

## Ames honors Fire Prevention Week October 6-12

Defective  
fire extinguishers

Persons discovering defective fire extinguishers or extinguishers whose charge has been depleted should notify their Facility Safety Manager.

The FSM will contact Jerry Hall of RFTM on extension 5216. The FSM or his representative will then tag the item with his name, building number or room number. He will call the delivery service dispatcher, extension 5418, to arrange for pickup and delivery to 221-M.

## Evacuation bells

All personnel *must* evacuate a building when the evacuation bells ring. The bells are activated by the Duty Office or by automatic sensors. They will ring steadily until turned off by the fire department. When the emergency is over, an all-clear will be indicated by an intermittent ringing which will be initiated by the Duty Office upon notification by the Fire Chief or person in charge at the scene.

At Ames dial **5555**  
for all emergencies

Remember these SPECIAL DAYS  
mean SPECIAL FIRE DANGERS...

## Birthdays etc.

Paper hats and candles on the cake are a dangerous combination. Be especially careful at children's parties. Always use flameproof decorations. Keep an eye on fireplace, candles, table appliances. When the party's over, empty ashtrays, check furniture, wastebaskets, everything to be sure no smoldering tobacco can cause fire later on.

## 4th of July

If fireworks are illegal where you live, don't have them. Where fireworks are legal, use extreme caution. Keep them away from buildings and other people. Don't let little children handle matches or fireworks alone.

## Halloween

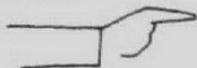
It's dangerous for children to carry candle-lighted jack-o-lanterns. Be sure children's costumes are flameproof.

## Christmas

Set the tree in water (if possible), and don't keep it up too long! Use non-combustible decorations. Check tree lights for breaks in cords, plugs, and connections. Arrange lights so they are not touching tree needles, decorations, walls, curtains. Turn off tree lights when leaving home. Be extra careful in the use of candles. Never use candles on the tree. Keep electric window candles away from curtains. Use only correct electrical equipment for outdoor decorating. Put Christmas wrappings and trash in rubbish cans and get rid of it as quickly as possible. Store Christmas decorations away from heat sources.



-- but the **BEST WAY**  
to put out a fire is  
**NOT TO HAVE ONE!**



## Be alert! Avoid false alarms



The little round gadget that Ron Rinfret of the Safety Office and Ann Levy from the Astrogram Office are pointing to in the photograph above is a smoke detector. Several have been installed in various Ames buildings during the past two years. They respond to visible and invisible products of combustion. So far at Ames, they have been set off by the by-products of welding, exhaust from trucks, a pipe-smoker on a ladder, and extreme changes in air flow.

To avoid false-alarms employees should avoid activities in the vicinity of the detectors which might set them off. Where necessary it is possible to regulate the sensitivity of the detector, or another type can be installed. For further information contact the Safety Office at extension 5602.

**DID YOU KNOW--** there are 1500 fires  
in U.S. HOMES every day?

Be prepared -- **KNOW WHAT TO DO!**

**HAVE AN ESCAPE PLAN**  
--and the whole family should know about it!

## If trapped...

If trapped, *don't jump* unless absolutely necessary. Help usually is on the way. So close door, open window *slightly* at top and bottom for vent, breathing -- then WAIT.

## In public places

Upon entering, look for fire escape and alternate route.

If fire, avoid panic rush.

## Escape rules

Get close to floor (less heat).

Take short breaths -- and cover face with wet cloth.

Keep out of excessive heat, smoke. Feel doors -- if hot, don't open.

Never leave doors, windows open. This spreads fire.

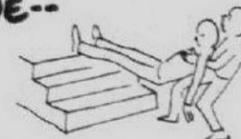
Have an outside gathering point. Is everyone out?

Don't re-enter burning building except to save a life.

## TO RESCUE--



For an unconscious person -- tie hands, slip over neck and drag -- like above.



On stairs -- hold under arms, slowly back down stairs.

Know what each extinguisher contains and you'll know when to use the right one. Here are the MOST EFFECTIVE COMMON TYPES:

- PRESSURIZED WATER – operates usually by squeezing handle or trigger – read instruction labels (contains WATER, or water with anti-freeze chemical).
- PUMP TANK – operates by pumping handle (contains WATER, or water with anti-freeze chemical).
- SODA-ACID – operates by turning extinguisher upside down. Has handle on bottom for inverting (contains WATER, soda nuxtyrem acid mixture, acid-no anti-freeze).
- DRY CHEMICAL-MULTI-PURPOSE – operate by squeezing handle or trigger – read label (contains a POWDER commonly designated "A, B, C").

Put out a Class "A" fire by LOWERING ITS TEMPERATURE using a water or water based extinguisher – wet fire to cool – soak to stop smoldering ... or BY COATING the burning combustibles with "multi-purpose" dry chemical.

- CARBON DIOXIDE (CO2) – operates usually by squeezing handle; or LIQUEFIED GAS (sometimes known as Halon 1301-bromotrifluoromethane).
- DRY CHEMICAL – operates usually by squeezing handle or trigger – see instruction label (contains one of two general types of POWDER not to be mixed; one is for Class B, C fires; one for Class A, B, C fires). May be Foam-Compatible.
- FOAM – operates by turning extinguisher upside down (contains WATER and ingredient to make a smothering foam).

Put out a Class "B" fire by "SMOTHERING" it. Use extinguisher giving a blanketing, flame-interrupting effect – cover whole flaming liquid surface.

- NON-CONDUCTING EXTINGUISHING AGENT – such as
- CARBON DIOXIDE (CO<sub>2</sub>)
  - DRY CHEMICAL (B-C TYPE)
  - DRY CHEMICAL (MULTI-PURPOSE)
  - LIQUEFIED GAS

Do Not Use Soda-Acid, Foam or other Water-Type extinguishers until electric power been Shut Off.

When live electrical equipment (Class "C" fire) is involved ALWAYS use a NON-CONDUCTING extinguishing agent to prevent receiving an electric shock! Shut off power as quickly as possible.

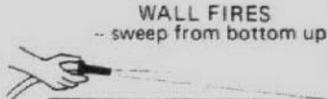
Special DRY POWDER EXTINGUISHERS. Some are available in drums or pails and are applied by Scoops and Hand Shovels and others in pressure or cartridge pressurized PORTABLE or WHEELED EXTINGUISHERS.

Certain metals in finely divided forms (new Class "D" fire) require SPECIALLY designed extinguishing agent to provide SMOTHERING BLANKET or COATING.

## HOW TO FIGHT SMALL FIRES--

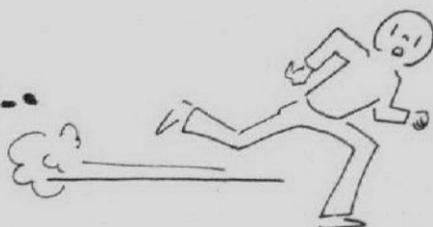
- 1 Make sure everyone GETS OUT
  - 2 Call the fire department AT ONCE
- then if fire is still small--FIGHT IT!
- 3 Keep NEAR DOOR so you can escape
  - 4 STAY LOW--out of heat, smoke
  - 5 Aim water stream at base of fire
- 

FLOOR FIRES  
-- sweep from edge in



WALL FIRES  
-- sweep from bottom up
- 6 Stay OUTSIDE closets, small attics, etc., and shoot stream in
  - 7 Ventilate only AFTER fire is out

**BUT--**  
if fire gets **LARGE--**  
**GET OUT!**  
(And close all doors behind you.)



## KNOW YOUR FIRST AID

fast action can often save a life

### BURNS and SCALDS

**SLIGHT**  
(small, on surface, reddening skin)

use cold water treatment

**SERIOUS**

(large or deep, blistering or charring)  
-- Call doctor.

Remove clothes, cut around sticking cloth. Don't clean. Cover loosely with clean, dry dressing. Treat for SHOCK. Never use iodine, cotton, grease, oil on burns.



### OVERCOME

--by smoke, gas (dizzy or unconscious, violent coughing, irregular breathing, ringing ears, seeing spots)



- 1 get in fresh, warm air
- 2 lay person down
- 3 if victim not breathing, give artificial respiration
- 4 call fire department for oxygen
- 5 call doctor; treat for SHOCK.

### SHOCK

... a severe upset to nervous system (pale, cold sweat, clammy skin, irregular breathing, listless)

- 1 LAY PERSON DOWN -- raise hips, legs -- loosen clothes
- 2 KEEP WARM -- wrap blankets under and over, but don't overheat -- get doctor



## and IN CASE OF FIRE--

**FIRST--**Collect your wits--KEEP CALM  
Quickly size up the situation

**THEN--**Get the family to safety

**AND** call the fire department--

### NUMBER?

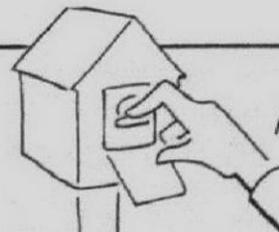
- learn it now
- teach it to your family
- post it near phone

OR tell operator, "I want to report a fire."



When calling:

- speak slowly and plainly
- give address
- tell extent of fire
- then wait for any questions!



A sure way to get help--  
**FIRE ALARM BOX**  
(street or building)

- Know where the closest one is and how to operate
- 1 open door (or break glass)
  - 2 operate lever
  - 3 stay--direct firemen.



# the astrogram

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## AMRDL Director Paul F. Yaggy retires

Paul F. Yaggy, Director of the U. S. Army Air Mobility Research and Development Laboratory, AMRDL here at Ames has retired from the Federal Service after more than 31 years of continuous service. He leaves his position as Director of the Laboratory on September 28.

Yaggy, named the first Director of AMRDL when it was established in 1970, was a key figure in the development of the organization which featured a unique interagency relationship of three of its four Directorates with the NASA's research centers. This close association between the Army and NASA has produced multiple benefits to both agencies, including reduced research costs, an exchange of aviation technical expertise useful to both agencies, increased contributions to national security and a better understanding of the problems, and their possible solutions, faced by the Army and NASA in research efforts common to both.

No stranger to Army aviation research programs, Yaggy in 1965, was named Technical Director of the then newly organized Army Aeronautical Research Laboratory at Ames and became its Director three years later. This Laboratory marked the initial step in bringing together the Army and NASA for joint participation in research... a step that paved the way for the birth of the Army Air Mobility R&D Laboratory Headquarters at Ames Research Center and its fourth Directorate located at Fort Eustis, Virginia.

Prior to his Army association Yaggy had 20 years of experience as a research engineer and scientist with the NASA/Ames Research Center, and its predecessor organization, the Ames Aeronautical Laboratory of the National Advisory Committee for Aeronautics (NACA).

Yaggy's association with NACA (now NASA) began in 1944 when he was

(Continued on Page 2)



## Cosmonauts train at JSC

Soviet cosmonauts assigned to next summer's joint space mission with the United States arrived in Houston last month for three weeks of training at the Johnson Space Center. On the same day, a large delegation of U.S. engineers and specialists reached Moscow to take part in technical and management meetings on the Apollo-Soyuz Test Project.

The eight cosmonauts are prime crewmen Aleksey A. Leonov and Valeriy N. Kubasov and backup crewmen Anatoliy V. Filipchenko, Nikolay N. Rukavishnikov, Vladimir A. Dzhanibekov, Boris D. Andreyev, Yuriy V. Romanenko and Aleksandr S. Ivanchenkov. They are accompanied by six specialists and a ninth cosmonaut, Major General Vladimir A. Shatalov, Chief of Cosmonaut Training for the U.S.S.R.

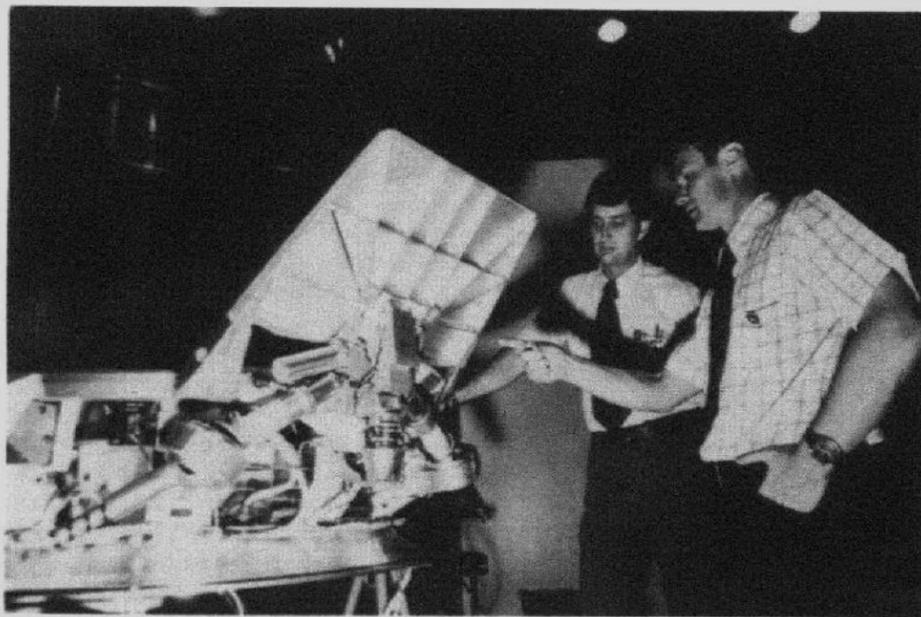
Major Shatalov discussed the recent Soyuz 15 mission. He emphasized that

the docking mechanism used on this mission was in no way related to the joint equipment that will be used on ASTP.

The joint training with American astronauts will end September 27. It will include flight simulations, procedures training in Apollo and docking module mockups, communications training and study of spacecraft systems.

U.S. astronauts assigned to ASTP completed a 3-week training period in the Soviet Union last July 12. Joint crew training is planned again in both countries next spring. Prime crewmen for the U.S. are astronauts Thomas P. Stafford, Vance D. Brand and Donald K. Slayton.

Dr. Glynn S. Lunney, U.S. Technical Director for ASTP, headed a 47-member group that arrived in Moscow for a 2-week stay. Thirty U.S. engineers and technicians presently are completing a 3-week visit to Moscow.



ASTP DOCKING TEST - Robert White (on left) and Vladimir Syromyatnikov look over a Soyuz spacecraft docking system prior to an Apollo-Soyuz Test Project docking mechanism fitness test conducted in Building 13 at the Johnson Space Center. White is the American chairman of ASTP Working Group No. 3, and Syromyatnikov is his Soviet counterpart. This working group is concerned with ASTP docking problems and procedures.

## George Lee heads '74 CFC campaign

George Lee has been appointed chairman of Ames' 1974 Combined Federal Campaign by Center Director Dr. Hans Mark. Lee reminds all employees that, "More than ever, during these days of high inflation, the CFC needs your help. In the past, we have been increasing our gifts at a rate of approximately 7% per year. This year, I think we should try for a 10% increase. In dollars this would mean an average increase of \$3.40. Another goal for this year is 100 percent participation."

## Annual awards ceremony Oct. 25

The annual Honorary Awards Ceremony for Ames employees will be held in the auditorium on Friday, October 25, starting at 2:30 p.m.

A special invitation is extended to all retired Ames employees to attend this annual event.

The program will include an address by the Director, Dr. Hans Mark, and the presentation of NASA Length of Service Certificates and emblems to approximately 160 Center employees who will be honored for 20, 25, 30 and 35 years of Federal service.

## Hermilo Gloria named to new post

by Ann Levy, Student,  
Monta Vista High School



Hermilo ("Hermi") R. Gloria has recently been reassigned to the Personnel Division and will now serve as a Minority Recruiting Coordinator and Advisor. Hermi has been employed at Ames for 25 years.

Hermi acts as an interface between Personnel and the Equal Employment Office at the Center and with NASA Headquarters. His primary goal is to increase the minority population at Ames and achieve equal employment opportunity. This is the goal of all NASA Centers.

In his new capacity Hermi will recruit people from all over the United States. He is mainly looking for professionals, but he is also trying to find candidates for technical and non-professional positions.

Hermi's job is mainly concerned with women and minorities. Eighteen percent of all Ames employees are women; only eleven percent of all employees are minorities; and a large number are in low grade jobs.

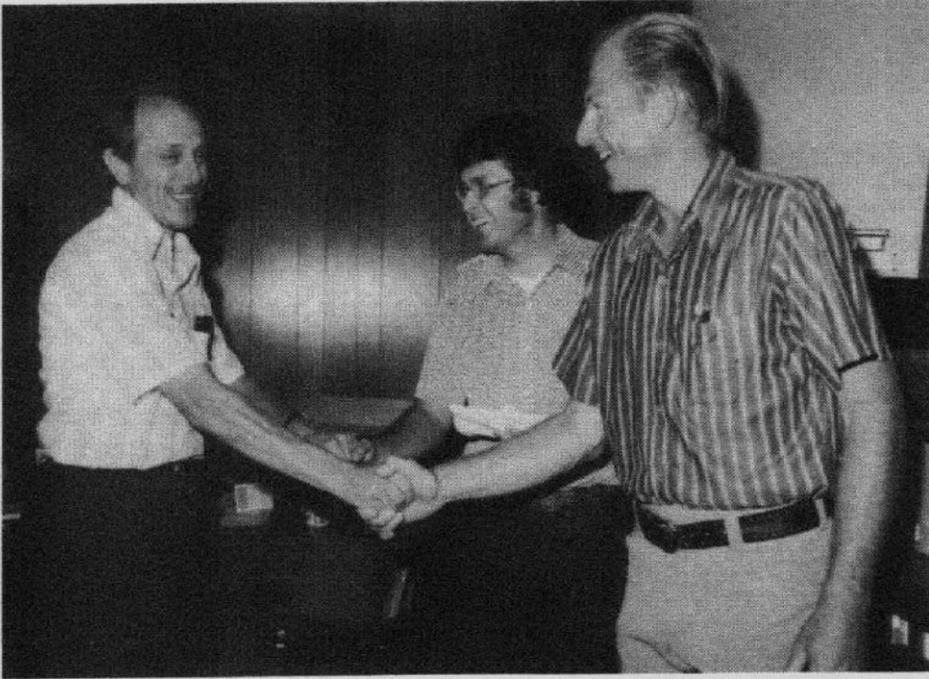
He doesn't believe that the number of minorities and women at Ames are going to increase substantially for a while. In fact, he projects that it will probably be five years before things even start to reach some degree of parity with community population profiles. Ames has the best record of hiring and attitude towards the women and minorities but it still isn't as good as it could be, and that's what Mr. Gloria is here for.

The three major problems of discrimination are race, sex, and age. EEO is working on the first two now, and the third is going to be the next major problem. As a general rule, people over forty are passed over in hiring in favor of the younger personnel.

(Continued on Page 2)

GALILEO II is back at Ames after a 3 month mission (Story on Page 3)

## Hedlund sets world records



Ted Brown (middle) of Research Facilities Engineering Branch and Roger Hedlund of Electronic Instrument Development Branch (RFD) receive congratulations from branch chief (RFD) Boris Ragent (left) on the record success of their "Battery Box" electric car.

Roger Hedlund, after spending the last 2-1/2 years of free time building an electric car, recently set four world and national speed records on the Bonneville Salt Flats in his "Battery Box." His top speed was 175 mph.

Hedlund entered his 1900 pound special purpose car in the amateur "Speed Week" event the last part of August. The competition during the week included 225 cars and was sponsored by the Federation of International Automobiles. There was only one other electric car in competition at the salt flats though there were two electric motorcycles. One of the motorcycles' top speed was 165 mph.

Ted Brown, also an Ames employee, served as Hedlund's crew for the one week meet. Brown has also spent many hours working on the "Battery Box" electric car along with owner Roger Hedlund.

The 1900 pound automobile carries 1200 pounds of batteries, runs on 28 lead acid batteries and one fork lift type motor. It performed surprisingly well on the very long straight and smooth salt flats of Utah.

Hedlund has been interested in electric cars for the past five years. He belongs to the Electric Auto Association and does his own race car driving. An electronics engineer at Ames for the past 12 years, Hedlund says he has no further future plans in electric car racing. Brown has been a mechanical engineer at the Center for six years and has thoroughly enjoyed "crewing" for the "Battery Box." And Hedlund welcomed Brown's help. As he put it jokingly, "If anything mechanical went wrong I just blamed it on Ted! Actually, at the meet only one battery broke, so I can safely say he (we) did a good job!"

## Propulsion conference participants

The following Ames staff members will participate in the AIAA/SAE 10th Propulsion Conference to be held October 21-23, 1974, in San Diego:

Warren Anderson (Aerodynamics Branch) will be chairman of the "Air Breathing Propulsion: Inlet Design and Development" session on October 21.

Thomas N. Aiken, Kiyoshi Aoyagi, and David G. Koenig (all of the Large-Scale Aerodynamics Branch) and Michael D. Falarski (U. S. Army Air Mobility R&D Laboratory) will present "Comparison of the Acoustic Characteristics of Large-Scale Models of Several Propulsive-Life Concepts" in the "Air Breathing Propulsion: General Technology" session on October 21.

Daniel C. Dugan (Flight Operations Branch) will be co-presenter of a paper entitled "A Feasibility Study of Developing Toroidal Tanks for a Spinning Spacecraft" in the session "Fluid Rockets: Advanced Concepts in Propellant Expulsion" on October 22.

Norman E. Sorenson, Eldon A. Latham, and Donald B. Smeltzer (all of the Aerodynamics Branch) will present "Variable Geometry for Supersonic Mixed-Compression Inlets" during the session "Air Breathing Propulsion: Analysis and Integration Technology" on October 23.

John Wheatley (Army Air Mobility Research and Development Laboratory) will chair the session "Air Breathing Propulsion: Small Engine Technology" on October 23.

## The saver's edge.



Take stock in America.  
Buy U.S. Savings Bonds.

## Earthquake prediction techniques studied

Radio signals from outside our galaxy will soon be used to detect almost imperceptible movements in the Earth's crust that may lead to the accurate prediction of earthquakes.

A team of scientists and engineers at the Jet Propulsion Laboratory, aided by a geophysicist at Caltech's Seismological Laboratory, is developing an Earth-fault monitoring system which combines experience gained from spacecraft navigation with current radio astronomy and geophysical research.

A 9-meter (30-foot) antenna at JPL is the principal instrument in the earthquake research concept called ARIES — for Astronomical Radio Interferometric Earth Surveying.

By summer's end, a sensitive radio receiver, linked to the antenna, was listening to signals from quasars as far away as a billion light years. Listening to the same radio source will be one of the space communications stations of the NASA/JPL Deep Space Network at Goldstone.

Pete MacDoran, head of the JPL team, said the key to the ARIES project, is the capability of measuring the difference in arrival times of identical quasar radio signals at the two antennas, located about 200 kilometers (125 miles) apart.

Over the past three years ARIES techniques, based on instruments originally designed for space exploration, have been developed to produce time difference measurements to a precision of about one-tenth of a billionth of a second (0.000000001 second). From this type of measurement, the distance between the antennas can be determined in three dimensions, to an accuracy of inches and less.

The initial distance measurement between JPL and Goldstone will establish a reference baseline. Subsequent measurements will indicate any change in the distance between the two antennas that might be caused by shifts in the Earth's crust adjacent to fault zones. A straight line between Pasadena and Goldstone intersects the great San Andreas Fault, the main channel of the Earth fracture system in California and source of the state's most devastating earthquakes.

## Hermilo Gloria

(Continued from Page 1)

Two of the main problems that Hermi encounters in his job are 1) increasing minority staff during a time when there is a slowing down of job opportunities, and 2) stereotyped opinions towards the minorities and women; i.e., there are too many who think that "a women's place is in the home," and that the minorities are not qualified.

Mr. Gloria is using university and community contacts to let people know about the opportunities at NASA. He says that the types of jobs open are limited only by the abilities and qualifications of the person.

Good luck to Hermi in his new job!

## Yaggy retires

(Continued from Page 1)

assigned to Ames with a special U. S. Navy detachment. He participated in wind tunnel research on various World War II aircraft at high subsonic speeds. Following his release from the Navy he returned to NACA where he held a succession of engineering positions as a civilian employee.

Recalled to active duty in 1951 with the outbreak of the Korean War, Yaggy supervised maintenance of a squadron of Anti-Submarine Warfare aircraft (VS 871).

Again returning to NACA in November 1952 after his discharge from the Navy Yaggy became a research scientist and attained national recognition in the specific phases of V/STOL aircraft related to rotors, propellers, and ducted fans in addition to serving as a consultant to industry, the Armed Forces and other NACA Centers. Following the redesignation of the NACA to Ames Research Center, NASA Yaggy's responsibilities were expanded to include research on recovery systems for spacecraft and lifting body reentry vehicles.

Yaggy is an Associate Fellow of the American Institute of Aeronautics and Astronautics and has served on the Technical Committees of the Institute of Aeronautics and Astronautics, the Society of Automotive Engineers and the American Helicopter Society. He serves on the Board of Directors of the American Helicopter Society as a Director-at-Large, and received the Society's highest award in 1973, the Dr. Alexander Klemin Award presented for "notable achievement in the advancement of rotary-wing aeronautics."

Yaggy was educated at Taylor University, Upland, Ind., the University of Notre Dame, South Bend, Ind., and San Jose State College, where he was graduated with distinction (honors in engineering) with a BSEE. He has pursued graduate studies at Stanford University.

## Farwell and thanks from AMRDL Director

Mr. and Mrs. Paul Yaggy wish to express their appreciation to all who participated in the recent retirement dinner given in their honor. The many remembrances and mementos will serve as fond reminders of many years of close associations and valued friendships.

Paul F. Yaggy

## Disability retirement taxes change

Following a series of court decisions, the Internal Revenue Service has announced that employees who retire under the disability provision of the Civil Service Retirement Law may claim a sick pay exclusion of up to \$100 per week (\$5200 per year) from gross income until they reach mandatory retirement age which is 70.

However, according to Personnel, this provision may be short-lived, as Congress is currently considering legislation that would eliminate all disability annuities as sick pay exclusions.

## Galileo II home after 3 months in Africa

After a three-month absence, Galileo II, Ames' globe trotting research aircraft, is parked once again at the Ames hangar.

Galileo II left Ames on Sunday morning, June 23, for Dakar, Senegal, Africa, to participate in the most intensive meteorological scientific expedition ever attempted. Called GATE (Global Atmospheric Research Program Atlantic Tropical Experiment), and sponsored by the World Meteorological Organization of the United Nations, the 101-day study combined the efforts of 13 research aircraft from four nations, 38 ships from ten nations, satellites from the U.S. and Russia and countless scientific and technical personnel from all over the world.

Purpose of the experiment was to gather data necessary to understand the tropical atmosphere and its effect on global weather patterns. A long range result, it is hoped, will be the knowledge to enable meteorologists to accurately forecast weather weeks in advance for any spot on the globe.

Galileo II chalked up more than 260 flight hours during the three-month trip, far more than on any previous expedition by Ames aircraft. Flight hours don't tell the whole story, however, as each hour in the air meant many hours of hard work by ground crews in the blistering heat of tropical Africa.

A tremendous amount of data was gathered by the ships, planes and ground stations assembled for the investigation. GATE scientists were freely predicting that years of study would be required for complete understanding of the knowledge gained, but that the final results will be priceless.

The return trip from Dakar was made by way of Amsterdam, Holland, where officials of the European Space Research Organization (ESRO) were introduced to Galileo II. ESRO is developing the Spacelab module for Space Shuttle missions in the 1980's.

Next May the Ames ASSESS (Airborne Science Spacelab Experiment System Simulation) program will conduct a joint US/European mission to simulate an actual five-day Spacelab mission. That effort will involve three US and three European experiments, and experiment operators will live aboard the CV 990 for the five day period making daily scientific flights. All spares and equipment for the full period will have to be aboard the aircraft from the beginning of the experiment, just as it would be in an actual space mission.

The visit of the CV 990 to Amsterdam coincided with a NASA-ESRO Spacelab meeting and an ESRO Spacelab experimenters meeting. Douglas Lord, NASA Spacelab Program Manager, headed up the NASA group at the meeting, which was also attended by Don Mulholland, Chief of the Ames Airborne Science Office, and Earl Petersen, Ames 990 Mission Manager for the GATE project.

Spacelab officials are deeply interested in Galileo II because operation of the research aircraft (the concept of a platform for mounting of scientific

experiments with common sub-systems such as power, communications, data acquisition system, environmental controls, etc., furnished as part of the facility) has much in common with the projected operation of the Spacelab.

On Friday, September 27, a briefing was held for the European press, followed by a tour of the aircraft.

The aircraft arrived at Ames on Sunday, after stops in Shannon, Ireland, and Bangor, Maine. The Galileo II crew was greeted by Center Director Dr. Hans Mark and the Director of Astronautics, Dr. Dean R. Chapman. Both commended "all members of the Ames staff and contract personnel who have participated in the very successful mission." They added that, "Under the leadership of Earl V. Petersen, Program Manager, the Galileo II maintained an exceptionally high operational efficiency, and has met more than the planned commitments of the mission." George M. Low, Deputy Administrator, NASA Headquarters, added his commendations to all concerned with a letter of recognition also.

The people involved are as follows:

Donald L. Anderson  
Gaylord M. Androes  
Dale R. Annesley  
John C. Arvesen  
Carl H. Berg  
Donald R. Burris  
Lester Collins  
Stewart A. Colpitts  
Peter E. Croft  
Robert A. Cullum  
Richard W. Cutts  
Fred J. Drinkwater  
Gary E. Gibson  
Clinton D. Hancock  
Glen H. Harner  
Louis C. Haughney  
Richard C. Hunnicutt  
Robert C. Innis  
Donna D. Johnson  
Calvin P. Kahl  
Lauren D. King  
Ronald A. Kisro  
John W. Kroupa  
Sharone C. Lathrop  
Robert W. Legg  
Frank Matamoras  
Charles E. Mattraw  
Douglas J. McKinnon  
Stanley A. Miller  
Edward C. Mitz  
Robert B. Morrison  
Curtis L. Muehl  
Donald R. Mulholland  
Robert M. Munoz  
George Olczak  
Earl V. Petersen  
Bernardo G. Pongeggi  
Charles S. Ritchie  
Mitchel Saadi  
Frank M. Schroeder  
Charles T. Schultz  
Curtis C. Schuppe  
Glen J. Slike  
Glen W. Stinnett  
Ann M. Teshima  
Cleo B. Wagoner  
Richard J. Watson  
Donald L. Wilson  
Peter V. Wolfe  
Mary Zimmer



Don Mulholland, Chief of the Ames Airborne Science Office, shows Dr. J. P. Kuettnner through the Galileo II aircraft at Dakar. Dr. Kuettnner is director of the GATE Project.



Typing a log of mission events and observations is Ann Teshima of the Airborne Science Office. Peter Croft of Informatics Inc., maintained the complex data acquisition information installed on Galileo II.



Dr. Pete Kuhn, scientist with NOAA, operates infrared sensors which observe atmospheric heating and cooling. Dr. Kuhn has been a CV 990 experimenter for many years and has flown on nearly all of the previous Ames expeditions.

## Can't afford to commute by car? Join the Ames bus pool

Did you know that operating any mid-sized, full-size, or sub-compact car this year will cost you literally thousands of dollars? According to a study performed by Hertz Car Leasing Division published in the S.F. Examiner and Chronicle, Sept. 15, 1974, the cost of operating an average car will exceed the purchase price of a new model in less than two years. In other words, the additional cost of driving it for a year can run from \$2,000 to more than \$4,000.

The study said a typical late-model mid-size car driven 10,000 miles a year and kept for three years will cost 24 cents a mile to operate.

Operating expenses include gasoline, oil, service, parts, repairs, licenses and insurance costs, interest and depreciation rates, but not garage rent or road toll fees.

The study also said operating costs increase if a motorist keeps his car for less than three years. Per-mile costs increase an average half cent if the car is kept two years and increase one cent if the model is traded in after only one year.

Hertz said its cost calculations set gasoline prices at an average 55 cents a gallon, with a \$4,250 mid-size car averaging 14 miles a gallon. Full-size models were given average fuel economy ratings of 10 miles a gallon and subcompacts were rated at 18 miles a gallon.

License and insurance expenses for an intermediate driven 10,000 miles a year, which Hertz said is the national average for annual car mileage, were computed at 4 cents a mile.

Parts and service were computed at 2 cents a mile, gas and oil at 5 cents and

depreciation at 10 cents, based on a monthly depreciation rate of 2-1/4 percent a month over a three-year period.

The Internal Revenue Service recently began allowing traveling businessmen to deduct 15 cents a mile for car operating expenses up to 15,000 miles a year and 10 cents per mile for all mileage over that.

But IRS tells taxpayers that if higher costs can be documented, a larger deduction can be claimed for business-related travel.

So ride the Ames bus pool. It has been very successful so far but there are a few seats that have not been filled and it can take a few more riders. Bus tickets may be purchased in books of 22 round trips for \$22. A book of trips is good for six weeks which is 30 working days. A book of trips may be purchased any time during the month.

**PICK UP POINTS!** Start 7:20 a.m.

- 1) Westgate Shopping Center (Saratoga Ave. and Prospect)
- 2) Prospect and Provincetown
- 3) Prospect and Saratoga-Sunnyvale Rd.
- 4) Rainbow and Stelling
- 5) McClellan and Stelling
- 6) Stevens Creek and Mary

Closed door into Ames; 3 stops at the center.

Leaves Ames (tentatively) 4:40 p.m.

If you are interested and wish more information concerning the bus pool (and purchase of tickets), please call Don Frolich at ext. 6026.

Come out and support your friendly neighborhood bus system.

## Speakers Bureau

During the time that they are at Ames, students in the Ames/Foothill Work Engagement Program attend seminars presented by Ames scientists and engineers on a variety of the research activities at Ames. During this winter academic quarter, the students will hear the following seminars, arranged by Rich Lenhart, Instructor/Coordinator for the program: Palmer Dyal (Astrophysics Branch), "Lunar Magnetism" October 2; Harold Hornby (Special Studies Office), "World Values and Energy," October 10; S. N. Stein, M.D. (Guest Scientist), "Moons, Money, and Medicine," October 18; Donald Gault (Planetary Science and Applications Branch), "Planet Mercury through the Eyes of Mariner 10," October 21; Barry Feldscher (student participant in the Work Engagement Program), "Revival of the Rigid Airships and its Environmental Benefits," October 29; Earl Peterson (Airborne Science Office), "The International Tropical Experiment 'Gate' - Global Meteorological Project," November 6; and Richard Fimmel (Project Pioneer), "Pioneer 11: Jupiter's Second Encounter," November 19.

Richard Fimmel (Pioneer Project) spoke to the Los Altos Rotary Club at its noon meeting on September 18. He discussed the Pioneer 10 and 11 missions, and the Pioneer 10 encounter with Jupiter.

John "Jack" Dyer (Pioneer Project) presented an invited seminar for the Department of Chemistry of San Francisco State University on September 27. Jack discussed the Pioneer 10 and 11 missions.

Edwin Erickson (Astrophysics Branch) was the guest lecturer for the Physical Sciences Laboratory Colloquium sponsored by the Palo Alto Research Laboratory of Lockheed, on September 24. He discussed airborne infrared astronomy, observations of Venus, and the Orion nebula.

Ed Van Vleck (Systems Studies Division) was the speaker at the September 19 meeting of the Armed Forces Communications and Electronics Association at the Presidio. The title of Ed's presentation was "Project Cyclops: The Search for Extraterrestrial Intelligence."

## Photography Club

Members as well as interested NASA employees and contractors are reminded that the Ames Photography Club is well underway into its new year of programs. At the last meeting, James R. Burke, who has a portrait studio in Los Altos, provided an entertaining and informative program on available-light portrait photography. A competition with a theme on this subject is to be held at the next regular meeting of the club on Wednesday, October 30 (Conf. Rm., Bldg. 245 at 4:30 P.M.). The club is also planning a field trip for Saturday, November 3. Further details will be forthcoming.

## Volunteers needed

Founded to aid the families of men and women in our county and state prisons, Friends Outside has tried to provide the children in these families with "volunteer friends" for a number of years.

These children live in homes in many cases no more than 20 minutes from your own, yet they come from a world of tragically limited horizons. They are children without a future - unless they receive help from the outside, and in particular with a tutor. Please help by tutoring a child and help them stay in school.

Our tutors volunteer 2 hours a week; big brothers and sisters 4 to 6 hours.

If you are interested in becoming involved, please contact Jerry Malcolm, x 6396, or

David Gibson, Youth Director  
Friends Outside  
712 Elm Street  
San Jose, California 95126  
Tel: 295-6033

## Basketball

Anyone interested in playing basketball for the Ames Industrial League team should contact Paul Kutler at Ext. 6417.

## WANT ADS Transportation

FOR SALE: '73 El Camino, 350 cu. in. AC/Radio/Heater PS/PB, very low mileage 16K, front end shock bumpers, \$2950. Call 926-4673

'74 HONDA CB550. Bates Fairing. Crash bars. 2,500 miles. Like brand new. \$1450. Sherwood, Ext. 5287.

HONDA 100 motorcycle. Excellent condition; over 90 mpg. \$350 Call 736-8547.

## Miscellaneous

Kimball Pump Organ, Oak, 11 Stops, 6 Octaves, 50" tall, 23" deep, 48" long. \$300 or offer. Call 941-4726 after 3 p.m.

Wrought Iron Railing - 3 or 4 step hand rail, 30" high x 3-1/2 ft long. \$25, telephone 259-6069.

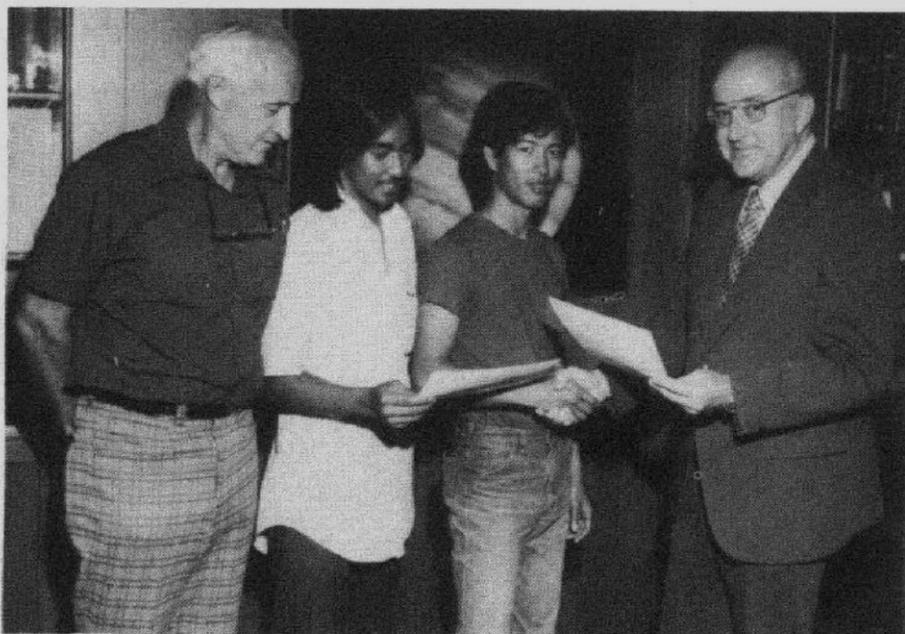
Needed - Ride to Lockheed. Area of Mathilda and Lockheed Way. Will pay. 4:00 - 4:15 PM. Call Larry Groves 245-1767.

I am in need of transportation to and from work. My address is 2231 Nobili Ave. Santa Clara - close to Hwy 101. Working hours 7-3:30. Phone: Res. 244-9066; Work 965-6397.

FOR SALE: Organ, Hammond, Model F-100, Apt. Size, Excellent tone and finish. \$350. Call Don Goodsell 732-8620.

Bushnell Binoculars 7x35 Wide angle: \$30. Call 245-2881.

## Work experience students receive certificates



Work experience students Renato Bigornia and Arturo Dalisay (center, left and right respectively) from the Foothill Community College District, receive a Certification of Completion in Machine Technology (Phase I) from Ames Deputy Director C. A. Syvertson (right). The class, given at Ames, is part of the Foothill De Anza Community College District program which Andy Bogart (left) oversees and coordinates.

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

## Ames CFC reps visit local agencies

by Ann Levy  
Monfa Vista High School

### Children's Home Society

Last week a few Ames CFC representatives toured three institutions funded by the CFC. They were the Children's Home Society, the Goodwill, and the Hope foundation, all located in San Jose.

The Children's Home Society is one of the many organizations aided by the United Fund. It is a private non-profit organization that provides services to children and parents. The 4 things that this agency does are: 1) adoptions; 2) foster care; 3) pregnancy counseling; and 4) parent/child counseling. The main sources of funds are: The United Fund, parents adoption fees (up to 7 percent of parents gross annual income), and trusts and wills.

So far this year the Children's Home Society (CHS) has placed 75 children in homes (adoptions), plus 30 more inter-country adoptions. They are cutting down the time it takes to get children from 2 years to as little as 4 or 5 months old placed in homes.

Philosophically, the CHS feels that children need to be in families, not institutions, and the scene of children waiting to be adopted living in institutional surroundings is no longer in existence. Therefore, children are placed in foster homes while waiting to be adopted. They may wait there anywhere from 2-3 days to 6 or 7 months until placement. The average waiting time is 6 weeks for babies and a little longer for older children. There is no age limit on children who can be adopted, and theoretically anyone under 18 can be adopted. However, the teens usually don't want to be adopted and are placed in a group setting to wait until they're of age; i.e., 18 years old.

Eighty-five percent of all placements made are babies. The agency has the policy of placing all children from the same family in the same home. This is challenging but can be done quite successfully.

There is no income requirement for couples wishing to adopt a child. The fee is placed on a sliding scale according to income and variable factors. If a couple wants to adopt, they must have a good stable relationship between themselves. No family that can provide a good environment is turned down. The Children's Home Society does not place children in single parent homes, although the County does. Their reason is that there are too many couples waiting.

The Children's Home Society receives referrals through doctors, attor-



Ames employees meet with a representative at the Children's Home Society to learn more about the adoption agency's procedures.

# 1974 Combined Federal Campaign

## Give your fair share



CFC representatives from Ames observe a Goodwill Industry employee crimping electrical terminals that have been brought to the United Fund sponsored agency for assembly on contract.

neys, schools, and by word of mouth. The biggest source is the schools, followed by doctors. The agency is listed in the yellow pages under "Adoptions."

### Goodwill Industries

Though many of us think of Goodwill as being just a place that sells used clothes, furniture, and other commodities, Goodwill is also in the training business. Goodwill Industries trains the

handicapped and the disadvantaged for jobs in private business.

"Clients" are referred to Goodwill through a variety of sources. Sponsoring agencies include the State Department of Rehabilitation, Welfare, Veterans Administration, and private insurance companies.

The clients are interviewed, examined and tested. During intake of clients,

(Continued on Page 2)

## Questions and answers

1. Why should I pledge to the United Fund?

You'll find that the United Way is probably the greatest thing you can do to help people and it's the best way . . . economically and fairly. When you make your Fair Share Pledge remember a lot of people are counting on you.

2. What is meant by Fair Share?

Most people want to give something to help others. The Fair Share idea asks each person to give in proportion to his ability to give. It suggests that what we give should be based on our income level. Those who make more, give more; those who make less, give less. The Fair Share guide suggests what others in your pay level are giving. It's a guide to help you know you are doing your Fair Share.

3. Why do we need a United Fund Program? Doesn't the Government take care of everyone in need with tax dollars?

United Fund agencies help people who do not qualify for government help. And its programs help people in ways that government programs never will. There are so many of the sick and aged, children and adults from every denomination, every walk of life who need personalized care, local treatment and services that government just doesn't make possible. That's why people give. They know that if we work together we are helping people in our community, who really need help.

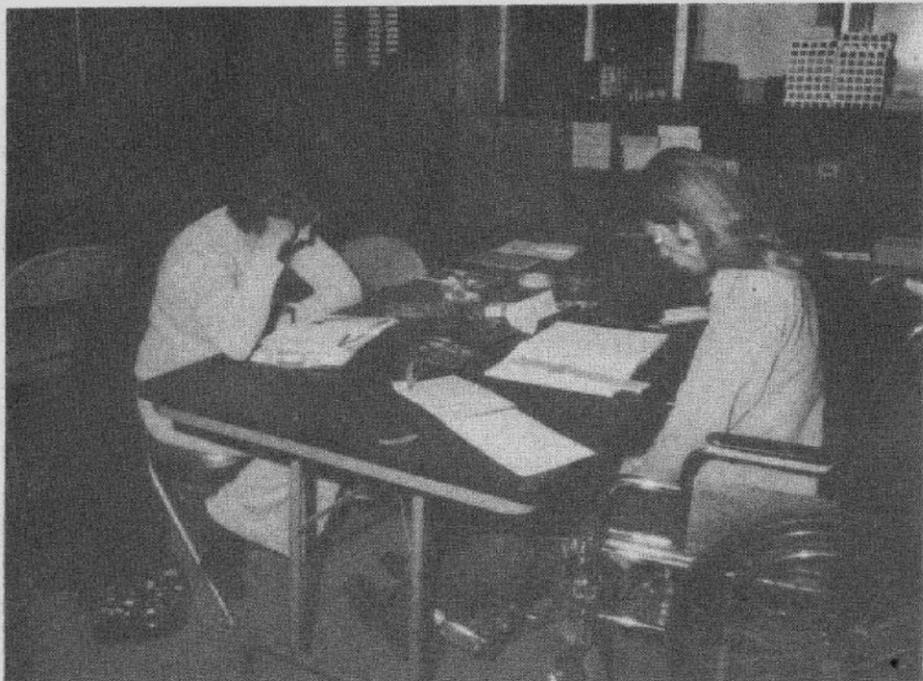
4. How much are United Fund operating costs?

In 1973, campaign expenses amounted to 5.4 cents on the dollar, with year-round administrative costs of 3.0 cents. United Fund costs are the lowest of any community-wide campaign of comparable size on the West Coast. Of course, one of the major reasons for having a United Fund is to reduce the cost of separate fund-raising appeals which often run from 15 to 50 cents on the dollar.

## Exposure Film

Oct. 23rd

"Death by Exposure and Exhaustion" is the title of a film to be shown in the Ames Auditorium at 11:30 a.m. Wednesday, October 23rd. It will discuss hypothermia which is the number one sports killer.



Two handicapped students enrolled in the Goodwill's electronics program study in the agency's classroom.

### Visits (Continued from Page 1)

a program plan is established after discussing available work areas and program goals.

In a real work setting the client's overall potential is evaluated by one or more supervisors. Some clients need additional time to adapt to a work environment and are provided work adjustment services.

The work evaluation and adjustment areas are as follows: clerical, drapery manufacture, power sewing, electronics assembly, furniture shop, janitorial, keypunch, laundry, mattress shop, metal shop, packaging-collating, paint shop, print shop, radio dispatching, recordkeeping, retail sales, small appliances repair, stock-room, shipping and receiving, telephone soliciting, transportation.

Goodwill also has several training courses funded under a Federal Training Services Project Grant. Any Department of Rehabilitation client is eligible for these courses if they show potential for eventual competitive employment. The seven areas are: Bookkeeping (24 week course), Clerical (18), Electronics Assembly (15), Food Services (20), Janitorial/

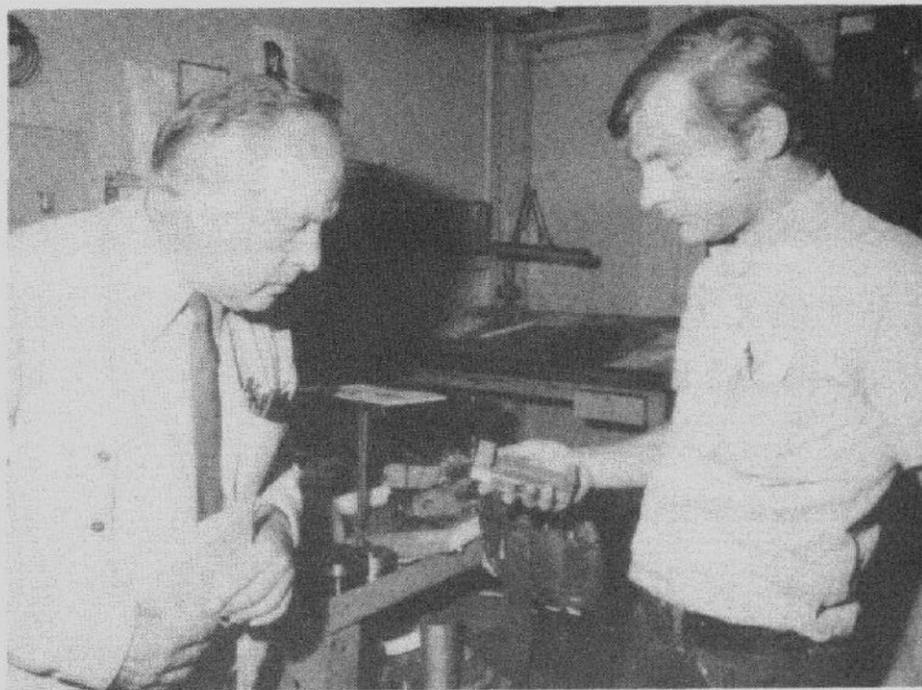
Maid Services (10), Production Machine Operator (12), and Retail Sales (16).

Each instructor works out an individual program for each client. The courses are accredited by the State of California.

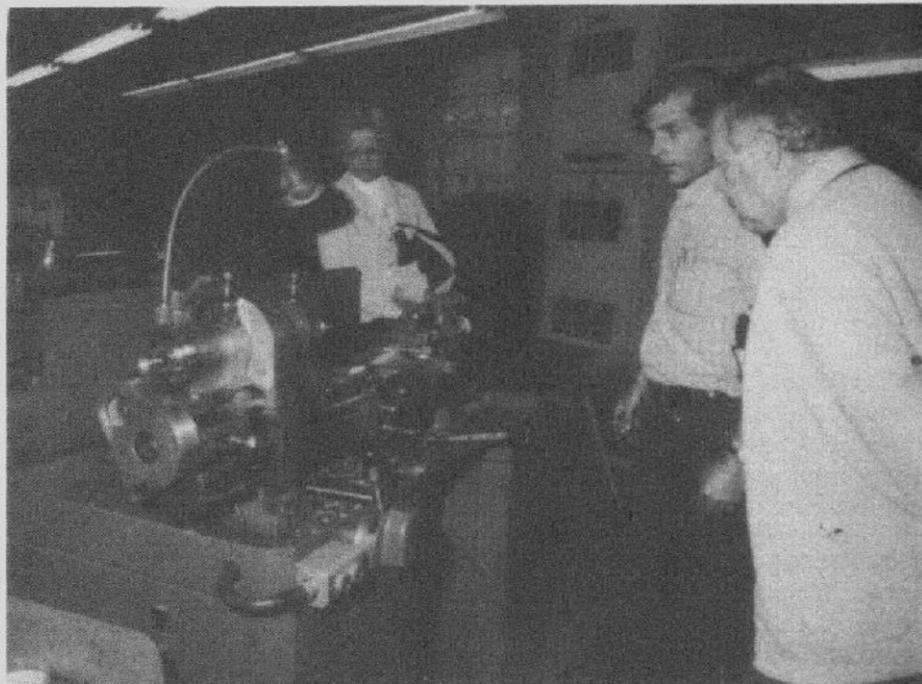
### Hope for Retarded

Hope for Retarded Children and Adults is a non-profit organization serving a broad range of retarded people. Their pre-school program starts as soon as the condition is diagnosed; for example: The two-and-a-half-year-old who is not yet potty trained. At age 3 the children can go in on an everyday basis. The main goal of this pre-school program is to prepare the children for whatever school they will attend. At age 10 an occupational therapist determines where the child stands in relation to the normal 10-year-old.

There are now four Hope workshops in Santa Clara County with plans to open another one in the Gilroy/Morgan Hill area shortly. The people are referred to Hope through the schools and the Department of Rehabilitation. As well as the retarded Hope aids the deaf, the blind and other physically handicapped people.



Art Gobets (left) inspects a product made by the machine tool class at Goodwill Industries. The gentleman with Gobets is the class instructor.



Many of the tools in the machine shop are actually produced and assembled by the trainees in the class. Dell Duke and Art Gobets ask questions of the machine tool instructor about the shop.

### Why we need

The goal for the 1974 Santa Clara County United Fund campaign is \$5 million, the largest goal in the Fund's 15 year history. \$5 million is not so large when measured against the needs of the people of Santa Clara County.

In actual fact, the amount of "new dollars" that the Fund is trying to raise in 1974 is \$500,000 over the amount raised last year and represents an increase of 11.4 percent.

Why do we have to raise \$5 million and what are the needs that have to be met with this money?

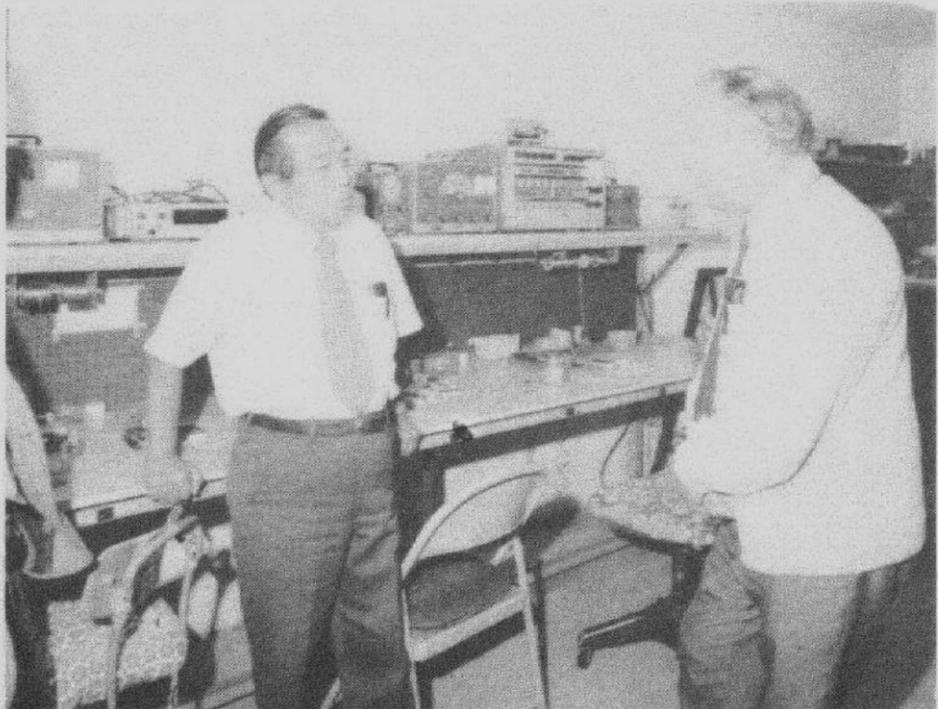
First of all, Fund money and Fund supported agencies have the primary objective of helping thousands of persons from all walks of life who desperately need help that United Fund agencies can provide, such as specialized training and rehabilitation.

Secondly, to help solve the question of how to look after and meet the ever increasing needs of the elderly and senior citizens, day care centers are needed for the old as well as the young. Currently, United Fund supports two such centers in the county while there is an immediate need for many more.

### 1974 CFC Campaign Chairman



George Lee, 1974 CFC Chairman at Ames, wishes to remind all Ames employees that this year's goal at Ames is \$54,000 for the Santa Clara County United Fund. This year's goal is 10% higher than last year's amount which reached \$49,000. One hundred percent participation is desired and a rule to follow to pay 'your fair share' is to contribute one hour's pay per month to the United Fund.



Art Gobets (right) and the Santa Clara County Goodwill Industry's electronics instructor discuss curriculum taught in the course.



## Ames expedition to Hawaii Experimenters fly sounding rocket

Hickam Air Force Base in Hawaii is a temporary home base for one of Ames' high flying Earth Resources Survey Aircraft for a month of scientific missions which began October 1.

Primary mission for the aircraft is to probe the stratosphere 12 miles high to detect the distribution and extent of ozone, nitric oxide, and pollutants south of Hawaii from the equator to about 40 degrees north latitude.

The stratospheric sampling phase of the Hawaii expedition is a part of a semi-global study conducted by Ames to aid a national research program concerned with how these gasses and particles may affect the world's climate over a long period of time. Similar missions covering the higher latitudes and the polar region have been based at Ames and Eielson Air Force Base near Fairbanks, Alaska. These have been the first attempts to make detailed measurements at such altitudes and latitudes.

Three other objectives of the mission are to photograph and scan various locations on Oahu, the island of Hawaii, Maui and possibly Kauai. One study will compare photos of lava flows on the island of Hawaii and Maui with suspected volcanic regions on the Moon, Mars and Mercury.

Another study is to use cameras, an infrared scanner and an ocean color scanner to develop techniques for using remote sensing to help the Hawaii State Department of Planning and Economic Development (DPED) manage land use, water quality, recreation, pollution, erosion, sedimentation, and reef die-back. Kaneohe Bay is the primary area selected for the study with Kauai as a back-up site in case of cloudy weather on Oahu.

If flight time is available, another mission would make photos over the island of Hawaii to aid the Institute of Pacific Islands Forestry, U.S. Department of Agriculture, in their research on Ohia and Mamani trees on the slopes of

Mauna Kea. These trees are dying and the cause is presently unknown.

Photos made by the NASA aircraft are in the public domain and will be available from the U.S. Department of Interior, EROS Data Center, Sioux Falls, South Dakota, about two months after the study is complete.

The cooperative program with the DPED is the result of recent meetings between Richard Kawakami, Chairman of the Committee on Water, Land Use and Development, Hawaii House of

(Continued on Page 2)

### Sea turtles hatched and released at KSC

Human intervention resulted in the release of more than 4,000 newly hatched loggerhead and green turtles into the Atlantic Ocean during a 4-week period ending in early October. The release sites were wild beaches at Kennedy Space Center, which are traditional breeding grounds for giant sea turtles in summer months.

Sponsoring the effort to spare thousands of turtle eggs from almost certain extermination are wildlife experts from the Interior Department's Merritt Island National Wildlife Refuge, which manages non-operational areas of the sprawling spaceport.

Dr. James Baker, wildlife biologist with the refuge, says egg losses can reach 100 percent. The sea turtles, which become giants weighing several hundred pounds at maturity, are imperiled in the egg stage by the encroachment of civilization on their breeding beaches, onslaughts by natural enemies such as raccoons and predatory humans. The U.S. government is now reviewing the status of various sea-turtle populations to determine whether the seagoing reptiles should be placed on an official endangered species list.

In the KSC rescue mission, thousands of eggs (about the size of ping-pong balls) were collected in July from the sand-covered nests of one green turtle and 39 loggerhead turtles along the beaches. Placed in a Fish and Wildlife Service Refuge headquarters building, the eggs were incubated in plastic baskets and began hatching in early September.

September 17, a typical day in the turtle rescue project, saw the release of 72 green turtles and some 500 loggerheads, which had hatched overnight. The tiny animals were taken in containers to a wild beach set against a background of Launch Complex 39 - the springboard for Apollo, Skylab and the Space Shuttle.

(Continued on Page 3)



Ames engineer Tak Matsumoto demonstrates the system that permits an experimenter to fly an Aerobee sounding rocket during its arc above the Earth's atmosphere where equipment aboard can study the sun. Matsumoto, of Systems Development Branch, designed the experimenter flight system. It is used aboard rockets launched from White Sands, N.M., that are controlled by the SPARCS (Solar Pointing Aerobee Rocket Control System) developed by Ames and Lockheed Missiles and Space Co., Sunnyvale.

### Showman and Wash named Tech Assistants to Aeronautics

The Ames Aeronautical Directorate has two newly appointed technical assistants. Bob Showman now holds the Senior Technical Assistant position and Mike Wash has subsequently filled the technical assistant position which Showman vacated. Both men are excited about their new jobs and are looking forward to integrating their technical and administrative expertise in advising and assisting the directorate's operation.

Bob Showman came to Ames from Florida in 1963 as an aeronautical engineer. He had earlier received a Bachelor of Science degree in Aeronautical Engineering from Penn State and had worked as an engineering representative in private industry. Showman was originally drawn to Northern California because he wanted to work for a research organization and to continue his education and obtain his Masters degree. The Bay Area offered a research organization and three excellent universities so Showman relocated, applied for employment at Ames Research Center, and enrolled in the Santa Clara University.

Showman began his NASA career in the Theoretical Guidance and Control

Branch. He worked on attitude control problems of satellites during his first six years at Ames. He then transferred to the Guidance and Navigation Branch to do research and development in guidance and control systems for an unpowered space shuttle vehicle. The system was actually placed aboard the CV-990 "Galileo I" aircraft where automatic and manual approaches with engines at idle were tested at the Flight Research Center.

Two years ago Showman applied for and was appointed to a technical assistant position in the Aeronautical Directorate. Though Showman states that, "Though applying for the job was one of my biggest decisions, I finally came to the conclusion that a tech assistant job would offer a fantastic opportunity to learn how the NASA/Ames aeronautical system actually works. That proved to be true!"

Showman, who now holds the senior technical assistant position, also related in a recent interview that it is really quite difficult to pinpoint what a

(Continued on Page 3)

### Retirement Info

With the continued rise in the cost of living, an increase in annuities for retired Civil Service employees is almost assured. Present indicators point to an annuity increase of approximately 7 percent for Federal employees who have retired before January 1, 1975.

Information concerning retirement eligibility may be obtained by contacting Mrs. Doris McMahon, Records and Reports Branch, Extension 5610.

It is particularly important that personnel planning to retire before the end of December contact Mrs. McMahon concerning their plans as soon as possible.

## Contractor's report due

Under a statute recently enacted by Congress (sec. 7, Public Law 91-303), NASA employees formerly employed by certain aerospace contractors are required to submit a report, containing information specified in the statute. Personnel who were formerly employed by any of the aerospace companies listed below are required to file such a report by November 15, 1974, if they also meet the following criteria:

1. Employment with the listed aerospace contractor terminated on or after July 1, 1970; and

2. Salary rate during employment with the listed aerospace contractor was \$15,000 per annum or more; and

3. NASA salary rate during FY 74 was equal to or greater than GS-13.

Additional information and NASA forms 1480 may be obtained from and should be returned to the Records and Reports Branch, Mail Stop 241-5.

Failure to file report is punishable by a maximum of six months imprisonment or a fine of not more than \$1,000, or both.

### AEROSPACE CONTRACTORS

Recipients of Direct NASA Awards;  
1974

The following is a list of aerospace contractors which received direct NASA awards totaling \$10 million or more in fiscal year 1974. This list is published pursuant to section 6 of Public Law 91-119, as amended by section 7 of Public Law 91-303 (84 Stat. 372; 42 U.S.C. 2462, 1970 Supp.).

American Airlines, Inc.  
633 Third Avenue  
New York, NY 10017

The Bendix Corp.  
Bendix Center  
Southfield, MI 48076

The Boeing Company  
7755 East Marginal Way  
Seattle, WA 98124

California Institute of Technology  
1201 E. California Blvd.  
Pasadena, CA 91109

Chrysler Corp.  
P.O. Box 757  
Detroit, MI 48231

Computer Sciences Corp.  
650 N. Sepulveda Blvd.  
El Segundo, CA 90245

Fairchild Industries, Inc.  
20301 Century Blvd.  
Germantown, MD 20767

Federal Electric Corp.  
621 Industrial Ave.  
Paramus, NJ 07652

General Dynamics Corp.  
Pierie Laclede Center  
St. Louis, MO 63105

General Electric Company  
3135 Easton Turnpike  
Fairfield, CT 06431

Grumman Aerospace Corp.  
South Oyster Bay Road  
Bethpage, NY 11714

Harris Corp.  
55 Public Square  
Cleveland, OH 44113

Honeywell, Inc.  
2701 Fourth Avenue South  
Minneapolis, MN 55408

Hughes Aircraft Company  
Centinela Avenue & Teale Street  
Culver City, CA 90230

International Business Machines Corp.

Old Orchard Road  
Armonk, NY 10504

LTV Aerospace Corp.  
P.O. Box 5907  
Dallas, TX 75222

Litton Systems, Inc.  
360 North Crescent Drive  
Beverly Hills, CA 90210

Lockheed Electronics Co., Inc.  
U.S. Highway 22  
Plainfield, NJ 07601

Martin Marietta Corp.  
277 Park Avenue  
New York, NY 10017

McDonnell Douglas Corp.  
P.O. Box 516  
St. Louis, MO 63166

Morrison-Knudsen Co., Inc.  
P.O. Box 7808  
Boise, ID 83729

Northrop Services, Inc.  
500 East Orangethorpe Avenue  
Anaheim, CA 92801

Philco-Ford Corp.  
Union Meeting Road  
Blue Bell, PA 19422

RCA Corp.  
30 Rockefeller Plaza  
New York, NY 10020

Rockwell International Corp.  
600 Grant Street  
Pittsburgh, PA 15219

Sperry Rand Corp.  
1290 Avenue of the Americas  
New York, NY 10019

TRW, Inc.  
23555 Euclid Avenue  
Cleveland, OH 44117

Teledyne Industries, Inc.  
1901 Avenue of the Stars  
Los Angeles, CA 90067

Textron, Inc.  
40 Westminster Street  
Providence, RI 02903

Thiokol Corp.  
P.O. Box 27  
Bristol, PA 19007

United Aircraft Corp.  
400 Main Street  
East Hartford, CT 06108

## Shoes, save feet



At home or at work safety shoes have the potential of saving an individual's foot from severe damage or injury in an unexpected accident.

Joe Auby, RFTE, recently related to the Safety Office how his new steel capped safety shoes saved his foot when an extremely heavy one-horse power motor accidentally fell directly on his foot.

Richard Taylor, FAOW, also had a similar occurrence when his foot got caught under a lawn mower and his steel capped safety shoes protected his foot from the sharp mower blades.

The importance of having good sturdy shoes is unstatable.

The Safety Shoemobile offers many sizes and styles of safety shoes to Ames employees. The Shoemobile visits the Center three or four times a year and offers employees the perfect opportunity to purchase shoes to wear for camping, fishing, hiking or working.

Employees with occupations requiring safety shoes may obtain the shoes free of charge. If you think you qualify,

check with your supervisor, branch chief or with the Safety Office at extension 5602.

## New credit union "Getaway" contest

Join Moffett Field Employees Credit Union's new Magic Four savings program and you may win the Getaway. It's a Getaway to wherever you want to go in the United States, excluding Alaska and Hawaii.

Take part in our Magic Four drawing and you could win this luxurious round trip by air coach for two to any airport serving scheduled airlines in the United States. In addition, you'll receive \$500 in travelers' checks for spending money. It's a dream waiting to come true.

We've put the Getaway together to get you acquainted with MFECU's Magic Four savings program. From October 1 to December 31, you can get tickets in the drawing by participating in the Magic Four in any of the following ways:

1. Get one drawing ticket for every \$25.00 added to your reliable share account. This applies to new or increased payroll deductions, also. In the last interest period shares earned a total of 5.75% per annum.

2. Get ten tickets for every new 6% per annum savings certificate in \$1,000 denominations, for a two-year term.

3. Get fifteen tickets for every additional 7.2% per annum savings certificate beginning at \$5,000 with \$1,000 additional increments, for a three-year term.

4. Get twenty tickets for adding one of our great new 8.4% per annum savings certificates, for \$10,000 with \$5,000 additional increments available for a term of as little as six months.

## Ames expedition

(Continued from Page 1)

Representatives; Tadao Beppu, Speaker of the Hawaii House of Representatives; and Clarence A. Syvertson, Deputy Director of the Ames Research Center, who is the overall manager of the Hawaii Expedition. Kenji Nishioka, a research scientist with the Ames Systems Studies Division and a native of Hilo, Hawaii, is the project manager.

The NASA team in Hawaii for the expedition is headed by Martin A. Knutson, manager of the Ames Earth Resources Aircraft Project. Max Lowenstein and Guy Ferry of Ames are principal investigators for the stratospheric data collection and are part of the Stratospheric Project Research team headed by I. G. Poppoff. Bill Murphy and Staff Sergeant Mike Laughlin at Hickam Air Force Base are assisting NASA in flight operations.

## Public service appeal

There is a dire need for temporary accommodations for the newly hired Ames' contractor and civil service employee. Will you call me at 965-5778, give me your name, and list the kinds of accommodation you can provide either free or at a price. C. J. Fenrick, Code DE: 241-28.

## Velkoff retires from AMRDL



Dr. Henry R. Velkoff, staff scientist with the U. S. Army Air Mobility Research and Development Laboratory (AMRDL), Ames Research Center, and his wife, Carol, enjoy a light moment during his retirement ceremony as Colonel Norman L. Robinson, AMRDL deputy director, reads the retirement citation.

Dr. Velkoff, who served as the staff scientist in the Office of the Director, retired after 21 years of government service. Prior to his retirement, he was active in the establishment of the new Remotely Piloted Vehicles Program which was instituted accordingly by the U. S. Army Aviation Systems Command.

An active member of the American Helicopter Society, Dr. Velkoff has been a consultant to the Office of Naval Research, the Air Force Systems Command, Boeing Vertol, the Battelle Memorial Institute and Westinghouse. He has authored or co-authored more than 40 technical and scientific papers and holds three patents.

Following his retirement, Dr. Velkoff plans to teach Mechanical Engineering at the Ohio State University.

## Tech Assistants

(Continued from Page 1)

technical assistant actually does in light of the fact that the scope of the job is so broad. General areas of work do, however, include approving purchase and travel requests for the directorate, controlling budgets, and reviewing and evaluating programs and projects.

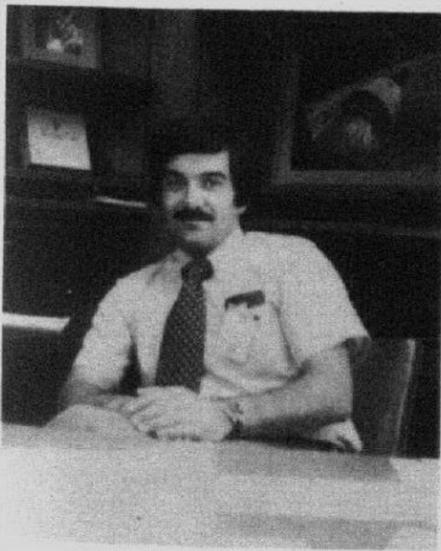
When asked what career plans he holds for the future, Showman relayed that he wishes to remain in a position where he can mix technical and administrative work and not just concentrate totally in one area or the other.



Bob Showman

Mike Wash came to Ames two years ago from NASA's Manned Spacecraft Center (now Johnson Spacecraft Center) where he spent six years working with the Apollo program as a flight controller and an astronaut trainer.

Before joining NASA, Wash graduated from the Virginia Military Institute with a B.S. in Electrical Engineering, and subsequently served in the Air Force as a lieutenant. He supervised a team of experts who evaluated radar systems all over the North American Continent.



Mike Wash

After three years of Air Force duty, Wash worked for one year in industry with Aerojet General and then applied for federal employment with NASA in Houston. He was hired and came aboard about the time the Gemini program was in completion. He was therefore placed with the new born Apollo Program which he claims was "really in the early stages of the game... possibly before most people could even spell "Apollo!"

As a flight controller in Mission Control Houston, Wash was involved with seven Apollo flights. He also helped in the actual training of the astronauts for flight.

When reflecting back on the whole experience he states, "It was a thrill to be so closely associated with the astronauts in the lunar landing program in the role as flight controller and trainer. It is a great sense of accomplishment to me to be intimately associated with the people who successfully completed one of the greatest feats of all mankind."

Upon completion of the Apollo program, Wash transferred to Ames and was assigned to the QUESTOL project. After one year he moved to the Avionics Research Branch and remained there until his recent appointment as a Technical Assistant to the Aeronautics Directorate.

Wash heartily agrees with Showman that the tech assistant's job offers a fantastic background and opportunity for any future career planning. He states, "I am quite excited about this job and look forward in all sincerity to the challenges and knowledge it offers. I know I will enjoy working for Dr. Roberts and our entire directorate. And I am looking forward to some of the traveling the position may entail."

He continued, "During my past 2½ years at Ames I have found that there are many unbelievably competent people at this Center. The talent here is just fantastic. There are PhDs at Ames who can not only theorize but can also build the products of their imagination! I really hope to learn all there is to know in my new position as technical assistant."

## Sea Turtles

(Continued from Page 1)

Handlers gently tilted the containers and the hatchlings slowly began their instinctive migration down the beach toward the sea, their natural home.

Driven by a biological clock, the turtles travel countless miles to congregate off the shores of suitable beaches, probably selected by an ancestral drive. Generally mating takes place offshore and the female heads for shore to lay her fertilized eggs.

With luck, the young turtles will emerge from the nest immediately after hatching in 55 to 60 days and move in mass down the beach to the waiting sea. Many beaches are heavily patrolled during the turtle nesting season and severe penalties can be levied against humans who disturb the turtles or their eggs.

### SCORPIO

OCTOBER 24-NOVEMBER 22

**Scorpio, the secretive, magnetic perfectionist, possesses will power and intense emotional drive. You never deal with life superficially. You have good judgment and good luck in financial matters and know how to make money multiply. Watch your savings grow fast with U.S. Savings Bonds.**

## Will the real \$6 million man stand up

Once each week, when "The Six-Million-Dollar Man" flashes onto the nation's television screens, the show opens with the spectacular crash of a space vehicle. The realism of this particular sequence leaves the audience wondering how much movie magic can be accomplished.

Actually, the crash was real. The pilot, Marine Air Reserve Lt. Col. Bruce A. Peterson served as the model for the hero of the series, who is portrayed by actor Lee Majors.

Peterson was a research pilot for the National Aeronautics and Space Administration's Flight Research Center at the time of the accident. The May 10, 1967 crash involved the experimental M2F2 lifting body, a wingless creation that was being tested as a re-entry vehicle from space. He still is with NASA as director of safety and quality assurance for the experimental programs being conducted at Edwards Air Force Base, Calif. And he is still active in the Marine Air Reserve, serving as commanding officer of the all-Reserve Marine Aircraft Group-46 at the El Toro Marine Corps Air Station.

"I don't think it cost any \$6,000,000 to put me back together after that crash," the Reserve lieutenant colonel admits, "but I really don't have any idea of what the total hospital bill added up to." Peterson was under treatment for well over a year, in and out of several hospitals, as plastic surgeons did their work.

Admittedly he was rebuilt in a slightly more realistic fashion than that employed by script writers in the TV version.

All that Peterson remembers of the accident is "about what is seen on the television screens every week. That particular footage was taken by the cockpit cameras. I blacked out about the same time the cameras stopped working.

"I was landing, fighting a cross-wind that had sprung up, when I saw a helicopter in my way. I tried to avoid it. As

the landing gear door was being lowered, a gear door apparently caught in the dry lake bed, flipping the vehicle. I remember the first impact and the first roll of the machine."

Peterson was dragged from the wreckage and rushed to nearby Edwards Air Force Base hospital in a helicopter. After initial treatment he was flown to the hospital at March Air Force Base, and a week and a half later to the UCLA Medical Center.

Injuries included a fractured skull. His whole forehead had been scraped off by the rough desert sand and the rest of his face was as though "it had been sand-blasted." His right eye was damaged, his teeth were badly chipped as a result of the impact and he suffered a broken hand.

He had to undergo skin grafts, plastic surgeons building a new eyebrow and a new eyelid.

The Marine Corps allowed him a waiver to remain in the Reserve in spite of the damaged eye, but he would have to fly with a co-pilot. Today, Peterson is qualified in three of the four aircraft flown by the El Toro Marine Air Reserve: the OV10A Bronco, the AH-1G Cobra helicopter and the CH-46D Sea Knight transport helicopter. All are two pilot aircraft.

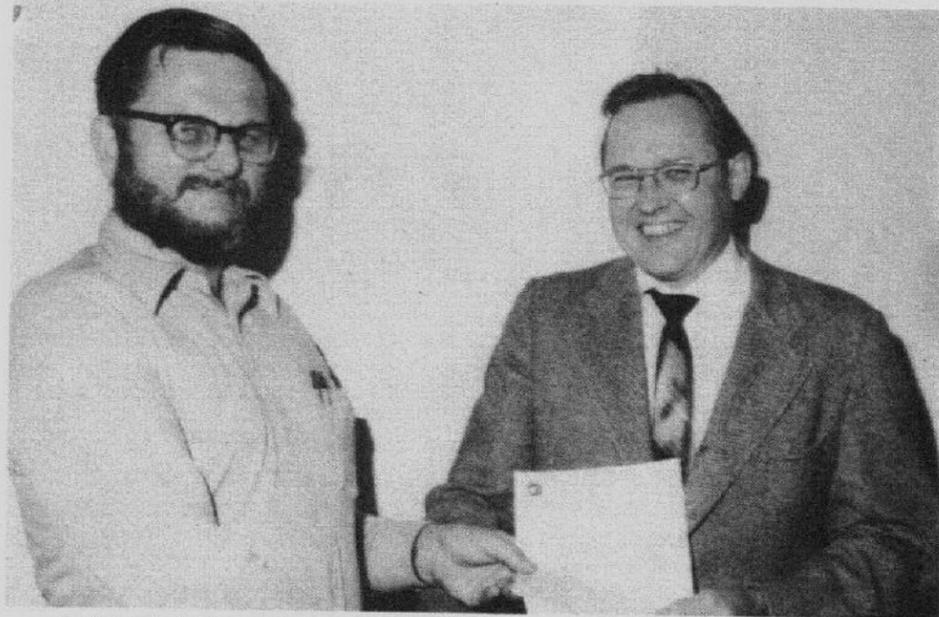
He long ago gave up keeping accurate track of the number of flight hours he has, but figures he has stacked up "somewhere around 5,600 hours, give or take a hundred."

In comparing the inspiration for the Six-Million-Dollar Man with the actor who portrays him, it is hard to find similarities.

Perhaps the greatest similarity between the two men is their dedication and enthusiasm, even though they are channeled in different directions.

"I've been told that Majors wants to meet the man he is trying to portray on the screen," Peterson says, "and I'd like to meet him. We'll have to do that one day."

## Sutton receives achievement award



Ralph "Ed" Sutton (left) recently received a Special Achievement Award from John S. MacKay, Branch Chief, Scientific Applications Analysis Branch. Sutton has been assisting users of the CDC 7600/6600 complex available to Ames scientific users at the Lawrence Radiation Laboratories in Berkeley for the past 3 years. He received a letter from Dr. Hans Mark, Center Director, commending him on his excellent work, and he was also presented a check.

# Speakers Bureau

During the meeting of the Aviation Lighting Committee of the Illuminating Engineering Society, Dr. Richard Haines (Man-Machine Integration Branch) will present a paper entitled "Vision Through Fog Viewing Runway Centerline and Edge Lights." The meeting is being held in Chicago, November 16-18.

Sal Rositano (Electro-Systems Engineering Branch) will be the guest speaker for the San Jose Westgate Rotary Club on November 12. Sal will discuss NASA's advances in the field of bioinstrumentation and the applications to such fields as medical science.

Lt. Col. Alfred Worden (Chief of the Systems Studies Division) will travel to San Diego to address the California Conservation Council. The organization will hold its annual meeting and educators workshop on November 1. Al's presentation will be "View from Space."

Charles Hall (Manager of the Pioneer Project) presented an invited paper on October 2, to the International Astronautical Federation at its meeting in Amsterdam. Mr. Hall's paper was "Pioneer 10 and 11 Spacecraft and Missions to Jupiter."

On October 29, Dr. Paul Callahan (Biochemical Endocrinology Branch) will be the guest speaker for the Marin Council of the Boy Scouts of America. The occasion is an Eagle Recognition Dinner for 76 young men who have achieved the rank of Eagle Scout; the evening banquet

will be held at Hamilton Air Force Base. Paul will discuss the relationship of NASA and scouting.

Barbara Busch (Educational Programs Office) addressed the parent-teacher association of St. Martin's school in Sunnyvale on the evening of October 9. She discussed how NASA's activities can be used to aid teachers and students in their learning processes.

On November 13, Barbara will talk to two groups of 8th graders at Crittendon School in Mountain View. The students are in a class called "Consumer Education" and are interested in the various ways NASA's space research benefits mankind.

At the AIAA Life Sciences and Systems Conference, being held November 6-8, 1974, at the Inn of the Six Flags, Arlington, Texas, the following Ames personnel will be participants:

In the session "Man's Role as a Systems Manager in Air Transportation," Betty K. Berkstresser (Systems Studies Division) presented the paper: "Avionics Systems in the Management of Air Transportation." Betty is now on a year's exchange program with NASA Headquarters.

In the same session Thomas E. Wempe (Man-Machine Integration Branch) will present "Flight Management - Pilot Procedures and System Interfaces for the 1980-1990's."

## Irene Tharpe celebrates retirement with over 250 friends



Over two-hundred and fifty people wished Irene Tharpe good luck and good-bye at a gala luncheon affair celebrating the government employee's retirement after 33 years of service. When MC Frank Pfyl introduced Irene, she ironically exclaimed, "I never knew I still had so many friends who would still speak to me. It's absolutely wonderful!"

Dear Friends,

Thanks! The retirement luncheon you gave in my honor was the greatest event of my life. The pearls you gave me are beautiful - now one of my prized possessions.

I have worked in other areas but nowhere have I met such a large number of helpful, kind and wonderful people. Thanks again for many years of wonderful associations.

Sincerely,  
Irene Tharpe

# WANT ADS

## Transportation

'72 VW Superbeetle, blue with white vinyl top, deluxe interior, good condition, \$1750. Lynne Enfield, x5732, 946-0606

'68 Ford 1/2 Ton P.U., 360 V8, AT, \$1200; with 8' Siesta Shell, cargo door, boat rack, together \$1525. Call after 5 p.m. 248-4999

'62 TR-3, new engine, seats & top, radial tires, GT transmission, excellent condition, \$950. Call 243-4826

'68 Chevy El Camino, 327, AT, \$975. Soulages, 268-3531

'73 OSSA Motorcycle, 250 Enduro, mint cond., \$800 or offer. Soulages, 268-3531

## Housing

FOR RENT: 2 furnished rooms and bath in private home. Suitable for 1, private entrance, near El Camino Hospital, garage privileges. \$150 including all utilities. Call 968-3089 after 5 p.m. for appointment.

## Miscellaneous

New automobile stereo 8-track tape player, \$40. Phone 965-9174 after 5:30.

FOR SALE: '74 Kona Makai boat-Hull (bubble deck), 455 Olds., about 30 hours on motor. Like new, \$5500. (Includes trailer, custom cover and all C. Guard required equip.) Call 865-6870 after 6 p.m.

Sears 4-qt. stainless steel pressure cooker in good condition. (New one costs \$25) Call 321-1858.

Coffee Table, very good condition, \$11. Call 321-1858.

For Sale - TV Modulators for video tape recorders, \$15 each. Dave Mendenhall, 255-8507

OTARI MX5500 Professional Stereo Deck, has auto reverse, microswitches, etc., Teak AN-180 Dolby unit, top of line equipment and 36 hrs. reel to reel tape and miscellaneous equipment (cardioid mike, splicers, demagnetizer, and much more), \$500 firm. Call 371-5061

MUST SELL. 7 ft. brown simulated leather sofa and 2 herculon upholstered oak chairs and ottoman, excellent condition. Call after 6 p.m., 867-5728.

Assorted reels of Scotch magnetic recording tape. Call Art Rizzi, 326-7492 eves.

Englehardt Student Cello, Model E55-4/4, full size, very good condition, \$225. Call 257-0580.

Authentic Indian Turquoise and Silver Jewelry. Very good prices. Call 257-1921 evenings.

FREE: Calico kittens. Call Bauer, 408-867-6454.

Lost Pair B&L Safety Sun Glasses. Please contact Jack Barrie if found. x5214 or 323-0194

Car Pool: I want to start a car pool from Remington/Bernard area in Sunnyvale to Ames - my hours are somewhat flexible. Call Bill Daily, x5537 or 739-4443.

Car Pool Needed. East side San Jose, near White & Story. Hours: 8:00 - 4:30. x5059 or 926-0345

FREE to good homes, 2 dogs - 1 Schnakapo, 1 yr old, black male; 1 mixed black female, 6 yrs old. Good with children. Contact editor.

## Hull named president of local council

The Joint Council of Science and Mathematics Education representing major industries and the high schools, colleges and universities of Santa Clara Valley recently elected Garth A. Hull President for the coming year. The Council's purpose is to plan and conduct programs to increase the effectiveness and appeal of science and math education.

Hull urges those at Ames who are interested in seeking opportunities to contribute in this important task to contact him. He is the Educational Programs Officer in the Public Affairs Office at Ames.

## Mulholland to speak at AIAA Oct. meeting

The October dinner meeting of the American Institute of Aeronautics and Astronautics (AIAA) will be Wednesday, October 30 in the Ames Cafeteria. A no host social hour will begin at 6 p.m. with a prime rib dinner at 7:15 p.m. and a lecture by Donald R. Mulholland at 8 p.m. Mulholland, Chief of the Ames' Airborne Science Office, will give an illustrated talk on the Airborne Science Program at Ames. A short tour of the aircraft used in the program will be included.

Advance reservations are mandatory. Contact Olive Holwerda (ext. 6312) or Clara Johnson (ext. 5257) on or before Friday, October 24.

Room 142  
Admin. Bldg.  
Phone 965-5422

**astrogram**

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