x ballast coils with 2 x power factor correcting capacitors. One of the capacitors failed, the ensuing explosion causing the front of the plastic enclosure to blow off. The internals of the capacitor ended up on the floor and sprayed onto the equipment stored in the crane pedestal.

The reason for the capacitor failure is believed to be due to its age. A capacitor's working life is dictated by numerous factors; age and temperature being two of the main ones and the nature of their use results in them running hot.

The lighting circuit has been checked with no problems detected and the floodlight remained 'on' after the capacitor failure.

Following the failure, the vessel has raised the following points for consideration:

- An additional Planned Maintenance task will be raised to monitor the internal condition of these ballast units
- Consideration should be given to changing the capacitors on a regular basis; e.g. every 5 years
- There are many of these ballast units fitted on this vessel and within the fleet, some mounted in areas where this type of damage may result in a more serious incident if flammable material is stored in the immediate vicinity
- Consideration should be given to reviewing the location of such units which may not be protected by fire detection systems

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### Submitting Companies Recommendations:

- All vessels should check the location of this type of equipment and record same on board
- Vessels should check the internal condition of the units especially the capacitors and verify that there is no evidence of heat build-up within the unit
- An inspection of the areas in the vicinity of these units to ensure there is no flammable material stored in close proximity



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