



Newsletter

Volume 36, Number 5, February 2006

What's Up with Electric Propulsion?

Dr. David King

Aerojet: Redmond Director of Engineering

The presentation will review today's role of Electric Propulsion in applications and technology status. Electric Propulsion has been applied to science and



Photo credit: www.epower-propulsion.com

commercial satellites with hundreds of satellites launched to date. Aerojet's Redmond facility has played a leading role in commercializing this technology, and is actively developing and producing flight hardware. Most geosynchronous communications satellites launched today rely on electric propulsion for orbit maintenance.



Image credit: www.space-

As Director of Engineering, Dr. King leads the engineering department at Aerojet's Redmond facility. Responsibilities include development of engineering capabilities and management of design, stress, thermal, reliability, materials & process, components, and chemistry laboratory disciplines.

Prior to this management role, he was the Chief Scientist for Aerojet Redmond. On four occasions, Dr. King was nominated for Engineer/Scientist of the year and twice selected as The Engineer/Scientist of the Year for his contributions in electric propulsion.



Image credit: www.space-travel.com

His background includes work on propulsion systems, electric propulsion thrusters including ion thrusters, Hall current thrusters, magnetoplasmadynamic thrusters, pulsed plasma thrusters, and arcjets, power electronics, and analysis of multiphase, plasma and chemically reacting flows. He is the inventor on six electric propulsion and plasma processing patents, and has authored over thirty papers and publications.

Before Aerojet, Dr. King was the Electric Propulsion Group Supervisor at NASA's Jet Propulsion Laboratory. He received his Ph.D. from Princeton University in 1982 and his BSME from Rutgers University in 1976.

Joint AIAA/SFTE Presentation

Date: **Tuesday, February 28, 2006**
Place: Museum of Flight, Seattle, WA
Time: 6:00 pm Social, no-host bar.
6:30 pm Dinner
7:15 pm Presentation

Dinner Price:

\$15 AIAA & SFTE Members & Guests
\$18 Non-Members

\$5 Students & Educator Associates
Program Only: \$5 (Free for persons 17 and under)

Please RSVP online at www.pnwaiaa.org or e-mail reservations@pnwaiaa.org (including meal choice). You will receive a confirmation e-mail. Please make reservations by Monday, February 27th.

Please note a reservation is a commitment to pay.

Events

LearFan SN001 Composite Prototype

AIAA members are invited to attend a presentation by Dennis Newton, former Chief Test Pilot of LearFan Corp, who will be speaking on the LearFan composite prototype, SN001. It was the first airplane composed of all graphite-epoxy composite structure. In addition, its unique propulsion consisted of two turbine engines driving a single propeller.

The lecture is presented by the Royal Aeronautical Society's Seattle branch. It is scheduled for Tuesday, February 21, 2006 at 6:00 pm. The Museum of Flight will host the event which is free. No RSVP is required although it is recommended to arrive early for seating.



January Meeting: US Navy Maritime P-8A Multi-Mission Aircraft

The January meeting featured Ray Figueras of Boeing's Muti-Mission Maritime Aircraft program. Mr. Figueras provided an overview of the program ranging from the various advantages of implementing a current platform, the Boeing 737, to a short marketing video clip.



(l-r) Mike Bartlett (SFTE Chair), Ray Figueras (Boeing MMA Director), and Dave Lednicer (PNW AIAA Chair).

2006 Engineering Fair

The 2006 Engineering Fair will be held on Saturday, February 18th, at the Museum of Flight in Seattle, WA. The Fair will begin at 10 AM and end at 5 PM.

Sponsored by the Puget Sound Engineering Council (PSEC), the Fair is part of National Engineer's Week. The Fair, which targets K-12 students as well as the general public, is free. A voucher for \$2 off the Museum of Flight admission can be picked up at the PSEC booth.

Stop by the Pacific Northwest Section's booth to pick up a Space Shuttle glider and stickers for the kids. We look forward to seeing you there!



Aerospace Futures Alliance of Washington Blasts Off With Dignitary-Filled Breakfast

SEA-TAC, Wash., Jan. 23 – Washington aerospace employers and a high-powered cast of elected officials celebrated the launch of a new coalition – the Aerospace Futures Alliance of Washington (AFA) – at a breakfast kickoff at the Hilton Seattle Conference Center today. The AFA was formed to support and promote the aerospace industry in Washington state. According to its organizers, its three main goals are to: 1. Raise the visibility of the aerospace industry as a large, diverse, and important sector of Washington's economy – both now and in the future; 2. Advocate for aerospace in Olympia and with Washington's Congressional delegation; and 3. Foster better connections throughout the industry in Washington, enabling increased collaboration on business opportunities. "Our aerospace industry is second to none and one of the reasons that Washington State is known throughout the world," said Governor Chris Gregoire. "The AFA is essential to raising the profile of this industry and our state." An industry profile developed by economists Dick Conway and Douglas Pederson shows that the aerospace and air transportation industry is the state's largest employer, with more than 100,000 employees. This includes companies from major aircraft manufacturing to component manufacturers to

PNW Calendar	
Saturday, February 18th	
2006 Engineering Fair Museum of Flight, Seattle	
Tuesday, February 21st	
Speaker:	Dennis Newton, AIAA Associate Fellow (revised)
Topic:	LearFan Composite Prototype
Tuesday, February 28th	
Speaker:	Dr. David King
Topic:	Electric Propulsion
Tuesday, March 21st	
Speaker:	TBD
Topic:	TBD
Tuesday, April 18th	
Speaker:	Scott Eberhardt
Topic:	Wind Tunnel
Thursday, April 27th	
Jillian's Billiards Night 6:00 to 9:00 pm	
Tuesday, May 16th	
Speaker:	Jeff Boulware
Topic:	SED Zero Gravity Project
Tuesday, June 20th	
Speaker:	Ratan Khatwa
Topic:	Flight Deck Design-The Human Factor Challenge
* Meetings begin at 6:30 PM at the Old Spaghetti Factory, Seattle.	
Retired Members Brunch	
Saturday, March 18st, 9:00 AM	
Speaker:	Tom Cogan
Topic:	The Boeing 787
Location:	Museum of Flight, Seattle
Contact:	Tom Holgate (253) 838-0333

airports, air service firms and air carriers. Of this total, the more traditionally defined aerospace manufacturing industry provides more than 65,000 jobs, with annual wages averaging \$83,370, more than double the statewide average. Air transport provides the remainder. Combining direct and indirect jobs, the aerospace industry creates more than 200,000 jobs across the state. While the industry is centered in King and Snohomish counties, it provides more than 40,000 jobs outside those two counties. Speakers at the AFA kickoff also drew attention to the national importance of Washington's aerospace industry, including its critical relationship to the national balance of trade. "Washington aerospace is important to the entire nation," said Congressman Norm Dicks. "In November, it drove U.S. overall manufacturing growth, while growth in other sectors stayed stagnant. Keeping this engine running is worthy of efforts by all of us. The AFA can spur both business innovation and community awareness here at home." The concept of the AFA originated out of work done over the past few years by the Prosperity Partnership, a coalition of government, business, labor and community

leaders from King, Kitsap, Pierce, and Snohomish counties.

Bob Drewel, executive director of the Puget Sound Regional Council, which is heavily involved in the Partnership, said, "Not long ago, it looked like our Washington aerospace industry might be in jeopardy. But the entire state rallied to protect it. It was a stellar effort but, now that times look better, we can't let down our guard. The continuing prosperity of aerospace is in our hands. AFA will help us ensure that public policies are always in place to protect it." SOURCE: Aerospace Futures Alliance of Washington



2006 Congressional Visits Day

You are invited! Every year, AIAA members come to Washington, D.C. to take part in our annual Congressional Visits Day (CVD). Here, you will have the unique opportunity to meet with national decision makers to discuss critical industry issues in civil aeronautics, civil astronautics, and defense.

CVD brings scientists, engineers, researchers, educators, and technology executives to Washington, D.C. to raise the visibility of and support for science, engineering, and technology. "Team captains" coordinate the event for their state's delegation, which is open to all who believe that science and engineering are the cornerstones of our Nation's future. CVD begins with an orientation meeting where you will be able to meet AIAA representatives from around the country and learn about national Aerospace issues. The majority of the CVD experience consists of a series of briefings and meetings with your Congressional representatives to discuss issues important to you. The event concludes with an evening reception with Congressional representatives, AIAA staff, and members. The Pacific Northwest Section is currently forming its CVD team and is presently looking for anyone interested in participating from Alaska, Idaho, Montana, Oregon and Washington. We will need one team captain from each state to serve as a point of contact. Whether you would like to be team captain or simply attend this exceptional event, please contact Christian Carpenter at carpenter@pnwaiaa.org.

AIAA REGION VI ANNUAL PUBLIC POLICY COLLOQUIUM

"Air & Space Issues for the Year 2006"

The Region VI Public Policy Colloquium will be held on Saturday, 25 February 2006, 9am to 3pm in El Segundo, CA. Led by Steve Goad, Deputy Director of Public Policy for Region VI, and members of AIAA's Public Policy team, the Colloquium is your chance to learn about other

Sections' Public Policy activities and get a head start on preparing for Congressional Visits Day 2006 (CVD).

For your convenience the Colloquium will be held at the LAX/El Segundo Courtyard Marriott, which has shuttle service to and from LAX. RSVP to Susan Andriacchi, (800) 683-242 or susana@aiaa.org, by 21 February 2006.



Space 2006 The Value Proposition for Space: Security, Discovery, Prosperity

19-21 September 2006
San José McEnery Convention Center,
San José, California

Nearly a half-century into the space age, space remains a new frontier whose value to humanity is still being discovered. We continue to discover how critical space capabilities are to global security, economic growth, and scientific discovery. Space enhances the preservation of peace by continuous global awareness and communications. It improves the quality of human existence by better monitoring Earth to provide warnings of short-term weather and long-term environmental threats and to support disaster relief. It increases economic activity and productivity through more efficient global communications, geo-positioning, global timing, and terrestrial resource tracking and utilization. Finally, it encourages the study of science and mathematics by today's youth by furthering discovery both on the Earth and throughout the amazingly complex and still mysterious universe.

Despite these remarkable advances in space technologies and applications over the past half-century, they remain largely unrecognized by the majority of people outside the space community. During these times of stressed national and community budgets, and of increased global political tensions, it is difficult for those not directly engaged in space endeavors to recognize their value compared to their costs.

Increasing awareness of both the achievement of space activities to this point, as well as the promise they hold for a more secure, comfortable life on a global scale, is one of the main objectives of this conference.

Space 2006 will address the importance of space for civil, commercial, security, and scientific purposes, and identify the investments in security, logistics infrastructure, horizontal integration and scientific investigation that will maximize space's value to ensuring prosperity for humanity in the future. The conference will address a wide array of topics, including technical, economic, and policy themes, to provide a forum to discuss "the value proposition for space."

The program for Space 2006 is comprised of technical and plenary sessions, keynote addresses and panel discussions, an exhibit showcasing the latest in space technology and featuring non-traditional aerospace companies, vibrant educational outreach activities, and much more. Space 2006 is supported by Lockheed Martin Corporation, NASA Ames Research Center, and U.S. Air Force Space & Missile Systems Center, and organized by the American Institute of Aeronautics and Astronautics.

Participate in Space 2006 to help define and communicate the value proposition for space!

For more information, visit
<http://www.aiaa.org/events/space> or email
space2006@aiaa.org



AIAA Board of Directors 2006 Elections

By now you will have received in the mail your ballot for the 2006 elections of AIAA's Board of Directors. Remember to mail in your ballot early

to be received by 20 March 2006.

Alternatively, online voting will be offered. Visit www.aiaa.org for more information. Online voting will need to occur by 20 March 2006.

PNW AIAA 2006 Section Elections

Interested in becoming more involved with AIAA? Consider running for an office within the PNW section. Visit our website, www.pnwaiaa.org, to view all the offices. Feel free to contact any of the current officers for more information on their positions.

Contact Emmanuel Domingo (domingo@pnwaiaa.org) to be placed on the upcoming slate.

Student Conference Judges Needed

Student conference is April 6-7, UC Irvine. We need papers and oral judges. Some judges are signed up now. Technical judging is now done via the Internet. Sign up online. Access code is 12345. Elizabeth Carter of the AIAA Western office will have a PowerPoint presentation on judging. Sponsoring companies get a CD of student resumes and a place at the conference to put their propaganda.



Section website: <http://www.pnwaiaa.org/>
 National website: <http://www.aiaa.org>

Please submit newsletter materials to the editor by the 28th of February for the March newsletter.

Outstanding Section Awards
 1972-1973
 1977-1978
 1978-1979
 1991-1992
 1993-1994
 1994-1995
 1994-1995
Section Special Event Awards
 1976-1977
 1977-1987
 1978-1979
 1982-1983
 1987-1988

Membership Award
 1997-1998
Young Member Activity Awards
 1990-1991
 1991-1992
 1994-1995
 1995-1996
Career Enhancement Award
 1997-1998
Newsletter Awards
 1994-1995
 1995-1996
 1996-1997

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Now make corrections on-line at
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Section Officers and Directors

Position	Name	Address (Mail stop if Boeing*)	Phone	Email address
Council				
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Secretary	Michelle Evans	02-10	-	michele.c.evans@boeing.com
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Advisory Council	Kari Seppanen	14-KF	206-655-3356	kari.j.seppanen@boeing.com
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Elected, non-voting				
Vice-Chairman-Elect	Scott Eberhardt	-	-	eberhardt@pnwaiaa.org
Secretary-Elect	Jon Lee	02-XJ	-	jonathan.p.lee@boeing.com
Treasurer-Elect	Chris Nelson	6712 183 rd St. SW, Lynnwood, WA 98037	-	ccnelson@comcast.net
Appointed				
Webmaster	Andrew McComas	2133 152nd Ave NE, Redmond, WA 98052	425-643-9090	mccomas@amiwest.com
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Nominations	Vera Martinovich	02-XJ	425-266-8664	vera.a.martinovich@boeing.com
Museum of Flight Liaison	Open	-	-	-
Pre-College Outreach	Scott Eberhardt	-	-	eberhardt@pnwaiaa.org
Public Policy	Karl D'Ambrosio	5026 18 th Avenue NE, Seattle, WA 98105	253-395-3710	karld@emfcowa.com
Young Professionals	Emmanuel Domingo	03-JP	-	domingo@pnwaiaa.org

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