

# DETECTING LEAKAGE



WEEK 54

# WK 54: SIRE 2.0 : DETECTING LEAKAGE

## Ch 2.3.4

*Were the Master and deck officers familiar with the company procedures for detecting leakage of liquids between cargo, bunker, ballast, void and cofferdam spaces which included inspecting the surface of ballast water prior to discharge, and were records available to show that the necessary checks had been performed?*

*Applies to: OIL TANKER / CHEMICAL TANKER / LNG / LPG*

### POTENTIAL GROUND FOR NEGATIVE OBS:

- There was no company procedure to periodically check empty spaces for ingress of liquids from adjoining spaces or pipeline leakage or, to check the surface of ballast water for contamination prior to discharge.
- The accompanying deck officer was unfamiliar with the company procedure for periodically checking empty spaces for liquid ingress or monitoring the levels of full or partially full tanks for migration of liquid between spaces.
- The accompanying officer was unfamiliar with the company procedure for inspecting the surface of ballast water prior to discharge when a ballast tank adjoined a cargo or bunker tank or had piping containing oil passing through it.
- Records determined that periodic checks to identify the ingress of liquids into empty spaces had not been conducted as required by the company procedures.
- Records determined that the surface of ballast water contained in tanks adjacent to cargo or bunker tanks, or which had pipes containing oil passing through them, had not been inspected prior to discharge.
- Records determined that ballast lines had not been tested where they passed through cargo tanks or fuel tanks.

- Inspection of the ballast tank sighting arrangements determined that numerous bolts were required to be removed from the inspection hatch or, an enclosed space entry was needed to be made, to inspect the surface of the ballast water within a full tank.
- Records determined that liquid leakage was detected in an empty space as a result of structural or pipeline failure during the previous twelve months.
- Records determined that ballast water or a ballast tank was contaminated by oil from an adjacent space or pipeline leakage during the previous twelve months.

**CHECKLIST FOR YOU :**

1. Are all deck officers familiar with the company procedure for sighting the surface of ballast water prior to discharge where the ballast tanks are adjacent to a cargo/bunker tank or where oil pipes and/or hydraulic lines pass through the tanks?
2. Are all deck officers familiar with the company procedure for periodically checking empty spaces for liquid ingress or for monitoring the levels of full or partially full tanks for migration of liquid between spaces?
3. Are the records of periodic monitoring of empty spaces for liquid ingress available?
4. Are the records of ballast water surface inspection before discharging available?
5. Are the records of testing of ballast lines available where they passed through cargo tanks or fuel tanks?
6. Do numerous bolts need to be removed from the inspection hatch or, is enclosed space entry needed, to inspect the surface of the ballast water within a full tank?
7. Do the records indicate that liquid leakage was detected in an empty space as result of structural or pipeline failure during the previous 12 months?
8. Do the records indicate that ballast water or a ballast tank was contaminated by oil from an adjacent space or pipeline leakage during the previous twelve months?

**GUIDELINES:*****Human Guidelines:***

The accompanying Deck Officer must be familiar with the company procedure for periodically checking empty spaces for liquid ingress or monitoring the levels of full or partially full tanks to detect any migration of liquid between spaces.

The accompanying Officer must also be familiar with the company procedure for inspecting the surface of ballast water prior to discharge, especially when a ballast tank adjoins a cargo or bunker tank or contains piping with oil passing through it.

***Process Guidelines:***

The vessel operator should ensure that there are procedures in place for leakage detection, covering the following areas:

- Inspecting the surface of ballast water in tanks adjacent to cargo or bunker tanks and areas where oil pipes, such as hydraulic lines, run through, before discharging ballast overboard.
- Periodically sounding empty tanks and spaces to detect any migration of liquids from other spaces in the event of structural failure or pipeline leakage.
- Periodic monitoring of the contents level in full or partially full tanks to detect migration of liquids between adjacent or interconnected spaces.
- Testing of ballast lines that pass through cargo tanks or fuel tanks.
- Taking mitigating actions when contaminated ballast water is found or when there is evidence of cross-contamination of contents between different spaces.

The Inspector is expected to sight these procedures and verify the following:

- Sounding records and records of ballast water inspections prior to discharge, ballast line tests, as per company procedures.
- Periodic soundings of empty tanks have been conducted.

- The ballast tank sighting arrangements are readily accessible to inspect the surface of ballast water prior to discharge.
- Whether tanks adjacent to cargo or bunker tanks can be easily inspected without the removal of numerous bolts to access inspection hatches or make an enclosed space entry.
- Whether liquid leakage or cross-contamination was detected in an empty space or ballast tank due to structural or pipeline failure in the past 12 months.
- Records of ballast line tests passing through cargo or fuel tanks.

### **Hardware Guidelines:**

Ensure the availability of the Cargo/ballast tanks/ void space/ FW tanks reports.

### **REFERENCE:**

TMSA KPI 4.2.2 requires that cargo, void and ballast spaces are inspected to ensure their integrity is maintained.

IMO: ISM Code / 7.

OCIMF: International Safety Guide for Oil Tankers and Terminals. Sixth Edition

#### 11.3.4 Monitoring of Void and Ballast Spaces

Void and ballast spaces in the cargo tank block should be regularly monitored for leaks from nearby tanks. Monitoring should include regular atmosphere checks for hydrocarbon content and regular sounding/ullaging of the empty spaces.

#### 12.6.5 Discharging Segregated Ballast

To prevent contaminated segregated ballast causing pollution, where possible the surface of the ballast should be sighted before deballasting.

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# TRAINING

# SIRE 2.0



# ONLINE TRAINING

## FOR SEAFARER & SHIP MANAGEMENT STAFF



### MARINER'S UPDATE

COMPLIANCE WITH SIMPLICITY

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Card

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# SIRE 2.0

## SIMPLIFIED ONLINE LESSONS FOR EASY UNDERSTANDING

### OUR COURSE CONTENTS:

- |  |  |
|--|--|
| 1. Why SIRE 2.0                              | 7. Defect management                     |
| 2. Risk Based approach how tie risk analysis | 8. Human factor and PIF                  |
| 3. Pre Inspection procedures                 | 9. Standard classification / TMSA coding |
| 4. Questionnaires & CVIQ formation           | 10. Office staff responsibilities        |
| 5. Response tools & type in SIRE 2.0         | 11. Ship staff participation             |
| 6. Negative Observations                     | 12. Past SIRE 2.0 observations           |

### WHY CHOOSE US:

- ✓ Free SIRE 2.0 tool to minimise the error (in questionnaire & photo condition reports)
- ✓ Collection data of past SIRE 2.0 observations handout
- ✓ SIRE 2.0 checklist for all 12 chapters
- ✓ Practical insights into inspection methodology
- ✓ Flexible training options (online LIVE training for ship staff)
- ✓ Expert trainers with the real time experience in SIRE 2.0 Inspections

ELEVATE  
SAFETY,  
COMPLIANCE &  
EFFICIENCY IN  
SAFE TANKER  
OPERATIONS



NEXT COURSE  
PLANNED ON

## MAY 2026

# 16<sup>TH</sup>

## SATURDAY



UNIVERSAL TIME  
1000 TO 1230

INDIAN STANDARD TIME  
1530 TO 1800

INVESTMENT

# 49\$

OUTSIDE PRICE

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