

**The Board of Directors and the Officers of the International Loran Association welcome you to the 35<sup>th</sup> Annual Convention and Technical Symposium of the organization!** This meeting marks the first time in the Groton-New London area; home to the USCG Academy. We know you will enjoy not only the meeting, but your stay in our 2006 convention city. Thank you for your interest in Loran and your support of the ILA.

**Registration and Fees:** If you have not yet paid your registration fees for the Convention, the GAUSS meeting, or guests attendance, please check in at the registration desk to complete these transactions.

**Meeting Proceedings:** ILA-35 Proceedings will be published on Compact Disk media only. The cost for the proceedings is included with the full registration to ILA-35; additional copies may be purchased separately. Check with the Registration Desk or the ILA Operations Center.

**ILA-35 Sponsors:** The Association gratefully acknowledges the sponsoring organizations and the individuals who contributed time and money toward this meeting.

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| Technical Chairman: Prof. Peter Swaszek | swaszek@ele.uri.edu                       |
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## International Loran Association 35<sup>th</sup> Annual Convention and Technical Symposium

October 23-25, 2006  
 Mystic Marriott Hotel and Spa  
 Groton, CT USA

*“2006 – The Year of Loran”*



Avery Point Lighthouse—Groton, Connecticut

## 35<sup>th</sup> Annual Convention and Technical Symposium Mystic Marriott, Groton, CT

### Sunday, October 22, 2006

#### 6:00 - 8:00 pm **Early-Arrival Reception**

At the Johnsons' home, 16 Elm Ave., Norwich, CT

*Turn left out of the Marriott. Turn left onto I-95 South. Take exit 84 for Rt 32 North. Stay straight on RT 32 North for a couple of miles. Take the right-hand entrance for I-395 North. Take exit 82 for Norwichtown. At the end of the exit ramp turn right onto West Town St. Go ½ mile to the stop sign; congregational church will be on your left. Go straight to next stop sign; Norwichtown Green will be on your right. Turn right onto Elm Ave. Number 16 is on the left towards the end (yellow house). Lost? Call 860-887-6064.*

### Monday, October 23, 2006

#### 9:00 am **GAUSS Standardization Committee Meeting**

*Mystic Salon A*

#### 1:00 pm **146<sup>th</sup> ILA Board of Directors Meeting**

*Mystic Salon A*

#### 4:00 – 5:30 pm\* **Registration/Information desk open**

#### 6:00 – 8:00 pm **Icebreaker Reception** – *Conference Room 7*

### Tuesday, October 24 – General Sessions

*All general sessions are in the Marriott Salon D*

#### 7:30 am **Informal Continental Breakfast**

#### 7:30 – 10:30 am\* **Registration/Information desk open**

#### 8:00 - 8:30 am **Welcome Remarks**

Gregory Johnson, Conference Chairman  
Peter Swaszek, Technical Chairman  
Langhorne Bond, ILA President

#### 8:30 - 10:00 am **Session 1 – Loran Status around the World**

Chair: Sherman Lo, Stanford University

***The eLoran Evaluation and Modernization Program - A Decade of Excellence,*** Mitchell Narins, US Federal Aviation Administration

***The GLA's Loran Programme and Current Status in Europe,*** Sally Basker, General Lighthouse Authority, and David Last, RIN President

***Update on FERNs,*** Tamotsu Ikeda, SENA, and Seung-Li Gug, Korea Maritime University  
***US Loran Modernization Update,*** CDR Christopher Nichols, USCG Loran Support Unit  
***Status of U.S. Loran Program and Policy,*** CDR John Merrill, USCG Headquarters  
***FY06 US Loran Performance Review,*** Lt Matthew Will, USCG NAVCEN West

#### 10:00 - 10:30 am **Morning Break**

#### 10:30 - 12:00 n **Session 2 – Loran in the GPS World**

Chair: James Carroll, Volpe National Transportation Systems Center

***Test Results of the e-Tracker – a New Modular and Flexible Loran-C based Goods Tracking System,*** Marc Clerens, ELSIS AG (presented by Peter Swaszek)

***Signals of Opportunity: Loran in the World's "Areas of Interest",*** Robert Lilley

***Genesis of Loran Augmented Satellite Navigation,*** John Herther, MITRE

***Comparing the Timing Capability of LORAN to Industrial Timing Requirements,*** Michael Lombardi, NIST

***TRI-NAV™ Integrating LORAN, GPS, INS, and Timing for a Total Navigation Solution,*** Gary Steimer and Stephen Smith, Oak Ridge National Laboratory

#### 12:00 - 1:30 pm **Lunch** – *Marriott Salon F*

Speaker: John Beukers, Past ILA President

#### 1:30 - 3:15 pm **Session 3 – Loran in Aviation**

Chair: Lt. David Lown, USCG Loran Support Unit

***Loran C Accuracy Considerations: Terminal Area and en Route,*** David Diggle, Ohio University, and Mitchell Narins, US Federal Aviation Administration

***Assessing Loran for RNP 1.0,*** Sherman Lo and Per Enge, Stanford University

***A Potential Role for eLoran in Aviation Surveillance,*** James Carroll, Volpe National Transportation Systems Center

***The Big Picture on ASFs: the Validity of Predicted ASFs over Long Distances,*** Ruslan Shalaev, Gregory Johnson, Alion Science & Technology, Peter Swaszek, University of Rhode Island, Capt Richard Hartnett, USCG Academy, and Christian Oates, Alion Science & Technology,

***Demonstrating the Integrity Loran Cycle Selection,*** Sherman Lo and Per Enge, Stanford University

#### 3:15 – 3:45 pm **Afternoon Break**

#### 3:45 – 5:30 pm **Session 4 – Loran for Harbor Entrance & Approach**

Chair: David Diggle, Ohio University

***Differential Loran Trials in Harwich Harbour,*** Gerard Offermans, Arthur Helwig, ReeElektronika, Paul Williams, Trinity House, and Wouter Pelgrum

***Methods for developing ASF grids for harbor entrance and approach,*** Peter Swaszek, University of Rhode Island, Gregory Johnson, Alion Science & Technology, and Cpt Richard Hartnett, USCG Academy

***High Precision Differential Loran – Tampa Bay Revisited,*** Wouter Pelgrum,  
***High Performance Evaluation of Loran as a DGPS Backup System in the HEA Domain Using a Target Level of Safety Criterion,*** Peter Morris, Stanford University

***The Loran Data Channel; Progress to Date and Future Plans,*** Benjamin Peterson and Ken Dykstra, Peterson Integrated Geopositioning

#### 7:00 – 9:00 pm **Reception, USCG Academy Alumni Center**

Museum open 6:00 - 9:00 pm

*Carpool Transportation; maps will be provided*

### Wednesday, October 25 – General Sessions

*All general sessions are in the Marriott Salon D*

#### 7:30 am **Informal Continental Breakfast**

#### 8:30 – 10:30 am\* **Registration/Information desk open**

\*The registration and Information desk will be open at the times indicated above. The desk may be open at other times also.

#### 8:00 -10:00 am **Session 5 – Noise and ASF Variation**

Chair: Kevin Bridges, US Federal Aviation Administration

***High-Voltage: P-static Test and Evaluation Facility at the FAA Technical Center,*** Robert Lilley, Aviation Management Associates, and Robert Erikson, W J Hughes FAA Technical Center

***LDAc: A Wideband Loran Data Acquisition System,*** Gregory Johnson, Alion Science & Technology

***Recent Ohio University LORAN-C Atmospheric Noise Flight Test Results,*** Curtis Cutright, Janet Blazyk, David Diggle, and Frank van Graas, Ohio University

***Evaluating Atmospheric Noise Mitigation Techniques,*** Lee Boyce, Stanford University

***Warping Time and Space: Spatial Correlation of ASF Temporal Variations,*** Michael Kuhn, Gregory Johnson, Alion Science & Technology, Peter Swaszek, University of Rhode Island, Capt Richard Hartnett, USCG Academy, and Mark Wiggins, Alion Science & Technology

***An Examination of Loran Signal Temporal Propagation Variations,*** Robert Wenzel, Booz Allen Hamilton, Peter Morris, Stanford University, and Lt Kirk Montgomery, USCG Navigation Center

#### 10:00 - 10:30 am **Morning Break**

#### 10:30 - 12:00 n **Session 6 – eLoran Applications**

Chair: Durk van Willigen, ReeElektronika

***Development and Implementation of the Loran TOA Measurement System,*** Wouter Pelgrum, David Diggle, Ohio University, and Arthur Helwig, ReeElektronika

***The State of Loran Data Channel (LDC) and Two Way Satellite Time/Frequency Transfer (TWSTFT) Research and Development,*** Lt Kevin Shmihluk, USCG Loran Support Unit

***LORADD UTC Timing and Frequency Trials,*** Arthur Helwig, Gerard Offermans, ReeElektronika, and Chris Farrow, Chronos

***Backup Strategies for Navigation and Surveillance,*** Gary Church, Michael Harrison, and Robert Lilley, Aviation Management Associates

#### 12:00 - 1:30 pm **Lunch** – *Mystic Salon F*

ILA Annual Membership Meeting – Langhorne Bond  
Service Awards – Bill Roland, ILA Awards Chair

#### 1:30 - 2:50 pm **Session 7 – Navigation Safety Panel**

Chair: Langhorne Bond, ILA President

Sally Basker, General Lighthouse Authority

Cpt Bill Brogdon, USCG retired

Earl Waesche, Legislative Director, National Boating Federation

Brad Wheeler, Marine Operations, International Registries

#### 2:50 – 3:20 pm **Afternoon Break**

#### 3:20 - 5:00 pm **Session 8 – Loran Markets and Policy**

Chair: Benjamin Peterson, Peterson Integrated Geopositioning

***ACO Summary Description and Analysis,*** Erik Johannessen, Megapulse  
***Integrated eLoran/GPS Receivers: An Overview of Markets and Commercialization,*** Zachariah Conover and Michael Leathem, CrossRate Technology

***Loran's Role in Future PAT,*** Erik Johannessen, Megapulse  
***An Update to Modernized Loran; LEMS/LICOS Requirements Project,*** Wayne Wawrzyniak, USCG Loran Support Unit

***Radionavigation – the only way to go?,*** Durk van Willigen, ReeElektronika

#### 5:00 – 6:00 pm **147<sup>th</sup> ILA Board of Directors Meeting** – *Conference Room 2*

#### 6:00 - 7:00 pm **Reception** – *Pre-Function Area*

#### 7:00 - **Banquet** – *Mystic Salons B & C*

*ILA Awards Presentation*

*Speaker: Don Treworgy, Director of the Mystic Seaport Planetarium*