

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
Bruce E. Hensel
John D. Illgen
Dale E. Johnson
J. David Last
Mark P. Morgenthaler
Maurice J. Moroney
Ben Peterson

Wild Goose Association

WGA Operations
Ellen G. Lilley
150 S. Plains Road
The Plains, OH 45780
614-797-2081



*The International Loran
Radionavigation Forum*

To: Board of Directors, Wild Goose Association

From: R. W. Lilley, President

Date: May 8, 1993

Subj: Minutes of the 104th Board meeting

These minutes were taken by Dave Scull, acting for Walt Dean at this meeting, and were reviewed and slightly edited by me. Please review them carefully, as a number of important matters came before the Board. Please contact Dave Scull or me with any comments or corrections. Thank you.

Minutes of the 104th Meeting of the Board of Directors, April 22, 1993:

1. Call to Order

The 104th meeting of the Board of Directors was convened at 10:10 am in the Institute of Navigation Conference Room, Suite 480, 1800 Diagonal Road, Alexandria, Virginia. At the opening of the meeting a quorum was not established. It was decided to proceed with discussion of the agenda items but not to vote on any motions until after lunch when Director Laura Charron was able to be present.

2. Appointment of a Recording Secretary

Dave Scull volunteered to serve as the Recording Secretary.

3. Attendance, Proxies and Statement of Quorum

The following Board Members were in attendance:

Bob Lilley, President
Carl Andren, Treasurer
Dave Amos
Laura Charron

Dave Scull, Vice President
Dale Johnson
Ben Peterson

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

Also attending:

Charlie Sakran, representing the International Navigation Association

Written Proxies were received from Frank Cassidy, John Beukers, Bruce Hensel and Jim Culbertson.

At 1:30 pm Laura Charron arrived and a quorum was declared present.

4. Adoption of the minutes of the 102nd and 103rd Board of Directors Meeting

It was noted that Ben Peterson's name was missing from the minutes although he attended the BOD meetings. The date of the 103rd BOD meeting was also to be added.

Dave Amos made a motion to approve the minutes, seconded by Ben Peterson. The minutes of the 102nd and 103rd meetings were adopted without objection.

5. Reports

a. Executive Committee Report

The minutes of the January 15, 1993 Executive Committee Meeting held by teleconference were distributed.

Bob Lilley reported that NavCom Systems, Inc. had made a separate donation to the 1993 Convention in the form of pens and notepads.

Bob stated that each Director and Committee Chairman will be sent a copy of the new Coast Guard Loran-C Users Guide.

Commander Doug Taggart, USCG Headquarters, is eager to have WGA review the new Loran-C Signal Specification. Jim Van Etten, Per Eric Kvam (NODECA) and Walt Dean are reviewing the spec for WGA.

Dale Johnson reported that he and Terry Pearsall in RTCA Special Committee (SC-176) assignments hope to have change #1 to DO-194 completed by mid-May. They are also working with SC-159 on GNSS/Loran-C issues. Bob Lilley also works with these committees.

After a quorum was declared, a motion to accept this report was made by Dave Amos, seconded by Dave Scull. The motion was passed.

b. Secretary's Report

The Secretary's report was adopted after a quorum was present, without exception.

c. Operations Report - Membership

Bob Lilley noted that the membership figures currently appeared low but expected them to improve, as members continue to renew.

It was noted that Bruce Hensel had moved to Florida and was now working for Godfrey Engineering, a company that does approach lighting systems.

d. Nominating Committee Report

President Bob Lilley referred to the report forwarded by the Nominations Committee. A motion to accept the nominations slate was made by Ben Peterson, seconded by Dale Johnson. It was later adopted without objection.

e. Treasurer/Audit Report

Carl Andren passed out copies of the Treasurer's Report. He reported that there was approximately \$42K in the treasury. This does not include large future bills such as those for the 1992 Convention proceedings. He recommends that a book of abstracts be published in the future but not pre-printing of the proceedings.

He reported that he and Norma Meyers will do an audit on May 5, 1993. he will send a copy of the audit report to Walt Dean when it is completed.

A motion to accept the Treasurer's report was made by Dale Johnson and seconded by Dave Amos. It was adopted unanimously.

f. 1993 Convention

Bob Lilley referred to John Illgen's report, previously distributed. He has been informed by John Illgen that United Airlines would be the official carrier and that if more than 40 people sign up we can get a 10% reduction on the airfare from anywhere in the United States.

g. President's Report

Bob Lilley reported that Bob Anoll is very appreciative of WGA support in his RTCA SC-159 committee on GNSS/Loran-C.

The antenna collapse at the Turkish Loran-C station was discussed and Ed McGann's remarks in a letter to Dave Scull were discussed. Lieutenant Commander D'Agnese of USCG Headquarters reported to Bob Lilley that they tried to get the Turkish Government to discuss the issue, but it has been to no avail so far. DoD has no plans to fund a replacement tower in view of the short time remaining on their Loran-C requirement.

It was discussed whether WGA could do anything further by making more noise. The Board recommended that John Beukers continue his efforts in Europe and that President Lilley communicate to IALA WGA support of a new station established by the Commonwealth of Independent States (CIS) or another state as a replacement for the Turkey station.

Dave Amos suggested that his WGA Technology committee could provide information on alternative chain designs.

Bob Lilley described the progress being made by the FAA on Loran-C/GPS non-precision approaches. He hopes that both systems can be based on the same criteria and referred to the recent letter by Acting Administrator, Joseph del Balzo to Marty Shuey which reflects this desire. Dave Amos and Dale Johnson both said that the WGA should support Administrator del Balzo. The approach plates for both systems can be coincident and will save much work. FAA Flight Standards attends the RTCA committees, and supports the dual development of approach procedures. Bob Lilley reminded the Board that a Loran-C/GPS hybrid system meets the necessary "sole-means" availability figure of 0.9999, while neither system meets it alone.

A motion to accept this report was made by Dave Amos, seconded by Dave Scull. The motion was voted on and passed later in the meeting.

6. Issues for Board Discussion and/or Action

a. 1994 and 1995 Conventions

There was considerable discussion of this issue, in regard to joint sponsorship by WGA/INA with the CIS Internavigation Committee and the time needed for planning. It would be difficult for the Coast Guard to justify two meetings so close together in Russia. Dave Scull pointed out that the International Association of Institutes of Navigation was planned for early September 1994 in Beijing, China.

A motion was made by Dave Amos, seconded by Ben Peterson that WGA share 1/2 of the costs of a site inspection trip to Moscow with the International Navigation Association. The motion was unanimously approved. John Beukers and Henry Schlacta will make this trip in May, and John will report back to the Board.

A motion was made by Dale Johnson, seconded by Laura Charron that WGA stay with the 1995 date previously agreed with Mr. Denisov for a WGA meeting in Russia. The motion was unanimously carried.

A motion was made by Dave Amos, seconded by Dave Scull that WGA express its wishes to INA that we consider holding a joint technical meeting in the future. The motion was unanimously carried.

A motion was made by Dave Amos, seconded by Laura Charron that in view of the IAIN Congress in 1994 that WGA hold a joint meeting with INA in 1995. The motion was unanimously carried.

The 1994 Technical Meeting as now planned will have Bahar Uttam and Ed McGann serve as General Chairmen and Dave Amos and Mike Moroney as the Co-Technical Chairman.

b. Review and Comment On VNTSC Loran-C User Guide

Bob Lilley asked the Directors to review the guide since it was in a draft stage and may need updates. Any comments should be forwarded to Mike Moroney.

c. John Beukers' Fax on the Radionavigation Journal and Loran-C Awareness in Europe

In order to produce the Journal, John Beukers will require some up front money. A motion was made by Dave Scull, seconded by Dale Johnson to authorize up to \$5k expenditures on the Journal. John also wants to transfer remaining funds from WGA 1992 in the National Westminster Bank to a Barclays account in Stow-on-the-Wold. These would be used for expenses on the Journal and Bob Lilley will contact him concerning this.

A motion was made by Dale Johnson, seconded by Dave Amos to transfer the money from Westminster Bank to Barclays Bank in Stow. The motion was carried unanimously.

On European Awareness Dave Amos reported that while stationed at Coast Guard Activities Europe some years ago a free article in the magazine SAIL on Loran-C resulted in the Coast Guard being deluged with requests for information. Bob Lilley will contact John Beukers concerning the advertizing situation, and will get more information from John on what he has in mind. No vote was taken.

d. Ed McGann letter on Differential Loran-C

The directors present agreed with McGann's position on the RTCM Special Committee SC-104 Differential GPS transmission format and agreed that it should continue to contain a differential Loran-C message. George Quinn Loran-C Program Manager for FAA, has expressed the same viewpoint.

e. WGA Price List Card

The price list was reviewed and Bob Lilley recommended that the price for meeting proceedings be raised from \$30 to \$40 for members, with corresponding changes for non-members. This was agreed to.

7. Next Meeting Schedule/Adjournment

The next Board of Directors' meeting will be held in October, 1993 at the 1993 Convention in Santa Barbara. The specific schedule will be announced later. The tentative date is October 18.

An Executive Committee Teleconference will be held at 1:00 pm July, 15, 1993.

The meeting was adjourned at approximately 2:30 pm.

Submitted by

David C. Scull, Vice-President
(Recording Secretary, 104 BOD)

5.

104
BOD

Date: April 19, 1993

From: Bruce Hensel, Chairman, Nominating and Election Committee

To: Walt Dean, WGA Secretary

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 1993 election.

President

James Alexander
Dale Johnson

Board of Directors

James Alexander
John Beukers
Jim Culbertson
John Illgen
Mike Moroney
Bill Roland
Doug Taggart
Durk VanWilligen

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

Approved
104 BOD
4/22/93

Board of Directors

Robert W. Lilley..... President
David C. Seull 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
Bruce E. Hensel
John D. Illgen
Dale E. Johnson
J. David Last
Mark P. Morgenthaler
Maurice J. Moroney
Ben Peterson

Wild Goose Association

WGA Operations
Ellen G. Lilley
150 S. Plains Road
The Plains, OH 45780
614-797-2081



*The International Loran
Radionavigation Forum*

To: Members of the WGA Board of Directors, and Committee Chairmen

From: Robert W. Lilley, President

Date: April 27, 1993

Subj: Enclosed Board minutes and Loran-C Handbook

At the recent 104th Board of Directors' meeting, I announced that the Coast Guard has published the Loran-C Handbook. Enclosed is your copy. You will remember that a committee of WGA members assisted in the review of the draft of this document. Many of our suggestions are included, and the WGA has received an expression of appreciation from the Coast Guard. (We are also mentioned in the Acknowledgements!)

The Coast Guard provided copies of this Handbook for WGA to hand out at the 1993 Convention. I'll be shipping these books to John Illgen shortly before the October Santa Barbara meeting.

Also, please review the Board minutes and provide comments to me. The next WGA function will be the Executive Committee meeting, which will be held in July, 1993 by teleconference. Our next full Board meeting will be held in October, at the beginning of the Santa Barbara convention. The date and time will be announced, likely in July.

John Beukers requested that his fax, attached, be circulated to the Board. I have asked John to emphasize the completion of this important publication, and I now ask for your help in providing materials and suggestions to John.

Thank you for your continuing help.



U.S. Department
of Transportation
**Federal Aviation
Administration**

800 Independence Ave., S.W.
Washington, D.C. 20591

JAN 21 1993

Mr. Martin W. Shuey
Vice President, Air Traffic Control
Aircraft Owners and Pilots Association
421 Aviation Way
Frederick, MD 21701-4798

Dear Mr. Shuey:

This is in further response to your letter requesting assistance in obtaining credit for the Distance Measuring Equipment (DME) position provided by Long Range Navigation (Loran-C) and Global Positioning System (GPS).

In accordance with Advisory Circular 20-121A, Airworthiness Approval of Airborne Loran-C Navigation Systems for Use in the U.S. National Airspace System (NAS), Loran-C receivers, when properly installed and with current data, may be used for DME positional information in the en route structure and in the terminal area. These receivers cannot be used for the segment just prior to the final approach fix and through the final approach segment to the missed approach point.

A certificated, approach-quality Loran-C receiver would be required to use Loran-C DME positioning fixes on existing final approaches. We would need the identification or a request for the approach procedures needing fixes and the positioning location for the DME source (missed approach point) included in the onboard data base. We would then perform Loran-C data analysis and ground signal measurement, complete instrument procedure review and fix added, flight inspection of the fix, and formal procedure revision.

Initially, we are committed to developing 500 new Loran-C area navigation (RNAV) procedures. These approaches will also be GPS procedures. We plan to concentrate our available resources on this task.

GPS, as you point out, is not yet fully operational. As you may know, we intend to allow properly installed and certificated GPS avionics, with suitable and current data bases, to be used to fly most existing non-precision approaches. (Those not allowed would be localizer, localizer directional aid, and simplified directional facilities procedures.) We propose to allow this use of GPS in three phases:

1. Phase I. Prior to the GPS being fully operational, an approach could be flown using it, but ground stations must be operating normally. The navigational facilities specified in the approach must be installed, operating, and tuned for immediate use.


2. Phase II. This phase would begin after the GPS is operational. It is similar to Phase I but would not require the specified equipment to be tuned for immediate use.

3. Phase III. In this fully implemented phase, neither the specified ground station nor corresponding avionics would be required. The GPS would be fully used as a substitute for the nonprecision systems, including DME.

Navigation accuracy for both Loran-C and GPS is not an issue. System integrity and signal availability are more of a problem. As you suggest, onboard equipment combining these two systems may well resolve any remaining concerns. The course deviation tests that you mentioned are now programmed for this fiscal year.

We are very excited about the operational advantages that can be gained from these navigational systems. We may be able to allow both Loran-C and GPS to fly existing nonprecision procedures. Your recommendation of Loran-C and GPS fixes for existing procedures to produce lower minimums is a prime example of the operational advantages we expect to achieve. We can act on your recommendation after the appropriate receivers/data bases are available to the flying public and our resources are adequate. Comments and suggestions from you and your organization are always welcome.

Sincerely,


Joseph M. Del Balso
Executive Director for
System Operations

Acting Administrator, FAA

January 27, 1993

Dr. Robert Lilley
President, WGA
Ohio University
319 Stocker Center
Athens, OH 45701

Dear Bob,

Subject: RTCM 104, Differential Formats

Last week in San Francisco, I sat in on the 104 discussions and was assigned the Loran-C section updates. Apparently they have been unreviewed for 10 years or so. It is little wonder "we get no respect". After receipt of the appropriate current references, I will enlist other Loran-C community members to review such.

However, I was astonished to find that there were actually 60-70-80 different differential signal formats--almost all for GPS, of course--and treating each community (survey, nav, etc) local, regional and national all to their own desires, even with some--but not too much--consideration of foreign requirements (IMO, et al!) and other users such as aviation and their international requirements (ICAO, et al). It does not seem to be a convergent process.

Moreover, there was a move to retitle certain reserved formats from having Loran-C in their titles to simple "Reserved". This effort was USCG led but, in fact, was justified by the general description of systems and services such formats would serve. In light of 10 years of unconcern, I really felt I could not object. But, the door is now open to strongly reinsert one or more dL/C formats if we wish. I copied you on my memo to d/SAT Conference (Netherlands) people indicating what appeared to be a somewhat too narrow view assuming Loran-C is coming to Europe.

Does WGA want to re-undertake an aggressive dL/C awareness project? The USCG differential programs are completely blind to the issue and in my opinion dedicated to suppressing it at any cost.

Any thoughts from the Board?

Best regards,

Ed McGann
Executive Vice President

EM/lm

Brookton
highlight
in Newsletter
Tip Dave
5900

far to BOD

AVIONICS

FEB 03 1993

RECEIVED



Megapulse

8 Preston Ct
Bedford
Mass 01730-2380
(617) 275-2010
Telex 92-3358
MEG-BFRD
FAX (617) 275-9636



WILD GOOSE ASSOCIATION

Member and Non-Member ~~1992~~ Price List

Proceedings: 1972-~~1992~~ Non
Bound volumes of papers presented Member Member
at past Conventions, each volume \$40 ~~\$50~~ \$55
(When not available, individual paper charge will apply)

Bibliography

List of titles and listing of all Authors for
papers presented at Conventions \$7.50 \$10.00

Papers

Individual papers presented
at Conventions, each \$5.00 \$10.00

Journals

Back Issues of the (1975-1986)
Radionavigation Journal, each \$10.00 \$15.00

Videos

Loran - A Quick Refresher Course \$15.00 \$20.00

Loran-C and GPS as a Navigation Mix
for the United States Airspace \$15.00 \$20.00
(Federal Aviation Administration)

Loran-C - A Navigator's Approach \$35.00 \$39.50
(Capt. Henry Marx, Landfall Navigation)

How to use Loran-C and GPS \$20.00 \$25.00
(Azure)

Payment and Shipping

Shipping and handling on all orders ... \$5.00

Items are shipped UPS ground. Overseas shipments are
sent surface mail. Please remit payment with order in
U.S. funds, drawn on a U.S. bank, to:

Ellen G. Lilley Phone/Fax:
David C. Scull, VP Operations Phone: (703) 361-0884
Wild Goose Association Director Fax: (703) 361-0019
c/o NavCom Systems, Inc. (614) 797-
7203 Gateway Ct., Manassas, VA 22110 2081
150 S. Plains Rd. (over) 25780
The Plains, OH

WGA Memorabilia

Golf Shirts \$18.00
Caps \$8.00
WGA Paper Decals 3" (4 minimum) \$2.00
Lapel Pins \$5.00

MASTERCARD / VISA
AVAILABLE

Directors are asked to review and suggest any changes in items
or prices, before we print new cards.

To: Ed McGann, Megapulse

From: R. Lilley ✓

Date: 1/17/93

Subj: Your recent fax reminding me of your less-recent fax

I followed up on your suggestion that we should try to keep the differential Loran-C data block in the RTCM 104 message, and have so far had the following result:

"FAA presently has no plan for providing differential Loran-C, but supports the retention of the differential capability in the RTCM message."

George Quinn (202) 267-6502
Loran-C Program Manager
1/15/93

Carl Andren was in on the recent WGA Executive Committee meeting, and he said he would carry this message to RTCM and would talk to you there.

On the PHI differential-Loran-C idea; no problem asking. I have not found a good contact yet. I don't think FAA will be interested in providing the DLC service themselves (see Quinn's comment above). Certification will be easier if PHI has PRIVATE (not public-use) approaches. They could do it like we did in the early-implementation program (by STC or letter of authorization, perhaps).

xc. Walt Dean: 104 BOD meeting

To: John Beukers

From: R. Lilley ✓

Date: 1/17/93

John:

The 1/15/93 Executive Committee meeting came off quite well by phone, once we got the conference call established. I think we should continue this kind of hi-tech stuff when we can; it potentially saves several thousand dollars for the five participants.

The committee received and accepted with enthusiasm your excellent Convention report. Thank you for the report and for the hard work reported there!

Also, your comments on the meeting with Lord Caithness and on EC satellite activity are helpful, although not surprising. I hope the UK will see the light and recognize Loran-C! Do we have any clout with the Icelanders? Weren't the fishermen belatedly agitating for a mix?

On the Journal: Can we plan to introduce this at an upcoming EVENT?

- a. Santa Barbara - October 93?
- b. Boston - October 94?
- c. May 15 - Anniversary of El Paso Dedication (?!?)

xc. Walt Dean: 104 BOD meeting



THE INSTITUTE OF NAVIGATION

1800 Diagonal Road, Suite 480, Alexandria, VA 22314
Telephone (703) 683-7101 Fax (703) 683-7105

Date: 5/4/93

FAX To: Mr. Robert L. Lilley

Organization: Ohio U Avionics Lab

FAX Number: 614 593-1604

The Institute of Navigation FAX Number: (703) 683-7105

From: Jave Scull

Number of Pages: 6

Subject: WGA Box Mtg Minutes

H: Bob. Here is the
draft of my notes
Please feel free to
correct or elaborate.

WAVE
P.S. I sent a wordperfect
S.I file to Ellen.

DRAFT

Minutes of the 104th Meeting of the Board of Directors, April 22, 1993

1. Call to Order

The 101st Meeting of the Board of Directors was convened at 10:10 am in the Institute of Navigation Conference Room, Suite 480, 1800 Diagonal Road, Alexandria, Virginia. At the opening of the meeting a quorum was not established. It was decided to proceed with discussion of the agenda items but not to vote on any motions until after lunch when Director Laura Charron was able to be present.

2. Appointment of a Recording Secretary

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3. Attendance, Proxies and Statement of Quorum

The following Board Members were in attendance:

Bob Lilley, President
Dave Scull, Vice President
Carl Andren, Treasurer
Dale Johnson
Dave Amos
Ben Peterson
Laura Charron

Also attending:

Charlie Sakran representing the International Navigation Association

Written Proxies were received from Frank Cassidy, John Beukers, Bruce Hensel and Henry Laura Charron and Jim Culbertson.

At 1:30 pm Laura Charron arrived and an official quorum was declared present.

4. Adoption of the minutes of the 102nd and 103rd Board of Directors Meeting

It was noted that Ben Peterson's name was missing from the minutes although he attended the BOD meetings. The date of the 103rd BOD meeting was also to be added.

approximately \$42K in the treasury. This does not include large future bills such as those for the proceedings. He recommends that a book of abstracts be published in the future but now pre-printing of the proceedings.

He reported that he and Norma Meyers will do an audit on May 5, 1993. he will send a copy of the audit report to Walt Dean when it is completed.

A motion to accept the Treasurer's report was made by Dale Johnson and seconded by Dave Amos. It was adopted unanimously

f. 1993 Convention

Bob Lilley referred to John Illgen's report. He has been informed by John Illgen that United Airlines would be the official carrier and that if more than 40 people sign up we can get a 10% reduction the airfare from anywhere in the United States.

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The antenna collapse at the Turkish Loran-C station was discussed and Ed McGann's remarks in a letter to Dave Scull were discussed. Lieutenant Commander D'Agniese of USCG Headquarters reported to Bob Lilley that they tried to get the Turkish Government to discuss the issue, but it has been to no avail. DoD has no plans to fund a replacement tower in view of the short time remaining on their Loran-C requirement.

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A motion to accept this report was made by Dave Amos, seconded by Dave Scull. The motion was voted on and passed later in the meeting.

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A motion to accept this report was made by Dave Amos, seconded by Dave Scull. The motion was voted on and passed later in the meeting.

b. Secretary's Report

The Secretary's report was adopted later on in the meeting as part of the Executive Committee reports without exception.

c. Operations Report - Membership

Bob Lilley noted that the membership figures currently appeared low but expected them to improve. It was noted that Bruce Hensel had moved to Florida and was now working for Godfrey Engineering, a company that does approach lighting systems. Carl Andren noted that Frank Cassidy's name was not on the April 1993 Director's List.

d. Nominating Committee Report

President Bob Lilley referred to the report forwarded by the Nominations Committee. A motion to accept the nominations slate was made by Ben Peterson, seconded by Dale Johnson. It was later adopted without exception.

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some years ago a free article in the magazine SAIL on Loran-C resulted in the Coast Guard being deluged with requests for information. Bob Lilley will write to John Beukers concerning the advertizing situation.

d. McGann letter on Differential Loran-C

The directors present agreed with McGann's position on the RTCM Special Committee SC-104 Differential GPS transmission format continue to contain a Differential Loran-C message. George Quinn of FAA is believed to have the same viewpoint.

e. WGA Price List Card

The price list was reviewed and Bob Lilley recommended that the price for meeting proceedings be raised from \$40 to \$50.

f. Other Items

None

7. Next Meeting Schedule/Adjournment

To be held at the 1993 Convention in Santa Barbara. An Executive Committee Teleconference will be held at 1:00 pm July, 15, 1993.

The meeting was adjourned at approximately 2:30 pm.

U
January 13, 1992

write USCG & FRP
people -



Megapulse

8 Preston Ct
Bedford
Mass 01730-2380
(617) 275-2010
Telex 92-3358
MEG-BFRD
FAX (617) 275-9636

Mr. Robert Lilly
Ohio University
319 Stocker Center
Athens, OH 45701

Subject: a) Positive USCG Posture re Loran-C
b) Loran Availability Date (2015) in '92 FRP

Bob
Dear Bob:

- a) The attached article is a welcome response to Loran community entreaties to the USCG to express, for the benefit of the presently somewhat confused user community and the industry, a positive posture regarding the future support for Loran-C.

Action Suggested:

- Bob: Distribute to WGA Board -- and through someone designated as WGA publicity (at least temporarily) have this article sent to any and all aviation, marine and AVL publications that can be thought up requesting similar articles for their readers. I presume USCG has a formal release copy and perhaps has done some distribution. We should urge widespread publication.
- b) The attached copies of selected pages of the "Official" '92 FRP indicate that we finally got our wish for a clear date - 2015, not just the vague "...into the 21st Century".

The selected pages also show a last minute addition -- mandated by FAA under threat of withholding approval if not included (as I hear the story). This addition on page 3-43 is "Beyond the original offer..... In addition..., subject to the availability of funds....GPS-SPS". In my not-so-humble opinion, the underlined clause (underline added by me) will shoot the hell out of the credibility and commitment to that promise in the eyes of foreign governments and international authorities. It certainly completely violates the IMO and ICAO requirements that any government making an offer of a system for international acceptance must unequivocally guarantee a period of availability. Of course, the potential usurpation of the GPS services by the National Command Authority "during a dire national emergency" never has given much warm, comfortable feelings to these authorities anyway!

SUMMARYAction Suggested:

- Bob:
- 1) Letter to the USCG thanking them for their article and commenting on its quality.
 - 2) Letter to FRP coordinators and contributors thanking them for their consideration of WGA comments and offering, of course, to further contribute to future additions. (We best wait until FRP is printed and distributed -- possibly by end of January, 1993.)

Regards,



Ed

E/I

encs

U.S. Department
of Transportation

Research and
Special Programs
Administration

JOHN A. VOLPE
NATIONAL TRANSPORTATION SYSTEMS CENTER

Kendall Square
Cambridge, MA 02142-1093

FACSIMILE TRANSMISSION COVER SHEET

FAX: 617/494-2028

Date 1-12-93 Cover & _____ Page (s)

To Ed McGinn From Sig Carpenter
Myzard Volpe Center

FAX # _____ DTS - 52 Tel (617) 494 - 2126

Message How is the "official" policy statement and 10-year GPS
offer from the 1992 FRP - Date 1/12/93

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Federal Policy and Plans for the Future Radionavigation Systems Mix 1992

Purpose: This statement sets forth the policy and plans for Federally provided radionavigation systems.

Objectives: The Federal Government operates radionavigation systems as one of the necessary elements to enable safe transportation and encourage commerce within the United States. It is a goal of the Government to provide this service in a cost-effective manner. In order to meet both civil and military radionavigation needs, the Government has established a series of radionavigation systems over a period of years. Each system utilizes the latest technology available at the time it was introduced to meet existing or unfulfilled needs. This statement addresses how and for what period each system should be part of the Federal radionavigation systems mix.

The Department of Defense is deploying a new high-technology radionavigation system, the Global Positioning System (GPS), which will have wide civil application on a global basis. This system has the potential to meet or better the accuracy and coverage capabilities of most other radionavigation systems. Consequently, if the full civil potential of GPS is realized, the Department of Transportation will consider phasing out some of the existing radionavigation systems.

Any decision to discontinue Federal operation of existing systems will depend upon many factors including: (a) resolution of GPS accuracy, coverage, integrity, and financial issues; (b) determination that the systems mix meets civil and military needs currently met by existing systems; (c) availability of civil user equipment at prices that would be economically acceptable to the civil community; (d) establishment of a transition period of 10-15 years; and (e) resolution of international commitments.

Radionavigation systems operated by the U.S. Government will be available subject to direction by the National Command Authority (NCA) because of a real or potential threat of war or impairment to national security. Radionavigation systems will be operated as long as the U.S. and its allies accrue greater military benefit than do adversaries. Operating agencies may cease operations or change characteristics and signal formats of radionavigation systems during a dire national emergency.

Individual System Plans:

Loran-C: Loran-C is the Federally provided radionavigation system for the U.S. Coastal Confluence Zone (CCZ). It provides navigation, location, and timing services for both civil and military air, land and marine users. Loran-C is approved as a supplemental air navigation system. It is also approved for nonprecision approaches at certain airports. The Loran-C system now serves the 48 conterminous states, their coastal areas, and certain parts of Alaska. It is expected to remain part of the radionavigation mix through the year 2015.

The DOD requirement for the Loran-C system will end December 31, 1994. Operations conducted by the United States Coast Guard at overseas stations will be phased out by the end of 1994. In the case of stations located outside the U.S., discussions continue between the U.S. and the respective foreign governments concerning the continuation of service after the DOD requirement terminates.

Omega: Omega is currently the only operational radionavigation system that provides global coverage and serves maritime and aviation users. The civil aviation requirement for Omega will remain in effect until GPS is approved to meet the Required Navigation Performance (RNP) criteria for the oceanic en route phase of flight. This is expected to occur in 1995. The U.S. does not expect to end Omega operations before the year 2005. However, the U.S. operates Omega with six partner nations (Norway, Liberia, France, Argentina, Australia, and Japan); therefore, the system is dependent upon continued participation by these nations under bilateral agreements with the U.S. Continued operation after this date would also depend on identifying navigation or non-navigation requirements that are not met by other systems.

The DOD requirement for Omega will end December 31, 1994; however, limited use is expected as long as the system remains operational.

VOR/DME:

VOR/DME provides users with the primary means of air navigation in the National Airspace System (NAS). VOR/DME, as the international standard for civil air navigation in controlled airspace, will remain a short-range aviation navigation system through the year 2010.

The DOD requirement for and use of VOR/DME will terminate when aircraft are properly integrated with GPS and when GPS is certified to meet RNP for national and international controlled airspace. The target date is the year 2000.

TACAN:

TACAN is a short-range navigation system used primarily by military aircraft.

The DOD requirement for and use of land-based TACAN will terminate when aircraft are properly integrated with GPS and when GPS is certified to meet RNP in national and international controlled airspace. The target date is the year 2000. The requirement for shipboard TACAN will continue until a suitable replacement is operational.

ILS, MLS:

ILS is the standard civil landing system in the U.S. and abroad, and is protected by ICAO (International Civil Aviation Organization) agreement to January 1, 1998. ICAO has selected the MLS as the international standard precision approach system, with implementation targeted for 1998. MLS is expected to gradually replace ILS in national and international civil aviation. The FAA and DOD plan to have MLS collocated with ILS to minimize the transition impact.

Transit:

Transit is a satellite-based positioning system operated by DOD.

Transit will terminate and system operation will be discontinued in December 1996.

Radiobeacons:

Maritime and aeronautical radiobeacons serve the civilian user community with low-cost navigation. Some maritime radiobeacons will be modified to carry differential GPS correction

signals. This may cause errors when used by certain aeronautical receivers; therefore, these maritime radiobeacons should not be used for aviation. Aeronautical radiobeacons and maritime radiobeacons, which will carry differential GPS correction signals, will remain part of the radionavigation systems mix into the next century. Many of the remaining maritime radiobeacons may be phased out after the year 2000.

GPS:

GPS is a DOD-developed, worldwide, satellite-based radionavigation system that will be the DOD's primary radionavigation system well into the next century. The operational capability of GPS is of significant interest to both civil and military users. The term Full Operational Capability (FOC) is of particular significance to the Department of Defense as it defines the condition when full and supportable military capability is provided by a system. GPS FOC will be declared by the Secretary of Defense when 24 operational (Block II/IIA) satellites are operating in their assigned orbits and when the constellation has successfully completed testing for operational military functionality. An Initial Operational Capability (IOC) will be attained when 24 GPS satellites (Block I/II/IIA) are operating in their assigned orbits, are available for navigation use and can provide levels of service as specified below. Notification of IOC by the Secretary of Defense to the Secretary of Transportation will follow an assessment by the Air Force, as the system operator, that the constellation can sustain the stated levels of accuracy and availability throughout the IOC period. IOC is planned to occur in mid-1993 and military FOC is planned in 1995.

Prior to IOC, GPS is considered a developmental system. System operation, including signal availability and accuracy, is subject to change at the discretion of DOD. Operations conducted using the developmental system are, therefore, subject to disruption if it is necessary to adjust system operating parameters in support of system testing. At IOC, the GPS will have achieved its earliest operational configuration and the Standard Positioning Service (SPS) will be available as specified below.

Subsequent to IOC, any planned disruption of the SPS in peacetime will be subject to a minimum of 48-hour advance notice provided by the DOD to the Coast Guard GPS Information Center (GPSIC) and the FAA Notice to Airmen (NOTAM) system. A disruption is defined as periods in which the GPS is not capable of providing

SPS as specified below. Unplanned system outages resulting from system malfunctions or unscheduled maintenance will be announced by the GPSIC and NOTAM systems as they become known. The Coast Guard and the FAA will notify civil users when the GPS is approved for navigation.

GPS will provide two levels of service - a Standard Positioning Service (SPS) and a Precise Positioning Service (PPS).

SPS Policy: SPS is a positioning and timing service which will be available to all GPS users on a continuous, worldwide basis with no direct charge. SPS will be provided on the GPS L1 frequency which contains a coarse acquisition (C/A) code and a navigation data message. SPS is planned to provide, on a daily basis, the capability to obtain horizontal positioning accuracy within 100 meters (2 drms, 95 percent probability) and 300 meters (99.99 percent probability), vertical positioning accuracy within 140 meters (95 percent probability), and timing accuracy within 340 ns (95 percent probability). The GPS L1 frequency also contains a precision (P) code that is reserved for military use and is not a part of the SPS. Although available during GPS constellation build-up, the P code will be altered without notice and will not be available to users that do not have valid cryptographic keys.

PPS Policy: PPS is a highly accurate military positioning, velocity, and timing service which will be available on a continuous, worldwide basis to users authorized by the DOD. PPS will be the data transmitted on GPS L1 and L2 frequencies. PPS was designed primarily for U.S. military use. It will be denied to unauthorized users by use of cryptography. PPS will be made available to U.S. Federal and Allied Government (civil and military) users through special agreements with the DOD. Limited, non-Federal Government, civil use of PPS, both domestic and foreign, will be considered upon request and authorized on a case-by-case basis, provided:

- ♦ It is in the U.S. national interest to do so.
- ♦ Specific GPS security requirements can be met by the applicant.
- ♦ A reasonable alternative to the use of PPS is not available.

**Differential
GPS:**

Differential GPS (DGPS) is a system in which differences between observed and predicted GPS signals at a particular location are transmitted to users as a differential correction to upgrade the precision and performance of the user's receiver processor. Several DOT agencies are planning to provide DGPS services.

Maritime DGPS: The USCG plans to provide DGPS service for the harbor and harbor approach phase of maritime navigation. Maritime DGPS will use fixed GPS reference stations which will broadcast pseudo-range corrections using maritime radiobeacons. The USCG DGPS system will provide radionavigation accuracy better than 10 meters (2 drms) for U.S. harbor and harbor approach areas by 1996, free of charge to the user. Until the DGPS service is declared operational by the USCG, users are cautioned that signal availability and accuracy are subject to change due to the dependence on GPS, testing of this developing service, and the uncertain reliability of prototype equipment.

Aeronautical DGPS: The FAA, in cooperation with DOD, is planning to use differential corrections to GPS/SPS in the provision of RNP in the National Airspace System, including approaches to landing in all weather conditions.

All licensed communication links, including those used to transmit differential GPS corrections, are subject to the direction of the NCA. DOD/DOT will not constrain the use of SPS-based differential GPS service as long as applicable U.S. statutes and international agreements are adhered to.

On July 12, 1991, the RTCA, Inc. Special Committee 159 published the Minimal Operational Performance Standards (MOPS) for airborne supplemental navigation equipment using GPS.

For GPS to meet RNP for civil aviation (for oceanic en route, domestic en route, terminal, and nonprecision approaches), it must provide at least five satellites in view above a mask angle of 7.5 degrees in which all combinations of four out of five satellites provide horizontal position accuracy required for the different phases of flight. At least five satellites are required so that if one satellite fails, unaided GPS navigation may continue. The current civil aviation integrity requirement for nonprecision approaches is that the navigation system provide a warning to the pilot or removal of the signal from service within 10 seconds after the signal has gone out-of-tolerance.

Interim guidance for installation and approval of GPS equipment in aircraft is given in Appendix B.

In light of recommendations of the ICAO Special Committee on the Future Air Navigation System (FANS) and to further the development of the ICAO Communications, Navigation, and Surveillance/Air Traffic Management (CNS/ATM) system concept, the U.S. decided to make available the SPS of the GPS at the Tenth Air Navigation Conference in September 1991. The U.S. offer at the Tenth Air Navigation Conference was: "GPS-SPS is planned to be available beginning in 1993 on a continuous, worldwide basis with no direct user charges for a minimum of ten years. The service will provide horizontal accuracies of 100 meters (2 drms - 95% probability) and 300 meters (99.99% probability)." Beyond the original offer of GPS-SPS for a minimum of ten years, the U.S. intends to continue operation of GPS and to offer GPS-SPS for the foreseeable future free of direct user fees. In addition, the U.S. intends, subject to the availability of funds, to provide a minimum six-year advance notice of termination of GPS operations or elimination of the GPS-SPS.

3.2.10 Differential GPS

GPS may exhibit variances from a predicted grid established for navigation, charting, or derivation of guidance information. This variance may be caused by propagation anomalies, errors in geodesy, accidental perturbations of signal timing, or other factors.

Adverse effects of these variances may be substantially reduced, if not practically eliminated, by differential techniques. In such differential operation, a facility may be located at a fixed point (or points) within an area of interest. GPS signals are observed in real time and compared with signals expected to be observed at the fixed point. Differences between observed signals and predicted signals are transmitted to users as differential

NOTE**INSIDE VIEW**

Navigating Loran-C's Future

Rumors of System's Demise Are Greatly Exaggerated

By ENSIGN JOHN THOMPSON

With the advent of the new satellite based Global Positioning System (GPS), there is a growing concern among Loran-C users that their time-tested navigation system will be eliminated in the very near future.

The closure of several overseas Loran-C stations is adding to the controversy. Rumors of the demise of the Loran-C system could not be further from the truth.

Although the Coast Guard is withdrawing from overseas Loran-C operations by the end of the 1994 as mandated by public law, most nations will continue to operate these stations for their own needs.

In many cases, they will actually expand the coverage areas. The U.S. Coast Guard continues to fully support, improve and expand Loran-C facilities in the continental United States and Alaska.

In 1991, two new Loran-C chains began transmitting to complete the coverage over the continental United States. In addition, modernization of older facilities continues.

Loran-C users have increased thanks to its use by the aviation community and to new applications by terrestrial users.

U.S. Coast Guard Ensign John Thompson is a radionavigation information officer in the Coast Guard's Radionavigation Division.

This trend is expected to continue despite the arrival of GPS. Due to the very large size of the Loran-C user community, continued reliance on Loran by foreign governments and new non-navigation applications, Loran-C is expected to be around until at least 2015.

Presently, Loran-C is one of the most widely used radio-navigation systems available. The Loran-C community consists of the over 600,000 users worldwide including maritime, aviation and terrestrial users. Many of these are recreational boaters and small commercial vessel operators who take advantage of Loran-C's very low cost and excellent repeatable accuracy.

Loran-C remains as the designated, federally provided, radionavigation system for civil marine use in U.S. coastal waters. The Federal Aviation Administration (FAA) has also designated Loran-C as a supplemental system for use in the National Airspace System.

In the Pacific, Loran-C coverage will remain largely unchanged. The only exception is the recently closed Central Pacific chain, located in Hawaii, that was originally intended to provide coverage for a U.S. Department of Defense missile test range.

Its loss is not expected to significantly affect civil users. The Republic of Korea has taken over the operation of the former Commando Lion chain (now called the East Asian chain) and will relieve the U.S. Coast Guard of control and monitor duties by the end of 1992.

In addition, Korea is actually in the process of upgrading the two stations located there. Japan will soon assume operations and upgrade the equipment of four of the five stations that form the Northwest Pacific chain.

These two chains provide coverage for both Korean and Japanese waters. A new chain (the Russian-American chain) is being completed jointly by the United States and Russia and should be operational by the end of 1993.

In the Atlantic and in Europe, Loran-C coverage will continue as before with only a few minor changes. Several Northern European nations have signed an agreement to assume control of four of the five stations in the North Atlantic and Northern Europe that presently form the Norwegian Sea chain.

Their plans include not only upgrading these facilities, but adding three additional stations and eventually reconfiguring the chain. Canada is building a new station at Comfort Cove, Newfoundland.

Several other nations have been operating their own Loran-C chains for years. Russia operates at least two chains independently.

There are two chains operated by the Saudi Arabians that are, again, independent of U.S. control. There has been no indication of potential closure of any of these systems.

In fact, many other countries, including China and India, are actively developing new Loran-C systems for their own use.

Loran-C will also better serve the aviation community in the future. The FAA has already designated this system as an approved enroute navigation system.

The Coast Guard and FAA are work-

ing toward approval of Loran-C as an approach navigation system.

To date, the FAA has approved Loran-C for non-precision approaches at over 20 airports.

This number is increasing with the newly expanded coverage over the central United States.

There are many non-navigational uses of the Loran-C system with more being developed every day.

One of the most important of these is Loran-C's accurate time synchronization. This invaluable service is used by telephone and utility companies, television and radio services and satellite communication companies, among others.

Another use is for monitoring the location of vehicles such as ambulances, police cruisers and vehicles carrying dangerous or precious cargos.

The weather service uses Loran-C to monitor weather balloons. There are new auto alarm systems being marketed that use Loran-C to locate stolen cars. And the railroad industry is developing a Loran-based system to keep track of their trains.

Another interesting use of Loran-C is for tracking animals, especially migratory species.

The Loran-C system may someday be replaced, but this is still years away. Once the decision is made to terminate the Loran-C program, a 10- to 15-year phase-out period will help protect the user's investment.

For the immediate future, the Loran-C system will continue to grow and be upgraded. Loran-C users can be assured that this system will remain an accurate and affordable radionavigational aid well into the next century.

International Business Alliances Hinge on Satisfying Customers

WALDMANN, From Page 14

ogy not available in-house. Alliances formed primarily as a way to share the risk of new and costly airplane programs do not guarantee that firms will fully and completely satisfy the customer.

Let me stress that satisfying airline customers is as much a part of our suppliers' responsibility as it is ours. Boeing contributes approximately 40 percent of the dollar value of delivered jetliners. The rest comes from our program partners and suppliers around the world. These firms must pull their weight in providing airplanes that customers want and can afford.

Two ways that Boeing works with our program partners and suppliers to help us meet the needs and expectations of our airline customers are design-build teams, and something we call the Advanced Quality System.

The design-build team concept's champion is the 777 airplane program. This program

has more than 230 design-build teams with experts from every discipline involved in designing, building, testing, maintaining and operating an airplane.

Program partners and suppliers hear firsthand what airline customers expect and work closely with Boeing to translate these expectations into the airplane that airline customers prefer. That is the benefit of design-build teams.

Used less formally and much less thoroughly on past airplane programs, Boeing will use design-build teams aggressively and comprehensively on all future models and derivatives.

The Advanced Quality System is the second way we work together to build long-term relationships with our program partners and suppliers. These help us establish reliable, consistent, day-to-day processes that build quality in up front rather than inspecting for quality at the end.

Like the use of design-build

teams, the increasing application of Boeing's Advanced Quality System ensures that program partners and suppliers deliver the quality and affordability airlines expect. That is the benefit of the Advanced Quality System.

Our program partners and suppliers are very familiar with Boeing's design-build teams and Advanced Quality System. Boeing contracts with new firms throughout the world only when they can demonstrate their ability to provide the quality and affordability our airline customers require.

And affordability matters to our airline customers. Airplanes must be affordable if airlines are to remain competitive. The chief executive officer of a major American airline recently said, "New airplanes are too expensive. As we buy new aircraft to replace old ones, ownership costs go up faster than operating costs go down."

Boeing studies indicate that

airplane ownership costs are now the largest part of airline direct operating costs.

To respond to market opportunities, airlines must be extremely nimble — able to take advantage of every opportunity that will give them an edge over the competition. They expect Boeing to help them capitalize on these competitive opportunities.

Boeing has developed its worldwide customer base in competition with the world's other manufacturers of commercial aircraft. The Boeing Co. thrives on competition. But Boeing's most formidable competitor, Airbus Industrie, is not a normal competitor.

Extensive levels of past subsidization provided by the governments of France, Germany, the United Kingdom and Spain have enabled Airbus to develop a full family of aircraft without ever having made a profit. To price these aircraft without full cost recovery, and to offer concession-

ary financing terms to customers.

Twenty-two years ago Airbus launched its first aircraft. In a recent speech in New York, Airbus President Jean Pierson said that Airbus generated its first operating surplus in 1990, "four years ahead of schedule." But from our perspective — that of an aerospace company that's had to earn its keep from day one — this is 20 years too late.

The U.S. government and the European Community have reached an historic agreement earlier this year that will limit certain types of Airbus subsidization.

The agreement is noteworthy in several respects. It includes a ban on production supports, which is the first instance of an outright prohibition on domestic subsidies.

In addition, it provides strict terms and conditions for development funding, which historically has represented the lion's share of European government support for Airbus.

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Boeing, Airbus Spark Debate On Jumbo Jet

By JACQUELINE GALLACHER
And DEBRA WERNER
Commercial Aviation News Staff Writers

LONDON — Discussions on the next generation super jumbo jet have sparked an international debate on the cast of characters that will participate in the project.

Boeing Co., Seattle, and Airbus Industrie, Blagnac, France, last week issued contradictory statements on the current status of those discussions.

Boeing officials confirmed Jan. 6 that the company is holding

discussions with Deutsche Aerospace, British Aerospace and Aerospatiale, three members of the Airbus Industrie consortium, as well as a number of Japanese companies, about jointly studying the feasibility of developing a 550- to 800-passenger jet.

In addition, McDonnell Douglas officials said that company has had informal talks with Boeing and Deutsche Aerospace about joining the study.

News that three Airbus Industrie members were considering

See JUMBO, Page 20

All Nippon Posts Large 1992 Loss

Airline Revenues Fell \$120 Million

By DENNIS PIDGE
Commercial Aviation News Staff Writer

TOKYO — All Nippon Airways Co., Japan's second-largest international carrier, reported Jan. 6 it expects to post a loss of 15 billion yen (\$120 million) in its international operations for the financial year, ending March 31, 1993.

As a result, the carrier may be forced to retreat from its long-term plans to increase international flights worldwide.

"We are considering a possible reduction of international flights, but we are looking for various ways to improve efficiency in international operations. Details have yet to be worked out," said Tetsuo Fukuda, the airline's international public relations manager.

All Nippon, like other international carriers worldwide, has been plagued by fewer first-class and business-class travelers, lower seat occupancy rates on flights, and price-cutting fares by other airlines to capture customers as a result of the prolonged recession in the airline industry.

Lack of available slots at Tokyo International Airport-Narita and Kansai (Osaka) International Airport have also slowed the Japanese carrier's ability to increase international flights. Huge investments in Narita, Tokyo International Airport-Haneda and the new Kansai airport facilities are burdening costs.

A major Japanese business newspaper, the *Nihon Keizai Shimbun*, reported in December that All Nippon would reduce in the future the number of flights it operates from Narita to Washington, Sydney, Australia, and other cities overseas. Fukuda denied the newspaper report.

In fact, All Nippon will start two weekly flights between Narita and Frankfurt, Germany, Feb. 17 and three weekly flights between Narita and Shanghai, China, March 30, according to Fukuda.

"There seems to be a lot of internal debate going on whether to go forward on the international side or retreat," said Daniel O'Keefe, a transport analyst with

See NIPPON, Page 21



COMMERCIAL AVIATION NEWS PHOTOS BY STEVE ELFRIS

Federico Pena, left, secretary of transportation designate,



vowed to work quickly to revive the troubled U.S. airline industry during a Senate confirmation hearing Jan. 7. Sens. Ernest Hollings, top right, and John Danforth, bottom right, led the committee's inquiry into the former Denver mayor's position on a wide range of aviation issues.

Pena Rejects Re-regulation, Pledges to End DoT Torpor

By TRISH GILMARTIN
Commercial Aviation News Staff Writer

WASHINGTON — Secretary of Transportation designate Federico Pena vowed to work in partnership with the aviation industry to improve the plight of U.S. airlines but pointedly told Congress he does not favor re-regulation.

The former Denver mayor and head of president-elect Bill Clinton's transportation transition group said at a Jan. 7 Senate confirmation hearing that the notion of re-regulating the nation's airlines "is not on my radar screen."

Pena's comments took aim at speculation he would seek to reverse the 1978 deregulation of the U.S. airline industry. Pena said he was "troubled" by such reports and told members of the Commerce, Science and Transportation Committee

that he had never met Denver lawyer Paul Dempsey, who is a leading opponent of deregulation and a rumored Pena choice for a key Transportation Department post.

Pena, 45, agreed with lawmakers who cited aviation and maritime policy reform as paramount concerns and said both would be high on his agenda if confirmed.

Sen. John McCain (R-Ariz.) noted that the Bush administration had put forth a framework for dealing with the nation's maritime crisis, but ignored aviation. "It cannot continue. We are in a crisis," McCain said.

The incoming Clinton administration's approach to aviation could include appointment of a high-level commission to study the ailing industry and recommend ways

to put it back on track, Pena said. The U.S. airline industry has lost a record \$6 billion over the last two years alone and an estimated 60,000 jobs since 1990.

United Airlines chairman and chief executive officer Stephen Wolf called on president-elect Clinton to convene a commission of experts to identify ways to help the industry. Wolf's suggestion came in a Jan. 6 letter to Clinton seeking conclusions from the transportation commission within 90 days.

"This industry... is in serious trouble," Wolf said. Problems such as prolonged operation of carriers under bankruptcy protection, trade barriers to U.S. carriers' market access abroad and outdated infrastructure will not be

See PENA, Page 20



OHIO UNIVERSITY/AVIONICS ENGINEERING CENTER

—TELEFAX COVER PAGE—

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(VERIFY) *614-593-1534
8-943-2282*

COMMENTS:

Thanks for the letter of January 13

a) Bill Brogdon was instrumental in getting that article written, I understand. Anyway, he is publishing it in the Gazette in full.

b) Absolutely. I'll write USCG and FRP people!

We're working on the WGA media data base, and will send the article out
\$\$