

# AIAA SAN FRANCISCO SECTION



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AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS SAN FRANCISCO SECTION  
P.O. BOX 1548, MOUNTAIN VIEW, CA 94042 <http://www.aiaa-sf.org>

Thursday, January 24, 2002

### US Navy Shipboard Rotorcraft Flight Testing



Helicopter and ship at sea

You're at sea in a helicopter, about to land on a moving target, a pad at the stern of a ship cutting through rough waves. The pad moves up and down, and yaws from side to side. Not a problem. Or is it?

The US Navy conducts Dynamic Interface (DI) shipboard rotorcraft tests to improve all aspects of shipboard rotorcraft compatibility. **Kurt Long**, a helicopter flight test engineer, will summarize the adverse condi-

tions that are often typical of the shipboard operating environment; and the US Navy's DI shipboard test methodology, test coordination, data collection, and analysis techniques. He will highlight technical challenges encountered during shipboard rotorcraft operations and by recent DI test programs. He will describe innovative test methodologies currently employed to resolve those challenges. He will also discuss the Navy's DI Pilot Rating Scale (PRS), which is a simplified version of the Cooper-Harper Handling Qualities Rating Scale. He will illustrate many of these aspects by reviewing a recent Dynamic Interface shipboard flight test, conducted off the Atlantic coast in February 2001.

#### About the speaker

**Kurt Long** is a civilian shipboard helicopter flight test engineer, employed by the US Navy at the Naval Air Warfare Center, Patuxent River, MD. Kurt graduated as an Aerospace Engineer from Penn State in 1985 and conducted graduate studies there until 1987, when he started work at Patuxent River. Kurt worked at Patuxent River's Dynamic Interface Department between 1987 and 1997, where he conducted over 75 shipboard helicopter flight test programs and 15 shipboard helicopter flight simulator efforts for the US Navy. In 1997, Kurt was selected for Long Term Training at Stanford University, where he started to investigate ship air-

*Continued on page 6*

Thursday, February 28, 2002

### Searching for Extraterrestrial Intelligence



140 foot telescope of National Radio Astronomy Observatory, used in SETI's Project Phoenix

Are we alone? Or is there other intelligent life in the universe -- or for that matter in this galaxy? Many scientists think there is. But if so, how would you find it?

In 1960, astronomer **Frank Drake** aimed a 26-meter radio telescope at the National Radio Astronomy Observatory in Green Bank, West Virginia, at two nearby stars, beginning the first modern search for extraterrestrial intelligence (SETI). Since then there have been more than 60 SETI projects around the world.

The SETI Institute serves as an institutional home for scientific and educational projects relevant to the nature, distribution, and prevalence of life in the universe. The Institute's Project Phoenix was begun in 1995 to target nearby Sun-like stars. Observations initially took place at the 64 meter Parkes radio telescope in New South Wales, Australia. Current searches are conducted using the 305 meter Arecibo dish in Puerto Rico to simultaneously monitor over 58 millions radio channels.

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## New Frontiers in Air Transportation

by

**Dr. Philip M. Condit, Chairman and CEO  
The Boeing Company**



Aviation provides a critical infrastructure for civil society and provides the core of much of our global defense and security. Boeing plays a key role in both. We are a company that we like to say both connects and protects. We connect people. We bring families, business, and national leaders together. And we protect people. We bring air superiority, troops, humanitarian aid, and help when duty and disaster call.

About ten years ago, we saw radical changes coming in our business and in the rest of the world. We began to see that the information revolution was providing opportunities to change how we did our business. Technology and the globalization of commerce were making us a mobile, global society. In the year 2000, there were 665 million paying passengers in the United States. We now are moving to a global economy that is connected by the Internet, telecommunication, and air transportation.

Today we are at a critical point. We are moving from a regulated, patchwork, national system to a deregulated, mature, and, hopefully, open integrated system. We have a real opportunity -- a new frontier to open. And if we can work together successfully, we can build an air transportation system that will serve international commerce and contribute substantially to global prosperity. For many of us, the events of September 11 have given even more urgency to this effort. To be very candid with you, this fundamental air transportation infrastructure has not kept up with the radical changes produced by advances in technology and a more connected society.

What issues do we need to address to achieve an integrated, productive global aviation system? I think there are three: (1) a basic global aviation policy that allows us to move from a highly regulated, bilateral system to an open, multilateral system; (2) an airport and air traffic management system that can accommodate the future growth of air transportation; (3) the safety and security that is required if all of us are to be confident in that system.

*Basic global aviation policy:* Our aviation infrastructure has not kept up with the world that has emerged over the last 54 years. In 1946, the United Kingdom and the United States negotiated the first bilateral air-service agreement. Since then many nations have negotiated "open skies" aviation agreements. Today there are more than 3,000 agreements. Basically, these allow airlines from one country to fly to any airport in another country. But restrictions still exist on the ability to carry passengers from a third country, which has to be negotiated separately or within another country.

I believe it's time to move to an open rules-based system for much greater efficiency, with better passenger choice. This is, in my opinion, a huge task. It means that the efficient carriers will survive, while the inefficient carriers in turmoil will disappear. Since

the goal is a rules-based system with level playing field competition, development of the rules must occur in an international arena. There will be debates about the advantages, the disadvantages, and how you get to a level playing field. Jobs will be created in one area and lost in another because of the change. But if we want commerce to grow, I think it's necessary.

*Airport and air traffic management (ATM) system:* About a year ago, we started a new Air Traffic Management business at Boeing to make dramatic changes. We believe a future satellite-based airspace management system can be used to improve air transport system safety, capacity, and efficiency on a global scale. If we don't make changes, significant changes, soon, there will be gridlock from fleet and passenger growth in years ahead.

Our air traffic management system literally grew from fires on hilltops to radio beacons to VOR/DME with radar coverage and transponders. It is a system with controllers who watch and respond in tactical ways; it is essentially a system of one-lane roads with a police officer directing traffic on every corner.

A satellite-based future airspace management system can dramatically improve our air transport system on a global scale. It can provide an integrated system without the gaps of the current one. The technology is available, but the political issues are significant. A global system needs to deal with how we protect national sovereignty, and who handles coverage over oceans.

We need to build this kind of system to provide new routes, new terminal approaches, new precision approaches, and free flight with an absolute requirement to always maintain and improve aviation safety and security. This system needs to be seamless with global interoperability so you can fly from Madrid to Detroit to China with one set of avionics and one set of procedures. The good news: It can be done. I think it needs to be done.

*Safety and security:* Growth of the global economy -- whether from the perspective of a developing nation or an industrialized country -- demands safe and secure access to the skies. September 11 has created an unprecedented urgency. We must work together immediately to build the safest, securest air transport system possible. While we must be vigilant and alert, we also must reduce the flow time or idle time of passengers traveling through airports. If you have to wait two or three hours prior to a one-hour flight, it's not worth it, and travelers will find another way.

Our chief technology officer at Boeing put out a call to our employees for suggestions, and he has so far received more than 3,000 ideas. Let me give you one: smart card technology. Smart cards and biometrics can put you into the fast lane at the airport check-in line because we know who you are and know that you are reliable. It gives some travelers a choice to move quickly and easily. This would allow us to move about 90 percent of passengers through the fast lane, and the slow lane -- with fewer people -- will go faster also.

We are looking at Connexion by Boeing for broadband connectivity to increase security, as well as functionality, on airplanes. We are asking, "Can we use such technology and make use of real-time data to know what is going on in the airplane, with the military, and the tower?" The same technology can make the airplane an extension of daily life, a place where a traveler can stay in constant contact with family and the office while airborne.

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## AIAA SF 2002-2003 Elections

Below are the candidates nominated for Officer Positions of the San Francisco Section of AIAA. Please indicate your votes and return to the address indicated. Write-in candidates can be made by petition, which requires the signatures of at least 5% of the membership of the San Francisco Section (currently 70 signatures required).

Vice Chair 2002 (Chair Elect 2003)	Fanny Zuniga, NASA Ames Research Center	_____
Secretary	Roger Martinez, Analytical Graphics	_____
Treasurer	Rick Kwan, AerospaceComputing	_____

Mail ballot to Seth Kurasaki at the address listed below for Engineer of the Year nominations. They must be received by May 6, 2002.

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### Engineer of the Year Nominations

Each year the AIAA San Francisco Section honors a few Bay Area residents as Engineers of the Year. Awards may be made in up to seven disciplinary categories, in recognition of the diversity of talent and accomplishments among engineers in the area. Nominations are solicited from the membership at large, but nominators and nominees are not required to be AIAA members. Please send (or e-mail) the completed nominations forms by May 6, 2002 to:

Seth Kurasaki  
Vice Chair, AIAA SF Section  
NASA Ames Research Center  
Mail Stop 262-5  
Moffett Field, CA 94035-1000  
e-mail: [vicechair@aiaa-sf.org](mailto:vicechair@aiaa-sf.org)

The following information must be attached on a separate sheet of paper to the form below:

- Proposed Citation (Write a brief statement of the individual's contributions)
- Basis of the Nomination (Write a brief paragraph assessing the significance of the contributions. Include a list of publications and patents, etc.)
- Background (Education and employment)
- Nominator (Include name, address, daytime telephone, and e-mail address)

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#### Nomination for Engineer of the Year

Category (circle one)

Aeronautics	Astronautics	Engineering Design
Engineering Educator	Information Systems	Project Management
Young Engineer		

Nominee

Name \_\_\_\_\_

Position \_\_\_\_\_

Organization \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

## Galileo Memorial Scholarship

*sponsored by NASA Ames Research Center & American Institute of Aeronautics and Astronautics*

### Origins and History of Scholarship

The Galileo Scholarship was established in memory of the crew of Galileo-I aircraft.

On April 12, 1973, the Navy P-3 Orion (aircraft no. 157332) and the NASA Convair-990 (aircraft No. 711) collided in midair on approach to NAS Moffett Field, CA. The Orion, with 16 Navy personnel on-board, had been on a mission over Big Sur, California, and was flying approaches to touch-and-go landings. The Convair-990, a flying laboratory nicknamed "Galileo," with 11 NASA civil service and support service personnel on-board, was returning from Monterey Bay surveying migratory sea mammals. All were lost except for one of the Navy personnel.

Following that accident, Ames and AIAA established a scholarship fund to benefits the survivors of the crew of Galileo-I. After serving its original purpose, it has continued to provide scholarship to high school seniors who intend to pursue a career in engineering, mathematics, and physical or natural sciences.

Out of four or five scholarships that are annually awarded, at least one is awarded to a child of the NASA civil service and support service personnel (the Ames family). The rest of the awardees are students from the eight bay area counties: Santa Clara, San Francisco, San Mateo, Santa Cruz, Alameda, Contra Costa, Marin and Solano. It has now served for 28 years.

### Current Status of Galileo Scholarship

The scholarship fund needs shoring up. We currently have about \$17,000 remaining in the fund. We spend about \$7000 out of this

fund annually. Rather than let the fund die, we want to rejuvenate it.

- We are asking for a sustained financial commitment from the Ames family and the community that the Galileo Scholarship serves.
- We also want the local industries to provide summer-job and internship opportunities for the awardees.
- We also need your help in reviewing the large number of applications we receive and participate in the decision making.

In doing this, our intent is to

- Keep the memory of Galileo-I crew alive.
- Keep the scholarship available for our children.
- Help support the education of children of our community.

Please feel free to contact us if you would like to help keep the fund alive. Your financial contribution will be tax deductible.

Gano B. Chatterji (Chairman AIAA SF Section)  
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## Congressional Visits Day 2002

AIAA's Sixth Annual Congressional Visits Day (CVD) will be held March 20-21, 2002 in Washington, D.C. Congressional Visits Day is an annual event sponsored by AIAA that serves to educate Congressional representatives and staff on the technical and public policy issues affecting the aerospace community. It also provides AIAA members with an opportunity to directly impact the decision-making process. The CVD program is designed to bring AIAA members face-to-face with key congressional members and staff to discuss the issues most critical to civil aeronautics, astronautics, and defense.

The registration fee is \$200 if you register by the early bird deadline, February 28, 2002. Special rates for government employees and retirees are \$100. Student rates are \$50. The registration fee is \$300 after February 28, 2002 for general registration, and is \$150 for government employees and retirees. No registrations will be accepted after March 8, 2002. A block of rooms has been set aside

at the Washington Court Hotel. The rates are \$209/single and \$229/double. The room block cut-off date is 17 February 2002.

Section Leaders will be sent a letter regarding the Section Participation Sponsorship Program that AIAA is offering again this year. Section Leaders must submit nominations for their section representatives by 1 February 2002. After review by the AIAA Public Policy department, selectees will be notified by 8 February 2002.

For further information contact:

Paul Looney: [paul@aiaa.org](mailto:paul@aiaa.org), 703/264-7625  
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Gano Chatterji: [chairman@aiaa-sf.org](mailto:chairman@aiaa-sf.org)

A summary of the 2000 Congressional Visits Day is available on the AIAA website at:

[http://aiaa.org/public/cvd00\\_report.doc](http://aiaa.org/public/cvd00_report.doc)

*Prognosis:* I am deeply optimistic about the long-term future of global air transportation. I do not see limits on significant change that cannot be addressed if we work together. I do not pretend that this will be easy. Moving to a rules-based, global aviation system will cause dislocations, but the resulting system can be dramatically safe and secure. A global air traffic management system offers more capacity and dramatically increases safety.

In 1960, when he accepted the Democratic presidential nomination, John F. Kennedy talked about a new frontier for America. He said, "The New Frontier of which I speak is not a set of promises -- it is a set of challenges." I think that is where we find ourselves today; that we have significant challenges, too. I also believe that we can solve our challenges through imagination, invention, discovery, and creativity. Together we must insist on safe and secure travel and commerce worldwide. Together we must ensure healthy, critical infrastructures that build a great future and that allow us to conquer challenges with inspiration and courage. That's how we will open up the new frontiers.

**Dr. Philip W. Condit** is Chairman and Chief Executive Officer of the Boeing Company, is a native of Berkeley, California, and an honorary fellow of AIAA. He earned a B.S. in mechanical engineering from U.C. Berkeley, the first of many academic degrees.

He began his career at Boeing in 1965 as an aerodynamics engineer on the Supersonic Transport (SST) program. He became lead engineer for the Boeing 747 high-speed configuration airplane in 1968 and was named the 747 performance lead engineer in 1971. Within a year, he advanced to manager of the quiet short-haul system development program, and then became manager of 727 marketing in 1973. He entered the Sloan Fellowship program at the Massachusetts Institute of Technology in 1974. Upon completion of his year of study at MIT, he returned to Boeing as manager of new program planning in 1975. A year later, he became director of program management for the 707/727/737 Division. He was named 757 chief project engineer in 1978, and director of 757 engineering in 1981.

Condit was named vice president and general manager of the 757 Division in 1983. Later that year, he became vice president of the Renton Division, which built the 707, 727, 737 and 757 airplanes. In 1984, Condit was promoted to vice president of sales and marketing for Boeing Commercial Airplane Company, serving during a period of exceptional sales. He was appointed executive vice president of Boeing Commercial Airplane Company in 1986 and, in 1989, executive vice president and general manager of the New Airplane Division, which subsequently became the 777 Division.

He was elected president and member of the board of directors of Boeing in 1992, and given the title of CEO in 1996. He was elected chairman of Boeing in 1997.

Condit has authored several papers on commercial aircraft technology, and holds a patent, awarded in 1965, for the design of a flexible wing called the sailwing. He also led the team that launched the wide-body Boeing 777 airplane, and he pioneered management concepts that integrated design/build teams of customers, suppliers and employees to design and produce the 21st-

century jet. The 777 "Working Together" team has received numerous aeronautical awards, including the prestigious Collier Award.

## Oakland's Historic North Field AIAA Historic Aerospace Site Nomination

In December, the San Francisco section nominated Oakland International Airport's historic North Field for recognition as an AIAA Historic Aerospace Site. The Historic Site program was introduced in 2000 to honor places of historical significance in the evolution of aviation and space flight.

Oakland Municipal Airport is significant for its role in the pioneering efforts of aviators seeking to stretch the reach of aviation across the Pacific. Numerous historic flights occurred at this airfield, including the start of Amelia Earhart's final trip, an intended around-the-world journey.

More information on the nomination will be posted in January on the section website: <http://www.aiaa-sf.org>

## Dinner Program Information

### Events:

- Thursday, January 24, 2002 - US Navy Shipboard Rotorcraft Flight Testing
- Thursday, February 28, 2002 - Searching for Extraterrestrial Intelligence

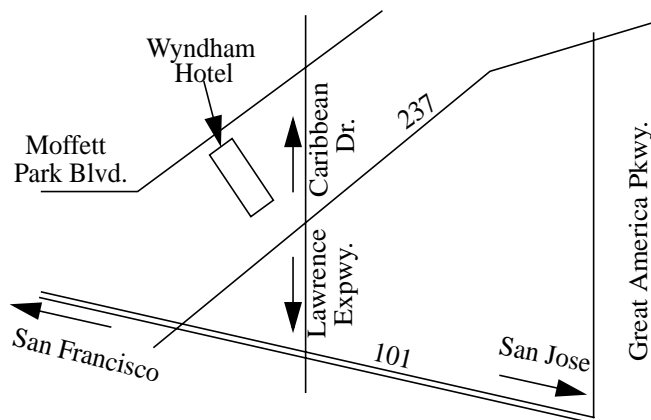
No-host cocktails at 6:30pm, dinner & program from 7pm to 9pm

**Place:** Wyndham Garden Hotel, 1300 Chesapeake Terrace, Sunnyvale, CA [Tel: (408)747-0999]

**Cost:** AIAA members and guests - \$20, Students - \$14, non-members - \$25. Cash or check only

**Registration:** By Monday preceding dinner. On-line at <http://www.aiaa-sf.org>, or contact Programs Director by e-mail or phone.

**Cancellation:** By Wednesday preceding dinner. Please contact Programs Director. (AIAA pays for all reservations, including no-shows.)



*US Navy Shipboard Rotorcraft Flight Testing*  
(continued from page 1)

wakes through the use of wind tunnel and Computational Fluid Dynamics (CFD) techniques. In 1998, Kurt and his ship airwake efforts transitioned to NASA Ames Research Center. Since 1999, Kurt has been stationed at NASA Ames as a US Navy employee and has worked on a variety of wind tunnel projects, including V-22 descent aerodynamics, new ship aerodynamic design, and shipboard rotorcraft interactional aerodynamics.

*Searching for Extraterrestrial Intelligence*  
(continued from page 1)

The SETI Institute now has a joint project with UC Berkeley to build the Allen Telescope Array, a SETI-dedicated array that will equal a 100 meter radio telescope.

**About the speaker**

**Dr. Frank Drake** is Chairman of the Board of Trustees of the SETI Institute. He is a Professor of Astronomy and Astrophysics at the University of California at Santa Cruz, where he also served as Dean of Natural Sciences (1984-88). In 1960, as a staff member of the National Radio Astronomy Observatory, he conducted the first radio search for extraterrestrial intelligence.

He is a member of the National Academy of Sciences where he chaired the Board of Physics and Astronomy of the National Research Council (1989-92). He was a Professor of Astronomy at Cornell University (1964-84) and served as the Director of the Arecibo Observatory.

The **AIAA SAN FRANCISCO SECTION IN4M-LETTER** is a publication of the San Francisco Section of the American Institute of Aeronautics and Astronautics, a non-profit society whose primary purpose is to advance the arts, sciences, and technology of aeronautics and astronautics and to foster and promote the professionalism of those engaged in these pursuits.

**Section Officers and Council:** A complete directory of the section council can be found at <http://aiaa-sf.org>.

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