

Open Workshop on Risk-Based Approaches in the Maritime Industry

May 22-23 2007

At

National Maritime Research Institute, Japan



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• May 22

- 0930-1000 Opening by K. Yoshida
- 1000 Session 1: risk-based design
 - Risk modelling (Mr. F. Kaneko, NMRI)
 - Integrated Risk Model for Total Risk Management for Ships (Dr. J.K. Lee, MOERI)
- Coffee
- 1130 Session 1 (contd.): risk-based design
 - Cost benefit analysis (Dr. T. Arima, Class NK)
 - Structural reliability for intact and damaged ship structures (Dr. R. Skjong, DNV)
- LUNCH
- 1430 Session 2: advanced tools to support risk-based design
 - Prediction of hull girder collapse probability (Prof. M. Fujikubo, Hiroshima Univ.)
 - Prediction of capsizing probability of an intact ship for the performance based criteria (Dr. Y. Ogawa, NMRI)
 - Prediction of capsizing probability (Prof. K. Spyrou, NTUA)
- Coffee
- 1630 Session 2 (contd.): advanced tools to support risk-based design
 - Risk-based design overview (Prof. D. Vassalos, SSRC)
- 1700 Workshop on risk-based design: availability and applicability of tools
- 1830 Reception at NMRI

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Programme

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- May 23
- 0930
- • Why RBD and RBA is important for ship owners (Mr. T. Strang, Carnival)
- 1000 Session 3: approval process for risk-based ships
- • Risk-based system approval (Dr. P. Sames, GL)
- • Risk acceptance criteria (Dr. R. Skjong, DNV)
- Coffee
- 1130 Session 4: Status and outlook for GBS at IMO
- • GBS presentation from Japan (Prof. T. Yao, Osaka Univ., GBS project manager of Japan Ship Technology Research Association (JSTRA))
- • Outlook for Safety Level of New Ship Design and Construction (Mr. M. Hirakata, NMRI)
- LUNCH
- 1400 Session 4 (contd.): Status and outlook for GBS at IMO
- • Goal Based Regulations (Dr. R. Skjong, DNV)
- • A roadmap for risk-based design and approval in the framework of GBS (Dr. P. Sames, GL)
- • Workshop on the future of risk-based design and approval



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Why risk-based design and approval is important for the maritime industry

- Maritime Safety is regulated by
 - SOLAS
 - Flag State
 - Class Rules
- **Rules and regulations has been developed as reactions from Accidents (reactively).**



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Level of safety accomplished by rules

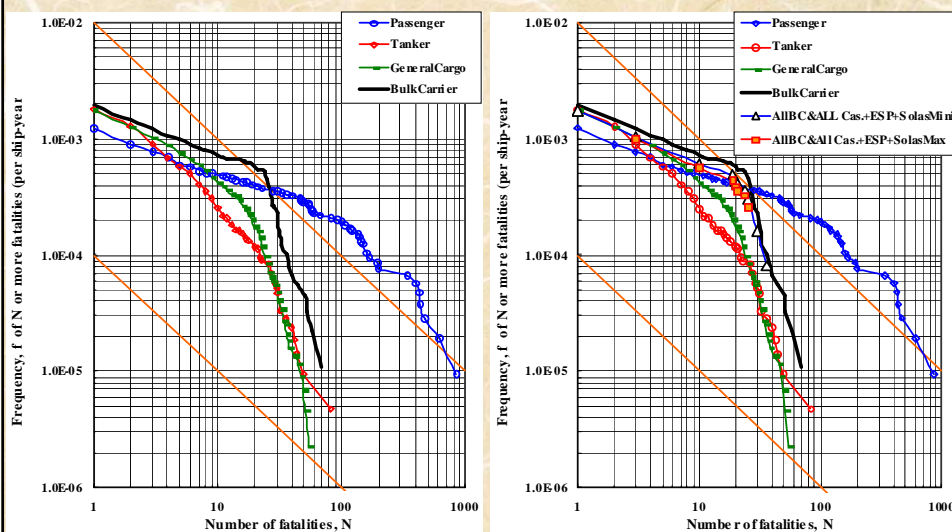
- It was almost always unknown that the regulations **developed reactively** are sufficient, enough, too far or excessive.
- **Safety rules shall have clear indication of level of safety at which the rules aim.**
- **Quantitative safety level can be obtained by Risk-based or Safety-Level based approach.**
- **Is that possible?**

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Today's safety level

Workshop on GBS-
Safety Level Approach



Extracted from MSC 75/5/2

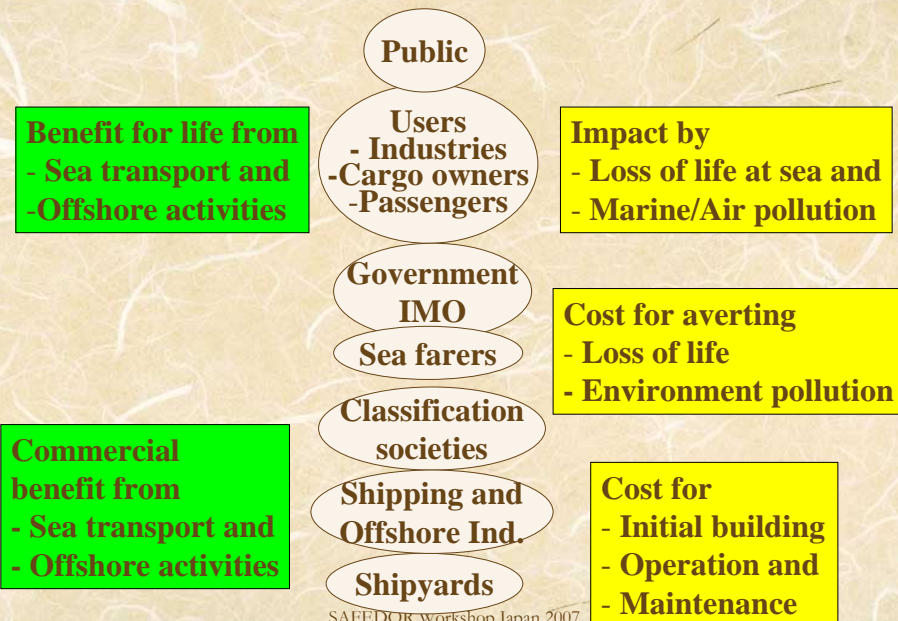
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safety level based goal

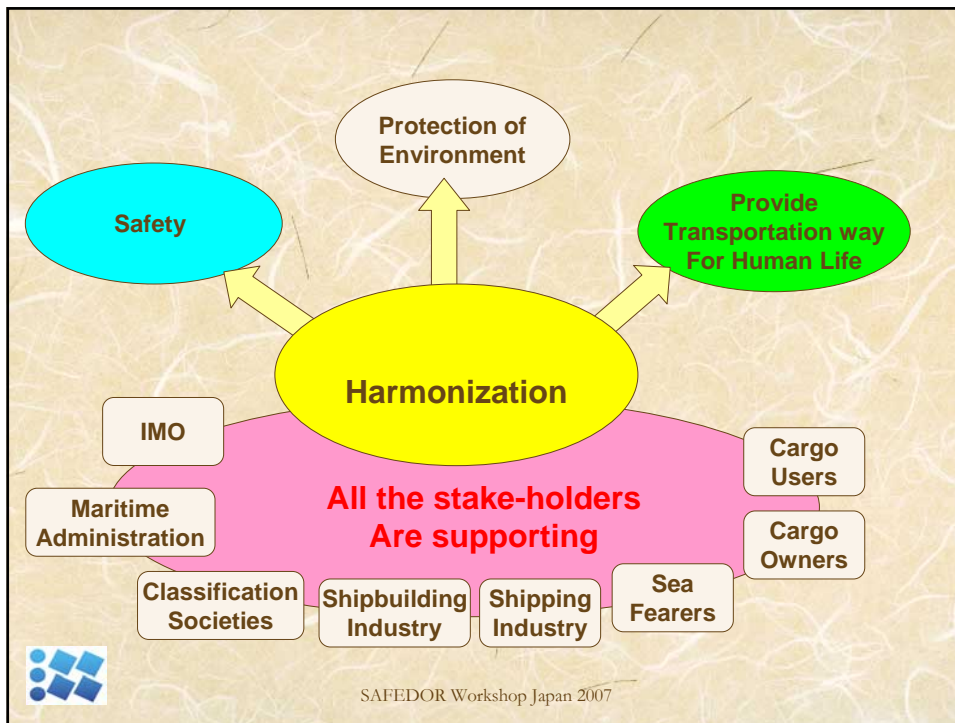
- Safety goal or acceptable safety/risk level of industrial activities already exists in many countries. (MSC 81/6/3)
- Quantified risk assessment has already been used in the nuclear, chemical, petrochemical and **offshore industries** (MSC81/6/3, MSC 81/INF.7) under regulatory frameworks.
- **For offshore industries,**
 - Norway: Risk Analysis regulations NPD and regulations for management of Health, Environment and Safety (HES)
 - UK: Safety Case Regulations (UK HSE)
- It is expected that such safety level goal would be established in maritime industries.
- **Such establishment is apparently possible.**

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Cost/benefit and stakeholders



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Open Workshop on Risk-Based Approaches in the Maritime Industry

- **NMRI hopes this workshop provides good chance to**
 - Exchange views
 - Understand each other
 - Understand what the risk-based approach is
 - work together for reasonable, rational, practicable, achievable rule making, and
 - Work together for risk-based design of ships.

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Open Workshop on Risk-Based Approaches in the Maritime Industry

is organized by

- **SAFEDOR Project in EU, and**
 - **National Maritime Research Institute (NMRI)**
- with support and cooperation of
- **Japan Ship Technology Research Association (JSTRA) and**
 - **The Japan Society of Naval Architects and Ocean Engineers (JASNAOE)**

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