

# **International Loran Association**

## **27<sup>th</sup> Annual Convention and Technical Symposium**

### **October 11-15, 1998, Danvers, Massachusetts, USA**

#### **Summary**

Armed with the knowledge that the United States Department of Transportation had made the decision to continue the Loran-C radionavigation service beyond the published termination date of the year 2000, the participants at the International Loran Association's annual convention were enthusiastic to address revitalization of the Loran-C infrastructure and upgrading the service around the world.

Following formal opening of the convention, the Welcome Address was given by the outgoing President Capt. William Brogdon who noted with sadness the death of Bill Polhemus, a long-time member and good friend. In recognition of his many significant contributions to Loran-C and radionavigation in general, the President dedicated the convention to Bill Polhemus and asked that he be remembered during the days to come. Bill Brogdon continued by reviewing his two-year term as President and congratulating the consolidated effort by many organizations and individuals instrumental in getting the Loran termination date changed. He asked for DOT to make the official announcement of the continuation of Loran-C service without delay so that industry could respond with the new technology that was in the wings.

Robert David, Vice President of the National Boating Federation (NBF), a U.S. nationwide alliance of recreational boating organizations, noted that the NBF represented an estimated 2-3 million recreational boaters. He described the activities of the NBF and its legislative work with Congress which included delaying the proposed shut down of Loran. He stated: "the NBF believes Loran is a viable and economical navigational method for recreational and commercial vessels, and it should be maintained for the foreseeable future."

The keynote address was given by Langhorne Bond, past Administrator of the U.S. Federal Aviation Administration. He dealt with the safety issues of using a single radionavigation system and stated that the known vulnerabilities of GPS made the concept of sole-means GPS positioning and time dissemination a dead issue. He strongly supported an on-going mix of terrestrial and satellite systems saying that Loran had a significant and complementary role to play. In addressing the Federal Radionavigation Plan, Langhorne Bond suggested that the Department of Transportation should get this right or not publish it at all since its vacillations are damaging to the United States position as a leader in radionavigation policy.

The convention's first day was devoted to Radionavigation Plans and Policies. Rear Admiral James D. Hull of the United States Coast Guard was the lead speaker. As senior representative of the Department of Transportation, the participants eagerly awaited a

formal announcement from the Department of the change in Loran-C policy. This was not forthcoming but the Admiral was open and provided the explanation that the DOT decision and that of the Department of Commerce had been made and their decision had been passed on to the Office of the Management and Budget for signature. He stated that, once approved, the decision would be conveyed to Congress along with the mandated Loran-C report that had been prepared by Booz Allen & Hamilton. No firm date was given as to when this would take place. (*Informal conversations indicated that this might not take place until February 1999, ed.*)

Status of the 1998 Federal Radionavigation Plan (FRP) was discussed by Heywood Shirer from the U.S. Department of Transportation's Policy Office who indicated that there would probably be changes to the termination dates of terrestrial radionavigation systems. He added that the language for the 1998 FRP was under review, and it was hoped to have the document published by the end of the year.

Content of the Congressional mandated Loran-C Study was reviewed by Ron Davis of Booz Allen & Hamilton. The study indicated overwhelming user support for the continuation of the Loran-C service with a positive result from a cost/benefit analysis. The report has been submitted to the Department of Transportation and is waiting for concurrence before being submitted to Congress. No date was given as to when this would take place.

The position of the US Aircraft Owners and Pilots Association (AOPA) was given by Doug Helton who said that the trend is to accept GPS and its augmentations for sole-means navigation. However, he said: "until the systems are in place, operational and experienced, AOPA supported the continuation of Loran-C service." When questioned about a back up to GPS he commented: "We don't know for sure" but "Ditching loran makes no sense."

The debate over radionavigation policy has been taken up by Congress as reflected in the current DOT FY1999 appropriations bill. Larry Barnett provided the participants with the language in the bill and discussed the activities relevant to GPS, GPS augmentations and Loran-C that had taken place in Congress during the year. He noted that the DOT Bill was currently in the House and Senate Committee Conference and agreement was expected momentarily.

Luncheon speaker on the first day was John Kern, Vice President for Regulatory Compliance and Chief Safety Officer for Northwest Airlines. He described how a major airline looks at the national airspace system and discussed Northwest's current avionics equipment and plans for the future. He stated that one half of Northwest's fleet was INS equipped while none had either GPS or Loran-C. He further stated that no purchasing of new equipment would be done until it becomes clear what the future systems would be and whether their use would be cost effective. For now, he said: "Northwest is tied to the airway system or relied upon being vectored by radar," but he considered the future to be in free flight.

Session Chairman, John Beukers, introduced the continuation of the Plans and Policies Session by addressing radionavigation status in the Commonwealth of Independent States (CIS), the European Union (EU), International Maritime Organization (IMO), and the Far East Radionavigation System Loran-C/Chayka consortium (FERNS). He stated that, other than GLONASS updates from the Internavigation Office in Moscow, there had been no additional information relating to the CIS Radionavigation Plan. As to the EU, the response to requests for a speaker or a written update on EU activities suggested that there is significant planning activity but that it was not appropriate to discuss the actions being taken in open forum at this time. He noted that the FERNS consortium of China, Korea, Japan and Russia were holding its seventh session this week, and the agenda included a discussion to elevate the technical arrangement of the four countries to a political treaty. For activities within IMO, reference was made to the Resolution A.860 (20) "Maritime Policy for a Future Global Navigation Satellite System."

Activities within the International Association of Lighthouse Authorities (IALA) and the General Lighthouse Authorities (GLAs) were provided by Dr. Nick Ward, Chairman of the IALA Radionavigation Committee.

Representing the timing community was Cyrus Matin-nia from the Sprint Long Distance Company. He stated that along with AT&T and MCI, Sprint was concerned about sole dependency upon GPS for timing and was disappointed that the Booz Allen & Hamilton report did not include adequate representation of the timing communities' requirements for loran. (*In actual fact the timing community was consulted but after an initial response it withdrew from active dialogue. The reason given was the fear of divulging competitive information, ed.*) The recommendation was for the use of both Loran-C and GPS as complementary systems.

From Canada, Val Smith described the Loran-C Impact Assessment Study being conducted in Canada as a result of the United States announcement of the termination of Loran-C services in the year 2000. Recreational boaters, commercial users and professionals are being consulted. Since user fees are involved, commercial interests want Loran-C terminated immediately to avoid the fees. There followed a considerable amount of discussion regarding Canadian plans and policy now that the United States has changed its policy towards loran. The comment was made that *the shoe is on the other foot* now.

The status of the Northwest Loran-C System (NELS) and the plans for implementation of the wide area differential GPS augmentation Eurofix were presented by Terje Jorgensen of the NELS Coordinating Office. While the system is operational, he spoke of the need for building the loran infrastructure in Europe and the challenge of getting the EU to follow up on its commitment to loran as a component of the future mix of radionavigation systems.

The second day was essentially devoted to technology issues associated with new digital loran receivers, H-field antennas and combining loran with GPS to provide better coverage and integrity.

Addressing the banquet audience, Phil Boyer, President of the Aircraft Owners and Pilots Association, confirmed the need of the membership for the continuation of the Loran-C service and for a mix of systems in the future. The shortage of student pilots was the main theme of his speech in which he cited the decline in new general aviation aircraft as a major contributing factor. Mr. Boyer described the promotional campaign to enlist new students which AOPA believed, in the long run, would ease the critical shortage of airline pilots.

The following day, the United States Coast Guard gave a status report on current Congressionally-mandated loran projects and provided a glimpse as to what to expect with the next generation loran systems. This was supported by Bill Roland of Megapulse who described new timer technology for the integration of loran and GPS. A review of monitoring GPS, DGPS (beacon), DGPS (Eurofix) and Loran-C in the UK was provided by John Beukers. A selection of the results obtained from new Loran-C receiver technology were shown indicating reception of multiple chains and many more stations than has been possible with the older analog receivers.

The afternoon was devoted to topics of propagation and interference and was highlighted by a presentation from Joe Kunches of the NOAA Space Environment Center describing what has been seen so far in Solar Cycle 23 which is due to peak at the turn of the century.

Eurofix was the subject of the afternoon session with results provided by those at Delft University who have been developing the system. Similar results obtained during U.S. Coast Guard tests in the United States using the transmitter at Wildwood, NJ, were also presented. These results show that using Loran-C transmitters for communication GPS differential corrections a positional error of 3-5 meters over a wide area can be obtained at minimal expense. A workshop on Eurofix was held on the next and last day of the Convention.

A meeting was held at the conclusion of the convention to approve a resolution reflecting the participants' assessment of the current loran status and the desired actions to be taken by policy makers to ensure loran's position in the future mix of radionavigation systems.

At the ILA Board of Directors meeting held after the conference it was decided to hold the next convention in Europe with Paris, France being the most probable location.

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