

# **Testing of Watertight Compartments**

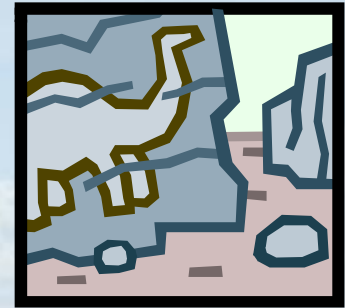
**1 December 2011**

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# 1. Background (Review)

- Requirement of hydrostatic testing for F.P.s, D.B.s and Inn. Skins dates back to 1929 or earlier (Riveting age).
- Current SOLAS regulation II-1/11, specifying testing of **W.T. spaces & tanks**, entered into force in Jan. 2009.
- Paragraph **2** seems to be **at variance** with paragraph **1**.





## 2. Variance overlooked by ?

- Paragraph **1** states that hydrostatic testing is not practicable and mandatory for “Watertight compartments not intended to hold liquids”, including “ballast” holds.
- Paragraph **2** explicitly requires hydrostatic testing of “**F.P.** (including void spaces), **D.B.** (including duct keels) and **Inn. Skins**”.
  - Main point at issue;  
Hydrostatic testing of **all** W.T. compartments ?

# 3. Vagueness & confusion

- In addition, paragraph **3** requires **hydrostatic testing** of “**Tanks** intended to hold liquids” in order to confirm tightness and **structural strength**.
  - Main point at issue;  
Hydrostatic testing for tightness confirmation?





# 4. Impracticality caused by formalism

- The **latest established Engineering Practice** of the Shipbuilding Industry has been **conflicting** with current SOLAS requirements !
  - Prefabricated hull construction (Blocks)
  - Advanced outfitting
  - Exemption from hydrostatic (structural strength) testing of other tanks of same construction and those of subsequent sister ships



# 5. Actual problems experienced

- Hydrostatic testing mostly brings **serious damage** to equipments, electric cables and/or coatings in “**Watertight compartments not intended to hold liquids**” although they are filled with **fresh water**.
- It is terrible to save enormous amount of **fresh water** for tests.





## 6. Remedial action taken by IACS

- IACS, cosponsored by Cook Islands and Marshall Islands, proposed draft amendments to SOLAS and draft Guidelines for “**Procedures of Testing Tanks and Tight Boundaries**” at MSC 86 (MSC 86/23/13, June 2009).
- MSC 86 decided to refer the issue to DE.
- At **DE 56** (February 2012), discussion on this issue will be commenced (agenda item 16).  
**2** sessions are arranged to settle this issue.





# 8. SAJ opinion

- The point is sound balance between completeness of the test and efficiency of the production.
- Uniform requirements of the tests lead to too much inflexibility in application.
- Long-term actual QC results achieved by each Shipbuilder are to be considered by the Class, with a view to **not** impairing Shipbuilders' motivation for upgrading their **QC & QA**.



# 9. SAJ proposal



- World-wide Shipbuilding Industry should demonstrate their **QC & QA** systems, and appeal to **EMSA** and others for their consent to draft amendments to SOLAS and Guidelines.
- SAJ considers to deliver a message to DE 56.
- Each Shipbuilder had better make every effort to upgrade his **QC & QA**; otherwise, each Shipbuilder must accept more hydrostatic tests.



# 10. Schedule

- After the settlement to be reached at **DE**, discussion, approval, adoption by **MSC** and implementation will follow, which still require substantial procedural period.
- By then, an **interim measure** may be taken by IMO to cope with urgent Industry needs.



# 11. State of other organization

- In February 2011, ISO/TC8/**SC8**/(WG6) decided **postponing** the development of draft international standards for “Tightness for hull compartment and equipment of ship” and **reconsidering** the scope of the standards, in order to follow the actions to be taken by IMO.

**Thank you for your attention !**

