



Loran Lines

The newsletter of the *International Loran Association*; the international loran radionavigation forum. (Formerly the *Wild Goose Association's* journal, *the Goose Gazette*)

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Volume 95-S, Special Edition, March, 1995

U.S. Department
of Transportation

United States
Coast Guard



Battle Stations!

Subject: LORAN-C SYSTEM TERMINATION

Date: 9 JAN 1995
16562

From: Chief of Staff

Reply to: G-CPA
Attn. of: CAPT Cross
7-2405

To: Chief, Office of Navigation Safety
and Waterway Services

Ref: (a) G-N (G-NRN) memo 16562 Ser: 95/20008 of 26 Oct 94

1. I share your concerns that ongoing discussions about terminating LORAN-C earlier than planned may have created uncertainty within the user community. However, I believe the best way to resolve this concern is to quickly provide users with our best estimate of when we expect to terminate the system.

2. Changing the 1994 Federal Radionavigation Plan (FRP) to show 2000 as the date for terminating LORAN-C will reduce user uncertainty, facilitate LORAN-C terminations, and has little risk for us or the users. Most importantly, it will facilitate termination by helping to reduce customer opposition. The strongest argument against terminating LORAN-C will be that users need more time to amortize their LORAN-C investment, and announcing our plans now to terminate the system in 2000 gives users maximum advance notice of our plan. Also, showing a 2000 LORAN-C termination date in the FRP will encourage the various bureaucracies to resolve the issue sooner, much as the MBS did for our internal debate. Finally, there is little risk as we can always delay termination if the opposition raises convincing arguments.

3. Conversely, I do not believe we would serve the public well by continuing to publish 2015 as the planned LORAN-C termination date when we believe the system will likely be terminated sooner. Delaying the announcement will give users less time to prepare for the inevitable termination of LORAN-C, give the bureaucracy reason to procrastinate in making a final decision, and do little to resolve customer uncertainty, as our discussions over when to terminate LORAN-C would continue. Moreover, we would be open to criticism for not changing the 1994 FRP given that we have little expectation that the system will be operated until 2015.

4. Reference (a) may have been overtaken by events. I understand that the Positioning & Radionavigation Executive Committee recently achieved a consensus view that the Year 2000 should be proposed as the date for planned termination of LORAN-C in the 1994 FRP. I also understand that the committee decided that neither the Department nor an operating agency should study the further application of LORAN-C as a complement to GPS. Please advise me if this information is incorrect.

5. In the interim, please continue to use 2000 as the Coast Guard's current plan for termination of LORAN-C service.

KENT H. WILLIAMS

The headline was appropriate for the last issue, and it is still appropriate. As you will see inside, we still have a "situation" here... Your International Loran Association has put together this collection of press reports to keep our members and contacts up to date on the Coast Guard's plans for an early shut-down of Loran-C and the related inconsistencies in the Federal Radionavigation Plan.

Please read these materials closely and, if you are so moved, write your senators and congressmen. The ILA Committee for a Balanced Radionavigation Policy has carried the matter to Loran-C's various constituencies, and it is now important to educate our elected representatives. You will note that Loran-C has the support of the full range of "alphabet groups" and user community segments. ILA expresses the thanks of its members for the statements issued by these aviation, marine, land navigation and precision timing users.

This material is presented to stimulate an open and public debate on the issue of Loran-C as a part of the future navigation mix. As a broader issue, the debate should include the degree to which the Federal Radionavigation Plan actually represents current U. S. policy. The materials presented here are either public documents, press releases or are reprints, with permission, from *Aviation Daily* (McGraw-Hill) or *CNS Outlook* (Technology Communications, Inc.). ILS extends thanks to the copyright holders and other information sources.

Please forgive the "scrapbook" format; we thought getting the word out was more important than being fancy. ILA and the more than one million Loran-C users around the world thank you for your attention and your support.

ILA has learned of the deaths of members Orvis E. Hubbell on November 29, 1994 and Martin F. Docker on June 10, 1994. The Association extends its sympathy to friends and family members.



Loran Lines

Formerly the Goose Gazette

Loran Lines is an official publication of the International Loran Association (ILA). This newsletter is published quarterly, with cutoff dates of 1 February for the Winter issue, 1 May for the Spring issue, 1 August for the Summer issue and 1 November for the Fall issue.

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The International Loran Association (ILA) consists of organizations and individuals who advocate the continued implementation and use of the LOng RAnge radio Navigation system Loran-C throughout the world.

Since its inception in 1972 as the Wild Goose Association, the ILA has followed the charter which states:

"The International Loran Association (formerly the Wild Goose Association) was formed to provide an organization for individuals who have a common interest in Loran and who wish to foster and preserve the art of Loran, to promote the exchange of ideas and information in the field of Loran, to recognize the advances and contributions to Loran, to document the history of Loran, and to commemorate fittingly the memory of its members."

While the Association's interest is loran and loran's development over the past 50 years, its current priority is the responsible implementation and use of Loran-C. In this context the ILA provides a technical forum for national and international loran related radionavigation issues.

In pursuing its advocacy role, the ILA acknowledges the presence of other long range or global radionavigation systems and recognizes that benefits accrue when these systems are used in concert.

The ILA supports the use of satellite systems, Omega or special purpose systems when employed within their technical limits. The Association is, however, opposed to, and will respond to pronouncements of "sole means" for a single system when these are detrimental to the orderly implementation of a mix of radionavigation systems.

The ILA is both technically and user oriented. In support of the User the Association advocates that all radionavigation systems for use by the civil sector have transmitted signal specifications and signal availability published in the Federal Register. Further the ILA advocates that dynamic notice of signal condition and availability are broadcast to users in a timely manner.

The ILA supports the position of the prudent navigator who requires the availability of more than one navigation system for navigating with integrity.

The ILA actively participates in the formulation of government radionavigation policy by providing comments and suggestions to the biennial U.S. government Federal Radionavigation Plan (FRP).

The ILA is sensitive to false and misleading claims of signal availability, performance and schedules for all long and medium range radionavigation systems and responds to such claims as appropriate.

The ILA recognizes that there is a substantial amount of development work to be completed with Loran-C as the system spreads to worldwide use and campaigns for the continued financial support of these activities.

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Loran-C

You Can Afford

L-NAV 25



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381 McGlincey Lane - Dept. A
Campbell, CA 95008 (408) 271-2888

Do you have any info on this receiver?
If so, please call Mr. George Jones,
Holley Mechanical, (803) 356-4822

AVIATION DAILY

Page 218

February 9, 1995

AOPA Against GPS As Sole Means Of Navigation

Although the Aircraft Owners and Pilots Association was among the early advocates of the Global Positioning System, FAA's push to establish the satellite system as a "sole means" of navigation, approach and landing is causing some nervousness among general aviation advocates. Douglas Helton, AOPA VP-regulatory policy, said yesterday that "we still want Loran-C despite GPS" until it is proven that GPS can meet the sole-means requirement. The problem is that FAA apparently has lined up with the Coast Guard in advocating early retirement of Loran-C despite government promises to phase it out gradually, over a 10-year period ending in 2015. "We have always had a multi-source navigation system," Helton said. "Airlines have their inertial navigation system, which we cannot afford, as a backup."

A decision for an early demise of Loran-C would affect more than just the 120,000 aviation users, Helton said. "We [aviation] are the minority by far" compared with other users, such as marine, he said. "A lot of naysayers in the technical community say that it is not a good idea at this point" to rely on GPS as a sole means, Helton said. "Both users and the technical community say we need a backup. FAA is the only one that will not acknowledge that at this point." The agency may have painted itself into a corner by promising Congress large savings with the use of GPS as a sole means of navigation, avoiding the cost of maintaining and replacing ground-based aids, another source said.

Just what position the government will take is expected to appear in DOT's already-late 1994 Federal Radionavigation Plan. An internal Coast Guard document obtained by The DAILY shows the Coast Guard does "not believe we would serve the public well by continuing to publish 2015 as the planned Loran-C termination date when we believe the system will likely be terminated sooner."

January 19, 1995

Mr. Heywood Shirer
U.S. Department of Transportation
400 7th St., S.W.
Washington, DC 20590



AIRCRAFT OWNERS AND PILOTS ASSOCIATION
421 Aviation Way • Frederick, MD 21701-4798
Telephone (301) 695-2000 • FAX (301) 695-2376

Dear Mr. Shirer:

I understand you will be meeting with the Federal Aviation Administration, the Coast Guard, and the Department of Defense this morning to review the draft 1995 Federal Radionavigation Plan (FRP). The Aircraft Owners and Pilots Association would like to reaffirm its support for Loran C.

The current draft of the FRP calls for a transition period beginning in 2005 and ending in 2010. The association is convinced the requirement exists for continued federal support of the LORAN C system consistent with this transition period, and believes the FRP should reflect this requirement.

AOPA encourages the Department of Transportation to make the necessary changes in the FRP to reflect the requirement for LORAN C through the year 2010.

Sincerely,

Douglas S. Helton
Vice President
Regulatory Policy

AOPA got the ball rolling...

AVIATION DAILY

February 14, 1995

Page 247

Loran-C Indecision Said To Reflect DOT Leadership Lapse

Lack of leadership at DOT as the agency develops intermodal agencies was blamed last week for indecision that has led to a lengthy delay in publishing the 1994 Federal Radionavigation Plan. The issue holding up the FRP is Coast Guard reluctance to continue its support of the Loran-C program through its 2015 phaseout date, and FAA's willingness to go along with the Coast Guard and bolster its own plan to make the Global Positioning System the sole source of navigation for aviators.

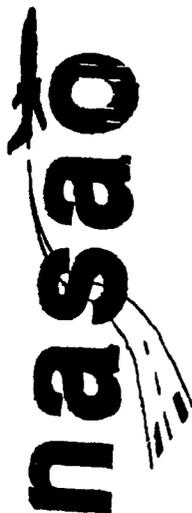
"It looks like it will be well into 1995 before the FRP will be published, and we are supposed to have a 1996 plan," said Steve Brown, senior VP-government and technical affairs for the Aircraft Owners and Pilots Association. The plan is supposed to be issued every two years, but "if we started working on the 1996 plan today, we would be lucky to get it out in 1996," Brown said. Loran-C is "probably the key area of indecision on DOT's part," he said. "Given the number of transportation users that have invested in Loran, it is unbelievable they are thinking of dumping the system before we have GPS up and with operating experience."

Brown said that while AOPA firmly believes in GPS as a sole means of navigation, the aviation community still needs a cost-effective backup capability initially, and most agree on a 10- to 15-year transition (DAILY, Feb. 10). "For us it is Loran," he said, "for the airlines it is their inertial navigation systems." Brown said that, "in theory, DOT exists to bring the Coast Guard and its other groups together and make a decision. Not only has it not done that, it could have done a much better job asking customers and users what the needs are."

DOT could have stepped in when the Coast Guard wanted to stop funding Loran, he said. "DOT has not been providing leadership to its own modes. It is far more cost-effective to commit to Loran as a backup rather than keeping VOR, DME, ILS and DBs. They are far more expensive systems to operate than Loran."

A RESOLUTION

**OF THE NATIONAL ASSOCIATION OF STATE AVIATION OFFICIALS
AT THEIR 63RD ANNUAL MEETING, SEPTEMBER 21, 1994
IN BISMARCK, NORTH DAKOTA**



WHEREAS, THE LORAN-C SYSTEM IS A PROVEN AND STABLE LAND-BASED NAVIGATION SYSTEM PROVIDING FULL COVERAGE FOR THE CONTERMINOUS UNITED STATES AND ADJACENT MARITIME AREA;

WHEREAS, THE LORAN-C SYSTEM STRUCTURE IS IN PLACE AND OFFERS THE MOST ECONOMICAL, EFFECTIVE, AND EFFICIENT MEANS OF COMPLEMENTING THE GLOBAL POSITIONING SYSTEM;

WHEREAS, OVER 40 PERCENT OF ALL GENERAL AVIATION AIRCRAFT CURRENTLY HAVE A LORAN-C RECEIVER WITH AN EXPECTED ECONOMIC LIFE EXTENDING WELL INTO THE 21ST CENTURY;

WHEREAS, THE PREMATURE SHUTDOWN OF THE LORAN-C NETWORK WILL HAVE A SIGNIFICANT ADVERSE ECONOMIC IMPACT ON AIRCRAFT OWNERS AND OPERATORS WHO CURRENTLY HAVE, AND REGULARLY USE, LORAN-C RECEIVERS;

AND WHEREAS, IT HAS BECOME EVIDENT IN RECENT MONTHS THAT THE U.S. COAST GUARD IS CONSIDERING THE TERMINATION OF FUNDING FOR THE LORAN-C SYSTEM AS EARLY AS 1996;

NOW, THEREFORE BE IT RESOLVED, THAT THE NATIONAL ASSOCIATION OF STATE AVIATION OFFICIALS DOES HEREBY URGE THE U.S. SECRETARY OF TRANSPORTATION AND THE CONGRESS OF THE UNITED STATES TO ENSURE THAT THE U.S. OPERATED LORAN-C NAVIGATION SYSTEM REMAINS IN PLACE UNTIL THE PROGRAMMED TERMINATION IN 2015.

**NASAO and AASHTO
joined in...**

As approved by mail ballot of the Board of Directors on February 7, 1995

N PR-20-95

TITLE: LORAN C SYSTEM CONTINUATION



WHEREAS, THE LORAN-C SYSTEM IS A PROVEN AND STABLE LAND-BASED NAVIGATION SYSTEM PROVIDING FULL COVERAGE FOR THE CONTERMINOUS UNITED STATES AND ADJACENT MARITIME AREA; AND

WHEREAS, THE LORAN-C SYSTEM STRUCTURE IS IN PLACE AND OFFERS THE MOST ECONOMICAL, EFFECTIVE, AND EFFICIENT MEANS OF COMPLEMENTING THE GLOBAL POSITIONING SYSTEM; AND

WHEREAS, OVER 40 PERCENT OF ALL GENERAL AVIATION AIRCRAFT CURRENTLY HAVE A LORAN-C RECEIVER WITH AN EXPECTED ECONOMIC LIFE EXTENDING WELL INTO THE 21ST CENTURY; AND

WHEREAS, THE PREMATURE SHUTDOWN OF THE LORAN-C NETWORK WILL HAVE A SIGNIFICANT ADVERSE ECONOMIC IMPACT ON AIRCRAFT OWNERS AND OPERATORS WHO CURRENTLY HAVE, AND REGULARLY USE, LORAN-C RECEIVERS; AND

AND WHEREAS, IT HAS BECOME EVIDENT IN RECENT MONTHS THAT THE U.S. COAST GUARD IS CONSIDERING THE TERMINATION OF FUNDING FOR THE LORAN-C SYSTEM AS EARLY AS 1996; AND

NOW, THEREFORE BE IT RESOLVED, THAT THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) DOES HEREBY URGE THE U.S. SECRETARY OF TRANSPORTATION AND THE CONGRESS OF THE UNITED STATES TO ENSURE THAT THE U.S. OPERATED LORAN-C NAVIGATION SYSTEM REMAINS IN PLACE UNTIL THE PROGRAMMED TERMINATION IN 2015.

**AVIATION
DAILY**

State Aviation, Highway Officials Want Loran To Continue

Alarmed by a lack of support for Loran C at DOT, state aviation and highway officials have approved resolutions calling on DOT to continue the navigation system until 2015. They and the Aircraft Owners and Pilots Association fear that the preoccupation of establishing the Global Positioning System as a sole-means system until GPS is proven is a mistake (DAILY, Feb. 14). The National Association of State Aviation Officials (NASAO) and the American Association of State Highway and Transportation Officials support continuing the Loran program. The Coast Guard, which is responsible for maintaining the Loran system, "has indicated an intent to terminate support for the system in the next few years," said NASAO President Gary Ness.

"Regardless of mode, state transportation officials across the country recognize the absolute necessity of retaining a proven and reliable navigation system," Ness said. Since 1984 NASAO has been a principal proponent of an enhanced Loran system because it "offers low-cost instrument approach capability to thousands of airports. In fact, an FAA/industry working group chaired by NASAO was effective in resolving many contentious issues over the past decade, including gaining closure of the mid-continent gap, industry agreement on charting specifications and pilot education," Ness said. For the past several years, NASAO has urged Loran retention as a complementary navigation system to GPS, he said. "Experts tell us that many difficult issues — some technical, some financial, some political, and some international — could impede the final delivery of a stand-alone GPS system. Until then, it would be foolish to dismantle Loran. Even then, we believe there is merit in discussing the use of Loran as a perfect, permanent backup system."



NATIONAL AIR
TRANSPORTATION
ASSOCIATION

4226 King Street
Alexandria, Virginia 22302
(703) 845-9000 FAX (703) 845-8176

March 7, 1995

The Honorable Howard Coble, Chairman
Subcommittee on Coast Guard and Maritime Transportation
Transportation and Infrastructure Committee
589 Ford House Office Building
U.S. House of Representatives
Washington, DC 20015

Dear Congressman Coble,

The National Air Transportation Association (NATA) represents the many aviation businesses and flight support companies (commonly called fixed base operators, or FBOs) that own, operate and service aircraft in this country. The nearly 2,000 NATA members are a vital link in the air transportation industry - providing necessary services to the airlines, general aviation, and the military. They serve the traveling public directly or indirectly by providing needed aeronautical services such as fuel sales, maintenance, aircraft and parts sales, aircraft storage, flight training, aircraft rental and on-demand aircraft charter services.

NATA is committed to the safe and efficient utilization of the United States transportation system. While focused on the National Airspace System, the Association has a specific concern that happens to encompass other forms of transport as well - roads and highways; boating and maritime commerce. It is for this reason that the Association supports the resolutions of the National Association of State Aviation Officials, the American Association of State Highway and Transportation Officials, and the petition of the Boat Owners Association of the United States to assure the continuation of the LORAN-C system until at least 2015 as originally called for in the U.S. Radionavigation Plan.

LORAN-C is an extremely cost effective ground-based system that is still used, and relied upon, by well over a million air-, surface- and water-borne vehicle operators, not to mention additional users like the telecommunications industry and even the National Weather Service. That number continues to grow in spite of the "preeminence" of the global positioning system (GPS). It is precisely for that reason - the dependency being placed on GPS - that LORAN-C must be retained as a backup. Maintaining LORAN-C would be very much in keeping with the long-standing U.S. navigation policy to require (and provide) secondary systems in the interests of safety, efficiency and promotion of commerce. I strongly urge you to do so.

Sincerely,

James K. Coyna
President

SERVING GENERAL AVIATION BUSINESS

**AVIATION
DAILY**

March 6, 1995

Boating Group Sides With Aviation Users Of Loran C

Boat Owners Association, with more than 500,000 members, is siding with aviation groups in an attempt to dissuade the Coast Guard from an early phase-out of the Loran-C program. The Aircraft Owners and Pilots Association and the National Association of State Aviation Officials earlier protested a Coast Guard plan to phase out Loran as in the year 2000 instead of 2015 as called for in the Federal Radionavigation Plan. The 1994 FRP is months behind schedule, leading industry officials to suspect Coast Guard reluctance to commit to continued funding of Loran C.

The boating group, representing recreational owners, said that "no other navigation system has so many vessel and aircraft operators depending upon it for their safety. An estimated 850,000 private citizens currently use Loran, and this number may be conservative. In 1993 alone, 90,000 Loran receivers were sold to consumers." The association also said the entire Loran system "provides service to millions of boaters, pilots and fishermen for only \$15 million a year. This pales in comparison with the billion-dollar-plus price tag for GPS."

While the Global Positioning System may eventually replace Loran, "it's not there yet," the association told the House subcommittee on Coast Guard and maritime transportation. "GPS does not have the reliable and extremely beneficial 10-meter repeatability of Loran," and consumers are "wary of GPS because it not only requires a more expensive receiver, but citizens know that the federal government degrades its own signal to about 300 meters accuracy" if they do not invest in a \$400-\$800 differential receiver.

Other groups concerned about early Loran phaseout include the American Association of State Highway and Transportation Officials, National Marine Electronics Association, National Fisherman, International Navigation Association, International Loran Association, Northwest European Loran Systems, Far East Radionavigation Service, European Union, International Association of Lighthouse Authorities and the Radionavigation Intergovernmental Council. There is some indication that FAA may be trying to set up a working group of aviation users, which it had committed to a couple years ago, to determine phasing and transition scheduled for various nav aids.

along with boaters
and the NATA...

February 23, 1995



Megapulse

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Bedford
Mass 01730-2380
(617) 275-2010
Telex 92-3358
MEG-BFRD
FAX (617) 275-4149

Chairman, Committee For A
Balanced Radionavigation Policy
c/o Locus, Inc.
1842 Hoffman Street
Madison, WI 53704

Dear Mr. Roth:

You have requested that I analyze the current status of the US portion of the world-wide Loran-C system, and develop a concept for upgrading the US sites to reduce operating costs, and meet the FAA requirements for integrity warnings to meet Non-Precision Approach (NPA) standards.

Megapulse is currently completing the delivery of seven transmitters and a control center to the Northwest Europe Loran service. This equipment has been developed to do for Northwest Europe exactly that which you propose for North America. Therefore, I believe this data is a sound basis for describing the technical changes, costs and savings from a like change in U.S. Loran-C operation.

The fundamental concept of unmanning Loran-C transmitting sites and retaining only a caretaker has been proved in the past fifteen years of operation in Canada (Port Hardy) and by the French Navy at the Lessay and Soustons sites for the past ten years. There is no doubt that the solid-state Loran transmitting equipment is sufficiently reliable, and t

The enclosure describes the costs and the estimated savings. The savings are tabulated here by year, assuming start in 1996. (1995 dollars)

...Megapulse showed that the economics can be even better (send for details!)...

The enclosure details the five major steps required to:

1. Replace tube-type transmitters to reduce man consumption, as well as improve reliability.
2. Upgrade existing solid-state transmitters to p requirements and lower switch maintenance cc
3. Consolidate Conus chain control operation at on in Alaska but consolidated with the maintenanc each site and two new control centers. This subs ISDN switched network services, reduces con the dedicated lines currently used.
4. Provide power line conditioning to reduce a m
5. Contract depot level support.

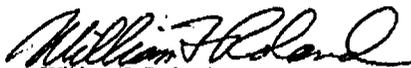
(,000) Year	Current Operating Cost	Current Personnel Count	Operating Cost W/Improvement	Improved Personnel Count	Capital Outlays
1995	17,000	232	17,000	232	0
1996	17,000	232	17,000	232	15,000
1997	17,000	232	16,000	212	15,000
1998	17,000	232	15,000	187	15,000
1999	17,000	232	13,000	163	15,000
2000	17,000	232	11,000	139	15,000
2001	17,000	232	7,500	114	0
2002	17,000	232	7,500	114	0
"	"	"	"	"	"
"	"	"	"	"	"
↓	↓	↓	↓	↓	↓
"	"	"	"	"	"
"	"	"	"	"	"
2015	17,000	232	7,500	114	0
\$340,000			\$201,500		\$75,000
SAVINGS:					\$64,000

Table 1. Annual costs for current Loran-C system and for improved system, showing savings over a 20-year operating period. (Thousands of dollars)

This is based on the quoted Coast Guard figure of \$17M/year operating and maintenance costs.

Should you have any further questions, please contact me at the above telephone.

Sincerely,


William F. Roland
President

**AVIATION
DAILY**

March 22, 1995

...AOPA took the
case to the FAA...

CNS Outlook Communications
Navigation &
Surveillance

The Newsletter of Policy and Technology for Aviation and Air Traffic Management
Washington, DC • April 15, 1995 • Volume 3, Number 4

AOPA criticizes FAA progress
- promised GPS approaches lag

AOPA Legislative Action, an affiliate of AOPA, has criticized the FAA for not aggressively pursuing key programs important to general aviation and others. Speaking before the House Appropriations Transportation Subcommittee on March 21, Steven J. Brown of AOPA suggested that the funding priorities for FAA's 1996 budget should include:

- accelerated commissioning of GPS approaches;
- procurement of the WAAS to increase GPS accuracy for precision approach;
- continued funding of LORAN-C;
- preserving DUATS and enhancing weather detection/dissemination capability.

Brown said FAA was already falling behind in implementing GPS, saying the program was "nowhere near" the goal of commissioning 500 new stand-alone GPS approaches by the end of 1995. "This effort has received neither sufficient management priority nor streamlined, automated methods of designing and certifying airspace procedures."

AOPA Chief Appeals To FAA To Reaffirm Need For Loran

Aircraft Owners and Pilots Association President Phil Boyer is appealing personally to FAA Administrator David Hinson that the agency reaffirm its support for funding of the Loran C navigation system. Boyer said early termination of Loran, as planned by the Coast Guard, "would cost aviation users a majority of their recent investment" and "increase reliance on VOR and NDB navigation at a time when everyone should be focusing on an eventual transition to a GPS/Loran-based system for general aviation," Boyer wrote Hinson. He said Loran, budgeted at \$17 million a year, costs little compared with the hundreds of millions of dollars a year spent on 1,039 VOR/VORTACs and 1,336 NDBs. Loran manufacturers are building Loran/GPS combination avionics, he noted, and AOPA sees Loran as a GPS backup in early years and a GPS complement later.

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AIRCRAFT OWNERS AND PILOTS ASSOCIATION
421 Aviation Way • Frederick, Maryland 21701-4798
Telephone (301) 695-2020 • FAX (301) 695-2375

Phil Boyer
President

March 14, 1995

Mr. David R. Hinson
Administrator
Federal Aviation Administration
AOA-1
800 Independence Avenue, SW
Washington, DC 20591

Dear Mr. ^{David}Hinson:

The Aircraft Owners and Pilots Association (AOPA) which represents 335,000 pilots would like to reaffirm its continued support for Loran C navigation services. There are approximately 120,000 installed Loran sets in use by the aviation community at the present time. However, you should recognize that there are over 1.3 million receivers in use in the United States of which aviation users represent only 12 percent of the total user base.

Recently, some navigation analysts within the government have proposed early termination of Loran C that would cost aviation users a majority of their recent investment. We believe this move would only serve to increase reliance on the current VOR and NDB navigation systems at a time when everyone in the aviation community should be focusing on an eventual transition to a GPS/Loran based system for general aviation.

AOPA views Loran as being a complementary system to be used in conjunction with GPS for cost-effective future navigation services. In fact, most Loran manufacturers are now manufacturing combination Loran/GPS avionics. Clearly, this is a way to improve reliable navigation signals to general aviation in lieu of GPS/INS systems which general aviation cannot afford while the airlines can. In addition, during the early transition to GPS services, Loran would provide a viable back-up to GPS in case of a GPS system outage or failure.

From a cost standpoint, Loran is a low cost navigation service in comparison to current systems such as NDBs and VORs. Loran's annual operation and maintenance cost is \$17 million, while the operation and maintenance cost of other systems is hundreds of million dollars annually.

For all of these reasons, AOPA requests that the Federal Aviation Administration (FAA) reaffirm its continued support of Loran C for the foreseeable future by endorsing continued funding for the system as reflected in the 1992 Federal Radio Navigation Plan.

AOPA requests your personal support to ensure that the 1994 Federal Radionavigation Plan reflects the same commitment.

Sincerely,

Phil Boyer

**AVIATION
DAILY**

March 16, 1995

Page 423

*...and NBAA joined in....**and the Coast Guard tried
hard to ignore the uprising...**FAA talked in March about
a still-unannounced policy.***Coast Guard Beats Back Users' Efforts To Keep Loran C**

The Coast Guard apparently is succeeding in its attempts to deflect keep-Loran-C efforts by hundreds of thousands of users of the system, and is continuing with its plan to terminate the program early. The Coast Guard's stance has been met with silence from FAA despite strong support for the Loran program expressed by the Aircraft Owners and Pilots Association, the National Business Aircraft Association and the National Association of State Aviation Officials. The Coast Guard position could spark opposition abroad next Monday, when its representative attends a meeting in Brussels of the European Commission director general for transport, called to consider expanding the use of Loran outside Western Europe. Previously, the Loran policy of the European Union, the Commonwealth of Independent States and the International Association of Lighthouse Authorities had followed the U.S. lead.

A Coast Guard official told The DAILY that the U.S. representative at the EU meeting will be a "technical observer," and that "we will not be offering any position per se." The Coast Guard's authority to operate Loran in Europe ended Dec. 31 with the conclusion of the Defense Department's mission, the official said. DOD had funded Loran in Europe and worldwide to support its ballistic missile submarine program, and the Coast Guard no longer has money to operate Loran overseas, he said. The EU is "attempting to position itself so it does not have to rely on the U.S. military GPS [Global Positioning System]."

A letter sent Dec. 7 by the Coast Guard commandant's office to the Coast Guard Navigation Center cites a Nov. 9 meeting of the DOT Position/Navigation Executive Committee at which it was decided to end Loran service in the U.S. also, by 2000 instead of 2015 as specified in the 1992 DOT Federal Radionavigation Plan. "We expect this decision to be published in the 1994 Federal Radionavigation Plan," the letter said. The FRP had pledged to give a 10-year notice of termination. The Coast Guard letter was signed by R.C. Houle, acting chief, Office of Navigation Safety and Waterway Services. "We need to focus our radionavigation (RA) research on the developing RA systems, GPS/DGPS," the letter said. This position falls in line with FAA policy of establishing GPS as a sole means of navigation, which FAA will present this month at ICAO headquarters in Montreal. FAA will push GPS as a replacement for the microwave landing system program.

Aviation users in the U.S. endorse GPS but want to keep Loran "until such time as a truly redundant and approved GNSS system is available, and airborne avionics systems have made a good penetration of the market place," National Business Aircraft Association President John Olcott said in a March 9 letter to Anthony Broderick, FAA associate administrator for regulation and certification. "More money can be saved by beginning to phase out the nation's numerous VORs, NDBs and ILSs which require a higher level of manpower and budget to support than the Loran C system," Olcott said. He noted that Loran also supports trucks, trains and boats, and "other applications utilize this very cost-efficient navigation service." If Loran is retained through 2015, it can "provide vital redundancies and ease the burden of the aviation industry's transition to GNSS [the Global Navigation Satellite System]," Olcott said.

Bellcore, which provides network synchronization support to many local telephone companies, including the seven "Baby Bells," told Frank Kruesi, DOT assistant secretary for transportation policy, that continued support for Loran by the Coast Guard is important. In a March 3 letter, Bellcore said network synchronization calls for "timing traceability to a highly accurate clock" called a primary reference source (PRS). Several technologies are being used for PRS, including cesium beam oscillators, GPS and Loran, he said. It would cost more than \$1 million for these companies to replace Loran with GPS receivers, and "technology diversity is considered valuable by our clients to provide for a more reliable timing source," Bellcore said.

At this morning's AOA staff meeting, the Administrator asked George and Tony Broderick to develop a plan on the LORAN-C issue in coordination with the Coast Guard. What triggered this discussion was an item in today's Aviation Daily on LORAN-C. Stated simply, the article says Coast Guard stands firm in fending off attempts by LORAN-C supporters to get the Coast Guard to revise its plans to terminate the LORAN-C early, in the year 2000 instead of 2015, as specified in an earlier DOT Federal Radionavigation Plan. The article goes on to say that the Coast Guard's stance "has been met with silence from the FAA." Actually, an agency policy is in development and should be ready for announcement fairly soon. You can bet that George will get questioned on the subject when he is in Phoenix tomorrow to participate on a panel at the FAA General Aviation Forecast conference. AOPA, NBAA, and NASAO are all strong supporters of LORAN-C as a backup to GPS until GPS can prove itself fully capable of providing sole means navigation through every phase of flight. Thus, they oppose the early termination date because they contend GPS will not have proven itself satisfactorily by that time.

AVIATION DAILY

Page 2 April 3, 1995

FAA Evaluating Ways Other Than Loran To Back Up GPS

FAA is evaluating different technologies as a backup system for the Global Positioning System (GPS), including Loran-C, but it does not expect to make a decision before the yearend, George Donohue, assistant administrator for research and acquisitions, said Friday in Washington. This means that the phaseout period for Loran will be reduced in the next Federal Radionavigation Plan from the year 2015 to the 2000 under plans by the Coast Guard, which operates Loran. Although several aviation industry groups have appealed to FAA to retain Loran as a backup until GPS has proved itself. Donohue said that Loran has not been approved for IFR operations and that "as we look at moving to GPS, we are concerned with a backup system. That is under review. Radar itself is a backup." Loran is a "potential backup. We want to find the lowest-cost, most reliable system, and we just do not know the answer yet," he said.

Donohue also said it could be costly to bring Loran up to, and operate it at, aviation standards. He said Loran has not been certified as IFR "because its reliability is questionable, especially in bad weather." FAA, he said, is looking at what other technologies might be used to back up GPS for general aviation. "Before we jump and make a decision, I want to look at all possibilities," Donohue said. "By the end of the calendar year, we should be able to make a decision" on the system to back up GPS, Donohue said.

While several aviation groups have appealed to FAA to keep Loran, Donohue noted that Loran is a Coast Guard responsibility. One source told The DAILY, however, that this means that the Coast Guard has made a "unilateral decision, without public debate or hearing and without congressional oversight, to turn off a major asset of the United States that affects millions of people, transportation safety, national security, communications and the national grid power distribution system."

The National Business Aircraft Association, apparently getting little response from FAA, has turned to Congress for help. NBAA President John Olcott wrote Rep. Frank Wolf, chairman of the House subcommittee on transportation, that "until such time as a truly redundant and approved satellite system is operating and avionics are widely available, Loran-C must be retained. There remain a number of crucial questions about GPS's integrity, accuracy and availability. Until these questions have been answered to the satisfaction of both the FAA and the user community, FAA has no choice but to limit the use of GPS by aircraft operating in the national airspace system." Olcott said that more than 100,000 GA aircraft are Loran-equipped. He said Loran "supports more than just the aviation industry — maritime, rail and trucking industries in addition to other applications utilize this cost-effective navigation service."

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...FAA spokesman made a mis-informed statement and was re-informed by many...



The Finest in Electronic Product Design and Production April 17, 1995

Hitachi Authorized Design Center Harris Authorized Design Representative

Dr. George Donohue Associate Administrator for Research & Acquisitions FAA 800 Independence Avenue, SW Washington, DC 20591

Dear Dr. Donohue:

I am writing because of your critical role in upcoming FAA studies to select a backup for GPS and your recent statements regarding Loran as reported in the April 3 Aviation Daily. As a Loran manufacturer and U.S. taxpayer, I have three major concerns:

First, Loran has been certified for enroute and in-terminal applications for many years, and Loran's performance is obviously satisfactory to over 100,000 general aviation users. Recent Loran endorsements by the AOPA, NASAO, NBAA, and NATA also indicate strong, widespread public support for this proven, cost-effective system.

Second, it is clear the FAA does not have accurate or contemporary information about Loran technology/performance, and I have included a brief update as an attachment. In regard to updating Loran technology, please note the government also has an obligation under Public Law 100-223 to implement Aviation Blink and improve master transmitter synchronization to 100 nS. Such steps are long overdue and would be a major benefit to existing and future users.

Finally, government officials should be acutely aware that public statements can have a drastic effect on products, markets, and businesses, and essentially create policy with no regard to user input or market demand. My company recently lost a major contract, plus one year's related preparation time and costs, because of government "rumors" about Loran's demise. This situation is grossly unfair to small businesses and does not serve public or FAA interests.

In conclusion, I hope the FAA will become sensitive to these issues prior to embarking on studies to select a GPS backup. These studies should use contemporary Loran technology to objectively evaluate the real economic and performance opportunities available in a GPS/Loran mix. Moreover, formulating our nation's radionavigation plans should include meaningful user input before government policies are finalized and publicized.

Sincerely,

[Signature]

G. Linn Roth, Ph.D. President

kl/enclosure: Loran Update

U.S. Loran-C Upgrade Prepared by Megapulse, Inc.

Concept

This program description is a statement of concept and budgetary cost estimates. It is intended to be implemented as a package over a three- to five-year period. The work at any one station would be completed during a single maintenance cycle, with the expectation that no more than seven days of air are required. The transmitters provided will be upgraded to Megapulse's current export specifications. When transmitters are replaced, one-half of the tube-type transmitter's current export reducing potential availability should the remaining half fail during the installation of the new transmitter. Upon completion of the solid-state transmitter installation, it is tested and then switched over to the transmitting antenna. The chain control system would be installed at the sites but not be center was completed. Sites with ISDN service may use receivers. Note that remotely operated timing receivers Personnel—Concept Concept Each of the 18 Co- minimum range of the ca-



AOPA LEGISLATIVE ACTION
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Congress Steps Into Fray Over Loran-C
Congress has entered the dispute over the Coast Guard's plan to discontinue funding of the Loran-C program despite protests from numerous user groups (DAILY, March 16). The House Coast Guard subcommittee ordered that DOT submit a report on the future use and funding of the Loran program. The report, which is due within six months of approval of the Coast Guard authorization act, will address an appropriate timetable for transition from ground-based radionavigation technology "after it is determined that satellite-based technology is available as a sole means of safe and efficient navigation." It also must address the "need to ensure that Loran-C technology purchased by the public before the year 2000 has a useful economic life."

The 1992 Federal Radionavigation Plan included use of Loran until the year 2015, but the Coast Guard could get some relief. The study also will address the "need for all agencies in the Department of Transportation and other relevant federal agencies to share the federal government's costs related to Loran-C technology."

Statement of Steven J. Brown
Senior Vice President
Government & Technical Affairs
AOPA Legislative Action

Before the
House Appropriations Committee
Subcommittee on Transportation & Related Agencies

The Honorable Frank R. Wolf, Chairman

Concerning FAA's FY'96 Budget Request

March 21, 1995

and the conclusion was
reached that Congress
was the next step...

LORAN C

We also want to emphasize the importance of continuing funding for the LORAN C system. LORAN is a cost effective complement to the GPS system. It is compatible with GPS and can easily serve as a back-up navigation technology in the event of early GPS system problems. It would be foolish and risky to place all our hopes immediately on GPS without a prudent back-up system. And since LORAN equipment is already installed in roughly 120,000 general aviation aircraft, LORAN is the logical choice.

We are concerned that the Coast Guard seems to be calling for early retirement of the LORAN system, despite previous government assurances that LORAN would be phased out gradually over a period ending in the year 2015. We assume the Coast Guard position on LORAN is motivated largely by the justified enthusiasm regarding the GPS system.

AOPA Legislative Action is among the most vocal advocates of an early transition to the Global Positioning System. But it will remain important to augment the GPS system until it can be satisfactorily established that GPS is reliable as a "sole means" of aeronautical navigation. This is consistent with the long-standing policy of the United States to maintain redundant systems to enhance aviation safety and efficiency in our national air transportation system. We agree with this policy.

The highly reliable LORAN system consists of an established infrastructure which serves 1.3 million users at an annual operations and maintenance cost of approximately \$17 million. Furthermore, the existing system infrastructure can be upgraded incrementally over a period of years for under \$10 million annually. In fact, if current tube-type transmitters which are in place at about half the locations in the country were replaced with solid state equipment, operations and maintenance costs could be reduced substantially. Civilian caretakers could replace Coast Guard personnel at these sites, making it possible to realize even greater cost reductions. Frankly, we believe that the cost of operating and maintaining the system could be cut by as much as half.

We urge the Committee to take steps to assure continued maintenance of LORAN as a logical system to augment GPS technology until the reliability of GPS as a sole means of navigation has been established. The Subcommittee should direct the Coast Guard, in cooperation with the Federal Aviation

AOPA LEGISLATIVE ACTION
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March 13, 1995

The Honorable Howard Coble
Chairman
Subcommittee on the Coast Guard
and Maritime Transportation
U.S. House of Representatives
Washington, D.C. 20515

We are writing to urge Subcommittee support for funding of the Loran-C navigation system until the compatibility of Loran and Global Positioning System technologies. Please accept this statement for the subcommittee hearings held on February 14 and 15, 1995. We are concerned that the Coast Guard is requesting that the Loran system be phased out by the year 2015, which would be a significant reduction in the year 2015. We are motivated in our action to support the Global Positioning System as a viable alternative to Loran-C.



The highly reliable and established infrastructure of the LORAN system is a complement to the GPS system, and serves as a reliable back-up navigational tool in the event of GPS system problems. The Association strongly urges the Committee to recognize the reliability of the LORAN C and ensure that funding is preserved for continued maintenance and upgrades throughout its gradual phase-out period ending in 2015. It is the Association's recommendation that the Coast Guard and FAA be directed to expedite implementation of the Automatic Blink System (ABS) and to provide resources to begin incremental upgrade of the LORAN system infrastructure by replacing old tube-type transmitters that are in use at about half of the U.S. transmitter sites and by replacing Coast Guard personnel with civilian caretakers. These steps can reduce the approximately \$17 million annual operations and maintenance costs by about half. Maintaining the use of the LORAN-C would be very much in keeping with the long-standing U.S. navigation policy to require (and provide) secondary systems in the interests of safety, efficiency, and promotion of commerce.

Testimony of

The Honorable James K. Coyne
 President, National Air Transportation Association
 4226 King Street
 Alexandria, Virginia 22302
 (703) 845-9000

International Loran Association



March 3, 1995

The Honorable James M. Inhofe
 United States Senate
 Washington, DC 20510

Dear Senator Inhofe:
 As a follow-up to my letter of February 24 I submitted for the hearing record in conjunction with BOAT/ILR, representing over 500,000 recreational organizations, previously included endorsements from AOPA and a number of major marine, aviation, and international organizations. As these letters attest, the continuation of Loran is not a budget issue, but an issue of national policy and safety. The IIA can count on your strong support for the continuation of this widely-used, cost-effective, and proven radionavigation system.

Sincerely,
 G. Lynn Roth, Ph.D.
 Chairman, Committee for a Balanced Radionavigation Policy
 Enclosures: BOAT/ILR and NASA OIG letter copies



1200 EIGHTEENTH ST., NW (202) 783-9000
 WASHINGTON, DC FAX (202) 331-4334
 20036-2596

March 30, 1995

The Honorable Frank R. Wolf
 Chairman
 Subcommittee on Transportation and Related Agencies
 2358 Rayburn House Office Building
 Washington, DC 20515

Dear Chairman Wolf:

The National Business Aircraft Association (NBAA) is very concerned about the possible elimination of funding for operation of the Loran-C navigation system beyond the year 2000. A large number of NBAA's 3,500 Member Companies, which operate more than 5,800 aircraft, utilize Loran-C equipped aircraft and are doing so on a daily basis. We encourage the Subcommittee to support additional steps to ensure the continued funding and upgrading of Loran-C within the United States.

NBAA strongly supports the continued funding of the Loran-C system. NBAA also supports and encourages efforts to bring the benefits of satellite navigation to the aviation community. However, during the transition from ground-based to space-borne navigation, flight operations safety is best assured by retaining provisions for both systems for a short time. The Loran-C and Global Positioning System (GPS) are highly compatible, complement each other well, and provide needed system redundancies. Typically, ground-based navigation systems are immune to the phenomena that can cause interference with space borne systems, and vice versa. Therefore, both systems deliver an unparalleled degree of safety and effectiveness that a sole-means satellite system cannot.

An important goal of the Federal Radionavigation Plan (FRP) is the provision for cost effective services to meet civil and military needs. The Federal government has a substantial investment in Loran-C and the system has more than 1.3 million users nationwide with an annual operating cost of only \$17 million. By incorporating upgrades, such as replacing tube-type transmitters with solid-state equipment, it will be possible to lower operating and maintenance costs.

Until such time as a truly redundant and approved satellite system is operating and avionics systems are widely available, Loran-C must be retained. There remain a number of crucial questions about GPS's integrity, accuracy and availability. Until these questions have been answered to the satisfaction of both the FAA and the user community, FAA has no choice but to limit the use of GPS by aircraft operating in the National Airspace System.

Finally, early de-commissioning of Loran-C makes very little economic or technical sense because:

1. The Loran-C system is presently in place, proven, and operating
2. Over 100,000 General Aviation, non-commuter aircraft are Loran-C equipped

STAY TUNED! There's a bit of progress overleaf, but Loran needs you! --->

12 Loran Lines

104TH CONGRESS
1ST SESSION

H. R. 1361

To authorize appropriations for fiscal year 1996 for the Coast Guard, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

MARCH 30, 1995

Mr. COBLE (for himself, Mr. TRAFICANT, Mr. SHUSTER, and Mr. MINETA) introduced the following bill; which was referred to the Committee on Transportation and Infrastructure

A BILL

To authorize appropriations for fiscal year 1996 for the Coast Guard, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 SECTION 1. SHORT TITLE.

4 This Act may be cited as the "Coast Guard Author-
5 ization Act For Fiscal Year 1996".

6 SEC. 2. TABLE OF CONTENTS.

7 The table of contents for this Act is as follows:

Sec. 1. Short title.
Sec. 2. Table of contents.

TITLE I—AUTHORIZATIONS

Sec. 101. Authorization of appropriations.

1 SEC. 415. REPORT ON LORAN-C REQUIREMENTS.

2 Not later than 6 months after the date of the enact-
3 ment of this Act, the Secretary of Transportation shall
4 submit a report to the Committee on Transportation and
5 Infrastructure of the House of Representatives, and the
6 Committee on Commerce, Science and Transportation of
7 the Senate, prepared in consultation with users of the
8 LORAN-C radionavigation system, defining the future
9 use of and funding for operations, maintenance, and up-
10 grades of the LORAN-C radionavigation system. The re-
11 port shall address the following:

12 (1) An appropriate timetable for transition
13 from ground-based radionavigation technology after
14 it is determined that satellite-based technology is
15 available as a sole means of safe and efficient navi-
16 gation.

17 (2) The need to ensure that LORAN-C tech-
18 nology purchased by the public before the year 2000
19 has a useful economic life.

20 (3) The benefits of fully utilizing the compat-
21 ibilities of LORAN-C technology and satellite-based
22 technology by all modes of transportation.

23 (4) The need for all agencies in the Department
24 of Transportation and other relevant Federal agen-
25 cies to share the Federal Government's costs related
26 to LORAN-C technology.

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