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WILD GOOSE ASSOCIATION

P.O. Box 556
Bedford, MA 01730

NEWSLETTER

SPRING 84

ITEM - MAILING ADDRESS

The mailing address of the Wild Goose Association is:

The Wild Goose Association
P.O. Box 556
Bedford, MA 01730

ITEM - 13th ANNUAL WILD GOOSE ASSOCIATION

Technical Symposium is scheduled for October 30 through November 1, 1984. Location will be Boston, MA. The theme of this years' conference will be "The Expanding World of Loran-C." The first call for papers has been mailed. Categories associated with this years theme include:

- New chains or stations
- Forecasts of future trends
- Probable impacts of NAVSTAR GPS
- Use in Command and Control Systems
- Operational improvements
- User equipment enhancements.

Prepare your abstract soon and forward it to:

Roger W. Hassard
38 Beacon Hill Drive
Waterford, CT 06385 USA

Please provide all abstracts by June 8, 1984.

This years symposium will feature three outstanding speakers.

Walter Cronkite—former CBS News Anchorman, renowned journalist, and notable Loran-C user.

RADM Alfred P. Manning, Jr., USCG—Chief of the USCG Office of Command, Control, and Communications, who has played a key role in Loran-C both technically and administratively over the years.
RADM Theodore J. Wojnar, USCG—Chief of the USCG Office of Navigation.

ITEM - 12 ANNUAL WGA SYMPOSIUM

The 12th Annual Technical Symposium was deemed a huge success. The WGA membership greatly appreciates the contributions from Bob Schellhase (Convention Chairman), Dave Carter (Vice Chairman), Hal Sherman (Technical Chairman), Bob McKeown (Hospitality), LTJG Robin Orr (Administration), session chairmen, authors, and guest speakers. Congratulations from the membership is extended to each of you for providing an excellent symposium.

ITEM - AWARD NOMINATION FOR 1984

All members are invited to submit nominations for 1984 WGA awards to:

Awards Chairman
Robert L. Frank
30795 River Crossing
Birmingham, MI 48010
(313)645-9848

Please write or call Bob Frank with nominations as soon as possible.

ITEM - RETIREMENT CONGRATULATIONS

Retirement congratulations are extended to Jim Van Etten. Jim recently retired from the Avionics Division of ITT, Nutley, NJ. Jim's contributions to Loran-C over the years have been significant and impacted Loran-C expansion on a worldwide basis. Jim does plan to maintain an active role in the WGA for which we are all grateful. Again, congratulations Jim Van Etten.

ITEM - 1983 WGA AWARD RECIPIENTS

The Wild Goose Association, a professional organization of individuals and organizations having a common interest in Loran made awards at its twelfth annual technical symposium in Washington, DC, on October 13, 1983.

Medal of Merit to Michael Eaton, Head of the Navigation Group at the Bedford Institute of Oceanography, Dartmouth, Nova Scotia, for his work in hydrographic surveys using Loran-C in precision modes, and his testing, analysis, and planning assistance in the expansion of Loran-C in the Canadian area.

Best Paper Award to James R. McCullough, Woods Hole Oceanographic Institution, Barry J. Irwin, and Robert M. Bowles, U.S. Geological Survey, all in Woods Hole, MA, for "Loran-C Latitude-Longitude Conversion at Sea: Programming Considerations," presented at the 1982 WGA Technical Symposium. Service Awards to David A. Carter, JAYCOR, Inc., 1982 WGA Convention Chairman and David H. Amos, U.S. Coast Guard, 1982 WGA Technical Symposium Chairman.

Congratulations is extended from the entire WGA membership to all the above award recipients.

ITEM - IEEE SPECIAL ISSUE ON GLOBAL NAVIGATION

The October issue of the Proceedings of The Institute of Electrical and Electronics Engineering is a special issue devoted to Global Navigation.

Bob Frank produced an outstanding article entitled, "Current Developments in Loran-C" (Invited Paper), page 1127. For additional copies of the proceedings you should write to:

Proceedings of the IEEE
445 Hoes Lane
Picataway, NJ 08845
or phone the Managing Editor at (212)705-7560

Frank Brady, Executive Director of ION and a Life Fellow of the IEEE is Guest Editor of the issue. The activity was endorsed by The ION Council as a means of spreading navigational information to the larger segment of the scientific and engineering community represented by the IEEE. The Proceedings have a subscription list of over 45,000 members.

ITEM - NEW CHIEF USCG OFFICE OF NAVIGATION

Rear Admiral Theodore J. Wojnar, USCG, has been appointed Chief of the Coast Guard's Office of Navigation at Coast Guard Headquarters, Washington, DC. Rear Admiral Richard A. Bauman, USCG, former Chief of the Office of Navigation, has been reassigned as Commander, First Coast Guard District.

ITEM - RTCM TACKLES NEW GPS STANDARDS

At the request of The ION the Radio Technical Commission for Maritime Services will develop recommendations for transmitting differential corrections to users of GPS.

RTCM has established Special Committee No. 104 DIFFERENTIAL NAVSTAR/GPS SERVICE.

ITEM - SOVIET THREAT TO U.S. SPACE SYSTEMS

Recommend WGA members review a paper entitled, "The Soviet Threat to U.S. Space Systems-How Safe are U.S. Satellite-Based Navigation Systems?" authored by LCOL Culbertson and Major Ingelido. This paper appears in the ION Proceedings for the 39th Annual Meeting (June 20-23, 1983). Copies can be obtained from:

ION
815 15th Street, NW, Suite 832
Washington, DC 20005

ITEM - LORAN-C ARTICLE APPEARS IN "AIR PROGRESS," JULY 1983

An article entitled, "Choosing It and Using It" by Peter Lert focuses on a guide to selecting and using Loran-C airborne units.

ITEM - FINAL REPORT ON CIVIL USE OF THE NAVSTAR GLOBAL POSITIONING SYSTEM

This final report carried out under the auspices of the Command, Control, and Communications Committee, National Security Industrial Association (NSIA) has been produced. Results are contained in two volumes -- Volume 1 contains the text; Volume 2 contains the supporting charts and graphs. These can be obtained (both for \$50.00) from

NSIA
National Headquarters
1015 15th Street, NW, Suite 901
Washington, DC 20005
(202)393-3620

ITEM - WHAT IS THE WILD GOOSE ASSOCIATION?

The Wild Goose Association (WGA) is a professional organization of individuals and organizations having an interest in Loran (Long Range Navigation). It is named after the majestic birds that navigate thousands of miles with unerring accuracy. Organized in 1972, the WGA membership now includes hundreds of professional engineers, program managers, scientists, and operational personnel from all segments of government, industry, and the user community throughout the world, working for the advancement of Loran.

The aims and purposes of the Wild Goose Association are:

1. To foster and preserve the art of Loran;
2. To promote the exchange of ideas and information in the field of Loran;
3. To recognize the advances and contributions of Loran;
4. To document the history of Loran.

The official publications of the WGA are:

1. Radio Navigation Journal. The Journal is a compendium of current Association and Loran information and related topics. It is intended that the Journal will be updated and published annually, after the annual elections, to provide the membership with an annual report of the significant activities, accomplishments, and objectives of the Association. Further, the Journal provides a compendium of Loran information and reference data deemed of interest to the community at large. The 1983 Journal was recently published and mailed out.

2. Newsletter. The Newsletter is intended to provide the WGA membership with a means of frequent communications covering information pertinent to the activities of the Association, the Board of Directors, the individual members, and the Loran community at large. It is intended that the Newsletter will complement the Radio Navigation Journal and be published at quarterly intervals at a minimum and monthly intervals as a maximum.

3. WGA Proceedings. The Proceedings document the papers presented at the Technical Symposium of the Wild Goose Association Annual Convention held in October.

Membership: There are five classes of membership: regular, honorary, Life, associate, and corporate. Any individual organization that has an interest in the field of Loran is eligible for membership. Regular membership is \$15.00 for initiation fee and the first year's dues. Life memberships are available for \$100.00. Additional information may be obtained by contacting:

WILD GOOSE ASSOCIATION
P. O. Box 556
Bedford MA 01730

If a WGA member has any noteworthy Loran-C news, please forward a few one-liners to your Newsletter Editor at:

John D. Illgen
Kaman Tempo
816 State Street
Santa Barbara, CA 93102

or telephone it in to Sharon Garland at: (805)963-6460 or 963-6458.

ITEM - FORTIETH ANNUAL ION MEETING, CAMBRIDGE, MASSACHUSETTS

Theme for the ION meeting to be held in Cambridge, MA, is focused on the future role of navigation. For information contact:

Maurice J. Moroney
DOT/TSC
Kendall Square
Cambridge, MA 02138

ITEM - REPORTS RELEASED ON PANAMA CANAL FOG NAVIGATION STUDY

Frank MacKenzie and Edward Spitzer (DOT/TSC) recently published two reports directed on obtaining information on methods of predicting fog, of dispersing fog, and of providing navigation during fog. Contact Frank MacKenzie at U.S. DOT RSPA, Transportation Systems Center, Cambridge, MA 02142 for further information.

ITEM - LORAN-C RECONFIGURATION UPDATE

In the U.S. Coast Guard's Radionavigation Bulletin No. 12, published information appeared pertaining to the expansion of Loran-C coverage on the Canadian East Coast by the addition of a new Loran-C station at Fox Harbour, Labrador, Canada.

Below is an update list of events which have recently occurred.

1. On 1 June 1983, the Group Repetition Interval (GRI) of the North Atlantic (NORLANT) Loran-C Chain was changed as scheduled from 7930 to 9980. (Note: Although the rate changed, navigational charts with GRI 7930 Loran-C time difference overlays remain valid. The only change required to use this chain is to set your Loran-C receiver to a GRI of 99,800 microseconds instead of 79,300 microseconds.)
2. In early August 1983, two Loran-C stations: Fox Harbor, Labrador, Canada, and Angissoq, Greenland, went on air as scheduled for testing purposes only.
3. At 1630Z, 5 October 1983, Loran-C station Cape Race, located in Newfoundland, Canada, ceased transmissions on GRI 9980. At the same time, Cape Race commenced transmissions on the new Labrador Sea Chain, GRI 7930, for testing and certification purposes only.

The scheduled completion date for all changes was 2400Z on 31 December 1983. At that time, the Labrador Sea Chain (GRI 7930) and the Canadian East Coast Chain (GRI 5930) were operationally available for navigational purposes. Additionally, the name of the new North Atlantic Chain, GRI 9980 (formerly old GRI 7930) was changed to the Icelandic Chain, GRI 9980 with the following configuration:

<u>Designation</u>	<u>Station Location</u>
Master	Sandur, Iceland
Whiskey	Angissoq, Greenland
Xray	Ejde, Faeroe Islands, Denmark

ITEM - SAUDI ARABIA LORAN-C SYSTEM

Listed below are the transmitting and monitoring facilities for the Northern Saudi Arabian Loran-C Chain (GRI 8990). This information was obtained at the recent Wild Goose Association (WGA) conference held in Washington, DC. Information pertaining to the Southern Saudi Arabian Loran-C Chain (GRI 7190) will be released once the position of the Master station has

been certified. Currently, the Northern Chain is scheduled to be operational in mid-1984 and the Southern Chain operational in late 1984.

Additional information on the Saudi Arabian Loran-C System is available through the following address:

Mr. Vernon Johnson
 Engineering Avionics Division
 ITT Corporation
 500 Washington Avenue
 Nutley, NJ 07110

NORTHERN SAUDI ARABIAN LORAN-C CHAIN GRI 8990

(Note: This Loran-C Chain is privately built and is not operated or controlled by the U.S. Coast Guard.)

Designation	Station	Coordinates	Coding Delay (usec)	Baseline Length (usec)	Peak Power (KW)
Master	Afif	23°48'36.8"N 42°51'17.6"E			800
Victor	Salwa	24°50'01.5"N 50°34'12.0"E	11000	2641.09	800
Whiskey	Ar Ruqi	29°01'04.6"N 46°37'22.0"E	25000	2298.51	200
XRay	Ash Shaykh Humayd	28°09'15.9"N 34°45'40.0"E	40000	3145.53	400
Yankee	Al Lith	20°13'58.3"N 40°12'31.0"E	56000	1606.26	200
Zulu	Al Muwassam	16°25'55.9"N 42°48'04.3"E	69000	2726.94	800
Monitor	Jubail	27°19'36.4"N 49°28'30.7"E			
Monitor	Yanbu	24°04'14.1"N 38°02'35.9"E			
Monitor	Al Qunfuddah	19°08'48.3"N 14°03'40.7"E			

ASF

ITEM - LORAN-C CORRECTION TABLES

Revised editions of Loran-C Correction Tables (also referred to as ASF Correction Tables) for the Coastal Confluence Zone (CCZ) of the United States are now available. The edition date is 1983 and the tables include observed data in areas where past Coast Guard verification surveys were conducted. The tables are produced by the Defense Mapping Agency Hydrographic/Tropographic Center (DMAHTC) and are listed below:

<u>Publication Number</u>	<u>Chain/Rate</u>
LC PUB 2211100C	Canadian East Coast/5930
LC PUB 2211200C	Northeast U.S./9960
LC PUB 2211300C	Great Lakes/8907
LC PUB 2211400C	Southeast U.S./7980
LC PUB 2212100C	U.S. West Coast/9940
LC PUB 2212200C	Canadian West Coast/5990
LC PUB 2212300C	Gulf of Alaska/7960

Each publication covers an entire chain and costs \$6.00 per copy. Loran-C Correction Tables may be ordered through your local DMA distributor or through the Washington, DC office at the following address:

Defense Mapping Agency
Office of Distribution Services
Attn: DDCP
Washington, DC 20315
Telephone Number (202)227-2816

ITEM - GPS PROGRAM STATUS SUMMARY (Copied from NAVSTAR Newsletter)

2.1 Program Highlights

2.1.1 Space Segment: Navstar 9 is being prepared for launch on 21 February 1984. We plan to launch Navstar 9 into our 120-degree plane. This will give us three fully operational satellites in both of our 120° and 240° planes and will ensure four hours of satellite visibility each day in support of our user equipment test program. Our 28 satellite production program is proceeding very well. Negotiations for our 28 upper stage production program is proceeding very well. Negotiations for our 28 upper stage production contract will begin shortly with McDonnell Douglas/Huntington Beach. Schedule is being protected by our long lead contract.

2.1.2 Control Segment: Testing is progressing. While tests have identified the need for numerous hardware and software fixes that are being implemented, results achieved indicate that the current design approaches are basically sound. Planning for our user equipment production program is also underway. On 14 September 1983 the services approved our approach for this very large acquisition.

2.2 Program Funding

2.2.1 September concluded a very good year for the program. This was the year that saw the following:

- A significant commitment by the government and our contractors to the program.
- Award of our satellite production contract for 28 satellites — the largest satellite contract ever awarded.
- Start of our full-scale development user equipment test program. Preliminary test results from both contractors have been encouraging.
- Full operational capability of our Initial Control Segment and the partial completion of our world-wide Operational Control Segment.
- Award of the contract for the development of our Nuclear Detonation (NUDET) Detection System (NDS) terminal contract.
- Launch of Navstar 8 — our most successful launch to date. It also began the era of our NDS-equipped satellites.

2.2.2 Our program is fiscally sound. However, technical and programmatic challenges remain. These challenges include:

- Completing the launch of our RDT&E satellite constellation.
- Completing our satellite qualification test vehicle.
- Integrating an additional NDS sensor and survivability improvements.
- Managing the largest satellite and upper stage contracts ever undertaken. In addition, launching more satellites per year starting in late 1986 than has ever been attempted.
- Developing a world-wide command and control network.
- Developing and producing our NDS terminals.
- Completing the FSD phase and beginning the production phase of one of the largest user equipment programs ever undertaken by the DOD.

ITEM - LORAN INTERFERENCE REDUCED

Hardware modifications now being made by U.S. Navy in cooperation with USCG are aimed at correcting the potential of certain U.S. Navy LF stations to emit low-level radiation within 90-110 kHz when the transmitters need maintenance.

Newsletter Editor, John D. Illgen, Kaman Tempo, Santa Barbara, California.

GLORIA the GOOSE

by RICKY PASQUIER

