



Loran Lines

April 1999

Newsletter of the International Loran Association

Volume 99-1

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Loran loop antenna eliminates "P-Static" interference on aircraft

AIRCRAFT USERS OF LORAN will enjoy significant improvement in signal quality when flying in precipitation using a newly developed magnetic loop antenna, according to tests recently completed at the Avionics Engineering Center, Ohio University. The tests sponsored

... significant improvement in signal quality ...

by the FAA were under the direction of ILA board member Dr. Robert Lilley of Illgen Simulation Technologies. Tests used antennas provided by Megapulse, Inc. and receivers from LOCUS, Inc. In the past, discharge of accumulated electric charges generated while flying in clouds or precipitation has been the cause of interference (so-called p-static) in loran receivers using the traditional whip (E-field) antenna.

The new low-profile antenna responds to the magnetic (H-field) component of the loran signal, and can be placed inside an aircraft avoiding certification requirements for aircraft modification. Using high-voltage tests configured by Assistant Center Director Dr. David Giggle and discharger manufacturer Robert Truax, extreme p-static conditions were simulated. Under conditions in which aviation-quality whip antennas suffered a serious reduction in observed signal-to-noise ratio (SNR) of over 25 db, loran signal reception using magnetic field antennas showed little or no degradation.

(Continued on page 3)

Hot off the internet ...

USCG posts request for response from industry interested in the production of Solid State Loran-C transmitters.

Details on page 2

National Boating Federation joins support for Loran-C

IN A RECENT LETTER to ILA president Linn Roth, Bill Michelson, president of the National Boating Federation (NBF), restated their wholehearted support for the continuation of Loran-C as an essential component of the navigation services provided by the Federal Government as follows:

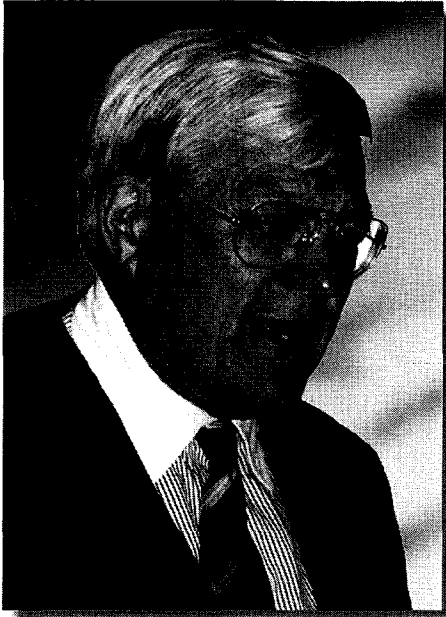
"The National Boating Federation has supported the continuation of the nation's Loran-C navigation system for many years and is pleased to join with other groups to help preserve this useful and potentially life-saving tool that is a major piece of safety equipment carried by enormous numbers of recreational boats in all waters. It continues to hold this position. The National Boating Federation is the country's largest recreational boating organization.

"We encourage the efforts of the International Loran Association to persuade the federal government to continue operating this valuable and serviceable system. We as recreational boaters recognize the pressures on various arms of the government to eliminate waste and reduce unnecessary spending, but we feel that to dismantle Loran-C would not only be an expensive undertaking but also wasteful in that a substitute secondary navigation system for the country would have to be developed and put into service.

(Continued on page 4)

Please note ILA's web site address:
<http://www.loran.org>
and new e-mail address: ila@loran.org

Langhorne Bond to receive ATCA award



LANGHORNE BOND, former FAA Administrator and currently ILA Board member, has been selected by the Board of Directors of the Air Traffic Controllers Association (ATCA) to receive the Glen A. Gilbert Award at its 44th Annual Convention in September 1999.

This award, created by ATCA, honors Glen A. Gilbert, one of the fathers of air traffic control, and is intended to recognize and honor individuals who have made significant contributions to aviation, especially in the field of Air Traffic Control. The trophy, inscribed with the names of recipients, is on permanent display at the Smithsonian National Air and Space Museum in Washington, D.C.

Mr. Bond has spent most of his career in aviation, including manufacturing, marketing, safety, airport development, and air traffic control operation. His recent policy papers on satellite navigation operations have enjoyed world-wide attention and stimulated a reconsideration of the safety and effectiveness of air navigation systems in the future. Bond has been a vigorous and articulate supporter of the inclusion of loran in a mixed system using ground-based and satellite signals, providing alternative backup facilities designed to ensure safety and increase international acceptance of Global Navigation Satellite Systems (GNSS) such as the U.S.-supported GPS, Russian GLONASS, and the proposed European system.

Speaking at the recent Phillips Business Information conference in Washington, D.C., Bond reminded the audience that satellite systems are vulnerable to natural and man-made interference and that national policy may dictate at some time the discontinuation of signal coverage either locally or on a global scale. These factors argue strongly for the provision of alternative backup navigation systems as part of a total navigation system package. ■

Loran Lines is an official publication of the International Loran Association (ILA).

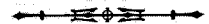
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The ILA encourages readers to submit material for publication. Any and all news related to loran and ILA members is welcome. Send information (with pictures, if possible) to either of the co-editors:

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1/6 page: \$100
Other rates on request.

Coast Guard requests info on loran transmitter construction and operation

An announcement by the U.S. Coast Guard was made on March 25, 1999 on the GAS Electronic Posting site soliciting response from industry in two areas:

(A) The production and installation of Solid State Loran-C transmitters. Approximately 11 to 13 transmitters may be required including organizational and depot-level spares.

(B) The assumption of round-the-clock responsibilities for USCG Loran-C facilities, electronic system maintenance, administration, logistics, and support.

In the description of the solicitation the following comment is of interest to readers of *Loran Lines*: "Although the Federal Navigation Plan (FRP) of 1994 announced the closure of Loran in the year 2000, the Coast Guard in concert with DOT and FAA is exploring options for the possible continuance of Loran to the year 2008."

Full text of this document can be obtained on the web site www.eps.gov under DOT U. S. Coast Guard, March 25, 1999. ■

Capt. James F. Culbertson USCG (ret) 1931 - 1998



the loran community. In 1993 he was awarded the Medal of Merit.

He was born May 15, 1931 in Girard, Pa. A graduate of the U.S. Coast Guard Academy Class of 1954, he received an Electronic Engineering Degree from the U.S. Navy Postgraduate School, and retired in 1984. He passed away on December 8, 1998 in Lompoc, Calif., where he was a member of the Village Country Club and an avid golfer. He is survived by his wife, JoAnne, and sons Gregory and Glen.

Some of Jim Culbertson's many assignments while in the USCG included: director for the U.S. Coastal Confluence Zone Loran-C Radionavigation Implementation Project including site selection, hardware design and procurement, antenna development, system integration, evaluation, and calibration. He was chief of the Electronics Engineering Division at U.S. Coast Guard Headquarters, Commanding Officer of the USCG Electronics Center, Wildwood, N.J., and Chief of Operations for the South California Coast Guard District, directing Coast Guard drug interdiction operations and federal law enforcement operations utilizing Loran-C to determine when vessels have crossed into U.S. waters.

JIM CULBERTSON was an active and effective member of the leadership team of the International Loran Association for many years. He served two terms on the Board of Directors: 1983-1986 and 1994-1997. He was vice president of ILA from 1986 to 1990 and President during 1990 and 1991. He was directly involved in the U.S. Coast Guard Loran-C program from the early '60s and was widely known throughout

After retirement in 1984, he joined Kaman Tempo as Senior Scientist concerned with a wide variety of communications and navigation systems, including the application of Loran-C to remotely piloted vehicles and the direction of computational studies and simulations of Loran-C receiver designs for the improvement of signal-to-noise ratio during acquisition, cycle selection and skywave rejection.

More recently Jim was associated as Senior Vice President with Coastwatch Inc., a maritime-oriented consulting firm specializing in government and private sector operations in the coastal zone. These efforts included project manager for a study for the Volpe National Transportation Systems Center (VNTSC) of navigation and traffic problems at selected U.S. ports, and participation in a VNTSC study on the availability of Loran-C stations as part of a project to evaluate and document the availability of navigation aids in the National Airspace System.

Jim will be remembered by his friends and associates for his major contributions to loran, for the breadth of his professionalism, and for the sense of commitment demonstrated in his achievements in so many areas. ■



Loop antenna eliminates "p-static" *(continued from Page 1)*

Under such conditions it is even possible to track most of the North American stations simultaneously using new linear averaging loran receiver technology. According to Lilley, "There is no longer the need to be concerned over loran use under instrument weather conditions. Loran will be there just when you need it."

For operation under visual flight rules (VFR), current loran users need not retrofit to the new antenna, since p-static does not occur in clear air. Effects of p-static can be mini-

mized in approved receivers through correct location and system maintenance. New installations of Loran-C or combined Loran-C/GPS avionics should take advantage of this new antenna technology to reduce or eliminate p-static.

In previous tests carried out under support by DARPA, loop antennas have been used in urban canyons and other difficult electromagnetic environments with excellent results. During the Ohio tests, magnetic loop antennas maintained navigation fixes while inside a closed steel hangar under severe simulated p-static conditions.

Illgen Simulation Technologies is a Goleta/Santa Barbara, California, firm specializing in software development and testing, navigation, and communications.

LOCUS Inc., based in Madison, Wisconsin, produces Linear Averaging Digital (LAD) receivers presently in use for critical timing and monitoring applications.

Megapulse, Loran-C transmitter manufacturer from Bedford, Massachusetts, is also active in receiver and antenna development. ■

Boating federation supports loran

(continued from Page 1)

"It is the understanding of the 20 organizations which make up the National Boating Federation that Loran-C is currently a workable navigation system boasting extraordinary repeatability and also has an extremely broad base of receivers installed in thousands if not millions of boats across the country. We further understand that Loran-C works well in conjunction with the Global Positioning System and further enhancements of the two system's compatibility can be implemented.

"We therefore urge members of Congress to do all in their power to assure the continuation, maintenance and development of Loran-C as a vital component of the country's navigational system."

The National Boating Federation is an organization that works at the federal level on the behalf of its 20 member organizations that together conservatively number two million boaters. It is made up entirely of volunteers and has no products to sell, relying entirely on membership dues and donations for its existence. It was organized in 1961 and continues to monitor federal legislation and rule making, alerting its members to potential detrimental proposals. It actively works to represent the interests of boaters at the national level. ■

The ILA headquarters has been advised of the death in the year past of several members of the loran community:

James Black, who was associated with Holbrook Industries, Inc.

Richard Hallonquist of British Columbia, Canada.

Millard Perry of Cumberland, Rhode Island.

Joseph Zyda, a life member of WGA/ILA, was with ITT in Carpinteria, California.

The National Boating Federation comprises the following members:

Chesapeake Bay Yacht Clubs Association
Florida Council of Yacht Clubs
United States Power Squadrons
Great Lakes Cruising Club
Inter-Lake Yachting Association
International Order of the Blue Gavel
Lake Michigan Yachting Association
Massachusetts Boating and Yacht Club Associations
Northwestern Boating Council
Oregon Federation of Boaters
Pacific Coast Yachting Association
Pacific Inter-Club Yacht Association
Pennsylvania Boating Association
Potomac River Yacht Club Association
United States Sailing Association
Recreational Boating Association of Washington
Greater Cleveland Boating Association.

Strong support still needed

RESPONDING TO the concerns of the user community that Loran-C continue to be supported, Congress acted in October 1998 to authorize funds for capital improvements to Loran-C. As Congress now turns to the federal budget, work still remains to sustain this initial momentum and ensure the appropriation and allocation of the necessary funds.

A sustained campaign by ILA, industry spokesmen, and other organizations such as NBF and AOPA have continued to advise the government agencies involved of

the concerns of those who use and need Loran-C and who consider it essential to future operation. This is a view that is supported by the Booz, Allen and Hamilton (BAH) report which declares that Loran-C should continue in place. In response to questions posed during recent hearings of the Senate Transportation Appropriations subcommittee by Senator Kohl of Wisconsin, who has supported ILA in this matter, Secretary of Transportation Slater stated that DOT does see a benefit in continuing loran and is presently reconsidering the program. In an interview last Fall FAA Administrator Garvey stated that Loran-C might be considered as a backup for satellite based navigation systems.

Loran pioneer **Stanley Pickarsky** passed away February 5, 1999. As an engineer with General Electric, Mr. Pickarski was involved in the building and testing of the original Loran-A system and the later implementation of Loran-C in the Pacific. Working in the Honolulu District 14 office of the USCG, he is remembered as a valued friend and colleague. ■

It is clear at this point that while substantial progress has been achieved, a strong effort by all concerned is still required to translate these expressions of "interest" or "consideration" into positive support—a support which ultimately translates into the allocation of funds for Loran-C. The need continues in the weeks and months ahead for a persistent, informed and articulate advocacy of Loran-C as an integral partner in the nation's position, timing and navigation. ■

Advance Notice & Call for Papers
ILA 28th Annual Convention and Technical Symposium
London, England

THE ROYAL INSTITUTE OF NAVIGATION will host the 1999 ILA Convention in London, England. The Convention and Technical Symposium ILA28/NAV99 will cover Loran-C as related to satellite navigation and services and include other systems that will provide a mix for the next century. John Beukers and Terje Jørgensen, ILA Board members, have agreed to co-chair this event which will take place from November 1 to 3, 1999. Meetings will be held in Church House, adjacent to historic Westminster Abbey, with a navigation exhibition at the same site. The

Technical Symposium will address Loran-C, satellite and other systems for the 21st Century. Session headings will include Radionavigation Policy, Terrestrial and Satellite Systems, Navigation with Communication Systems, Integration of Systems, Eurofix, Propagation and Interference, and Transmitter & Receiver Technology.

Abstracts of not more than 500 words should be submitted by 10 May 1999 to:

ILA Operations Center
741 Cathedral Pointe Lane
Santa Barbara, CA 93111 USA
e-mail: ila@loran.org

—or—

Royal Institute of Navigation
1 Kensington Gore
London, SW7 2AT, England
e-mail: conference@rin.org.uk

The working language will be English; it will be used for all printed material, presentations and discussions. The Conference Program and Registration Form will be published a few months before the event and will be sent to those who complete the proforma below. Proceedings will be distributed at the conference itself. Advanced notice and a call for papers and registration information are also available on the ILA website: <http://www.loran.org>

DEADLINES

Intending authors should note the following dates:

Receipt of synopsis	10 May 1999
Notification of provisional acceptance	7 June 1999
Receipt of paper for publication	4 Oct 1999

Copy this form, fill out the information and fax to 805-967-8471

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The Royal Institute of Navigation
1 Kensington Gore, London, SW7 2AT
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e-mail: conference@rin.org.uk

Yes / No - I wish to offer a contribution provisionally entitled:

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