

Robert W. Lilley..... President
David C. Scull Vice President
Walter N. Dean Secretary
Carl S. Andren Treasurer
James F. Culbertson Past President
James O. Alexander
David H. Amos
John M. Beukers
Frank Cassidy
Laura G. Charron
Kjell O. Enerstad
Bruce E. Hensel
John D. Illgen
Henry E. Marx
Mark P. Morgenthaler
Maurice J. Moroney
William L. Polhemus

Wild Goose Association



The International Loran
Radionavigation Forum

Minutes of the 102nd Meeting of the Board of Directors.

1. Call to Order

The 102nd meeting of the Board of Directors was convened at 6:00 pm on 24 August, 1992, at the Copthorne Hotel, Birmingham, England, by President Robert Lilley.

2. Attendance, Proxies and Statement of Quorum

The following Board members were in attendance:

Bob Lilley, President
Dave Scull, Vice President
Jim Culbertson, Past President
Jim Alexander
John Beukers
Laura Charron
Kjell Enerstad
Bruce Hensel
John Illgen
Mike Moroney

3. Approval of Minutes

John Beukers moved to approve minutes of the 101st Board meeting, seconded by Bruce Hensel. Approved without changes.

4. Treasurer's Report

No report had been received from C. Andren, who was absent. Lilley would check for next meeting.

5. Executive Committee Report

A letter was prepared and sent to Europeans congratulating them on establishing an international agreement to implement and operate a North West Europe Loran-C chain. The countries included Denmark, France, Germany, Ireland, The Netherlands, and Norway. The agreement was signed in Oslo, Norway, August 6, 1992.

During the XCOM report, a lengthy discussion took place regarding the dissemination of accurate information to educate the Loran-C users. This point was emphasized by Enerstadt, Moroney, Culbertson and Alexander. It was agreed that education and information are key words. Some geographic sectors do not appreciate the merits of Loran-C. Kjell indicated "Loran-C is a living reality in USA, not in Europe". The European population needs education. Kjell offered to assist. Lilley expressed dismay over USA industry attitude.

Moroney emphasized the accurate education process. Discussion included the need to show how Loran-C can be used for transportation (taxi), boat owners, and many others. Again, education and reaching out to these groups was emphasized. Lilley and Moroney emphasized that a combination of Loran-C and GPS could show good results.

It was agreed by all that the WGA must educate the users, and promote Loran-C. Culbertson put further emphasis on the user, indicating that there is a lack of good user information. He concluded that the WGA needs to look at a broader user segment. Lilley indicated a continued effort is required by the WGA and "we must arm our members with information".

Scull reported he recently attended an RTCA working group meeting under SC 159 (GPS MOPS). Bob Anoll (SCT) requested assistance on this committee to work specs for signal-to-noise ratios and other signal parameters. Scull has linked Bob Anoll with Moroney to meet this need.

Alexander mentioned the problem of multiple languages regarding the Loran-C awareness of potential users.

Lilley concluded with the following:

- * Coordinate WGA effort and arm members with information
- * Get Journal out (priority education item)
- * Expand newsletter
- * Obtain supply of free copies of USCG Loran-C User Handbook

6. Standing Committee Reports

92 Convention - Beukers reported that the Convention passed the financial break-even point.

93 Convention - Move to 103rd BOD meeting

Special Committee Reports -

a) VTS RFP excluded systems other than GPS. Culbertson wrote letter to USCG. Reply indicated they consider GPS more cost effective than Loran-C.

BOD 102 p3

b) Scull wrote Coast Guard's Legal Office, requesting that the Hawaiian chain be reconfigured so it would be useful rather than closing it down. Coast Guard never replied, and call to Legal indicated the letter had no significant impact. AOPA may raise the issue.

Newly Elected Board Members Announced - Lilley plans to appoint 3 Board members in accordance with constitution.

103rd Meeting - 103rd BOD meeting scheduled for the close of the symposium.

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Wild Goose Association



*The International Loran
Radionavigation Forum*

WGA GENERAL MEETING 27 AUGUST, 1992

The meeting started at 0823, 27 August 1992 at the Copthorne Hotel, Birmingham, England. President Bob Lilley introduced the officers and members of the Board of directors present, plus Dave Olsen, Marty Shuey and Jim Van Etten. He then introduced the two newly elected directors, Ben Petersen, who was present, and Dale Johnson, who was not. Selected for special recognition was Kjell Enerstadt, who had played an important role in the approval of Loran-C in northern Europe.

The treasurer's report, just received by FAX, revealed that the Association is solvent, with retained earnings of 31,760 and current earnings of 12,584, due principally to the financial success of the conventions. The Association's total assets as of 26 August, 1992 were \$44,314.86.

It was announced that the WGA store - hats, t-shirts, etcetera, had just arrived, and would be open for business for anyone interested.

The WGA operations center, staffed by Ellen Lilley, is now functioning in Athens, Ohio.

There are plans for new WGA directory, the main obstacle being decisions as to just what information should be included in it. There are plans to publish a complete list of WGA awards and their recipients in the next issue of the Radionavigation Journal.

There has been a change of plans, and the 1993 convention will be in Santa Barbara, chaired by John Illgen. Bahar Uttam has volunteered to chair the 1994 convention in the Boston area.

Vladimir Denisov, head of the Russian delegation, spoke for some time. He said the development of the Chayka chains is continuing, with the Bering Strait chain becoming operational, and the others running experimentally. They are planning a magazine concerning their Chayka operations, and will distribute it widely. The next issue will have more technical detail and will be distributed to participants at this conference.

Board of Directors

Robert W. Lilley..... President
 David C. Scull Vice President
 Walter N. Dean..... Secretary
 Carl S. Andren..... Treasurer
 James F. Culbertson..... Past President
 James O. Alexander
 David H. Amos
 John M. Beukers
 Frank S. Cassidy
 Laura G. Charron
 Kjell O. Enerstad
 Bruce E. Hensel
 John D. Illgen X off end '92?
 Henry E. Marx
 Mark P. Morgenthaler
 Maurice J. Moroney
 William L. Polhemus X off end '92?

Wild Goose Association



The International Loran
 Radionavigation Forum

Date: July 1, 1992

From: Bruce Hensel, Chairman, Nominating and Election Committee

To: Walt Dean, WGA Secretary

Subj: Nominating and Election Committee Report

WGA ballots for the election of President and Directors were counted in Grand Rapids, MI on June 30, 1992 in accordance with Article IV, Section 5 of the Bylaws. Results are as follows:

President

James Alexander	47
Robert Lilley	113

Board of Directors

Carl Andren	96	re-el
Bill Brogdon	60	re-el
Frank Cassidy	89	el
Dale Johnson	83	
Bruce Hensel	75	Appt -
David Last	69	Appt -
Henry Marx	65	
Ben Peterson	85	el
Perry Campbell	1	
Jim Culbertson	1	
Bob Lilley	1	
Bill Roland	1	

Appointed '92
 Kjell Enerstad
 Bruce Hensel
 H. Marx

93
 Last
 Hensel

Illgen

Election results are certified by the following members of the Nominations and Elections Committee.

Bruce Hensel
 Bruce Hensel, chair

Steve Wilson
 Steve Wilson, member

Bob Chatlosh
 Bob Chatlosh, member

encl: WGA ballots

cc: Wild Goose Association, Inc.
 Candidates P.O. Box 556, Bedford, MA 01730, USA

Board of Directors

Robert W. Lilley..... President
David C. Soull..... Vice President
Walter N. Dean..... Secretary
Carl S. Andren..... Treasurer
James F. Culbertson..... Past President
James O. Alexander
David H. Amos
John M. Beukers
Frank S. Cassidy
Laura G. Charron
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Bruce E. Hensel
John D. Ilgen
Henry E. Marx
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Maurice J. Moroney
William L. Polhemus

Wild Goose Association



The International Loran
Radionavigation Forum

Date: May 14, 1992

From: Bruce Hensel, Chairman, Nominating and Election Committee

To: Bob Lilley, WGA President

Subj: Nominating and Election Committee Report

The Nominating and Election Committee submits the following nominations for the offices of President and Board of Directors for the 1992 election.

President

James Alexander
Robert Lilley

Board of Directors

Carl Andren
Bill Brogdon
Frank Cassidy
Dale Johnson
Bruce Hensel
David Last
Henry Marx
Ben Peterson

Please obtain the approval of the Board of Directors for these nominations as required by Section 4.c. of the association bylaws.

Approved by tel FAX 19 May '92
Wen

Board of Directors

James F. Culbertson President
 David C. Scull Vice President
 John M. Beukers Secretary
 Carl S. Andren Treasurer
 John D. Illgen Past President
 James O. Alexander
 Walter N. Dean
 Kjell O. Enerstad
 Leo F. Fehlner
 Vernon L. Johnson
 Robert W. Lilley
 Henry E. Marx
 Edward L. McGann
 Maurice J. Moroney
 William L. Polhemus
 James P. Van Etten
 Ron Wiener

Wild Goose Association



April 22, 1992

FOR INFO -
 R. LILLEY TO
 CONTACT
 J. DEL BALZO

TO: WGA Board of Directors
FROM: ED McGann
SUBJECT: DOT Sponsored Media Presentation on the
 Multi-modal Use of GPS

It has come to my attention that the DOT plans to host the more powerful media (TV - Press) elements in mid-May for a major presentation on the supposed multi-modal benefits of the GPS. This effort is said to involve FAA, USCG and the land transport groups of DOT. Gentle probing has not led to the DOT point of responsibility for this endeavor but Joe Doeffler at FAA and the GPS Industry Council have been intimated as being involved. Interestingly however this effort is not widely known in the navigation community although it is said to be part of the 26th Anniversary celebration of the founding of DOT.

One might ask why, at this time, have a unilateral promotion of GPS with its presently unofficial civilian status, few users and doubtful acceptance nationally and certainly internationally to the total disregard of other systems - Loran which has the largest multi-modal, nonmandated user community in the world, ILS/MLS which are officially recognized in the NAS plan and a variety of other systems for which various DOT entities can justifiably claim championships and positive demonstrated benefits.

Certainly it is good to show the populace that future potential navigation systems are under evaluation. However, the past decade has seen quite enough of the overoptimistic, unrealistic promulgation of GPS capabilities and availability to the commercial detriment of other presently available systems and with the attendant potential reduction in user safety.

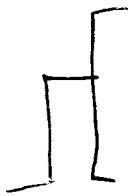
-2-

Therefore an unbalanced presentation of the GPS projected attributes at this time without the larger perspective of the effectiveness and utility of other existing and future position fixing navigation systems which could well be in the eventual mix of systems as prescribed by the Federal Radionavigation Plan (FRP) is simply another step in what has recently been an irresponsible "policy making" process.

Recommendation: If the WGA Board feels that a balanced presentation with advocacy of the broad spread of systems and issues is in order, I would encourage a strong effort to promote this view within DOT thereby preventing what could be a highly undesirable representation of U.S. navigation issues and policy as would be the case if DOT were to be seen as totally focused on GPS.

Footnote: As you will notice we have taken the step of including in Megapulse's standard FAX format the notification of the WGA Birmingham Conference. We encourage this action from all WGA members and friends and also the attachment of the colorful stickers to all relevant mailings. In truth it might better politically be said - especially abroad - that the eventual international mix may well be "Loran-GNSS" with GPS as the initial step along the satellite path but this distinction will be clear as events unfold toward and into the conference.

JACK HANE KLAU



Orchestrated by Pub Affairs

Demo of GPS app to modes —

→ Dick Stafford - 267-3444 w/c

5/22

Dorfler's Video tape
was OK —

CALL
DEF

from Ed McGann

Call Back

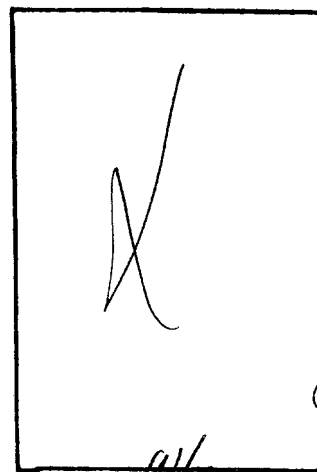
Phone Call

to RWL

Date 4/21/92 Time 11:28

Phone Number 617-275-2012

Subject _____



Seymour
(202) 961-2227
646

DOT
25th Anniv.
Talk to
Martin Marietta
media guy -
JACK HANDEKLAU
202-646-5391

w/c
→

Please Call. → Public Affairs of
Dick Stafford.

May 14 DOT Multimedia Extravag
GPS w/GPS

Note GNSS, not GPS - Da Balzo -

- Mix? not antiGPS - Loran -

LFRP Did play down present NAS

Person Taking Message

Why promote a non-certified system?

U

WILD GOOSE ASSOCIATION

102nd Meeting of the Board of Directors

Date: Monday, August 24, 1992
Time: 3:00 pm
Place: Copthorne Hotel, Birmingham, England
(Check bulletin boards for room)

Agenda

- | | | |
|----------|---|--------------|
| 1. | Call to Order | Lilley |
| 2. | Attendance, proxies and statement of quorum | Dean |
| 3. | Adoption of Minutes of 101st Board Meeting | Dean |
| WGA ✓ 4. | Secretary's Report | Dean |
| ✓ 5. | Treasurer's Report | Andren |
| ✓ 6. | Executive Committee Report | Lilley |
| 7. | Standing Committee Reports | |
| | Conventions: | |
| | 1992 | Beukers |
| | 1993 | Morgenthaler |
| | Election. ✓ | |
| 8. | Special Committee Reports | |
| 9. | Old Business | |
| 10. | New Business: | |
| 11. | Next Meeting Schedule | Dean |
| 12. | Adjourn | |

WILD GOOSE ASSOCIATION

103rd Meeting of the Board of Directors

Date: Thursday, August 27, 1992
Time: 5:30 pm
Place: Copthorne Hotel, Birmingham, England
(Check bulletin boards for room)

Agenda

- | | | |
|----|--|---------|
| 1. | Call to Order | Lilley |
| 2. | Attendance, proxies and statement of quorum | Dean |
| 3. | Introduction of New Board Members | Lilley |
| 4. | Standing Committee Reports
Conventions:
1992 | Beukers |
| 5. | Old Business | |
| 6. | New Business: | |
| 7. | Next Meeting Schedule | Dean |
| 8. | Adjourn | |

To: WGA Executive Committee

From: Robert Lilley, President



Date: July 15, 1992

Subj: Various matters for the Executive Committee

Foreword

These materials are being provided to Walt Dean for inclusion in the Board Meeting packet for the upcoming 102nd BOD meeting in Birmingham. This packet should be sent soon to all BOD members, so that we can get reports and comments in before we go to Birmingham.

Introduction

This package contains a variety of items, many of which are "news bits" for your review and comment if you wish. A few are of more immediate interest given that our August Convention and Technical Symposium is approaching.

News Items

The Beukers: After a short visit with John and Marilyn Beukers in Moreton-in-Marsh, UK during late June, I am happy to report that they seem comfortable and happy. The family homestead at East Ridge, Longborough, is a most pleasant Cotswald "cottage" (I'd call it more like a mini-estate!), in a lovely setting.

Convention: John reports we have reached his break-even point on pre-registration! He will be sending out a packet to each registrant soon, giving some information on transport, dress customs, etc. John will also send a report to Board members on convention administration and status.

Each of us needs to help John with exhibitor interest or hospitality sponsorship! The European market will be large, with new and growing Loran-C interest. It seems that manufacturers should be more interested than they are showing. If you have an opportunity:

Encourage participation in the exhibit. Failing this, encourage the manufacturer to contact John. If they want to send over some brochures and literature, along with a sponsorship for the hospitality suite, we will be sure their literature gets to the audience.

This is important! Please help! Thanks!

- Thanks to Laura and to USNO for the notice of the convention in their Bulletin for 27 May, 1992.

- To supplement previous publicity and to reinforce the manufacturer's message above, we sent out a hurry-up Goose Gazette with full convention registration materials plus some

hot news items.

- To give even more encouragement to those members who signed the interest-sheet at Williamsburg, the Operations Center sent follow-up mailings with convention materials plus a ball-point pen (Thanks, Mike!).

Vehicle Tracking Systems: The WGA has continued to encourage the Coast Guard to include Loran-C in its consideration for systems to support VTS in Prince William Sound and other locations. This continues activity pursued by Jim Culbertson as WGA President. So far, we have met with no success. Ideas?

Fish Expo: We were contacted to see if WGA would sponsor a booth at Fish Expo in Boston, October 15-17, 1992. I have not said "Yes" because these booths are EXPENSIVE! It seems to me that some of our corporate members might well be exhibiting, and that perhaps we could get them to include a literature rack for WGA with current Gazette copies plus membership applications ... ? What do you think?

Letter from D. W. Sweeney: Included for your information and comment; Henry Marx provided this copy.

Letter from a "former member:" For your information; this subject comes up at least once per year. Comments and suggestions are welcome.

Loran-C Quarterly: I have attached a copy of this newsletter, which is produced by the FAA Loran-C program office. The newsletter is certainly a good move, although the material is clearly dated in terms of current Loran-C activity worldwide.

Loran-C in Europe: I have attached a copy of an article sent by Jim Culbertson, which gives some good background on what is going on in Europe. For your info.

1993 Convention: Mark Morgenthauer and Tricia Tan have been working with Erika Faust to locate the right spot for this event. I sent a fax around last week to get your votes for San Francisco, and I appreciate your quick response.

This approval was needed so the San Francisco space could be tied down. At that time hotels in Reno had not responded to WGA's needs for October, 1993. I asked Tricia to keep trying Reno, even though we had Board approval for San Fran. Just today, I learned that Erika has found the Reno Hilton will be able to accommodate us for rates easily \$30 per night less than San Fran... At this point, I ask the Executive Committee's understanding and cooperation as we try to settle on an interesting site at a good price!

WGA Election: We received the report on the election from Bruce Hensel; a copy is attached for the record.

WILD GOOSE ASSOCIATION
Awards Committee

230 Rutgers Place
Nutley NJ 07110
July 11, 1992


To: Robert W. Lilley, President WGA
150 S. Plains Road
The Plains, Ohio 45780

Subject: Awards Committee Report

The Awards Committee in 1992 consisted of Frank Cassidy,
Vern Johnson, and Jim Van Etten, Chairman.

The attachment summarizes the awards to be presented at the 1992 Convention in Birmingham. The selections are by unanimous decision of the committee. While the Constitution and Bylaws only requires approval of the President's Award by the Board of Directors, it is suggested that the Board be made aware of all Awards as you deem appropriate. The citations shown are tentative and are being reworked as needed in the logistic process of preparing the certificates, trophies and plaques.

Your signature is required on the Citation Certificate for the Medal of Merit recipient. I will obtain that from you at the Convention.


J. P. Van Etten
Chairman, Awards Committee

Attachment: Wild Goose Association Awards -- 1992 (2pages)

cc Committee Members

WILD GOOSE ASSOCIATION -- AWARDS 1992

1992

MEDAL OF MERIT

NORMAN MATTHEWS

as Secretary General, International Association of Lighthouse Authorities. (IALA), for his dedicated efforts in fostering and coordinating Loran-C radionavigation policies of IALA member states throughout the world.

1992

PRESIDENT'S AWARD

ANDREAS STENTSETH

as Chairman of the Northwest Europe Loran-C Policy Group. Under his leadership Loran-C has been adopted for the European coastal waterways.

1992

PRESIDENT'S AWARD

KJELL ENERSTAD

as Secretary of the Northwest Europe Loran-C Policy Group. His thorough and hard work in support of member interests during negotiations contributed to the adoption of Loran-C for the European coastal waterways.

WILD GOOSE ASSOCIATION
BEST LORAN PAPER AWARD - 1992

Ionospheric Propagation & Loran-C Range
-- The sky's the Limit

DAVID LAST, RICHARD FARNWORTH AND MARK SEARLE

WILD GOOSE ASSOCIATION
BEST STUDENT PAPER AWARD - 1992

Weighted Spectrum Analysis in Loran-C Receivers

ANDRE NIEWLAND

OUTSTANDING SERVICE AWARDS

ELIJAH "ZEKE" JACKSON

as GENERAL CHAIRMAN OF THE 1991 CONVENTION

DAVID C. SCULL

as CHAIRMAN OF THE 1991 TECHNICAL SYMPOSIUM

DAVID L. OLSEN

as CO-CHAIRMAN OF THE 1991 TECHNICAL SYMPOSIUM

ROBERT L. FRANK

as AWARDS CHAIRMAN 1980-1991

ROBERT W. LILLEY

as EDITOR, WGA NEWSLETTER, THE GOOSE GAZETTE, 1989-1991

U.S. Department
of Transportation

United States
Coast Guard



Commandant
United States Coast Guard

Washington, DC 20593
Staff Symbol (102 & D)
Phone G-NRN
(202) 267-0283

16577
Ser: 92/57

Dr. Robert W. Lilley
President
Wild Goose Association
P. O. Box 556
Bedford, MA 01730

MAY 14 1992

Dear Dr. Lilley:

Rear Admiral Ecker has asked me to respond to your letter of April 20, 1992. Please understand that the Coast Guard's decision to use differential GPS (DGPS) vice differential Loran-C (DLC) as the precise positioning component of our dependent surveillance system in Prince William Sound, Alaska, was not done lightly. Although you may have heard otherwise, the decision to use DGPS was not mandated by the 1990 Oil Pollution Act.

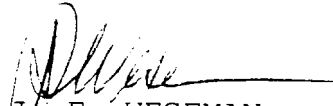
As Mr. Manko indicated in response to a prior, similar inquiry from the Wild Goose Association last August, the need to expedite implementing a dependent surveillance capability in Prince William Sound was a very important factor in the final decision to use DGPS. Use of DLC would have required some relatively long period of data collection to determine a "centerline" number for the DLC reference site. This type of effort is not necessary to implement DGPS. This extra effort would have delayed implementation beyond that mandated. Unfortunately, contracting difficulties have not allowed us to proceed as quickly as desired. This, of course, has been an unfortunate circumstance. Mr. Manko also correctly mentioned that the Coast Guard decision to use only one system versus two was based on minimizing cost to both the Government and the user.

Use of DGPS in Prince William Sound is also consistent with Coast Guard plans to install a nationwide DGPS, including Alaska, in the near future. Based on significant experience in developing and evaluating DLC in the 1980's, and more recently DGPS, the accuracy of DGPS (10 meters or less) versus DLC (approximately 20 meters) was also a significant factor in our decision. Although 20 meters is what is needed for dependent surveillance in Prince William Sound, there are other Coast Guard requirements that require greater accuracy. For example, the better than 10 meter DGPS accuracy will allow the Coast Guard to position and check other maritime aids to navigation much more efficiently and economically than at present.

I hope that my explanation of why the Coast Guard chose DGPS as the precise positioning component of the dependent surveillance capability in Prince William Sound is satisfactory. As Program Manager for Coast Guard-operated radionavigation systems, I sincerely believe the decision is based on sound logic, and is economically responsible.

I continue to appreciate the efforts of the Wild Goose Association in support of Loran-C, and look forward to continuing the excellent relationship we have enjoyed over these past many years. Please, keep up the good work.

Sincerely,

A handwritten signature in dark ink, appearing to read 'J. F. Weseman', with a horizontal line extending to the right.

J. F. WESEMAN
Captain, U.S. Coast Guard
Chief, Radionavigation Division
By direction of the Commandant

FAX MESSAGE

James F. Culbertson

15781 Exeter Street
Westminster, CA 92683

Tel: (714) 531-7974

Fax: (714) 531-5688

TO: Bob Lilley
FAX No: 614 593 1604

DATE: 26 May 1992

TIME: 11:30 AM

SUBJECT: Loran-C at VTS Valdez

=====

Dear Bob:

Latest USCG response dated 14 May 1992 to our objections to not considering Loran-C for the Valdez VTS has left me somewhere between fuming and exasperation!

The 5/14 response admits that 10m accuracy is not needed for Prince William Sound - then goes on to say that the Coast Guard has their own requirements for 10m accuracy thereby justifying a national DGPS system - this is pure bologna! The HHE requirements in the FRP for radio navigation accuracy cannot be substantiated - there is not a maritime pilot in the world who will say he needs 10's of meters navigation accuracy when piloting in harbors - and certainly this is not needed for approaches. The FRP numbers came right off the top of the head of a senior USCG officer when the first editions of the FRP were being drafted...and his accuracy statement was based upon what Loran-C (or DLC) would be capable of providing - NOT what was required for safe navigation!

Now I am hearing rumors that the USCG may have to go back on the street and readvertise for the DGPS for Valdez due to the terrible way this procurement has been handled and the outpouring of complaints and objections by industry. This will mean that three years after the Exxon Valdez spill there still is no dependent surveillance system for Valdez - and Loran-C has been there all along to provide 20m accuracy (without differential techniques, in all probability) with little additional cost to the taxpayer!

How in the world can the USCG continue to ignore this fact and who do we have to talk to bring this matter to the proper attention of someone who will do something about it!

One might think that the Loran-C receiver industry would be interested in exploiting things in Valdez. However, with all the time that has gone by, I am not aware of singular industry (except Megapulse) that has going on record concerning this issue. I suspect it is because most of them are off exploiting GPS and DGPS themselves and are more interested in pushing things in that direction than doing something realistic about the utilization of an existing national asset - Loran-C.

I feel quite confident that there is Loran-C hardware out there that could be brought to bear in Valdez quickly and easily to demonstrate the capability that already exists. At least this capability could be put to work until DGPS is a reality and there would be something being done **now** to track tankers in and out of Valdez!

Are there any industry members of WGA who would be willing to demonstrate the capability of Loran-C in and out of Valdez? If someone would come forward who is interested, I might be able to discuss installing a system on an Arco tanker. I am a personal friend of the president of Arco Marine and I am sure he would listen to a reasonable proposal.

I am in no position to take a leadership role in pursuing this matter - I think that it is up to the Loran-C industry to do so. This is certainly what the GPS industry is doing! If in fact no one is really interested in pursuing the Loran-C issue in Valdez (and with other VTS's being planned), then I guess the attitude WGA should take is that GPS is the way to go - and we had better be ready to change our name and charter!

Attached are a couple of articles. One from Federal Computer Weekly quoting Busey shows the direction DOT is going and the USCG is following this lead all the way.


Jim.

118 Dolphin Cove
Stamford, CT 06902
27 April 1992

*Henry Mark - 174
Christie Sharp & Daddalao*

Dear Senator Lieberman,

I am writing you about the Global Positioning System(GPS) currently being implemented by the Department of Defense(DOD). GPS is a satellite positioning system which will give you accurate positions in both latitude and longitude as well as in altitude.

GPS although still listed by DOD as not yet operational is already in use by many governmental and civilian groups. The applications of GPS seem to be far reaching for improvements in surveying, agriculture, aviation, navigation and transport.

One of the problems to its fuller utilization seems to be a feature of the system as designed by DOD called Selective Availability(SA). SA is designed to degrade the system so that positions are accurate to about the 100 meter range rather than the 10 meters or less for the system with SA off or with special receivers for DOD use only.

The DOD turned off SA during the Gulf War because they did not have sufficient receivers which could give them the full accuracy of GPS so they purchased thousands of commercial models to use through Desert Storm.

The DOD maintains that imposition of SA will prevent an enemy from using the system against us. Yet, the technology already exists and is being implemented to counter SA and give users the full benefit of GPS accuracy. This is called Differential GPS. It consists of a GPS receiver at a known position receiving the degraded GPS position and then broadcasting corrections so that nearby receivers can apply the corrections and thereby have full GPS accuracy. The US Coast Guard is already experimenting with such a modified system on eastern Long Island so that they can accurately place bouys and other navigational aids as well as allow their vessels accurate positioning.

The dilemma which seems to exist is that if countermeasures to SA exist and can be copied or used by any potential enemy, why does the DOD continue to cling to SA? Why do we have other parts of our Federal Government actively spending tax dollars to defeat SA? Must all or most civilian applications go to extra expense in design and manufacture to bypass SA so that they can benefit from the full accuracy of GPS?

I would appreciate your taking the time to more fully inform yourself about GPS and its benefits to everyone, and start asking your colleagues in Congress why the DOD should continue Selective Availability? Perhaps control of GPS, a truly national (and global) asset, should be given to some other agency so that all of GPS's benefits will be available all of the time to all of our citizens, as well as all of the peoples on Earth.

Sincerely,

Dura W. Sweeney

102/EC

Wild Goose Association, Inc.
c/o Bruce Hensel
PO Box 556
Bedford, MA 01730

June 10, 1992
7755 Hunters Run
Memphis, TN 38138

RE: Ballot w/ Notice that my dues are unpaid

Dear Bruce;

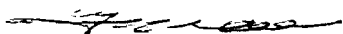
Please pass a copy of this letter to each member of the Board of Directors. From discussions with other members at two previous conventions, I am certain my situation is very similar to many other members/previous members.

I was fortunate to be able to attend the 1989 convention because my boss was anxious for me to learn all I could about Loran-C and because I informed him of a "Loran-C conference". However, when it came time to renew my membership, he refused to approve my request for reimbursement for "other than a professional organization". My new boss did approve reimbursement for my membership because I followed the suggestion of others and requested membership in the "International Loran Radionavigation Forum". Later, I learned this action could have cost me my job. My new boss has not approved my membership renewal or attendance at the 1992 convention because "it is obviously just a 'wild goose chase' (boisterous laughter)".

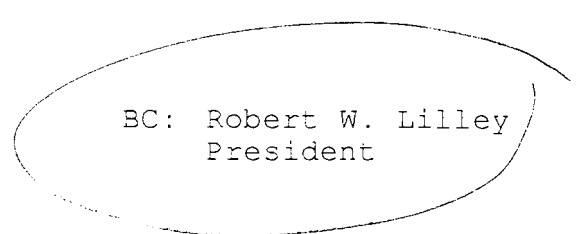
I pass on a suggestion I heard at the 1989 conference. I also offer a suggestion which may overcome the "extreme resistance by the oldtimers to any recommendation for change". The suggestion I heard was that the organization be given a more professional name. The suggestion I make to overcome "resistance by the oldtimers", is that we make The Wild Goose Association (WGA) the elite and honorary status that is attained only after years of membership and specific technical contributions to the Loran organization, which might even be renamed "The International Loran Radionavigation Forum". All present members of WGA who have been members for 5 years or longer would be grandfathered into the new honorary status of being designated a Wild Goose. Future limited membership would be earned.

I regret I will not be around to see all of you dedicated people continuing your efforts to preserve the art of Loran in such a skillful manner. I congratulate you for the tremendous benefit WGA has been to the navigation community. I believe the future existence of WGA (**ILRF**, or what ever you eventually call it) will be determined by your success in being able to recruit, motivate and retain professionals who are recognized and treated as such.

Respectfully submitted,



Former Member
7755 Hunters Run
Memphis, TN 38138



BC: Robert W. Lilley
President

Loran-C

Its Future in Europe

by Capt. E.E. Stoeger
and Lt. Cmdr. G.R. Westling
Updated by
Cmdr. W.J. Thrall

In the past, Loran-C has been a very successful system operated first for the United States military and later adopted for U.S. maritime civilian use. It's been in operation for more than 30 years, maintains an excellent triad (three-station) availability of better than 99.7 percent, and a predictable accuracy of one-quarter nautical mile, and a repeatable accuracy of between 18 and 90 meters, two drms, within the coverage area.

Loran-C is a land-based, hyperbolic radio-navigation system used throughout the world. It's owned and operated by a number of countries including Canada, France, the Republic of China, Saudi Arabia, the United States, and the Commonwealth of Independent States (the Russian chayka system is similar to Loran). Other countries building chains or recently on-line are India and Venezuela. These systems serve over 500,000 worldwide civilian maritime users, plus over 100,000 civilian aviation users.

Despite its obvious popularity, Loran-C has been overshadowed in recent years by the Global Positioning System (GPS). This inequity in attention is likely to continue as GPS is declared operational, although Loran is not going to disappear by any means. In the United States, according to the Radio Navigation Plan of 1990, "The Loran-C system is expected to continue in operation for the foreseeable future. This estimate is based on the adoption and use of this system by a very large user population, and the absence of any near-term prospect for its replacement." This is especially true in the United States where marine demand will continue to grow moderately while civil aviation and land use are expected to grow significantly over the next decade.

Other nations operating or planning Loran chains are also committed

to the future. Use throughout the world has been projected through the year 2015 and beyond. Loran-C offers countries not wishing to rely on satellite systems controlled by other country's governments a low cost, effective alternative. So why is the future of Loran-C in Europe in question? Overseas, the U.S. Coast Guard presently operates several Loran-C chains in support of Department of Defense missions: CENPAC north of Hawaii, NWPAC to the east of Japan, and in Europe, the Icelandic Sea, the Norwegian Sea, and MEDSEA chains. These chains are scheduled for closure or transfer by the end of 1994 when the Department of Defense requirement for Loran-C ceases.

U.S. COAST GUARD IN EUROPE

The involvement of the U.S. Coast Guard in operating Loran-C chains in Europe stems from mutual defense agreements of the late 1950s with the nations of Denmark, Norway, Iceland, and the Federal Republic of Germany in the north, and Italy, Spain, and Turkey in the south. The purpose of the European chains is to provide radio-navigation and timing capabilities to the Defense Department and NATO forces in the European theater.

The Coast Guard has operated and maintained three Loran-C chains in Europe for over 30 years. These are the Icelandic Sea, Norwegian Sea, and Mediterranean Sea chains. The stations in the north are crewed by host nationals under agreements between the United States and respective nations. Stations in the Mediterranean are manned by U.S. Coast Guard personnel and a few local civilians.

By the end of 1994, the Defense Department requirement for Loran-C will be supplanted by GPS. The U.S. Coast Guard involvement in European Loran systems will then cease. Recognizing the desirability of continuing the Loran system in northwest Europe, the Coast Guard and interested nations have been working on a system turnover arrangement for 10 years.

The Coast Guard will be out of European Loran-C on January 1, 1995. Stations will either be closed or their operation transferred to the respective host nations. This will be decided through bilateral negotiations between the Coast Guard and each affected nation.

THE FUTURE IN NORTHWEST EUROPE

The availability of Loran-C in northwest Europe after 1994 is critically dependent upon the cooperation and agreement of interested nations. The members of the Northwest European Policy Group (NEPG) — Norway, Iceland, Canada, Denmark, Germany, The Netherlands, France, Ireland, and the United Kingdom — banded together to foster Loran-C cooperation and formulate formal agreements on system operational control, coverage, and cost sharing. Progress was being made in developing a multinational agreement.

Then in 1991, the United Kingdom's minister of transport announced DECCA as the once and future U.K. system of choice, and the U.K. withdrew from the NEPG. Iceland then decided GPS would meet all their navigation needs and it too withdrew from the group. This left Canada as the only nation needing (and funding) Loran station Angissog. Therefore, Canada quit the NEPG.

The remaining countries continued to plan and cooperate in developing the needed agreement. Then in November 1991, the U.S. Department of Defense began adjusting the GPS Selective Availability (SA) to bounds in excess of the 100-meter accuracy advertised to civil users. The resulting 1,500-meter accuracy has caused Iceland to reconsider its position with regard to Loran-C. That may force them to rejoin the NEPG. The United Kingdom, now with a new minister of transport, may renounce its stand on DECCA and also ask to rejoin the NEPG.

This policy group has recommended time of transmission (TOT) control, which includes new stations and new equipment as well as most of the old

stations. Depending on which nations ultimately participate and the possible linkage with other systems, any of several variations of this configuration could occur.

Not surprisingly, the obstacles have proven to be in the areas of cost-sharing and nation participation. Agreement in principle among the members suffers further review in the approval process in the various nations' parliaments. Present Loran-C policy positions, in the authors' views, are summarized as follows:

1. Ireland and the U.K., with no stations now and poor coverage, originally agreed to participate in the new system. But in 1991, they decided to retain their DECCA system despite the single-source issue. Both Ireland and the Netherlands, also without any Loran-C stations or service and a history of DECCA use, will participate in the Loran-C program and cost-sharing.

2. Denmark hosts stations in Greenland and the Faroe Islands. They also operate DECCA, particularly for the Baltic side of the country. Denmark has agreed to participate as a member of the consortium, but their level of participation is limited.

3. Germany and Norway host stations and support continuation. Iceland has been an extensive user of Loran-C; its fishing industry is a strong economic and political force that initially backed Loran-C, then shifted its allegiance to GPS only to find GPS not living up to their needs.

4. France has two stations used in range-only mode by the French navy. France supports expansion of the system and offers her two stations to the new configuration.

5. Canada was an interested participant in the group based upon its need for the continuation of loran station Angissog in the Labrador Sea chain. They could rejoin if Iceland enters NEPG negotiations again.

The Northwest European Policy Group and the agencies they represent have contributed an enormous amount of time and energy to the continuation of Loran-C in Europe. The decision to go forward now rests with their governments. We look forward to their final decision this July.

THE FUTURE IN SOUTHERN EUROPE

As in Northwest Europe, the prospects for continued Loran-C operation in the Mediterranean area are

highly dependent on the involvement of several nations. While Italy, Spain, Portugal, France, Turkey, and Greece have all expressed an interest in continuing the service, they have yet to agree on the configuration or funding.

Spain, Italy, and Turkey presently host Loran stations in the Mediterranean. However, these stations are Coast Guard manned and operated. These nations have formed a MEDSEA working group chaired by the International Association of Lighthouse Authorities to develop both post-1994 plans and an agreement to ensure continued operation.

Italy has informally responded with some interest and is considering ownership of the stations at Sellia Marina and Lampedusa. One approach they've discussed with the Coast Guard is to have the Ministry of Merchant Marine operate the facilities with help from the telecommunications agency.

The future of the station at Estartit, Spain, is addressed in the current U.S./Spanish base rights agreement. Under this agreement, U.S. Coast Guard Loran-C station Estartit will be one of the U.S. bases turned over to Spain. Discussions with Spain were held in May 1990 in Madrid where the Spaniards proposed continued operation of the loran station Estartit after the Coast Guard departs. They're interested in installing new solid-state transmitters, enabling it to dual-rate with a station in France or a future additional station on the Iberian peninsula. Spain expressed enthusiasm about participating in a trans-European Loran-C system, and hopes that the Commission of European Communities would support such a system.

The U.S. and Turkey continue to discuss post-1994 Loran-C operations. Turkey is pivotal in the region. A station in the Balkan area is critical to meet Italy's requirement for coverage in the Adriatic Sea.

THE COMMONWEALTH OF INDEPENDENT STATES

The Commonwealth of Independent States (the former Soviet Union) operates two chains of chayka, their own loran-like radio-navigation system. Signal shapes are slightly different, as are control doctrines. But receiver tests have shown that commercial loran receivers can acquire, track, and provide fixes using chayka signals.

The U.S. Coast Guard is implementing a joint U.S./CIS Loran-C/chayka

chain in the Bering Sea region, scheduled to be on-air in June of this year. In Europe, the CIS is expanding its service and has proposed to link with systems in the Baltic, Mediterranean, and Barents Sea regions. These proposals show some significant potential benefit to the loran countries in Europe. Here are some of the CIS proposals.

1. Upgrade an existing low-power station in Bulgaria to replace coverage now provided by the station in Kargaburun, Turkey. This could satisfy Italy's requirement for service throughout the entire Adriatic and provide the necessary link connecting and completing the Mediterranean chain.

2. While the NEPG proposes an additional station in Finland or Denmark to provide coverage of the Greenland Sea, the CIS plans a chayka chain station just east of Murmansk covering the Kara Sea and eastern Barents Sea. The CIS suggested combining their chayka chain with Bo and Jan Mayen in Norway. This plan offers the economically enticing possibility of using just one additional station instead of two in the northern area.

3. Representatives of the Inter-radionavagatzia Committee met with the German Waterways Commission and the U.S. Coast Guard to discuss plans for a Baltic Sea chain using the existing Loran-C station at Sylt, Germany, existing chayka stations, and possibly several other additional stations. They agreed that a Baltic Sea chain was in all their best interests and that a chain comprised of stations at Sylt and the two westernmost chayka stations would probably work best together. Initial analysis indicates good coverage over the mid-Baltic. Calculated loss in coverage to the western, northern, and eastern extremes is due to signal-to-noise limitations. Lower values of noise and interference may apply in these northern latitudes and the conservative receiver signal-to-noise constraints could be relaxed to indicate greater practical coverage. Further analysis and testing continue.

OBSERVATIONS

Loran-C can now be viewed worldwide as a network rather than a series of chains. This was first evident in the extensive dual-rate additions in North America, and is now seen in the expansion plans for Europe. An interesting exercise for efficient loran configuration would be to erase national

boundaries, look at each station as a point, link the stations into chains, and add additional stations where needed. As the navigating nations improve their political and economic cooperation, this idea can be approached.

The geography of Loran-C, with its long baselines and distributed coverage, requires cooperation. This is particularly true in Europe where countries are compact, some hostile borders remain, and space is at a premium. Complicating the resource-sharing matter is that hosts to stations may not be the prime benefactors of coverage, and free service is available to any user.

How we view the service provided by Loran-C is changing. Maritime users have long been satisfied with the service where provided. Aviation requirements are now the driving force behind signal, information, command, and control requirements in North America, and those requirements are seeping into European specifications. The Netherlands, for one, sees inland operation requirements for Loran-C driving her participation in system expansion.

Receiver improvements allow us to reexamine the way we view coverage. The traditional approach is to assume a -10 dB signal-to-noise ratio, reflecting the low end of receiver design. Modern receiver characteristics indicate this approach may be overly conservative for flexible planning. Configuration plans usually assume hyperbolic chain coverage, yet receivers now on the market can use master-secondary pairs from adjacent chains for navigational position fixes. In a recent study, Inmarsat presented coverage analysis including cross-chain availability that showed significant expansion of service compared to single-chain coverage. Analysis of proposed service in the Baltic and Barents Sea regions may well benefit from this approach. A fleet of dual-chain receivers is much less costly than an unnecessarily added Loran station.

Satellite systems are being examined as contributors to Loran-C service. Space systems (GPS, GLONASS, COMSAT) can be used in conjunction with Loran-C for hybrid fixes or to enhance Loran-C service by improving synchronization

of transmissions, provide interstation communication, broadcast integrity, or fine accuracy corrections to users.

CONCLUSIONS

In the future, there will continue to be a number of navigational systems available to users — GPS, DECCA, OMEGA and Loran-C. Receiving systems are expected to routinely integrate input from these systems. The mix of navigational systems will provide practical flexibility and redundancy.

Loran-C use will continue to grow throughout the world. The United States will support its stateside Loran system operation for many years to come. Its overseas operations will conclude at the end of 1994. Hopefully, other nations in those regions will carry on, providing an extremely valuable service to their populations at a very low cost.

This article reflects the opinions of its co-authors and not necessarily those of the U.S. Coast Guard or involved nations.

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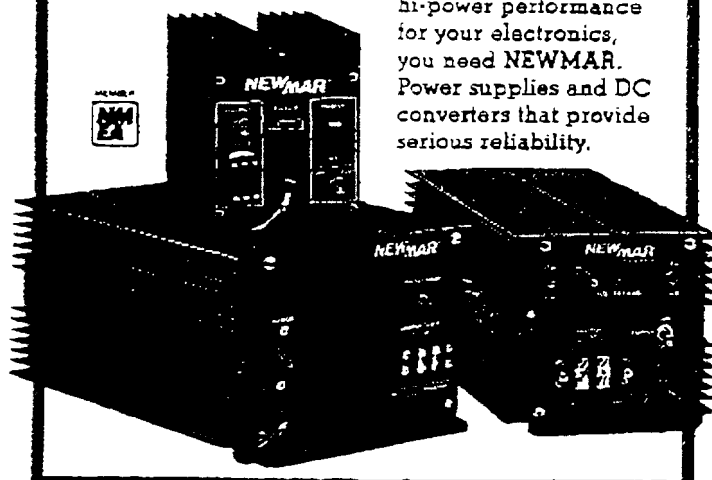
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