



AMERICAN
INSTITUTE OF
AERONAUTICS AND
ASTRONAUTICS
* * * *
HOUSTON SECTION

newsletter

FEBRUARY 1978

IN THIS ISSUE

Editorial

Recap and Future Needs

Section Activities

Project Enterprise

Add -- "Getaway Special"

Rice Section Responds

Wanted -- A Few Good Salesmen

Be An AIAA Congressional Fellow

January Meeting

Space Shuttle Panel Discussion
and New Member Night

December Meeting: Cruise Missile

Mini-Symposium in March

Membership Committee

Membership Matters

Advances in Grade

25 Year Membership Awards

Membership Status

Chairman Awards

Comment

ISA Announces Mini-Symposium

L-5 Society to Meet

Science and Technology Committee

SCI-TEC Scanner

RECAP AND FUTURE NEEDS FROM THE CHAIRMAN

The year 1977 has been a successful one for the Houston Section. We have had an interesting set of monthly programs on such topics as Space Industrialization, Oceans from Space, the Soviet Manned Space Program, the Cruise Missile. The remaining programs are equally fascinating: Mini-Symposium, Fusion as a Source of Energy and Aviation History. Attendance at meetings has been good, but there is always room for improvement.

We have become involved with "Project Enterprise" and have purchased payload space on the Shuttle for Rice University and are well on our way to doing the same for Texas A&M University. In spite of all this success, however, I personally feel we have overlooked an important job that each and every one of us must do in order to make AIAA a more viable and effective organization.

We must listen to those people in AIAA who are considering dropping their memberships because they no longer feel that the AIAA is doing something for them...and some of these members have been with the AIAA quite some time. Some concerns expressed are that AIAA conducts too many national meetings, which indirectly drives up the cost of membership.

The Houston Section NEWSLETTER is published at intervals from September through June at the Clear Lake Offices of Northrop Services, Inc., and McDonnell Douglas Corp., by the Houston Section AIAA. Address all contributions to Norman H. Chaffee/EP4, NASA, Johnson Space Center, Houston, Texas 77058.

In light of current travel restrictions, AIAA might want to seriously consider reducing the number of national meetings. I'm sure that there are other specific concerns, and I would personally like to hear what these are from the membership. We have an exciting and dynamic organization here in the Houston Section and I would like to keep it that way.

Let's all put our heads together and find those areas where we can improve AIAA and enhance what the AIAA as a professional society can do for its members.

Tom Murtagh (713) 483-4546

PROJECT ENTERPRISE STATUS

Project Enterprise, our Section's program of purchasing Shuttle payload space for local universities, is off to a fine start. We have made the down payment on a payload for Rice from section funds and are now initiating an effort to purchase one for Texas A&M. These schools were selected since we have affiliated student chapters at each.

Although section funds have been used to expedite the program, we are relying on the contributions of individuals to meet the two \$500 down payments. If each of our 500 members would donate \$2.00 to this worthy cause our down payment commitments would be met. To date, we have received about \$430 -- won't you consider helping?

Please send your contribution or pledge to Mark-Craig (JSC/EX32) or Earl Crum (JSC/ER). Thank you!

ENTERPRISE ADDENDUM -- "GETAWAY SPECIAL"

A recent report has indicated that over 171 spaces for "Getaway Special" cargos have been reserved. Purchasers have included a pharmaceutical concern, a ball bearing manufacturer, a movie director (for space shots of the earth); the group making reservations at the present time numbering over 70. The report indicated that 210 orders have been received. Including all reservations; the cost to the customers is more than \$520,000,000, and presently will be about sufficient to fill 25 flights of the Shuttle, starting in May 1980. The big customers have reserved space for satellites to be placed in orbit. Some of these are private companies, others include foreign governments. The program seems to be a definite success.

RICE SECTION RESPONDS

The Rice AIAA would like to formally thank the Houston Section for securing payload space aboard the Space Shuttle for the University. To get Project Enterprise under way, an organizational meeting for all interested people will be held within a few weeks. In addition to several upperclassmen, a number of freshmen and sophomores have expressed interest in the project. This is very important since these are the students who ultimately will place the Rice payload into the Shuttle during the 1980's.

Another space-related project at Rice is presently nearing its completion. During early February, a group of science professors, engineers, and students in the Department of Space Physics and Astronomy is going to launch a heavily instrumented sounding rocket into an aurora above Alaska. The entire payload, including the instruments, an attitude control system, and a recovery system, measures 12 feet in length and 17 inches in diameter, weighing almost 550 pounds. The instrument section, carrying devices which will measure electron, proton, and heavy ion fluxes as well as electric and magnetic field strengths, was built on the Rice campus during 1977. Rice AIAA chairman Rick Fienberg has spent a year helping with the construction, testing, and calibration of the charged particle detectors and is incorporating his experience with the project into his senior physics research at the University. It is hoped that the data from the flight will enable the Rice group to gain a better understanding of how the aurora is generated. In the long run, this flight will add much to our knowledge of the particle and field environment of the earth.

WANTED—A FEW GOOD SALESMEN

What's the connotation of the title? Well, in this day and age it has several. The second one that comes to mind is the gender of the word "Salesmen". Quite properly, it should be used as "Salesperson". However, if the title of this article were presented in that neutral gender, then surely someone would have missed the connotation that was intended.

What was intended is the Webster definition of "Salesman" as, "One whose occupation is to sell, as merchandise, land, etc., either in a store or within a given territory." There's no reason that "merchandise" can't be construed to mean technology. The point is that the Fuller Brush man or the used-car salesman down the street are not the only salesmen around town.

Each one of us is a salesman. To go further, for the aerospace industry to continue to flourish, rather than be relegated to a group that is called on only when needed, we must perform double-duty salesmanship to survive.

First, each individual must (and does this daily without too much thought) sell him or herself to the boss. You may have a desk job in a dark corner of the building and see your boss maybe once a month. Yet you still must sell the boss on your capabilities and your worth as an employee or you won't last long at your job.

The other salesmanship duty is one that's beginning to emerge from the uneasy economical and moral state of our country. The lay public has trouble relating to the aerospace industry. They don't read the space technology articles on spinoff, nor can they comprehend what Apollo, Telsat, Mariner, etc., did to improve their lives. They don't trust what they are being told by industry, and in particular certain "big industry" which they feel is siphoning away what little money they have left over after taxes. These people make up the general public and they are the ones that must be educated on technology if we and our country are to survive under a free enterprise system.

How can we do this? This should be done both individually and also with some degree of organization and/or cooperation. Both methods have their advantages. As individuals we have the closeness and respect of our friends and relatives. As a group, information can be disseminated more efficiently (to name several examples).

A recent article by the AIAA president, R. H. Miller, in the January, 1978, issue of *Astronautics and Aeronautics* on "Unlocking the Wealth of Aerospace Technology" touches on these very points. I urge you to read the article and to take positive action to invest a small amount of your time now to ensure the future of the aerospace community and all those related to it.

Your local AIAA section has many committees, a group of councilors and 5 officers that are interested and willing to assist you along these lines in any way that they can. Won't you call one of them today? For your reference they are:

<u>OFFICERS:</u>	THOMAS B. MURTAGH, Chairman	483-4546
	ERNEST R. HILLJE, V-Chairman-Operating	483-2040
	JOSEPH P. LOFTUS, JR., V-Chairman-Technical	483-2194
	ROBERT R. STEPHENS, Secretary	488-5660 X279
	EARL CRUM, Treasurer	483-3083
<u>COUNCILORS:</u>	ALFRED E. CRONK	845-7541
	CHARLES A. JACOBSON	488-5660 X200
	DOROTHY B. LEE	483-2326
	HUBERT P. DAVIS	483-3083
	PHILIP M. DEANS	483-6486
	WILLIAM E. HAYES	488-5660 X266
	MARK K. CRAIG	483-4702
	SHARON G. BARNES	483-2254
	CLAIBORNE R. HICKS, JR. - Deputy Director of Public Policy for Region IV	483-4601
<u>COMMITTEES AND STAFF:</u>	R. GLOSCZWSKI - Membership	488-5660 X299
	W. SIMMONS - Membership (Rtd.)	483-3918
	W. STEWART - Publicity & Newsletter	334-2617
	N. CHAFFEE - Public Affairs	483-3851
	R. J. WARD - Leg. Affairs	483-4667
	C. H. STEWART - Prof. Partic.	483-4926
	J. SUNKEL - Cont. Education	483-4611
	(M. CRAIG) - Student Actv.	483-4702
	D. HASS - TAC	333-2030 X131
	J. ALGRANTI - RAC Rep.	483-7226
	J. McLANE - RAC IV Dir.	483-4407
	A. VERRENGIA - Career Env.	483-3931
	L. CARLSON - Career Env.	845-7541
	J. DISHLER - Science/Tech.	483-6427
	F. WEIRUM - Rice Univ. Student Advisor	527-8101 X3617
	J. RAND - TAMU Univ. Student Advisor	845-7541
	R. BILSTEIN - UHCLC	488-9270
	F. HUSSAIN - UH, Mech. Engr.	749-4444
	L. WOOD - Staff	333-3133
	C. VAUGHAN - Staff	483-4991
	(Local planning coordinator for first Regional Conference ever held in IV.)	
	B. McMURDO - Staff	488-0910 X205
	E. THOMPSON - Staff	488-5660 X302

BE AN AIAA CONGRESSIONAL FELLOW

Do you want to help the federal government make the critical decisions on aerospace programs? Do you want to make a difference where your input will really count? You should consider applying for AIAA's Congressional Fellow Program. You will spend a year in Washington working for a Senator, Congressman or Congressional Committee.

A Fellow is chosen by the AIAA Public Policy Committee and is given a stipend of \$15,000. His or her own organization is encouraged to contribute the rest of the salary and benefits. Mid-career professionals with high technical qualifications, strong references and broad interests are needed to provide initiative for national support of future directions in space.

Contact Johan Benson, Washington, D.C., 202-785-0293 or Bob Ward, Houston, 713-483-4667 for further information. The competition closes March 30, 1978. Now is the time to accept the challenge. Won't you offer to help lead the way to unlock the wealth of Aerospace Technology?

JANUARY MEETING

The January meeting offered an opportunity for AIAA members and potential members to get a first hand report from the Space Shuttle panelists. The results of the Orbiter Approach and Landing Test Program were detailed and some of the lessons learned in hardware development, design integration, hardware/software systems integration, ground checkout team establishment, and crew observations. That experience has been projected into the Space Shuttle Vehicle which includes the Orbiter, main engine, external tank and solid rocket boosters. A status on all program elements is planned to focus our activity on the shift in emphasis from subsonic flight testing to orbital flight test and operations.

We were also pleased to have the national AIAA president-elect for 1978, F. A. (Al) Cleveland, visit our local chapter, which has won the outstanding section award for two years in a row and is shooting for a third consecutive year. The challenge is strong membership, active recruiting, and outstanding programs. We believe we are providing these ingredients but we need the help of each member. We believe the benefits of membership are more than worth the cost.

A varied and interesting monthly program covers current topical interests of our large membership; a highly successful annual mini-symposium is held with technical subjects covering current technology developments. Young and old members can actively participate as authors and presenters or attendees. Interdisciplinary development and communications through the outstanding technical meetings (locally and nationally); excellent technical journals; career updating and improvement through our symposiums; meetings and audit cassette library are all strong blows against technical obsolescence.

We were also pleased to have the society of Experimental Test Pilots (SETP) co-host our January meeting. We felt that the program was of strong interest to SETP due to their test piloting background. A lot of our pilots and astronauts belong to both professional organizations. Attendance was around 300.

Phil Deans

SPACE SHUTTLE PANEL DISCUSSION AND NEW MEMBER NIGHT

AIAA-Houston Section - in conjunction with the Society of Experimental Test Pilots, conducted, on Wednesday, January 18, 1978, a Panel Discussion on the "Space Shuttle Status - Orbiter Approach and Landing Test Results". In addition, AIAA National President Elect, Mr. Al Cleveland, highlighted "New Member Night" with an address on "How We Benefit from Professional Societies". The function was held at the Gilruth Center, NASA/JSC.

The Meeting opened with introductory remarks by Tom Murtagh, Chairman AIAA Houston Section and an Opening Address by Dr. Christopher C. Kraft, Jr., Director, NASA/Johnson Space Center. The Program then began with a presentation by the National AIAA President Elect, ushering in "New Member Night".

Al Cleveland, through the skillful use of "cartoon" slides, identified the many advantages of Technical Societies, in general and AIAA in particular, insofar as the individual members are concerned. The benefits far outweigh the costs and, through active participation, members can associate with business counter-parts of other organizations, as well as staff associates within their own area of endeavor. Superior performance is recognized by Technical Societies and job advancement is the usual result. As a matter of additional information, it was interesting to note that more than 70 New Members were added to AIAA's Membership List as a result of the "New Member Night" Campaign. Dinner attendance was approximately 300.

The main program of the evening then followed, with the introduction of the Space Shuttle Panel by the Program Co-ordinator, Philip M. Deans, Chief, Orbiter Systems Integration Office, NASA/Johnson Space Center.

The Orbiter Project Manager, Aaron Cohen, the first Panelist to speak, discussed the status of the Orbiter Project with the use of Development and Production slides, stating that the many Orbiter Systems were verified by Approach and Landing Tests (ALT).

To amplify this further, the next Panelist, Deke Slayton, ALT Project Manager and Astronaut, presented also, with the aid of slides and motion picture film, the major objectives and schedules of the ALT Program. Free flight photographs of phases #1 through #5 depicted the "controls", "maneuverability", "stability" and "glide".

Following in a logical sequence, the third Panelist, Astronaut Fred Haise, also Test Pilot for ALT, gave his comments concerning "Pilot Impressions" of the "Captive Flight" on top of the Modified Boeing 747, the "Separation" and the "Free Flight", as well as numerous "General Impressions". Motion pictures as well as slides were also used.

The final Panelist, Enoch Jones, Space Shuttle Project Office, discussed the Systems Development Status of the Main Engine, External Tanks, Solid Rocket Development and the Kennedy Space Center Facilities. Also, with the aid of slides and motion picture film, Mr. Jones presented a "briefing" on the KSC Launch Facility Construction Progress and Shuttle Pad #39. Orbital Flight Tests and Mission Planning were discussed, as well as Projected Shuttle Launches for the period 1980 through 1981.

This was a most successful and informative evening and the Social Hour, followed by a great dinner, made the evening complete.

R. J. Crane - News Reporter

AIAA DECEMBER MEETING REVIEWS "CRUISE MISSILE"

The American Institute of Aeronautics and Astronautics, NASA/Houston Section, at its recent meeting on December 6, 1977, was given a most informative presentation on the current status of the controversial "Cruise Missile" by Sherman L. Hislop, Program Manager for Cruise Missile Guidance, McDonnell-Douglas-East.

Mr. Hislop holds a Masters Degree in Aeronautical Engineering from the University of Colorado and as an Officer in the Air Force, served as Project Officer for the BOMARC Missile and F-101 Aircraft, as well as Program Director for ASSET/Thor-Delta and PRIME/Atlas Systems. Mr. Hislop has been with McDonnell-Douglas since 1964, and prior to his current assignment was Director of Shuttle Engineering, MDAC-East, assigned to the "Cruise Missile". Mr. Hislop is a Member of the Air Force Association, as well as AIAA.

This presentation was particularly timely because of the recent controversy in Washington that resulted in the cancellation of the B-1 Bomber in favor of the "Cruise Missile", a decision that is still being debated.

Numerous charts were displayed indicating the progressive development of the "missile" and its special configurations for "Anti-Ship", "Land Attack", and "Air Attack" Missions. In these cases the "air frames" were similar, but the engines and computer systems differed.

The "guidance system" in each case was tested extensively in specially equipped aircraft prior to installation in the missile, using a terrain-altitude co-ordinated computerized approach, in a series of 27 Terrain Correlation Application Flight Tests.

MINI-SYMPOSIUM

The third annual Mini-Symposium will be held March 21, 1978, at the Gilruth Recreation Center. Mr. James Chamberlin of MDAC is the General Chairman. Technical sessions will be chaired by Bob McMurdo of Boeing, Lamar Bowles, Rockwell, and Ivy Hook and Mike Duke of JSC.

Plans for the Symposium provide for registration at noon, technical sessions through the afternoon, and a social hour and dinner in the evening. The dinner speaker will be Mike Collins, Director of the Air and Space Museum for the Smithsonian Institute. Mike was the Command Module Pilot on Apollo 11 and the author of "Carry the Fire". He will discuss the history of the museum collection and his experiences in operating the most popular museum in history.

MEMBERSHIP MATTERS

New Section Members. A hearty welcome to the following new members of the Houston Section. We urge each of you to actively participate in the activities of your Section, for only in this way can you fully realize the benefits of your AIAA membership - particularly in these days of travel restrictions. If you are interested in serving on a Committee call Tom Murtagh, your Section Chairman (483-4546), and he'll put you in touch with the proper Committee Chairman.

NAME	ORGANIZATION	OFFICE PHONE
<u>November 1977</u>		
. Garman, John R.	JSC/FE5	483-2637
Horrocks, John T.	Blount Brothers Corp.	795-5680 X281
*Milliken, Andrew H.	Lockheed	333-6475
*Milne, Steven M.	?	?
Schuessler, P. B.	McDonnell Douglas	483-3551
*Shipman, Keith W.	?	?
Sory, Kenneth T.	McDonnell Douglas	488-5660 X261
Voss, Janice E.	JSC/CG6	483-6226
Winkler, Gary W.	Singer/Link	488-5510 X428

December 1977

Dugge, Peggy	McDonnell Douglas	488-5660
Hale, William M.	Rockwell	333-2030
Newbrough, Dan E.	Rockwell	333-2030
*Sanders, Alfred P.	?	?
*Srinivasan, T. K.	?	?

* Transfer in from another Section

? Information not available; member please call Bill Simmons
(649-2558 or 483-3918)

Advances in Grade. Our congratulations to the following members who have been advanced to the grade of Associate Fellow:

Robert G. Chilton, JSC/EG
Stanley Faber, JSC/FE
Sarwar Naqvi, McDonnell Douglas

25 Year Membership Awards. Our congratulations are also due to the following members who have been recognized for 25 years membership in AIAA.

Angelo Miele, Rice University
James E. Pavlosky, JSC/ES3
Alton G. Mitchell, General Electric
Joseph Green, San Jacinto College

Membership Status - Region IV Sections

	ASSIGNED MEMBERS			MEMBERS RECRUITED	
	*6/30/77	12/31/77	%Change	#Number	% of Base
Albuquerque	160	160	0.0	12	7.5
Central Texas	22	20	-9.1	1	4.5
Holloman-Alamogordo	34	32	-5.9	2	5.9
Houston	507	473	-6.7	30	5.9
Inland Missile Range	39	40	+2.6	5	12.8
North Texas	541	494	-8.7	30	5.5
Oklahoma	90	94	+4.4	10	11.1
Southwest Texas	100	94	-6.0	6	6.0
REGION IV	1493	1407	-5.8	96	6.4

*Base for 1977-78 calculations
Cumulative for 1977-78

Comment: Does anyone think that
we're in good shape?

AIAA REGIONS
(Column Headings as above)

Region I	6477	6062	-6.4	324	5.0
Region II	1750	1731	-1.1	133	7.6
Region III	1835	1702	-7.2	89	4.9
Region IV -----	1493	1407	-5.8	96	6.4
Region V	1536	1452	-5.5	97	6.6
Region VI	<u>7967</u>	<u>7566</u>	<u>-5.0</u>	<u>405</u>	<u>5.1</u>
National Assigned	21058	19920	-5.4	1144	5.4

Comment: The bottom half is no place for Region IV!

Membership Chairman Awards Status. Each year the National Membership Committee presents an award to a Section Membership Chairman in each of the three Section categories -Large (500 members & over, 175-499, under 175). The awards are based on the record of the section for the year in (a) change in assigned members and (b) new members recruited; the formula weighs new members 3 times as heavy as assigned members and takes into account the size of the section at the start of the year (June 30th). Here's how the award points stand with the year half gone:

Large Sections: Houston is #5 with the year half gone! Pacific Northwest is #1 (33.18); Long Island is #2 (25.39); San Diego is #3 (14.20); St. Louis is #4 (11.07). North Texas is #7 (7.95).

Medium Sections: We have no entries in this race. Palm Beach is leading (58.19), Wichita is #2 (26.05) and Phoenix is #3 (25.67).

Small Sections: #1 - Vandenberg (92.90); #2 - Delaware (85.29); #3 - Tampa Bay (56.15). Inland Missile Range is #5 (41.02). Points for other sections in Region IV are: Oklahoma (37.77), Albuquerque (22.50), Southwest Texas (12.00), Holloman-Alamogordo (11.77) and Central Texas (4.55).

Comment: While the awards are presented to the Section Membership Chairmen in recognition of his achievement, they are also an indication of the support that the MC's receive from the Section members. We want the 1977-78 award for the large sections to go to Bob Glowczwski, who is doing an outstanding job for our section. There's only one way to do this -- each of us must get out and recruit new members, and do it now! Look around you. Are all of your associates AIAA Members? Is your boss an AIAA Member? Don't you have any friends? (Non-professionals are eligible for Associate Membership) Call Bob (488-5660 X 299) and see if he has a prospect for you to work on. Member recruiting is everybody's business! Don't wait for "George" to do it, he may be waiting for you!

ISA ANNOUNCES MINI

A "pink sheet" has been issued for the Instrument Society of America's prospective mini-symposium, to be held at UH-CLC on 3 March. Abstracts were requested before 23 January. Authors selected will be notified in early February concerning paper selection. Abstracts only will be published in the proceedings.

Paper presentations are tentatively planned for the afternoon of the third only, with a possibility for morning sessions if sufficient interest is shown through the receipt by the committee of sufficient acceptable papers. A formal dinner is scheduled to follow the seminars.

Symposium Director is Dr. Sarwar Naqvi. (M/S; E914, Beta Building, McDonnell Douglas) 488-5660 Ext. 238.

The proceedings will be at the University of Houston, Clear Lake City, 2700 Bay Area Blvd. The event is sponsored by Clear Lake-Galveston, Univ. Houston-Clear Lake and Sections of the Instrument Society of America.

L-5 SOCIETY TO MEET AT LSI

The next meeting of the L-5 Society will be held at the Lunar Science Institute (LSI) 3303 NASA Road 1, Clear Lake City. The Schedule:

WEDNESDAY - FEBRUARY 15 Berkner Room, L S I
7:30 PM Business meeting plus 1978 planning conference
8:00 PM Guest lecture - details to be revealed soon

Sometime before this meeting, a special meeting will be held to "brainstorm" the future of the L-5 Houston Chapter.

The Science and Technology Committee presents

"SCI-TEC SCANNER"

- Editorial - WE have scanned other science and technology publications for items of interest -- please let us know if YOU agree!
- Washington D.C.
A study committee was established with the guidance of the Director of the White House Office of Science and Technology. They have been asked to examine methods for improving data handling in the Presidential decision-making process.
- New SOLAR CELLS
A liquid-junction solar cell by Bell Laboratory, Murray, N.J., proposes a combined liquid-solid construction that is easy to make, less expensive and can be long-lived.
- Energy
An alternative technique to laser irradiation as a step towards production of energy by controlled nuclear fusion was announced by the Sandia Laboratories in Albuquerque, N.M. They produced the first fusion neutrons using electron beams. The formula -- 1 million neutrons (pulsed) at deuterium-filled fuel pellets.
- R&D
A late 1977 estimate from the National Science Foundation is that research and development spending is over \$40 billion in the U.S. or approximately \$3.5 billion more than 1976. Basic research is \$5.2 billion, applied research \$9 billion and \$26.2 billion for development.

Jules Dishler, Chairman