AIAA Newsletter
Volume , Number , September 2002

THE K-1 REUSABLE LAUNCH VEHICLE AS A FLIGHT DEMONSTRATOR FOR ADVANCED TECHNOLOGIES

Speaker: Rob Meyerson – Deputy Manager for NASA Programs, Kistler Aerospace

While satellite technology has advanced at an impressive rate, the technology used to launch satellites remains fundamentally unchanged. Costly expendable launch vehicles used to deliver satellites into low earth orbit today impede the commercial promise of space, and alternatives are needed.

Kistler Aerospace is currently developing the world's first fully reusable aerospace vehicle. The company's goal is to become a satellite delivery service to low earth orbit that will radically realign the economics of doing business in space.

Kistler's Reusable Launch Vehicles (RLVs) will also be used as flight demonstrator vehicles for the Space Launch Initiative, under contract to NASA's Marshall Space Flight Center. Flight demonstration of advanced technologies is a continuing issue among aerospace systems developers and technologists. Ground test facilities typically cannot simulate flight environments, and conducting a flight experiment on the Space Shuttle or an expendable launch vehicle is expensive and time-consuming.

Kistler's responsibility in this project is for the integration and flight demonstration of key technologies that are being developed to support the second-generation RLV program. Kistler has developed standard interfaces and uses a rideshare approach to reduce the cost of conducting these experiments.

This presentation will discuss the Kistler Aerospace K-1 RLV and its development status. The accommodations that are available to technology experimenters will be discussed, including interfaces, relevant environments, and provided support.

Mr. Meyerson is the Deputy Manager for NASA Programs at Kistler Aerospace Corporation in Kirkland, WA, responsible for all activities on Kistler's Space Launch Initiative contract. He also serves as the Landing and Thermal Protection Systems Manager for the K-1, with responsibility for the design, development, test, and installation of the parachutes, airbags, inflation systems, and thermal protection systems for the K-1 vehicle.

Before joining Kistler, Mr. Meyerson was the Parachute System Manager for the X-38/Crew Return Vehicle Project, responsible for the design, production, and testing of an autonomous gliding parachute (parafoil) system for a human rated reentry vehicle. He has also served as the Space Shuttle Orbiter Aerodynamics Subsystem Manager, responsible for the Orbiter aerodynamic database, including flight and wind tunnel testing. He was the lead aerodynamics engineer during the Orbiter drag parachute system development.

Mr. Meyerson is an Associate Fellow of the AIAA and is currently a member of the Aerodynamic Decelerator Systems Technical Committee. He earned a Bachelor's degree (Aerospace Engineering) from the University of Michigan and a Master's degree (Engineering Management) from the University of Houston.

AIAA Lecture - Dinner Meeting

Date: **Tuesday, September 24**, 2002 (NOTE NEW DAY)

Place: **Old Spaghetti Factory, 2801 Elliott Avenue**, Seattle
(NOTE NEW LOCATION)

Entrée choices are baked lasagna or spinach and cheese ravioli. Please specify choice when making reservations.

Time: 6:00 PM Social, No-Host Bar
6:30 PM Dinner
7:00 PM Program – **K-1 Reusable Launch Vehicle**

Dinner Reservations: Call anytime (425) 342-0988

Dinner Price: **$15** AIAA Members and Guests
$18 Non-Members

$**12** Students

Program Only: **$5** (Free for persons 17 and under)

Please make reservations by Friday, September 20. A reservation is a commitment to pay!

12 hp From 180 Pounds, The Story Of The Wrights Flyer's Engine

By Charles E Taylor

The following is the first installment of a six part article written by Charles E Taylor, as told to Robert S Hall when Orville Wright died January 30th, 1948. Charles E Taylor then became the only surviving member of the three who built the first airplane. Charlie Taylor was the only employee and intimate associate of Wilbur and Orville Wright throughout the critical years. Without precedent or fanfare, Taylor built the engines for the Wright's first planes to their designs. The article below was written in 1948 while Taylor was living in retirement in California, it was first published in Collier's, December 2nd, 1948 and was reprinted in the Airline Pilot, December 1978. Charles E Taylor died January 30th, 1956.

It was a hot June night in Dayton. It must have been a Saturday because I was at the Wright Cycle Company gassing with Wilbur and Orville. They used to stay open Saturday nights to take care of the folks who worked all week and couldn't get around any other time. One of the brothers, I forget which, asked me how would I like to go to work for them. There were just the two of them in the shop, and they said they needed another hand. They offered me $18 a week. That was pretty good money; it figured to 30 cents an hour [Editor's note: Taylor's statement implies a 60-hour work week]. I was making 25 cents at the Dayton Electric Company, which was about the same as all skilled machinists were getting. I was a machinist and had done job work for the boys in my own shop. Once I made up a coaster brake they had invented, but they dropped it later. I knew they were interested in box kites and gliders, and that they had gone south to Kitty Hawk, N.C., in 1900 with a glider. I didn't know anything about the stuff, but I did know something about the bicycle business. The Wright shop was only six blocks from where I lived and I could bicycle to lunch. Besides, I liked the Wrights. So I said all right, and I reported in on June 15. That was in 1901. Three weeks after I went to work for the Wrights, they took off for the South with another glider. I was alone in charge of their bicycle company. They trusted me to handle not only their customers but also their money. When they returned that year, they decided to build a small wind tunnel to test out some of their theories on wings and control surfaces. We made a rectangular-shaped box with a fan at one end powered by the stationary gas engine they had built to drive the lathe, drill press, and band saw. I ground down some old hacksaw blades for them to use in making balances for the tunnel. Nowadays, wind tunnels run into the millions of dollars, and some are big enough to hold full-scale airplanes. That was the first work they asked me to do in connection with their flying experiments. For a long while, though, I was kept busy enough repairing bicycles and waiting on customers. The Wrights did most of their experimenting upstairs where they had a small office and workroom. I worked in the shop in the back room on the first floor.

Part of my job was to open up at 7 a.m. They would get in a little later, between 8 and 9 a.m. We all stayed until closing time at 6 p.m. We went home for lunch, but at different times so we didn't have to close the shop. Their father, Milton Wright, was a bishop in the United Brethren Church, and the boys never worked on Sunday. So far as I can figure out, Will and Orv hired me to worry about their bicycle business so they could concentrate on their flying studies and experiments. I suppose the more of the routine work I shouldered, the faster they were able to get on with their pet project, and I must have satisfied them for they didn't hire anyone else for eight years. If they had any idea in June 1901 that someday they'd be making a gasoline internal-combustion engine for an airplane and would need some first-rate machine work for it, they sure didn't say anything about it to me.

But when they returned from the South in 1902, they said they were through with gliders and were going to try a powered machine. They figured they'd need a larger machine to carry the motor, and they started work on the new biplane right away. At the same time they tried to locate a motor. Nothing turned up. So they decided to build one of their own. They figured on four cylinders and estimated the bore and stroke at four inches. While the boys were handy with tools, they had never done much machine work, and anyway they were busy on the airframe. It was up to me.

PNW Aerospace Timeline

Dinner Meeting and Lecture

Third Tuesday every month (except September)	
Topic	Rob Meyerson, K1 Reusable Launch Vehicle as a Flight Demonstrator for Advance Technologies.
Date/Time:	24 September 2002, Social at 6:00 p.m.
Location:	**Old Spaghetti Factory, 2801 Elliott Ave, Seattle (Note New Location)**

Retired Members Brunch

Third Saturday Every other month at MOF		
Speaker:	Pete Morton; Topic: Educational Needs.	
Date/Time:	21st September 2002	9 am
Location	Museum of Flight, Seattle	
Contact	Tom Holgate	

Past	
1900-1939	Aviation and most of our retired members were born, Air Power starting to replace land and sea warfare
1940-2000	V-2, B-17, B-52, 707, Sputnik 727, DC-9, DC-10, 737, 47, 67, 57, Apollo, ICBM, Space Shuttle, B-2, F-22, 777, Air Power becomes a major force in the world.
2001	Two airplanes hijacked and flown by terrorist, strike the world trade center towers.

Future	
9th September	Puget Sound Engineering Council (PSEC) Members Societies Representatives & Alternates Meeting.
5th – 6th October	AIAA 1903 Wright Flyer Centennial Tour and Exposition, Nellis Air Force Base Air Show Las Vegas, NV
15th October	Program to be announced by Vera Martinovich Note the date change – 3rd Tuesday.

Aerospace Career Handbook

The Aerospace Career Handbook is now available. The handbook was prepared as a service of AIAA's Young Professional Committee. It has been written specifically for college students who are contemplating a career in the aerospace industry. It is available for downloading on the AIAA website at:

Membership Benefits:
http://www.aiaa.org/membership/index.hfm?mem=1

Young Professional Programs:
http://www.aiaa.org/membership/index.hfm?mem=13

Career Resources:
http://www.aiaa.org/members/index.hfm?memo=6

Student Membership Benefits:
http://www.aiaa.org/membership/index.hfm?mem=30

"On the Radar Screen" on the AIAA homepage
Please contact Elizabeth Carter at elizabethc@aiaa.org to request a printed version of this handsome, useful brochure.

Unemployed Member Benefits

If you are unemployed and your membership is up for renewal, your dues will be cut in half – just write a signed statement on the back of the renewal form explaining that you are currently unemployed, and then, on the front of the form, reduce the dues amount to be paid by 50%. Consider networking at our monthly dinner meetings. The AIAA web site (www.aiaa.org) offers a free resume posting service and has a career opportunities page available to members only. Free guides "Job Hunting: The Nine Steps to Success" and the "Professional Career Time Line" can also be ordered online.

Section website: http://www.geocities.com/aiaa_2000/index.html
National website: http://www.aiaa.org

Please submit newsletter materials to Charity by the tenth of September for the October Newsletter.

Outstanding Section Awards
1972-1973 **Young Member**
1977-1978 **Activity Awards**
1978-1979 1990-1991
1991-1992 1991-1992
1993-1994 1994-1995
1994-1995 1995-1996

Membership Award
1997-1998

Section Special Event Awards
1976-1977 1997-1998
1977-1987 **Newsletter Awards**
1978-1979 1994-1995
1982-1983 1995-1996
1987-1988 1996-1997

Career Enhancement Award

A PUBLICATION OF AIAA THE PACIFIC NORTHWEST SECTION

Address Corrections

Send to: **AIAA**
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Now make corrections on-line at
http:\\www.aiaa.org
(Members Only). Membership ID needed

Section Officers and Directors

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Appointed				
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Retired Members	Tom Holgate	2704 SW 314th, Federal Way, WA 98023-7842	253-838-0333	holgatz@aol.com
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Nominations	Laura Kistler	0R-HH	425-294-2553	laura.s.kistler@boeing.com
PSEC Liaison	Open			
Museum of Flight Liaison	Doug Chappelle	8M-03	253-773-3878	Douglas.e.chappelle@boeing.com
Pre-College Outreach	Rich Hepler	4C-40	206-544-0507	richard.a.hepler@boeing.com
Aerospace Congress & Exhibition.	Bill Rickard	737 P-F Development	425-294-5767	William.Rickard@west.boeing.com
Young Professionals	Open			

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