



Loran Lines

October 1999

Newsletter of the International Loran Association

Volume 99-2

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Office of Management and Budget continues to block continuation of Loran-C

WHILE GAINING essential support in the Fall 1998 Congressional session approving funds specifically designated for Loran continuation and infrastructure upgrades, we have seen opposition to Loran within related agencies seeking to push their own budget agendas. This opposition has resulted in delays, missed deadlines, and a general unwillingness to make any public statement of support or to take appropriate positive action to confirm the future status of Loran.

In addition to widespread support from the user community, impartial technical and economic analyses have supported Loran and the need for it to continue as part of a terrestrial-satellite navigation mix. For over a year, inputs from Congress, from consultants commissioned specifically to evaluate the question, and from the public have failed to move the agencies responsible to final action. They continue to sequester the evidence at hand and to stall the issuance of a decision.

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ILA Convention in London Nov 1-3 1999

Loran-C, Satellite, and Integrated systems for the 21st Century

THE Royal Institute of Navigation and the International Loran Association have combined their individual annual conferences (NAV99 and ILA28) to provide an exciting and diverse forum on navigation as we enter the 21st Century. In a world where systems for global navigation and time dissemination will play a significant role in national economics, the theme of this conference, the mix of satellite and

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Photo courtesy National Air and Space Museum

Don Engen dies in Nevada air crash Director of Air and Space Museum was formerly Director of FAA

ADMIRAL DONALD D. ENGEN, 75, of Alexandria, Virginia, a distinguished naval aviator, died with his friend William Ivans July 13 when the Nimbus motor glider they were flying plunged to earth near Minden, Nevada, east of Lake Tahoe, from an altitude of over two miles. Ivans, 79, of Incline Village, Nevada, was a holder of many glider flight records and a legend in the soaring community. It was not clear from early reports who was at the controls. Admiral Engen has been described as a consummate aviator and public servant, a friend and supporter of general aviation. He will be missed by the entire aviation community. Engen's career and his record of continuing support for Loran-C during and after his tour of duty as FAA administrator are reported on page 4 of this issue of *Loran Lines*. ■

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

OMB delays Loran continuation

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The 1998 edition of the Federal Radio Navigation Plan (FRP) has been tangled in internal dissension and discussion. It has missed its 1998 deadline and shows every likelihood of not appearing until 2000.

In a effort to directly confront those responsible for this inactivity, ILA president Roth has written to the Director of the Office of Management and Budget reviewing in detail the events of recent months and urging immediate action to finalize the steps which have so far been made for the continuation of Loran. His letter is reprinted here on pages 5 and 6.

In view of the intransigence exhibited so far by the OMB and its apparent hostility in refusing to release economic and technical analyses favorable to the continuation of Loran, it is urgent that ILA members and others concerned with

navigation policy write or visit their Congressional representatives at once. Several years ago a previous ILA president called us to do battle against those who would unilaterally shut the system down. There was a significant and effective response, and some of the barricades were overcome. However, new obstacles have appeared and it is once more necessary to respond to a call for action.

Write to Congress: NOW

Direct your letters to the Honorable at the following addresses.

For the House:
United States House of Representatives
Washington DC 20515

For the Senate:
United States Senate
Washington DC 20510

Let your voice be heard, loud and clear. Urge the continuation of loran until at least 2008, with an upgrade of its infrastructure to

continue operations at reduced costs. Insist that in the face of the testimony, the evidence and the need, DOT be required to make a formal and unequivocal announcement of a policy supporting Loran in the USA. Include a copy of Linn's letter. It's an excellent summary of all aspects of the situation. You can obtain a full-size copy on ILA letterhead from Al Frost at (603) 862-1306 or albert.frost@unh.edu. Please encourage all your friends and colleagues to do so as well. ■

New members – ILA Board of Directors

Board of Directors (3 year terms)

- John Beukers
- David Last
- Nick Ward
- Erik Johannessen

President: Linn Roth (1 year term)

Appointed Directors (1 year term)

- Terje Jørgensen
- Jim Doherty
- Harold Chadsey

These changes will take effect at the London convention. ■

Bill Roland retires from Megapulse

AFTER SEVEN YEARS at the post, Bill Roland retired as President of Megapulse Inc., effective July 1, 1999. Bill has had a long history of active participation in Loran-C beginning with his assignment in 1963 to the U.S. Coast Guard Electronic Engineering Center. After work as system engineer for the Southeast Asia Chain, he was transferred to USCG Headquarters to begin the development of low cost receivers. In 1970 he became the USCG project manager for the development of solid state Loran-C transmitters which ultimately lead to the installation of many Megapulse transmitters in the US and overseas.

More recently he has been involved in Loran-C communications, timing, and synchronization issues. He has presented numerous papers at ILA, ION, and IAIN conventions. He will continue to be close to the action in Loran-C as a consultant with PVT Associates [Position Velocity Time]. While remaining in Massachusetts for the present, he and wife Ellena have plans to move to Panama City, Florida in the not too distant future. ■

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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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Current advertising rates for one year's insertions (usually four issues):

1/2 page: \$250
1/6 page: \$100
Other rates on request.

Carolina Beach off-air for five days in June 1999

Boat operators in area concerned by loss of Loran signal

BILL BROGDEN, Captain USCG (ret.), reports to *Loran Lines* that on 21 June 1999 the U.S. Coast Guard took the Carolina beach transmitter off-air for antenna repairs. This had been announced in the local *Notice to Mariners* but the outage took many by surprise.

Carolina Beach is the Z secondary for the Southeast U.S. Chain (7980) covering the area between Jupiter Beach and Cape Fear and is the Y secondary for the

Northeast U.S. Chain (9960) covering Cape Fear to Nantucket. While in some areas the transition of receivers to the Z secondary at Dana was routine, others had to manually switch to the Great Lakes chain and in some cases there was no coverage at all.

Many fishermen and divers know thousand of positions only by their accustomed TD values, and are unfamiliar with other station triads. Some large operators have developed data files of all TD combinations for locations of interest and Bill reports the VHF channels were busy with requests for obstacle TD values for the available stations.

This event shows once again the importance of Loran position data expressed as TDs to thousands of boat operators. Owners have a huge investment in their data bank of shoals, rocks, and wreck coordinates reliably expressed as Loran TDs. They also know they can return to a Loran position more accurately than a GPS position.

The tacit assumption by some is that users will want to switch to GPS as soon as possible. In fact, many users continue to rely on Loran and don't want to switch, since information comparable to the original data is not available from GPS. Consequently, Loran is their system of choice. ■

ILA Convention

(continued from page 1)

terrestrial systems, is most timely and appropriate.

The opening keynote addresses include reports on navigation systems from representatives from the USA, the UK, the International Lighthouse Authority (IALA), North-west Europe Loran System (NELS), the Far East Radio Navigation Systems (FERNS) and the Russian Chayka system.

The global breadth of the participation in the convention is reflected in the over thirty papers which will be presented during the meeting. Topics include:

- current and future Radio Navigation policies in countries represented at the conference
- new technical developments in receiver technology and design
- signal propagation
- Eurofix
- differential systems
- timing
- communications technology
- a look at proposed future systems.

This is sure to be a memorable meeting.

The 1999 convention, held in cooperation with the Royal Institute of Navigation, is almost upon us! We have posted the program (programme) on the ILA web page at www.loran.com. Note that we may be still working on the direct-display registration form as you receive this, but if you download and print the .pdf file you will get a copy of this form and can fax it back. Or look over the Royal Institute's web site at www.rin.org.uk and consider registering on-line! In either case, get registered! No, it's not inexpensive, but air fares drop before November, so that's in our favor. Thanks — see you there!

Bob Lilley rlilley@illgen.com

The initial high expectations for space-borne navigation systems have to some degree obscured the critical role of terrestrial systems. Experience has shown, however, that time and significant expenditures will be required to resolve some of the limitation found in present space systems. This conference will address the urgent need for a review of the most appropriate terrestrial/satellite mix, and explore the advantages that an integrated system can offer in the future.

With the Royal Institute of Navigation as host, the conference will be held in Church House near Westminster Abbey and the Houses of Parliament. The Thistle Victoria, on Buckingham Palace Road, London

has been selected for the Conference headquarters and for the Conference banquet. The full program of speakers and papers to be presented during the three-day conference together with full registration and booking information can be obtained from the sponsors:

ILA Operations Center
741 Cathedral Pointe Lane
Santa Barbara, CA 93111 USA
website <http://www.loran.org>

or

Royal Institute of Navigation
1 Kensington Gore
London, SW7, 2AT UK
website <http://www.rin.org.uk>

Admiral Donald D. Engen USN (ret.) 1924 – 1999

DURING his lifetime Admiral Engen made many lasting and significant contributions to aviation. He served as member of the National Transportation Safety Board and as director of the Federal Aviation Administration (FAA) 1984 – 1987. In 1996 he was selected to direct the National Air and Space Museum in Washington DC. He was Administrator of the FAA during the period that this agency was deeply involved in the application of Loran-C for en



Don Engen signs Loran-C approach

route, terminal and instrument approach navigation and guidance. The Loran community remembers Don as an experienced pilot and a strong advocate of a mix of navigation systems.

Born in Pomona, California, he had an ambition for a Navy flying career from early school days. Entering Pasadena Junior College in December 1941 he left to join the Navy's special flight training program for enlisted men. This was to be the first incident in a long and distinguished career in aviation. He served on the carrier USS Lexington and took part in the

campaign to liberate the Philippines. After a brief interval as a civilian test pilot he returned to the Navy and served on the USS Valley Forge during the Korean War, taking part in the first aerial strike over Pyongyang, North Korea. Later he served as commanding officer of the USS Kalmi, the USS America, and CO of Carrier Division 4. He was Deputy Commander of U.S. Naval Forces in Europe from 1973 to 1975 and of the U.S. Atlantic Fleet from 1976 to 1978. He retired in 1978 with the rank of Vice Admiral.

Under Admiral Engen's leadership the FAA launched the Loran-C Early Implementation Program in support of Loran-C use in the National Airspace System. After exhaustive studies and tests the FAA approved instrument approach procedures based on Loran-C.

On November 4, 1985 Don joined with Bill Polhemus and others who had been influential in bringing this effort to fruition participating in the initial flight under Loran-C into Bedford Mass., the first location to gain FAA approval of a Loran-C non precision approach.

In his role as Director of the Smithsonian National Air and Space Museum, Don was receptive to



Mike Moroney, Bill Polhemus, and Don Engen returning from the inaugural Loran-C approach

continued dialog with members of the International Loran Association. He encouraged the Association to continue its technical and educational contacts with government

officials so that critical decision could be made with full and accurate information.

Adm. Engen received many awards in his lifetime, among them the Society of Experimental Test Pilot's Doolittle Award for Technical Management (1984), the National Achievement in Aviation Award from the Aero Club of Washington (1988), and from the Soviet Union, the Yuri Gagarin Gold Air and Space Medal (1992) for his lifetime of work in aviation.

Don is survived by his wife Mary and their four children who request that donations be made in his memory to the Dulles Center. The aviation and navigation communities are diminished by Don Engen's passing and those who knew him feel an additional very personal loss.

Proceedings of the ILA 27 Symposium in October 1998 available

THE ILA Proceedings have been distributed to all who attended ILA27 last year in Danvers, Mass. This is a comprehensive report of a critically important meeting for ILA and for the future of Loran. In addition to a wide range of technical and policy papers, it includes the text of the Keynote Speech by Langhorn Bond, former FAA Administrator and ILA board member; the formal resolution that was crafted at the Convention regarding the future mix of systems for Position, Navigation and Timing; and a full report on the workshop on Eurofix. It is a compendium of activities of the society in 1998 and an essential reference for all who are concerned with the continuing need to gain Congressional and Government support for Loran.

Headquarters reports that a few copies remain at \$55 for members (\$65 for non members), including shipping costs. Contact ILA Operations Center, 741 Cathedral Pointe Lane, Santa Barbara CA 93111. ■

Working with DOT and OMB . . .

Renewed effort to persuade FAA to release Booz-Hamilton report

AT THE DIRECTION of Congress, DOT commissioned an independent report on Loran navigation by the consulting firm of Booz-Allen and Hamilton. The first report on the economic aspect of retaining Loran, submitted to the FAA in April 1998, in essence stated that continuing existing Loran services would save over US\$290 million. The second report, on the technical aspects of Loran as an alternative system to GPS, was completed in February, 1999. **Neither report has been released, despite repeated requests to do so by members of the user community.**

Recently ILA President Roth wrote Mr. Manuel Vega, product team lead for Navigation and Landing, an FAA division which includes Loran programs, asking that these reports, which are highly supportive to a continuation of Loran, be released. These independent and objective reports clearly confirm the significant value of Loran as a component of the satellite/terrestrial navigation mix of the future. Their release is needed to support the case of those advocating continued operation and system upgrades for Loran. ■

NBF urges members to support Loran funding

THE National Boating Federation (NBF), which continues to be strongly supportive of the continuation of Loran-C as an essential component of the navigation systems mix available to the boating community, has alerted its members to the serious delay in funding posed by the Office of Management and Budget (OMB). In the current issue of their newsletter *Lookout*, concern is expressed that OMB has reopened questions dealing with matters which had essentially been resolved at Congressional hearings and departmental meetings of DOT, FAA and USCG.

OMB has requested renewed justifications, even proposing partial shutdown of a Loran chain to reduce operating costs. These actions demonstrate a lack of understating of the nature of the system and its operation and ignore past supporting testimony by numerous user groups. NBF members are urged to let their Congressional delegation know their feelings in this matter and advise them that the continuance of Loran is a significant issue for boating safety. ■

DOT asked to formally announce continuation of Loran-C

IN A recent letter to Department of Transportation Secretary Rodney Slater, ILA President Linn Roth presented additional factors in support of a request for an immediate announcement by DOT that it would endorse Loran continuation.

He pointed out that in November, 1999 a joint symposium in London presented by ILA and the Royal Institute of Navigation will focus on

integrated terrestrial and satellite systems, and in March 2000 the German Institute of Navigation will sponsor an international symposium on the integration of Loran-C, Eurofix, and EGNOS/Galileo. In addition to this European activity, it is reported that China plans to develop a cellular phone system using Loran-C as its time reference.

The US participation and effectiveness at these and subsequent events requires that the DOT immediately reaffirm a positive Loran policy.

Participation by US companies in both the European and Asian markets for the creation and operation of Loran-related timing systems and combined GPS/Loran navigation systems will be severely handicapped or eliminated by shutting down the US Loran system. Beyond the demonstrated and documented present value of Loran as a part of a navigation system mix, there is a substantial economic value to a program of sustained support for the system as part of the global navigation and timing technology in the next century. ■

OMB asked to move ahead with Loran

The following is the text of Linn Roth's letter to OMB:

Mr. Jacob Lew
Director, Office of Management & Budget
Old Executive Office Building
17th and Pennsylvania Ave., NW
Washington, DC 20503

Dear Mr. Lew:

I am writing to express the International Loran Association's deepest concern with two major issues currently before the Department of Transportation (DOT): 1) the continuation and

upgrade of the Loran system; and 2) the development of a sound, cohesive national radionavigation policy involving the integration of the global positioning satellite (GPS) and Loran systems.

As you are aware, Congress, industry, and virtually every user community have vigorously and continuously supported Loran continuation since the proposed termination of Loran was unexpectedly advanced from 2015 to 2000. These user groups have included: Aircraft Owners and Pilots Association (AOPA), American Association of State Highway and Transportation Officials (AASHTO), BoatUS, National Marine Electronics Association

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Letter to OMB

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(NMEA), National Boating Federation (NBF), National Fisherman, National Association of State Aviation Officials (NASAO), International Navigation Association (INA), International Loran Association (ILA), Northwest European Loran System (NELS), Far East Radionavigation Service (FERNS), the European Union (EU), and the International Association of Lighthouse Authorities (IALA).

Thousands of individuals responded by signing Loran continuation petitions, which have been presented to the DOT. Motorola wrote directly to Secretary Slater, stressing the importance of Loran as a timing source in major telecommunication networks affecting millions of Americans. Representatives of the T1X1 telecommunication timing group also met with DOT officials in Washington to express their support for Loran.

Within the last two years, two Booz-Allen & Hamilton studies commissioned by the DOT and FAA have demonstrated the technical and economic advantages of Loran continuation. Moreover, the national GPS augmentation program – which provided the essential rationale for terminating Loran in 2000 – is years behind schedule and billions of dollars over budget projections used to cost justify the program. Most importantly, it is now abundantly clear that a national infrastructure totally dependent on a single radionavigation technology is not only prohibitively expensive and time consuming to develop, it is also fundamentally unsafe. Even if a sole-means GPS system is eventually developed, it is widely acknowledged that realistic implementation will take until 2015 or later.

Earlier this year, the DOT began exhibiting the leadership this national issue deserves. They recognized Loran was the only radionavigation system capable of supporting and complementing GPS in marine, aviation, terrestrial, and timing applications (i.e. the entire national infrastructure), and simultaneously was the most cost effective and least expensive system. Secretary Slater stated support for continuation of Loran in testimony before Congress and a DOT press announcement was prepared, but never released, indicating approximately \$100 Million would be

used to upgrade the Loran infrastructure and the system would operate until at least 2008. On June 18th, Secretary Slater sent letters to key members of Congress requesting additional funding to continue Loran upgrades.

In short, Loran continuation has been economically, technically, and politically justified repeatedly for several years by users groups, industry, independent studies, and Congress, and now the DOT has recognized Loran as a national asset and necessary GPS complement. Moreover, the economic, schedule, policy, and technical reasons formerly used to justify Loran termination have simply not held.

Now, on the eve of a Loran continuation announcement and a major step forward in the development of a cohesive, balanced national radionavigation policy, the Office of Management and Budget (OMB) has created new obstacles. The OMB has requested user groups and the DOT to revalidate their support and justify Loran continuation yet again. Furthermore, these obstacles (e.g. analysis of the impact of closure of the Northeast Loran-C chain) have been introduced with no apparent understanding of the technical operation of the Loran system, the extent of user community support, or the economic impact of such a technically unsound concept. It is also troubling that in response to letters from user groups raising these concerns, the OMB (see Mr. Schwartz' attached letter) has not addressed any of these issues, and completely ignored other obstacles OMB representatives have used to thwart DOT efforts to favorably resolve the matter.

As a result of OMB actions, the US public and industry remain understandably confused not only about national policy, but also the policy making process. Internationally, the FRP and US radionavigation policy are subject to open derision, and Europe is aggressively pursuing the Galileo satellite system and integrating Loran with GPS and other satellite systems (i.e. the Eurofix system for distribution of differential satellite corrections and external integrity messages using Loran). Indeed, the upcoming combined convention of the Royal Institute of Navigation (RIN) and the ILA is entitled "Loran-C, Satellite, and Integrated Systems for the 21st Century." In other words, the lack of US leadership is spawning GPS competi-

tors, and the US is now starting to cede its leadership position in international radionavigation. Since radionavigation systems will literally affect every US citizen in the future, and this multibillion dollar industry is growing rapidly, US inability to form national policy is particularly significant.

In the case of Loran, literally years have gone by with no Administration direction. Now, when a favorable policy decision has been made and reported in many press articles, the Administration and the OMB continue to delay final action. For whatever reasons, the OMB has been unwilling to show any positive, favorable leadership on this issue.

It is now imperative the OMB become more constructively involved in embracing Loran continuation and upgrades immediately, and in facilitating formulation of a realistic, cohesive national radionavigation policy. Such a policy would go beyond the needs of a particular department or agency and address national concerns for the safety, performance, and economic advantages provided by combining dissimilar systems such as GPS and Loran. That policy should also eliminate fundamental national vulnerabilities – such as those addressed in the Presidential Commission on Critical Infrastructure Protection in 1997 – inherent in sole dependence on a single, space-based technology.

I sincerely hope you will positively address these issues with the urgency they deserve. The domestic and international user and government communities, the navigation, telecommunication, and timing industries, and Congress, have waited years for definitive answers on Loran and coherent radionavigation policies that represent our national interests. The nation deserves, and the Administration must facilitate resolution of these critical issues. I respectfully ask you to provide that leadership immediately, and expedite cooperation with the DOT and finalization of Loran continuation.

Sincerely,

International Loran Association
G. Linn Roth, Ph.D.
President

cc: Senator Herb Kohl
Senator Russ Feingold
Representative Tammy Baldwin



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