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Instructional Content

Course Descriptions

2008-06-19

Announcement for an International Short Course on Ship Shock Modeling and Simulation & Equipment Shock Qualification

Shin, Young S.

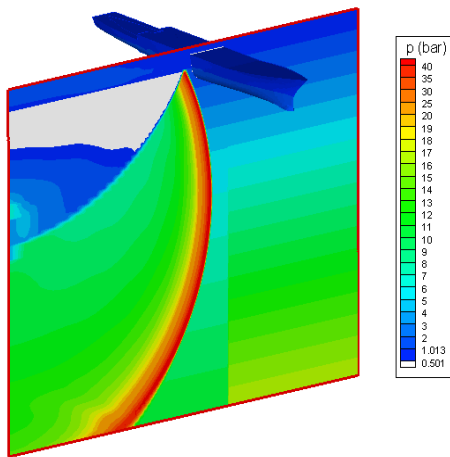
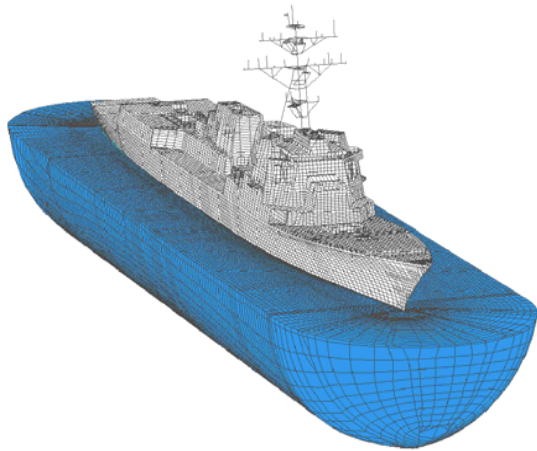
Shock and Vibration Research



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Announcement for an
International Short Course on

**SHIP SHOCK
MODELING AND SIMULATION &
EQUIPMENT SHOCK QUALIFICATION**

June 17 - 19, 2008

at

**Lansmont Corporation
Ryan Ranch Research Park
17 Mandeville Court
Monterey, CA 93940**

Course Lecturer:

**Professor Young S. Shin
Dept. of Mechanical and Astronautical
Engineering
Naval Postgraduate School
Monterey, CA 93940**

Organized by

**Shock and Vibration Research
10150 Blue Larkspur Lane
Monterey, California 93940
Phone/Fax: (831) 375 4999
email: yshin2004@sbcglobal.net**

About the lecturer

Young S. Shin

Principal, Shock and Vibration Research
10150 Blue Larkspur Lane
Monterey, California 93940, USA
Phone/Fax: (831) 375-4999
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Dr. Shin is currently a Principal of Shock & Vibration Research and Distinguished Professor of Mechanical Engineering at Naval Postgraduate School, Monterey, California. Before joining the Naval Postgraduate School in 1981, Dr. Shin was with General Electric Company and Argonne National Laboratory over a period of ten years.

He is the author of over 90 papers on flow-induced vibrations, fluid-structure interaction, shipboard machinery monitoring and diagnostics, vibration damping, and underwater shock testing, analysis and design.

Prof. Shin has conducted series of lectures and consultancy in "ship shock response to underwater explosions" to Electric Boats Co. of General Dynamics, Newport News Shipbuilding Co., Bath Iron Works, NWSC-White Oaks, USC, TNO Research Center in Delft, Netherlands, Mitsubishi Shipbuilding Research Center in Nagasaki Japan, National University of Singapore, Seoul National University in Seoul, ADD Research Center in Daejeon and Chinhae, Korea, Korea Research Institute of Machinery and Metals, IZAR in Spain, and EAC in Norway.

He is a Fellow of American Society of Mechanical Engineers. He has developed and taught the course "Naval Ship Shock Design and Analysis" at the Naval Postgraduate School.

Course Objective

The purpose of this course is to provide engineers (1) modeling and simulation techniques of surface ship to compute the responses of ship structural system and components to underwater explosion, and (2) review of

Dynamic Design Analysis Method (DDAM) for shock qualification of shipboard equipment. 1-D, 2-D and 3-D demonstration models and ship-shock simulations are reviewed.

Course Overview

1ST DAY: TUESDAY

- UNDEX EXCITATION MECHANISMS
 - Sequence of Underwater Explosion Events
 - Hydrodynamic Relations
 - Underwater Acoustic Waves
 - Air-Water Interface
 - Shock Wave Parameters
 - Bubble Behavior and Bubble-Pulse Loading
 - Bulk and Local Cavitation
 - Fluid-structure Interaction

2ND DAY: WEDNESDAY

- SHIP-SHOCK SIMULATION APPROACHES
 - Coupled Lagrangian and Eulerian Approach
 - Coupled Finite/Boundary Element Approach
 - 3-D Coupled Ship and Fluid Model
- SHIP-SHOCK MODELING PROCEDURES
 - Hull and Bulkhead Modeling
 - Contained Fluid Modeling
 - Surrounding Fluid Modeling
 - Radiation Fluid Boundary Modeling
- SHIP-SHOCK MODELING AND SIMULATION
 - 1-Dimensional Model and Analysis
 - 2-Dimensional Model and Analysis
 - 3-Dimensional Model and Analysis
 - How to Handle Damping?
 - Resultant Response Evaluation
 - General Discussions on Ship-Shock Problems

3RD DAY: THURSDAY

- SHOCK QUALIFICATION OF SHIPBOARD EQUIPMENT BY DESIGN ANALYSIS
 - Shock Spectra
 - Normal Mode Analysis
 - Response of a Multi-DOF System to Shock Motion
- DYNAMIC DESIGN ANALYSIS WORKSHOP
 - Dynamic Design Analysis Method (DDAM)
 - DDAM Step-by-step Analysis Procedure
 - Design Criteria of Shipboard Equipment Using DDAM
- APPLICATION TO SHIPBOARD EQUIPMENT USING DESIGN ANALYSIS
 - Application Problem [1] - A Single DOF System
 - Application Problem [2] - Holddown Bolts Design
 - Application Problem [3] - Two DOF System

Application Problem [4] - Multi-DOF System

8. SHOCK, VIBRATION, IMPACT AND DROP TESTING (LANSMONT CORPORATION)

Testing Equipments and Instrumentations
Data Acquisition and Reduction
Case Studies
Demonstrations

Course Organization

REGISTRATION

Register in advance by using the attached registration form with check and money order. Early registration is suggested because enrollment is limited.

FEE

The following registration fee includes the cost of all sessions, coffee breaks, and the course notes.

\$ 1,200 --- if paid by 4 weeks before class starts

\$ 1,500 --- if paid after that date.

COURSE LOCATION

Lansmont Corporation
Ryan Ranch Research Park
17 Mandeville Court
Monterey, CA 93940

ACCOMMODATION

Comfort Inn
1200 Olmsted Road
Monterey, CA 93940
(831) 372-2945
[Comfort Inn Monterey Airport](#)

DAILY SCHEDULE

The lectures will start at 8:30 a.m. and end at 4:30 p.m.

FOR FURTHER INFORMATION, CONTACT:

Shock and Vibration Research
10150 Blue Larkspur Lane
Monterey, California 93940, USA
Phone/Fax (831) 375-4999
Cell Phone (831) 277-7117
email: yshin2004@sbcglobal.net

Registration Form

REGISTRATION FEE

The following registration fee includes the cost of all sessions, coffee breaks, and the course notes in electronic files.

\$ 1,200 --- if paid by 4 weeks before class starts.

\$ 1,500 --- if paid after that date.

Early registration is suggested because enrollment is limited.

You may send the same information by email.

Name: _____

Title/Position: _____

Company: _____

Address: _____

City: _____

State: _____ Zip: _____

Country: _____

Telephone: _____

Fax: _____

email: _____

Date: _____

Method of Payment:

Credit Card Payment – Contact Lansmont

Check to be mailed – Address below

Please make your check or money order payable to “Lansmont Corporation” and mail or email this completed form to:

Attn: Marie Calica – marie_calica@lansmont.com
(831) 655-6621

Lansmont Corporation
17 Mandeville Court
Monterey, CA 93940

Affirmation

Once your payment is received, a place will be reserved and receipt will be affirmed.

Cancellation Policy

Cancellation, with full refund of fee, will be honored if written notification is received no later than two weeks in advance. No refunds will be made once the course has commenced. Shock and Vibration Research reserves the right to cancel the course with full refund of fee in case of insufficient interest.