



the astrogram

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October 8, 1970

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

Combined Federal Annual Awards Ceremony, Oct. 8-23

The Ames 1971 Santa Clara County Combined Federal Campaign (CFC) at press time was scheduled to get underway today (October 8) and will continue through October 23.

Solicitors are meeting with management personnel and representatives of the CFC from Santa Clara County to learn more about the campaign held each year in support of the United Fund, International Service Agencies, and National Health Agencies.

PATHWAY SOCIETY

Mr. Al J. Addy, a member of the Board of Directors of the Pathway Society, the Coordinating Council on Drug Abuse of Santa Clara County, accepted the Center's invitation to be the guest speaker at today's meeting. The Society is a four-pronged program of service, education, rehabilitation, and research against drug abuse. This is just one of the 99 United Fund agencies which benefit from this yearly campaign.

Dr. Hans Mark, Ames Director, chaired the kick-off meeting. In an earlier communication to the staff he pointed out that the needs of the agencies supported by the CFC are important and worthy of our support. He also asked that employees give thoughtful consideration to a generous contribution to the Campaign.

Ross C. Bainbridge, Ames Campaign Chairman, is asking for the continued help of Ames employees to make the 1971 drive a success. In discussing the campaign he said "During these rapidly changing times, many people are asking what can be done to help our community and others around us. The CFC offers us all the opportunity to be involved and to contribute to improved human relations." Then he went on to say, "This year we have asked the team captains to visit some of the local agencies to view first hand how our contributions are used to help others. I am sure they will want to share these experiences with their fellow em-

Annual Awards Ceremony, Oct 21

The annual Honorary Awards Ceremony for Ames employees will be held in the Auditorium on Wednesday, October 21, at 2:30 p.m.

A special invitation is extended to all retired Ames employees to attend this annual event. A section will be reserved at the front of the Auditorium for the invited guests.

The program will include an address by Dr. Hans Mark, Ames Director, on the "State of the Center", and the presentation of NASA length of service certificates and emblems to approximately 150 Center employees. A new emblem representing 35-years of service will be presented this year for the first time, along with the 20, 25, 30 and 40-year awards.

(Continued on Page 3)

employees - - don't hesitate to ask about them."

Last week more than 40 federal installations were represented at the CFC coordinators meeting held at Moffett Field Naval Air Station. A report on contributions from federal employees in the County during 1969 showed a total of \$129,677, 12 percent over previous giving. The Ames Contribution was \$42,017. A target to look to again this year.

Ames Tests New Fire Protection System

The first promising fire-protection system for large passenger aircraft has been demonstrated by scientists at Ames.

The system could provide a fire-resistant protective shell, bonded to the aircraft fuselage, to completely enclose the passenger compartment. Such a shell, as shown by this test, could provide a survivable environment for the 6-10 minutes required for firemen to subdue the fuel fire and remove the occupants.

The tested system used fire-retardant paints and foams developed by the Ames Center. It is designed to protect passengers from on-the-ground fuel fires following a crash or other landing accident.

The system is in an early development stage. However, during the recent test, a 12 1/2-foot-long section of a C-47 fuselage protected by the system, and sitting in a small lake of aviation fuel (5000 gallons) maintained survivable conditions in the heart of a raging 1800 degree F fire.

An identical but unprotected section of the C-47 burned up completely in two minutes, and a 1/4 inch steel bulkhead, not part of the aircraft structure, softened and folded like taffy from the intense heat. The plane's aluminum skin burned through in about 30 seconds.

Hot gases penetrated the foam-protected C-47 hull after eight min-

utes of fire. Subsequent examination disclosed a flaw in foam installation which is believed to have been responsible for this event.

Ames scientists Dr. John Parker Salvatore Riccitiello, and Paul Sawko, believe the system is definitely capable of protecting passenger transport aircraft during ten minutes of maximum intensity fuel fire.

Transport aircraft fuel fires usually are brought under control in about seven minutes, experience shows.

According to Dr. Parker, several factors need to be considered before the system can be installed in operating aircraft.

The system would add weight to aircraft using it, which might amount to from one to three percent of the payload. Some system of protecting windows from fire would have to be devised.

However, a number of promising proposals have been advanced to solve these problems such as using the strength of the foam itself in an aluminum sandwich structure to reduce aircraft weight.

The system's fire retardant paint is used on the inner skin and structural formers of the aircraft. Then fire-retardant foam is sprayed about three inches deep between the interior formers, creating a solid lightweight mass, bonded to the aircraft skin and structure.



TEST VEHICLE BEFORE TEST



TEST VEHICLE AFTER TEST

New OART Head

Roy P. Jackson, Vice President and Assistant General Manager of the Aircraft Division of the Northrop Corp., recently was appointed Associate Administrator for NASA's Office of Advanced Research and Technology (OART) effective Nov. 2.



ROY P. JACKSON

OART, one of four major Headquarters offices which direct NASA's research and development programs, has the responsibility for providing the technology to meet the nation's future requirements in aeronautics and space exploration. OART projects cover a broad range from aeronautical research to space power.

Ames is one of four NASA centers carrying out programs in aeronautics and space under OART's leadership. The others are Langley, Lewis, and Flight Research.

Mr. Jackson, 50, was born in San Francisco and was graduated from Stanford University with distinction, receiving an AB degree in mechanical engineering with an aeronautical option.

While serving with the Navy contingent at Ames during World War II, he was assigned to the 7-by-10-Foot Wind Tunnel. He joined Northrop in 1953 and has directed a wide variety of aeronautical and space system efforts.

In announcing the appointment, Dr. George M. Low, NASA Acting Administrator, said, "NASA is very fortunate to obtain the services of a man with such a long and varied experience in aeronautical and space research and development. He brings to NASA an enviable record of success as a manager."

Two other appointments were announced by Dr. Low. Oran W. Nicks, who has been the Acting Associate Administrator of OART, was named Deputy Director of the Langley Research Center, effective Nov. 2. And Vincent L. Johnson is the new Deputy Associate Administrator for Space Science and Application (OSSA), effective immediately.

Changes in NEBA Programs

The NASA Employees Benefit Association (NEBA) recently announced changes in the Life (Dependent) and Travel insurance programs.

As a result of the changes some Ames employees may be noticing a decrease in their NASA Group Life Insurance premiums for the coming quarter. The Dependent Insurance Class A which provides \$2000 of coverage on the spouse is being consolidated with Class B providing \$2500 coverage on the spouse. In addition, rates for the dependent insurance are being reduced as outlined in the schedule below. All changes are effective with the quarter which began October 1.

CLASS	FROM	TO
A \$2000	\$2.70	Discontinued
B 2500	3.15	\$2.65
C 5000	5.50	4.65

The Travel Accident Insurance program changes are as follows:

Plan II (business travel) has been broadened to cover passengers and technical personnel on NASA administrative and program support aircraft. There is no change in the present rate of \$0.65 per thousand of coverage.

A new Plan III is being offered to cover pilots and crews of administrative and program support aircraft at a rate of \$3 per thousand of coverage.

A new Plan IV is being offered to cover pilots and crews of proficiency type aircraft (single engine jets, etc.) at a rate of \$6 per thousand of coverage.

Finally, single trip coverage is being offered to employees and others traveling as passengers or technicians on administrative or program support aircraft, and who are not covered under the annual travel accident plan. The rate for this insurance is \$5 per trip for \$100,000 of coverage.

Applications for either type of coverage (life or travel accident) may be made at any time throughout the year. Travel Accident Insurance coverage would become effective immediately upon receipt of payment. Life Insurance Coverage (which also offers the plan for dependents) is effective at the beginning of a calendar quarter.

RECORDS ROUNDUP

HAUL AWAY OLD RECORDS



Ames Drive October 1-31

Fellowships for Ames Science Fair Winners

Ames will present work-research fellowships to two outstanding Santa Clara Valley high school students for work at the Center next summer.

The two students chosen will be winners of NASA awards in the biological and physical science divisions of the 1971 Santa Clara Valley Science Fair to be held next spring. Dr. S.N. Stein, Chief of the Ames Medical Office, who serves as Vice President of the Santa Clara Valley Science Fair, is responsible for the selection of the student fellowship winners who will earn \$600 each for their research work at Ames. They will either continue their own research projects in association with an Ames Center scientist or join existing Ames' research teams.

The \$600 payments will be made through the students' respective high school districts.

The Santa Clara Valley Science Fair is open to any Santa Clara Valley student from the sixth grade through senior high school. Students must enter through either a science teacher or an adult sponsor.

New Ames Skylab Contract Awarded

The Ames Center has awarded a cost-incentive contract for \$3,221,059 to the Northrop Corporation's Electronics Division, Palos Verdes Peninsula, California, for two Skylab Program biology experiments.

The purpose of the experiments, using pocket mice and vinegar gnats is to study the circadian rhythms of the two types of organisms under conditions of space flight.

The 18-month contract calls for the design, fabrication, test, delivery and field support for flight qualified hardware, ground support equipment and spares for the Skylab biology experiments.

GRAND NATIONAL

A discount is offered for the 1970 Grand National Arena Show at the Cow Palace. It is good for five different performances; Oct. 24 at 2 p.m., Oct. 25 at 7 p.m.; Oct. 26 at 8 p.m., Oct. 27 at 8 p.m. and Oct. 28 at 8 p.m.

The deadline for sending the discount ticket and reservations in is October 16. For information and discount tickets contact "The Astrogram" office, Bldg. 241, Room 134.

Apollo 14 to Set Lunar Explosions

During their exploration of the lunar hill country next February, the Apollo 14 astronauts will set off 21 small explosions on the surface and arm a mortar to launch four grenades after they leave.

Measurements of the resulting vibrations of the Moon, radioed to Earth, will give scientists new information on the shape, structure and thickness of the outer lunar crust.

The Active Seismic Experiment, as it is called, will be set out by Lunar Module Pilot Edgar D. Mitchell during the first of two four-to five-hour ventures outside the LM with Mission Commander Alan B. Shepard, Jr., during their day-and-a-half on the Moon.

While Shepard deploys other scientific instruments and gathers rocks, Mitchell will lay out 310 feet of cable and stick three vibration detectors, called geophones, into the lunar soil at intervals of 150 feet. As he walks back to a central recording and relay station, he will fire cartridges every 15 feet. This creates seismic waves for detection by the geophones.

After firing the last of the cartridges, Mitchell will then set up and arm the boxlike, four-barrel mortar. The mortar contains four high-explosive grenades that will be rocket-launched, on radio command from Earth, to detonate at ranges of 500 feet, 1,000 feet, 3,000 feet and 5,000 feet. The vibrations caused will also be picked up by the geophones, and their strength and their strength and speed through the Moon will provide additional information on its structure. Data will be obtained from as deep as 1,500 feet.

Such data could help in the search for water on the Moon. Some scientists think local concentrations of ice may lie buried near the lunar surface beneath the penetration of the Sun's heat during the two-week lunar day. If so, a seismic velocity survey might detect them.

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

Haymaker Reports on Technical Meetings

Some historical aspects of Madam Curie's discoveries were the subject of a discussion last month in Paris between Ames research scientist Dr. Webb Haymaker, Experimental Pathology Branch, and Professor Pierre Joliot of the Institut du Radium.



DR. WEBB HAYMAKER

observed months or years after exposure, at doses in the therapeutic range, are directly attributable to vascular damage, presumably the result of somatic mutation occurring in certain vascular cells.

Dr. Haymaker, as well as others at the Congress, reported the new development that brain damage may also be due primarily to radiation injury of certain supporting cells in the brain (oligodendrocytes). A collective study being carried out by Dr. Haymaker and Dr. Polak of Buenos Aires indicates that the brains of monkeys may be injured when exposed to very low dosages such as 3 rad daily for a total of 39 rad. Affected under these conditions is another type of supporting cell in the brain called the "astrocyte".

On a side trip to Basel, Dr. Haymaker visited Dr. Hans Rudolf Muller, Chief of the Department of EEG and Diagnostic Ultrasound at the University there. Of particular interest to Dr. Haymaker was a new device designed by Dr. Muller to record blood pressure from the supraorbital artery situated just over the eye which can be felt to pulsate. The device could conceivably be applied to NASA manned missions, but this remains to be determined.

TAU BETA PI FORMS LOCAL CHAPTER

Tau Beta Pi, the national engineering honor society, is forming an Alumnus Chapter in the Peninsula Area. In order to have an up-to-date mailing list, Ames members are asked to send their name, collegiate chapter, and current address to :

Mr. C.E. Pappas
580 Arastradero Road, No. 802
Palo Alto, CA. 94306

Should you know of any members who have lost contact with the National Chapter or who are newcomers to this area, please include their names.

FIRE RETARDANT

(Continued from Page 1)

In a fire, both fire-retardant paint and foam release fire-extinguishing vapors and form insulating flame-proof black char. The paint, in addition, swells into an insulating foam material and fills any spaces between joints.

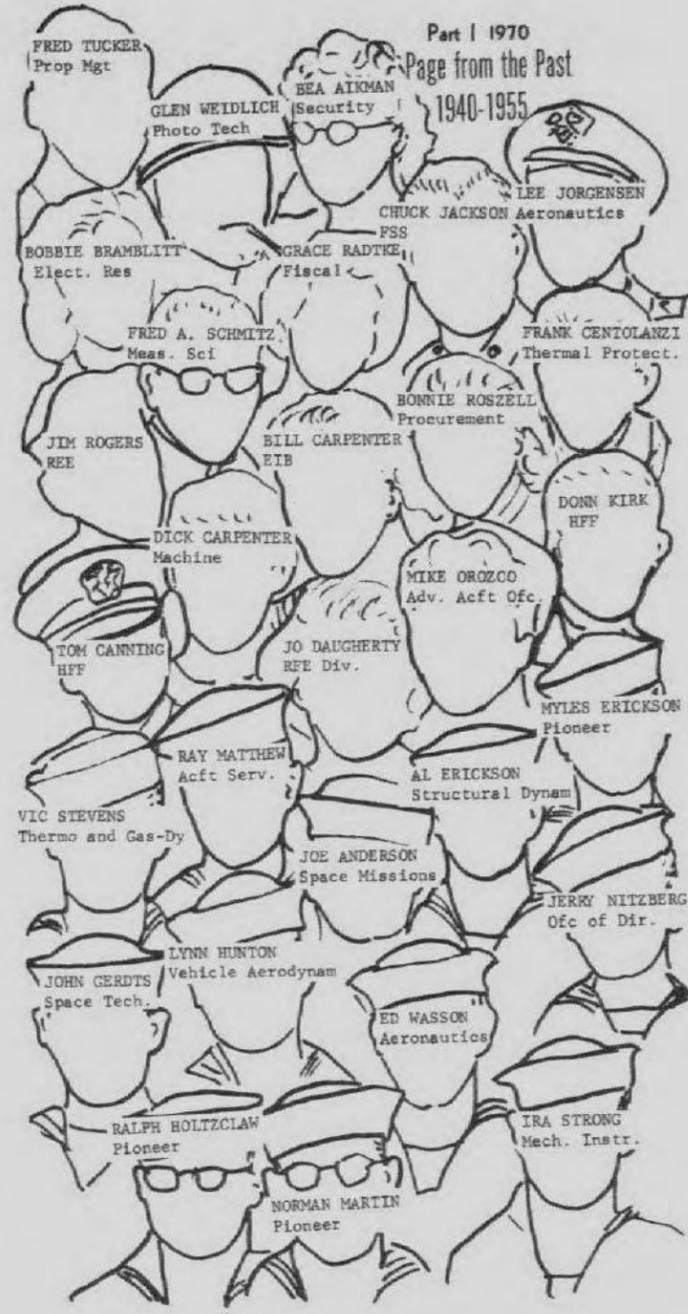
The paint has a capacity to swell from 70 to 100 times its original volume when heated about 575 degrees F, producing a foam-like closed-cell char.

The paint is a new product based on salts of nitro-substituted aromatic amines. Surveys of similar paints indicate it is the most effective such paint yet developed.

The foam, also newly-developed, is a polyisocyanurate with additives, and is believed to be one of the most effective fire-retardant foams yet devised.

During a fire, the foam retains about 50 percent of its mass in an extremely tough insulating black char.

The foam during normal aircraft operation could serve as insulating material against aircraft engine noise and aid in cabin temperature control.



THE AMES FAST PITCH SOFTBALL TEAM . . . took third place in the nine team Mountain View League with an 11-5 record. Ames tied for first place for the first half of play, but lost the playoff game. Team members pictured here are, front row (l to r), Steve Kanally, LF; George Alger, SS; Roland Duenas, RF; Bob Corbett, P; and Bruce Ganzler, 2B, Manager. Back row, (l to r), Mike Green, 1B; Roger Hedlund, CF; Bob Bell, C; Jim Myers, 3B; Emmett Lampkin, RF, missing from picture, Bob Holmes, LF. Roger Hedlund and Bob Bell led the Ames team in hitting with an even .300.

Ames Airings

JACK TUNNEL (Computation Division) and his wife, Barbara, recently returned from a tour of Europe that included four Scandinavian countries, the Arctic Circle, Russia and England. It sounds like they had an exceptional trip, particularly to Russia.

Crossing the border between Finland and Russia proved to be a bit trying for Jack. Besides checking his luggage for propaganda (such literature as the Bible is considered dangerous, and not even a personal copy may be brought in) and counting his money, he was asked if he were carrying any pornography. Because of the guards accent, Jack didn't fully understand what the guard wanted. Finally, understanding the word 'picture', Jack gave the guard his passport, opened to his picture.

Once past the border, Jack found Russia very interesting. He and his wife were particularly impressed with the underground transportation system in Leningrad. Since the Russian people travel primarily in public transportation, their under and over-ground systems are extremely efficient.

They also enjoyed the Hermitage museum, the Peterhoff Palace and St. Isaacs cathedral in Leningrad. The Peterhoff and St. Isaacs were both completely destroyed during WWII and have now been totally restored to the original appearance. An interesting note about St. Isaacs, which is the second largest cathedral in the world, St. Peters being first, is that it is used for a museum only. Jack said there were very few active churches anywhere in Russia.

He also reported that, although there was a lack of merchandise in the department stores, and people stood in long lines for groceries, the Arts are well supported. The ballet, opera and theaters are very inexpensive, and well frequented. One interesting thing about shopping in Russia, is that the Russians are not allowed to possess foreign currency. There are special stores which sell only to foreigners.

Another interesting event, for the Tunnells, was an Elizabethan dinner at the Gore Hotel in London. The dinner was served, in a 16th century atmosphere, by flirting wenches. A king was chosen from among the guests, while strolling minstrels played bawdy songs, on Mandolins. After the meal was finished, snuff was served to gentlemen and ladies alike, and the minstrels and mandolins played contemporary tunes, such as Scarborough

... by Jeanne Richardson

ough Fair. In true Elizabethan fashion, the dinner and entertainment lasted long into the night.

Jack and his wife also took advantage of the excellent theaters in London. Among the greats they saw were Robert Morley, and the Leningrad Ballet Company at the Royal Festival Hall. By the way, I want to put an end to those nasty rumors that have been spreading since Jack's return. There is absolutely no truth to the story of Jack dipping snuff during coffee breaks, or sending copies of his passport picture to Playboy.

Ames was represented at the Northern California Sports Car Council's Sports Car Olympics this year by DOUG PEARSON and PAULETTE BURGESS (Gasdynamics Branch). Doug must have been the busiest guy at the race. He was one of the master scorekeepers, entered two autocross events, two rallye type events, a Concours de Elegance and a sports car quiz. There were no reports on how Doug did in the races or the quiz, but Paulette and her husband, Ron took second place in their class for the Concours.

After the races Paulette and Ron spent two weeks roaming around Burney Falls, Lassen National Park and the northwestern California coast on a camping and fishing trip. I don't know exactly how this fits in with the car racing and camping; but Paulette wanted to recommend seeing the U.S. Army Corps of Engineers' Hydraulic Mod-

el of the San Francisco Bay and Delta Regions. For those of you who, for some reason haven't seen it yet, it's located in Sausalito.

A son was born to TERRY GRANT (Spacecraft Data Systems) and his wife Julie, Sept. 14. Alexander Paul weighed in at 6 pounds and 13 ounces.

MALACHIA FOX (Gasdynamics Branch) became Mrs. Robert Martin August 22. After the reception, the newlyweds left for a two week honeymoon in Nevada, Idaho, Wyoming and Montana.

BOWLING

... by Dennis Riddle

There are a couple of teams in the All Ames Basketball League that are short of players. If anyone is interested in playing, please contact Bruce Ganzler, ext. 2747.

Standings, after the second night of bowling September 24, 1970, for the Ames Mixed Fives Thursday night league, are as follows:

TEAM	WON	LOST
Rebels	6	2
Team 1	6	2
Team 3	4	4
Rejects	3	5
Team 5	3	5
Don's Demons	2	6

High games and series were on the increase and are as follows for the men: Frank Lazzeroni 209, 520 series; William Angwin 191, 186; 542 series; Guy Whetham 194, 507 series; Estin Baker 182, 489 series; William Kohl 498 series.

High games and series for women were: Helen Morehouse 187; Lorraine Shaw 173, 462 series.



VICTORIOUS FIGHTING PUMAS . . . The contest for first place in the All-Ames Softball league is over and once again the Fighting Pumas were the winners. Members of the team pictured here are (front row, l to r) George Carvalho, Bob Showman, Ken Souza, Don De Vincenzi, and Marnell Smith. Back row (l to r) Dave Sinnott, Steve Kanally, Clark White, Roger Hedlund, Tom Carson, and Jim Gonsalves. Not shown, Carl Saxinger.

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.

HOUSING

For Sale- By owner, 4-bedroom home, \$27,000, \$750 down to FHA. Side yard for boat, Cupertino schools, call 252-4535.

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.

AUTOMOBILES

Resume Lease-Olds, 1970, Custom 88, 4-door hard-top, air-conditioning, stereo, automatic, power steering, power brakes, power windows, call 266-6802.

For Sale-69 MGB, black Roadster, Alarth pipes, \$1900. Also, Alfa Romeo, 1967 Giulietta Spyder, \$350, 967-9230.

For Sale-1964 Plymouth 2-door, H.T.; 383 hi-performance engine, Hurst comp. 4-speed; Mag wheels; posi-rear end; airlifts, new clutch and synchros. Best offer, 325-9844, evenings and weekends.

For Sale- 1960 Chevrolet 283, radio and heater, standard transmission, \$250. Call 968-2259.

For Sale-1966 Chevrolet Belaire, 6 cyl. 4-door hard top, stick shift, heater, 7,900 miles. New short block with 7,000 miles. New battery, tires tall pipe and muffler. Light blue and white, clean and no dents. \$250, call 325-0277, Menlo Park.

MISCELLANEOUS

Wanted- People to join a car pool, south San Jose area, 8 a.m. to 4:30 p.m. shift. Have three riders and need one or two to complete the group. Call Art Mandell at ext. 3073.

For Sale- 1968 Honda 90, 8-speed, 950 MI, rack \$200, call Don Lefforge, 293-4610.

For Sale- Chocolate Point Siamese kittens, with championship pedigree, \$15, male and female; reg. papers available, 253-4475.

For Sale- Used Head Standards 7', \$30, near new Hart Javelin 6'9", offer, old Hart Standard 6'3", \$20, good condition, bindings, poles, call after 5 p.m., 941-1861.

For Sale- 1966 Chev. 4-door, std. trans, fair cond., no dents, new paint, call after 5 p.m., 941-1861.

For Sale- Brittaney Spaniel pups, A.K.C. shots, wormed, excellent for hunting or show, \$100 and \$85. Also, Model 760 Rem. pump, 35 cal. \$85, call 263-1873.

For Sale- Dog house, redwood, 36" x 33" x 21" Good Condition, \$8.50, call 243-9970, after 4:30.

Wanted- Wine Press, 1/4 or 1/2 ton capacity, 296-0200 after 5 p.m.

Free- Lonely, lovable - Labrador X, 3 years old neutered, all shots. Owner has moved. Call Jean, after 6 p.m., 967-9203.

For Sale- Poodle puppies, small miniature, Sassafra, A.K.C., 736-1475.

For Sale-Singer sewing machine, model 99K with cabinet, 968-0805.

For Sale-Classical Guitar, Spanish import \$100, 941-4419.

For Sale- Two cushion couch and chair, floral design, walnut end table, all excellent condition, \$125, 253-3027, evenings.

The following items of Equipment have been moved from their normal location . . . anyone having knowledge of the present location of the equipment please contact the Property Management Branch, ext. 2745.

- Ames Decal #
- 32516 - Hewlett Packard Oscilloscope, model 180A
- 32517 - Hewlett Packard dual channel amplifier, 1801A
- 32518 - Hewlett Packard Time Base Generator, 1821A
- 39146 - Autonetics Mod. 7135-305, Power Supply
- 39147 - Beckman Mod. 7350R Electronics Timer
- 03381 - Spenser, opaque Still Projector-Delineoscope
- 24846 - Underwood manual, portable typewriter (black case)
- 24568 - Honeywell 7400 Recorder Reproducer
- 25225 - Hewlett Packard Mod. 202 CR oscillator

VACANCY NOTICES

Merit Promotion

Secretary (Stenography) GS-318-6
Deputy Director of Aeronautics and Flight Mechanics
Deputy Director of Astronautics
(2 positions)
For information, call Barbara German, ext. 2021



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

COMBINED FEDERAL CAMPAIGN OCTOBER 8 TO 23

There are many appeals today for involvement in our society's actions. The appeals range in interest from ecology, air pollution and over-population to the drug crises. It is difficult, with appeals coming from so many sources, not to be confused and sometimes apathetic toward these appeals. However, for most of us, there is one cause or appeal, that is heard more clearly than the others.

Perhaps, if you are a parent of a teenager, you can see the need for such institutions as the Pathway Society, which works toward the prevention of drug abuse. If you are concerned about the problems of minorities, you

may be interested in the activities of the National Urban League, or the Mexican-American Community Services Agency. Perhaps it is finding a solution to the problem of air pollution that interests you, and therefore the Institute for Medical Research of Santa Clara County. The list is almost without end.

It was because of this multiplicity of appeals that the Combined Federal Campaign was established. The C.F.C. offers a method of contributing to many or a single organization, by a single contribution or by payroll payment.

The How, What, Why of The C.F.C.

WHAT IS THE COMBINED FEDERAL CAMPAIGN? It's a one-time solicitation for voluntary health and welfare agencies. The Santa Clara County United Fund and the National Health and International Service Agencies which normally would solicit next spring are cooperating locally in a single campaign for Federal personnel. HOW DID IT COME ABOUT? Many employees have asked for a single charity drive. It can save a great amount of time and expense for the Government and the voluntary agencies. One drive makes it practical, too, to have a payroll payment plan.

WHY PAYROLL PAYMENT? Employees and servicemen want to contribute their fair share. Payroll payment helps you to do this because you spread your gift in small

mums, allotment may be in any amount.

2. Withholding in the amount authorized will be for a full year beginning with the first pay period in January 1971. You may discontinue the allotment at an earlier date upon written request to the payroll office, but you cannot change the amount or begin payroll payment again in 1971.

HOW ARE PLEDGES DIVIDED AMONG THE CAMPAIGN ORGANIZATIONS? A proportionate amount for each of the campaign organizations has been worked out on the basis of their past receipts from Federal personnel in this area, as shown below. If you want to designate a special amount for any of the agencies participating in these

Your Gift Aids These Organizations

INTERNATIONAL

American-Korean Foundation
CARE

Project Hope

Planned Parent-World Population

NATIONAL

American Cancer Society

American Heart Association

The Arthritis Foundation

National Association for Retarded Children

National Cystic Fibrosis Research Foundation

National Foundation March of Dimes

National Kidney Foundation

National Multiple Sclerosis Society

National Society for Crippled Children and Adults

CYO

Children's Home Society
Eastfield

Ex-Squared Foundation

Family Life Education Association

Family Service Association

Friendly Visiting Project

Friends Outside

Girl Scouts

Hope for Retarded Children and Adults

Institute for Medical Research of Santa Clara County

Jewish Community Center

Jewish Community Council of San Jose

Legal Aid Society

Mexican-American Community Services

Milpitas Youth Center

Miramonte Mental Health Services

Mountain View Community Services

National Urban League

Palo Alto Medical Research Foundation

Peninsula Children's Center

Police Athletic League (PAL)

Rehabilitation Mental Health Services

Saint Elizabeth's Day Home

Saint Joseph's Welfare Center

Salvation Army Extension Services

San Jose Day Nursery

Santa Clara County Dental Research Foundation

Santa Clara County Mental Health Association

Santa Clara Valley Youth Village

Saratoga Youth Center

Social Planning Council of Santa Clara County

Stanford University Clinics

Travelers Aid Association

USO - National

USO - Local

Visiting Nurse Association

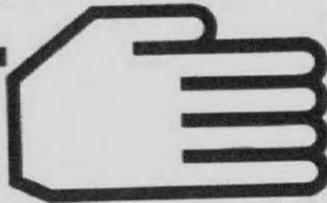
Volunteer Bureau

Volunteers of America, Brandon House

YMCA

YWCA

REACH OUT



installments over a full 12 months. What you give does not depend upon how much cash you have on hand at the time you are solicited.

The payroll payment plan is available to all civilian employees, except those with a temporary appointment of less than one year, and to members of the Armed Forces who are assigned in this area. Its use is optional and voluntary with the contributor, under the ground rules which the Government has set to keep down payroll withholding costs:

1. Minimum allotment per payday is 50¢ if you are paid every two weeks or twice a month, or \$1 if paid monthly. Above these mini-

organizations, write the name and amount in the space provided on the pledge form and your designation will be honored.

Santa Clara County United Fund, 78.6%

National health agencies, 16.4%

International service agencies, 5%

Make checks payable to "Combined Federal Campaign."

Contributions are tax deductible.

Contributors who use direct payment have the option of making a confidential gift through the use of a sealed envelope which will be delivered without opening to Combined Federal Campaign Headquarters.

National Society for the Prevention of Blindness

United Cerebral Palsy Association

LOCAL

Adult and Child Guidance Clinic

American National Red Cross

American Social Health Association

Bay Area Health Facilities Planning Association

Boys City Boys' Club

Boy Scouts of America

Buddy Project

California Council on Crime and Delinquency

Camp Fire Girls

Catholic Social Services of Santa Clara County



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

The How, What, Why of the Combined Federal Campaign



CANCER . . . As the fight against cancer intensifies, research equipment grows more sophisticated.

Alive Today: 1,300'000 Cured Cancer Patients

The American Cancer Society fights cancer on three fronts: research, education and service. Education and service help save lives today. Research seeks final victory over cancer. More than 1,300,000 Americans are alive today, cured of cancer. Learn cancer's seven danger signals and have a yearly health checkup.

Please Give More for Better Health through the campaign of your National Health Agencies.

Your gift to the C.F.C. is used to support agencies which provide medical aid, education, rehabilitation and direct services. It will also help finance intensive research toward winning the battle against the crippling and killing diseases which can afflict all Americans.

For instance, gifts to the C.F.C. will help to sustain the research of the American Cancer Society. They will also be supporting the work of the Institute for Medical Research at the Valley Medical Center in San Jose.

CAMPAIGN CAPTAINS

Five C.F.C. Campaign Captains from Ames visited the Institute recently. They saw, first hand, how part of the funds they would be soliciting are spent. The Campaign Captains; Maurice J. Hitchman, Measurement Sciences; Maurice V. Gowdey, Project Pioneer; William E. Berry, Spacecraft Systems; Albert J. Nevotti, General Accounting; Fred H. Swartz, RFE Division, were taken on a tour of the facilities at the Institute.



PROJECT IDEA

Campaign Captains saw the laboratories where the investigation of anticoagulant drugs and ulcer research takes place. They then moved to where Dr. Herbert I. Machleder is investigating methods of severing the vagus nerve for the treatment of peptic ulcers and where Dr. J. Gerald Toole, Cardiologist, has been examining a new method of treating congestive heart failure patients.

EAR BANK

The Ear Bank, established in 1967 in the Institute's laboratories was also a part of the tour. The bank, thus far, has made ear transplant procedures possible on 16 patients.

Dr. Albert B. Iben, a cardiovascular surgeon and Institute for Medical Research investigator, was doing heart surgery on a dog, when the tour passed his door. The tour's host offered those interested a peek, but there were only two interested parties.

Dr. Iben has been attempting to keep the hearts of experimental animals alive outside their bodies for from 24 to 72 hours. He hopes to devise a similar procedure for human heart transplants.



A FRIEND WAS FOUND . . . by Albert Nevotti, General Accounting, on the C.F.C. tour of the Institute for Medical Research. The child is part of Project IDEA (Infant Deafness Educational Assistance).

TOUR, PROJECT IDEA

The tour included a small wooden structure which houses Project IDEA (Infant Deafness Educational Assistance). Project IDEA was founded and is directed by Richard F. Copano, Ph.D., a San Jose audiologist. It is based on the premise that there will be greater success in the development of speech and language for these deaf and hard of hearing children by beginning special training in their infant years. It accepts all youngsters without tuition upon the referral of physicians and audiologists.

From Project IDEA the tour moved to the Institutes's facilities for research in the Valley Medical Center buildings. Here, the Ames



RFE CAMPAIGN CAPTAIN . . . Fred Swartz is pictured with a specially trained teacher and four of her pupils during the C.F.C. tour of Project IDEA.

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



COMBINED FEDERAL CAMPAIGN . . . The kick-off meeting of the Ames 1971 Santa Clara County Combined Federal Campaign (CFC) brought together for this informal discussion (from l to r) Ross C. Bainbridge, Ames Campaign Chairman, Dr. Hans Mark, Ames Director, and Al J. Addy, a member of the Board of Directors of the Pathway Society. Mr. Addy was guest speaker at the Ames meeting and explained the work of the Pathway Society, the Coordinating Council on Drug Abuse of Santa Clara County. The Society operates a 24-hour crisis intervention center and provides trained volunteers to the community to disseminate accurate and comprehensive information about drug abuse. It is just one of the 115 local, national and international service supported by the annual Combined Federal Campaign.

Airline Pilots Land Simulated Shuttle

Actual landing approaches of a four engine jet transport configured to simulate a nearly full-size space shuttle have been successfully flown by two commercial airline pilots. The tests were conducted by NASA as part of a study of energy-management techniques for the proposed shuttle orbiter in the terminal area.

Purpose of the test conducted at NASA's Flight Research Center, was to demonstrate that unpowered approaches and landing maneuvers of this type can be accomplished safely and readily by qualified professional pilots and do not require highly trained test pilots.

Captains Donald C. McBain and James V. Mitchell, both senior captains for United Airline, each flew several simulated shuttle approaches from altitudes of 20,000 feet down to actual touchdown in the 140-foot long NASA research aircraft which is the approximate same size as the orbiter portion of the proposed space shuttle.

Four approaches were flown by

each pilot. Two were steep (11-degree) straight-in Instrument Landing System (ILS) type approaches; one under visual flight conditions and the other under simulated bad weather conditions with an assumed ceiling of 500 feet. Two 360-degree spiraling approaches were made visually from a position approximately 20,000 feet above the intended landing point. A constant airspeed of 240 m.p.h. (indicated) was held throughout the descent. Energy was controlled by varying the bank or turn angle of the aircraft.

For the past several months, FRC has been flying the CV-990 and a B-52 aircraft to demonstrate that this type of approach can be flown safely in vehicles the size of the proposed shuttle orbiter.

The airline pilots were briefed on flight procedures by Fitz Fulton, B-52/CV-990 project pilot for FRC. Ames research pilot Fred Drinkwater flew as safety pilot. The CV-990 is a national research facility based at Ames.

Russian Cosmonauts To Visit Ames Monday, October 26

Cosmonauts Andrian Nikolayev and Vitali Sevastyanov, who as a team established the time-in-space record last June when they orbited the earth for over 17 days, and Astronaut Edwin E. Aldrin, Jr., who made the first lunar landing with Neil Armstrong on July 20, 1969, at press time were scheduled to visit the Ames Center on Monday, Oct. 26, as part of a 10-day tour of NASA facilities.

The party will be greeted by Dr. Hans Mark, Director of Ames, when they arrive on the Ames Convair 990 "Galileo" aircraft Monday afternoon. The cosmonauts and Astronaut Aldrin will then address Ames employees, followed by a tour of two research facilities: the new flight simulator for advanced aircraft and a high-speed wind tunnel with a scale model of a proposed NASA space shuttle vehicle.

When the distinguished visitors arrive at the Center they will have visited New York, Washington, Huntsville, Houston, and JPL. A primary reason for their visit was to attend the AIAA Seventh Annual Meeting and Technical Display at Houston Oct. 19-22.

ANDRIAN NIKOLAYEV

Maj. Gen. Andrian Nikolayev, the commander of Soyuz 9 was born in Chuvash ASSR in 1929. He finished an Air Force school in 1954 and up until 1960, when he joined the Cosmonaut Detachment, served in units of the Soviet Air Force. In 1962 he and Pavel Popovich performed the world's first

Civil Defense Alert Oct. 30

Ames employees are advised by the Santa Clara County Office of Civil Defense that the next regular testing of the Civil Defense alert and warning system occurs at 11 a.m. on Friday, October 30.

SIGNAL

The test consists of a steady siren tone for one minute, a minute of silence, then a warbling tone or series of short blasts for a minute.

group flight on Vostok 3 and Vostok 4 spaceships. The Vostok 3, piloted by Andrian Nikolayev, covered more than 1,615,640 miles in orbit around the earth. Cosmonaut Nikolayev was in space for four days and Pavel Popovich for three days.

VITALI SEVASTYANOV

Cosmonaut Vitali Sevastyanov was born in Krasnouralsk, Sverdlovsk Region, Russian SFSR in 1935. In 1959 he finished the Moscow Aviation Institute. In 1965 he presented his master's thesis and received his degree in engineering. He is the author of more than 20 scientific papers. During his studies as a postgraduate he gave a series of lectures in Stellar Town, becoming one of the first teachers in the cosmonaut training center. He became a member of the Cosmonaut Detachment in 1967 and was a back-up for the Soyuz 6,7 and 8 crews.

New Mobile Food Service for Ames

Effective Monday, October 19 mobile food service was provided to Ames employees through an extension of the regular cafeteria operation. This service has been requested by many employees, especially those in buildings some distance from the cafeteria. The cafeteria contractor, Stewart-Hill, has leased a suitably equipped "canteen" truck which dispenses such items as sandwiches, coffee, milk candy, desserts, cigarettes, etc. Other items will be added based on customer demand.

It will take several days of operation to establish a time schedule for the number and location of stops to be made. As soon as the schedule is firmed it will be published in "The Astrogram." In the meantime, watch for the canteen truck in your area.

Zonta International Offers Fellowship

For the thirty-third year, Zonta International is announcing its Amelia Earhart Fellowship Awards to women for advanced study in aerospace sciences. The \$3,000 fellowships, established by this service organization of executive women in business and the professions as a memorial to the famed air pioneer, are supported by more than 570 Zonta clubs in 35 countries. Miss Earhart had been a long-time Zonta club member before her disappearance in 1937.

Zonta's confidence in women's potential in the space field has been rewarded by the distinguished contributions made by the young women who have received the 100 Earhart grants. A bachelor's degree (or its equivalent) in a science qualifying a candidate for graduate work in some phase of the aerospace sciences is the basic requirement for the fellowship, plus evidence of exceptional ability and commendable character.

Recipients include students whose degrees were earned in North America, Europe, the Middle and Far East. Fellowships have been used in graduate schools in the U.S., Canada, Switzerland, United Kingdom, West Germany, and Japan.

Candidates, or instructors wishing to recommend students, write: ZONTA INTERNATIONAL, 59 East Van Buren Street, Chicago, Illinois 60605. Applications must be filed by February 1, 1971.

Holidays, 1971

When Public Law 90-363, the so-called Monday Holiday law, becomes effective on January 1, 1971, Federal Holidays will be observed as follows:

New Year's Day, Jan. 1, Washington's Birthday, Third Monday in February. Memorial Day, Last Monday in May. Independence Day, July 4. Labor Day, First Monday in September. Columbus Day (new), Second Monday in October. Veterans Day, Fourth Monday in October. Thanksgiving Day, Fourth Thursday in November, Christmas Day, December 25.



ON-SCHEDULE DELIVERY . . . of a Pioneer experiment package is accepted by (second from left to right) Pioneer Project Manager Charles F. Hall; Joseph E. Lepetich, Experiments Manager; and Alvin J. Wilhelmi, Experiments Office. The package which was delivered by Edward Schaub (far left) of the University of Iowa technical staff, is the design verification unit of the Geiger Tube telescope for the Jovian Charged Particle experiment to be flown on Pioneer F and G missions to Jupiter. Dr. James Van Allen, University of Iowa, internationally known space physicist, is the principal investigator for the overall experiment. Roger Randall of the University is the principal engineer for the Geiger Tube telescope. As a result of the on-schedule delivery the instrument has now been integrated onto the Pioneer spacecraft which is being fabricated at TRW Systems.

Ames Scientist To Give Course at Foothill

Starting date for "A Geological Look at the Moon," a three-lecture series on scientific data resulting from the highly successful lunar mission of the last decade will start Monday, November 2, at Foothill College.

Donald E. Gault, Chief of the Planetology Branch at Ames and two staff members, Dr. Ronald Greeley and Dr. Ted Bunch, will present a survey of some of the geological findings in light of Surveyor, Lunar Orbiter, and Apollo missions, coupled with laboratory and field studies.

Lectures will be given Mondays, November 2, 9 and 16 from 7:30 to 9:30 p.m. in Room F-12 of the Forum Building at the College.

Opening lecturer on "The Moon: What it Looks Like" will be Dr. Ronald Greeley. Mr. Gault's November 9 topic is, "Craters, Craters, Craters." Dr. Bunch speaks November 16 on "The Moon: What is it and Where Did it Come From?"

There is a pre-registration fee of \$3.50 for the series. If space is available, tickets to individual lectures will be offered at the door.

Manager Sought for Ames Store

The Ames Exchange Council is looking for an individual to help set up and run the Ames store which will be opening soon in the Cafeteria. The Ames store is a nonappropriated fund activity operated by the NASA-Ames Exchange Council and the position to be filled is not subject to Civil Service Regulations.

The position is part time (approximately five hours a day) and requires someone with merchandising experience. The individual will be responsible for store operations including buying, displays, and selling of merchandise, plus employees services such as group purchase arrangements for sports and theatre events.

This position offers an excellent opportunity for someone interested in operating a small business consisting of both merchandising and personal services.

Anyone interested in the position may send a brief resume to John Givens, mail stop 237-1. For further information call Mr. Givens at ext. 3083 between 11:30 a.m. and 12 noon.

Heart Association Golf Tournament

The Almaden Golf and Country Club will be the scene of the Santa Clara County Heart Association's first Heart Golf Tournament, Friday, November 13, at 11 a.m.

James Marshall the recipient of a new heart 9 months ago, will play the full 18 holes with the permission of his physician. The proceeds of the event will go towards the further expansion of heart research.

There will be a 13th hole, hole-in-one prize of a Toyota. Other prizes include a round trip to Hawaii a weekend in Pala Mesa and a weekend at Highlands Inn, Carmel-by-the-Sea. Tournament fee is \$40 and non-golfers fee is \$25. For information and reservation forms please contact "The Astrogram" office, Room 134, Bldg. 241, or call ext. 2385.

astrogram 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

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PERSONNEL CORNER

The U. S. Civil Service Commission is emphasizing again that Federal employees and members of their families have the right and obligation to register and vote. There are, however, political-activity restrictions for employees, whether excepted, career, part time, or temporary.

In general the restrictions state that an employee covered by the Hatch Act cannot run for any office as a partisan candidate or campaign for any partisan candidate or engage in any partisan political management. Partisan candidate means one representing a National or State political party such as Democratic or Republican.

There are some permissible activities with regard to politics as well as restrictions. In a series of articles beginning in this issue of The Astrogram both areas will be explained for the information of Ames employees.

WHAT EMPLOYEES MAY DO:

- You have the right to vote as you choose. Political-activity restrictions do not relieve a Federal employee of his obligation as a citizen to inform himself of the issues and to register and vote.

- You may make a voluntary campaign contribution to any regularly constituted political organization. (Note restrictions in the next issue).

- You may display a political sticker on your private automobile, but you should not do so while on duty conducting the public business.

- You may wear a political badge or button, but here again you should not do so while on duty performing the public business.

- You may accept appointment to such positions as members of boards of education of public libraries if your agency decides the holding of these local offices will not conflict or interfere with the efficient discharge of your Federal duties. If these offices are elective, you may not participate in a partisan political election.

- You may participate in a non-partisan local election in which party designation, nomination, and sponsorship are completely absent. You may be a candidate for office in such an election and you may hold the office after the election if your particular agency decides that your holding it will not interfere with your Federal employment.

- You may petition Congress or any Member of Congress. For example, you may write to your Congressman and tell him how you think he should vote on any issue.

- You may sign petitions, including nominating petitions, but may not initiate them or canvass for the signature

of others if they are identified with partisan political management or campaigns.

- You may attend political rallies and join political clubs, but you cannot take an active part in the conduct of the rally or in the operation of the club or act as chairman, officer, committee member, or delegate. You may vote on issues, but you may not speak for or against them.

WHAT EMPLOYEES ARE PROHIBITED FROM DOING:

- You may not be a candidate for nomination or for election to a National or State office. You may run for a community office only as described in the sections What Employees May Do and Exemptions for Certain Communities. (See The Astrogram, May 23)

- You may not solicit others to become candidates for nomination or election to partisan offices.

- You may not campaign for or against a political party or candidate.

- You may not use your automobile to transport voters, except members of your immediate family, to the polls. However, riders in regularly scheduled carpools can stop at the polls on the way to or from work.

- You may not distribute campaign material.

- You may not march in a political parade.

- You may not sell tickets for or otherwise actively promote such activities as political dinners.

- You may not write for publication or publish any article or letter soliciting votes for or against any political party or candidate.

- You may not solicit or receive any assessment or contribution for any political purpose.

- You may not make a political contribution in a Federal building or to some other employee.

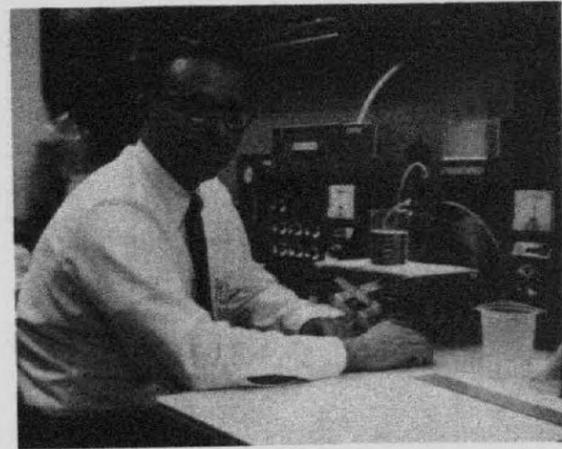
WHAT THE PENALTIES FOR VIOLATION ARE:

The Civil Service Commission enforces political-activity restrictions for employees in competitive positions. The Commission makes investigations and holds hearings in cases involving violations. The most severe penalty for violation is removal and the minimum penalty is suspension without pay for 30 days.

In cases where removal is ordered by the Commission, the employees may not be re-employed in any position the salary of which is paid from the same appropriation as the job from which he was removed.

Employees in excepted positions come under the jurisdiction of their agency head in political - activity matters.

ARA Executive Board Members



ARA MEMBERS . . . Dr. John Greenleaf of Biomedical Research Branch is shown with a mockup of an atomic absorption analyzer. Would you like someone to analyze your suggestions for the Ames Recreation Association? Call John, a member of the ARA Executive Board, ext. 2901. . .



EMERSON SHAW . . . Photographic Branch, has "got the big picture" of the Ames Recreation Association. Do you? Call Em, a member of the ARA Executive Board, if there's a recreation activity you'd like to see developed at Ames. He's at ext. 2218.

BOWLING

. . . by Dennis Riddle

After four weeks of league play we have two teams tied for first place: The Sportsmen and the Huff-ers with 11 wins and 5 losses. With 10 wins and 6 losses, we have a three way tie for third place: Team #10, the Road Runners, and the Primo Warriors. Several other teams are right on their tails!

Political Activity— Specific Questions and Answers

Q. May an employee work as a part-time volunteer for a partisan candidate if his activity does not involve contact with the public?

A. No. The Civil Service Commission interprets the law as prohibiting any date or political party in a campaign.

Thus, he is not permitted to do clerical work at campaign headquarters, write campaign speeches, or canvass voters for the purpose of promoting support for the candidate or political party.

This includes voluntary campaign work for any partisan candidate, such as "stuffing envelopes" with campaign or political literature.

Otto Meckler bowled a nice 203/587. George Rathert had a 223/563. Also in the ole strike pocket and Arlene Robinson, 202.

Anyone wishing to participate as a spectator is invited to come down to Moonlite Lanes in Santa Clara on Tuesdays between 6:20 p.m. and 9 p.m., lanes 25-40.

Ames Airings

... by Jeanne Richardson

JEANETTE REMINGTON (Board of Examiners) returned not long ago, from a trip to Minneapolis and her home town of Wells, Minnesota. Jeanette visited friends and family and enjoyed two weeks of an Eastern autumn, complete with crisp air and piles of bright colored leaves.

WALTER T. ZAVIANTSEFF (Electrodynamics Branch) left Ames recently, to continue his graduate studies at the University of California at Berkeley. He will be working on his doctorate there. He wishes to thank all his friends for the wonderful farewell party given in his honor at Mings.

CONGRATULATIONS

JOHN R. MULKERN (Reliability and Quality Assurance) was doubly proud Sept. 21, when his daughter, Mrs. Nancy Babcock, gave birth to twins. The two grand daughters weighed 6 pounds each, and the grandfather is reportedly doing well.

The engagement of LINDA S. FRANKS (Records and Reports) to Allen Fowler was announced recently. The wedding is planned for January 30, in Santa Clara. Linda Mackey and Karen Bain, both of Records and Reports will act as Linda's attendants.

If you have any news of vacations, exciting or interesting events, I would appreciate hearing of them. Please contact Jeanne Richardson, ext. 2973, or mail stop 241-4.

GOLF

... by Kay Bruck

The Riverside Tournament on October third determined the Ames Golf Club Champion (the player with low gross for the day -- no handicap) and the winner of the Director's Cup (the player with low net for the day - stroke play trophies this year).

Winners in the four flights, as reported by the co-chairmen, Tom Polek and Bert Nevotti, were:

First flight: Al Petretti, first; Debby DeBevoise, second; and Jack Lee, third.

Second flight: Don Dust and Bob Eddy, shared first; George Falkenthal and Frank Prior shared second.

Third flight: Dick Johns, first; Jim Silver, second; Bill Thompson and Bert Nevotti, shared third.

Fourth flight: Gene Garis, first; Bill Page and Yvonne Sheaffer shared second.

Closest-to-the-pin was won by Jerry Dickson.

The last tournament of the year will be the Turkey Shoot at Las Positas on October 31.

TRAVEL CLUB

... by Jan Konrath

The Ames Travel Club has blossomed with a new name of "Ames Adventurers" and has elected the following officers:

President, Ken Callat;
Vice President, Jan Konrath;
Treasurer, Lynn Roach; and
Secretary, Vi Norcio.

The officers and club members would like to thank Jean Moorhead and Jeanne Clemson for their efforts in organizing the club and expect to keep them busy planning future activities.

Eighty-three enthusiastic wine connoisseurs recently attended a wine-tasting and steak barbeque at the Novitiate Winery in Los Gatos.

For the next event, 40 "Adventurers" will embark on a bus tour of the Napa Wine Country. The trip will include visits to several wineries, a candle factory, a no-host picnic, and cheese and salami tasting. For information on the Travel Club, contact any of the officers. Planned activities for November will be a flight to Las Vegas 20, 21 and 22. Round trip, two days and two nights, and other items \$58 each.

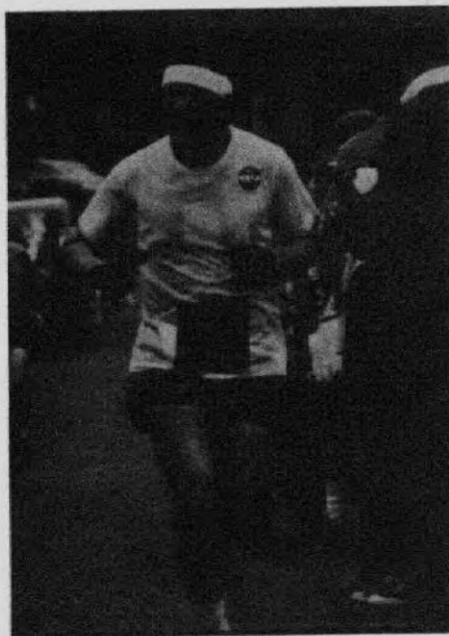
For further information contact Ken Caillat, ext. 2234.



WARREN ANDERSON (Air-Breathing Propulsion) pitches horseshoes at the Ames recreation area. The area also includes facilities for Volleyball, Softball and a driving range. Equipment is provided by the A.R.A.

Ames Sports Area

The Ames Recreation Association has provided several sets of Horseshoes for groups who are interested in playing. Several of the horseshoe pits are located at the presently designated recreation area which is at the south east end of the Center, approximately 300 yards north of the Navy dirigible hangar. Volleyball, Softball and driving range are also available. Equipment may be obtained by contacting Al (Pooch) Puccinelli, ext. 2229.



VITO D'ALOIA . . . Ames Jogger-naut is pictured near the finish of the Dipsea race, August 30. The race was run from Mill Valley to Stinson Beach, via Muir Woods.

JOGGERNEWS

... by Jim Woodruff

Eight Jogger-nauts ran in five long distance races recently; John Arvesen, Bruce Castle, Vito D'Aloia Mike Green, Roger Hedlund, Ted Passeau, Paul Sebesta, and Jim Woodruff. The best known and favorite race was the Dipsea, from Mill Valley to Stinson Beach via Muir Woods, on August 30. Six Jogger-nauts completed this one.

Two weeks later six jogger-nauts ran the Double Dipsea, from Mill Valley to Stinson Beach and back. This gave them a chance to run both ways over an 850 foot ridge and over a fifteen hundred foot ridge.

Vic D'Aloia ran the 7.5 mile Walnut Festival run at Walnut Creek. This was the shortest race at Lake Merritt.

If you want to join us in races or in our occasional group runs, call Jim Woodruff, 2066.

AMES SKI CLUB

The Ames Ski Club met recently, elected officers and drew up a constitution. Plans are being made for several ski weekends and trips this season. On the tentative schedule is Sun Valley and, of course the various areas around Lake Tahoe.

Anyone interested in skiing should contact one of the club officers;

President, Skip Yem ext. 2237
Vice Pres., Bob Stroub ext. 2244
Treasurer, Jack Tunnel ext. 2683
Secretary, Jeanne Richardson ext. 2973
Ski Meister, Denise Lucy ext. 2872

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.

MISCELLANEOUS

For Sale- Zenith 400, Console 21" B/W T.V. excellent condition \$45, call Chadha, 325-1437.
For Sale-Twin bed, mattress, with frame \$40, call Chadha, 325-1437.

Wanted-Share driving to Livermore, C. Swift, ext. 2800.

For Sale-Never used 1/2 HP food disposer. Won in contest. \$25, call 732-3238, after 6 p.m. and all day weekends.

For Sale-Ski boots, child's Henke, all leather 4 buckle boot, size 4, \$10, call 253-3659.
For Sale- Sail boat, O'Day daysailer 17ft, with trailer Full boat cover, 5 sails, extra gear and hardware. Race equipped, 253-3659.

For Sale-Gas Stove apartment size, 4 burners with oven. White, \$25, call Don Goodsell, 968-1200.

For Sale- Faberware open hearth electric rotisserie with shish Kebob attachment, original price \$61, in excellent condition, will sell for half price, call 326-0296 after 4 p.m.

For Sale- Maple coffee table, wagon-seat style, \$25 (orig. cost \$95). Also maple bookcase headboard (orig cost \$140) for standard bed, with elec. blanket and bedspread, \$30. Furniture is Heywood Wakefield, 327-6407, evenings and weekends.

Wanted-High school student, needs a good, used 10 speed bicycle, English or American make. Pay up to \$40. Call John at 326-6951 evenings.

For Sale-Rototiller; Mustang, 4hp. Clinton cast iron engine. Both engine and tiller completely rebuilt. Firewood, fireplace length, split oak and Bay. Delivered locally \$10/Tier. Call 948-8002.

For Sale- T.V., Zenith 19" new picture tube, asking \$35. Amos, evenings 321-8771.

For Sale- Chocolate Point Siamese kittens, with championship pedigree, \$10. male and female; reg. papers available, 253-4475.

Wanted-People that don't like to drive to work every day . . . to join a car pool from Good Sam. Hospital area, 8-4:30 shift. Have two, need two or three to complete the group. Call L. Graham ext. 2252, or Joe Astalfa, ext. 2823.

For Sale- Mini bike 31/2 HP, like new, call 252-8245.

Lost- Man's Bulova wristwatch, between bldg.s N-213 rear and N 234 on Tuesday, Oct. 6. Finder please call Al Rufiange x. 2531.

For Sale- Walnuts, 25 and 30 cents a pound, call 243-7750 after 5 p.m.

For Sale-Double bed, box springs and mattress, with light gray head and footboard. \$25, call 252-3370.

HOUSING

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.

AUTOMOBILES

For Sale-1965 Dart, GT, V-8 convert.; 4-spd. trans, mag wheels, excellent engine, body, tires. \$775, call E. Fry, 251-6710.

For Sale-1963 Corvair convertible, good shape. \$350, Horace Emerson, 736-8465.

For Sale-1960 Station wagon, good running condition Dodge Dart, many new parts (tires, etc.). Asking \$250, call Amos evenings, 321-8771.

VACANCY NOTICES

Merit Promotion

Secretary (Steno) GS-6
Open Centerwide
Office of the Director of Astro-nautics.

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



RUSSIAN COSMONAUTS AND U.S. ASTRONAUT . . . visited the Ames Center on Monday (Oct. 26) as part of a 10-day tour of NASA facilities. The distinguished visitors were greeted by Dr. Hans Mark, Ames Director, and spoke to the many employees who were at the plane to meet them. They thanked the assembled group for the warm welcome extended to them and expressed their hope for future success for the Center. Pictured here from left Cosmonaut Andrian Nikolayev, Astronaut Edwin E. Aldrin, Jr., and Cosmonaut Vitali Sevastyanov discuss a proposed concept for NASA's space shuttle with Victor Stevens, Chief of the Space Shuttle Office at Ames

Sensor System Aids Mental Patients

A brain sensor and radio transmitter system, developed for space medical research with test pilots, appears to allow major improvements in diagnosis and treatment of schizophrenic mental patients.

Scientists at Ames and Agnews State Hospital in San Jose, a mental hospital of the California Department of Mental Hygiene, are working together on the system. They are using the radio-sensor system with a computer to develop a new means of diagnosis.

The new method is under clinical test on mental patients at Agnews Hospital with good preliminary results.

The sensor-radio system installed in a headset is so light and com-

fortable that it does not frighten disturbed patients. Because of this, the doctors now believe they can use it to distinguish between schizophrenics needing immediate large doses of tranquilizing drugs, and those who can be treated without drugs.

The diagnostic method uses differences between patients' brain wave responses to a series of light flashes, as a way of distinguishing between various types of schizophrenia (behavior disorders).

Past diagnostic methods using brain waves have required inserting needle electrodes under the scalp, or shaving patches of the scalp for electrode contact.

With seriously disturbed schizophrenic patients, these disquieting procedures -- required immediately on admission to the hospital -- usually have not been possible.

The Ames-developed system, however, employs only a headset consisting of a light wire clip fitted with two small electrodes which sense brain waves through the hair with no scalp preparation. The headset also carries a tiny battery-powered radio transmitter to broadcast the brain signals to the computer for analysis.

Because data is radioed, no wires are involved. This absence of wires prevents undue anxiety about shock therapy by some disturbed patients who have either undergone it or fear such treatment.

"The allaying of such fears is important for good early diagnostic work," says Agnews' Chief of Research, Dr. Maurice Rappaport.

"Modern drugs have made possible tremendous advances in the treatment of many emotionally disturbed individuals," Dr. Rappaport comments.

"However, there may be a subgroup of schizophrenics for whom non-drug therapy is the treatment of choice. The problem has been to distinguish these individuals from those for whom drugs are most appropriate."

The radio-sensor system has promise for other uses, Dr. Rappaport adds. Patients could wear the headsets in their wards. Then data on their mental states could be radioed to the computer as they did a va-

Continued on Page 4



RESEARCHERS . . . Kenneth Hopkins (left), a bioengineer at Agnews State Hospital, and Richard Westbrook, Ames Instrumentation Division, check data on the Ames EEG sensor unit in use at Agnews.

CFC Campaign Extended a Week

The Ames 1971 Santa Clara County Combined Federal Campaign has been extended one week to give the CFC Chairman, Ross Bainbridge, and his team captains an opportunity to prepare final reports. Friday, October 30, is the last day to participate in this annual effort in support of the United Fund Human Care Services, National Health Agencies and International Service Agencies.

Research & Technology Office Reorganized

The major research and technology office within NASA has been reorganized to provide increasing emphasis on improving aeronautical research and more effective support of space activities.

The Office of Advanced Research and Technology (OART) will retain its name under the reorganization to be effective immediately and additional staffing will not be required.

The change in OART organization is largely a reflection of emerging technologies and applications as well as new and expanded project-oriented efforts in both space and aeronautics.

Aeronautical research, for example, had been centered in one division. Now there will be three offices and three divisions concerned exclusively with specific aspects of aeronautical research. Complementary support of aeronautical research will continue to be provided from other OART offices and divisions in such areas as controls, information systems, materials and structures.

On the purely aeronautics side, the new organizational units are as follows: Short Landing and Take-Off

(STOL) Program Office, Advanced Technology Experimental Transport (ATET) Program Office, Lifting Body Program Office; Aeronautical Operating System Division; Aeronautical Research Division and Aeronautical Propulsion Division. (The STOL and ATET Program Offices will study the design of future short and long haul aircraft.)

ORGANIZATIONAL UNITS

New organizational units which will support technology in space or the atmosphere are: Shuttle Technologies Office; Nuclear Systems Office, Space Propulsion and Power Division; Environmental Systems and Effects Division; Guidance, Control and Information Systems Division and Materials and Structures Division.

The remaining units are: Resources and Institutional Management Division; Advanced Concepts and Missions Division; Safety and Operating Systems Office and a Research Council. The Council will serve as a focal point for planning future research efforts. It will include as members the directors of NASA's four principal research centers: Langley, Lewis, Ames, and Flight Research (FRC).

Text of Message Presented by Dr. Mark at Ames Honorary Awards Ceremony

"In the middle of my second year with you, it is appropriate that we should meet here today to discuss the state of the Center. I am especially pleased to be speaking to this group since you have, by your loyalty and length of service, amply demonstrated your devotion to Ames.

DEBATE

"Let me begin by setting the scene in the context of the debate now going on regarding the nature and uses of technology. I think that I can best state both sides of the question by quoting from a speech made by a highly distinguished scientist before a symposium on this general topic. He said: "One cannot be sufficiently cautioned against the attempt to economize on scientific work. On the one hand, the progress of important branches of technology depend on the results of experimental and even theoretical science; and on the other, each disruption of scientific work causes lasting damage to the living body of research, that is to say, it is a partial forfeiture of previously expended labor and capital. Hence, it is in the interest of this country to put on a secure footing the continuation of scientific investigations on the previous scale."

"The public reaction to this statement, as expressed by an editorial that appeared one day later in a leading national newspaper was not good. It said, in part: "Neither the statistics nor the arguments are new. Nor did any of the protagonists of the laboratory explain why there is poverty amid plenty, and idleness where we expect to hear the hum of the machine. We look to them for a way out of the slump, only to find them as helpless as the economists. As yet, no one has devised the means of absorbing new technical developments with the least possible amount of distress." The editorial goes on to call for a government plan to apply science without neglecting "human aspirations" and "moral values." It closes by saying that the scientists have not addressed themselves to the immediately relevant questions of the social management of science and its applications. They have simply assumed that science and technology were the sources of progress that would lead to desirable improvements in the social condition.

"You have undoubtedly heard both of these arguments with increasing frequency in recent years. What is interesting about the two things I have quoted is that both of the statements were made more than thirty-six years ago. The scientist who defended research was Dr. Albert Einstein speaking before a session of the American Institute of Physics on February 22, 1934. The editorial I quoted, appeared a day later in the New York Times on February 23, 1934.

TECHNOLOGY

"As you can see, the values of technology have been questioned before. Last week, I attended a number of meetings in Washington in which similar hard and difficult questions were put to us. It is my opinion that the extent to which this Center will receive support depends on how well we can serve important and immediate national needs. This situation is characteristic of periods such as the great depression as well as the present era in which pressing domestic problems occupy public attention. As you may remember, in the 1930's the federal government did, in fact, take the advice of the Times' editorial writer and applied science and technology on a large scale to improve the nation's economic condition. The development of the Tennessee Valley through the TVA is perhaps the best example. I have every reason to believe that the federal government will again mobilize technology to find ways of alleviating some of the difficulties we face. The organization of the National Oceanographic and Atmospheric Administration, the Environmental Protective Administration, and other agencies of this kind presage such actions. This will take money and, since our resources are finite, agencies whose missions may bear less strongly on immediate needs will have to reduce their activities.

"The obvious question that you must all be asking is what this means for the future of our Center? I cannot predict the future but I do know two things: One is that I expect the situation I have described to persist for several years to come, and that we will

adapt to it. The second, and perhaps more important one is that Ames is an excellent place to lead in the demonstration that the technology we have developed in the past decade can be applied, in the words of Apollo 11, "for the benefit of all mankind."

"Fortunately, there are a number of things we are doing which are of great short-term importance to the nation and which also fall within that portion of NASA's charter that deals with facing the nation's more immediate problems. I have already touched upon these in previous talks with you but it is worthwhile to repeat at least a few examples again. In aviation, we have an excellent start in the development of the nation's first jet-STOL experimental vehicle which will be ready for flight tests in early 1972. Through our flight simulators, we are helping to develop certification standards for new aircraft. It is particularly significant that this work is being done in collaboration with the FAA, the agency ultimately responsible for aircraft certification. The first example of this effort will be an application to the certification of the Concorde aircraft which is scheduled to start commercial operations in about two years. We are continuing to support vigorously this country's efforts in military aviation through work in the F-14 program as well as several others. In other areas, we have a strong program in the development of synthetic materials for various purposes in aircraft construction with particular emphasis on fire retardant and high temperature resistant materials. Finally, we are in the process of working out what we hope will be a vigorous program in earth observations as a natural development of the work done by our Airborne Sciences Office as well as certain other elements of the Center.

CHANGES

"During the past year, we have made a number of administrative and personnel changes that will allow us to move rapidly in developing the practical applications of our research work. The most recent one is the reorganization of the Full-Scale and Systems Research Division in the Aeronautics Directorate. Several other changes are planned, and I expect that we will finish these organizational adjustments early next year so that I will be in a good position to report to you on this matter in my annual address to the Center in March 1971. Aside from internal changes, there are two other administrative areas that we intend to develop intensively. One is that the Center must build closer working relationships with the other NASA Centers and other federal agencies that are supported by our work. To implement this, an old friend of many of you here, Mr. Bill Harper, has recently joined the Director's staff with a primary responsibility in that field. The second is that we will vigorously continue to strengthen our relationships with local universities and educational institutions. The purpose of both of these policies is to make certain that we have strong connections at every level with the institutions and agencies that are most likely to use the product of our work.

"It would be a mistake for me to finish this address without mentioning fundamental research aimed at longer term goals in space as well as in aeronautics. Even in 1934, when the country was in the throes of its worst economic depression, some people were continuing to do fundamental research. In March of that year, Dr. K. T. Compton, then the President of MIT, announced that MIT scientists had shown it possible to release large amounts of energy in certain nuclear reactions. Only eleven years later, nuclear energy was released on a large scale at Alamogordo. In June 1934, Dr. Robert Goddard writing to the sponsors of his researches announced that he had finally found light and simple means for pumping liquid fuels at a rapid rate into the combustion chamber of his rockets. Thirty-five years later, less than half the average life span of Americans today, men were standing on the Moon.

"We will continue to do fundamental research at Ames but, as in the 1930's, it will be done on a reduced scale while we devote major attention to more immediate ends. Under such circumstances, the research we conduct must meet two very stringent criteria: The first is that it must seek to answer really fundamental questions. It is not enough merely to fill in another column

(Continued on Page 3)

Your CFC Gift Aids These Organizations

FRIENDS OUTSIDE

Friends Outside is one of the more unique ways the money donated to the Combined Federal Campaign helps our society. Friends Outside works to alleviate some of the emotional and financial trauma that accompanies family life when the husband and father is put into prison.

Often the family of a prisoner is left with no income, no leadership, and a heavy load of resentment and shame.

Friends Outside, by visiting at least 30 men in county and city jails per week, hears of the families in need through the prisoners themselves.

The organization, located in a large, old house on Elm Street in San Jose, was visited recently by five Ames employees; Lyndell King, Air-Breathing Propulsion; John Mc Dermaid, Management Procedures Office; Kathy Byrne, Army Aeronautical Research; Loretta Schneickert, Computer Systems; and Jessie Gaspar, Programming.

It was found that Friends Outside works through volunteers, the families of the prisoners and gifts, such as those donated through the Combined Federal Campaign. It is not federally or state funded.

The type of aid available to families ranges from emergency supplies of food and clothing, to summer outings for children and tutoring during the school year.

According to a study by a juvenile probation officer and a San Jose State College professor, prisoners' children are the most potentially delinquent children in the coun-

try. Through Big Sisters, Big Brothers, tutoring and summer camping trips, Friends Outside works to save the prisoners' children from possible delinquency.

The mothers are invited to join a Friendly Mothers Club, which helps to maintain the house on Elm street and raise money for the organization. Besides offering friendship and aid to the mothers, various speakers are invited to the club to provide educational information.



ED TINDLE . . . (right) Combined Federal Campaign Captain for Space Missions stopped to talk with one of the workers on a tour of the Goodwill Industries. Ed was given a demonstration in mattress making, one of the many skills taught at the Goodwill training centers.

GOODWILL INDUSTRIES

The Goodwill Industries is an organization that most of us take for granted, feel we know enough about and occasionally support with donations of repairable goods.

A tour of the Goodwill training area recently, was an interesting experience for three Combined Federal Campaign Captains; Robert Altman, Radiation and Wakes; Ed Tindle, Space Missions; and Jack McLaughlin, Employee Development.

It was found that Goodwill trains not only the physically handicapped, but a great number of mentally and socially handicapped as well. Many of the trainees are recent patients at Agnews State Hospital

The people trained and rehabilitated at Goodwill often are placed in private industry after training. This means that Goodwill is aiding handicapped persons achieve independence and dignity, while helping them move from dependency on tax support to the role of taxpayer. 241 people were placed in private industry in 1969.

You can help to prevent the waste of human resources by contributing to Goodwill Industries, and other similar organizations through the Combined Federal Campaign.

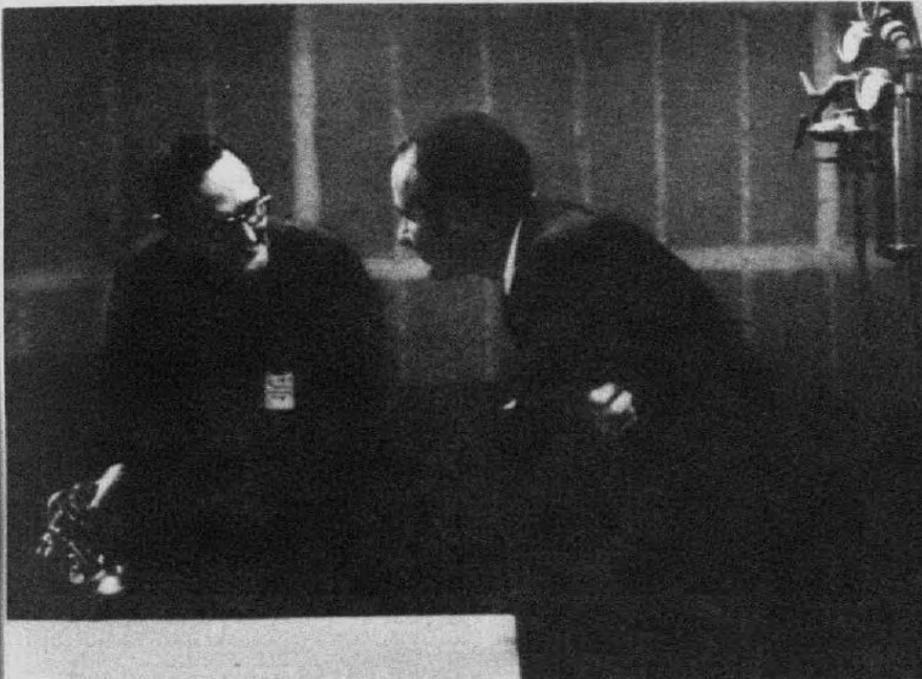


EMERGENCY FOOD SUPPLY . .

in the Friends Outside pantry is source of interest for John McDermaid, Management Procedures Office Campaign Captain during a tour recently. The food is given to the families of prisoners, on an emergency basis. It is one of the many forms of help Friends Outside provides needy prisoners' families of Santa Clara County.



ONE OF THOSE HELPED . . . by your donations to the Combined Federal Campaign is this child. Through the support of the Combined Federal Campaign and other sources, Friends Outside will provide he and his mother with food and clothing until a source of income is obtained for the family. Jeanne Richardson of "The Astrogram" staff is pictured here during a tour of several agencies which benefit from contributions to the Combined Federal Campaign.



A GOODWILL WORKER . . . explains to Jack McLaughlin, (right) Employee Development Campaign Captain, how he finishes furniture with only one arm. Goodwill Industries of Santa Clara County served 1,331 physically, mentally and socially handicapped and disadvantaged in 1969.

DIRECTOR'S MESSAGE

(Continued from Page 2)

in somebody's table of numbers. The second is that it must be recognized as first-class work by the rest of the scientific community. Fortunately, we have a number of programs that fall in this category. The search for extraterrestrial life which will see its first important application in the Viking flight is one of these. Another is the Pioneer program which will lead to this country's first attempt to explore the outer planets in 1972. Finally, we have made a good start in establishing a lead position in Infra Red Astronomy, a field which will almost certainly bear strongly on important new developments in cosmology. There are a few examples of what I have in mind.

EXCITING AND CHALLENGING TIMES

"These are exciting and challenging times. You have already demonstrated that you can meet new and difficult situations, and I am confident that you will do so again."

NASA/Soviets Discuss Docking

Five NASA representatives met with their Soviet counterparts in Moscow this week (October 26-27) for preliminary technical discussions on possible compatible space docking arrangements.

The discussions are an outgrowth of correspondence exchanged during the past year between the heads of NASA and the Academy of Sciences of the USSR on ways to develop U.S./Soviet space cooperation.

If such arrangements can be realized, it would be possible for American and Soviet manned spacecraft to rendezvous and dock with each other. This would open the way for a wide range of cooperative activities in space.

Dr. Thomas O. Paine, former NASA Administrator, formally proposed joint consideration of compatible docking arrangements in a letter July 31 to President M.V. Keldysh of the Soviet Academy. Keldysh replied Sept. 11 proposing the meeting in Moscow and inviting NASA to select dates. On Sept. 25 Dr. George M. Low, Acting NASA Administrator, accepted Moscow as the site for the talks and suggested that the meeting be held Oct. 26-27. Academician Keldysh has confirmed that these dates are acceptable.

NASA representatives who will attend the meeting in Moscow are: Dr. Robert R. Gilruth, Director, Manned Spacecraft Center; Arnold W. Frutkin, NASA Assistant Administrator for International Affairs; George B. Hardy, Chief, Program Engineering and Integration Project, Marshall Space Flight Center; Caldwell C. Johnson, Chief, Spacecraft Design Office, Manned Spacecraft Center; Glynn S. Lunney, Chief, Flight Director's Office, Manned Spacecraft Center.

Group Health Benefits Program

The Government contribution to Group Health Benefits premiums will be increased to 40 percent of the average premiums effective Jan. 10, 1971 in accordance with the provisions of Public Law 91-418, approved Sept. 25, 1970. At present the Government contribution is 24 percent. Informal word has been received that the health plan carriers are negotiating for increased insurance premiums which will also be effective Jan. 10, 1971.



AMES-DEVELOPED RADIO-SENSOR SYSTEM...developed for space medical research with test pilots, used in diagnosis and treatment of mental patients. Patricia Dickinson, a research assistant at Agnews State Hospital, is shown testing the Ames EEG (Electroencephalograph) sensor unit.

Ames Scientists at AIAA Meeting

The Seventh Annual Meeting and Technical Display of the American Institute for Aeronautics and Astronautics (AIAA) was held last week (October 19-22) in Houston, Texas.

"Aerospace for Man's Needs" was selected for the over-all theme. Individual themes for the morning and the afternoon sessions included Frontiers of Research and Technology; The Long Term Outlook of the National Aeronautical Program; the Short Range Transportation Systems of the National Aeronautical Program; and the National Space Program.

Among the technical papers presented were two authored by staff members of NASA's OART Mission Analysis Division located at Ames. They were: "Hypersonic Transport Preliminary Performance Estimates for an All-Body Configuration" coauthored by Thomas J. Gregory, Mark D. Ardema, and Mark H. Waters; and "Technological Factors in Short-Haul Air Transportation", by Hubert M. Drake and George C. Kenyon.

At the session on Fluid Mechanics a paper was presented by Ames research scientists entitled "Heating Environment and Protection during Jupiter Entry." Coauthors are Michael E. Tauber, Hypersonic Free-Flight Branch, and Roy M. Wakefield of the Thermal Protection Branch.

AMES SENSOR SYSTEM (Continued from Page 1)

riety of activities, or were presented with different kinds of situations. In cases that are unstable or very acute, moment to moment monitoring could be done, and intensive care provided, much as with intensive care units in general hospitals.

Drs. Rapport and Julian Silverman of Agnews have based the diagnostic method on their research on patient brain-wave responses to light stimuli. Researcher Richard Westbrook of Ames Instrumentation Division and Agnews research bio-engineer Kenneth Hopkins have developed the system.

For diagnosis, the patient is fitted with the comfortable, wire-free headset and seated in a darkened isolation room. He watches light flashes of varying intensity, and his responses are then radioed to the computer for analysis.

The sensors and radio were developed at Ames for sensing brain waves of pilots riding centrifuges and doing other tests. The sensors consist of a silver-chloride pellet coated with commercial electrode paste, in contact with a sponge wetted with saline solution.

The brain's reaction patterns to the light signals are tiny, brief and are mingled with the constant massive flow of other brain wave signals. However, Mr. Hopkins has devised a computer program to sort out these tiny electrical signals.

The very small one-milliwatt, Ames-developed, high performance

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- \$175 or trade for a good small car, 1966 Honda CD 90 "STREET" good condition, recent overhaul, many new parts, call after 5 p.m. 969-1092.

For Sale-1965 Honda 50 cc Model C110, good running condition. \$75, also a new helmet size 7 1/4 \$13.50 call Jim Rogers, 378-5741.

For Sale-1957 Plymouth Station Wagon, runs well, \$200, call 245-1833, after 5 p.m.

For Sale-1966 Mustang Convert., A-1, new tires, top, valve job, red/black interior \$975, M. Murphy 989-2382.

For Sale-1957 Chevrolet, low mileage, clean, good condition, 64 rebuilt engine, runs well, r/h, stick, make offer, call 941-1861.

MISCELLANEOUS

Wanted- Donation, TIME issues for Feb. 9, 16 and 23, 1970, Library, x 3312 (Mrs. Lundell).

For Sale-Dual 1009 4-speed record changer, walnut base, dust cover, and Shure M7-N210 diamond cartridge. Cost \$125, a bargain at \$50. 257-0438.

For Sale-Stereo automatic record player, Garrard model 50 with ADC cartridge and diamond stylus, walnut base, \$47.50, 323-7070, evenings and weekends

Car Pool-Want to join or form a car pool, from 2851 Mauricia Avenue, Santa Clara, near Klely Blvd. and Stevens Creek Blvd. on 8 to 4:30 shift. Call Richard Shumway, 2991/2992 (office) or 247-3578.

For Sale-Large 4-bedroom, 3 rooms 2 baths, appr. 2000 sq. ft., 1/3 acre on cul-de-sac, swimming pool with cabana. Principals only priced to sell, \$38,700, by owner, 968-0521.

For Sale- Beautiful cloths and/or custom sewing. Call Cathi at 246-9511, afternoons. 1855 the Alameda, San Jose.

Steal-Pureblood Siamese rare chocolate point kittens male and female. Worth \$35 to a cat lover, now only \$10, (slack in the market), call 253-4475.

For Sale- Chairs, Dr. (4) Bassett, Solid dk. Oak, oiled hi-back, uphol. grn tweed seats. Used 1 wk., cost \$160, selling for \$95. Call 295-56965.

For Sale-Electric wall oven and table top burners, great for cabin \$25 or best offer Mehler, 322-3951.

For Sale- 2 matching end tables, modern, exc. condition, strong, make offer, call 941-1861.

For Sale-1968 VW, auto, trans., radio, heater, 17,500 miles, excellent condition. \$1595. Call W. D. Hightower, 964-3008, after 6:00 p.m.

Wanted-Hard Top for Triumph TR-3. Also, side curtains for same, and trunk-type ski rack for Triumph TR-4. Call Genie DeGabain, 368-4888.

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

transmitter has low internal noise, high sensitivity, and works from a single aspirin-tablet-sized mercury battery. The transmitter measures 5/8 by 1/2 by 1/4 inches.

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