The Sixteenth Asian-Pacific Technical Exchange and Advisory Meeting on Marine Structures in Asia Pacific Maritime Congress – 90th Anniversary of KSNAJ –

21-23, May 2002 in Kobe, JAPAN

TEAM2002 KOBE

Technical Program

Organized by:
International Technical Committee, TEAM

Sponsored by:
Kansai Society of Naval Architects, Japan (KSNAJ)
TEAM2002 Organization

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Prof. Y. Tomita Osaka University
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Symposium Secretariat

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Conference Timetable

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Technical Sessions

I  External and/or Internal Loads for Ships and Marine Structures
II  Structural Performance of Ships and Marine Structures
III  Structural Design Criteria and/or Structural Design Method of Ships and Marine Structures
IV  CAD/CAM/CIM in Shipbuilding Production Technique of Ships and Marine Structures
V  Noise and Vibration Problems
VI  Fatigue/Fracture
VII  Offshore Structures Problems
TECHNICAL PROGRAM

MONDAY, MAY 20 3:00p.m.

Registration & Welcome Reception

MONDAY May 20 3:00p.m.- 8:00p.m. Crystal Hall, Crystal Tower 3F
Registration and welcoming reception will be held at "Crystal Hall" in "Kobe Crystal Tower (Head Office Building of Kawasaki Heavy Industries Co.,Ltd.)" just near JR Kobe station. Access to Kobe (Downtown Sannomiya) from Kansai International Airport (KIX) is shown in the back of this document.

Access to Crystal Tower from Sannomiya Kobe
By JR line
Time: 3 minutes   Fare: ¥120
Get off at Kobe Sta.  Futsu (local service), Kaisoku (rapid service) and Shinkaisoku (special rapid service) stop at Kobe Sta.
By Taxi
Taxi terminal: In front of JR Sannomiya Sta.
Time: 15 minutes   Fare: about ¥1,200
Tell the driver that your destination is the "Crystal Tower".

TUESDAY, MAY 21 8:50a.m.

Plenary Session

TUESDAY May 21 8:50a.m.- 9:50a.m. Rm. 503, ICCK*

* ICCK = International Convention Center Kobe

PART 1: Conference Opening
Opening Declaration
Prof. Yasumitsu Tomita (Chairman, Local Organizing Committee)

Opening Address
Prof. Toichi Fukasawa, (Chairman, International Organizing Committee)

PART 2: Invited Lecture
Simulation Based Design and Production in Shipbuilding
Prof. Yasuhisa Okumoto (Kinki University)

TUESDAY, MAY 21 9:50a.m.

Coffee Break

TUESDAY, MAY 21 10:10a.m.

I. External and/or/Internal Loads for Ships and Marine Structures

IV-1. CAD/CAM/CIM in Shipbuilding Production Technique of Ships and Marine Structure

TUESDAY May 21 10:10a.m.-11:50a.m. Rm. 505, ICCK

Chair: Prof. Ki-Sung Kim (Inha University)

A Comparison Study on Long-Term Prediction of Ships in Waves
Chih-Chung Fang, Hua-Tung Wu and Chung-Yung Lu (United Ship Design and Development Center)

Estimation of Forces Resulting from Impact of Screws Against ICE. Model of Newton
Konstantin P. Gorbachov, Gennady P. Tumrov, Nicolai I. Voscovchuk, Boris G. Slivaev and Alexandr V. Slavgorodskaya (Far Eastern State Technical University.)

A Three-Dimensional Technique for predicting Ship Motion and Loads in Oblique Waves
C. H. Wu (United Ship Design and Development Center) and M. C. Fang (National Cheng Kung University)

A Study on the Influence of Swash Bulkhead with a Large Opening on Sloshing Pressure
Biomechanical Study for Traffic of Workers in Shipyard  
Yasuhiro Okumoto and Masaki Taruoka (Kinki University)
### III-2. Structural Design Criteria and/or Structural Design Method of Ships and Marine Structures

**WEDNESDAY** May 22  8:50a.m.-10:10a.m.  Rm. 503, ICCK

**Chair:** Prof. Sang-Gab Lee (Korea Maritime University)

**On the Estimation of Stress Response Function caused by Inner and Outer Pressures of a Ship**

Toichi Fukasawa (Kanazawa Institute of Technology), Shinsuke Murakami and Takao Kuroiwa (Mitsubishi Heavy Industries, Co.,Ltd.)

**A Study on the Worst Load Point in Grillages**

Kisun Kim, Kyungsu Kim, Hyoung-Jin Park and Jae-Hyok Chang (Inha University)

**A Study of Multi-Deck Ship Structures Optimization by Means of Genetic Algorithms**


**Optimum Structural Design of Tankers Using Multi-objective Optimization Technique**

Chang-Doo Jang (Seoul National University), Sang-Hoon Shin (Hyundai Heavy Industry, Co.,Ltd.), Kyung-Goo Kim (Osan College) and Ha-Cheol Song (Seoul National University)

### IV-2. CAD/CAM/CIM in Shipbuilding Production Technique of Ships and Marine Structure

**WEDNESDAY** May 22  8:50a.m.-10:10a.m.  Rm. 505, ICCK

**Chair:** Dr. Hisashi Serizawa (Osaka University)

**Reprocessing Technology of Polymer Materials into Ship System Elements**

Olga A. Odinokova (Khabarovsk State University of Technology)

**Effect of Various Factors on Transverse Shrinkage under Butt Welding**

Masakazu Shibahara (Kanazawa Institute of Technology) Hisashi Serizawa and Hidekazu Murakawa (Osaka University)

**Theoretical Study on Forming of Twisted T-section Longitudinal from Aspect of Inherent Strain**

Madhu S. Nair (Cochin Shipyard) and Hidekazu Murakawa (Osaka University)

**Experimental Study on Heat Transfer between Heating Gas and Plate during Line Heating Process.**

Keiichi Sugiyama (Nippon Steel Co.,Ltd.) Yasumitsu Tomita, Naoki Osawa, Kiyoshi Hashimoto and Kiyoshi Matsuoka (Osaka University)

### WEDNESDAY, MAY 22 10:10a.m.

**Coffee Break**

### WEDNESDAY, MAY 22 10:40a.m.

### III-3. Structural Design Criteria and/or Structural Design Method of Ships and Marine Structures

**WEDNESDAY** May 22  10:40a.m.-12:00a.m.  Rm. 503, ICCK

**Chair:** Prof. Chang-Doo Jang (Seoul National University)

**Numerical Simulation of the MIL-S-901D Shock Test of the Nonlinear Double Resiliently Mounted Main Engine Module of a Naval Ship**

Sang-Gab Lee, Jeong-II Kwon (Korea Maritime University) and Jung-Hoon Chung (Korea Institute of Machinery and Materials)

**Comparison of Calculation Schemes for the Ship in Floating Dock**

Sergey V. Antonenko (Far Eastern State Technical University) and Galina I. Lando (Det Norske Veritas Representative Office)
Extensive Finite Element Analyses of Forward and Aft Part of a PANAMAX Container Ship
Bungo Matsugi, Yoshinori Date and Tetsuo Okada (Ishikawajima-Harima Heavy Industries Co.,Ltd.)

Structural Analysis in Vicinity of Access Opening
N. W. Kim, W. S. Kim and Y. M. Paik (Hyundai Heavy Industries Co.,Ltd.)

V-1. Noise and Vibration Problems

WEDNESDAY May 22 10:40a.m.-12:00a.m. Rm. 505, ICCK

Chair: Prof. Shigehiro Hayashi (Osaka University)

Analysis of Propeller Induced Vibration and Structure-Borne Noise
Wei-Hui Wang (National Taiwan Ocean University)

Study on Effectiveness of Noise Control on Engine Room Bulkhead by using Active Muti-Helmholtz Resonators Wall
Wei-Yu Lu, Wei-Hui Wang, Der-Yuan Liou (National Taiwan Ocean University), Hong-Jen Wang and Linus Y. S. Wang (Wisking Technology Corporation)

Active Mass Damper for Ship Superstructure Vibration by Electromagnetic Control
- Development of IHI-AMD -
Yu Takeda, Hiroki Kusumoto, Itaru Iwasaki and Yuji Koike (Ishikawajima-Harima Heavy Industries, Co.,Ltd.)

Identification of Equivalent System Matrices of Marine Structures by VBARX model
C. F. Hung, W. J. Ko and K. C. Lan (National Taiwan University)

WEDNESDAY, MAY 22 12:00a.m.

Lunch

WEDNESDAY, MAY 22 1:00p.m.

Asia Maritime Forum

WEDNESDAY May 22 1:00p.m.- 3:30p.m. Rm. 301, ICCK

A round table meeting, Asia Maritime Forum, by the representatives of the societies of maritime engineering in Asia-Pacific countries will be organized. In the forum, a new association for maritime engineering will be proposed and the memorial declaration will be given. The participants in TEAM2002 are invited to join the meeting.

WEDNESDAY, MAY 22 3:30p.m.

90th Anniversary of K.S.N.A.J Celebration Ceremony

WEDNESDAY May 22 3:30p.m.- 4:30p.m. Rm. 301, ICCK

WEDNESDAY, MAY 22 4:30p.m.

90th Anniversary of K.S.N.A.J Memorial Lecture

A Maritime Asia in a Historical Perspective
Prof. Heita Kawakatsu (International Research Center for Japanese Studies)

WEDNESDAY, MAY 22 6:00p.m.

90th Anniversary of K.S.N.A.J Memorial Banquet

WEDNESDAY May 22 6:00p.m.- 8:00p.m. Shin-Shyo Hall, KCCI

Banquet will be held at "Shin-Shyo Hall" of "Kobe Chamber of Commerce and Industry (KCCI)" just near the conference venue. We hope this program will offer a good opportunity to promote old friendship and to create new ones with colleagues from around the Aisan-Pacific region.
THURSDAY, MAY 23 8:50 a.m.

III-4. Structural Design Criteria and/or Structural Design Method of Ships and Marine Structures

THURSDAY
May 23 8:50a.m.-10:10a.m.  Rm. 503, ICCK

Chair: Prof. Wei-Hui Wang (National Taiwan Ocean University)

A Study for Torsional Strength Analysis of Container Ships
Seong-Whan Park, Tak-Kee Lee (Korea Institute of Machinery and Metals), Young-Man Lee, Je-Hyouk Woo and Hee-Jung Lee (Daewoo Shipbuilding & Marine Engineering Co.,Ltd.)

High-speed Accurate Method of Post-buckling Analysis of All-edge-clamped Rectangular Plate
Takao Yoshikawa, Seiichi Yamaji and Kazuhito Kishida (Kawasaki Heavy Industries Co., Ltd.)

Application of New Vibration Guideline of Merchant Ships
Kouhei Matsumoto (Kinki University) and Hideyuki Shuri (Hitachi Zosen Co., Ltd.)

A Study on Optimal Vibration Design by using Neural Networks
Koji Kagawa, Masahiro Maeda, Kazutaka Toyota, Yukioka Yasuzawa (Kyushu University) and Naoki Oba (Mitsui Engineering & Shipbuilding Co., Ltd.)

VI-1. Fatigue/Fracture

THURSDAY
May 23 8:50a.m.-10:10a.m.  Rm. 505, ICCK

Chair: Prof. Chen-Far Hung (National Taiwan University)

Three-dimensional Numerical Investigation on Thickness-through and Surface Fatigue Crack Closure
Hiroyuki Ishibashi (Nippon Steel Co., Ltd.), Yasumitsu Tomita, Kiyoshi Hashimoto, Naoki Osawa and Tetsujii Miyashita (Osaka University)

Fatigue Crack Growth Behavior of Ship Structural Members under Wave-induced Loads
Tetsuya Nakamura, Masao Morikawa, Satoshi Yamamoto and Kouta Shibasaki (NKK Co., Ltd.)

A Study on the Measurement of Plastic Zone and Crack Growth Length at the Crack Tip under Cyclic Loading using ESPI System
Kyung-Su Kim, Ki-Sung Kim and Chun-Sik Shim (Inha University)

THURSDAY, MAY 23 10:10 a.m.

Coffee Break

THURSDAY, MAY 23 10:40 a.m.

VI-2. Fatigue/Fracture

THURSDAY
May 23 10:40a.m.-12:00a.m.  Rm. 505, ICCK

Chair: Prof. Naoki Osawa (Osaka University)

Life Assessment of Welded Marine Strutures Made of Ferritic-Perlitic Steels with Regard to Double-Frequency Loading
G. Matokhin, V. Pogodajeve, A. Gridasov and Y. Kulchin (Far Eastern State Technical University)

System Approach in Providing Fatigue Life of Ship's Hulls and Their Safe Operation
Andrey P. German (Far Eastern State Technical University), Gennadiy T. Kazanov (Pacific Naval Institute after S.O. Makarov), Valeriy V. Novikov and Gennadiy P. Turmov (Far Eastern State Technical University)

Fatigue Analysis of Side Longitudinal Connections for the PLUS Notations
S. H. Oh, Y. P. Kim (Daewoo Shipbuilding & Marine Engineering Co., Ltd.) and H. S. Urm (Det Norske Veritas)
A Study on Evaluation of Fatigue Strength for One-sided Welding with Ceramic Backing Material
Yu-Chul Jeon, Yoo-II Kim, Man-Joo Huh and Joong-Kyoo Kang (Daewoo Shipbuilding & Marine Engineering Co., Ltd.)

VII. Offshore Structures Problems

THURSDAY May 23 10:40a.m.-12:00a.m. Rm. 503, ICCK

Chair: Dr. Jeng-Lih Hwang (United Ship Design and Development Center)

A Study on the Design and Analysis of a Bridge connecting to VLFS
Kyu Nam Cho, Uk Jae Lee (Hongik University), Kyung Hun Yoo, Jum Moon Kang, Myung Cheol Yoon and Oi Hyun Kim (Hyundai Heavy Industries Co., Ltd.)

A Simplified Method for Reliability Analysis of Damaged Jacket Structures Based on Collapsing Behavior Analysis
Shinji Katsura, Koji Masaoka and Hiroo Okada (Osaka Prefecture University)

THURSDAY, MAY 23 12:00a.m.

Closing Session

THURSDAY May 23 12:00a.m.-12:30a.m. Rm. 503, ICCK
PRESENTING INFORMATION

Presentation Procedure
The presentation of each technical paper will be organized as follows:
* Presentation of paper 15min.
* Discussion 5min.

Presentation Facilities
The following presentation facilities are available for TEAM2002 Conference:
* Over-head Projector,
* PC Projector,
* Standard Slide Projector.

Discussion Procedure
Written discussions will be presented orally, in the order received by the secretary, but only if there is time. Oral discussion from the floor will be permitted during whatever discussion time remains after all previously prepared written discussion have been presented.

PRACTICAL INFORMATION

Conference Name Tag
For identification purpose, please carry your name tag during the entire conference.

Secretariat
The Secretariat is located in Rm. 407 of ICCK(International Convention Center Kobe). The Secretariat will be happy to assist you with any practical information during your stay in Kobe.

Opening hours:
Tuesday May 21 09:00-12:00
Wednesday May 22 08:30-15:30
Thursday May 23 08:30-14:00

Messages
Messages will be displayed on a bulletin board in front of Rm. 503 of ICCK.

Telephones
There are some public telephones in the conference venue. Telephone cards can be bought in the venue.

Transportation
Access to Kobe (Downtown Sannomiya) from Kansai International Airport (KIX)

By Limousine Bus (KIX to Sannomiya direct ride)
Time: 65 minutes (75 minutes via Rokko Island)
Fare: ¥1,800
To get the limousine bus, please go from Exit "E" or Exit "F" at the 1st floor of the KIX airport terminal to limousine bus stop (6) (bound for Sannomiya) Buy ticket at the ticket machine "C."
Frequency: Every 15 to 30 minutes (Bus bound for Sannomiya via Rokko Island departs every hour)
Arrival place in Sannomiya: In front of Sannomiya Building (Near Portliner Sannomiya Sta. and JR Sannomiya Sta.)
By JR Airport Shuttle Rail
KIX JR station is located on the 2nd floor of the KIX airport terminal
1) Use Tokkyu (Limited express shuttle) Haruka
   How to get to Sannomiya: KIX to Shin-Osaka by Haruka
   Change train at Shin-Osaka
   Shin-Osaka to Sannomiya by local train
   Time: 74 minutes (excluding the time to transfer at Shin-Osaka)
   Fare: ¥2,810 (plus ¥510 for the use of reserve seats)
2) Use Kanku Kaisoku(KIX rapid service)
   How to get to Sannomiya: KIX to Osaka by Kanku Kaisoku
   Change train at Osaka
   Shin-Osaka to Sannomiya by local train
   Time: 84 minutes (excluding the time to transfer at Osaka)
   Fare: ¥1,660
*Passengers can take Shinkaisoku (special rapid service), Kaisoku (rapid service) and Futsu (local service) from both Osaka and Shin-Osaka to Sannomiya

Access to International Conference Center Kobe (ICCK) from Sannomiya Kobe

By Portliner
   Time: 10 minutes   Fare: ¥240
   Get off at Shimin Hiroba Sta. (5th stop from Sannomiya Sta.)

By Taxi
   Taxi terminal: In front of JR Sannomiya Sta.
   Time: 10 minutes   Fare: about ¥1,200
   Tell the driver that your destination is the“Kobe Kokusai Kaigijou” (“Kobe Kokusai Koryu Kaikan”)

Access to Crystal Tower from Sannomiya Kobe
   See page iii.