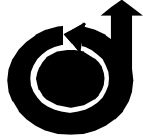


# AIAA SAN FRANCISCO SECTION NEWSLETTER



VOLUME XLII NUMBER 1 — SEPTEMBER & OCTOBER 2000

AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS • P.O. BOX 1548, MOUNTAIN VIEW, CA 94042 • [HTTP://AIAA-SF.ORG](http://AIAA-SF.ORG)

## September Dinner Meeting

**Steve Morris**  
**MLB Company**  
*Micro Air Vehicles*

Recent advances in miniaturization of electrical and sensing systems have enabled a new generation of small scale unmanned aircraft: Micro Air Vehicles (MAVs). MAVs will be deployed in battle by foot-soldiers and operate for up to 1 hour at a range of 10 km. Their primary mission is on-demand low-cost airborne surveillance. MLB has been developing MAVs for the past 4 years and this talk will summarize our findings.

Mission capable MAVs must be simple to operate, have a small system size and weight, be able to operate in high winds, and deliver high quality image data. The design of these aircraft requires an integrated technique which accounts for overall mission performance of the MAV system.

Mr. Morris will present a multidisciplinary optimization design study of MAVs and the flight test results of a family of aircraft based on the optimization results. The analysis shows that low Reynolds number aerodynamic performance plays a minor role in mission capability and that flight control, sensing, communication, and propulsion are the areas that have the strongest impact on mission performance. Configurations for fixed wing and VTOL designs will be presented that show simple solutions to low Reynolds Number aerodynamic issues. Flight test results of these aircraft demonstrate the importance of considering payload (sensor) requirements at the earliest stages of design.



### About the Speaker

Steve Morris, President of MLB Co, has been designing, building and flight-testing small scale aircraft for more than 15 years. At Stanford, he collaborated with Ames personnel in oblique wing aircraft design, and led the design and construction of the Oblique All Wing demonstrator, which flew in 1994. He was a member of the Stanford team that won the 1995 International Aerial robotics competition, and he won the 1997 and 1998 ISSMO Micro Air Vehicle Competition.

Further details about MLB are available at <http://www.spyplanes.com>

## October Dinner Meeting

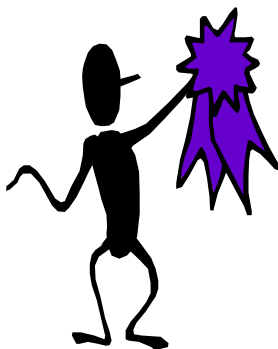
Information on the October dinner meeting will be available on our web page:

[www.aiaa-sf.org](http://www.aiaa-sf.org)

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## Winning Ways!



The San Francisco Section is pleased to congratulate Professor Arthur E. Bryson, who was just awarded the newly established *Aerospace Guidance, Navigation, and Control Award*. The caption for this award was "For significant lifetime contributions to the theory and practice of optimal guidance, navigation, and control, leading to exemplary aerospace systems and providing the foundation for future achievements."

Arthur E. Bryson is Professor Emeritus in the Department of Aeronautics and Astronautics at Stanford University.

# Mark Your Calendar

**September 21:** September Dinner Meeting: *Micro Air Vehicles*. See Page 3 for registration details.

**October 3:** Young Professionals' Fermented Fluid Mechanics Forum. See [www.aiaa-sf.org](http://www.aiaa-sf.org) for more details.

**October 19:** October Dinner Meeting: Topic To Be Announced. See Page 3 for registration details.

**October 30 – November 1:** Space Business Conference and Expo. Double Tree Hotel, San Jose. See [www.acflyer.mcgraw-hill.com/conferences/spbizagn.htm](http://www.acflyer.mcgraw-hill.com/conferences/spbizagn.htm) for more information and registration details.

## Coming Attractions...

### Precollege Outreach Update

The Council is planning several Precollege Outreach activities this year. Volunteers are always welcome! Please contact the Section PCO Officer to sign on.

Activities planned this year include (but are not limited to):

*Teacher Workshops:* Our first workshop is planned for December 9, 2000 at McClellan AFB in Sacramento. Dr. Chris McKay (AIAA member and research scientist at NASA Ames) will be our featured speaker. The theme for the workshop will be "Life in Extreme Environments". Teachers can register to attend by contacting the Section PCO Officer.

*Discover E:* This year's Discover E program (engineers in the classroom) will, once again, be chaired by AIAA member David Levinson. Volunteers are always needed to orchestrate this major program. Planning meetings begin in late September. Teachers can register to have an engineer visit their classroom by contacting the Section PCO Officer.

*Science Fair:* The Section will be supporting both the San Francisco Bay Area Science Fair and the Santa Clara Valley Science & Engineering Fair during the Spring of 2001. Judges are needed! Please contact the PCO Officer.

*Annual AIAA Student Essay Contest:* Many thanks to Space Systems/Loral and Mr. Gary Chesney for their generous sponsorship of last year's Annual AIAA Student Essay Contest. Volunteers are needed to assist in the planning and implementing of this year's contest.

These are a few of the PCO activities planned for this Council year. Your input, ideas, and assistance are encouraged! Please contact the Section Chair or PCO Officer.

### Web Activities

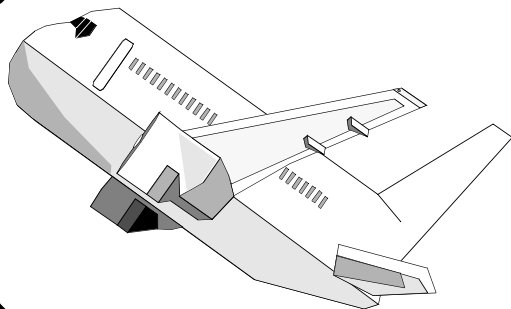
Beginning this fall, the San Francisco Section's website will launch a new feature, "Computing in Aerospace." From visualization and simulation to embedded systems, from our special vantage point in Silicon Valley to open source developments on the Internet, this website will look at how computing is affecting aerospace. Rick Kwan, a software engineer who has worked at JPL, Hughes Aircraft, and Sun Microsystems, is the writer/curator for the feature.

"Computing in Aerospace" joins "Evolution of Flight" which looks into the unique Bay area perspective on the history of aviation. It is developed in preparation for the 100th anniversary of the Wright Brothers' historic flight. Stephen Jaeger, an aero-acoustic engineer at NASA Ames, is the writer/curator for the feature.

If you have contributions or suggestions to make to either of these features, or want to be involved in the development of the AIAA-SF website, send mail to [webmaster@aiaa-sf.org](mailto:webmaster@aiaa-sf.org).

### Special Events

The AIAA council is currently planning many special events for the San Francisco section this year. An Historical Aviation Event at the Hiller Museum, Astronomical Viewing Events around the Bay area, and even the First Annual AIAA Golf Tournament are among the events being planned. Keep checking the web page, [www.aiaa-sf.org](http://www.aiaa-sf.org) for details on these and other exciting activities.



## ADVERTISE IT HERE!

San Francisco Section AIAA is now accepting advertisements for this newsletter. You can advertise your products and services to over 1700 professionals in the aeronautics, aerospace, and related high tech fields who read this newsletter. For more information contact:

AIAA Newsletter Editor  
P.O. Box 1548, Mountain View, CA 94042  
email: [newsletter@aiaa-sf.org](mailto:newsletter@aiaa-sf.org)

## The AIAA-SF Web Page

is always the best place to go for accurate, up to date information about AIAA events. Check [www.aiaa-sf.org](http://www.aiaa-sf.org) frequently!



## Welcome New Members

The San Francisco AIAA welcomes all of our new members. Come to a dinner meeting, enjoy a drink with a young professional, or work on our web page. Just contact one of the council members to get involved!

Geoffry S. Arnold	Patrick L. Fuller
William D. Bachalo	Cliff Kancler
Kevin Bilger	Elliott D. Katzen
John Capone	Leonard F. Kwiatkowski
Ed Casillas	E.D. Martin
Susan Delmedico	Edward R. Mills
Claudia Devaux	Tysen Mueller
Ramon M. Gatlin	Scott M. Murman
Mick Jordan	David L. Neel
Vern J. LaFave	Stuart E. Rogers
Miki Matsubara	Richard A. Sabatini
Paul D. Savage	Jochen Schein
Terry D. Welander	Julie A. Schneider
Arthur A. Woods	Soovo Sen
Stephen C. Atkins	Marilee Soden
John O. Bridgeman	Scott E. Stanford
F. Carey	Marie-Claude Theriault
Juan C. Jimenez-Victory	Ernest M. Thurlow
Sun Liang Liang	Gladstone E. Wood
Aaron Q. Rogers	Chang H. Keem
Mehrdad Roosta	Karen Y. Mark
John A. Sorensen	J. Mayers
Gerhard W. Thielman	John B. Roos
Alfred Murata	Sharon W. Houck
Tim D. Johnston	Nathan Meezan
Patrick A. Pereira	Victoria S. Arrigani
Tayeb Brahimi	Jennifer T. Law
David M. Bubenik	Matthew D. Valdhuis
Stewart S. Bushman	

### Do you need to renew your membership?

Now there is an easy way to apply for a new membership or renew your expired one on the web. The program is called AUTO-PAY; it is an electronic payment system that allows members to renew their membership easily. Go to <http://www3.aiaa.org/store/memberships.cfm> to apply today!

## Meeting Information

Dinner meetings are held the third Thursday of each month and are open to the general public. Bring a friend!

### Where

Dinner Meetings:

Wyndham Garden Hotel, 1300 Chesapeake Terrace, Sunnyvale, CA, 408/747-0999.

### When

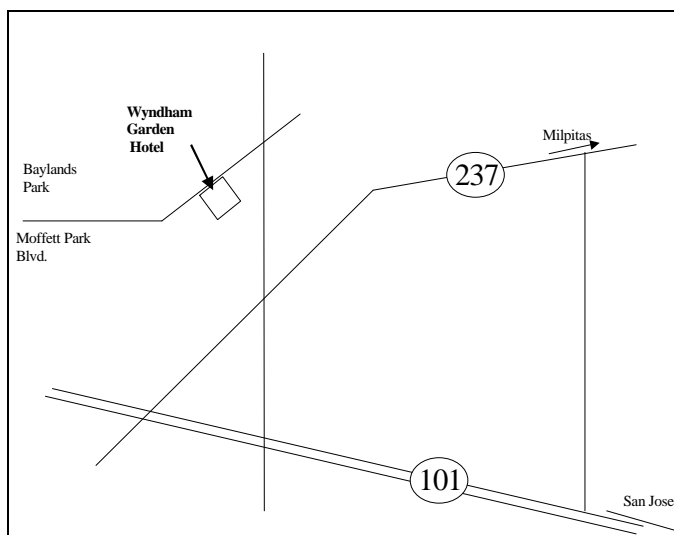
September Dinner Meeting September 21st, 2000

October Dinner Meeting October 19th, 2000

Cocktails are served at 6:30 pm, dinner at 7:00 pm.

### Cost

\$18 per person (includes buffet dinner).



### Dinner Meeting Registration

Registration Deadline: Monday of the week of the meeting. Availability is limited to 50 persons.

Members are encouraged to register for the Dinner Meetings via our website at [www.aiaa-sf.org](http://www.aiaa-sf.org).

For more information, email Roger Martinez at [rmartinez@stk.com](mailto:rmartinez@stk.com)

Note: The AIAA San Francisco Section is unable to process credit cards. We accept US currency and in state checks.

The *AIAA SAN FRANCISCO SECTION NEWSLETTER* is a bimonthly publication of the San Francisco Section of the American Institute of Aeronautics and Astronautics. AIAA members with address changes should contact AIAA member services at **1-800-NEW-AIAA**.

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Region VI Assistant Director			
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**September Dinner Meeting Speaker: Steve Morris**  
**Micro Air Vehicles**