



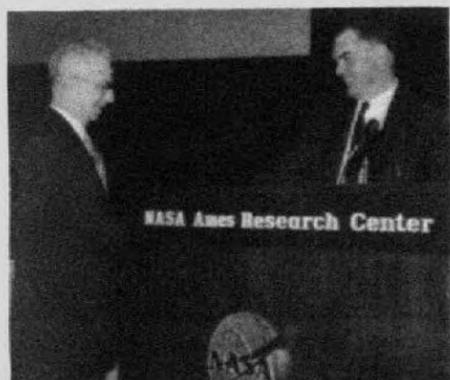
National Aeronautics and Space Administration • Ames Research Center, Moffett Field, California

Awards Ceremony

Federal service totalling over 3625 years was represented when Ames employees received NASA Length of Service Certificates and emblems at the annual awards ceremony held October 21 in the Auditorium. More than 150 employees were honored for 40, 35, 30, 25, and 20 years of service.

Master of Ceremonies Arthur B. Freeman, Director of Administration, opened the program and introduced the Director, Dr. Hans Mark. Dr. Mark welcomed the assembled guests and visitors and presented his message which was published in its entirety in the October 29 issue of "The Astrogram." (For those employees who may not have received that issue, additional copies are available in "The Astrogram" office.)

Following Dr. Mark's talk some of the research being conducted at the Center and NASA-wide was presented in a film entitled "NASA Aeronautics and Space Report - 1970."



LOUIS F. PHILLIPS... receives 40-year service award from Dr. Hans Mark, Ames Director.

A highlight of the day's events was the presentation of a 40-year service award to Louis F. Phillips a security guard in the Personnel Division. The certificate and a letter of congratulation signed by Dr. George Low, Acting NASA Administrator, were presented by the Ames Director. This was followed by the awarding of the new 35-year service certificate and emblem to Francis R. Malerick, Full-Scale and Systems Research Division; George E. Brown, Office of the Director of Aeronautics; Charles D. Cross, RFE Division; Peter Tomacci, Procurement Division; and Mr. Freeman. Also back from retirement to join the 35-year recipients was Russell G. Robinson, former Direc-

Final Report of CFC Campaign

The final report of the Ames 1971 Combined Federal Campaign has been compiled and according to CFC Chairman Ross C. Bainbridge the Center's participation rate is .75 percent, with an average gift of \$27, an increase of \$2 over last year. The total amount donated by Ames employees was \$39,265.

Don't Be A Victim!

The approach of the holiday season offers a lucrative field of operation for the thief who specializes in ladies' handbags and purses. Most offices at Ames will be unmanned due to annual leave schedules; and some employees will have extra money with them for Christmas shopping.

This is a time to be especially conscious concerning security of personal property. All personnel are cautioned that it is their responsibility to provide for the safekeeping of their money, jewelry, portable radios and the like to avoid these unfortunate disappearances.

Don't have an unhappy Christmas because of carelessness. Be alert, protect your property and have a happy holiday season.

WG Increase Delayed

Ames has been advised that the new Wage Schedule for WG employees will not be issued for some time because of the heavy workload in the DOD Wage Survey Committee. The new schedule will be effective retroactive to November 15 no matter when received.

of Aeronautics and Flight Mechanics. Mr. Robinson was within three months of 40 years of service when he retired May 28, 1970.

A reception followed the formal ceremony and gave attendees an opportunity to meet the honored guests and visitors. Hostesses for the affair were Jeanette Remington, Linda Mackey, Kathi Vitiello, and Karen Bain of the Personnel Division, and Carol Starckenberg, Instrumentation Division. Jeanne Richardson, Personnel Division, assisted Mr. Freeman in presenting the length of service emblems.

Ames Experiment to Fly on OAO

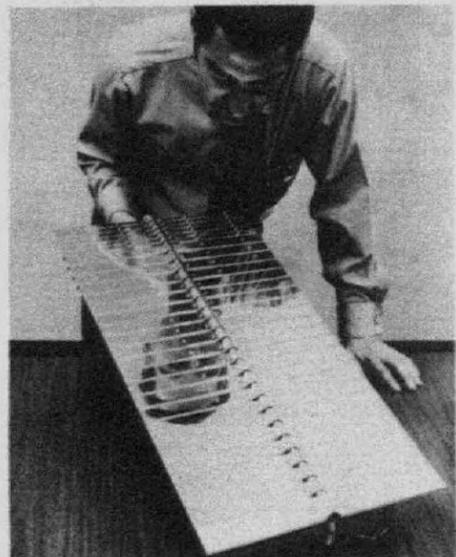
When the Orbiting Astronomical Observatory (OAO-C) spacecraft is launched late next year, it will flight test a variable conductance heat pipe which was researched and developed by Ames. John P. Kirkpatrick, Vehicle Systems Design, is the Principal Investigator for the OAO flight test, officially designated the Ames Heat Pipe Experiment (AHPE), and is responsible for its development, fabrication, testing, and flight evaluations. Stanford Ollendorf, of Goddard, is responsible for the integration of the AHPE with the OAO-C.

The AHPE has been designed to determine the performance and reliability of a gas controlled heat pipe in the zero-g environment of space and to demonstrate in a specific engineering application the effectiveness of a variable conductance heat pipe in providing temperature stability for spacecraft equipment experiencing varying electronic duty cycles and/or changing thermal boundary conditions.

On board the OAO will be an electronic computer, to which is attached the AHPE. The heat pipe will be responsible for keeping the computer, called the On Board Processor, at a relatively constant temperature.

The OAO pipe, a significant improvement over previous methods of thermal control, uses no electrical power and essentially no moving parts. While conventional methods of thermal control would allow a temperature variance of 0 to 140 degrees fahrenheit, under similar circumstances, the OAO pipe will maintain a temperature of 60 to 70 degrees fahrenheit.

The heat pipe is a highly effective, self-contained heat transfer device which transports thermal energy by means of a continuous evaporation-condensation cycle. On the OAO, dissipated thermal energy from the computer will be conducted into the pipe where it evaporates the methynol working fluid. A self-induced pressure gradient drives the vapor to the cooler end of the pipe where it condenses and releases its latent heat of vaporization which passes through the condenser wall to be rejected by the radiator. The condensate returns to the evaporator by capillary pumping through a



JOHN P. KIRKPATRICK... of the Vehicle Systems Design Branch is pictured with the Variable Conductance Heat Pipe which will be flight tested aboard Goddard's OAO Project. Mr. Kirkpatrick is responsible for efforts to design, test and fabricate the heat pipe experiment.

sintered metallic screen wick. Nitrogen gas, which will not condense at the operating temperatures, is stored in a reservoir held at a near-constant temperature by the vapor in the evaporator. The nitrogen gas is allowed to enter the condenser where it forms an interface with the working fluid, which tends to sweep it back into the reservoir. As the heat load increases the vapor temperature tends to rise with a corresponding increase in vapor pressure. The increasing pressure compresses the control gas exposing additional condenser heat transfer area which results in greater heat removal. This increased heat transfer maintains the electronics temperature nearly constant.

According to Mr. Kirkpatrick, the theory behind the heat pipe was first postulated around 1940. However, it was not until 1964 that the potential of the heat pipe was realized. Since that time, heat pipe technology has advanced rapidly. Much work has been done to advance heat pipe hydrodynamics, heat transfer, materials compatibility and fabrication technology. However one of the more recent and potentially important areas is the

(Continued on Page 4)



FORTY YEARS' SERVICE

PERSONNEL DIVISION

Louis F. Phillips

THIRTY-FIVE YEARS' SERVICE

Russell G. Robinson

FULL-SCALE AND SYSTEMS RESEARCH DIVISION

Francis R. Malerick

OFFICE OF THE DIRECTOR OF ASTRONAUTICS

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TECHNICAL INFORMATION DIVISION

Evelyn E. Forte

William R. Johnson

Ames Honorary Awards Ceremony



SION

Ames Airings Course Offered

... by Jeanne Richardson

VINCE ATOIGUE (Fabrication) made a recent trip home to Guam, after eight years in the U.S. He spent two months visiting friends and relatives in Saipan and Tinian. He said, not only had his old friends changed, but Guam had become a tourist attraction. Large hotels line the beach, and Japanese tourists land in large numbers everyday. Vince said it reminded him of Hawaii and particularly Waikiki.

BARBARA BUSCH (Public Affairs Office) recently fulfilled a telephone operator's dream when she visited with several people in Washington. She had talked, long distance, with these people for three years and decided to see if they looked as she had imagined them. Of course, they did not. In fact, Barbara said she was more surprised with each person she met. But it was alot of fun.

While in Washington, Barbara decided to take in some of the American heritage available there. She visited the National Gallery of Art, the National Museum, a part of the Smithsonian, and the Government Printing Office. She completely enjoyed the cultural and historical papers and artifacts.

From Washington, Barbara went to Illinois for a visit with her family. She said it was nice to go home in the fall and see the Maple trees in their bright fall colors.

LOU WILLIAMS (Mission Analysis) received his pilot's license not long ago in a Cherokee 140, and is now planning a cross-country trip. He is a member of the NASA Flying Club at Ames. Congratulations Lou.

CONGRATULATIONS!

PATT MELCIC (Code L) and her husband, Tomm, welcomed their first-born, a boy named Lane Thomas. He weighed 7 lbs., 14 oz. and was born on Monday, November 2.

CAROLYN MAURO (Employment) and her husband Leo, also became parents for the first time on Halloween. Christopher Leo was born at El Camino Hospital and weighed 7 lb. 10 oz.

"Summer Jobs"

The Civil Service Commission has issued its announcement "Summer Jobs in Federal Agencies" for the 1971 summer period. For further information or a copy of this announcement, contact Mrs. Edgar, Employment Branch, ext. 2021.

A course in x-ray fluorescence and electron microprobe analysis will be offered jointly by Ames and the Geology Department at San Jose State College during the 1971 spring semester. The course will meet on Tuesday evenings from 7 to 9 p.m. at San Jose State and one additional afternoon or evening at Ames for lab exercises on a time-to-be-arranged basis. Prior course work and/or experience with x-ray analysis will be helpful but is not a prerequisite. Senior or graduate level standing is necessary. The class size will be limited to 15. At this time there appears to be 3 or 4 openings still available.

Individuals interested please contact Max Blanchard, Ext. 2884.

GOLF

... by Kay Bruck

The last tournament for this year was the annual Turkey Shoot at Las Positas. The Co-chairmen, Carol Tinling and Ruth Richardson, reported the following winners:

First Flight-Bob Carlson, first; Jack Lee, second; John Hawkins, third; Frank Lazzeroni, fourth, and Bill Fietzer, fifth.

Second Flight-Bob Eddy, first; Earl Menefee, second; Joe Quartuccio, third; George White, fourth, and Chuck Turnbill, fifth.

Third Flight-Del Norman, first; Ed Tischler, second; Carol Tinling, third; Bert Nevotti, fourth; and Lee Seegmiller, fifth.

Fourth Flight- Jerry Dickson, first; Norm Barsi, second; Vance Oyama, third; Gene Garis, fourth; and Dave Sinnott, fifth.

Prizes were also awarded for the least putts - Otto Meckler; the most putts - John Estvanik; hole-in-one, Owen Koontz and Paul Kutler; and high gross, Fred DeMuth.

The annual awards banquet and installation of new officers will be on Saturday, November 21, at the Bold Knight, Sunnyvale. Sign up with Clark White, ext. 3052.

BASKETBALL

... by Phil Wilcox

The All-Ames Basketball League got underway last Thursday, Nov. 5 with the JETS against the FIGHTING PUMAS in the 7 p.m. game. Score: Jets, 22, Fighting Pumas, 21. In the 8 p.m. game it was ARO against the MADMEN. Score: ARO, 40, Madmen, 47. The 9 p.m. game CSC won over the BEER BARRELS by a score of 50 to 47.

All games will be held on Thursday evenings at the Sunnyvale High School Gymnasium. Games are played at 7, 8 and 9 p.m.

Motorcycle Decals

The Security Officer at Moffett Field Naval Air Station now requires that motorcycle decals be placed on the front fender or the left front shock absorber. For motorcyclists who do not have the decal so mounted the Ames badge office (room 119, bldg. 241) will issue one for this purpose.

Another new NAS rule is that not more than one person will be permitted on a motorcycle while being operated on Moffett Field, including entering and leaving the Station.

JOGGERNEWS

... by Jim Woodruff

The 13.9 mile Berkeley to Moraga foot race was held last Sunday morning under a clear sky and an ideal 62 degree temperature. The race began promptly at 10 a.m. at the ancient, but proud, Claremont Hotel.

Four Joggnauts were among two hundred or so running enthusiasts who started off briskly, jockeying for position before reaching the first bend. The first leg of the race was a steady uphill climb for nearly 6 miles, winding through wonderful eucalyptus groves. Next came the downhill leg of 5 miles, a welcome relief for all runners.

Our Joggnauts ran this race fairly closely together, well behind the winner, but in respectable times of 1:32:08 for Bruce Castle; 1:33:49 for Paul Sebesta and Vic D'Aloia; and 1:51:59 for Ted Passeau.

OAO EXPERIMENT (Continued from Page 1)

development of variable conductance techniques. Ames, a leader in this field, has conducted detailed studies which have mapped the performance of several techniques for varying pipe conductance.

In addition to unmanned spacecraft uses, variable conductance technology has potential application to NASA Space Station/Base Program, airborne avionics, and terrestrial applications in the laboratory, hospital and industry.

TRW Systems, Inc. performed the Variable Conductance Studies and is building the flight hardware for the OAO experiment under the direction of Dr. B.D. Marcus. The AHPE is also pioneering the way for a proposed experiment on ATSF to flight test a feedback controlled variable conductance heat pipe, currently under development for Ames by the Dynatherm Corporation. Both these contracts are monitored by Mr. Kirkpatrick.

WANT ADS

The Astrogram's ad section is provided as a personal, non-commercial service to Ames employees. Advertiser must be identified by name, extension and organization. The name may be left out of the ad but is needed for records. Ads must be submitted in writing to The Astrogram, N-241-4, by Thursday, a week before publication. The advertiser's home telephone number must be provided as a point of contact except in carpool notices.

AUTOMOBILES

For Sale-1970 Ford Ranchero 250, 6 cyl., less than 500 miles PB, PS, AT, PH, call 322-1386.

For Sale-1969 Austin America excellent condition, automatic transmission, R & H, low mileage, 2 new Michelin tires, very economical. \$1300, Call 296-2844.

For Sale-1969 Chevelle 300 Deluxe Coupe 300 hp 4-speed, 355 postraction, Mag wheels, anti-Sway bar, Hurst linkage, low mileage \$1700, call 255-3304.

For Sale-1965 Thunderbird, all power, air, and tilt wheel. \$995, call 371-0683.

For Sale-1966 TR4-A, new clutch and electric system, very clean, \$1350, 739-2608 after 4 p.m.

For Sale-1963 Valiant 200 Station Wagon, radio, heater, air, one owner, good condition, tires like new. \$400. 255-0440.

For Sale-1960 Chevrolet, 283 V-8, std. trans., radio and heater, 968-2259.

HOUSING

Wanted-Cabin in Tahoe or Reno area nearest Heavenly or Squaw, for Christmas week, call M. Campbell, 248-9442.

Wanted-Lady to share 2-bedroom house in Los Altos. Furnished, utilities included, fenced-in yard \$90 per month, call 961-6835.

For Rent-Vacation cottage, Sunnyside area of Tahoe, 2-bedroom, walk to beach or marina, \$70 per week. \$30 per weekend until winter season. Call 328-4642.

MISCELLANEOUS

For Sale-Yamaha 250, excellent condition, telephone 251-9161.

For Sale-General Electric five tube AM table top radio, excellent condition -\$6, call Blomquist 252-6229.

For Sale-Collection of around 5000 stamps mounted in 2-volume Harris hard-cover albums, Call Mort Golub at 968-7341.

For Sale-Palomino mare, 7 years, half Arab, half Quarter, \$350 or best offer. Call 251-9360 ask for Sandy.

Wanted-Partners in Peninsula Aeronautical Society Inc., Assets of Corporation: L-3 Aeronea, Alpha 200 radio and Omni, tie down at Palo Alto. The world's noisiest, slowest, cheapest form of flying! Al Boissevain, 327-8319.

For Sale-Flash gun, Nikon model BC-III battery/capacitor professional type flashgun, suitable for 35mm or 2 1/4 reflex cameras. \$10, Blomquist 252-6229.

For Sale-Deluxe edition of 1962 Encyclopedia Britannica with World Atlas, bookcase, and Year Books through 1968. Like new, \$200, call Vince Pettine, 377-1311.

For Sale-12 cu. ft. used Gibson two door refrigerator, freezer in excellent operating condition, phone 252-8245.

Wanted-Boys bicycle in good condition, after 5 p.m. 258-1675.

For Sale-Limoges China, 67 pieces for 8, including serving pieces, old and excellent. \$175, bargain! call 252-2771.

For Sale- Chairs, Dr. (4) Bassett, Solid dk. Oak, caned hi-back, uphol. grn tweed seats. Used 1 wk., cost \$160, selling for \$95. Call 296-5696.

Room 134
Admin. Mgt. Building
Phone 2385

The Astrogram is an official publication of the Ames Research Center, National Aeronautics and Space Administration, Moffett Field, California, and is published bi-weekly in the interest of Ames employees.

Editor Dot Evans
Reporters NASA Employees

Deadline for contributions:
Thursday between publication dates



the astrogram

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National Aeronautics and Space Administration • Ames Research Center, Moffett Field, California

NASA Makes Medical Progress

An automated technique for detecting bacteria in urine that is hundreds of times faster than the standard culture method has been developed by the National Aeronautics and Space Administration in cooperation with the Johns Hopkins Hospital in Baltimore.

The new technique is derived from results on earlier work by NASA scientists researching a system to detect life on other planets with chemicals from the common firefly.

Demonstrations of an automated instrument, a prototype device developed at Goddard, revealed the presence of bacteria in urine samples within minutes versus the 24 to 48 hours required with the standard culture methods.

A compact and automated laboratory instrument, based on the prototype design, could be made portable for operation by laboratory people not skilled in microbiology. In contrast, the standard culture technique must be done by microbiology technicians whose services are at a premium today.

Such an instrument would allow doctors to screen large numbers of patients and positively identify those with urinary tract infections. Thus, many precautionary administrations of antibiotics could be eliminated since the doctor wouldn't have to wait a day or two to know for sure if many patients have infections.

The high frequency of urinary tract infections -- they are second only to respiratory infections in the United States -- makes the examination of urine one of the most important and frequently done tests in the clinical laboratory today.

The most common and routine procedure for the diagnosis of urinary tract infections consists of incubating a urine specimen with a nutrient from one to two days and counting the number of bacterial colonies appearing. This reveals the number of viable cells capable of dividing. Bacterial counts of over 10,000 per milliliter of urine indicate a probable infection in the urinary tract.

In evaluating their new technique, the Goddard researchers

Continued on Page 2

Bloodmobile at Ames Dec. 11

The Santa Clara County Bloodmobile, sponsored by the Palo Alto Chapter of the American Red Cross, will visit Ames on Friday, Dec. 11 from 9 a.m. to 1 p.m. There continues to be an urgent need for blood and all employees who can are asked to participate in this worthwhile program.



Top NASA Award to Ames Scientist

Edward W. Perkins, Chief of the Center's Airbreathing Propulsion Branch, has received NASA's highest scientific award, the Medal for Exceptional Scientific Achievement. He was one of six scientists from NASA Centers and four from JPL honored this year.

Dr. George M. Low, Acting NASA Administrator, presented the award at the annual ceremony on Friday, Nov. 13 in Washington, D.C.

Mr. Perkins was honored for contributions made to inlet technology for supersonic and hypersonic airbreathing propulsion systems and to recent supersonic aircraft development programs.

An internationally recognized authority on the subject of propulsion system aerodynamics, Mr. Perkins has served in an advisory capacity on special review, assessment or evaluation groups relative to propulsion system performance inlet-engine matching, and propulsion system-airframe compatibility of supersonic airplane development programs. He is a member of the NASA Research and Technology Advisory Subcommittee for Airbreathing Propulsion Systems and the AIAA Technical Committee for Airbreathing Propulsion.



EDWARD W. PERKINS

Research programs developed and guided by Mr. Perkins have resulted in significant extensions to supersonic inlet technology. These extensions include the development of improved design procedures and the achievement of higher inlet performance capabilities. He has also developed a strong research program to advance the state-of-the-art of hypersonic inlet technology toward that which now exists for supersonic inlets.

Mr. Perkins was surprised and pleased at being a recipient of the NASA honorary award, but also stated that in spite of the fact that it was made to an individual, it reflects the work accomplished by the efforts of all the people in his branch. "Without their support, he said, "these programs could not have been carried out -- they are responsible for this award."

A native of Everett, Mass., Mr. Perkins holds a B.S. degree in Mechanical Engineering from the University of California, Berkeley, and has done graduate work in Fluid Mechanics at both U.C. and Stanford.

GROUP AWARD

Preceding the presentation of the individual awards, John G. Mc Tighe of NASA's Flight Research Center accepted a NASA Group Achievement Award on behalf of the Lifting-Body Flight Research Team which includes Ames Research Center, Flight Research Center and Langley Research Center. The citation read, "for outstanding leadership, management, and cooperation in the execution of the Lifting-Body Flight Research Program, which has successfully demonstrated the feasibility of highly unconventional wingless vehicles designed to return to Earth from space and make airplane-like landings."



VISITORS FROM STANFORD . . . Participants in the 1970-71 Stanford Sloan Program and members of the Stanford staff visited the Center recently and toured several facilities. The day-long program included a welcome by Dr. Hans Mark, Ames Director, and briefings by top management officials. Mark Kelly, Chief of the Large-Scale Aerodynamics Branch (second from right) is pictured in the 40 - by 80 -Foot Wind Tunnel as he discussed the details of the various types of V/STOL and the configurations involved.

AMES SPEAKERS BUREAU

Ames Scientists at Cupertino H.S.

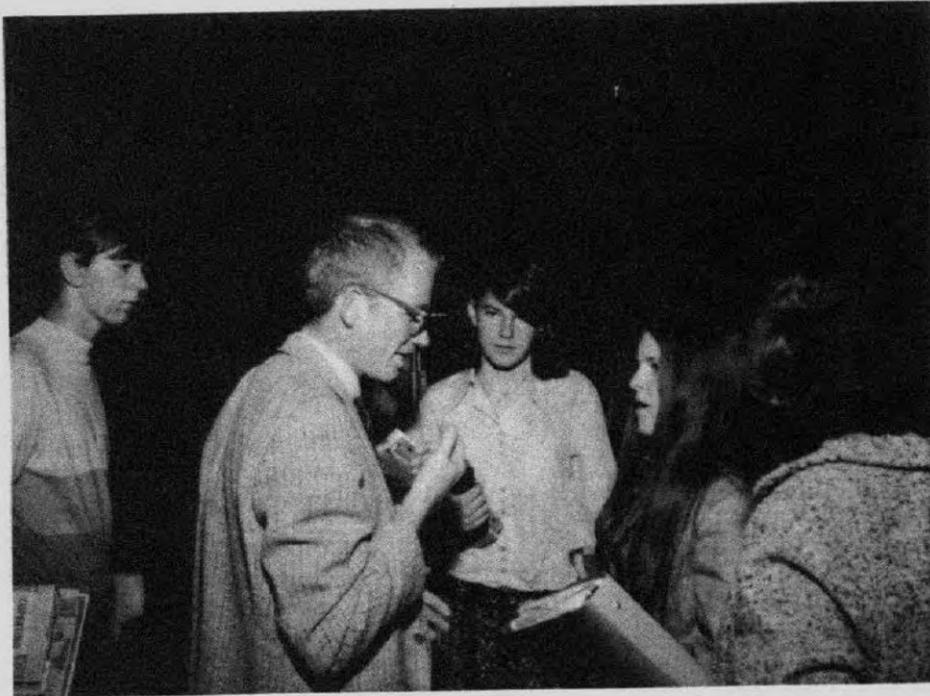
Three Ames scientists, Dale Compton, Radiation and Wakes; Ralph L. Carmichael, Vehicle Aerodynamics; and Harold Hornby, Advanced Conceptual Missions Division, spoke to a large group of science students at Cupertino High School on November 13. It was Science Seminar Day at the school and the three scientists provided four hours of lecture and discussion on the exploration of space. Mr. Compton spoke on the Jupiter Probes, Ralph Carmichael discussed Aeronautics, and Harry Hornby spoke on Long-Range Planning. The interest in the program was evidenced by the length of question and answer periods following the lectures. Many of the students came to the podium after the lectures to ask questions which ranged from problems of intense heat during re-entry to space exploration versus ecology.

The scientists not only provided the students with an exciting and informative morning, but the Cupertino science faculty were also free to attend the National Science Teachers of America Regional Science Meeting in San Francisco. In addition, the morning of lectures gave Ames the opportunity to effectively communicate to the public the purpose and some of the missions of NASA.

According to Brad Evans, Public Affairs Officer, "It is felt that the most effective means of communication between NASA and the taxpayers is in person-to-person engagements." Ames receives many requests for speakers from groups like Cupertino High School. Requests also come from such organizations as professional societies, management clubs, business, industry, and service clubs.

Because it is important to Ames that the public -- the taxpayer -- understands and is in accord with the purpose and missions of NASA the Ames Speakers Bureau was formed in April.

The bureau, administered by the Public Affairs Office, consists of 115 Ames employees who have volunteered their services as speakers. Some are seasoned speakers, others have little experience in public speaking. All are well informed in their fields, and are gaining valuable experience which should aid them in presentations of their work, justifying budgets, and defending



RALPH L. CARMICHAEL . . . Vehicle Aerodynamics, is pictured above (second from left) with Cupertino High School science students after his lecture at the school's Science Seminar Day. The student's questions continued long after the period and scheduled discussion had ended.

Mr. Carmichael and two other Ames scientists, Harry Hornby, Advanced Conceptual Missions Division, and Dale Compton, Radiation and Wakes spoke to the students through the Ames Speakers Bureau. The bureau is a volunteer group which fills the many requests received by Ames for speakers.

W.L. White Elected to Office in VCMA

The 14th Annual International Visual Communication Congress was held at the Sports Arena in Los Angeles Nov. 10-13. Willie L. White, Jr., Reproduction Service Branch, attended from Ames and was elected second vice president of the Visual Communication Management Association (VCMA), sponsors of the Congress.

Purpose of the yearly event is to bring together international representatives from design, reproduction management, and corporation offices to discuss the state-of-the-art of visual communication and to view exhibits presented by manufacturers and suppliers. This year's theme was "Reprographics for the 70's".

programs. The speakers are given a choice of the type of group they would like to speak to and the subjects they prefer to speak on. An invitation to join the Bureau is extended to any interested Ames employee.

The Speakers Bureau then, not only enables Ames and NASA to carry out their mandate of keeping the public informed, but provides the speakers with valuable experience and the requesting organization with some of the best informed speakers in the aerospace field.

Credit Union

October was a record month for the Moffett Field Employee's Credit Union, according to Manager Fred Mayer. An all-time high of \$300,862 was reached in volume of new shares, and loans in the amount of \$300,488 were made. Assets of the Credit Union now exceed \$2.7 million. Last month's total shares represent a 43 percent growth from a year ago.

Begun in March 1957, the Credit Union has 5775 members and is currently paying a 5 1/4 percent dividend semi-annually, and 6 percent on promissory certificates held by members.

The Moffett Field Employee's Credit Union is open to Federal Civil Service employees, and active duty and retired military servicemen in Santa Clara and San Mateo Counties.

Glass Fabrication Class

A class in Technical Glass Fabrication, course E168-B, will begin February 9 at San Jose City College. Donald Moody, Mechanical Instrument Branch will be the instructor for the four unit course scheduled to meet from 7 to 10 p.m. on Tues. and Thursday.

The class will provide a background in the basic steps in glass-blowing. For information, contact Mr. Moody, ext. 2006.

Post 17 Explorers Need Flights

Seven Explorer Scouts from Post 17, Ames Research Center would like the opportunity to learn more about flying by accompanying an eligible pilot or instructor on a flight. The Explorers have recently completed the second part of a Commercial Pilots Ground School course with a total of 128 hours each.

If you have an empty seat the next time you go flying and could use a guest co-pilot, please call John Habermeyer, the Post Advisor, at ext. 2988.

BACTERIA (Continued from Page 1)

tested over 1,000 urine samples that had been previously analyzed by the standard culture method and by further, more elaborate means in the Johns Hopkins laboratories.

Every single urine specimen that had a significant number of organisms present was detected by the firefly chemical technique.

Like the original life detection device, the new bacteria detector involves the measurement of a high energy biochemical substance, adenosine triphosphate, commonly called ATP. Since this compound is universally found in all living organisms, its detection is a reliable monitor for the detection of life.

The most sensitive means of detecting ATP is the use of chemicals obtained from the firefly tail. Two chemicals in the firefly tail luciferase and luciferin, flash when they come in contact with ATP. Since the intensity of the emitted light is proportional to the amount of ATP present, the light and, hence, the ATP can be measured with sensitive photoelectronic devices.

In contrast to the life detection system which was designed to measure the total amount of ATP regardless of its source, the bacteria detection technique must differentiate between bacterial ATP and that from other sources. This accomplishment and the automation of the new technique, both of which have been patented, represent the major accomplishments of the technology transfer effort.

astrogram Room 134
Admin. Mgt. Building
Phone 2385

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Editor Dot-Evans
Reporters NASA Employees

Deadline for contributions:
Thursday between publication dates

Annual Children's Christmas Party

With the Thanksgiving holiday now a part of the past the Ames Annual Children's Christmas Party takes a top spot on the agenda for December.

Make a note, the big day is Saturday, Dec. 12. The doors of the Airplane Hangar and Shop Building will open at 10 a.m. on the dot -- NO EARLIER -- and Mr. and Mrs. Santa Claus will arrive at 10:15 a.m. Except for a lunch break they will be on hand until 3 p.m. to visit with all their friends.

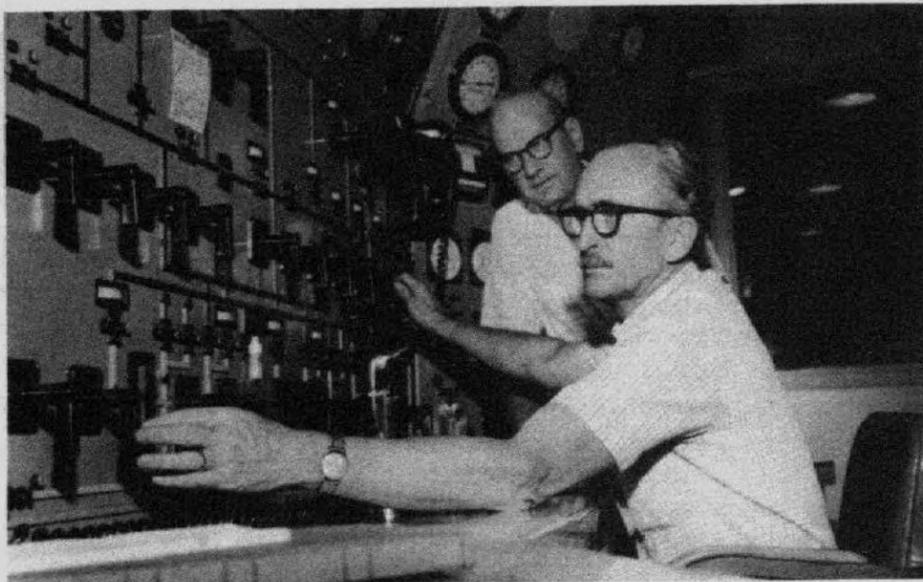
Invited guests this year will be 120 children from the kindergarten classes at the Cavanaugh Elementary School in East Palo Alto. Arrangements for these young people is under the direction of the Public Affairs Office, with assistance from Dolores Johnson of the Experimental Investigations Branch.

Sal Tardio, Chairman of the Christmas Party, has gathered talent from throughout the Center to make this the best party ever. Many of the traditional events will not change, however. The Gingerbread House or the Gift Shoppe will continue to be the distribution point for gifts, the Balloon booth will be in full swing, and there will be two refreshment areas for coffee, punch and cookies.

Jim Connolly, Chairman of the Entertainment Committee, has planned a full schedule of events. There will be three performances by Ed Kelley and his marionettes; three performances by "The Family Tree," a talented group of entertainers, including a magician; and in keeping with the Christmas season the Ames Choral Group will present a program of favorite carols. In addition to the scheduled events a troupe of clowns headed by Rusty Peterman (his dad is John Peterman in RFE) will circulate throughout the party area performing balloon tricks for the enjoyment of young and old. Guy Ferry, Planetology Branch, is forming a group to work with Rusty, anyone interested in helping may contact him on ext. 2884.

A cordial invitation is extended to Ames retirees and their families to attend this annual event. Reservation cards for the youngsters may be obtained by Calling Janet Konrath, ext. 2009.

Subscription tickets are now on sale and may be purchased from branch and division representatives. The price is \$1 or four for \$3. Prizes include: Round trip fare for two to Hawaii; 14-inch portable Syl-



AN IMPROVED METHOD . . . of purging the 11-Foot Wind Tunnel has resulted in a suggestion award of \$260 for Edwin J. Meehan (right), an Experimental Facilities Mechanic in the Ames Mechanical Operations Branch. The new procedure makes use of the test section boundary layer suction and recirculating pipes allowing air to be evacuated continuously from the test section area. Dry air is returned to the wind tunnel by the regular supply line and continues the purging action until the tunnel is dry. Mr. Meehan is pictured at the controls as he demonstrated his cost-saving method for his supervisor, James A. Sohler (left), Head of the Equipment Section. As a result of the suggestion tangible first-year savings in the amount of \$4,125 have been realized.

Rehearsals Scheduled for Ames Christmas Carolers

Rehearsals for employees interested in participating in the annual Christmas caroling at Ames will be held in the lobby of the Auditorium during lunch time, 12 to 12:30, December 7, 8, 9, and 10.

For further details call Bill Houck, ext. 2006.

vania color television set; Polaroid camera; earthenware barbecue; Pflueger Fishing rod and reel; Coleman sleeping bag; golf cart; and \$25 U.S. Savings Bond. The prizes will be on display in the Ames Cafeteria during the lunch period, beginning Monday, Nov. 30, with ticket sellers on duty until Friday, Dec. 11. Contractor personnel located at Ames and members of tenant organizations may bring their children to the party and are eligible to purchase subscription tickets.

Parents are reminded that the inventory form listing names and ages of their children must be sent to Janet Konrath in order to receive the party reservation cards. If this is not done there is a 50-cent charge at the door for children without the special card. Anyone not receiving the cards by Friday, Dec. 11, should call Miss Konrath, ext. 2009.

REMINDER . . . USE GATE 18 FOR ENTRANCE TO THE CENTER ON DEC. 12!

AIAA Meeting

The December meeting of the San Francisco Section of the AIAA will consist of a TWA sponsored tour of a Boeing 747. Tours will be held on two nights, Tuesday, December 8 and Thursday, December 10, beginning at the TWA information desk at the south terminal, San Francisco International Airport at 7:45 p.m. Members and guests are invited. Reservations are required and tours are limited to 100 people. For reservations call Charles Prunty, ext. 2137.

Special Discounts Offered to Personnel at Ames

Membership cards, mail order discount coupons, and other special offers are available without charge for all Ames employees, tenant organizations at the Center, and retired Ames employees. Contact The Astrogram Office, Room 134, Administration Management Building.

DISCOUNT CARDS

DISNEYLAND: Magic Kingdom Club cards for special benefits at Disneyland.

FRONTIER VILLAGE: Frontier Wonderland Club Cards for special benefits at Frontier Village.

SEA WORLD: Ames employees can now receive reduced rate tickets to Sea World, on Mission Bay, San Diego, through Sea World's Dolphin Club plan.

ALL ABOARD! CLUB . . . Membership cards are now available in "The Astrogram" office for special rates on the Roaring Camp and Big Trees Narrow Gauge Railroad, plus a reduction on accommodations at Holiday Inn of Santa Cruz.

DISCOUNTS

FURNITURE: Cards are available for the House of Karlson, San Francisco.

TIRES: Gerard Tire Service, Keith's Tire and Brake Service Capitol Tires, San Jose, and Du-Wall, Mt. View.

AUTOMOBILES: Buy or lease any new automobile at fleet prices from Rancar, Inc., Los Altos. All Makes available.

JEWELRY: Michael's Jewelry. A special discount is being offered to Ames employees from Michael's Jewelry, Moonlite Shopping Center, 244-8044. There will be a discount of 25% off on most items, and unmounted diamonds will be cost, plus 10%. The discount is also offered at Michael's other location at Princeton Plaza, San Jose, 265-5474.

NOTE: New membership cards will be issued after the first of the year.



TORA! TORA! TORA!

GROUP SALES MAIL ORDER

Make checks or money order payable to CENTURY THEATRES and mail to SPECIAL EVENTS, 3164 Olsen Drive, San Jose, Calif. 95117

Please send me _____ tickets at \$ 2.40

Date Sun., Dec. 20 Time of performance 8 p.m.

My check for _____ is enclosed.

Name _____

Address _____

City _____ State _____ Zip _____

Please enclose remittance and a stamped self-addressed envelope. All ticket requests must reach theatre seven days prior to show date, and tickets will be mailed soon after.

NASA-AMES RESEARCH CENTER

Ames Airings

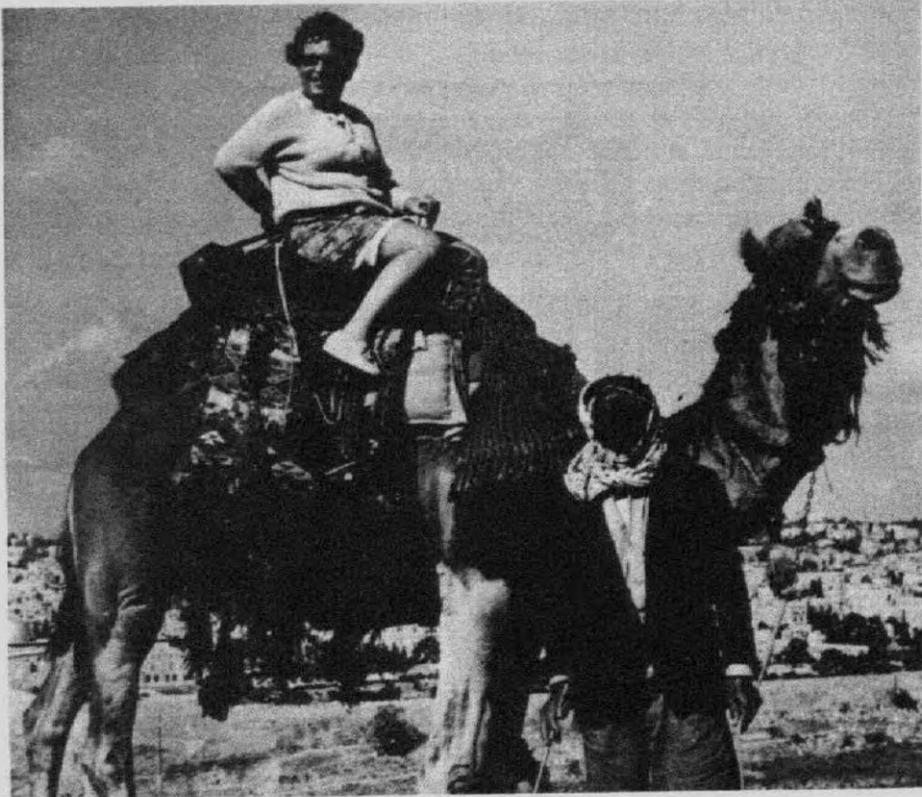
... by Jeanne Richardson

MIRIAM SCHNEIDERMAN (Procurement Operations) spent three weeks recently in one of the most interesting countries in the world, Israel.

In the country that was the birth place of Christianity, there was a cease-fire which allowed Miriam to travel safely, even to the borders. Among the more interesting spots she visited was the structure in which the Last Supper took place, the birthplace of Christ, and a recently excavated and massive amphitheater which dates back 2000 years.

She also saw the palace of King Herod which, like the amphitheater, goes back 2000 years and has only recently been uncovered. The one-time splendour of the palace was obvious from the beautiful Byzantine tile floors, sauna baths, swimming pools, and sculpture.

Everyone knows that a traveler to the near East must ride on the back of a camel. Miriam, being a well-informed traveler, obediently hoisted herself into the appropriate place, but she wasn't quite settled before an Arab gentleman commanded the beast to rise. Well, a camel, upon rising, lumbers from side to side, thus causing infinite difficulties for Miriam, who hadn't quite managed to get her left leg all the way over his back. Both safety and modesty being in jeopardy, Miriam clung tenaciously through it all and finally arrived at the height of traveling success - composed and comfortable on the back of a camel.



THE HEIGHT OF SUCCESS . . . Miriam Schneiderman, Procurement Operations, is pictured above at the high point of her trip to Israel, atop an obliging camel.

BOWLING

... by Dennis Riddle

At the end of eight weeks of bowling, the Comets and the Primo Warriors are tied for first place to themselves in Division II.

Hank Cole has been at it again! Oct. 26 he bowled 225, 210, 05/640. On Nov. 3 he was back with 245, 204, 199/648. Come on Hank-give the rest of us a chance!

Francis Genovaia had a 210,584 on Nov. 3. Also, Bernie Somer with 221/569 and Al Silva with 205/561. For the ladies on Nov. 3, Winnie Malloy had a 511 series and Arlene Robinson had a nice 202 game.

AMES SKI CLUB

The Ames Ski Club would like to invite all interested Ames employees to join club members on a trip to Sun Valley, Idaho, January 9 through the 16th. The package offers: 7 nights lodging, 7 days use of swimming pools, 7 days use of Sauna baths, 7 days use of local bus system.

Round trip flight via United Airlines, from San Francisco to Boise is also included.

\$205 - 2/room private bath

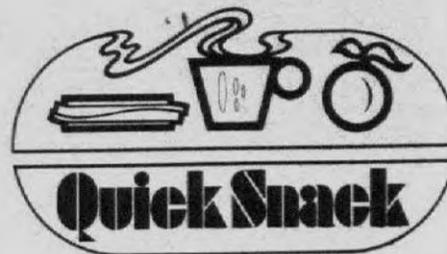
\$191 - 2/room share bath

\$170 - Chalet dorms (1 bath per floor)

\$25 deposit is required with the full balance due on December 9, 1970. For further information, call Denise Lucy, Ext. 2872.

CONGRATULATIONS

Congratulations are in order for John F. Pogue, Contract Management Branch, who was promoted recently as a Reserve Commissioned Officer of the U.S. Army. As of August 31, Mr. Pogue is a colonel in the Army Reserve.



Catering Truck Schedule

7:45 N-220	9:30 N-227	11:50 N-245
8:00 N-227	9:40 N-244	12:00 N-241
8:10 N-244	9:50 N-245	1:30 N-227
8:20 N-245	10:00 N-234	1:40 N-244
9:00 N-241	11:15 N-229	1:50 N-245
9:20 N-220	11:25 N-227	2:00 N-241
	11:35 N-244	

Glassblowing Show

A glassblowing exhibition sponsored by the San Francisco Section of the American Scientific Glassblowers Society will be held December 5 from 9 a.m. to 4:30 p.m. at Illumination Industries, Inc., 610 Vaqueros Street, Sunnyvale.

Art objects sold at the exhibition will benefit the Eastfield Children's Home in Campbell. For details call Dan Dempsey, Harry Horn or Don Moody, ext. 2006.

Holiday on Ice

The world famous ice spectacular returns to the Oakland Coliseum for its annual visit December 25th through January 3rd.

This year's all new show presents skating stars in productions including Cinderella, a Tribute to Sonja Henie, Yourushka and Old London Town.

Three of the performances have been designated as special discount performances for Ames employees.

The discount shows are Friday, December 25 at 7 p.m., Tuesday, December 29 at 8 p.m. and Wednesday, December 30 at 8 p.m.

Discount coupons are available in the Astrogram office. You may purchase as many tickets as you want with each coupon. Seats will be assigned on a first-come, first serve basis.

AMES ADVENTURERS

Ames Adventurers, the travel club at the Center, took a wine-tasting tour October 24 that will long be remembered by the Adventurers and Wineries. It all began with a tour of the Martini Winery, cheese and salami tasting and then a tour of Beringer Brothers Winery. The tour paused for a playful picnic lunch under the oak tree at Beringers, then tripped off to a shopping spree at a candle factory. The day ended with tours of the Beaulieu and Mondavi Wineries. Ken Caillat, president of the club, said the day was a splashing success.

WANT ADS

The Astrogram's ad section is provided as a personal, non-commercial service to Ames employees. Advertiser must be identified by name, extension and organization. The name may be left out of the ad but is needed for records. Ads must be submitted in writing to The Astrogram, N-241-4, by Thursday, a week before publication. The advertiser's home telephone number must be provided as a point of contact except in carpool notices.

AUTOMOBILES

For Sale-1964 Karmann-Ghia, excellent condition, well maintained, 45,000 miles, call 961-3167.

For Sale- 1966 Triumph Spitfire, good condition, \$850, call 247-0147, after 5 p.m.

For Sale-1959 Chevrolet Station Wagon, V8-283, radio, heater, automatic transmission, good condition. 739-9044.

For Sale-1965 Mustang, 63,000 miles, original owner, 225 hp, V-8, P.S., AT, D. Few, 328-1479.

For Sale-238 Chev. engine and transmission, ex. condition, \$175, 4:11 Positraction, 3rd. member for 55-64 Chev. \$90. 327-3053.

For Sale-1961 Rambler Ambassador, Good work car. L.W. Dickerson, 736-2019.

For Sale-1965 Chevrolet Monza, low mileage, very clean, good rubber. J. De Rose, 269-8158.

HOUSING

Wanted to Rent-2-bedroom furnished apartment or house for a Post-doctoral candidate, arriving 12-15-70. Pay up to \$200 per month. Call ext. 2696.

Wanted- to rent, mountain cabin during Christmas season. Call Jerry Deerwester, 739-5105.

For Rent-Ski cabin, sleeps up to 12. All electric heat and kitchen. Cheerful, fireplace, sunny deck, four ski areas within 10 minutes, Leo Poppoff, 323-2375

MISCELLANEOUS

For Sale- Portable Fairlane sewing machine, with built-in zig-zag. Sews forward and push button reverse. Tan color, \$35. Phone Sarah Narup, 252-5968.

For Sale-Girl's 20" bicycle, \$10, 7 1/2 ft. Sierra Pine, looks real, cost \$20, will sell for \$7. Penn Push mower, \$4. Frank Thompson, 379-2385.

For Sale-Down sleeping bag, full size viola, 12x12 braided rug, traverse rod, 6 to 8 ft. Call 327-3606.

Carpool-Share driving to Livermore or Pleasanton. Call C. Swift, ext. 2800.

For Sale-3-25 gallon tropical fish tanks (1 for salt water fish), 2 tank stand, pumps, filters, lots of extras. \$50 for all. M. Kussoy, at Jo 7-3270.

Wanted-Clean set of bunkbeds, complete, call Bill at 245-8670.

For Sale-Human hair wig, never worn, cost \$69.95 will sell for \$20. Ideal christmas gift. 253-4475.

For Sale-Deluxe edition of 1962 Encyclopedia Britannica with World Atlas, bookcase, and Year Books through 1968. Like new, \$200. Call Vince Pettine, 377-1311.

For Sale-Hellite tent camper, good condition, \$500, 867-1908.

Wanted-Golf cart for carrying clubs, call 292-0328.

For Sale-Weight Lifters, upholstered bench press, 110 lb. weights, like new, \$40. 967-4886 after 5.

Give Away-Female Manchester Terrior, 2 1/2 mo. old, call 266-2658.

For Sale-HO gauge train set and Power pack. Tracks are already mounted on a 3'x6' plywood and extra cars. Everything for \$25, call 321-8835.

Wanted-To form ride-group from Lark Ave., Good Sam. area, 7:30 - 4 shift. Call 377-1032 between 5 and 7 p.m., weekdays.

For Sale-Like new Raleigh 3 speed bicycle, tire chains, size 7-15-14, make offer, 327-3867.

For Sale-Girl's Bicycle, 20 inch, Schwinn, with training wheels, \$15, call 326-4800.

Lost-Greenstein's chemistry of Amino Acids, Vo. 3, copy 2, if found call Flores, x. 3045.

For Sale- Bicycles in good condition, 1 boy's Sting Ray, 1 Girl's Sting Ray, 1 girl's standard, call 274-5703, after 5 p.m.