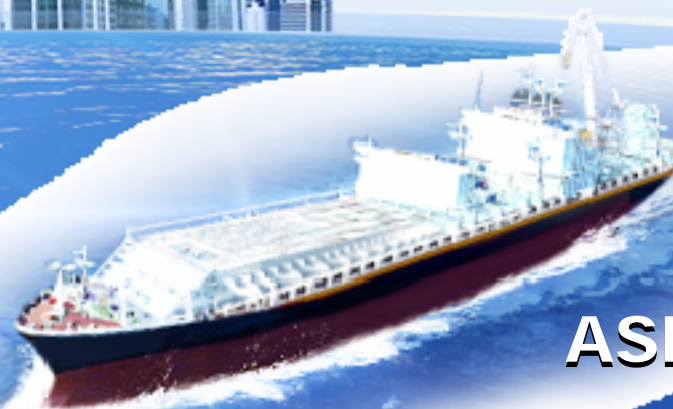


Current Status and Future Development of GBS



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Outline of MSC83 and GBS-WG

● MARITIME SAFETY COMMITTEE 83rd session (MSC83)

- ▶ 3 Oct. 2007 – 12 Oct. 2007
- ▶ Bella Center in Copenhagen, Denmark
- ▶ Chairman; Mr. Neil Ferrer (Philippines)
- ▶ Attendants; approx. 100 Member Governments
approx. 50 inter- and non-governmental
organizations





Outline of MSC83 and GBS-WG

● Working Group on Goal-based New Ship Construction Standards

- ▶ 3 Oct. 2007 – 11 Oct. 2007
- ▶ Bella Center in Copenhagen, Denmark
- ▶ Chairman; Capt. P. Little (United States)
- ▶ Attendants; approx. 40 Member Governments
approx. 10 inter- and non-governmental organizations





Main terms of reference of GBS-WG

1. Further development of the proposed **draft SOLAS amendments**
2. Further development of the draft **Goal-based New Ship Construction Standards for bulk carriers and oil tankers** and consideration of;
 - ◆ Application of GBS to BC and OT with **ice class**
 - ◆ Inclusion of a new functional requirement on continuous **performance monitoring**





Main terms of reference of GBS-WG

(cont'd)

2. Further development of the draft **Goal-based New Ship Construction Standards for bulk carriers and oil tankers** and consideration of;

- ◆ Inclusion of a new functional requirement concerning the acceptable **probability of exceedance** of the design load for ships' structures
- ◆ **Modification to the existing Tier II** functional requirements proposed by the Pilot Panel
- ◆ Definition of **"Net scantlings"** included in functional requirement II .3 on structural strength





Main terms of reference of GBS-WG

3. Finalizing the draft MSC circular on Guidelines for the information to be included in a **Ship Construction File**

4. Further development of the draft Guidelines for the **verification of compliance** with GBS, part A and part B
 - Part A; Tier III Verification process
 - Part B; Information / documentation requirements and evaluation criteria





Main terms of reference of GBS-WG

5. Preparation of **a plan and timetable** for a second, more in-depth, trial application of the Guidelines for the verification of compliance with GBS using the IACS CSR

6. Consideration in detail of the report of the Correspondence Group on the **Safety Level Approach**
 - ▶ Categorization of ship types
 - ▶ Review of available statistical data
 - ▶ Evaluation of the current safety level
 - ▶ SLA functional requirements
and common terminology





Key issues and WG's outcome

● Draft SOLAS amendment

- ▶ Draft SOLAS amendments make the GBS for BC and OT mandatory
- ▶ Tier I should apply to all ship types, as agreed, however,
- ▶ Application of current amendments;
 - + Majority; only to BC and OT
because of no Tier II and III applicable to other types of ship, so far.
 - + Some delegations; to all new ships
- ▶ Applicability threshold for BC; [90m] or [150m]
- ▶ Applicability threshold for OT; 150m





Key issues and WG's outcome

● Draft SOLAS amendment (cont'd)

- ▶ Necessity of sufficient Phase-in schedule
 - ◆ For classification societies, to develop, modify and adopt the new rules concerned.
 - ◆ For the Group of Experts, to verify the rules concerned.
 - It was agreed that further consideration is needed after Tier III will be finalized at MSC85 in Dec.2008, before the adoption of SOLAS amendment.
- ▶ Adequate measures to protect the intellectual property rights (IPR), not inside SOLAS but somewhere.





Key issues and WG's outcome

● Application of GBS to BC and OT with Ice class

- ▶ GBS-NSC should also be applied to BC and OT with ice class, however no specific Tier II and III are developed for ice class so far.
- ▶ In the long term, GBS should cover all conditions, including ice class.





Key issues and WG's outcome

- **Functional requirement on continuous performance monitoring (PM)**
 - ▶ Involves not only classification rules for new ship construction but also maintenance, operational considerations and numerous other factors, however
 - ▶ WG could not determine the appropriate method to implement PM.
 - ▶ In the short term, the concept could be considered in the draft Tier III verification process.
 - ▶ In the long term, PM might be required somewhere outside of GBS-NSC.





Key issues and WG's outcome

- **Modifications to existing Tier II functional requirements**
 - **Definition of “Net scantlings”** ---

PREVIOUS

The net scantlings shall provide the structural strength required to sustain the design loads, assuming the structure in intact condition **and excluding any condition for corrosion.**

Too much for global strength such as hull girder bending capacity and long-term fatigue process, etc

PRESENT

The net scantlings should provide the structural strength required to sustain the design loads, assuming the structure in intact condition **and accounting for the steel diminution that could be reasonably expected to occur during the life of the ship due to corrosion and wastage.**

Reasonable from technical point of view





Key issues and WG's outcome

- **Draft MSC circular on Guidelines for the information to be included in a Ship Construction File (SCF)**
 - ▶ Intellectual property rights (IPR)
 - ▶ Level of detail required
 - ▶ Correlation between the SCF and the Tier III verification guidelines
- To be further considered at MSC85





Key issues and WG's outcome

● Draft Guidelines for the verification of compliance with GBS

- ▶ Primary verification process
 - ◆ by the Group of Experts ? or
 - ◆ by self-assessment of the Classification society ?
- ▶ Number of members of the Group of Experts ?
- ▶ Decision making criterion;
 - Simple majority? or 2/3 majority?
- ▶ Refinement of the Guidelines by the submitted documents and the comments of the working group





Key issues and WG's outcome

● SAFETY LEVEL APPROACH (SLA)

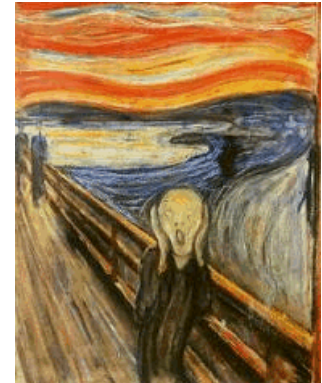
- ▶ Position of SLA --- One of the two approaches
 - ◆ GBS for BC and OT with the prescriptive approach
 - ◆ GBS using the safety level approach
 - ▶ Categorization of ship types using databases
 - ◆ Lloyd's Register Fairplay (LRFP)
 - ◆ Lloyd's Maritime Information Unit (LMIU) etc
- To be further discussed for establishment of the Safety Level Approach in GBS.





Future development of GBS

- **Mission of the Intersessional Correspondence Group organized between MSC83 and MSC85**
 - ▶ Development of a generic GBS framework
 - ▶ The prescriptive and the safety level approach
- **Short term plan**
 - ▶ MSC83 ~ MSC84 → Develop unified GBS framework
 - ▶ MSC84 → Finalize unified GBS framework and continue development of SLA
 - ▶ MSC85 → Finalize and approve Tiers I to III of GBS for BC and OT
 - ▶ MSC86 → Adopt SOLAS amendments and associated guidelines ???
- **Long term plan**
 - ▶ Expansion of GBS-NSC for other types of ship ???





Future development of GBS

● Mission of the Pilot Project Phase 2 by Pilot Panel

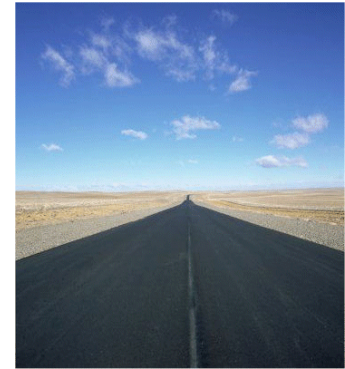
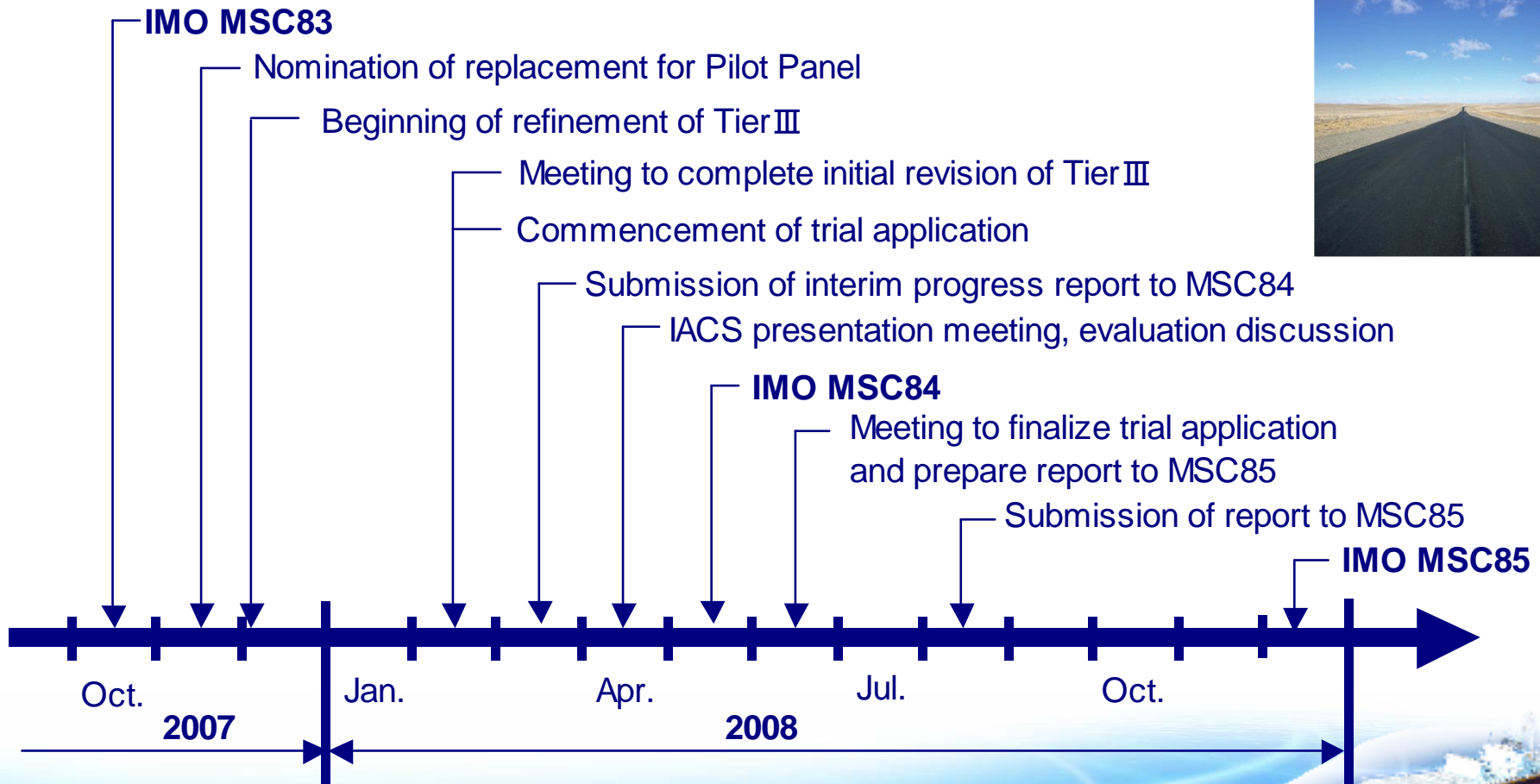
- ▶ Further development of the Draft Guidelines for the verification of compliance with GBS, part A and part B
- ▶ Conducting a trial of the refined GBS Tier III verification process using the IACS Common Structural Rules (CSR) for oil tankers
- ▶ Submitting the interim report to MSC84 and the final report to MSC85 including the draft Guidelines for the verification of compliance with GBS, Part A and B





Future development of GBS

Schedule of the Pilot Project Phase 2





Challenges of GBS in future

- **When will GBS be actually finalized for the verification of the CSR for OT and BC ?**
- **Who will be able to verify the CSR as the Group of Experts and how can IMO select such real Experts ?**
- **How will GBS be able to settle the technically rational acceptance criteria considering the state-of-the-art of the structural design of ships ?**
- **How can IMO manage to achieve the well-balanced GBS under the extremely political pressure ?**





SAJ's opinion and Conclusion

- It still seems a long way to the goal of the **Goal-based New Ship Construction Standards.**
- We, the Asian shipbuilders, should keep watching carefully over the process of **IMO MSC, GBS-WG, CG and Pilot Project**, and actively participate in them.
- We, the Asian shipbuilders, should enhance the cooperation any further in giving **IMO the technically rational opinions from now on.**



Thank You !

