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CALIFORNIA THE ORNIAN

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A Foundation Supporting the Study and Preservation of State and Regional History



NASA-Ames: A History of Looking Forward

The New Pioneers

“SPACE IS INDIFFERENT TO WHAT WE DO: IT HAS NO FEELING, NO DESIGN, NO INTEREST IN WHETHER WE GRAPPLE WITH IT OR NOT. BUT WE CANNOT BE INDIFFERENT TO SPACE, BECAUSE THE GRAND SLOW MARCH OF OUR INTELLIGENCE HAS BROUGHT US, IN OUR GENERATION, TO A POINT FROM WHICH WE CAN EXPLORE AND UNDERSTAND AND UTILIZE IT. TO TURN BACK NOW WOULD BE TO DENY OUR HISTORY, OUR CAPABILITIES.”

James Michener, Statement
to a Congressional Subcommittee

The frontier of our era is the challenge of space — how to travel through it, explore it, and tap the potential of its unknown. In the same way that renaissance technology provided the tools to explore the New World, technology emerging from Silicon Valley is enabling exploration of other worlds. NASA-Ames is at the heart of this technological advance. A federal research center, its community of scientists, engineers, technicians, and researchers have provided the leadership in aviation and space vital to all aspects of flight.

The History Center has been honored to work with NASA-Ames over the past three years to initiate documenta-

tion of its history. With the assistance of the American Association of University Women’s video crew, we produced three video histories for broadcast over United Cable television with key test pilot-engineers, scientists, and the present and former directors of the center. Such video documentation had never been done before. With this work we recognized that Ames had a real need to develop a historical display depicting its history, especially to collect artifacts and information relating individual contributions. Fortunately, Sy Syvertson, then Director of Ames, and Larry King, head of Public Relations, agreed with our idea — to mount a historical display at the History Center that could later be mounted at NASA-Ames for public and employee enjoyment. Roger Ashbaugh, graphics designer, agreed to provide the graphics and design support for the exhibit. The California History Center is grateful to all three of these individuals for making a reality what appeared to be an impossible task. The exhibit will open March 23 and continue through June 24, 1985.

Mr. Syvertson will coordinate a course in conjunction with the exhibit, bringing in heads of the directorates at Ames. This will be a rare opportunity to hear from the leaders of aviation and space technology for our day. We hope you will join us as we learn from those with vision and genius who lead us into the 21st century.

Seonaid McArthur
CHC Director



Early Jewish pioneers such as Levi Strauss, Anthony Zellerbach, Adolph Sutro, Joshua “Emperor” Norton, and more were featured in Fall Quarter’s exhibit on Jewish Heritage. Photo by C. J. “Buck” Bocchieri.

COVER:

During the 1970s, extensive research was done at Ames on the Harrier Fighter aircraft, used by both the Navy and Marine Corps. The Harrier is known for its ability to take-off and land vertically. Photo courtesy of NASA-Ames.

CALENDAR

3/23 NASA-Ames Exhibit Reception

A special reception will be held in the history center at 7 p.m. to herald the opening of an extensive collection of photographs and artifacts representing the development of NASA-Ames research facility from 1938 to the present.

4/8 Spring Quarter Begins

4/14 Saratoga Heritage Home Tour

Co-sponsored with the City of Saratoga's Heritage Preservation Commission. A rare tour of four special homes and gardens representative of Saratoga's rich architectural heritage. Refreshments include a selection of wines, courtesy of Paul Masson. Cost: \$12. 10 a.m. - 4 p.m.

4/20 Lighthouses

Wayne Wheeler, president of the United States Lighthouse Society, will lead a tour of Pigeon Point and Point Bonita lighthouses, preceded by a slide presentation on the history of lighthouses. Members: \$35; non-members: \$45. 8 a.m. - 6 p.m.



4/21 Bernard Maybeck - Berkeley Architectural Tour

A rare opportunity to tour interiors and exteriors of six of Maybeck's buildings is presented by the Berkeley Architectural Heritage Association. Tour is preceded by a lecture on Maybeck's works and no-host brunch at Skates on the Bay. Members: \$35; non-members: \$45. 9 a.m. - 5 p.m.

4/26 NASA-Ames: Visiting A Research Giant

A special tour of the NASA-Ames facility, conducted by former director C. A. Syvertson, includes a look at experimental aircraft, flight simulators, and wind tunnels. Informal reception following. Members: \$10; non-members: \$20. 1 - 4 p.m.

4/27 El Teatro Campesino

Join instructor Ya Ya DeLuna on this special visit to San Juan Bautista, highlighted by a performance and backstage tour of El Teatro Campesino, an internationally acclaimed theater which provides a unique form of cultural, political, and historical art in its plays. Members: \$30; non-members: \$40. 9:30 a.m. - 5 p.m.

5/4 - 5 Weekend on the Monterey-Big Sur Coast

Visits to the Monterey Bay Aquarium, an abalone hatchery, and spectacular Big Sur State Park are included in this exploration of California's natural history led by biologist Lee Van Fossen. Members camping: \$90; lodging: \$115; non-members camping: \$100; lodging: \$125.

5/11 Family Farms of the Santa Clara Valley

Yvonne Jacobson, author of *Passing Farms: Enduring Values*, takes you on a visit to Inouye flower farm, Cilker orchards, and the Mirassou vineyards for a look at three of the remaining pockets of agriculture in the valley. The tour concludes with lunch and wine tasting at Mirassou. Members: \$30; non-members: \$35.

5/17-19 Bodie - A Legacy Preserved

Take an adventure into the legendary and colorful ghost town of Bodie. Instructor Bill Palmer leads the weekend exploration of Bodie and surrounding eastern Sierra areas. Cost to those camping: \$20; those staying in lodge: \$65.

5/31, 6/7, 6/8 Genealogy Workshop

Genealogy expert La Vona Ness will show you how to research, organize, and record information necessary for you to trace your heritage and take you to the LDS Genealogy Library to continue the search for your family history. Members: \$15; non-members: \$20.

6/1 Railroad Through the Redwoods

Ride the rails through the redwood forest on a narrow-gauge steam-driven train. The hour-long narrated rail trip follows a barbecue steak lunch and an illustrated discussion on logging led by Henry Cowell State Park range Jerry Waggoner. Members: \$40; non-members: \$50. 8 a.m. - 5:30 p.m.



EDUCATION

State And Regional History

Members: Special evening registration for members taking history center classes only, 5-7 p.m., Monday, March 18.

Four Great Short Lines: *Bruce Mac Gregor*

Four noted railroad authors/photographers provide students with an understanding of the adaptation between “short line” railroading and regional and geographical conditions that made short lines practical. Four field trips planned.

California’s Coastal Waters: *Brian Smith*

An exploration of California’s inland and north coastal waters and the general development of the state’s maritime industry from 1849-1906. Four field trips planned.

Bodie-The Legend and Reality: *Bill Palmer*

A class tracing the movements eastward over the Sierra in search for gold after the discovery at Coloma and the “Rush” of 1849. One field trip to San Francisco planned.

Yugoslavs of California: *Elsie Matt*

A study of the unique history of the Yugoslav-Americans through lectures, slides, research and two field trips.

Trails and Parks of the Santa Cruz Mountains: *Tom Taber*

A class on California’s natural history focusing on general topography, climate, plants, animals and Spring wildflowers in the mountains of western Santa Clara, and San Mateo counties. Three field trips included.

Historic Archaeology: *Bob Cartier*

An introduction to the nature of archaeological remains, archaeological interpretation, recording and techniques of field survey and excavation, with field trips to various sites in the community. Class held on Saturdays.

Neighborhoods of San Francisco: *Frank Claus*

A series of eight slide-illustrated lectures covering the historical development, ethnic and cultural background and architectural features of specific areas of San Francisco. Four field trips included.

East Bay-Yesterday and Today: *Betty Hirsch*

An in-depth study of the forces that shaped the East Bay from its beginnings to the present day. One field trip.

Bay Area Museums: *Chatham Forbes*

A class tracing the history, development, collections and community roles of the De Young, Palace of the Legion of Honor and Asian Art Museum in San Francisco and Oakland Museums. Three Saturday field trips planned.

California’s Art History: *George Roberts*

A history of California painting from 1850 to the present day through four evening lectures and four Saturday field trips.

Central Coast Wine 1769-1985: *Charles Sullivan*

Author/historian Sullivan deals with all aspects of winegrowing of the region from the San Francisco Peninsula and Alameda County in the north to San Benito, Monterey and San Luis Obispo counties in the south. Two field trips included.

Palo Alto Area Communities: *Chatham Forbes*

An exploration of four communities that grew out of the mission and rancho lands of Spanish and Mexican days: Mayfield, Menlo Park, Palo Alto and Stanford. Three field trips included.

California Politics Pre Civil War: *Bruce MacGregor*

This class will study pre-civil war politics, from splinter parties, birth of a new national party, and the fusion efforts that united hostile factions to a stable “union” party, that guided California safely through the war.

San Francisco Maritime History: *Marion Card*

An historical study of the Maritime activities in the San Francisco Bay from discovery to its present position as one of the great ports of the world. Day-long trip to San Francisco’s annual “Festival of the Sea.”

Three California Missions: *Ilse Gluckstadt*

A look at the history of missions San Antonio, Soledad and San Miguel. Two field trips planned.

San Francisco’s Literary Realists: *Mike Hamilton*

Author and former curator at the world-renowned Huntington Library, Hamilton traces the lives of Jack London and Frank Norris through their fictional writings.

Exhibit Program:

NASA-Ames - A History of Looking Forward

One of the first high technology organizations to arrive in the Santa Clara Valley was the Ames Aeronautical Laboratory, Moffett Field, dedicated in spring 1940. Eighteen years later, Ames became part of the National Aeronautics and Space Administration when NASA was formed in 1958. The following courses are offered to enhance the Spring exhibit program, NASA-Ames - A History of Looking Forward.

NASA-Ames - Contributions to Aeronautics and Space: *Sy Syvertson*

A series of 10 lectures, coordinated by the recently retired director of NASA-Ames Research Center, bringing in top researchers from various departments to discuss the center's internationally significant basic research. A rare opportunity to hear from researchers who have made major contributions to the cutting edge of aeronautics and space technology.

The Stanford Connection: *Ilse Gluckstadt*

A class to explore the cooperative space research efforts of NASA-Ames and Stanford University through one evening lecture and a field trip to Stanford's Department of Aeronautics and Astronautics.

Lockheed - A Study of Aerospace Excellence: *Bill Palmer*

A series of lectures and topical films giving an historic perspective of the Lockheed Aircraft Corporation with particular emphasis on the Bay Area's Missiles and Space Company, and the projects which have made it famous.



Opening celebrations for fall quarter's Jewish exhibit included a traditional Havdalah service (left photo) performed at Saturday night's VIP opening by Rabbi Sidney Akselrad and assisted by CHC member Jewel Altman (photo by David Fox). Longtime CHC members Zee Tieger and Jewel Altman coordinated the preparation of traditional Jewish foods by the Greater South Bay Council of B'nai B'rith Women for the public opening held Sunday, October 7. (Photo by Irv Altman)

NASA-Ames: A History of Looking Forward

by C. A. Syvertson

Director NASA-Ames 1978-1984

One of the first high-technology organizations to arrive in the Santa Clara Valley was the federal laboratory at Moffett Field now known as the Ames Research Center. Led for 25 years by its first director, Smith J. DeFrance, it was originally known as the Ames Aeronautical Laboratory and it was the second field laboratory of the National Advisory Committee of Aeronautics (NACA). A panel of experts headed by Charles Lindbergh selected the site in the late 1930s because the Santa Clara Valley provided good flying weather, low cost and plentiful electric power, and proximity to major universities. Ground was broken for Ames on December 20, 1939 and its first research facilities, including several wind tunnels, were dedicated in the spring of 1940. Eighteen years later, Ames became part of the National Aeronautics and Space Administration when NASA was formed in 1958 and absorbed the NACA. With the advent of the space program, Ames' mission broadened from aeronautics alone to include such areas as life sciences, space physics, astronomy, material sciences, space project management, operating airborne platforms, and more recently computational physics. Ames' mission expanded again in 1981 when it took over management of the Dryden Research Facility, NASA's installation at Edwards Air Force Base in the Mojave Desert. With the addition of Dryden, Ames' role in flight testing was greatly expanded and responsibilities associated with landing of the Space Shuttle were added.

Aeronautical Research - World War II

Over the 40 plus years of its existence, Ames has been involved in, and contributed to, a wide variety of aerospace projects. The early years were dominated by WW II and the laboratory was totally dedicated to the support of the nation's war effort. Ames' staff and facilities were necessarily applied to solving immediate problems encountered with the nation's rapidly expanding fleet of military and naval aircraft. One key example serves to characterize this effort. When flying at high speeds, pilots of early versions of the P-51 Mustang fighter encountered a powerful and disconcerting rumble immediately underneath the cockpit. The source of the problem was difficult to establish, so one P-51 had the outboard sections of its wings chopped off to permit it to fit into a 16-foot diameter, high-speed wind tunnel at Ames. Test engineers soon determined that the rumbling came from an unsteady flow in a large ducting under the fuselage, which carried air to the engine. The engineers devised a modified shape for the

inlet to the duct that eliminated the rumble. The P-51 went on to become one of America's premier fighters in WW II. Its very long range, a result of superior aerodynamic performance, permitted the P-51 to escort our long-range B-17 and B-24 bombers over Nazi Germany.

Later, the P-51 and other high-speed aircraft of WW II encountered severe problems when they were flown at speeds approaching the speed of sound. Immediately after WW II, Ames' scientists turned their attention to developing an understanding of these high-speed problems. Ames built new wind tunnels capable of operating at very high speeds, both near, and well in excess of, the speed of sound. With these new facilities and complementary theoretical studies Ames' scientists helped develop an understanding of flight at high subsonic, transonic, and supersonic speeds. One of the key contributors to this fundamental work was Robert T. Jones, a scientist who conceived of the concept of using swept back wings to delay the effects of high-speed flight. The designs of nearly all modern jet aircraft are based on this fundamental knowledge that Ames' scientists helped develop. Two military aircraft, the B-58 and B-70, which were among the earliest capable of sustained supersonic flight, were based on specific work done at Ames.

Ames scientists continued to probe the problems of flight at higher and higher speeds, always approaching problems in a basic way, in order to develop a fundamental understanding of the phenomenon involved. The foundations thus established proved to be important when interest turned to problems of entering the earth's atmosphere at the very high speeds attained by ballistic missiles and returning spacecraft. Here the laboratory made one of its most significant contributions when, in the early 1950s, Ames scientist H. Julian Allen working with colleague Alfred J. Eggers, Jr., developed the "blunt-body" concept. With this approach, vehicles entering the atmosphere are made blunt with high drag and thus, as aerodynamically inefficient as possible. As a result, most of their energy is dissipated heating the atmosphere rather than heating the vehicles themselves. The blunt-body concept was the basis for the design of manned capsules for Mercury, Gemini, and Apollo, as well as for probes sent into the atmosphere of other planets.



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*In the early years, research at Ames was dominated by World War II. Staff and facilities were used to solve the problems encountered by military aircraft.
Photo courtesy NASA-Ames.*

Space Technology

Ames became a leading center in the field of atmosphere entry, and in the 1950s and 1960s developed powerful facilities such as arc jets and ballistic ranges to support the related research. The effort included the study of materials suitable for heat shields to protect entry vehicles. Many of the materials used in the thermal protection tiles for the Space Shuttle were developed and tested at Ames in the mid-1970s. Ames provided more tests in the development of the Shuttle than any other installation.

Ames extended its activities beyond the earth's atmosphere when, in the early 1960s, it took over management of the Pioneer programs. Ames' Pioneer spacecraft have included three series. Pioneer 6, 7, 8 and 9 were launched in 1965 to 1967 to explore the solar system in regions away from the influence of the planets. All four of these Pioneers are still in orbits about the sun either just inside or just outside the earth's own orbit. Several still send back data although they have been in space for almost 20 years.

The next series included Pioneers 10 and 11, which were launched in 1972 and 1973 to explore the outer reaches of the solar system. Pioneer 10 was the first spacecraft to pass through the asteroid belt, the first to explore Jupiter, the largest planet, and the first man-made object to leave the known solar system. Pioneer 11 followed its sister by 13 months and was the first spacecraft to explore Saturn and to penetrate its rings. Pioneer 10 and 11 were true to their name, pioneering the way for the more sophisticated spacecraft which were to follow. Pioneer Venus was the third member of the Ames Pioneer family. The Pioneer Venus project sent several spacecraft to earth's sister planet, Venus, in 1978. One spacecraft orbited the planet and still sends back data. The second spacecraft sent a set of five vehicles into the Venesian atmosphere to determine its properties. Although not designed to do so, one of these probes survived landing on the planet surface and continued to transmit for an hour after impact.

Better Tools for Aeronautic Research

The good weather of the Santa Clara Valley permitted Ames to conduct extensive flight research from contiguous Moffett Field Naval Air Station. More than 160 aircraft have been flight tested by Ames over the years. Several were modified to operate as "variable stability" aircraft. A computer was added to these aircraft which would be programmed to make the aircraft fly as it would if it had a different shape (e.g., a different wing) or different controls. This flexibility allowed test pilots and researchers to explore, in flight, different aircraft design characteristics, and the results were valuable in developing the design of new aircraft. For example, results from the variable stability aircraft led designers to give the F-104 Starfighter of the 1960s negative dihedral (i.e., drooped wings).

Ames' flight research led to several new and important activities at the center. Flight research specialists desired a safer and a more controlled way to study how advanced aircraft respond to a pilot's handling. This desire led to the development, starting about 1958,

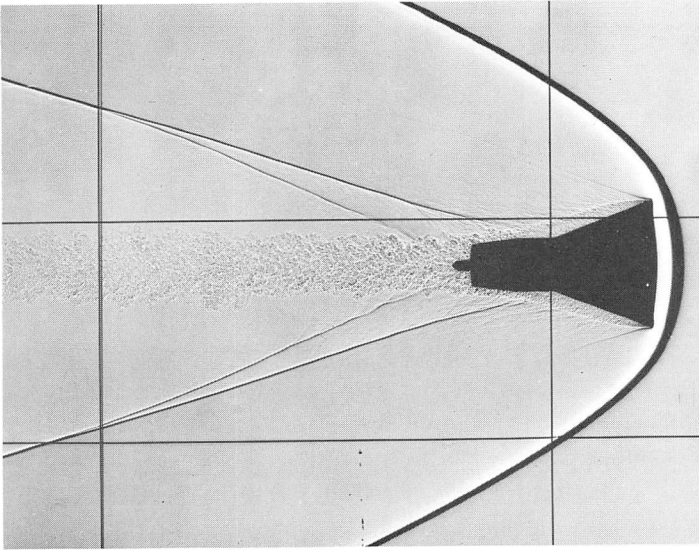
of a family of research flight simulators which a pilot could operate and experience most of the cues he would experience in flight - motion, visual, sound, control forces, etc. The simulators are controlled by computers which can be programmed to represent any desired aircraft and to make the simulators respond accordingly. With this tool available, research engineering test pilots can, in effect, fly advanced aircraft before they are built. The pilots give important input for the design of new aircraft and also identify any piloting deficiencies so corrections can be made before changes involve expensive aircraft modifications. Ames' simulation results have affected the design of advanced fighters, transports, bombers, helicopters, and even the Space Shuttle.

Life Sciences

Work in flight, and with the simulators, led Ames' researchers to seek an improved understanding of how a pilot functions when he flies an aircraft. The center thus sought the services of scientists in disciplines non-traditional for Ames - flight surgeons, physiologists and other life scientists. At first the numbers were small, but in the early 1960s when NASA desired to establish a life sciences research organization, this nucleus made Ames the logical site. Since then the life sciences program at Ames has grown and now includes such fields as exobiology, biomedical research, and an expanded aeronautical human factors program. Exobiology covers the search for life elsewhere in the universe and, as part of that, an improved understanding of how life began on earth. Ames' scientists were key participants in the life detection experiments landed on the surface of Mars in 1976 by the Viking spacecraft. Biomedical research at Ames is primarily concerned with the effect of the space environment on man. The research seeks an understanding and potential corrective action for such problems as deconditioning of the cardio-vascular system, loss of bone calcium, and space sickness or malaise. Ames' scientists and engineers will fly many related experiments as part of Space Shuttle payback.



R. T. Jones, shown here with a wind tunnel test model, was the Ames scientist who conceived of the concept of using swept back wings to delay the effects of high speed flight. The design of nearly all modern jet aircraft are based on this knowledge. Photo courtesy NASA-Ames.

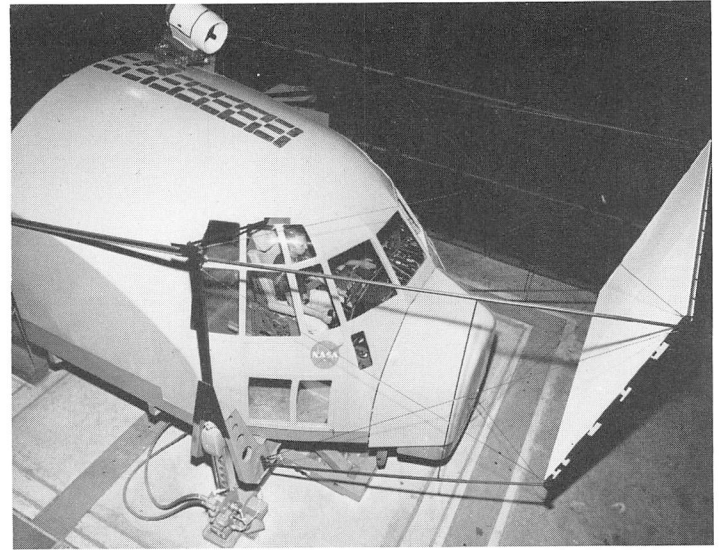


The "blunt-body" concept developed by H. Julian Allen and Alfred J. Eggers, enables vehicles reentering the earth's atmosphere to dissipate their heat into the atmosphere rather than the vehicle itself. This shadowgraph of a model of the Gemini spacecraft shows a sharply defined shock wave in front of the blunt shape and a detailed wake behind the spacecraft. Photo courtesy Emerson Shaw.

The role of life sciences in aeronautics has grown and permitted increased understanding for how man functions as a pilot. Since 1976 Ames has operated the Aviation Safety Reporting System (ASRS) for the Federal Aviation Administration. The ASRS is designed to permit anyone operating in the country's air system - pilot, air traffic controller, passenger, etc. - to report problems, hopefully before they become sufficiently serious to cause an accident. In the years since it was started, the ASRS has collected over 30,000 reports, and analysis shows that in roughly 75 percent of the cases, the human is a key contributor to the problem.

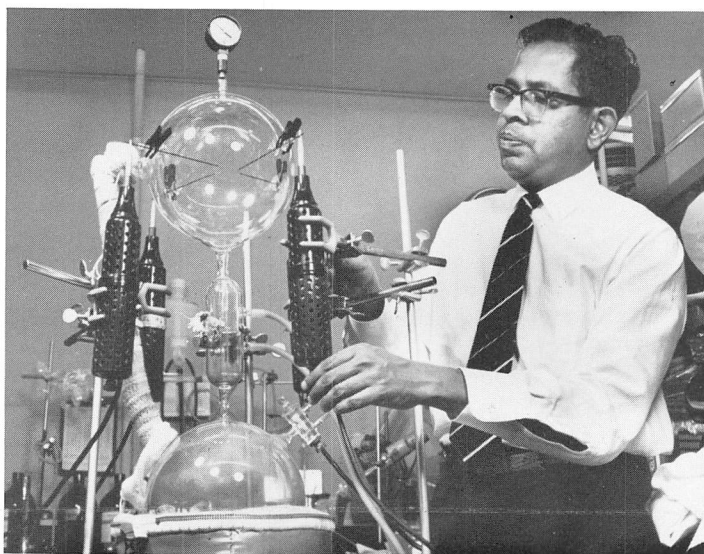
Airborne Science

Still another outgrowth of flight research occurred about 1960, when Ames combined this capability and its interest in space sciences, to develop the use of high flying jet aircraft as platforms to carry scientific instruments for observations of space, as well as of the earth and its atmosphere. The first aircraft in the airborne science fleet was a Convair 990 jet transport modified to carry as many as 12 different experiments and technicians. Other aircraft now include a Lockheed C-141 military transport, added in 1974, and modified to carry a 36-inch telescope above much of the earth's obscuring atmosphere. The fleet also includes three high flying U-2 reconnaissance aircraft.



Flight simulators became an integral part of flight research in 1958. The various types of simulators are controlled by computers which can be programmed to represent any desired aircraft and pilots can, in effect, fly advanced aircraft before they are built. Photo courtesy Emerson Shaw.

Aeronautics remains the primary mission of Ames and today represents about 60 percent of the center's efforts. Over the years, since 1940, new wind tunnels have been added and old ones modified and improved. They now include some of the largest, most powerful and most refined in the world. As Ames' capabilities grew, the attention of other organizations was attracted. In 1965, Ames and the U.S. Army entered into an agreement to cooperate in aeronautical research at low speeds, especially as it relates to helicopters. The Army agreed to station scientists, engineers, and other personnel at Ames to carry out both joint and Army specific research and Ames agreed to give the Army special access to some of its facilities. The joint venture has worked very well and today is a fine example of cooperation between federal agencies. The joint NASA-Army operation has produced some highly visible results including two unique aircraft. One added about 1980 is the Tilt Rotor Research Aircraft which takes off and lands as a helicopter, but transitions in flights, by rotating engine-motor combinations at each wing tip, to operating as a turbo-prop airplane. The other is a highly instrumented research helicopter operating like a flying wind tunnel to test advanced rotors for future helicopters.



Dr. Cyril Ponnampereuma, was one of the early life science researchers in the Chemical Evolution Branch of the Exobiology Division. By studying the chemical evolution of life on earth, key answers to the possibility of life on other planets may be explained. Photo courtesy of Emerson Shaw.

In addition to its wind tunnels, flight research, and simulators, Ames has developed a major set of computer facilities. The first digital computers appeared at Ames in the late 1950s and the computing capacity has grown steadily ever since. In the early 1970s, the growth accelerated when Ames began to accent a new field called Computational Fluid Dynamics (CFD). With advanced computers and CFD techniques, scientists foresee the ability to calculate, in fine detail, air flow over complicated advanced aircraft, a capability which has not existed in the past due to the extreme complexity of the mathematics involved. Already scientists have used CFD techniques to modify the design of several aircraft including an unmanned research aircraft known as HIMAT for the Highly Maneuverable Aircraft Technology. The modifications developed with CFD were essential in permitting HIMAT to achieve its desired performance.

Ames' future promises to be as productive as its past. Each year outstanding new scientists and engineers join the Ames' staff, fresh from universities and colleges all over the country. They bring new expertise and ideas to augment the capabilities at the center. Each year the research staff devises new technical approaches with applications to aerospace programs. With its outstanding staff and unique facilities Ames will continue to support national programs in both aeronautics and space.

Syverson, with both a B.S. and M.S. in Aeronautical Engineering from the University of Minnesota, began his professional career with Ames directly after serving with the U.S. Army. Over the years he served in many capacities with Ames including: Aeronautical Research Scientist; Chief, Mission Analysis Division; Director of Astronautics; Deputy Director and finally Director from 1978 until he retired in 1984. Syverson is coordinating a 10-lecture class about NASA-Ames for the history center's spring quarter curriculum. For details, see the De Anza College Schedule of Classes.

PIONEER PROFILE

Smitty DeFrance - Essence of a Square Shooter



Every section head, every division chief, was keenly aware that at any minute Smitty might burst into his office with a roar that could shatter glass in the windows. A rather fearsome apparition he sometimes seemed on such occasions: hat jammed down on head, cigar clenched in teeth, and eye flashing fire - his glass eye (lost in a flying accident) relatively benign. Survival always seemed doubtful during the first minutes of such encounters, but relief often came quickly if "explanations" were satisfactory. Above all, DeFrance was fair - a square shooter - and he was respected by all of his men. All, too, were aware of his devout loyalty to his staff and had experienced the friendly warmth of his personality more often than his wrath. But the wrath they never forgot. It lent wings to the work of the Laboratory, particularly during the period of construction and wartime urgency.

This was the essence of Smith J. "Smitty" DeFrance, the highly respected and well-loved director of the NASA-Ames Research Center from its beginnings in 1940, until he retired in 1965.

Smitty's job history doesn't begin with Ames however, but with the National Advisory Committee for Aeronautics' (NACA) Langley Memorial Aeronautical Laboratory, Langley Field, Virginia. Born in 1896, Smitty came to Langley in 1922, fresh from the University of Michigan with a degree in aeronautical engineering. His education had been interrupted by World War I

however, when he left the university to serve with the Air Service in Europe as a pursuit pilot and flight commander of the 139th Aero Squadron. He served with distinction and was awarded the Silver Star Medal.

DeFrance stayed with Langley for 18 years, and at the time of his appointment as Engineer-in-Charge of the new NACA (which became the National Aeronautics and Space Administration in 1958) facility at Moffett Field, he held the position of Assistant Chief of Aerodynamics.

The feeling at the time of his appointment was that a better man could not have been chosen to build a new laboratory, and when in 1941 research work became imminent, Smitty began to organize his staff along research functional lines. Following the Langley pattern he took steps to build a research group around each of the major facilities, including research, administration, technical shops, technical service, flight operation and aircraft maintenance. Each of those areas was in turn broken down into even more finite specialty groups.

Over the years Smitty gained the reputation for running a tight, business-like, efficient operation at Ames and was highly respected in aeronautical circles. Research men could look to him for sympathetic consideration of their far-out schemes, for freedom to pursue their work unhindered and for solid logistical support for their projects.

The excellence of his work was recognized well beyond the bounds of Ames. He received many awards during his career including the Presidential Medal of Merit, honorary doctoral degrees in law and engineering, Career Civil Service Award and the NASA Medal for Outstanding Leadership.

On October 15, 1965, Dr. Smith J. DeFrance, director of the Ames Research Center since its founding, retired after 45 years of public service. He had been an effective leader, well-liked by his staff and respected throughout the aerospace community. Coming to Moffett Field in 1940, on the eve of World War II, DeFrance had applied his long experience and characteristic driving energy to the construction of a new laboratory which well-served the country's wartime needs, and grew, under his guidance, to a research center of international repute. The laboratory which he founded bore the stamp of his integrity.

Though in failing health, Smitty DeFrance still lives in the San Francisco Bay Area.

(Excerpted from "Adventures in Research" written by Edwin P. Hartman, published by NASA in 1970.)

CULTURAL PRESERVATION

Experiencing Technological Innovation

What began as an idea by the Junior League of Palo Alto for a major science and industry museum is well on its way to becoming a reality now that an eight-acre river park in urban San Jose has been chosen as the site for The Technology Center of Silicon Valley.

It was 1978 when Junior League members first discussed the idea of an area technology museum and over the next four years they developed a strategic plan, researched existing museums and raised over \$50,000 to fund a feasibility study. The results of that study were positive: the project was described as a "manageable target with a good chance of success."

The Technology Center of Silicon Valley will be the first institution to direct all of its creative and educational expertise toward increasing public awareness and understanding of technology. Education is the fundamental purpose of the center and the nature of that education will be provided by exhibits and programs different from the formal education of the classroom. It is the difference between learning about space exploration in a classroom and actually climbing into a space capsule and using its controls.

What the technology center will do is stimulate visitor's curiosity, increase their understanding of technology and provide opportunities to further their knowledge.

With ground-breaking scheduled for 1986 and opening in 1988, The Technology Center of Silicon Valley will be housed in a 250,000 square foot structure, with 90,000 square feet of exhibit space. It will also include conference areas, a large auditorium, restaurants and support space for classrooms, laboratories and libraries. At an approximate cost of \$98 million, the center will strive for quality of presentation and depth of understanding through an interdisciplinary approach of scientific discovery, technological innovation and entrepreneurial initiative.

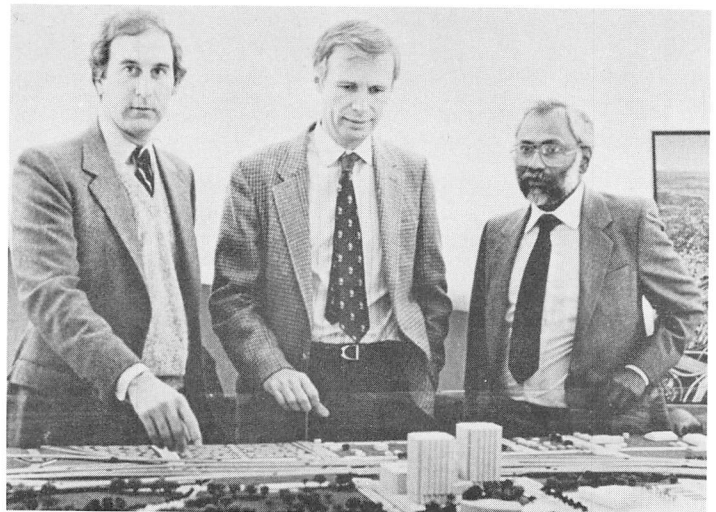
The governing board is comprised of leaders from a cross section of key Bay Area technology corporations and support industries representative of the community that has made Silicon Valley the high technology mecca of the world.

Key management positions have recently been filled. Technology center president is Dr. James L. Adams, professor of Mechanical Engineering and Chairman of the Values, Technology, Science and Society Program at Stanford University.

Filling the post of Executive Director is Dr. Eustace Mendis, coming from the Ontario (Canada) Science Center where he earned a worldwide reputation as an authority on science center program development.

Jane Mitchell rounds out the administrative staff as Administrative Director. Mitchell has been involved with the project since its beginnings and has a background in computer science.

(Information and photo provided by The High Technology Center of Silicon Valley.)



San Jose Mayor Tom McEnery, Technology Center Chairman Tony Ridder, and Technology Center Executive Eustace Mendis view model of downtown San Jose, site of prospective Technology Center.

FOUNDATION NOTES

Comings and Goings

Seonaid McArthur, director of the history center since 1979, will be leaving us in June after 13 years. Seonaid took over the helm of the center just as our operations were moving into the Trianon Building. It has been through her expert guidance and wonderful creativity that the center has gained the reputation of being a "class act." We have become noted, during her tenure, for our exhibits on local history, top quality publications, varied and interesting classes and the foundation-sponsored heritage tours.

She leaves a legacy of quality - quality in everything she has done for the center. And although her focus was always on the preservation of history, she was always forging new directions and implementing new ideas to keep the center viable and highly respected.

It will be difficult to replace her and even harder to say goodbye.

CHC receptionist Lesley McCortney left the history center in September after five years. A new marriage prompted new directions in her life and we wish her well. We recently hired Lesley's replacement. Helen Kikoshima joined the center in late January. Helen was raised in this area, attending local schools, and is a welcome addition to the staff.

One other staffing change is our new Docent/Volunteer Coordinator, Helen Riisberg. Helen took over that post this fall when Mary Jane Givens resigned due to her mother's illness. Helen has been doing a wonderful job and we enjoy having her here.

Saratoga Home Tour Planned

Sunday, April 14 the California History Center and the City of Saratoga's Heritage Preservation Commission will co-sponsor a very special visit to four historic Saratoga homes and gardens. The informal, self-guided tour includes a visit to a two-story New England saltbox and barn tied to early town commercial growth, a California craftsman estate built by friends of Julia Morgan, an expansive Mediterranean villa, and an old stone house built of rocks collected from 43 states and virtually every county in California. Complimentary coffee will be served in the morning, and in the afternoon Saratoga wines, courtesy of Paul Masson, will be served in the villa's gardens. Homes will be open from 10 a.m. to 4 p.m., and leaflets will be available which provide a description of the architecture and history of each house. Cost per person is \$12, payable to the Saratoga Heritage Tour. For additional information call the history center.

Spring Membership Festival

The lifeblood of the CHC is its members; without their interest in preservation of local history and without their support, the CHC could not continue to perform the fine community services that it does. Membership is tax-deductible and helps to fund exhibits, the Stockmeir archive and library, Local History Studies publications, the "Californian" magazine, special events, lectures and tours. Benefits include the "Californian", Local History Studies publications, special membership prices on tours, invitations to exhibit previews and special events, and registration service for CHC classes.

The history center always has room for more members. This spring we will be holding our annual membership festival to encourage new and renewing memberships. In addition to benefits listed above, those who join during the Spring Membership Festival will have the chance to win one of several prizes, to be announced at a later date. Now is the time to let friends know about the activities of the history center, and to invite them to take part in the preservation of our heritage.



Three hundred people attended the author's reception and book signing in December to celebrate the release of Yvonne Jacobson's book "Passing Farms—Enduring Values," a history of Santa Clara Valley's farming past. Yvonne and Pulitzer Prize winning author Wallace Stegner, who wrote the book's foreword, were busy signing copies all afternoon. Books may be purchased through the history center. Photo by David Fox.

New Board Members Seated

The Foundation welcomes three new members to its Board of Trustees. Ward Winslow, Mick Sullivan, and Yvonne Jacobson were appointed to the board in the last term.

Ward Winslow joined the board in October. A native San Franciscan, Winslow grew up in Palo Alto and for one-and-a-half years edited Palo Alto High School's student newspaper. In 1948 he began a 36-year career with the "Palo Alto Times," including 22 years as associate editor; in 1981 he became managing editor of the "Times Tribune." Winslow is a journalism graduate of the University of California and did graduate study in political science at Stanford. Later he became a Congressional Fellow of the American Political Science Association in Washington, D.C. Winslow's interest in local history undoubtedly stems from his having worked in his youth as a prune and apricot picker and cannery worker in the valley. Winslow and his wife, Holly, reside in Palo Alto.

Michael G. "Mick" Sullivan joined the board in December, replacing Barbara Reid as the De Anza College representative to the board. Sullivan assumed responsibility as Dean of the Social Science Division in September, and has taught cultural and physical anthropology, geography, and business management with the college since 1969. He received degrees in social science from the University of California, Santa Barbara, and a Ph.D. in educational development, anthropology from the University of Pittsburgh. Sullivan brings with him to the board an interest in the social sciences and strong support of the activities of the history center.

Yvonne Jacobson was born and raised in the Santa Clara Valley, attending local schools, including Stanford University, where she majored in English and minored in Humanities. After earning a Master's degree in English from Columbia, she traveled to South Africa, where she married a fellow Stanford student. They returned to the Santa Clara Valley in 1963 and have lived here ever since.

Yvonne has had a life-long interest in the preservation of history, due in large part to her own family's farming past. She first became involved with the history center through her photo exhibit on the family farms of the Santa Clara Valley, which opened in the Trianon in the Fall of 1981. A direct result of the exhibit is the history center's latest book, "Passing Farms - Enduring Values" written by Yvonne and co-published with William Kaufmann, Inc. of Los Altos.

In Memorium

Three friends of the California History Center passed away recently. Frances North Martin, a native of Cupertino born on a farm on Homestead Road in the 1890s passed away in early December. Charles Kuhn, long-time CHC member and San Jose rancher, was killed in an auto accident on January 27. Our sympathy is also extended to Mary Jane Givens, active CHC docent and volunteer, whose mother, Jessie Frances Duddy, died on January 22 at the age of 95.



CHC President Tony Lopina presents Certificates of Appreciation to Darlene Thorne, right, and Mary Levine for their support and contributions to the center over the years. The presentation was made at a recent CHCF board meeting. Photo by C. J. "Buck" Bocchieri.

New Members

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We extend our heartfelt thanks to all of our new and renewing members for helping make our program possible.

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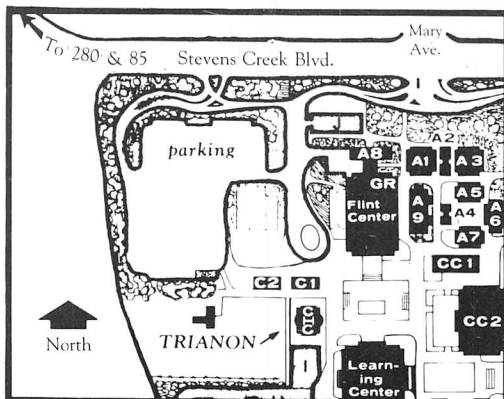
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Exhibit Hours:

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Docent Tours may be scheduled
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