

Horizons

American Institute of Aeronautics and Astronautics



Above: Neil Johnson (AIAA Councilor), Garret Reece (Texas A&M essay winner), and Steve King (AIAA Councilor) take a break for lunch during their JSC Mentoring Day

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Councilor**

**Steve King
Councilor**

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Inputs for the September's Horizons newsletter are due COB September 18th, 1999

Chairman's Corner

- by Merri Sanchez, Chair

We are off to a great start for this year in AIAA. The Executive Council is filled with highly motivated people who are busy planning exciting activities for the membership. Those of you who attended the annual Honor and Awards Banquet and Program in August received the special treat of hearing JSC's own AIAA Distinguished Lecturer Dr. Kenneth Cox speak on "A 'Futurist' Perspective for Space: Discovering, Shaping & Influencing Our Intention in Earth and Space". And we are looking forward to Brewster Shaw, Vice President and General Manager of Boeing being with us as a dinner speaker on September 30. Brewster will be sharing his vision on the future of commercialization of space. We will also be giving away 4 tickets to the Wings Over Houston airshow at the September meeting, so you want to be sure and come.

September will be busy with a Leadership Retreat on the 11th for your Executive Council. We will focus on establishing the goals of the section for this year and on learning how we can bring the best of AIAA to you. In addition we will start "Executive Tours" meetings with the management of the local aerospace industries to share with them the benefits of AIAA membership.

We do still have some openings on the Executive Council. This is your chance to get involved in the leadership of AIAA. The

available positions are:

- Councilor
- Young Professionals Chair
- Honors and Awards Chair
- Professional Development Chair
- Student Paper Competition Chair
- Annual Technical Symposium Chair
- Astrodynamics Technical Committee Chair
- Guidance, Navigation, and Control Technical Committee Chair
- Space Science and Astronomy Technical Committee Chair

If you are interested in any of these positions, or in volunteering to support one of the committees, please let us know.

I want to thank those of you that took the time to send in your survey from last month. The council is already using the information to select activities that we think you will like. And we are listening to you call for more variety in times and locations for the dinner meetings. We will be bringing you at least one breakfast, lunch, and after work meeting to complement the traditional dinner meetings. Our new Programs Chair, Rajni Andrews, has already developed a great list of locations and menus for our meetings. I think you will like the variety! Also, if you have an idea for a special AIAA sponsored event that you would like to

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participate in let us know! This is your organization and we want to meet your needs and expectations.

AIAA National has started a new award this year called the "Sustained Performance Award". We are looking for your suggestions on an AIAA member who has shown years of service to AIAA and published several papers to nominate. We will submit our Section's nomination on October 1. We will also submit nominations for the AIAA Engineer of the Year Award on October 1. This is a very prestigious award that we would like to see won by someone in our area. The nominee does not have to be a member of AIAA, but it is highly encouraged. Again, let us know if you have a suggestion.

Of special importance for our membership is the council's goal to reduce our newsletter mailings and rely more on an email note to check our website. We currently mail over 1000 newsletters a month at a cost of about \$500 each month. If we could reduce that number even in half, it would be substantial savings to the Section that we could apply to other activities. Included in this month's newsletter is a form that you must return in order to stay on the paper copy distribution. If we don't receive this form back from you we will assume that you will be happy receiving an email notice to check the website. If you are not already receiving AIAA emails from us, we don't have your email address. It will take several months for us to transition to a mixed technology distribution, but the savings will be worth it. I do want to make sure that everyone knows that if you do want a paper copy, we are happy to continue sending one! Just let us know.

Thank you all for your support of AIAA and I hope to see you at our events!

Merri Sanchez

Human Space Transportation & Exploration Workshop

The AIAA Executive Council agreed to help publicize the upcoming Human Space Transportation and Exploration Workshop that will be held in Galveston on February 29 and March 1, 2000. This sounds like an exciting workshop/symposium being put on by Lockheed Martin.

Merri Sanchez
Houston AIAA Chairman

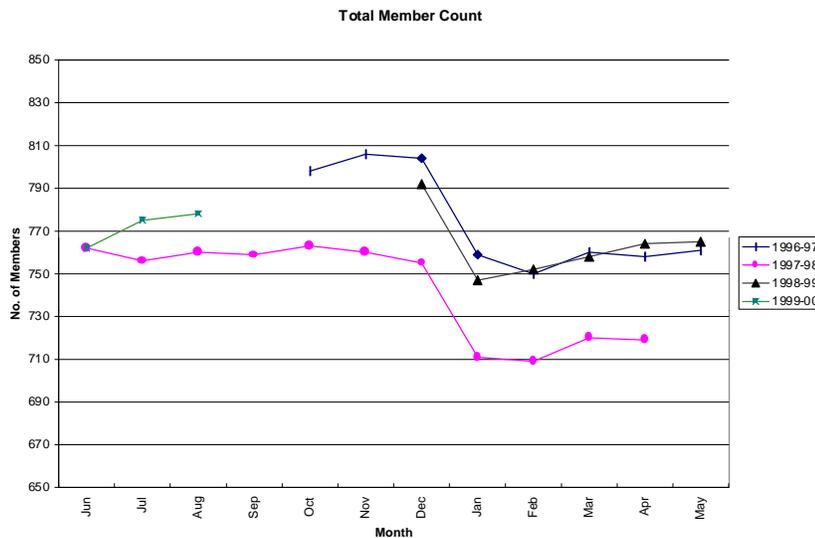
Horizons Newsletter Changes By John Keener

Since Cynthia Collins has decided to retire as the Horizons editor I have done the job this month. To make the job a little easier I have converted the newsletter from a Pagemaker™ to MS Word™. I hope you like the new format. I am taking over Bill Best's position as publications chair, and hope to have a dedicated editor by next month.

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Houston Section Membership on the Rise

Our Section is again nearing the 800 mark – and we gained 24 new members over the summer



months. However, we continue to lose a few members each month – make sure you don't forget to renew!! Are your colleagues and friends AIAA members? Encourage everyone you know to join AIAA and enjoy the same career enhancing benefits.

Welcome New Members

Please extend a warm welcome to our 24 new members from June, July, and August

Russel Aldrich, Igor Carron, Bernard Harris, Ralph Metcalfe, Ronald Newman, Nelson Thompson, Herman Vargas, Steven Yuan, Andrew Allen, Ali Aminian, James Buchli, William Capel, Howard DeCastro, Robert Dean, Michael McCulley, Michael Miller, Russ Turner, Koichi Wakata, Stephanie Wilson, Russel Baird, Roger Bilstein, Christopher Brown, Don Curry, Michael Oelke

Space Education in Area Schools

- by Joy Conrad

After the Lunar Rendezvous Fun Run on July 17, the public was invited to attend the first ever Space Education in Area Schools event in Gilruth's gym. The event was organized as part of the Lunar Rendezvous Festival to encourage interaction between schools and the local community. There were booths there from several NASA related organizations including the local AIAA Houston chapter. AIAA members Elizabeth Bains and John Keener spent several hours that morning thrilling kids with Alka Seltzer rockets and tornado bottles. Approximately 100 kids and parents stopped by maybe learned a little physics in the process. Way to go Liz and John!

Student Essay Winner Spends Day at JSC

- by Steve King, Section Councilor

August 6th started out as a usual bright and hot day at the Johnson Space Center (JSC), but it would not be a typical one for the Houston Section and its visitor, Garret Reece. Garret, a high school junior from College Station, won second place in the Texas A&M Student Branch's Space Exploration Essay Contest with an insightful paper titled *The Red Planet*. The Houston Section helped sponsor the contest and offered the winner of this prize "A Mentoring Day" at JSC, plus a ticket to Space Center Houston.

Neil Johnson and Steve King, both Section Councilors, greeted Garret upon his arrival that morning. He was given an overview of JSC, its mission, and the many career types that play key roles at the Center. It was amazing to hear that Garret would be enrolling in a unique program this fall at the University of North Texas allowing him to complete both the last two years of his high school education and the first two years of college. Wow! He expressed an interest in computers and engineering, so a board sampling of JSC's many activities was planned for his day.

After the introductions, Neil and Garret witnessed the real-time use of the Space Shuttle/Space Station mockups and robotics laboratories in building 9 and visited the TransHab mockups in building 32. The two were later joined by Steve King and Joy Conrad, Section Pre-College Chair, at the building 11 cafeteria to get a taste of authentic "space worker" food. Garret spent the remainder of the day with Steve King observing JSC's manufacturing capabilities, the construction of X-38 vehicle 201 in building 220, crew survival and EVA training at the Neutral Buoyancy Laboratory (NBL), and X-38 mating system testing in building 13. I think he was most impressed with the scale and on goings at the NBL. Throughout his day, Garret saw the

dedication, teamwork, and complexities that makeup JSC's varied activities. It was an eye opening experience for him to explore possible career choices and talk to people in those fields, and for his mentors to see his youthful potential. Hopefully one day we will see him return to JSC as one of our co-workers and AIAA Section members.

Future City Competition

- by Dr. Zafar Taqvi

Houston region's seventh and eighth-graders have designs on the future: the 2000 National Engineers Week Future City competition kicks off

It's called "Future City," but the non-profit competition asks middle school students to create models of real, working cities that must deal with all the benefits-- and problems -- of a modern metropolis. As young people learn the importance of engineering, they also learn the rigors of making a city work.

For the past seven years, junior high and middle school students from across the country, including the Houston area, have designed their versions of a city of tomorrow for the National Engineers Week Future City Competition™. The Houston regional coordinator, Dr. Zafar Taqvi, recently joined in the launch of the 2000 competition at a training session at George Washington University in Washington, D.C. on June 24-26, along with 19 other coordinators from across the nation.

The competition asks seventh- and eighth-graders to design, first on computer and then in a large three-dimensional model, a city of the future. The students work with their teacher and a volunteer engineer from the community who serves as a mentor. Though the cities may sound like fantasy, the designs are very much down to earth. Students must take into account real city problems such as pollution, crime, traffic, and unemployment, and

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then solve them. Students from the Houston area begin work on their future cities at the start of the school year, exploring a wide variety of scenarios via a computer program, SimCity 2000. This lets them experiment with where and how to use factories, parks, transportation systems, housing, schools, and other components of the urban fabric.

Houston will compete in regional finals on Saturday January 14th, 2000 at the San Jacinto College South. At the regional competition, the students must defend their future city design and model to a panel of engineer judges. The winning team receives a free trip to Washington for the national competition to be held February 22 and 23 during National Engineers Week, February 20-26, 2000.

Besides group sessions where coordinators discussed fundraising, securing schools, volunteer engineers and judges, and other competition details, the coordinators heard from business and education representatives. They included Kendall Starkweather, Ph.D., executive director of the International Technology Education Association (ITEA), Douglas Kaempf of the U.S. Department of Energy, John Mankins from NASA, and Patrick Natale, executive director of the National Society of Professional Engineers, sponsors of National Engineers Week. Workshop attendees also discussed integrating the competition with the Mars Millennium Project, a White House Millennium Council youth initiative challenging children across the nation to design a community on the planet Mars.

The National Engineers Week Future City Competition began with five sites in 1993. This year, 21 sites will host contests: Buffalo, Chicago, Denver, South Florida, Hampton Roads, Virginia, Houston, Los Angeles, Louisiana, Massachusetts, Michigan, Milwaukee, New York City, Ohio, Oklahoma City, Omaha, Philadelphia, Phoenix, Pittsburgh, St. Louis, Washington, D.C., and Washington State. Sponsored by the National Engineers

Week Committee, a consortium of engineering associations and major U.S. industries, co-chairs of National Engineers Week 2000, February 20-26, are the American Consulting Engineers Council (ACEC), a national organization of private consulting engineering firms, and CH2M HILL, a global engineering company specializing in water and wastewater, environmental management, transportation, telecommunications, industrial facilities and related infrastructure.

Last year, more than 550 schools and 8,000 students from across the nation participated in the Future City Competition. National finals, held at Washington's National Building Museum, was won by Our Lady Help of Christians School in Abington, Pa., representing the Philadelphia competition. Second place went to St. Francis of Assisi School in North Tonawanda, N.Y., from the Buffalo competition, and in third place was the St. Paul Lutheran School in Grafton, Wis., winner of the Milwaukee competition. The Al-Hadi School of Accelerated Learning located in Southwest Houston won the Houston Regional competition.

Students at schools wishing to sign up for the Houston Regional Future City Competition and engineers interested in volunteering as mentors or judges, should contact Dr. Zafar Taqvi at Z.Taqvi@ieee.org, (281)-244-4436 or at 9874 Sageaspen, Houston, TX 77089.

Details of the Future City competition can found at the website address <http://www.futurecity.org>

Human Space Transportation and Exploration Workshop 29 February – 1 March, 2000 Moody Gardens Hotel Galveston, Texas *Preliminary Program*

**Early registration deadline:
January 14, 2000**

As we enter the new millennium many challenges face us in our quest to explore space. Please join Lockheed Martin Astronautics for the Human Space Transportation and Exploration Workshop in Galveston, Texas, 29 February – 1 March, 2000 to discuss some of the issues involved. The workshop forum is designed to provide industry, government and academia participants the means for interactive discussion and consensus building on the needs, requirements, and issues revolving around a variety of human-in-space topics.

*Technical and Programmatic Paper Topics
Missions and Systems*

- Future missions for human access to space
- Human exploration of space: Return to the moon, Mars
- Space Shuttle upgrades
- Crew Return Vehicle
- Crew Transfer Vehicles
- Heavy lift vehicles
- Space tourism
- Requirements and operations concepts

Technologies and Issues

- Challenges of human rating vehicles & certification requirements
- Mission operations; autonomous systems, human in the loop/intervention;

earth based control, communications, controls, and displays

- Technologies; Long Duration Missions, In-situ Resource Production, Life Support Systems, Regeneration, etc.
- Human Factors, Physiology & Psychology; Crew Accommodations, Privacy, Human-Machine Interfaces, Training/Proficiency Maintenance, etc.
- Enhanced Safety Systems
- Crew Escape/Aborts
- Business Cases for Human Space Transportation: Cost, Funding, Business Plans, Commercialization, Privatization
- Outreach and Building Advocacy
- International Partnerships and Participation

Breakout Session Topics

- Automation, Autonomy, and Crew Involvement
- Long Term Effects of Space Flight
- Human Rating Requirements and Solutions
- ISS Future Requirements and Capabilities
- Safety of Personnel and Space Vehicles
- Financing/Cost/Benefits
- Astronauts vs. Civilians in Space

For further information contact Pat Langley, conference coordinator, in Denver at (303)977-6761 or email at pat.langley@lmco.com

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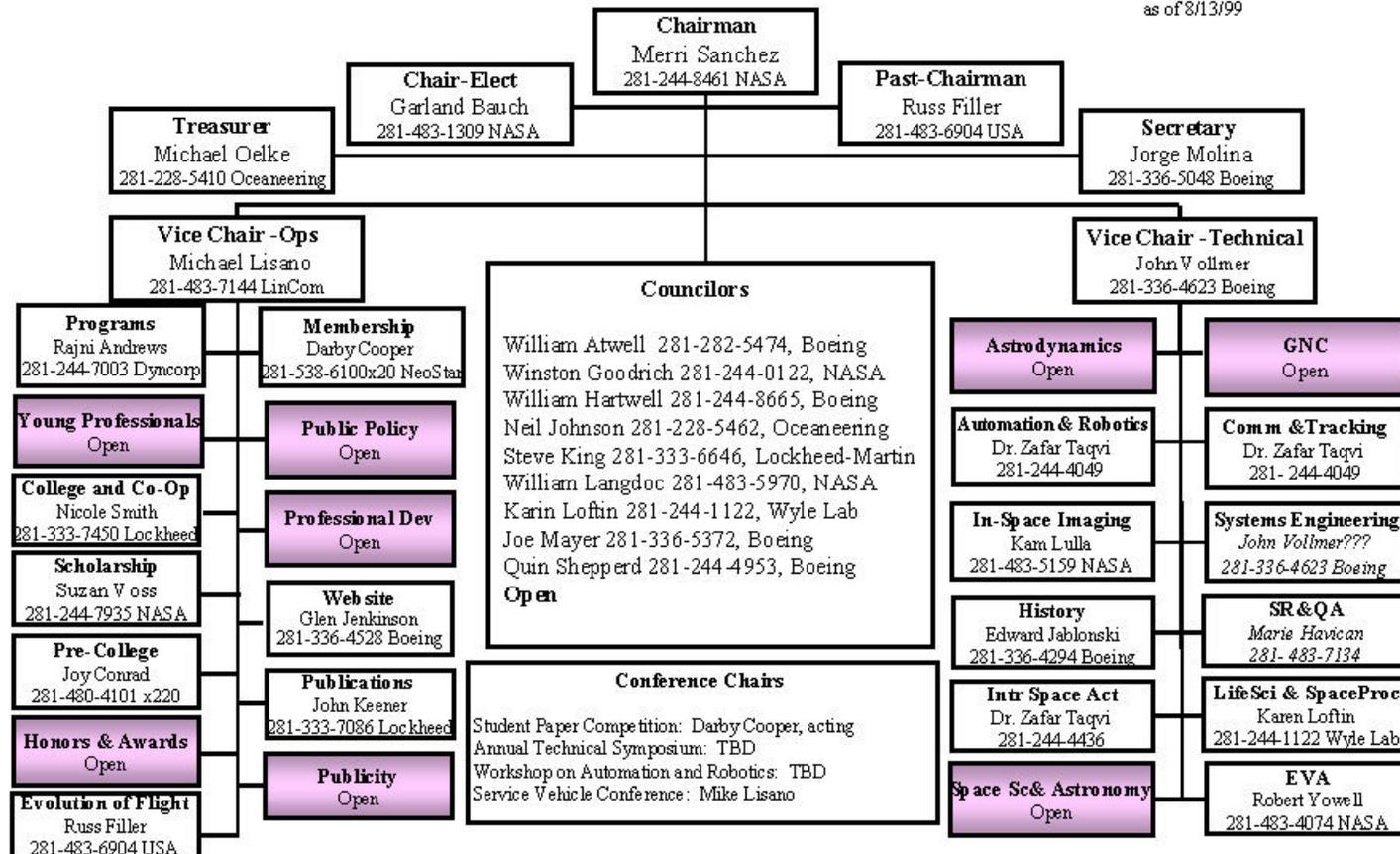


**American Institute of
Aeronautics and Astronautics**

1999-2000 Houston Section

Executive Council

as of 8/13/99



Italics implies will or has been asked, but has not accepted yet

AIAA HOUSTON SECTION Calendar of Events

Last updated 8/13/99

Changed since last Council Meeting in bold

July 1999

- 7/7 Lunch and Learn: "Role of Human Habitability Study in Space Facility and Vehicle Design" with Constance Adams
- 7/16 Region IV RAC meeting in Dallas
- 7/17 Regional Leadership Conference in Dallas
- 7/17 "The Magic of Physics" at the Education Fair at the Lunar Rendezvous Fun Run
- 7/20 Executive Council Meeting
- 7/23 Newsletter inputs due

August 1999

- TBD Lunch and Learn
- 8/1 Section Insurance Form due if we want it (council voted against it)
- 8/6 Mentor Day for winner of TAMU sponsored high school essay contest
- 8/9 Mail out newsletter and notice of August meeting
- 8/12 Executive Council Meeting
- 8/18 Newsletter inputs due
- 8/26 Honors and Awards Banquet and Program w/ AIAA Distinguished Lecturer Dr. Kenneth Cox speaking on "A 'Futurist' Perspective for Space"

September 1999

- TBD Lunch and Learn
- TBD Telecon to Australian Section
- TBD RAC Telecon
- TBD Executive Tour with Boeing management**
- TBD Executive Tour with USA management**
- TBD Executive Tour with Lockheed management**
- TBD Executive Tour with Muniz management?

- TBD Executive Tour with Hernandez management?
- TBD Executive Tour with Oceaneering management?
- 9/1 Submit Distinguished Lecturer request to National
- 9/11 Executive Council Leadership Retreat
- 9/15 Newsletter inputs due
- 9/30 Dinner Program, TBD**

October 1999

- TBD Lunch and Learn: "Vestibular-Autonomic Interactions in SpaceFlight" with Dr. Todd Schlegel
- TBD Executive Tour with Johnson Engineering management?
- TBD Executive Tour with LinCom management?
- TBD Executive Tour with DynCorp management?
- 10/1 Sustained Performance Award nominations due to National
- 10/1 Engineer of the Year Award nomination due to National
- 10/7 Executive Council Meeting
- 10/13 Newsletter inputs due
- 10/21 Dinner Program
- 10/30 Section Programs calendar due to National
- 10/30 Regional visit support request due to National

November 1999

- TBD Lunch and Learn
- TBD Telecon to Australian Section
- 11/4 Executive Council Meeting
- 11/10 Newsletter inputs due
- 11/9 RAC Telecon, 4 pm
- 11/18 Dinner Program

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CALENDER...continued from page 9...

December 1999

TBD Lunch and Learn
 12/2 Executive Council Meeting
 12/8 Newsletter inputs due
 12/16 Dinner Program or Holiday Party

January 2000

TBD Lunch and Learn
 1/6 Executive Council Meeting
 1/12 Newsletter inputs due
 1/10-13 38th AIAA Aerospace Science Meeting
 and Exhibits in Reno
 1/20 Dinner Program

February 2000

TBD Lunch and Learn
 TBD Telecon to Australian Section
 TBD Congressional Visits Day
 TBD Physics is Fun Day
 2/3 Executive Council Meeting
 2/9 Newsletter inputs due
 2/17 Dinner Program
 2/20-26 Engineer's Week
 2/29-3/1 **Human Space Transportation and
 Exploration Workshop at Galveston
 (Lockheed Denver conference, AIAA
 will help support)**

March 2000

TBD Lunch and Learn
 3/2 Executive Council Meeting
 3/8 Newsletter inputs due
 3/16 Dinner Program
 3/25-27 Houston Science and Engineering Fair

April 2000

TBD Lunch and Learn
 TBD Telecon to Australian Section
 4/6? Executive Council Meeting
 4/6-7 Student Paper Competition
 4/6-7 Annual Technical Symposium
 4/12 Newsletter inputs due
 4/15 Associate Fellow upgrade nominations
 due
 4/27 Dinner Program

May 2000

TBD Lunch and Learn
 TBD Workshop on Automation and Robotics
 and Innovations 2000
 TBD Clear Lake City Technical Societies
 Annual Awards Banquet
 5/1 Houston Section Spirit of Apollo
 scholarships applications due
 5/4 Executive Council Meeting
 5/10 Newsletter inputs due
 5/10-12 Global Air and Space 2000
 International Business Forum and
 Exhibits in
 Washington, DC
 5/18 Dinner Program

June 2000

TBD Lunch and Learn
 TBD Telecon to Australian Section
 6/1 Executive Council Meeting
 6/7 Newsletter inputs due
 6/15 Fellow nominations due
 6/22 Honor and Awards Banquet
 6/30 Section Reports due to Regional and
 National

July 2000

TBD RAC meeting and Regional Leadership
 Conference, location TBD

Cranium Cruncher

- by Norm Chaffee

It's been a long time since I wrote the June puzzle, but many of you were able to figure out the identities and baking secrets of the world-famous chocolate chip cookie bakers. I got correct answers from the following smart "cookie monsters".

Frank Baiamonte
Robert Blaine
Jim Booker
Hubert Brasseaux
Joy Conrad
Yurira Guinart-Ramirez
Steve King
Ajit Kwatra
Virginia Livingston
Reg Machell
James Wade
Gayle Yoder

Good work to each of you!

For those who are still eating cookies and wondering about the answer to the puzzle, there are two possible solutions that fit all the clues I gave you.

Solution 1: Effie Bundt uses 5 chocolate chips per cookie and bakes them for 16min-17secs; Ruby Strudel uses 7 chips and bakes for 17m/7s; Thelma Spicer uses 8 chips and bakes for 16m/9s; Miriam Applestreet puts in 9 chips and leaves them in the oven for 17m; while Georgia Honeydew uses 10 chips and bakes them for 17m/8s.

Solution 2: Effie Bundt - 5 chips, 16m/9s; Ruby Strudel - 7 chips, 17m/7s; Thelma Spicer - 8 chips, 16m/17s; Georgia Applestreet - 9 chips, 17m/8s; Miriam Honeydew - 10 chips, 17m.

James Wade was the only participant who identified both solutions, and he is our winner this month, receiving a free meal at an upcoming AIAA event during the next year. Congratulations, James!

Now try this puzzle as the first offering for the 1999-2000 Section year.

When the Houston Astros are on a road trip, they like to play the card game, Hearts. They always set up three tables with three players at each table, to accomodate the nine starting players. However, no outfielder likes to sit at a table with another outfielder; the first base, second base, and third base players don't like to sit at the same table; and the shortstop, pitcher, and catcher refuse to sit at the same table. However, they all like to rotate the table make-ups for each session of Hearts. How many different configurations of the nine starting players can they have before they repeat a table set-up?

Send your solutions to me via e-mail at Norman.H.Chaffee1@jsc.nasa.gov or via paper mail at NSA - JSC, mail code AP2, Houston, TX 77058. As always, the winner will receive a free meal at a future AIAA activity during the year. Good Luck!

Norman Chaffee

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AIAA Newsletter Distribution

You must return this form by October 30 to continue receiving the AIAA Houston Section newsletter in the mail. If we do not receive this form from you, we will assume that you are happy to receive an email notice to check the website when the newsletter is posted.

I wish to continue receiving the AIAA Houston Section Newsletter in the mail.

Name:

Address:

I would like to add my email address to your distribution list so that I can receive email notification that the newsletter is on the website. (No reply is required if you have already been receiving email notices from us.)

Please return to Merri Sanchez via email at merri.sanchez1@jsc.nasa.gov, or via interoffice mail at OC/Merri Sanchez, or via US mail at PO Box 57524, Webster, TX 77598.



Houston Section
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Webster, TX 77598

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