



A Busy Spring In San Diego

Kevin Burns, Acting Section Chair

The San Diego Section is growing with two new appointments to the leadership council. We have a young new member by the name of Kevin Scanlon who moved here from Pasadena and is our new chairperson for Young Professionals. The other appointment is Phil Smith as the chairperson for Public Policy. Phil is the CEO of the California Space Grant Foundation (<http://www.csgf.org>), which is the operating arm of the California Space Grant Consortium (calspace.ucsd.edu/casgc) and the California component of the congressionally sponsored National Space Grant College and Fellowship Program. He is also the Director of Operations for the Aerospace Education, Research and Operations Institute (AERO INSTITUTE). As you can see, he is highly qualified for the position. He is also highly motivated; within days of his appointment he represented the San Diego Section at the AIAA Region VI Public Policy Colloquium held in El Segundo. Upon his return Phil filed his report to the section and a few weeks later he was off to Washington, D.C. where he represented us at the AIAA Congressional Visits day. These two appointments filled all the vacancies on the council for the 2004-2005 year. We are always looking for leadership within the section, and will have other vacancies on the council in the coming months. Therefore, if you have a desire to serve in some capacity, please contact me.

This has been a great year. Eric Heininger got us off to a good start with his leadership, and then I was fortunate to have such experienced leaders to support me. We currently have eight former Section Chairpersons serving in leadership positions

on the council. We are fortunate to be slated for as many next year. Although Doug Armstrong has announced that he will be moving to Arizona in the next year, Chris Root has agreed to serve on the council next year. I feel very privileged to have such a strong base of support.

The AIAA is gone high-tech with all their paperwork being performed on-line. The section activities and year-end reports are all filled-out on the internet through the AIAA's website (<http://www.aiaa.org>). The next Council meeting will be at the Wyle Labs conference room so that we can complete our reports on the projected website. Nominations and endorsements for membership upgrades are also performed on the same website. If you know of a member that is deserving of a membership upgrade (Associate Fellow, Fellow, etc.), I would encourage you to make the nomination on-line. Members can also make self-nominations.

I encourage you to read the newsletter thoroughly. We have much going on and we are here to support you, the member. The Region VI RAC meeting will be held in El Segundo on the 14th of May. On the evening of 19 May is our annual Awards Banquet. This is the culmination of all our accomplishments over the past year and I would encourage everyone to get their reservations in as early as possible. The next Council meeting is scheduled for June 8th and we will start planning the activities for the following year. I look forward to hearing from everyone. If you have any ideas, concerns, nominations, or gripes, I would like to hear from you. Feel free to call me at (619) 543-1700 x-310, and my current e-mail address is: kevin.burns@wylelabs.com

FIELD TRIP TO JPL

Doug Armstrong, Field Trips Chair

We will now start taking reservations for the field trip to JPL on Monday, October 3rd, 2005.

I must have the roster to them 1 month before the trip. We are allotted a maximum of 40 spaces.

All U.S. citizens over 18 years of age must have government identification, either a driver's license or a passport. All non-U.S. citizens must present a passport or green card resident visa. Anyone without I D will not be allowed in the facility. The tour includes considerable walking and stair climbing.

We will leave from the Mira Mesa park n ride at 9:00 A.M. and stop somewhere for lunch. We will arrive at JPL at 12:45 and depart about 3:45 P.M. arriving at Mira Mesa about 6:30 P.M.

The cost approved by the council is \$20 for members and spouses, \$30 for non-members and \$15 for students. Reservations can be made only by E-mail to Drdougarm@aol.com. Then send a check for the correct amount to:

Doug Armstrong, 16474 Espola Rd., Poway, CA 92064-1413, made out to AIAA San Diego.

SDSU Rocket Project

Nils Sedano, SDSU Section Chair

Phoenix Delta launch- May 21, 2004

Through several delays in launch due to the inaccessibility of the launch site, the team spent the time examining and double checking the rocket's systems. Finally on May 21, the launch window was available and the team traveled to the launch site in the Mojave Desert.

The team's rocket is a 21ft long, LOx and kerosene, pressure fed bipropellant rocket. The system uses an LR-101 type regenerative cooled engine from an Atlas ICBM (two of these engines sat on each side of the rocket midway up to stabilize it during flight). The thrust put out by this system is 1000lbf for the entire flight, thanks to the third pressure tank which is filled with helium. The rocket is fully recoverable thanks to altimeters, two parachutes and

a drogue chute. The rocket's payload was made up of advanced altimeters, GPS tracking transceivers, two cameras equipped with live video feed relayed by an onboard antenna, and a set of letters (of sentimental value).



Photo thanks to Dave Allday

The team was prepared and did last minute tweaks the night before with only the recovery system and payload needing to be worked on pre-launch. Fears were running high during the day that winds might pick up and force the cancellation of the launch. Thankfully the winds abated and kept down until much later in the day. So about two O'clock in the afternoon the rocket was taken to the pad and fueled for launch. Emotions ran high as the countdown began. Finally ignition took place and the rocket took off. The rocket arced above people's head

with a deafening roar that could be heard for miles. Unfortunately the flight was not a perfect one. Again because of lack of funds the team had to use a previously used engine, the haphazard of which is that it is not completely reliable. Rust has become a constant issue; during the flight rust became loosened from the inner walls of the jacket chamber of the engine and clogged up the system. Notwithstanding, the engine still pushed the rocket upwards, though it caused a burn through the walls of the chamber finally causing an asymmetrical thrust profile. The rocket continued to arc and at approximately 400lbs of thrust dove to earth a long distance from the launch site.

The team was excited to see the Rocket fly and are not disappointed at the end result, the rocket has improved every step of the way, getting closer and closer to a perfect flight each time, and has afforded the students an invaluable learning opportunity few could boast. The students learn from these launches, just like NASA did in their early launches. Looking into the future the students will seek funding from companies willing to donate parts, time and money to continue their endeavors. Hopefully with enough funding the team will be able to rebuild and launch again.

For further information, please contact Victor Sanchez, *Project Manager*.
sanchez_victor_a@hotmail.com

UCSD DBF

Sarah Houts, DBF Team Member

The UCSD DBF team was thrilled to have placed 5th at this year's competition in Pax River, Maryland. We had nine team members attend, and all had a great time. There were thirty-six planes from universities across the nation and from overseas—universities from Israel, Turkey, and Italy all had planes. It was an excellent learning experience, getting to see a variety of designs, from a flying wing to a tri-plane, and how well each performed. As usual, there were some spectacular crashes when things did not go as planned. Our plane flew wonderfully, even in the rain, thanks to Steve Neu's excellent piloting. We look forward to working on the plane for next year's competition, and doing even better. If you would like to support

our team in the future, please contact me at sarah.houts@gmail.com.



SDSU DBF

Donald Myers, SDSU DBF Project Manager

San Diego State University aerospace engineering students participated in the 2005 AIAA Cessna/Office of Naval Research (ONR) Design Build Fly (DBF) competition held in St. Inigoes, MD from April 22 through April 25, 2005. Sponsored by Northrop Grumman Integrated Systems, the SDSU DBF team successfully designed, built and flight tested an electric powered, radio controlled aircraft. Dubbed Monty's Pride, the aircraft was designed to perform three predetermined missions as prescribed by the DBF contest administrators. Information about specific mission requirements can be found on the DBF contest's official website at <http://www.ae.uiuc.edu/aiaadbff>

The performance of Monty's Pride at the contest proved to be less magnificent than the SDSU DBF team expected. On the first official flight attempt, the plane failed to achieve flight due to a power failure and ended up nose down on the runway damaging the motor mount structure. After testing and overcoming the power plant problem, the team decided that another flight attempt would be unsafe due to the damaged motor mount which, although repairable, could not be manufactured within the remaining time of the contest.

Despite a disappointing flight attempt, the team excelled in other scoring aspects of the contest. Each team's score was based on three performance merits one of which was the flight score. The second merit was the design report which covered all phases of the project design from the conceptual phase through flight testing. The third merit was based on a figure, known as the Rated Aircraft Cost (RAC), which demonstrated the efficiency of the finished aircraft encompassing its actual design and manufacture; a high report score and low RAC were desirable. The SDSU team received a report score of 84.25% out of an overall average report score for all teams of 76%. In addition, the team's RAC was below the average RAC of 10.7 with a score of 9.87 as desired. The final result of the contest held SDSU in 25th place out of 36 flight capable teams and out of 44 total team entrants.

The Design Build Fly competition was an excellent supplement to the team's education allowing abstract ideas and theories to be taken out of the classroom and put into practice on a real world project. With the new found experience of this year's competition, the SDSU DBF team is excited at the prospect of bringing the trophy home following the 2006 competition. Donmyers1@sbcglobal.net

Membership News

Jim Peterson, Membership Chair

Section membership stands at 433 as of May 1st. We would like to welcome the following new AIAA professional members to the San Diego Section:

April

Adam Diedrich
Laurie Gris
Bruce Macdonald Trex Enterprises
Steve Slocum V System Composites
Alan Tulkki

May

Mikel Atkins Northrop Grumman
Scott Bartel Blacksky
William Chen ATA Engineering
Andrew
Fleming SPAWAR
Bryce Gardner ESI VS R&D Inc
Jeffrey
Hickerson SpaceDev Inc
Marta Ruiz Goodrich Aeronautical Structures

If you have any questions about membership or advancing your membership grade, please contact Jim Peterson at (858)-279-1940, or email to: jdpete@pacbell.net.

Position	Name/Company	Work Phone/Fax	Email Address
Section Chair	Vacant		
Secretary	Eric Carlson, Goodrich Aerostructures	(619) 691-6594	Eric.Carlson@goodrich.com
Treasurer	Penelope Ulander, NAVAIR North Island	(619) 545-3935	penelope.ulander@navy.mil
Vice Chair – Long Range Planning	Kevin Burns, Wyle Laboratories, Inc.	(619) 543-1700	kevin.burns@wylelabs.com
Vice Chair – Technical	Greg Marien, Northrop Grumman	(858) 618-5207	greg.marien@ngc.com
Program Arrangements	Jia (Jake) Yu, Goodrich Aerostructures	(619) 691-4087	jia.yu@goodrich.com
Field Trips	Doug Armstrong, USAF – Retired	(858)451-5637	Drdougarm@aol.com
Flyers	Nigel Barker, Goodrich Aerostructures	(619) 691-2568	Nigel.barker@goodrich.com
Newsletters & E-Bulletins	Katherine Miller, SDSU	(619) 925-3378	k_dmiller@cox.net
Webmaster	Joey Neumyer	(858)274-3942	tahoebrbr@yahoo.com
History & Bylaws	Bill Chana, General Dynamics - Retired	(858)488-7183	None
RAC VI Delegate	Nigel Barker, Goodrich Aerostructures	(619) 691-2568	Nigel.barker@goodrich.com
Public Policy	Phil Smith, California Space Grant Foundation	(858) 944-2555)	psmith@csgf.org
Membership	Jim Peterson, General Dynamics – Retired	(858)279-1940	Jdpete@pacbell.net
Honors & Awards, and Career Enhancement	Keith Glassman, NAVAIR North Island	(619) 545-3736	Keith.Glassman@navy.mil
Student Activities	Andrew Bechtel, NAVAIR, NAS North Island	(619) 545-3797	Andrew.Bechteln@navy.mil
Professional Society Liaison	Warren Johnson, BFGoodrich Aerospace – Retired	(858)278-1317	wmjohnson2@earthlink.net
Pre-College Outreach	Quentin Goss, USAF – Retired	(858)451-6213	qjgoss@att.net
Young Professionals	Kevin Scanlon	(619) 667-1166	Krscanlon@hotmail.com
Member at Large	Lee Bolt, Aerospace Consultant	(619) 281-0216	leebolt@worldnet.att.net
SDSU Faculty Advisor	George Faulkner, SDSU	(858)270-7354	DGFJR@aol.com
SDSU Student Chair	Nils Sedano, SDSU	(619) 961-5568	nilssedano@hotmail.com
UCSD Faculty Advisor	Dr. Kieko Nomura, UCSD,	(858) 534-5520	knomura@ucsd.edu
UCSD Student Chair	Matthew Napoli, UCSD	(909)702-6678	mnapoli@ucsd.edu

Pre-College Outreach

Kevin Burns

Because of budget constraints, teachers at Los Altos Elementary School were told that they could not plan on taking any field trips this year. When funds suddenly came available to the third grade teachers a few weeks ago, it left no time for the planning. They took the availability of the school busses on the only day they could and looked for an activity that was available for that time. The puppet theater in Balboa Park was seen as a good educational and cultural event. The production, played out with puppets, was *Sleeping Beauty*.

The call quickly went out for volunteer parents and on a beautifully sunny morning 48 children, two teachers, and six volunteer parents arrived in Balboa Park a half-hour early for the puppet show. So as to keep the children occupied, they were marched around the area and the bus took-off to return shortly after noon. As we marched past the Car Museum the discussion of the adults turned to, what to do after the 40 minute puppet show. As we approached the San Diego Air and Space Museum, suddenly the children took off with voices squealing with delight. They were fascinated with the large airplanes mounted out front, and soon half of them had noses pressed to the glass doors to see what is inside. Suddenly the teachers and parents were inundated with questions, "What kind of airplane is that? How fast does it go? How many people does it hold?"

Fortunately, a member of the AIAA San Diego Section was one of the volunteer parents and knew that the museum's Director of Educational Programs was also a member. After a short meeting it was discovered that there were no other school groups scheduled and that the group was lucky enough to be able to get in that morning.

After the puppet show the entire school group had an exciting tour of the Aerospace Museum led by the AIAA volunteer parent. By the end of the morning the children all had a great time learning about the history of aviation and space in the United States; and the AIAA member was hoarse from talking to an eager group of students for over an hour.

Annual Section Technical Symposium

Kevin Burns

The annual section technical symposium was a scholarly and fun event enjoyed by colleagues. The presentations were current, informative, and well presented. The subjects presented were:

World's First VTOL Airplane Convair/Navy XFY-1 POGO, Mr. William F. Chana, Aircraft Design Consultant and AIAA Distinguished Lecturer

BQM-74F Program, Mr. Doug Fronius, Northrop Grumman

2004-2005 AIAA Student Design Build Fly: Monty's Pride, Mr. John Maloney, SDSU

Solar Thermionic Space Power System, Mr. Paul Clark, General Atomics

Global Hawk Capabilities, Mr. Greg Loegering, Northrop Grumman

CFD Investigation of Flow Over a Generic Fan Wing Airfoil, Ms. Deepthi Duddempudi

SDSU Rocket Project, Mr. Joseph Brown, SDSU

The History of Aerospace Research at Cornell Aeronautical Laboratory, Mr. Kevin Burns, Wyle Laboratories

2004-2005 AIAA Student Design Build Fly: UCSD

One presentation, *The Unique Technical and Programmatic Challenges for the Apollo Spacecraft Lunar Module*, was scheduled, but not given. The author Mr. William Rector of Rector Associates International was in a car accident on his way to the meeting. Mr. Rector is alright and we are looking forward to inviting him as a meeting speaker sometime.



2005 Awards Banquet Gala Affair

Keith Glassman, Honors & Awards Chair

This year's AIAA San Diego Section Annual Awards Banquet was well received. Five awards were given out for accomplishments in local San Diego aerospace, two were given out for contributions to the AIAA, and long-term membership awards were given out. Lieutenant JG Chad Berman was also recognized for his First Place Paper at the 2003 AIAA Region VI Student Conference and his going on to win the national competition.

Lori Fleet Martin, Great-granddaughter of Reuben H. Fleet, was a guest of honor to present eight \$1,400 Reuben H. Fleet scholarships; a record number for scholarships in AIAA San Diego. This year there were a larger number of applicants, who were all highly qualified.

We sent three judges to select the best aerospace exhibitors at the 51st Annual Greater San Diego Science and Engineering Fair held in March. Two students, representing Lewis Middle School and Torrey Pines High School, received \$100 checks at the banquet. Those attending the banquet could see the exhibits on display.



UCSD displayed their winning entry from the 2005 AIAA Design Build and Fly competition, which won them the first year of ownership of the *AIAA San Diego Section Design Build Fly Competition Award*.

Madison High School demonstrated the operation of a large remote control robot they built for the US First Robotics contest, which was started by Dean Kamen of Segway and Boston Scientific. The robot they demonstrated at the banquet was designed to pick up, handle, and place large red and blue "tetras," or geometric metallic bar formations with four faces, just as a human would pick up and arrange plastic chairs in a back yard. Last month the students traveled to Atlanta, Georgia with the robot to compete in the national event. Deborah Barnes presented the team with a scholarship check from the California Space Grant Foundation.

The awards presented this year were:

Science Fair Award Junior Division
Science Fair Award Senior Division
Section DBF Competition Award
Reuben H. Fleet Scholarship

50 Year Membership Award
40 Year Membership Award
25 Year Membership Award



Chris Hinds – *How the Number of Engines Affect a Rocket's Altitude and Velocity*
Anthony Neuberger – *Real Time Analysis and Optimization of Solid Fuel Rocket Engines*
University of California San Diego Student Chapter
Joey D. Brown, SDSU
Sofia I. Calica, SDSU
Sarah F. Houts, UCSD
Mark W. Jeffrey, SDSU
Akasha Kave Khalsa, SDSU
Katherine M. Miller, SDSU
Alanna D. Milner, University City High School
Nils M. Sedano, SDSU

John E. Gyarfas
Richard E. Kuhn
Thomas Y. Palmer
Pete Peterson
Monte B. Adams
John G. Bodle
Ola Brevig
Phil C. Chan
Jack E. Dyer
Steven J. Harris
Mike Lazar
C. James Dorrenbacher



AIAA National Award for Sustained Service
James D. Peterson

Section Awards:

Outstanding Contribution to the Section
Outstanding Contribution to the National Educator Associate Award
Outstanding Contribution to the Community
Outstanding Contribution to Aerospace Engineering
Outstanding Contribution to Aerospace Management
Outstanding Achievement by an Aerospace Organization

Larry Sullivan, Goodrich Aerospace
Kevin Burns Wyle Laboratories
Brendan Casey, Joan MacQueen Middle School
Dr. John B. Kosmatka, UCSD
Frank Macklin
SpaceDev, Inc.
CAPT William T. Trainer
Commanding Officer,
NAS North Island
Carl O. Johnson,
Northrop Grumman
Unmanned Systems





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