## IN THIS ISSUE ...

President's Message	1
The European COLUMBUS Programme	2
Space Station Payload Accommodation	13
The Japanese Experiment Module	17
Inside AESS: China; Fellows	24
Publications	28
Patents	30
New Horizons	31
Chapter Chairmen	32
Foreign Technology Abstracts	Centerfold Insert
Conference Information	Insert Inside Covers

## ABOUT THE COVER ... (See also page 24)

TOAST

Nov. 4, 1986

Ladies and Gentlemen:

Friends and Comrades:

One day has passed for the first international radar conference which started here today. It's a pleasure indeed to see that both Chinese and foreign specialists are here this evening to talk their friendship over a cup of wine. I warmly welcome you to the dinner.

Many foreign organizations and specialists rended their active support and help to the conference and so do relevant Chinese organizations. The conference also got the help of Jiangsu Provincial and Nanjing city leaders. Please allow me in the name of conference Chairman, express my sincere thanks to all the friends and comrades who help make this gathering possible.

comrades who help make this gathering possible. It is the common desire of all present here to promote the progress of radar technology, cooperation and friendship. Today's dinner is a gathering of the radar specialists. I'd like to take this rare opportunity to ask you to raise your glasses and drink to our cooperation and friendship.

During the conference, we also invite our counterparts and their wives to see Nanjing's scenic spots and places of historical interest, and the performances by Nanjing artists. I hope you will enjoy them.

Now, I propose a toast to the progress of radar technology in various countries and mutual cooperation and toast the pleasant stay in China for the specialists and their wives!

Shen Zhongyi General Chairman



## IEEE AEROSPACE AND ELECTRONIC SYSTEMS SOCIETY

The Aerospace and Electronic Systems Society is a society, within the framework of the IEEE, of members with professional interests in the organization, design, development, integration and operation of functional systems for space, air, ocean or ground environments. These systems include, but are not limited to, navigation, avionics, spacecraft, aerospace power, radar, sonar, telemety, defense, transportation, and command and control. All members of the IEEE are eligible for membership in the Society and will receive this *Magazine* and the *Transactions* upon payment of the annual Society membership fee. *The Society Board of Governors, Organization, and its Committees will be found on cover 3.* 

34-4100 x262
01) 765-2858
862-1357
C

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

Henry L. Bachman, President	Ronald G. Hoelzeman, Vice President, Educational Activities	
, President-Elect	Carleton A. Bayless, Vice President, Professional Activities	
Bruno O. Weinschel, Past President	Charles H. House, Vice President, Publication Activities	
Merrill W. Buckley, Executive Vice President	Robert S. Duggan, Jr., Vice President, Regional Activities	
Ramiro Garcia Soza, Secretary	Donald C. Fleckenstein, Director, Standards Activities	
Edward J. Doyle, Treasurer	Emerson W. Pugh, Vice President, Technical Activities	
HEADQUARTERS STAFF		
Eric Herz, Executive Director and General Manager	Anthony L. Rigas, Staff Director, Educational Services	
Elwood K. Gannett, Deputy General Manager	Donald L. Suppers, Staff Director, Field Services	
Thomas W. Bartlett, Controller	Leo Fanning, Staff Director, Professional Activities	
Donald Christiansen, Editor of IEEE Spectrum	David L. Staiger, Staff Director, Publishing Services	
Thomas C. White, Public Information	Sava I. Sherr, Staff Director, Standards Services	
Charles F. Stewart, Jr., Staff Director, Administration Services	Irving Engelson, Staff Director, Technical Activities	

IEEE AEROSPACE AND ELECTRONIC SYSTEMS MAGAZINE is published monthly by The Institute of Electrical and Electronics Engineers, Inc., 345 East 47th Street, New York, NY 10017. Responsibility for the contents rests upon the authors and not upon the IEEE, the Society, or its members. IEEE Service Center (for orders, subscriptions, address changes): 445 Hoes Lane, Piscataway, NJ 08854. Telephones: Headquarters 212-705 + extension: Information—7900, General Manager—7910, Controller—7748, Educational Services—7860, Publishing Services—7560, Region/Section Services—7751, Technical Services—7750, IEEE Service Center (201) 981-0060. Washington Office/Professional Services (202) 785-0017. NY Telecopier No. (212) 752-4929. Telex No. 236—411 (International messages only). This Journal is available in either microfiche or printed form. Additional copies may be purchased at \$3.00 (first copy only) by IEEE members and \$6.00 per copy by nonmembers. Annual subscription price: IEEE members, dues plus Society fee. Price for nonmembers available on sequest. COPYRIGHT AND REPRINT PERMISSIONS: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy byoind the limits of U.S. Copyright law for private use of patrons: (1) those post-1977 articles that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through the Copyright Clearance Center, 29 Congress St., Salem, MA 01970, (2) pre-1978 articles without fee. Instructors are permitted to photocopy byoint fee Instructors are permitted to photocopy byoint or permission, write to the Director of Publishing Services at IEEE Headquarters. All rights reserved. Copyright © 1986 by The Institute of Electrical and Electronics Engineers. Inc. Printed in U.S.A. Second-class postage paid at New York, NY, and additional mailing offices. Postmaster: Send address changes to IEEE Aerospace and Electronic Systems Society, NEEE, 445 Hoes Lane, Piscataway, NJ 08854.