

HORIZONS

SEPTEMBER 1990

Chairman's Letter

John M. Trebes

Your Houston Section officers and councillors give welcome to you, the Section membership.

In this first Chairman's Letter of the year I will present a listing of your officers and councillors, share my Chairman's philosophy with you, and summarize some of our completed activities.

First, our slate of officers and councillors. You may want to cut this out and keep it handy for future reference.

Chairman:	John M. Trebes	JSC/SD52	483-7215
Chairman-Elect:	Dr. Zafar Taqvi	LESC/C80	333-6544
V-C, Technical:	Alan Shinkman	LESC/C83	333-7508
V-C, Operations:	Charles Blacknall	MDSSC/T7E	283-1073
Secretary:	Paul Judas	MDSSC/T3B	280-1604
Treasurer:	Steve Zobel	MDSSC/TB15	283-4246
Councillors:	Larry Guderian	MDSSC/TA271	283-4183
	Shirley Brandt	Grumman Space Sys.	929-7183
	Fred Becker	LESC/C87	333-7000
	Michael Laible	Grumman Space Sys.	929-7496
	Dr. Michael Duke	JSC/XA	283-5553
	Walter Lueke	JSC/ES361	483-5939
	Dr. George Nield	JSC/TM2	483-1364
	William Geissler	LESC/C87	333-6863
	Sandy Mallini	Barrios/DS11	283-5709
	André Sylvester	JSC/ET51	483-1537

My Chairman's philosophy as presented to the council is as follows:

- *Everything we do fits with AIAA Section and National goals or we don't do it.*
- *Everything we do we do with style, taste and class.*
- *We will recognize and award our members and our employers.*
- *We will maintain and strengthen the Houston Section's number one position in the AIAA.*

Some of our completed activities:

The dinner meeting schedule for the Gilruth Center has been established and is listed elsewhere in this issue.

Jim Visentine is efficiently and effectively building our membership. Jim has mailed letters over my signature to the new class of astronauts and to the NASA new hires. A letter from JSC Director Aaron Cohen, recognizing the AIAA and your Section, is about to be distributed centerwide. Jim and I started at the Center with this effort because we work here and know how to enter the system quickly and effectively. Our next step is to duplicate these efforts throughout our aerospace community by asking each corporate leader to participate in a similar effort. Jim will be looking for a Section membership person in each company in our community. This would be a nine month period of service to your Section. Won't you please call Jim now at 483-8923 with your offer to do this service?

Thank you for your kind attention and I'll see you here next month.

Horizons is the monthly newsletter of the Houston Section of the American Institute of Aeronautics and Astronautics. It is created by members of the Houston Section and reproduced at the Houston offices of Lockheed Engineering and Sciences Company. Please address all communications to Vice-Chairman of Operations, Charles Blacknall, MDSSC/T7E, telephone 283-1073.

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Section activities

Bouquets from Science Fair

Science Engineering Fair of Houston

July 18, 1990

Mr. Richard P. Bennett
 American Institute of Aeronautics and Astronautics
 Houston Section
 P.O. Box 57524
 Webster, TX 77598

Dear Mr. Bennett:

On behalf of all the students who participated in this year's Science Fair, we would like to express our appreciation of your ongoing financial support which made this event possible. A total of 1,244 finalists from 172 schools gave us another record year — our fifth in a row. This represents a 75% increase in participation compared to five years ago. This year, as a result of your generous support, we were also able to initiate awarding SEFH scholarships in the Senior Division.

In terms of the number of students who actually interact with judges, we are already the largest Science Fair in the world. We feel that this interaction is exceptionally important in developing scientific outlook and maturity, and we are most grateful to you for helping to make it possible through your continued support.

Thank you for working with us to keep technology alive and well in Texas and in the United States. We deeply value having you as a partner.

Very truly yours,

Glenn L. Taylor
 Shell Development Company

Technical Committee news

Space Transportation TC (National) Report

Charles Teixeira
 JSC/ET2, 483-4647

This is the first of what (hopefully) will become a regular update on activities of the Space Transportation Technical Committee (STTC). The committee consists of about thirty-five members representing various NASA centers, DOD, DOT, academia, industry, NASDA, and ESA. Meetings are held quarterly.

The last meeting was held at the Rocketdyne plant in Canoga Park, CA and included a tour of the Atlas and Delta final assembly and test facilities. Special presentations and debate topics (a regular on the agenda) included:

- ELV Logistics & Resupply For Space Station — C. Gunn/NASA
- Chemical Propulsion Impacts on The Environment — A. McDonald/Thiokol
- Attributes of Nuclear Propulsion for SEI — Myers-Mckinny
- Attributes of Chemical Propulsion for SEI — Sears-Henley.

Material was also presented on Solid Propulsion System Reliability (A. McDonald/Thiokol) and on Liquid Propulsion System Reliability compiled by the Liquid Propulsion Industry Advancement Group. C. Gunn/NASA also presented a status of NASA's mixed fleet program. An original of the above presentation packages is available for anyone wishing to make a copy.

Planned projects of the STTC include a slide show covering space transportation history, current systems, and proposed/new systems including non-domestics. A copy of the slides and supporting text will be made available through the STTC and/or the education arm of the AIAA. A space transportation systems design guide is also planned and is just getting underway.

The next meeting is scheduled for September 27-28 in Huntsville, AL.



The Members Speak Out

Lou Livingston

[Opinions expressed in this column are those of the correspondents and the columnist. They do not necessarily represent the position of the AIAA or of the Houston Section.]

To new members (and a reminder to old ones): TMSO was created as a sounding board for your views, gripes and/or questions on anything related to AIAA or aerospace. Questions or complaints dealing with Section activities will be referred to the responsible officer or chairperson for information or action. Other questions will be answered (if possible) any way we can. Opinions will be printed as is, perhaps with a comment or two by yours truly.

A few restrictions are appropriate. The subject should be in some way related to AIAA (Section or National) or

aerospace in general. No verbal comments, and no anonymous ones; put it in writing and put your name on it. (Names can be withheld on request.) No partisan politics, please, and no promotion of personal publications or products. If you want to sell something, try the Post or the Roundup.

Whatever you have on your mind, send it to Charles Blacknall, MDSSC/T7E. A list of *Horizons* input deadlines appears below. If you prefer, you may send it directly to me at 16546 Ivy Grove, Houston 77058, TX.

Upcoming events

Dinner dates, *Horizons* deadlines set

Lou Livingston
Editor

Following are the dinner dates for the 1990-91 Section year and the deadline for dinner reservations. Note that, because of holidays, a couple of reservation deadlines are expected to be the preceding Friday.

Alan Bean will be the speaker at the September meeting. The list of speakers, topics and formats will be updated in the next issue of *Horizons*.

Also included is the deadline by which inputs for *Horizons* must be received for inclusion in each month's issue. It is, of course, already too late for the September issue. All inputs should be sent to Charles Blacknall, MDSSC/T7E, in time to be received by the date given.

Dinner Date (Thursday)	Reservations Deadline	<i>Horizons</i> Issue	Input Date (Friday)
9/27/90	9/24/90 (Monday)	September	8/17/90
10/18/90	10/15/90 (Monday)	October	9/14/90
11/15/90	11/9/90 (Friday)	November	10/12/90
12/13/90	12/10/90 (Monday)	December	11/9/90
1/24/91	1/18/91 (Friday)	January	12/21/91
2/28/91	2/25/91 (Monday)	February	1/25/91
3/21/91	3/18/91 (Monday)	March	2/15/91
4/25/91	4/22/91 (Monday)	April	3/22/91
—	—	May	4/19/91
6/13/91	6/10/91 (Monday)	June	5/10/91



Technical activities schedule, September (and beyond)

Bill Best

Clear Lake Council of Technical Societies

5—Wednesday

JSC Astronomy Seminar
Open Discussion
JSC Bldg 31 Rm 129 Noon to 1:00 PM
Information: Al Jackson 333-7679

10—Monday

NASA Area Macintosh Users (Group) "NAMU"
Demo by Central Point SW
RSOC Cafeteria 600 Gemini 7:00PM
Information: Sharyn Best 488-6522

12—Wednesday

JSC Astronomy Seminar
Program To Be Announced
JSC Bldg 31 Rm 129 Noon to 1:00 PM
Information: Al Jackson 333-7679

13—Thursday

IEEE, ISA, CLCTS Video Conference
"Total Quality: The Malcom Baldrige Approach to QM"
JSC Gilruth Center 10:00 to 2:00 PM (\$50 Members/\$60
Otherwise)
Information: Andy Lindberg 483-1474

18—Tuesday

Armed Forces Communications and Electronics
Association
Monthly Luncheon (Public is Welcome)
Speaker: Dan Nebrig, NASA JSC Assoc Director
Holiday Inn 1300 E. NASA Rd 1 11:45AM
Information: Mike Denard 280-1532

19—Wednesday

Society for Computer Simulation 11:45AM
Location & Program TBA
Information: Dr. Pat Brown 333-0926

19—Wednesday

JSC Astronomy Seminar
Program To Be Announced
JSC Bldg 31 Rm 129 Noon to 1:00 PM
Information: Al Jackson 333-7679

20—Thursday

Clear Lake SigAda Business Meeting
Holiday Inn 1300 E. NASA Rd 1 11:45AM
Information: Tom Sullivan 333-5040

27—Thursday

AIAA, IEEE, ISA Joint Dinner Meeting
Speaker: Alan Bean
JSC Gilruth Center 5:30/6:30/7:30PM
Information: Dr. Zafar Taqvi 333-6544

25—Tuesday

Bay Area PC Organization (BAPCO) Monthly Meeting
Graphical Word Processing: AMI (Samna Corp)
League City Bank & Trust 303 E. Main 7:30PM
Information: Don Wechsler 335-8517

26?—Wednesday

Houston Space Business Roundtable Monthly Luncheon
Current Initiatives involving US Commercial Space
Policy
Department of Commerce
American Host Hotel 2020 NASA Rd 1 11:30AM
Information: Bill Nash 280-0460

26—Wednesday

JSC Astronomy Seminar
Program To Be Announced
JSC Bldg 31 Rm 129 Noon to 1:00 PM
Information: Al Jackson 333-7679

OCTOBER

1—Monday

NASA Area Macintosh Users (Group) "NAMU"
Symantec/Norton Utilities Gisela Salazar
RSOC Cafeteria 600 Gemini 7:00PM
Information: Sharyn Best 488-6522

3—Wednesday

IEEE, ISA, CLCTS Video Conference
"Computer Graphics"
JSC Gilruth Center 10:00 to 2:00 PM (\$50 Members/\$60
Otherwise)
Information: Andy Lindberg 483-1474

18—Thursday

Clear Lake SigAda Business Meeting
Holiday Inn 1300 E. NASA Rd 1 11:45AM
Information: Tom Sullivan 333-5040

23—Tuesday

Bay Area PC Organization (BAPCO) Monthly Meeting
Hard Disk Horror--Failure, Repair, and Recovery
(DiskTec)
League City Bank & Trust 303 E. Main 7:30PM
Information: Don Wechsler 335-8517

30-1 Nov—Tuesday-Thursday

"Space Exploration 90"
Sponsored by the NASA Alumni League
South Shore Harbour Resort and Conf. Center 8:00AM
Information: Gwen Griffen 623-6591

Please send additions, corrections and comments to:
Bill Best /R12A-130, Rockwell Shuttle Operations Co., 600
Gemini Ave., Houston, TX 77058, telephone 283-0261.

AIAA HOUSTON HORIZONS

OUTSTANDING SECTION AWARD

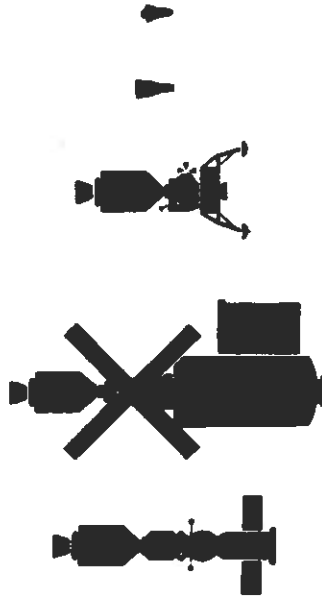


1975-1976
1976-1977
1979-1980
1980-1981
1981-1982
1983-1984
1988-1989

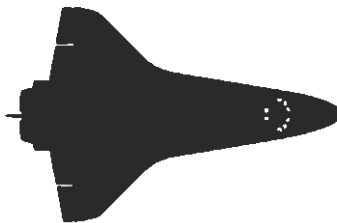
SECTION SPECIAL EVENT AWARD



1971-1972
1972-1973
1979-1980
1981-1982
1983-1984
1985-1986
1988-1989



AIAA HOUSTON
SECTION
P.O. BOX 57524
WEBSTER, TX 77598



Non-Profit Organization
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Webster, Texas
Permit Number 1

300591872 B HO
Dr Larry J Friesen
League City TX 77573

AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS

HOUSTON SECTION P.O. BOX 57524 WEBSTER, TEXAS 77598

Thursday, September 27, 1990

"THE ART OF SPACE EXPLORATION"

**ALAN BEAN
ASTRONAUT
ARTIST**



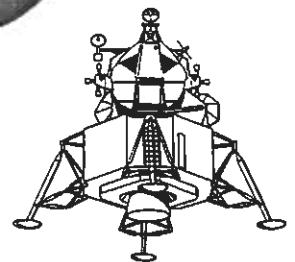
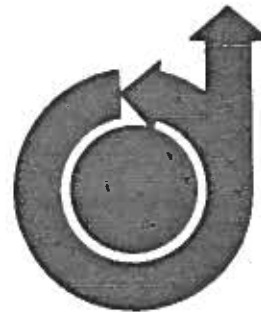
AIAA HOUSTON SECTION MEETINGS
ARE HELD AT THE JOHNSON SPACE CENTER
ROBERT R. GILRUTH RECREATION CENTER

PRESENTER:

Alan Bean is a graduate of the University of Texas at Austin. Following his graduation he entered the Navy and was selected for the Naval Test Pilot School in 1960. He was selected as a NASA astronaut in 1963 and was the Lunar Module Pilot on Apollo 12, man's second lunar landing in 1969. In 1973 he was the Spacecraft Commander of Skylab Mission II and in 1975 he served as backup commander for the Apollo-Soyuz Project. He became Chief of Operations and Training in the Astronaut Office before resigning from NASA to devote full time to painting in 1981.

Co-Sponsored by the
IEEE Galveston Bay Section and the
ISA Clear Lake-Galveston Section

Guest Host: Robert F. Thompson
Vice President and General Manager
McDonnell Douglas Space
Systems Company - Houston



DINNER MEETING:

SOCIAL: 5:30
DINNER: 6:30
PROGRAM: 7:30

MENU: CHICKEN IMPERIAL

MEMBERS & SPOUSES	\$8.00
NONMEMBERS	\$9.00
STUDENTS/YOUNG MEMBERS	\$7.00

FRANKIE
333-6064
LOCKHEED

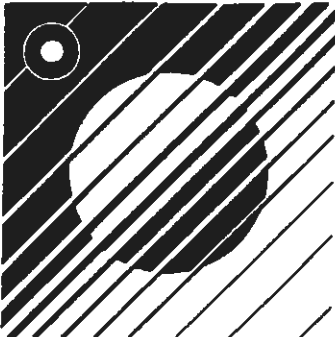
SANDY
845-0735
COLLEGE STATION

CARROLL
283-6000
EAGLE

SARAH
282-3160
BENDIX

NOTE: THE DINNER RESERVATIONS DEADLINE IS MONDAY, SEPTEMBER 24, AT 12:00 NOON.
ANY CANCELLATIONS ARE REQUIRED PRIOR TO DEADLINE. NO-SHOWS WILL BE BILLED.
ALL ARE WELCOME.

DINNER RESERVATIONS ARE NOT REQUIRED FOR ATTENDING THE PROGRAM ONLY.



IEEE VIDEOCONFERENCES
SEMINARS VIA SATELLITE



IEEE 36th Videoconference

TOTAL QUALITY: The Malcolm Baldrige Award Approach To Quality Management

Thursday, September 13, 1990

12:00 Noon - 3:00 P.M. USA Eastern Time

11:00AM HOUSTON
TIME

INTENDED AUDIENCE:

- Engineers
- Quality Professionals
- Technical Managers
- Manufacturing Professionals
- Executives
- Product Designers
- Students

And others with an interest in, or responsibility for quality management

SUPPORTING DOCUMENTATION:

- A Set of Notes
- Presenters' biographies

FUTURE TOPICS:

- Computer Graphics
October 3, 1990
- Simulation
November 7, 1990
- Fiber Optics Applications
December 5, 1990

LOCAL INFORMATION:

SEE BACK

Over the past two decades, foreign competition producing high-quality products has captured large market shares in many industries once dominated by American corporations. In response to this challenge, Congress instituted in 1987 the Malcolm Baldrige National Quality Award Program. Since its inception the Baldrige Award has become the equivalent of the Nobel Prize for Quality in the United States. Today, many companies are using the Baldrige quality criteria to evaluate their own quality-improvement efforts. The application process itself is quickly becoming the benchmark for total quality in the United States.

This videoconference will provide you with a thorough understanding of the National Quality Award program from the perspective of a Senior Baldrige Examiner. In addition, two in-depth case studies from past Baldrige Award winning quality programs at Xerox and Motorola will be presented.

PROGRAM OUTLINE:

Edward Fuchs

THE MALCOLM BALDRIGE NATIONAL QUALITY AWARD PROGRAM

- The background and design of the Baldrige Award.
- How to use the Baldrige examination and scoring criteria as a diagnostic system to improve your organization's quality process.
- Key indicators of excellence in high-scoring companies.

Edward Finein

"LEADERSHIP THROUGH QUALITY" - THE XEROX APPROACH TO QUALITY MANAGEMENT

- A detailed description of the elements comprising the "Leadership Through Quality" program.
- The competitive benchmarking techniques used by Xerox to establish its performance goals.
- How Xerox successfully integrated competitive benchmarking techniques into the design process.

William Smith, Jr.

"SIX SIGMA QUALITY" - THE MOTOROLA APPROACH TO QUALITY

- An in-depth look at the "Six Sigma Quality" process and its impact on reducing defects in manufacturing.
- The Motorola Six Step Process for new product design.
- How Motorola has been able to reduce total cycle time in manufacturing while increasing quality and lowering costs.

Questions & Answers

TECHNICAL ADVISOR:

Edward Fuchs
AT&T Bell Laboratories

PRESENTERS:

Edward Finein
Xerox Corporation

William Smith, Jr.
Motorola Inc.

TOTAL QUALITY: THE MALCOLM BALDRIGE AWARD APPROACH TO QUALITY MANAGEMENT

Presented by: IEEE Galveston Bay Section
Location: Gilruth Recreational Center
NASA/Johnson Space Center, Houston
Date: Thursday, September 13, 1990
Time: 11:00 am until 2:00 pm

Refreshments, parking, and lecture materials are included with registration.
For additional information, please call:

Site Questions	Dr. Zafar Taqvi	333-6544
Registration & Arrangements	Andy Lindberg	483-1474
Publicity	Bill Gadd	333-7559
	Francoise Stephan	266-1138

Coordinated by: IEEE Education Committee, Galveston Bay Section
Dr. Zafar Taqvi, Chairman

Register Now Because Attendance Is Limited!!!

Fees:	IEEE, ISA, AIAA, ACM Members	\$50
	Non-Affiliated	\$60
	Students	\$15

(Please, no refunds or cancellations after September 7, 1990)

Make checks payable to CLCTS and mail check and registration form to:

CLCTS c/o Andy Lindberg
Lockheed-ESC; Mailcode CO2
2400 NASA RD 1
Houston, Texas 77058

Registration Deadline Is Sep 7, 1990. Please return this portion to the address above with payment to attend the IEEE Videoconference "Total Quality: The Malcolm Baldrige Award Approach to Quality Management".

Name _____
Company _____
Mailstop _____ Work/Day Phone _____
Address _____
City _____ State _____ Zip _____
(Circle) IEEE ISA AIAA ACM Student None
Membership Number _____

IEEE 37TH Videoconference 3D COMPUTER GRAPHICS: Construction to Interaction

Presented by: **IEEE Galveston Bay Section**
Location: **Gilruth Recreational Center
NASA/Johnson Space Center, Houston**
Date: **Wednesday, October 3, 1990**
Time: **11:00 am until 2:00 pm**

Eastern Time

12:00 - 12:05pm Introduction

12:05 - 12:40pm

Geometric Modeling Techniques

Speaker: *Dr. Bruce Naylor, AT&T Bell Laboratories*

- An in-depth examination of the complexities of boundary representations and binary space partitioning trees.
- A detailed overview of constructive solid geometry methods.
- An exploration of non-linear methods of modeling, including both parametric and implicit formulations.
- The mathematical and computational aspects of bi-parametric patches, including NURBS and algebraic geometry.
- The challenge in extending set operations to non-linear representations.

12:40 - 12:45pm Break

12:45 - 1:25pm

Challenges in Rendering 3D Computer Graphics

Speaker: *Dr. Patrick Hanrahan, Princeton University*

- An overview of the basic geometric and optical algorithms used in rendering.
- The importance of visibility determination in removing hidden lines and surfaces.
- A review of image space algorithms, such as the painter's algorithm, Z-buffer algorithm and ray tracing.
- An examination of the major local shading algorithms
- A demonstration of local shading algorithms on a 3D workstation.
- The latest developments in global illumination models, including ray tracing and radiosity.

1:25 - 1:30pm Break

1:30 - 2:10pm

Graphical User Interfaces in the 1990's

Speaker: *Dr. Steven Feiner, Columbia University*

- An overview of the key issues and directions for graphical user interfaces. What's next after mice and windows?
- The problems and promise of multimedia interfaces.
- An examination of automated generation of user interfaces, using knowledge-based interface design systems that determine both interface form and content.
- How virtual worlds will change the way interfaces look and feel.
- New 3D interaction devices such as the VPL DataGlove, stereo displays, force feedback systems, and head-mounted displays.
- Examples of the capabilities that new interaction devices make possible.

2:10 - 2:15pm Break

2:15 - 2:55pm Questions & Answers

Your opportunity to call in questions to the speakers.

2:55 - 3:00pm Wrap - Up and Review

IEEE 37TH Videoconference 3D COMPUTER GRAPHICS: Construction to Interaction

Presented by: **IEEE Galveston Bay Section**
Location: **Gilruth Recreational Center
NASA/Johnson Space Center, Houston**
Date: **Wednesday, October 3, 1990**
Time: **11:00 am until 2:00 pm**

Refreshments, parking, and lecture materials are included with registration.
For additional information, please call:

Site Questions	Dr. Zafar Taqvi	333-6544
Registration & Arrangements	Andy Lindberg	483-1474
Publicity	Bill Gadd	333-7559
	Francoise Stephan	266-1138

Coordinated by: **IEEE Education Committee, Galveston Bay Section
Dr. Zafar Taqvi, Chairman**

Register Now Because Attendance Is Limited!!!

Fees:	IEEE, ISA, AIAA, ACM Members	\$50
	Non-Affiliated	\$60
	Students	\$15

(Please, no refunds or cancellations after Friday September 28, 1990)

Make checks payable to CLCTS and mail check and registration form to:

CLCTS c/o Andy Lindberg
Lockheed-ESC; Mailcode CO2
2400 NASA RD 1
Houston, Texas 77058

Registration Deadline Is Friday September 28, 1990. Please return this
portion to the address above with payment to attend the IEEE Videoconference
"3D COMPUTER GRAPHIC: Construction to Interaction".

Name _____
Company _____
Mailstop _____ Work/Day Phone _____
Address _____
City _____ State _____ Zip _____
(Circle) IEEE ISA AIAA ACM Student None
Membership Number _____