# Appendix I

## Rules concerning Deadman Systems

In this chapter a short explanation will be given of the rules and regulations concerning a Deadman system.

## BNWAS or Bridge Deadman

### Scope

The purpose of a bridge navigational watch alarm system (BNWAS) is to monitor bridge

activity and detect operator disability which could lead to marine accidents. The system

monitors the awareness of the Officer of the Watch (OOW) and automatically alerts the Master or another qualified OOW if for any reason the OOW becomes incapable of performing the OOW duties. This purpose is achieved by a series of indications and alarms to alert first the OOW and, if he is not responding, then to alert the Master or another qualified OOW.

Additionally, the BNWAS may provide the OOW with a means of calling for immediate

assistance if required. The BNWAS should be operational whenever the ship’s heading or track control system is engaged, unless inhibited by the Master.

### The BNWAS should incorporate the following operational modes:

* Automatic (Automatically brought into operation whenever the ships heading or track control system is activated and inhibited when this system is not activated)
* Manual ON (In operation constantly)
* Manual OFF (Does not operate under any circumstances)

### Operational sequence of indications and alarms

#### Operational State

Once operational, the alarm system should remain dormant for a period of between 3

and 12 min. At the end of this dormant period, the alarm system should initiate a visual indication on the bridge.

If not reset, the BNWAS should additionally sound a first stage audible alarm on the bridge 15 seconds after the visual indication is initiated.

If not reset, the BNWAS should additionally sound a second stage remote audible alarm in the back-up officer and/or Master location 15 seconds after the first stage audible alarm is initiated.

If not reset, the BNWAS should additionally sound a third stage remote audible alarm

at the locations of further crew members capable of taking corrective actions 90 s after the

second stage remote audible alarm is initiated.

In vessels other than passenger vessels, the second or third stage remote audible alarms may sound in all the above locations at the same time. If the second stage audible alarm is sounded in this way, the third stage alarm may be omitted.

In larger vessels, the delay between the second and third stage alarms may be set to a longer value on installation, up to a maximum of 3 min, to allow sufficient time for the back-up officer and/or Master to reach the bridge.

#### Reset function

It should not be possible to initiate the reset function or cancel any audible alarm from any device, equipment or system not physically located in areas of the bridge providing proper look out. The reset function should only be available in positions on the bridge giving proper look out and preferably adjacent to visual indications. Means of activating the reset function should be easily accessible from the conning position, the workstation for navigating and maneuvering, the workstation for monitoring and the bridge wings.

The reset function should, by a single operator action, cancel the visual indication and all audible alarms and initiate a further dormant period. If the reset function is activated before the end of the dormant period, the period should be re-initiated to run for its full duration from the time of the reset.

To initiate the reset function, an input representing a single operator action by the OOW is required. This input may be generated by reset devices forming an integral part of the BNWAS or by external inputs from other equipment capable of registering physical activity and mental alertness of the OOW.

A continuous activation of any reset device should not prolong the dormant period or cause a suppression of the sequence of indications and alarms.

#### Emergency call facility

Means may be provided on the bridge to immediately activate the second, and subsequently third, stage remote audible alarms by means of an Emergency Call push button or similar.

#### Security

The means of selecting the Operational Mode and the duration of the Dormant Period should be security protected so that access to these controls should be restricted to the Master only.

#### Malfunction

If a malfunction of, or power supply failure to, the BNWAS is detected, this should be indicated. Means shall be provided to allow the repeat of this indication on a central alarm panel if fitted.

## Engineer Deadman

### Scope

The purpose of an Engineer Deadman System is to monitor engine room activity and detect engineer disability which could lead to marine accidents. The system monitors the awareness of the “engineer on duty” and automatically alerts another qualified engineer if for any reason the “engineer on duty” becomes incapable of performing the “engineer on duty” duties. This purpose is achieved by a series of indications and alarms to alert first the

“engineer on duty” and, if he is not responding, then to alert another qualified engineer by means of a general alarm.

Additionally, the Engineer Deadman System may provide the “engineer on duty” with a means of calling for immediate assistance if required. The Engineer Deadman System should be operational whenever the engine room is attended/manned, unless inhibited by the Chief Engineer.

### The Engineer Deadman System should incorporate the following operational modes:

* Manual ON (In operation when engine room is attended)
* Manual OFF (Does not operate under any circumstances)

### Operational sequence of indications and alarms

#### Operational State

Once operational, the alarm system should remain dormant for a period of 30 minutes. At the end of this dormant period, the alarm system should initiate a visual and audio indication on the AMS.

#### Reset function

It should not be possible to initiate the reset function or cancel any audible alarm from any device, equipment or system not physically located in areas of the engine room or ECR (local silence is allowed)

The reset function should only be available in positions in the engine room and ECR. Activating the reset function should be easily accessible from the anywhere in the engine room.

The reset function should, by a single operator action, cancel the visual indication and all audible alarms and initiate a further dormant period. If the reset function is activated before the end of the dormant period, the period should be re-initiated to run for its full duration from

the time of the reset.

To initiate the reset function, an input representing a single operator action by the “engineer on duty” is required. This input may be generated by reset devices forming an integral part of the Engineer Deadman System or by external inputs from other equipment capable of registering physical activity and mental alertness of the “engineer on duty”.

A continuous activation of any reset device should not prolong the dormant period or cause a suppression of the sequence of indications and alarms.

#### Emergency call facility

Means may be provided in the engine room to immediately activate the visual and audible alarm by means of an Emergency Call push button or similar.

#### Security

The means of selecting the Operational should be security protected so that access to these controls should be restricted to the Chief engineer only.

#### Malfunction

If a malfunction of, or power supply failure to, the Engineer Deadman System is detected, this should be indicated. Means shall be provided to allow the repeat of this indication on a central alarm panel if fitted.