



# Directors' Newsletter

From the Secretary

June 1, 1990

## GPS Ramblings

John Beukers

*Should the WGA do more with GPS as it becomes operational?*

I know that Some Directors are receiving the magazine GPS World. For those who are not, this is a free subscription for qualified persons. I have spare subscription cards for anyone interested. The magazine is professionally produced, has some excellent articles, and is effective in reporting current news. Of course it is supported by advertising of which there is a fair amount.

The extraordinary amount of money that is being poured into GPS has provided the system with enormous momentum both in the US and overseas, but one must take a step back to assess where this system fits in with Loran-C, Omega and short range nav aids. At present it would appear that rational thinking is masked by an overabundance of technical hype.

One has only to look at last year's program for the ION GPS meeting in Colorado Springs to see that issues, critical to an orderly and acceptable implementation of this satellite system, are being ignored. The result of this one sided dialogue is a stream of misinformation that permeates down to the current radionavigation user. The boat shows are rampant with such misinformation according to Henry Marx and others who have attended them recently. This is detrimental to Loran-C manufacturers, the mariner and probably GPS as well.

If we raise the issues of GPS system cost, DoD policy towards civil use, establishment of long range funding, providing the world (friends and hostile nations alike) with a free service paid for by the US taxpayer, national sovereignty, vulnerability from solar eruptions, the

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## Notes from the President

By Jim Culbertson

I think our procedures for moving through Board business went pretty well at the meeting on 26 April. Somehow we managed to complete all the Agenda items and concluded about on time at 1530. My thanks to the members of the Board who attended and their active participation. Particular thanks go to Dave Scull and to Adroit Systems for providing great facilities for our meeting. For those of you who missed it, Dave had a special surprise for us at lunch - nuff said, you will probably have to wait until the Williamsburg Convention in 1991 to find out what that was.

Based upon the results of our Board meeting and the Executive Committee meeting held just before, it appears that a considerable amount of the routine business of the Board is going to have to be done in Executive Committee. The Board members in attendance seemed to concur with this. Therefore, the Executive Committee will undertake to address every possible matter before the Board meetings and make a report to the Board of action that has been taken.

We have made excellent progress in developing financial reports for the Association which will assist us in developing meaningful budgets, documenting our financial condition and support our tax preparation. Many thanks to Zeke Jackson of NAVCOM Systems, Inc. who volunteered his accounting software and staff to help Carl Andren put this all together.

I have taken a hard look at the large number of Special Committees we have and the continued lack of activity and reporting from most of them. We discussed this at the Board meeting and the Executive Committee will recommend some reductions and perhaps redefinition of these committees. We also dis-

cussed the need for having Quarterly Board meetings and there were mixed reactions to reducing them in number to annual or semiannual. In any case, I am continuing to pursue ways to streamline our Board proceeding and the conduct of WGA business and welcome any suggestions.

The day after the Board meeting I had a very good meeting with RADM Nelson (G-N) and earlier with CAPT Weseman (G-NRN). In addition to briefing RADM Nelson on our Board meeting, I reviewed ongoing WGA interests and activities including the European Loran-C issues, FAA initiatives, the FRP inputs, WARC agenda, FANS, UTC timing, and future WGA technical symposiums including one for Europe in 1992. His office had not seen the UK press release regarding Loran-C so we had a copy sent to him by FAX. He was very responsive to suggestions that the Coast Guard Regional Commanders in each Coast Guard Area office be listed in directories and telephone books as "Loran User Centers" or by some similar title to identify them as sources of assistance to the Loran-C user community. This would compliment the U.S. Coast Guard NAVSTAR GPS Information Center (GPSIC) that is being established in Washington, DC. I invited RADM Nelson to have the Coast Guard become a Corporate Member of WGA and explained the benefits of multiple regular memberships - he seemed responsive to this idea and appropriate application forms will be mailed by the Secretary.

By now you should have received a copy of the 91st WGA BOD Meeting Action Items dated April 26, 1990. Please take note of special items that

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## Press Notice

### The Department of Transport

April 24, 1990

# FUTURE OF UK MARINE RADIONAVIGATION

After widespread consultation, it has been decided, in principle, to adopt Loran C as the standard marine radionavigation system in UK waters during the 1990s, Cecil Parkinson, Secretary of state for Transport, announced today.

Subject to satisfactory international agreement within an acceptable timescale, this would mean replacing the current Decca Navigator System with the international civil Loran C system currently proposed for North West Europe and the North Atlantic.

Answering a Parliamentary Question from Sir David Price MP (Eastleigh), Mr. Parkinson said:

"Following a lengthy period of public consultation and careful consideration, I have concluded in principle that, on technical and cost grounds, the balance of advantage for the United Kingdom would be to join the international civil Loran C system currently proposed for North West Europe and the North Atlantic. This would be dependent on a satisfactory international agreement being reached within an acceptable timescale with the other interested states.

"This decision has not been an easy one. It would mean closing down in 1997 the present widely respected UK Decca Navigator System, the origins of which date back to the Second World War. The Decca System has been successfully operated by Racal Decca Marine Navigation Limited and its predecessors for several decades, and the marine community owes a considerable debt to the service, which is highly regarded.

"I have had the benefit of a wide range of responses to the Department's consultative document of June 1989. Many in the marine community, here and abroad, agree that we should not be wholly dependent for marine navigation on non-European military satellite systems such as the American Global Positioning System (GPS) and the Soviet GLONASS system and that a terrestrial civil alternative is needed. I am satisfied that the Loran C system would meet the

UK's navigational requirements to acceptable technical standards and additionally would provide more extensive cover, and be less affected by seasonal and night-time errors.

"I have given particular consideration to the representations from the fishing industry who are concerned about the costs of converting to Loran C. I fully appreciate the industry's extensive use of the Decca system for fishing, as well as for navigation, and I have considered the industry's points very carefully. However, if we introduce Loran C, the fishing industry will gain some important benefits. Loran C's avoidance of seasonal and night skywave effects makes it a more consistent system. Moreover, a Loran C system would allow significant cost reductions, which will work through as lower light dues paid by fishermen. In the meantime I will look specifically at the light dues paid by fishermen at present, in light of representation they have made. The fishing industry will also be aware that I am currently considering a report by the British Ports Federation which recommends that pleasure craft should be brought into the light dues system, so as to share the costs falling on the General Lighthouse Fund.

"Moreover, I am determined to ensure that there is a reasonable transitional period between Loran C becoming fully available and the Decca system being switched off. Given satisfactory progress in the international negotiations, the new UK transmitter could be operating by the end of 1992 and satisfactorily validated for use in repeatable mode before the end of 1993. This would allow a reasonable transition period of over three years to 1997 for conversion of the fishing industry's Decca records. The final re-configuration of the new system would be in place at the latest by January 1995.

"I am also satisfied that the financial considerations favour adopting the Loran C scheme. There would be an even stronger financial case for Loran C,

were it not for the cost of running both systems in the transitional period. I am satisfied that the cost to users of premature replacement of receivers, while difficult to assess, is not sufficient to undermine the case for change.

"My conclusion, therefore, is that the United Kingdom should not stand aside from the opportunity now offered for adopting a standard terrestrial regional radionavigation system under independent European control. Many countries are awaiting the UK decision before reaching their own, and in the longer term a favourable decision by the UK seems likely to increase the prospects of there being continuous Loran C cover through Europe, including the Mediterranean, the Iberia Peninsula and the Baltic.

"It remains to be seen whether an acceptable Loran C international agreement can be concluded among a sufficient number of interested countries to produce a suitable international system. Our appraisal of the proposal has been on the assumption that there would be cost sharing with Canada, Denmark, the Federal Republic of Germany, France, Iceland, Ireland, the Netherlands and Norway. My officials will be making it clear to the countries involved in the international discussions that the UK will finally commit itself to a binding agreement only if the terms are right. This means that the eventually agreed system must retain a genuinely international dimension and have sufficient financial support from other benefitting countries in terms which for the UK are no worse than the current and cost share provisionally attributed to it. The UK's final commitment is also conditional on (a) the location of, and the obtaining of the necessary approvals for, suitable sites for the new transmitter stations needed in the UK and the Republic of Ireland; and (b) Parliament's approval of an order under section 34(3) of the Merchant Shipping Act 1979 to define Loran C as a beacon for the purposes of the General Lighthouse fund (which would bear the UK costs). I expect to lay a draft order shortly.

"The UK will also be making it clear to the other potential partners in the international agreement that our window for a decision in favour of Loran is time limited. In the event of a firm commitment to Loran C, I would wish to give

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## UK Radlonavigation

*Continued from page 2*

the marine community about six years notice of the ending of Decca transmissions. Under Racal Decca's current contract with the general lighthouse authorities, the system could not continue beyond February 1997. I am also conscious of the need for an adequate transition period of at least three years during which both the Decca and Loran C systems would be operating. These constraints mean that a delay beyond early to mid-1991 in ratifying an acceptable international agreement would, as far as can currently be seen, effectively rule out the UK's adoption of Loran C. Thus, if a firm agreement acceptable to the UK has not been reached by then it would be my intention to withdraw from the international discussions and to consider with the general lighthouse authorities whether to arrange for modernization of the UK Decca Navigator System so that it could continue to operate beyond 1997.

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## Letter from Holland

**Durk van Willigan**

*UK Loran-C decision could be pivotal.*

(This letter was received during the latter part of April, see the press release from the UK in this newsletter)

The coming week the UK will make their decision concerning the change-over from Decca to Loran-C public. We really do hope for the best. If the suggested transmitter lay-out will become as proposed by the Loran-C Working Group, we will get excellent coverage in The Netherlands. I think Kjell Enerstad will inform the WGA as soon as he gets the news.

If the UK will stick to Decca, the Loran-C situation in Europe is more or less hopeless. Although the Norwegians can make a chain on their own, the rest of our continent, especially the main land, will suffer from bad signals. An unfavorable situation for fleet-management where Loran-C may do a very good job. In case of a negative decision many people will switch over to Navstar/GPS. And we all know the good and the bad items of GPS.

April 17, 1990

## Loran-C Navigation Systems Approved for Venezuela

1. On April 5, 1990, the Venezuelan President and his cabinet approved the acquisition of a four-station Loran-C chain for Venezuela and the letter of intent has been received. Contract negotiations have been given a deadline of 102 days but preliminary work is to commence immediately. The Venezuelan Government will make next week a down payment of dollars five million on this dollars forty million project and the U.S. manufacturer will be invited to come to Venezuela during the week of April 16 to begin contract negotiations.

2. Thus, fourteen years of presentation briefings and countless meetings by post staff (Hans Mueller), have finally resulted in Venezuela becoming the first South American country to adopt this air, water and land transportation navigation and positioning system. We made the first presentation on behalf of a Loran C purchase in 1975 when we detected that the Gov was on the verge of buying a competing, but inferior system, manufactured by the UK. The U.S. Coast Guard at that time made available a radio navigation expert to assist us in making this initial attempt, which blocked the intended purchase. Several changes in government, different spending priorities, lack of understanding or interest on the part of different ministers and numerous other reasons caused the delay and the need to begin anew. Needless to say, the system's manufacturers, Megapulse, Inc., and their agent demonstrated remarkable forbearance throughout.

3. The support of the U.S. Coast Guard has been significant. In this context we would like to express appreciation to the Commanding Officers and Staff of the Loran-C transmitter stations near Dothan, Alabama and Jupiter, Florida, who with great professionalism, tact and patience hosted the various high-level Venezuelan Government study groups and answered numerous questions about the operation, maintenance and civil engineering details of their transmitter sites. Their enthusiasm for Loran-C and its many applications greatly helped in convincing these Venezuelan officials and military officers of

the advantages to their nation of acquiring the system.

4. We understand that one of the prime reasons for adopting Loran-C, instead of waiting for the operational status of GPS, was the question of sovereignty. The Gov decided that since GPS is primarily a U.S. military system, its access could at any time be denied or restricted, due to political or military exigencies. The Loran-C system, however, will belong to Venezuela and is under the country's exclusive jurisdiction.

5. The total cost of the system is estimated at dollars 39 million. This will be followed by an estimated initial market for about 4,000 receivers of various types ranging in cost from dollars 300 to several thousand, depending on additional features. A local company has already signed an agreement with two U.S. companies for the assembly of two models. Another local company has contacted a U.S. corporation offering a satellite-based system which, using Loran-C positioning information, affords the control of vehicles en route.

6. The announcement of this decision will be met with satisfaction and relief by a wide range of pilots, fishermen, pleasure boats, agencies controlling waterways, regional development organizations, trucking companies and others, since the lack of a reliable navigation and positioning system has been experienced by all.

*Skoug*

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## Publications from IALA

*IALA's prolific output of reports needs readers!*

Becoming a member of IALA was a good idea and the WGA benefits by receiving reports on all types of subjects that concern the coastal mariner. There has been just one response to the Secretary's plea for interested readers. The reports pose a space problem and the absence of interest suggests a reconsideration of membership. The Secretary will bring this matter up to the Executive Committee for consideration.

IALA meetings present a good forum for WGA to express its position on radionavigation matters. Perhaps we should invite a paper to be written and part underwrite the author's expense to make the presentation. Your thoughts on the matter?

## 1990 Convention Publicity Release

*The following media release for the 1990 Convention, coordinated with Chairman Jim Alexander, has just been mailed to a total of 342 magazines and institutions throughout the world.*

June 1, 1990

### Loran-C Radionavigation Convention and Exhibition

In response to the growing interest and use of radionavigation systems by the private sector for aviation, marine recreation and surface transportation, the 19th Annual Convention and Technical Symposium of the Wild Goose Association will feature a full session, and a manufacturers' exhibition open to the general public. This will provide a unique opportunity for individuals to participate in workshops and pose questions directly to manufacturers, radionavigation system designers, the U.S. Coast Guard, the FAA, and Loran-C engineers.

"Loran-C and Its Place in Global Navigation" is the theme of the Technical Symposium which will include a session on the satellite Global Positioning System (GPS) and its interoperation with

Loran-C as well as a session on World-wide Loran Activities. A banquet with a keynote speaker, luncheons with speakers and a full program for spouses has been arranged.

The Convention will take place at the Ramada Renaissance Hotel, Long Beach, CA 90802, Phone: 213-437-5900, Tuesday through Thursday, October 23-25, 1990.

For registration details and further information contact the General Chairman, James Alexander, 3262 Tigertail Drive, Los Alamitos, CA 90720, Phone: 213-431-0244, or the WGA Secretary, John

Beukers, Flowerfield Bldg. 7, St. James, N.Y. 11780. Phone: 516-862-7500, Fax: 516-862-7403

The Wild Goose Association is an organization that specifically addresses Loran-C Radionavigation for land, sea, and air. It draws its membership from System Users, Industry, Government and Institutions having a broad range of radionavigation interests. Membership is open to anyone who has an interest in fostering and preserving the art of Loran.

## Welcome to our New Members

### April-May New Members

We welcome the following new members that have joined the Association since the beginning of April.

Belicka, Jr., John  
Boykin, Willie  
CEPIEC UNIV LIB - 1,  
CEPIEC UNIV LIB - 2,  
CEPIEC UNIV LIB - 3,  
CEPIEC UNIV LIB - 4,  
Char, Ronald K.  
Cox, Joseph  
Damiani, Thomas R.

Diekmann, Vernon  
Elazar, David  
Gannon, John  
Johannessen, Rolf  
Jourdan, David  
McDonald, Keith D.  
Meyerhoff, II, Paul  
Nowicki, Steve  
Retko, Edward  
Schnauffer, Jr., Patrick M.  
Skaar, Rodney M.  
Thomas, CW04 Burt J.  
Uppling, Byron R.  
Winslow, Roger  
Wood, James M.

## Membership Statistics as of June 1 1990

	May 26	July 26	Sept. 26	Nov. 27	Jan.1	Mar.1	April 1	June 1
Individual	320	346	372	415	426	295	349	402
Corporate1	5	5	5	5	5	3	3	3
Corporate2	11	12	12	12	12	8	13	15
Associate	5	5	5	8	8	2	2	2
Sponsored	93	93	102	102	102	48	70	80
Life	24	24	24	24	24	27	28	26
Honorary	9	10	10	10	10	10	10	10
Prospects	N/A	421	596	771	817	944	1015	1225
Complimentary	41	41	41	41	41	40	38	40
Total Membership	467	494	533	576	587	393	475	538
1988 Delinquencies				102	102	102	98	97
1989 Delinquencies						218	166	110

The total paid up membership, including Life and Honorary members, currently stands at 538 with 1225 prospects listed. Membership dues reminder notices were mailed during March and resulted in approximately 40 additional renewals.

## **SYNETICS, A New England Growth Company**

**An Interview with Bahar Uttam  
by John Beukers**

*In the relaxed atmosphere of the San Diego Princess Resort, after the ION meeting technical sessions, Bahar Uttam provided me with a profile of his company - SYNETICS and shared some of his personal background.*

SYNETICS is privately held and enjoys the reputation as being the 10th fastest growth company in New England. With 12 offices around the United States the company has a payroll of some 250 employees and an annual turnover of \$25 million. SYNETICS specializes in systems engineering in the fields of Information Technology, Telecommunications and C3I and has the DOD, DOT, Health and Human Services and other government, state and private agencies as major customers. In the field of radionavigation, SYNETICS is visible with the work being conducted on GPS, Loran-C and Omega and is a team player of the Public Law 100-223 Loran-C/GPS Interoperability study.

Bahar formed SYNETICS in June of

1984 with Bill O'Halloran and 6 others and work started with contracts for the Department of Defense in navigation. Today, SYNETICS has contracts with 35 different government agencies, 5 international contracts, 2 state-level contracts and twelve in the private sector. In 1988 the Small Business Administration voted the company New England's Small Business of the Year and in 1989 SYNETICS was a finalist in INC Magazine's New England High Tech Entrepreneurial Award.

Born in India, Bahar was educated in England, receiving his first degree in electrical engineering from Queen Mary's College of London University and two further degrees in electrical engineering in the United States. He emigrated to the United States in 1967. After being with The Analytical Science Corporation (TASC) for 10 years he joined Jaycor and became a Senior Vice President. He has been active with the WGA since its inception, has co-edited the Radionavigation Journal and has chaired several meetings. Bahar is also active with the ION and the IEEE, and is chairman of the US delegation of the International Electrotechnical Commission on Navigation Standards. In March of 1990, Bahar Uttam was awarded the IEEE Kirshner Award at PLANS for his contributions to Navigation.

## **Jet Electronics and Technology**

**By Bruce Hensel**

*Compudyne sells ANI to Jet Electronics and Technology, Inc.*

In the fall of 1989, Jet Electronics and Technology, Inc. (JET) purchased the majority of assets and technology of Advanced Navigation and Technology, Inc. (ANI). JET is a wholly-owned subsidiary of B. F. Goodrich Aerospace. ANI's surface mount technology (SMT) manufacturing operation has been relocated to JET's facility in Grand Rapids, Michigan.

The Model 530x and Model 720x terrestrial and airborne Loran-C receivers will be manufactured and marketed by JET. Information about these and other SMT Loran-C products can be obtained by calling JET at (616) 949-6600.

The ANI Model 7000 receiver and sensor will be manufactured and marketed by Foster Airdata Systems, Inc. Foster is a sister company of JET in the B.F. Goodrich Aerospace Division and is located in Columbus, Ohio. Information about the Model 7000 receiver can be obtained by calling Foster at (614) 888-9502.

## **European Convention 1992**

**By John Beukers**

*Board unanimously approves moving to the UK for its 21st birthday.*

It has been suggested for some time that the Annual Convention be held in Europe. The recent decision by the UK to replace Decca and the actions being taken by other countries to adopt Loran-C as their national radionavigation system makes the timing ripe for an overseas convention. Since I will be living in the UK in 1992, it was natural to volunteer as the Chairman for the 21st Convention.

An overseas convention will call for a substantial amount of additional organization and coordination requiring a strong committee. To this end John Illgen has agreed to be Technical Chairman and I have enlisted the help of Rod Stebbins

of Tampa, Florida to be Co-Chairman (US).

During my stay in England this summer it is my intention to meet with several organizations and government agencies to determine their willingness to co-sponsor the Convention and possibly obtain the use of government facilities. (UK DOT, UK Met Office, UK Ministry of Defence, Trinity House, Royal Institute of Navigation, NODECA, IALA - any other suggestions?)

In a phone call from Bob Lilley he indicated that Rod Stebbins had offered to be Chairman of a Convention Committee and urged that the WGA hold its 1993 Convention in Tampa, Florida. He noted that more than 50% of the marine receivers were manufactured in the area and that there was an active and successful EMS program under way in the area. As Co-Chairman of the 1992 Convention Rod will be able to get his feet wet. This information is being passed to Directors for their consideration.

## **Solar Effects on Radionavigation**

**By John Beukers**

*Space Environment Services Center (SESC) hosts Users Conference.*

The recent SESC Users Conference in Boulder, Colorado was attended by a diverse group of individuals from a multitude of disciplines that are effected in one way or another by normal and abnormal solar activity. I presented a brief review of VLF and LF radionavigation systems and described the effects of solar activity on propagation and positional accuracy.

SESC provides a full range of services, including a bulletin board, that cover forecasted, current and historical data on solar activity. These services are described in a comprehensive document handed out at the meeting.

Of particular interest to radionavigation  
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## News Items.....

### Next GPS Users Meeting

By the time that this Newsletter reaches you, the June 6th GPS Users Meeting will either be in progress or be over. If you missed it, the next meeting will be held preceding the Institute of Navigation's GPS meeting in Colorado Springs on September 17th and 18th at the Embassy Suites. If you need further details or other information concerning either of these meetings, call Karen Van Dyke at TSC (617-494-2432 or FTS 837-2432) for the GPS Users meeting and Karen Smith (taken over from Kathy Hannon) at the ION headquarters (202-783-4121) for the ION GPS meeting.

(See attachment for news of the March Users Meeting)

### Global Loran-C User Population

In response to a request from the Heywood Shirer of the DOT Research and Special Projects Administration for an estimate of the current and projected Loran-C user population, the WGA has circulated a simple questionnaire to all known manufacturers of Loran-C and Loran-C/GPS receiving equipment. When the completed questionnaires are received the information will be consolidated and provided to the RSPA. This data will be used to prepare the Loran User Population Table to be published in the 1990 FRP. Accurate current and projected user numbers are important since this can have an impact on future navigation policy and funding.

### WGA Library Acquisition

Thanks to Bruce Hensel for providing a copy of the missing 1975 Radionavigation Journal. A complete set of Journals is now on file.

### NASAO Members added to WGA Mailings

We received a diskette containing the names and addresses of the National Association of State Aviation Officials from the Staff Associate, Edward Scott. This information has been added to the WGA mailing list so that all NASAO members will be receiving complimentary copies of the Goose Gazette and will be kept informed about the Annual Convention

### What is PIANC?

"Founded in 1885, the Permanent International Association of Navigation Congresses (PIANC) is a worldwide organization of private individuals, corporations and national governments. We are concerned with marine and inland waterways and facilities and have joined together to promote the gathering and exchange of technical information which will assist in making more effective use of these critical commercial resources."

This is quoted from the information leaflet sent along with a substantial amount of literature by the U.S. Section of PIANC, headquartered in Washington, D.C. Governments of forty countries belong to the Association.

A copy of the leaflet is being sent along with this newsletter. The 1990 PIANC convention was held in Osaka, Japan during May to which the Association expected an attendance of more than one thousand.

For more details contact the WGA Secretary.

### UK DOT New Response to Racal-Decca

We have received the response dated April 25, 1990 to Racal-Decca Marine Navigation Ltd's letter of 30 January 1990. This is a comprehensive and thorough reply to the points raised by Racal-Decca. A copy of this document is being sent to Directors along with this newsletter and should provide interesting reading to all. The document provides an insight as to the future support needs of the new user community.

### DOD Lights-up Selective Availability without Notice

When DOD scrambled the GPS signals last month without prior warning there were cries of "Foul" from the user population. 2 DRMS accuracy is reported to have been degraded to 200M. Since DOD calls the shots, isn't this par for the course? See Ramblings by John Beukers in this issue

### Soviets Take Out Corporate1 Membership

We received a Corporate1 membership application from one of the team of Soviets that attended the 1989 Convention in Hyannis. The card lists ten spon-

sored members. We are currently waiting for payment to be transferred into the WGA bank account in Washington before activating these new members. We certainly welcome these individual and trust that their participation in the WGA will provide a communication path for Loran-C activities.

### GPS Ramblings

*Continued from page 1*

need for international treaties, responsibility for system control, reliance upon one system (or coupling GPS with GLO-NASS to overcome this criticism) - we get branded as being negative towards GPS. Shouldn't the GPS community be addressing these issues in a public forum? Shouldn't the WGA be vocal in presenting a balanced view?

The fact is that GPS as a civil system is not affordable. Just witness the debate in the UK over the cost of conversion from Decca to Loran-C. The amount of money that swayed the decision towards Loran-C was less than the batteries for one GPS satellite. Some countries are adopting GPS "because its free". Will Uncle Sam pass the hat around someday? Is this the way to establish global radionavigation policy? Perhaps the more enlightened approach is for a country to adopt Loran-C as a national radionavigation system enhancing it with the benefits of GPS and/or GLONASS. (The same arguments hold for the global Omega system which is covered by international agreement). Shouldn't the WGA have something to say about this?

Surely the GPS civil community should sit up and take note what happened when the DOD implemented selective availability on March 25, 1990 without prior notice. Accuracy was degraded to a reported 200 meters. Shouldn't the WGA have something to say about Loran-C rendezvous accuracy compared to GPS?

The issue of GPS as a sole means radionavigation system is too important for the WGA to stand idly by while, in my opinion, gross distortions of fact and decisions based upon misinformation are being made. What do you think? Should we remain silent or speak out?

(A copy of Washington View from the current issue of GPS World is enclosed with this newsletter for your interest.)

## Notes from RSPA and the IOA Board Meetings

by Dave Olsen

### 1990 Federal Radionavigation Plan

Biennial production of the FRP is coordinated by the DOT Research and Special Programs Administration. Our forum for FRP revision is the DOT/DOD Joint Radionavigation Working Group which has been meeting monthly as we develop revisions to the 1988 FRP. The Joint Working Group consists of members from the DOT Navigation Working Group and the DOD Positioning/Navigation Working Group. Many of the ideas submitted by the WGA in response to the November 1989 Users Conference have been worked into the text. We remain committed to a schedule that should allow us to distribute the 1990 FRP in December 1990.

We recently made a belated plea to both the WGA and the IOA for help in revising the system "projection tables" which appear in Chapter 3 of the Plan. John Beukers promptly sent a questionnaire to "some 40 manufacturers of Loran equipment worldwide, and a few others that might be able to throw some light on the total user population." Although we hope to have all FRP changes finalized by mid-June, we should still have opportunity to work in the results of John's survey during the ensuing review process.

### International Omega Association

The IOA Board of Directors met most recently on 5/17/90. A few items of note:

o **Name:** Perhaps similar to WGA's identity problem, the IOA also gets inquiries about their organization from people who appear to have no idea what a radionavigation system is.

o **Proceedings:** Those from the 10/89 conference in Long Beach are back from the printer and will be distributed soon.

o **1990 Conference:** Proceeding with planning for 24-28 September meeting on Bali. Having some problems communicating with local points of contact, but optimistic that everything will be worked out.

o **Awards:** The IOA championed the successful nomination of John A. Pierce for an IEEE "major medal." "Jack" will receive the Medal for Engineering Excellence at the IEEE Medals Presentation on 10/6/90 in Toronto. He's being honored "for the design, teaching, and advocacy of radio propagation, navigation, and timing, which led to Loran, Loran-C, and Omega." Jack is generally credited as the inventor of both Loran and Omega. The IOA has also nominated Eric R. Swanson for "Fellow" status in the IEEE. Eric has innovated many Omega developments and is responsible for the mathematical model that is widely used to predict the phase delay of Omega signals.

### 91st WGA Board of Directors Meeting Action Items

1. Investigate options for filling vacancy of Secretary's position when vacated by John Beukers. - Executive Committee.

2. Provide information on the 1990 Convention. 1) Description of User Day Program from Jim Alexander. 2) Provide Jim Alexander with BOD guidelines on target amount for convention registration fee and donations. - Jim Culbertson.

3. Appointment of Journal Managing Editor. Write a position description. - John Beukers.

4. Note Bob Lilley's June 1st deadline for WGA Newsletter. - All Directors.

5. Provide clean copy of Radionavigation Policy. - John Beukers.

6. Provide Directors with a Five Year Budget Plan before next meeting. - Carl Andren.

7. Follow up on Association name change with Ron Wiener. - Jim Culbertson.

8. Write up proposed By-law changes in greater detail for vote by BOD at next meeting. If necessary look for candidate to assume job as By-laws Chairman. - Vern Johnson.

9. Check up on delinquent accounts. - Mike Moroney, Carl Andren and Bob Lilley.

10. Examine the possibility of obtaining a minimum wage scale employee to assist with assembling the manufacturer's WGA greetings cards. -

Executive Committee.

11. Notify FRP Committee Chairman to get together with RSPA on possible future action. - John Beukers.

12. Update on Power Line Carrier interference problem in BOD Newsletter. - Walt Dean.

13. Obtain action on a WGA U.S. postage stamp. - Executive Committee.

14. Prepare and mail BOD ballot on fee changes. - John Beukers.

15. Provide Director Enerstad with copy of Jim Enias's FAA letter on Loran-C Aviation Standard. - Bob Lilley.

16. Further action WGA name change. - Executive Committee.

17. Raise Leo Fehlner's technology issues with John Castonia. - Jim Culbertson.

18. Notify John Illgen of BOD decision to have 1992 European WGA Meeting in late October. - John Beukers.

19. Notify John Illgen of BOD action on Eastern Block Nations Problem. - Jim Culbertson.

### Solar Effects

*Continued from page 5*

gation was the talk describing the effects of solar outbursts on satellite performance and positioning. Increased drag requires repositioning commands to satellites, particle bombardment of solar cells reduce their output, spacecraft skin charges and internal charges can cause malfunctions. It was stated that in 45 minutes the GOES satellites lost 11% of their solar cell output, decreasing the life of those satellites by 4-5 years. This type of scenario, added to ionospheric refractive effects, should give the GPS sole means proponents some food for thought.

The seriousness of solar outbursts was illustrated by the collapse of the Canadian power grid last March due to a magnetic storm. Airlines have reported interference with aircraft communications and control systems and at least one aircraft manufacturer is concerned with solar effects on "fly by wire" aircraft.

The Loran-C ground wave is probably the least susceptible to solar effects giving strength to the concept of interoperability.

Joe Kunches was my host and has tentatively agreed to present a paper describing solar effects on radionavigation systems both satellite and terrestrial at the next Annual Convention.

## Presidents' Notes

*Continued from page 1*

affect you and help out by reacting accordingly - and on time!

Some have said that if the Secretary is doing such a great job, and the Executive Committee takes care of the routine business, what is left for the Board to do? I think there is much that our Board should be doing now that a lot of the drudgery of managing the WGA has been taken over by the Secretary - the Board should have plenty of time now to think and act like Directors and make meaningful contributions using their experience and well developed technical and communication skills. There are lots of letters to editors to be written - short articles on loran - perusal of technical journals and publications for information and places to insert WGA input - WGA inputs to rule making - loran history - help with the Journal - and so much more! But, if in fact our Directors think that being a Director is simply attending Board meetings and being vocal only there, maybe we don't need but one Board meeting a year and the Executive Committee should be given free hand to run the business of the Association! Comments anyone?

## Delegation of Secretary's Tasks

By John Beukers

Listed below are the tasks currently being performed by the Secretary's office. I am in the process of preparing a schedule for each major line item will indicate when Marilyn and I will no longer be able to contribute to the various tasks. We are hopeful that we can find homes for the work without losing too much momentum.

### I. Membership

#### A. Database Maintenance

1. Dues Updates
2. New Members
3. Prospect Entry
4. Data Changes

#### B. Dues

1. Dues Notices
2. Reminder Notices
3. Membership Cards
4. Payment Administration

### 5. Delinquency Management

### 6. Corporate Membership and Sponsorship

#### 7. Associate Membership

### C. Member Communication

1. Correspondence
2. Phone and Fax

### II. Manufacturers' Cards

- A. Printing and Distribution
- B. Database Entry
- C. Prospect Mailing

### III. Manufacturers' Database

- A. Expansion
- B. Maintenance
- C. Contacts

### IV. Board Meetings

- A. Agenda Preparation
- B. Minutes
- C. Attachments

### V. Directors Newsletter

- A. Communication with Directors
- B. Preparation of Articles
- C. Formatting, Printing & Mailing

### VI. Stationery

- A. Letter Head and Envelopes
- B. Business Return Mail
- C. Membership Cards
- D. Price lists

### VII. Labels

- A. Goose Gazette
- B. Ballots
- C. Convention

1. Call for Papers
2. Program
3. Proceedings

### VIII. Publicity

- A. Media Database
1. Expansion
2. Maintenance

### B. Convention

1. Calendar Listings
2. Call for Papers
3. Convention Publicity

### IX. Publications

- A. Inventory
- B. Copying
- C. Sales
1. Packing and Shipping
2. Invoicing
3. Receipts and Receivables

### X. Files of the Association

- A. Maintenance
- B. Storage

### XI. Computer

- A. Hardware
1. System Requirements
2. Maintenance
- B. Software
1. Programs
2. Program Maintenance
- C. Programming

### XII. Office

- A. Space Requirements
- B. Equipment
- C. Staff

### XIII. Special Assignments

#### A. Responses to Input Requests

1. Federal Radionavigation Plan
  2. WARC
  3. Power Line Carriers
  4. FAA
  5. UK-Europe Loran-C
- #### B. Initiatives Undertaken
1. Loran-C User Population

### XIV. Loran Bibliography

- A. Database
  1. Entry and Expansion
  2. Maintenance
- #### B. WGA Technical Symposia
- C. NTIS
  - D. FAA
  - E. Other Inputs
  - F. Formatting and Publication

### XV. Forms and Printing

- A. Form Preparation
- B. Typesetting
- C. Copying and Printing

### XVI. Convention

- A. Registration Support
- B. Post Convention Mop-up

### XVII. Special Secretarial Initiatives

- A. U.S. Postal Service
- B. Non-Profit Permits
- C. Business Mailing Permits
- D. Merchants Credit
- E. Articles for Magazines

The minimum facility for performing this task consists of two standard stationery cabinets for office and shipping supplies, two five drawer file cabinets for the Associations files, three 7ft/7 shelf by 3ft wide shelves for the Proceedings and Journal inventory, a copy machine, a fax machine, and a computer work station. The computer should be a 386 MS-DOS machine with 4MBytes RAM, a 60Mbyte hard disk with a single high density 5 1/4 floppy disk drive. Peripherals should include a 2400/1200 baud modem, a standard and a wide carriage dot matrix, tractor fed printer and a laser printer. A working knowledge of the dBase language would be an added bonus. A normal office environment can be assumed.