

Horizons

Houston, Texas

October 1995

Chairman's Corner

Don Probe
Chairman

The operations of your AIAA Houston Section have been going well.

We are nearly through the first quarter of the 1995-96 year, a quarter which is traditionally slow, but we have conducted and participated in many significant activities. This last month we held a successful two-day Operability Workshop with NASA with attendance well over 100, a joint meeting with the American Astronomical Society celebrating 100 U.S. manned space flights, and a Lunch & Learn sponsored by the Space Transportation Technical Committee.

There are some chips in the paint, however, that need to be addressed by not only the Section leadership, but also the membership-at-large. One of the critical problems we have is that the "at-large" is getting smaller. In May 1994, our membership stood at 982. Our last membership roster from Headquarters showed a membership of 876.

In addition, another situation which will severely impact our current high quality communication with the membership-at-large is the fact that we do not have a replacement for our Horizons editor.

Our membership problem is neither new nor a surprise. We are all aware of the lower budgets and re-engineering many of our local companies and NASA are going through. There are, however, still many aerospace professionals who are not members of the AIAA. There are many reasons presented by non-members, e. g., the programs are not interesting, there are no benefits to belonging, the cost is too high, etc.

This publication is not an effective place to convincingly counter these concerns, but it is a good place to state our desire to make the AIAA organization meet the needs of our present and future members, and ask them to join and help make it happen. Or, for the passive ones, let them watch and join

when they see it happen.

What do you expect from your AIAA Section, Region, and National organizations? We started an inquiry last year by surveying the elected officers and councillors on their opinion of what members and potential members felt were the important and desired functions we perform. The list, in order of importance, was: monthly dinner meetings, annual technical symposiums, section newsletter, Lunch & Learn sessions, student paper competition, and honors and awards. Members, please call me and let me know if you agree or disagree with the officers and councillors' list!

A subsequent survey was conducted last year by our operations committee. It was a total membership mailout survey. The response to that survey by the membership was low, approximately 50 out of 1,000 members. The results from this type of survey obviously would not be representative of the membership. There were various ideas for dinners and lunch meetings in terms of format and speaker subjects, but nothing that would lead one to believe it would attract many additional members.

What do you expect from your Houston AIAA Section? Your elected and volunteer members are dedicated people interested in meeting your expectations, even as conditions and technology change. Call me or other officers you know with your recommendations, suggestions, and/or complaints. In this way you can participate in the planning of the services offered by the Houston Section to its membership and make these services more relevant.

Results of the survey of the officers and councillors indicated that the Section newsletter was the third most important product we produced for the membership. In the very near future we are in danger of losing this capability or cutting back severely on the quality of the publication. The available time for obtaining background training and familiarity with the editing process is rapidly fading away, so if there is interest on your part, please call Don Probe at 333-6278.

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Committee News

New Technical Committees

Charles Teixeira
Vice-Chairman, Technical

We are fortunate to have so many outstanding members that are willing to share their time and experiences by chairing various technical committees. This year we have added an Aerospace Maintenance TC chaired by Mrs. Frances Mount (JSC), an Artificial Intelligence TC chaired by Robert Savely (JSC), a Space Operations TC chaired by Thomas Diegelman (JSC), a Systems Engineering TC chaired by G. Deiter (Boeing) and James Vollmer (Boeing) as co-chair, and a new TC for CAD/CAM & Software chaired by John Knesek (Lockheed).

In addition we have new leadership in several TCs that are extremely important to the aerospace engineering community in the JSC area. The Life Sciences and Human Factors TC will be co-chaired by Ms. Karin Loftin (Krug) and Mr. Jon Zelon (Rockwell), and Ms. Anne Platoff will chair the History/Heritage TC.

If you are interested in the subject matter covered by any of the above new-start TCs, please give the appropriate chairperson a call and contribute your ideas, and a few hours of your time. I guarantee you will get more out of it than you put in. **H**

Space Transportation TC Lunch & Learn

On September 13th, David R. Criswell discussed his concept for a Multi-Use Booster System. Dr. Criswell started by making the observation that over the past thirty years or so, we have launched on the order of 1600 individual payloads on about 82 booster types. That averages about 20 payloads per booster type, which says we are good at coming up with new designs frequently but have not altered the basic economic challenge of low cost Earth-to-orbit transportation. His approach, for which he holds several patents, is to decouple the payload and booster characteristics, and to use multiple common boosters. This approach has two key advantages: it provides greater performance margins and significantly reduces sensitivity to payload mass fraction. Copies of the presentation charts may be obtained from the author or call C. Teixeira at 483-4647.

On a related subject, for those of you that may not have noticed, the second edition of the "International Reference Guide to Space Launch Systems" is out and may be obtained through the AIAA publications catalog for about \$50. It is an excellent launch systems reference guide and no, I do not get a commission. **H**

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 Martin Engineering Services. Opinions expressed herein, other than by elected Section officers, are those of the authors and do not necessarily represent a position of AIAA or of the Houston Section. Please address all correspondence to the Chairman, Don Probe, LMES/B14.

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Cranium Cruncher

Lou Livingston
Editor

September Cruncher

Every month each of the six provinces of the kingdom of Sardonica paid taxes in proportion to its population. The payments were made in sacks of 16-ounce gold nuggets.

One month the finance minister reported to the king that one province was paying in 15-ounce nuggets, but was unable to identify the guilty province.

Furious, the king told the minister: "Tomorrow morning you shall place no more than 16 of the nuggets from the various sacks on the royal scale. If you cannot identify the guilty province when you learn the weight of these nuggets, you will be executed on the spot."

How can the minister save his life?

Solution

The minister put on the scale one nugget from the first province, two from the second, three from the third, four from the fourth, and five from the fifth province, for a total of 15 nuggets. Fifteen 16-ounce nuggets would weigh 240 ounces. If the total weight was 239 ounces, the first province was the culprit; 238, and the second province was at fault; 237 identified the third; 236, the fourth; and 235, the fifth. If the total weight was 240 ounces, the sixth province was guilty.

Correct solutions were received by the deadline from Jerry Modisette and Mike Lounge. Jerry won the coin toss and a free dinner at an upcoming dinner meeting. Congratulations, Jerry!

October Cruncher

Here's an oldie-but-goodie from back in 1982, when we didn't even call this sheet *Horizons* yet:

A straight piece of timber, square in cross section, is placed on and at right angles to a horizontal log so as to make a seesaw. The cross-section of the log is

such that, as the timber rocks back and forth, it remains perfectly balanced. In other words, the center of gravity of the timber is always vertically above the point of contact with the log.

What is the equation of the curve describing the shape of the log, and what common name is given to this curve?

Since this is my last month as editor, send your solutions by October 16 to Don Probe, LMES/B14, and he will forward them to the new editor. **H**

Events

Operability Workshop Held

Dr. George C. Nield

On September 13-14, 1995, the AIAA Houston Section, in conjunction with the NASA Johnson Space Center and several local contractors, conducted an Operability Workshop at the Center for Advanced Space Studies. Over 100 people took part in the event, which featured a number of interesting speakers and a special panel discussion. The objective of the workshop was to begin a dialog between NASA and industry concerning the potential for improved ways of doing business in the areas of reliability, maintainability, and operations.

The technical program was organized by Ken Cox of the JSC Engineering Directorate and Hatem Nasr of Honeywell, and featured presentations by representatives from the petrochemical industry, Southwestern Bell, Southwest Airlines, Boeing, an undersea exploration firm, and many others. **H**

Wallet Card

Don't forget to save the wallet card included in this issue with names, phone numbers, etc. of Houston Section officers, councillors and committee chairs. You never know when you need to find someone.

So Long; It's Been Good to Know Ya

Lou Livingston
Editor

Although I will be in town from time to time for the next couple of months, this will be my last chance to acknowledge the folks who have helped publish *Horizons* over the last five years or so: printing coordinator Jeff Tave, and Chris Burmeister and Mike Matthews before him; Bill Best, mail chairman; and Bill Geissler, meeting flyers. Thanks also to all the contributors who have quietly tolerated my sometimes less-than-gentle emendations. I won't try to list them all, because I'm sure to leave someone out, but Jim Oberg deserves special mention for his many educational and entertaining articles.

This job has been a lot of fun for me. I have learned quite a bit and have derived a great deal of satisfaction from producing what I hope is a quality newsletter. I leave the job reluctantly, but the peace and quiet of a small town (around 9,000) with cooler weather and amenities within fairly easy reach has great appeal. If you're ever in Greencastle, Indiana, to paraphrase Sheridan Whiteside, try and find me. ♪

AIAA Calendar

The AIAA Calendar is intended to encompass all Houston Section events and significant dates. This includes Executive Council meetings, which are open to interested members, and *Horizons* deadlines. It will also include committee meetings, Lunch & Learns and similar events if *Horizons* hears about them in time for inclusion. Please send pertinent details to Don Probe, LMES/B14.

October

16 - Monday

Horizons inputs for November due COB.

19 - Thursday

Executive Council meeting.
5:00 PM, Center for Advanced Space Studies.

26 - Thursday

Monthly dinner meeting.
Program TBD.

30-Nov. 3 - Monday-Friday

AIAA/NASA/Aerospace Corp.
International Conference on Integrated
Micro/Nanotechnology for Space Applications.
South Shore Harbour Resort and Conference
Center.

November

9 - Thursday

Executive Council meeting.
5:00 PM, Center for Advanced Space Studies.

13 - Monday

Horizons inputs for December due COB.

16 - Thursday

Monthly dinner meeting.
Program TBD.

30 - Thursday

Executive Council meeting.
5:00 PM, Center for Advanced Space Studies.

December

7 - Thursday

Monthly dinner meeting.
Director's Reception.
Gilruth Center, 5:30/6:30/7:30.

18 - Monday

Horizons inputs for January due COB.

January 1996

18 - Thursday

Executive Council meeting.
5:00 PM, Center for Advanced Space Studies.

(see CALENDAR, page 5)

CALENDAR (from page 4)

January 1996 (cont.)

22 - Monday

Horizons inputs for February due COB.

25 - Thursday

Monthly dinner meeting.

Program TBD.

Gilruth Center, 5:30/6:30/7:30.

February

15 - Thursday

Executive Council meeting.

5:00 PM, Center for Advanced Space Studies.

22 - Thursday

Monthly dinner meeting.

Program TBD.

Gilruth Center, 5:30/6:30/7:30.

26 - Monday

Horizons inputs for March due COB.

March

21 - Thursday

Executive Council meeting.

5:00 PM, Center for Advanced Space Studies.

25 - Monday

Horizons inputs for April due COB.

28 - Thursday

Monthly dinner meeting.

Program TBD.

Gilruth Center, 5:30/6:30/7:30.

TBD

Student Paper Competition.

April

18 - Thursday

Executive Council meeting.

5:00 PM, Center for Advanced Space Studies.

22 - Monday

Horizons inputs for May due COB.

25 - Thursday

Monthly dinner meeting.

Program TBD.

Gilruth Center, 5:30/6:30/7:30.

May

16 - Thursday

Executive Council meeting.

5:00 PM, Center for Advanced Space Studies.

23 - Thursday

Monthly dinner meeting.

Program TBD.

Gilruth Center, 5:30/6:30/7:30.

28 - Tuesday

Horizons inputs for June due COB.

TBD

Annual Technical Symposium.

June

20 - Thursday

Executive Council meeting.

5:00 PM, Center for Advanced Space Studies.

27 - Thursday

Monthly dinner meeting.

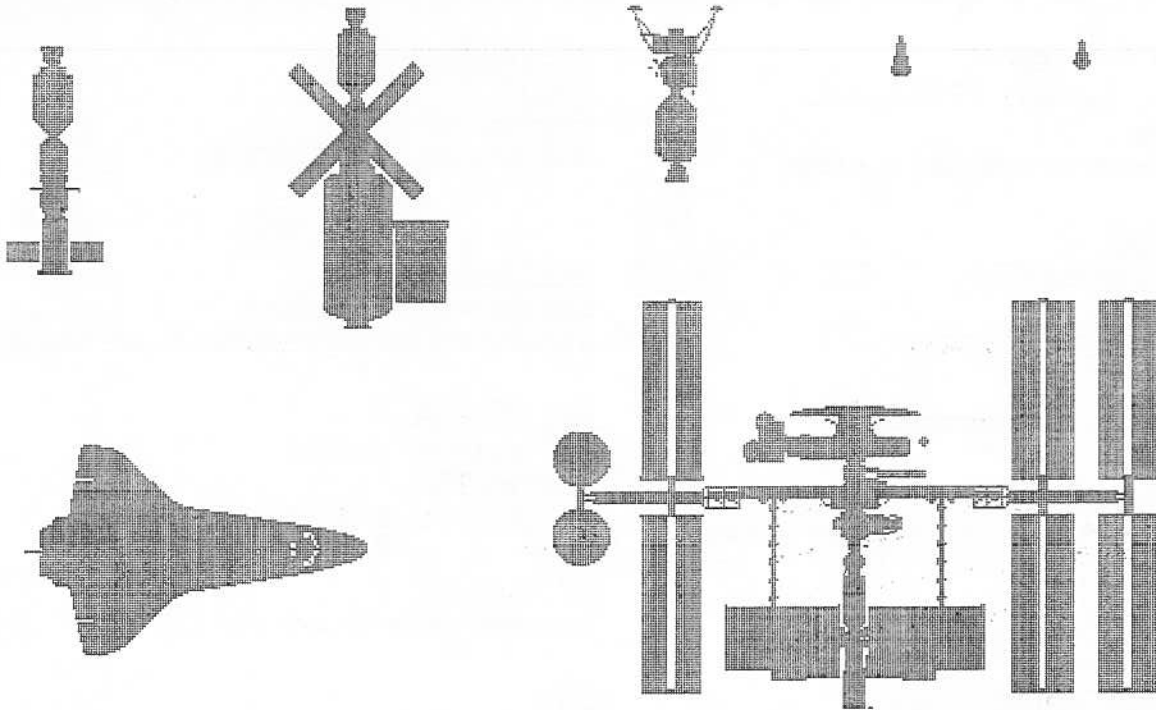
Honors and Awards Banquet.

Gilruth Center, 5:30/6:30/7:30.

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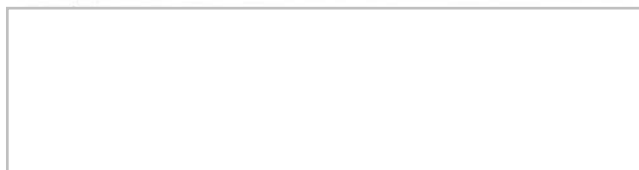


Horizons



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DON PROBE
CHAIRMAN 1995-96

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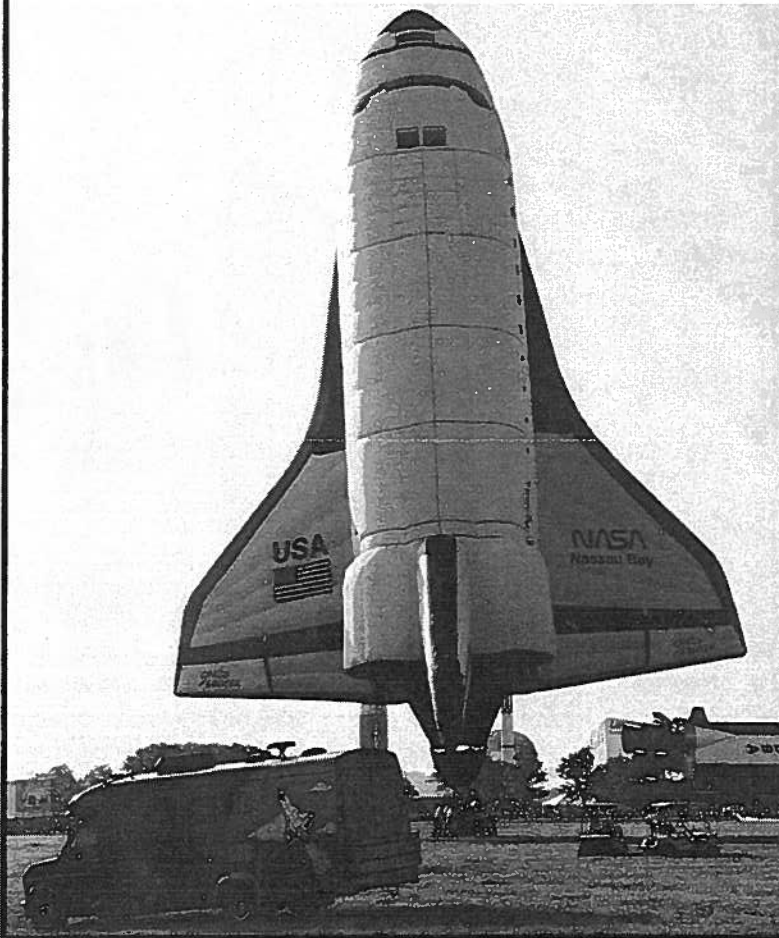
HOUSTON SECTION P.O. BOX 57524 WEBSTER, TEXAS 77598

Thursday, October 26, 1995

HOT AIR BALLOONING

STEVE LOMBARDI

Airventure Ballooning of Houston



PROGRAM

Steve is the founder of the Ballunar Liftoff festival held each year at JSC. He will speak on the sport of hot air ballooning including a video / slide presentation. He will have a hot air balloon on exhibit for demonstration from 5:00 to 6:00 p.m. on the soccer field outside the Gilruth Center.

DINNER MEETING

SOCIAL: 6:00
DINNER: 6:45
PROGRAM: 7:45

MENU: CHICKEN CALIFORNIA

MEMBERS & SPOUSES	\$10.00
NONMEMBERS	\$11.00
STUDENTS/YOUNG MEMBERS	\$ 5.00
UNEMPLOYED MEMBERS	\$ 5.00

ROBERT R. GILRUTH RECREATION CENTER
JOHNSON SPACE CENTER

TANYA BRYANT
483-1175
NASA

SARAH LEGGIO FOLLETT
282-3160
ALLIEDSIGNAL

CALL ONE OF THE ABOVE FOR RESERVATIONS.
NOTE: RESERVATION DEADLINE IS MONDAY, OCTOBER 23, AT 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.



Houston Section

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Rev. 9/19/95

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Wallet Reference Card Update 1995-96

The attached wallet card contains updated names, addresses, and phone and fax numbers for Houston Section officers, councillors and committee chairmen. Please save for future reference.

First cut along the outside lines. Then fold at the ticks on the side of the card, starting at the bottom.

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