American Institute of Aeronautics and Astronautics

Houston Section Newsletter Summer 1986

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The AIAA Houston Section newsletter is created by the Section Newsletter Committee and Bill Stewart, Editor. It is printed at the Houston offices of LEMSCO.
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Chairman's Comments- The Year of the Member

At the President's luncheon we learned that the theme for the upcoming year is "The Year of the Member." I'm glad they picked that name because we have tried to make every year the year of the member in the Houston Section.

Interestingly, they have adopted many of the ideas your officers have sent to head quarters over the past several years to implement. Someone does listen. As they state, "Many ideas are the result of listening and talking to you."

That certainly is where many of the ideas we sent to them came from, including from the intensive questionaire we all completed several years ago. We think many of the ideas will provide you with more timely service and provide you with additional and improved technical information and training.

Last year and the one before, the Section participated in applying the AIAA strategic plan to the local Section. We established the Long Range Planning Committee to do this. That committee will continue. It is now charged with also working th e action items for local sections in the booklet "The Year of the Member."

The AIAA is a volunteer organization. All things that are good happen because a member, or several, are turned on and give their time and talent in support of the activity and the Organization.

I encourage those of you who would like to have a stronger technical society that contributes more to the profession and to the local community to get involved and to contribute your talents to acheiving what you think will be beneficial tothe mambers of the local section and the community. Our contribution is limited only by your reservation about venturing forth and by the fact that everything that gets done is by voluntary effort.
Sometimes these volunteer efforts aren't perfect, but without them there would be no achievement. We all appreciate that which is done entirely successfully and that which is done as best as it can be within the limits of time and the pressures from the jobs we are here to do.

You have elected a team of qualified and enthusiastic officers to lead you. They will need support from you. Who will take up the banner for the future? Is this your year to really get involved? Where can you contribute to your profession, to it's members, and to the local community?

Thanks for giving me the opportunity to serve you.

Bob Lewis

AIAA On The Move

At the National Convention in Arlington, Virginia, brochures were passed out detailing plans for the new AIAA Headquarters in Washington, D.C. This was also discussed at the President's luncheon. The building is on D Street between 9th and 10th near NASA Headquarters, FAA, DOT, and the National Air and Space Museum.

The AIAA will occupy the top floor of the 10 story building. Construction is expected to be complete by the fall of '87. AIAA is a limited partner in the building with a 13.3% equity and a 25 year lease at $21 per square foot to start, well below market, which should result in a net income within 15 years to AIAA.

Most of the funds for the AIAA committments for the new building have been pledged by industry, who benefits from the knowledge transferred by the Institute to its members. Individual member will be asked for pledges for the final $1 million dollars - allowing those who benefit most to contribute to their Institiute.

A specific plan for this will be forthcoming.

Bob Lewis

AIAA Technical Symposium Report

The Eleventh Annual AIAA Houston Section Technical Symposium on Aerospace Technology was held Friday, May 9, 1986, at the University of Houston-Clear Lake Bayou Building. A record attendance of over 500 attended the largest symposium yet with 136 technical presentations in 16 technical sessions.

General Chairman AIAA Fellow Dr. Aaron Cohen, JSC Director of Research and Engineering, spoke at the dinner program following the Symposium on the theme for this year "Space: The Next 15 Years."

The plenary session at the conclusion of the technical sessions featured AIAA Fellow Dr. Buzz Aldrin of the historic Apollo 11 first lunar landing mission. Dr. Aldrin is Professor/Director of Space Studies with the University of North Dakota Center for Aerospace Sciences and is also Senior Scientist with Science Applications International Corporation (SAIC) at Manhattan Beach, California. In keeping with the Symposium theme he spoke on "Space: Changes Needed Now to Support the Next 15 Years."

In addition to the technical

AIAA Houston Section Election Winners 1986-87

Chairman - Karen Godek

Chairman Elect - Carl Huss

Vice Chairman, Operations - Lou Livingston

Vice Chairman, Technical - Walter Lueke

Secretary - Debra Nienhaus

Treasurer - Scott Satterwhite

Councillors - Kyle Fairchild
Logan Haycraft, Jr.
Ed Monteiro
Jim Oberg
Stephanie Vickery
Dick West
Nancy Wood

Returning Councillors - Don Rhorer
Richard Hermling
Ernie Hillje

1986-87 Officers and Councillors at the Banquet, left to right: Stephanie Vickery, Don Rhorer, Jim Oberg, Bob Lewis, Carl Huss, Karen Godek, Lou Livingston, Scott Satterwhite, Nancy Wood, Dick West, Debra Nienhaus

Technical Symposium, continued...

presentations, a display was provided by the Life Science Projects Division.

Those selected by the session chairmen as having made the best presentation in their respective technical session were recognized at the Annual Honors and Awards Night May 22.

On behalf of the Houston Section I would like to extend my sincere thanks to all those who contributed their time and effort to make the Eleventh Annual AIAA Technical Symposium an outstanding success. Our special thanks to the University of Houston-Clear Lake for providing the facility, to the 187 authors, coauthors, presenters, and session chairmen, to those who worked at the symposium with registration and with the visual aids equipment, to those who worked in preparing the symposium manual and badges, and to those who attended.

Stephanie Vickery
Past VC/Technical

Regional Training and Marketing Representative Appointed for AIAA Aerospace Database

Claire Zigmund Stokes has been apponited a regional training and marketing representative for the Aerospace Database, a service of the AIAA Technical Information Service (AIAA/TIS). Ms. Stokes cuurently is head of Reference and Research Services at the Science and Engineering Library of the

New Rep, continued...

University of Minnesota in Minneapolis and she will retain that position while serving as a consultant to AIAA/TIS.

Ms. Stokes is the second Training and Marketing Representative appointed by AIAA/TIS. Lynn M.Ecklund, appointed in October 1985, has been performing as a Training and Marketing Representative for AIAA/TIS in the Western United States.

Editor

Aaron Cohen Speaks: The Next Fifteen Years

Aaron Cohen, Director of Research and Engineering at the Johnson Space Center spoke at the dinner meeting following the highly successful Eleventh Annual Technical Symposium.

Dr. Cohen served as Manager of the Space Shuttle Orbiter Program Office from 1972 to 1982. Thus he brought a valuable perspective to his discussion of what has been accomplished during the first 25 years of the civilian space program and his vision of what lies ahead in the next 15 years that will bring us into the 21st Century.

He began by congratulating the Houston Section on its Eleventh Annual Technical Symposium which broke previous records with attendance of over 500. He remarked that such technical conferences are the backbone of research in science and engineering.

SPACE RESEARCH - Much has been accomplished in the past 25 years of space research. Unmanned space vehicles have brought us greatly increased knowledge of our planet through remote sensing programs such as Landsat.

Outstanding accomplishments in satellite communications now allow us to communicate immediately with people around the world. Upper atmospheric research programs have given us much better understanding of the environment that surrounds our planet.

Unmanned planetary missions have brought us new knowledge of the mysteries of our own solar system. The upcoming Gallileo and Ulysses programs promise new discoveries about Jupiter and the sun.

Orbiting astronomical observatories have provided unprecedented opportunities to study our galaxy, and the Space Telescope will soon greatly increase our capabilities.

SPACE TECHNOLOGY DEVELOPMENT - In the area of space technology development, the accomplishments of the past 25 years will greatly expanded by the end of this century.

Use of communications satellites is expected to expand by a factor of four by the year 2000. Orbits are already becoming crowded and the frequency spectrum saturated. The frequency spectrum will expand to the use of the Ka band by the early 1990's and intersatellite communications will utilize 60 gigahertz links.

Landsat brought us remote sensing capabilities that allowed us to study vegetation and geological features of our planet. The Topaz ocean topography satellite to be launched in the early 1990's will significantly improve our ability to track and forecast meteorological phenomena.

Manned space programs have allowed our space technology database to grow by orders of magnitude. Space Lab has demonstrated the key role of man in space based research. Satellite servicing and retrieval have been demonstrated and will increase as space craft are designed for on-orbit servicing. These accomplishments herald the promise of even greater accomplishments to come in the Space Station era.

During the next ten years, we will develop the technology to support a permanent manned presence in space. The initial operational capability must include "hooks and scars" to accomodate major growth during the lifetime of the Space Station.

Major growth areas include incremental expansion of thermal control, power, and communications. Automation, robotics, and artificial intelligence will be increasingly applied in areas such as micro-gravity production facilities and satellite servicing.

July 1982 marked the launch of the program to develop commercial uses of space. Space Station and associated unmanned production facilities will provide a micro-gravity environment to permit materials processing such as production of superpure crystals. Bioprocessing, already demonstrated on the shuttle electrophoresis experiments, will offer 450 times the effectiveness of similar operations in ground-based processes and will produce five times the purity.

Turning to the visionary aspects of

Cohen, continued...

manned space operations, Dr. Cohen projected expansion beyond the near-earth environment. This could include a permanently manned lunar base. Cohen concluded with a discussion of the lessons learned from the Challenger tragedy. The 51L accident reminds us that we are all human; that humans are fallible; that mistakes will be made. But the biggest mistake would be to cower at the possibility of making another. If we are to fail, let us at least fail in a great endeavor.

Richard West
Reporter

Honors and Awards Banquet Recognizes Outstanding Support

The Houston Section of AIAA, like most professional organizations, is dependent upon the volunteer efforts of its members. The extent of the support enjoyed by the Houston Section was clearly evident at the Honors and Awards Banquet held at the Gilruth Center.

On May 22, the section gathered to recognize the contributions of 85 people, both members and non-members, who had contributed to the success of the section during the past year. The awards presentation was MC'd by Bob Lewis, Section Chairman for the 85-86 program year.

First to be recognized were the winners of the best presentation awards for the 11th Annual Technical Symposium. Those awards were presented by Stephanie Vickery, Vice Chairman/Technical, as were awards for Section Technical Committee Chairmen and those who worked as session chairmen and assistants for the symposium.

Next to be honored were those who served as Senior Members and Councillors on the Council and in several projects of the section. Ed Monteiro, Vice Chairman / Operations, then awarded certificates for support of the many functions performed by members of the operations committees and numerous volunteer supporters.

After recognizing the outgoing officers, Bob Lewis turned the podium over to Karen Godek, our Section Chairman for the coming year. Karen presented Bob Lewis with a plaque for his leadership as Section Chairman during the past year and introduced the officers who will work with her during the 86-87 program year.

The Houston Section can be justly proud of its many achievements during the past year. And with the continuing support of its membership the section is looking forward to the challenges and opportunities of the future.

The Members Didn't Speak Out

Sure enough, no letters this period. I don't even have any left-over answers. If all of you spend the summer thinking of questions while I'm thinking of answers, I'll wind up with a ten year backlog. 'Tis a consummation devoutly to be wished.

I would like to offer my sincere appreciation to those of you who sent in questions, ideas, complaints. Most of the ideas weren't adopted, but that doesn't mean they weren't good. Most ideas aren't adopted, after all. Any system that has functioned well for a number of years (like the Houston Section) already has most of the bugs worked out. Improvements are hard to come by, but that doesn't mean you shouldn't keep trying. One idea that was adopted was the metric system for the Space Station. It would be difficult to claim that the lively discussion in TMSO led to the decision, but you can't really tell what subtle influences were at work.

I think we got all the questions answered. The only complaint (Newsletter delivery) was being worked before I got hold of it, so I can't claim any credit for that.

Again, thanks to one and all for your continued interest. By all means, keep those cards and letters coming to:

Lou Livingston
JSC/PB

Eleventh Annual AIAA Technical Symposium Award Winners

Symposium Technical Session Best Presentation Award Winners

Session	Top Award Winner
1. Communications: Techniques and Applications	Kwei Tu/Lockheed
2. Energy Systems	Steven B. LaCombe/Lockheed
3. Software	Gary J. Cernosek/McDonnell Douglas
4. Materials and Structures	Michael Ross /McDonnell Douglas
5. Rendezvous and Docking Systems	Peter T. Spehar /Lockheed
6. Space Systems and Operations	James E. Oberg
7. Test and Simulation	Kenneth A. Hopping /Lockheed
8. Space Station Health and Habitation	David V. Ostler/Technology, Inc.
9. Communications: Antennas and Radar	Christopher L. Lichtenberg
10A. Communications: Audio, Video, and Optics	Yvonne L. Yih /Lockheed
10B. Quality and Productivity	James L. Vogas/Boeing
11. Computers/Graphics	William T. Jordan/NASA-JSC
12. Thermal/ECLSS/EVA	J. H. Canniff /Lockheed
13. Guidance, Navigation, and Control	Scott Teplitz /McDonnell Douglas
14. Space Mechanics	Ann E. Golike /McDonnell Douglas
15. Payloads and Experiments	Ralph L. Close /Lockheed
16. Biosystems/Human Factors	Ray Schwarz /Technology, Inc.

AIAA Technical Symposium Best Presentation Award Winners:
(Seated, left to right) Ann Golike, Ruthan Lewis, Yvonne Yih, Kwei Tu, Michael Ross, Jim Oberg. (Standing) Jim Vogas, William Jordan, Ralph Close, Scott Teplitz, Christopher Lichtenberg, David Ostler, Kenneth Hopping, Gary Cernosek, Peter Spehar, Joe Canniff.

Committee Reports

Membership Committee

I am pleased to submit to you our AIAA membership summary for 1985-86. Under Bob Lewis's leadership we have done quite well this year. Our membership now stands at 1020, as compared to 945 at the beginning of the term. We now have 157 Senior Members and 119 Associate Fellows, which represents a significant increase in member upgrades from last year.

During this term, our membership has grown by a net of 215 new members, which represents quite an increase (23%) when we consider that 57 of our members moved out of the section and 83 were dropped by the AIAA for non-payment of dues. Our overall renewal rate has been 91.2%, typical of the Institute's national performance nationwide.

I wish to thank each of you for your excellent support of our recruitment efforts and, especially Stephanie Vickery who included a letter from our Chairman and AIAA membership applications in the abstract handouts for our Technical Sysmposium.

Hopefull, some of the 500 or so membership applications included in these handouts will show up at the AIAA New York office during the next several months.

Again, thank you for your outstanding support. I look forward to working with each of you again this coming year.

Jim Visentine
Chairman/Membership

Student Affairs Committee

The committee is in the process of completing its charter. It will be presented to the Council for its approval at the next Council meeting. The committee is considering the preparation of simple handout materials for career day activities. The AIAA pamphlet costs $.45 per copy w3hich seems excessive when bought in quantity. We are hoping to generate a 4 to 6 page flyer that we can print for the cost of paper, assuming we can get the support of NASA or one of our employers to do the printing.

Two of the five Science Fair winners signed up for the NASA tour which was part of their winner's package. Only one of them has returned the student member's application.

Dick Bennett
Chairman/Student Affairs

Summer Cranium Cruncher

Welcome back to the Cranium Cruncher! I do hope that your Craniums aren't out for summer vacation and I'll get lots of responses this month. The answer to last month's puzzle was 80 steps. The people named below correctly answered the puzzle.

The winner of the free AIAA dinner is David Kaplan, DH62. He was chosen randomly from the correct respondents. Thank you to the others who answered the puzzle.

SUMMER PUZZLE

The Mathematicians' Cricket Club, to which I am a member, always holds its annual dinner in January. I was trying to find the date of the next dinner from some fellow members,

Charles Campbell, LEMSCO/B12
J.A. Yannie, Aerospace Corp./JSC
Bruce McCandless II, NASA/CB
David Kaplan, NASA/DH62
P. B. Schoonmaker, MDAC/T315
Jack Johnson, NASA/EE
Ray Baker, LEMSCO/C22
Chris Blake, Boeing
Hal S. Rainey, NASA/ZR-1
Mike Rasmussen, MDAC/T303
Jim McCoy, NASA/SN3
Earle Crum, NASA/EX
Liz Bains, LEMSCO/B12
Ed Hite, MDAC/T6B
Mike Lounge, NASA/CB
Steve Brown, MDAC/T514
Jim Simon, NASA

but they were being rather foolishly unhelpful. One of them told me that the date was an odd number, another that it was greater than 13. A third told me that it was not a perfect square and a fourth that it was a perfect cube. And finally Charles Computer, the captain of the club, told me that the date was less than my highest score last season. (This was in fact 17, and I thought it was rather nice of Computer to bring this in.)

I subsequently discovered that of all these helpful hints only one was true. What was the date of the dinner?

Thanks to Dave Schultz/ LF for this puzzle. If you have a favorite puzzle that lends itself to single answers, i.e. not proofs, please send it in. By the way, send the answer with it.

Send your answers to Ed Monteiro, MDAC/T502, 16055 Space Center Blvd, Houston, TX 77062.

Renee Lance