



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

Ames scientists help Cousteau

On board his ship, Calypso, Jacques Yves Cousteau is making scientific observations and filming the Antarctic to give the public a view of this region.

The waters are among the most biologically productive in the world. The region has been made an international preserve for scientific research and is of high interest.

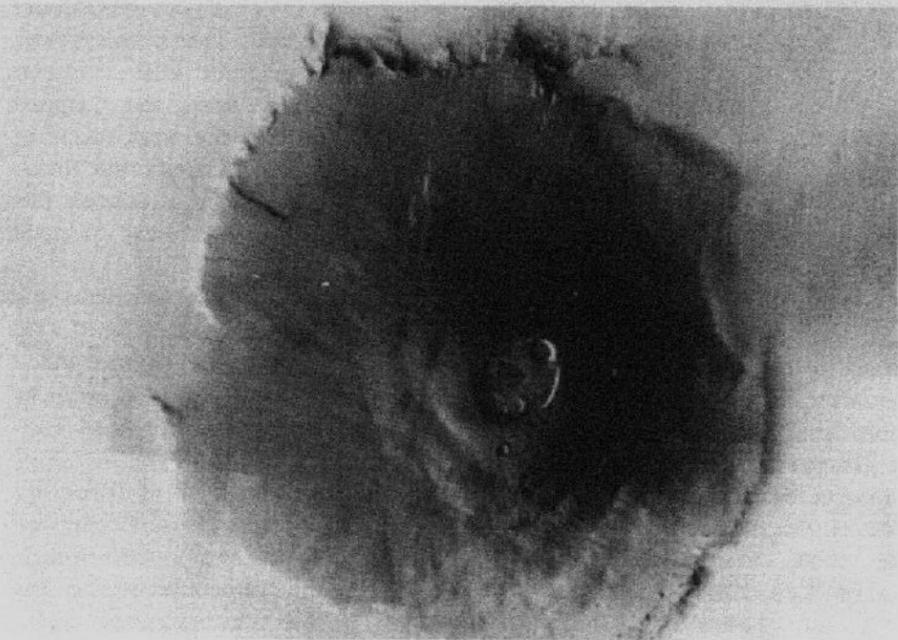
Ames researchers, John C. Arvesen and Ellen C. Weaver, SSG, are evaluating satellite thermal imagery for possible use in outlining the borders of the productive areas.

Cousteau's crew obtains the imagery directly from NIMBUS and NOAA satellites by means of a Goddard-furnished Automatic Picture Transmission (APT) receiver. The thermal imagery is then computed

with measurements of the actual water temperature and chlorophyll content determined by Ames' instruments on board ship. Ames then analyzes these data for correlation.

During the past several months Ames has been in daily contact with Cousteau and his ship through the NASA ATS-3 experimental communications satellite in synchronous earth orbit. The satellite communication link operates via a radio ground terminal established by the Systems Development Branch in building 244.

Coordinated efforts between researcher Arvesen, Emanuel H. Gross PDS, Bradford P. Gibbs, and Robert D. De Renzy, AAC, has enabled not only verbal contact of excellent (Continued on Page 2)



Gigantic volcanic mountain on Mars, called Nix Olympica, was photographed by Mariner 9. The mountain is 310 miles across at the base. Steep cliffs drop off from the mountain flanks.

Mariner 9 revises concepts of Mars

Mariner 9 was put into orbit around Mars late in 1971. The wind-mill-shaped, solar-powered spacecraft circled the planet 698 times in 349 days before being shut down on Oct. 27, completely mapping the bleak Martian surface.

As the spacecraft's TV cameras watched the seasons change below, its scientific instruments returned a wealth of data that has revised all previous concepts of Mars.

Among the Mariner 9's major observations were:

*A geologically active planet with volcanic mountains larger than any on Earth;

*An equatorial crevasse three to four times deeper than the Grand

Canyon;

*Indications that free-flowing water may have once existed on Mars;

*The evolution of a monumental dust storm that raged to an altitude of 50 to 60 kilometers (30 to 35 miles), cooling the surface and warming the atmosphere - a measurement of great value to scientists who have long been trying to calculate the effect of increasing pollution on Earth's global climate.

GROUNDWORK FOR VIKING

Mariner 9's findings laid the groundwork for America's next venture to Mars, the Viking expedition in 1975-76 which will search for evidence of life on the planet.

Most Powerful Computer in Existence

How Illiac IV Works

A scientist has conceived a new wing design which will aid the flight of aircraft. He would like to test it.

He may build a model and conduct tests in a wind tunnel. But, this is expensive and may take weeks. Instead he may decide to use Ames' Illiac IV computer system to see if the concept is valid.

After compiling all the necessary data, he has it translated into a computer language acceptable to the Illiac system. This he feeds into

computer terminal in his office area.

The computer transmits the information to Illiac's Interface Message Processor (IMP) via telephone lines over the nationwide Advanced Research Projects Agency network.

The IMP feeds this information to the PDP 10 computer where it is stored for some future use or for immediate use. If for immediate use, it is simply waiting till the Illiac array is free to accept the (Continued on Page 3)



Ames has a new hangar

That new aircraft hangar recently built on one side of Ames' flight apron will house the C141 StarLifter. It was purchased as surplus from Travis Air Force Base where it was disassembled, then brought to Ames and reassembled.

The Aircraft Servicing Facility, as it is called, will be used primarily as a nose dock for the C141. The aircraft, with its 36" telescope, will be covered to its tail section by the structure.

"Since the tail seldom needs servicing like the nose does, the han-

gar only covers the nose," says Marshall L. Biggs, RFR. The doors of the hangar are built to close around the aircraft. "We have proposed to implement the hangar with shops and laboratories around the beginning of the new fiscal year," he adds.

With the addition of laboratories scientists conducting airborne astronomy with the aircraft's giant telescope and computerized tracking systems may conveniently interface with the aircraft while on the ground.

EEO Announcement Correction



NANCIE BELL

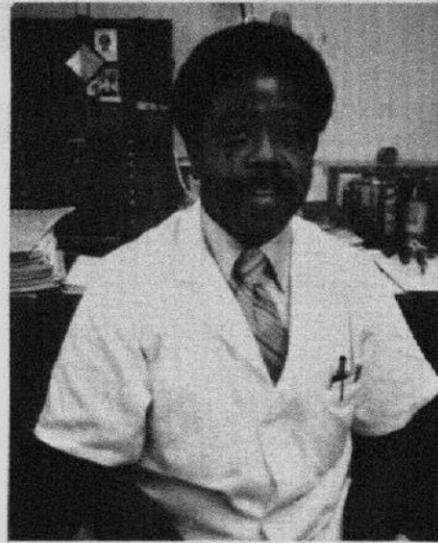
In the last issue of "The Astrogram" the appointment of four new Equal Employment Opportunity counselors was reported. The counselors were said to join previously appointed counselors; "Jessie C. Gaspar, RK; Joseph P. Licursi, RSE; Toribio G. Gonzales, RKO; and Sheldon M. Smith, SSA." That was a lie. Joseph P. Licursi and Toribio



HERMILIO GLORIA

Gonzales are no longer counselors. To replace them and Reginald F. King, RFS, whose term also expired, three employees were appointed on July 27, 1972. They are, Nancie L. Bell, LXB; Hermilio R. Gloria, SSE; and Lewis A. Turner, RSM.

This means that if an employee wishes to file a complaint of discrimination he may choose from



LEWIS TURNER

nine Ames EEO counselors: Jessie C. Gaspar, RK; Sheldon M. Smith, SSA; Dr. Nancie L. Bell, LXB; Hermilio R. Gloria, SSE; Lewis A. Turner, RSM; Jennifer Walker, AFAA; George Lee, STG; Wayne O. Hadland, RFE; or Esther L. Levy, ST.

In addition, as stated in the Equal Employment Act of 1972 "... officials designated to receive a complaint include the head of the agency, the Director of EEO, the head of a field establishment, a Federal Women's Program Coordinator and any other officials designated for this purpose by the agency. (Section 713.214 (a))."

Ames scientists help Cousteau

(Continued from Page 1)
quality with the ship, but also two-way transmission of photographs and printed data via a facsimile system.

The experiment will continue through August when the Calypso will proceed up the west coast of South America to study the Humboldt current which produces the most extensive fishing grounds known.

Christmas in the Antarctic is a lonely experience. To provide a tie to family arrangements were made for wives to talk to the ship by satellite through a telephone connection into Ames.

Dr. Hans Mark, Ames Director, personally extended Christmas greetings to the ship's crew directly from the Teleconferencing Facility in the Administration building.

As he stated in his message to the Calypso, the ability to instantly communicate high quality data from one of the most remote regions on earth has great potential significance in global oceanographic research. This experiment already has served as a model for planning future scientific oceanographic expeditions.

How to appraise files in 60 seconds

(Editor's Note: This is the first part of a three part series on filing. The second and third parts will appear in the next two issues of "The Astrogram.")

The problems commonly found in 85 to 90 percent of all files can be discovered, identified and isolated in no more than 60 seconds. The technique for this quick appraisal works as follows:

Step 1. Open a drawer of the file you are concerned with and see how crowded it is.

A properly managed file will use no more than 23 or 24 of its 27-inch inside clear capacity to hold the records. There should be three to four inches of working space in each drawer to allow proper use of the follower block or compressor plate, regardless of the depth of the file drawer.

If the drawer is packed full of records, pull open a few more drawers to see if the problem is universal. If it is an alphabetical file, check drawers in the "M," "N" and "O" areas as well as the front and back of the file. The middle of an alphabetical file is less likely to be crowded than the front or the back.

A tightly packed file slows filing time to a crawl and decent filing speed becomes an impossibility. Many other factors, of course, affect filing speeds and hence filing costs. These include the quantity of records being filed, the physical uniformity of the items them-

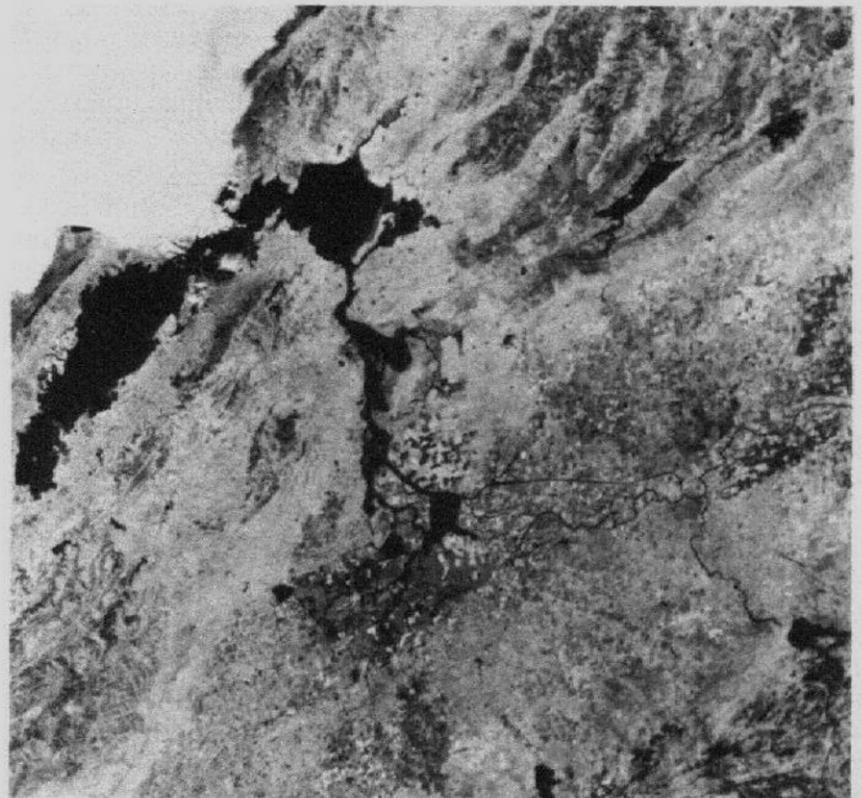
selves, the work flow in the file room, the physical set-up of the files, and lighting. But nothing slows a filing operation more than having too much material in a drawer.

Tightly packed files also cause file clerks to suffer from paper cuts and torn cuticles. The actual physical work of filing and finding is significantly increased. File room morale goes down. File clerks quit. New file clerks are hired to work with an impossible file. Production and efficiency are forgotten. Records are torn, mutilated and destroyed. No matter how good the filing equipment, how efficient, how modern, if the file drawers are tightly packed, the equipment will not work properly and the file will be a high cost, inefficient operation.

What do tightly packed file drawers indicate? They may mean the file supervisor doesn't know any better and has to be told that it's really the space in the file drawer that makes the system work.

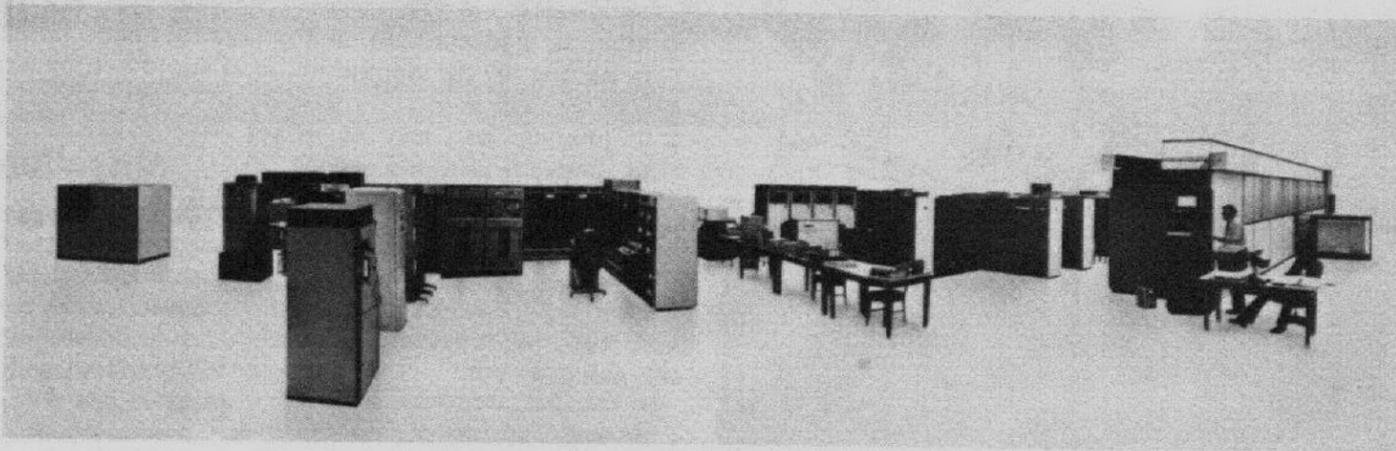
Packed drawers may also mean that management doesn't appreciate the value of a properly housed file and turns down repeated requests for more cabinets and filing space. Or they may mean that the company is growing at a terrific rate and the files were overlooked in the hubbub of keeping up with everything.

San Francisco Bay



This picture of the San Francisco Bay area was taken by Earth Resources Technology Satellite-1 (ERTS-1) from an altitude of 915 kilometers (569 miles). San Francisco Bay is lower center and the foothills of the Sierra Nevada upper right. Fog rolling into the Bay can be seen in the lower left corner. Federal agencies cooperating with NASA in this project are the Departments of Agriculture, Commerce, Interior, Defense, and the Environmental Protection Agency.

How Illiac IV Works



ILLIAC IV . . . This composite of several photographs shows the different parts of the Illiac IV computer system. The equipment setting alone at the far left is UNICON 690, which stores one trillion bits of information on 450 strips. (Photo below).

The next section, up to the table, contains the Interface Message Processor, (Photo top right) a PDP

10 computer, and several PDP 11 computers. Together these provide the system access to the ARPA network and computers to manage and process the data.

From the table on, is the Illiac IV system (Photo below right). This includes the Illiac IV array, an in-and output system, and a Burroughs 6700 computer.

(Continued from Page 1)

information and make its computation.

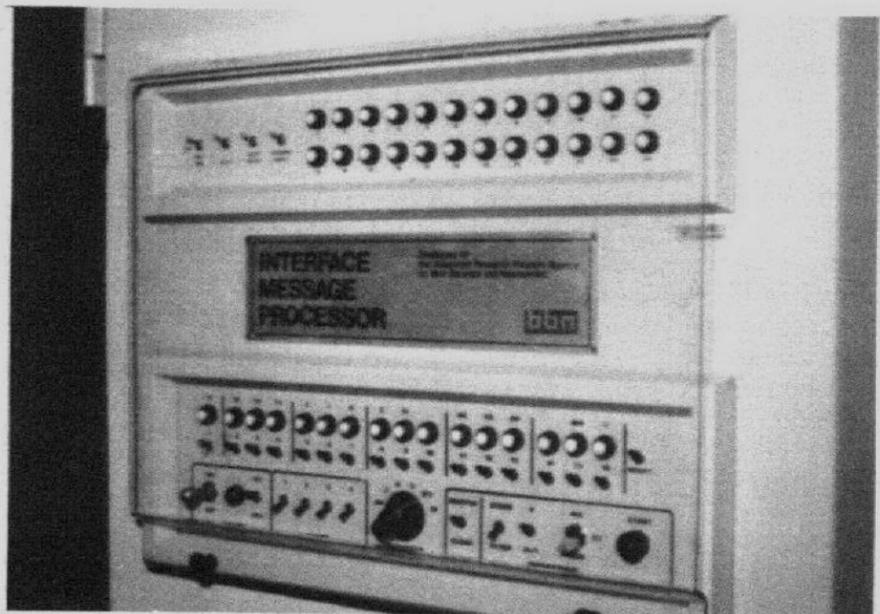
If for future use it may be put into UNICON, Data, never to be used by Illiac, may be stored in UNICON. Because it is capable of containing a trillion bits of information equivalent to 450 full sets of the Encyclopedia Britanica in a small area, UNICON is attractive, in itself, to computer users.

When Illiac is free the PDP 10 feeds the scientist's information into the Illiac array. Once in the array the data is computed at a

rate 100 to 200 times faster than most computers.

Results of the computations are fed to the PDP 10 computer and sent back over the ARPA network to the scientist.

This type of rapid answer-finding is not presently available. Some time this spring Illiac will be ready for use. It is expected to be running in an operation status this fall.



INTERFACE MESSAGE PROCESSOR . . . Receives data from Illiac users over the ARPA network and transmits it to one of the PDP computers or to a storage device.

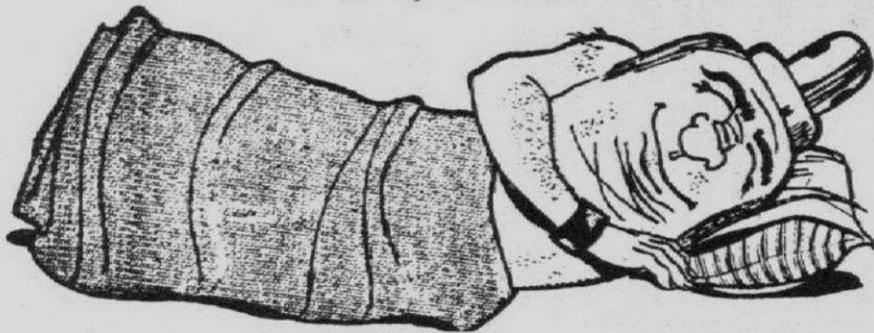


UNICON STRIP . . . Made of Mylar, a very strong plastic film, each strip can contain the equivalent of 22 reels of magnetic tape.



ARRAY . . . The part of the Illiac that does the computation. Capable of making 64 simultaneous computations, it is 100 to 200 times faster than the average computer for a select group of problems.

The Sleeping Giant



I am a compressed gas cylinder.
I weigh in at 175 pounds - when filled.

I am pressurized to 2200 psi.
I have wall thickness of about 1/4 inch.

I stand 57 inches high.
I am nine inches in diameter.
I wear a cap when not in use.
I wear gages, valves and hoses when at work.

I wear many colors and bands to tell what tasks I perform.

I am ruthless and deadly in the hands of the careless or uninformed.

I am too frequently left standing alone on my small base - my cap removed and lost by an unthinking workman.

I am ready to be toppled over-where my naked valve can be snapped off and all my power released through an opening no larger than the diameter of a pencil.

I have been known to jet away-faster than a dragster.

I smash my way through brick walls with the greatest of ease.

I fly through the air and reach distances of half a mile or more.

I spin, ricochet, crash and slam through anything in my path.

I scoff at the puny efforts of human flesh, bone and muscle to alter my erratic course.

I can, under certain conditions, rupture or explode; you read of these exploits in the newspapers.

You can be my master ONLY under my terms:

*Full or empty - see that my cap is on, straight and snug.

*Never leave me standing alone.

*Keep me in a secure rack or tie me so that I cannot fall.

*TREAT ME WITH RESPECT:
I AM A SLEEPING GIANT.

Fishing Trip Planned

... by Glen Weidlich

At the beginning of the 1973 "Fiscal Year" several die-hard deep sea anglers of the Photo Technology Branch and Management Associates are planning to launch a deep sea fishing jaunt to the Rockcoddus side of Half Moon Bay.

Take-off time will occur on, or about the first Saturday of May. The baitcasters intend to charter a fishing boat from Gardner's Fishing Trips, berthed at Muni Pier, Princeton. At present, final plans and preparations are being formulated for the trip. More concise details regarding the cost per person, time or departure, tackle rental and license fee for fishermen not so equipped will be forthcoming via the Astrogram.

We extend an invitation to all die-hard deep sea anglers of Ames and associates," says cod committeeman, Charley Lonzo, "to purchase a ticket and enjoy the brisk breeze and a bouncing day on the bay!

"Ladies . . . invite your hubby or a buoy-friend."

Sorry Charley . . . no tuna. But plenty of rockfish and perhaps a huge halibut or a lengthy lingcod.

TOASTMASTERS

by . . . Jim Rogers

Dick Schaupp from Space Exploration & Technology is Jetstream's new Admin. Vice President. Toastmasters provides an excellent speech and leadership training program and the Jetstream Club meets at the Cozy Grotto (across from Mt. View Post Office) at 11:45 every Wednesday. Guests are welcome.

SKI CLUB

The Ames Ski Club will sponsor the Annual Squaw Valley Washington's Birthday Ski Trip Feb. 16-19.

Trip price will include bus transportation, three nights lodging, three breakfasts and two dinners at Olympic Village Hotel, lift ticket reduction, ski lesson and rental reduction, use of pool and casino shuttle.

Price is \$43.75 with three per room, \$45.75 for two per room. Send \$10 reservation deposit with name of roommate (if known). Final payment due before Feb. 9.

Bus departs at 7 p.m. Friday, Feb. 16 from behind Building 202. Bus will arrive directly at Olympic Village hotel without dinner stop. There will be a dinner stop on return trip.

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. Ads must be submitted in writing to The Astrogram, mail stop 241-4, by Wednesday, a week before publication. The advertiser's home telephone number must be provided as a point of contact except in carpool notices. Ads must be limited to 15 words or less.

Miscellaneous

FOR SALE

Luggage, Invicta 30" suitcase. Little used, ex. cond. \$27 (Costs \$50 new). Handbag, like new \$10. 321-1858.

Tap shoes, size 6, like new \$6, 321-1858.

Recording tape, Scotch Dyna. series, #203, 1/4 x 1800" reel, never used, \$5, 321-1858.

French Besson professional trumpet beautiful, \$450 new, sacrifice for \$200. David, 356-8316.

HP-35 new cond., \$300. Call 349-5929 or 258-2831 evenings or wknds. British 303 sporterized rifle, sling & scope \$100, 377-0281.

Tires & rims, 15" track, Chev.-6-lug., 4 in all, 2 are split-rims, \$95, 377-0281.

WANTED

Carpool-Blaney/Bollinger area, non smoker, reg. shift, max. 4 people, Rasmussen ext. 6117/257-2848.

Used, gd. cond., very reasonable, reel type tape recorder for 7" reels. 629-8991 after 6 p.m.

Want to increase 2-person car pool to 3. Embarcadero/Middlefield in Palo Alto & South. Dave Few, 5442.

BOWLING

... by Pauline Polaski

The first half of the Tuesday night All Ames Bowling League was recently concluded. The Division A winners were the "Sportmen" - Roger Hedlund, Earl Tarabough, Frank Chow, Sal Tardio and Sandy Sandoval. Division B was won by the "Halfast Five" - Howard Garrison, Nancy Gowan, Judy Long Pauline Polaski and Lou Polaski.

During the first half, some outstanding games were bowled. Roger Hedlund led the men with a 650 series and a 245 game. Bill Angwin was right behind him with a 244 game. Gary Claser rolled a 226 on his way to a 644 series. Gary also narrowly missed bowling a 212 triplicate.

The women were not to be outdone however. The other night Judy Long bowled a fantastic 276 game and a 570 series. Ina Rathert rolled a 226 game and had a 552 series. Paulette Angway came up with a nice 224 game.

Automobiles

FOR SALE

63 Ford P.U., 6-cyl., good body, tires, runs ok, stereo tape deck, \$475, call 259-7607.

69 Triumph 650, new valves, tires, chain cables, looks gd, runs great, \$850/offer. 356-8316.

53 Ford, all new uphol. & head liner, \$150, J. Smith, 967-3986.

65 Corvette, Stingray, convt. 4-spd. new engine, r & h, \$1875, 968-5697.

64 Dodge Dart, 2-dr. sdn., engine in ex. cond., AT, R&H, new tires, \$325, 248-5976.

65 Buick sp. auto, ex. cond., new tires, tune up tags, \$475, call Kamdar, 948-9559.

69 Datsun Nissan Patrol 4-wheel drive, 8-ply tires, 58,000 mi., \$1650. Lane at 961-9805/368-3797.

71 Honda 600 sedan, new tires, battery, am-fm radio \$850/offer, 948-5968.

Housing

WANTED

To rent-by mo. 3-bdrm house, leave message for Carl Gillespie, Jr. at 948-9154.

Girl 19-25 to share neat 2-br. Sunnyvale apt. \$75 plus utilities. 248-5976

Happenings

SPEAKERS

Professor Ronald J. Adler, Physics Dept., American University, Wash. D.C.

Feb. 6 at 2 p.m. in building 245, auditorium, second floor.

"Relativity and Slowly Rotating Stars"

MEETINGS

1973 Winter Convention on Aerospace and Electronics Systems International Hotel, L.A., Feb. 13-15. Sponsored by the IEEE, and Aerospace & Electronic Systems Group.

Theme will be "Emerging Business Opportunities Through New Technologies."

Ames takes part in landing studies

Like Jonathan Livingston Seagull, airplanes have found better ways to fly. And, like the famous bird, they've found new and more sophisticated ways of descending on airports.

When aircraft can make short or vertical take off and landings on a regular basis at public airports new approach patterns will be needed. Already a new way of landing is needed by conventional aircraft to reduce the noise of their descent.

New ways of telling a pilot where his aircraft is on an approach will also be necessary.

To this end a team made up of Federal Aviation Association, Department of Transportation, Department of Defense and NASA representatives recently spent two and a half months in Washington, D.C. studying landing guidance systems.

Dr. Masayuki Omura of Ames' Avionics Research Branch, was part of the team. The team evaluated Microwave Landing System (MLS) Phase I contracts. The national MLS program is a three-phase, five-year program begun in July,

1971 to develop a common civil and military aircraft landing guidance system.

The new approach and landing guidance system is needed because the current systems are inadequate for future aircraft operations, says Omura. "The current civil Instrument Landing System (ILS)," he continues, "has been in use since early 1940's essentially unchanged in basic principles."

The ILS provides only a single narrow approach path, and guidance information accuracy near touchdown is severely affected by the surrounding terrain and buildings. The MLS on the other hand will have much wider coverage (up to 120 degrees) allowing curved and segmented approaches which are so important for efficient V/STOL operations and for avoiding areas sensitive to noise.

Working at higher frequencies, the MLS will provide accurate guidance information all the way to touchdown.

"The MLS," says Omura, "will have several levels of sophistication (Continued on Page 2)



HEADING FOR ALASKA . . . Ames' "Galileo" Convair 990 is prepared for a joint USSR/US mission over the Bering Sea. At Astrogram press time (Monday, Feb. 12) the Galileo had developed engine trouble and take off, scheduled originally for Feb. 12, was postponed until Feb. 13.

US-USSR Mission

The Academy of Sciences of the USSR and NASA will soon conduct joint measurements of sea ice, sea surface and atmospheric conditions in the Bering Sea from ships and instrumented aircraft.

The measurements are to be carried out by a Soviet weather ship and an IL-18 aircraft and by the Ames Convair 990 airborne science laboratory. The U.S. Coast Guard icebreaker STATEN ISLAND will be the USSR counterpart for surface measurements. The experiment will take place between Feb. 15 and March 7.

Purpose of the experiment is to obtain and exchange microwave measurements of the sea surface at varying temperatures and sea state, the salinity, thickness, roughness and age of sea ice, and the water content of the atmosphere. Results of the experiment may contribute to a better understanding of the interaction of sea ice and atmosphere on the development of weather patterns in the Bering Sea and adjacent area.

The experimenters hope to acquire more information on the performance of microwave radiometers mounted on aircraft, their relationship to satellite-borne instruments and their operational use in meteorology.

The USSR aircraft will operate

from the Anadyr Airport in eastern Siberia and the U.S. Convair 990 will be based at Anchorage, Alaska.

The Soviet ship will operate in the Sea south of the ice boundary near 179 degrees East longitude and the U.S. Coast Guard ship will operate in the ice between 58 and 63 degrees North latitude and 174 and 178 degrees West longitude.

Ships and aircraft will be linked by radio with each other and with Anadyr and Anchorage. Voice communications for coordination will be in English.

The experiment will be carried out under the August 1971 recommendations of the Joint US/USSR Working Group on Satellite Meteorology. The joint experiment scientists are Dr. William Nordberg of Goddard Space Flight Center and Professor Kirill Kondratyev of the Soviet Academy of Sciences. Mr. Earl V. Petersen of Ames' Airborne Science Office is the expedition manager.

Ames' Convair 990 pilots for the mission are Glenn W. Stinnett, Jr., James P. Riley, and Robert C. Innis. Donald L. Mallick of Flight Research Center will also fly on the mission. Navigator is John W. Kroupa and Engineer is Frank J. Bressmer.

Budget cuts affect all NASA centers

At a recent press conference in Washington, D.C., Dr. James C. Fletcher, NASA Administrator and Dr. George M. Low, Deputy Administrator spoke with members of the press on NASA's fiscal year 1974 budget. Excerpts from that conference follow:

" . . . In terms of our civil service personnel, which does account for the major portion of this appropriation, as you see, the totals, we are, as Dr. Low mentioned, coming down a little over 1800 positions, 1880. You see the major centers that are affected. The Kennedy Space Center down about 100, principally related to the slower build-up on the shuttle and other activities. Some reduction in Manned Spacecraft Center, 75, and the major reduction at Marshall Space Flight Center of 650 positions related primarily to the reduced work load involved in the slow-down of

the HEAO communications and other activities there.

The other reductions, Goddard, 158, related principally to the communications area again. And Wallops Island, a small reduction of 17.

And approximately 730 reductions in the aeronautics and space centers, Ames, Langley, Flight, and Lewis, with the primary reduction being at Lewis Research Center, 660. That number includes those reductions from the phasing out of the Plumbrook station and also the so-called SNO or Space Nuclear Operations activity.

In NASA headquarters, we are taking commensurate reductions, 150, so a total of 1880.

" . . . where we expect to end up this year by the end of June, we will be about 103,000 or 104,000 contractor employees working on NASA work, and staying essentially constant, or around 100,000 by the end of - - in June, '73.

Ames takes part in landing studies



DR. OMURA

(Continued from Page 1) to meet the needs of the entire spectrum of users - lowest cost version for the general aviation community, and the most sophisticated version for those users requiring all-weather operations with an extremely high degree of safety."

A five-year plan to develop and test the prototype MLS was formulated by an interagency planning group. The program, managed by the FAA, combines government and industry efforts.

Industry will develop the total MLS system and the government will engage in supportive programs on a discrete task basis. NASA's

major task is to evaluate the effectiveness of the MLS for STOL aircraft applications when the prototype system becomes available in 1975. Because of Ames' unique aircraft simulation capabilities and the related on-going STOL programs, the center will play an important role in the national MLS program.

Supervisory seminar

Ames' Employee Development Branch coordinated a supervisory seminar entitled "The Challenge of Leadership," Jan. 29 through Feb. 2 at College of San Mateo. The seminar was jointly sponsored by NASA, Veterans Administration Hospital, U.S. Geological Survey, Defense Contract Administration Services Region, and Moffett Field Naval Air Station.

The course was designed to provide supervisors with a foundation of accepted supervisory/ management concepts on which they could build for continued professional growth. The course theme stressed the individual's responsibility to broaden his knowledge of managing people and organizations.

The 40 participants heard speakers from the University of Santa Clara, University of Utah, Stanford University and the sponsoring institutions.

Scholarships offered

Federal Personnel Council Scholarship

The Federal Personnel Council of Northern California has announced the annual college level Scholarship Award Program for 1973. Seven one-year scholarships in the amount of \$350 will be paid to the winners upon their enrollment in a recognized junior college or an accredited college or university.

To be eligible the applicant must be the son or daughter of a career civilian employee presently employed in a Federal agency in Northern California; or the son or daughter of a retired or deceased career civilian who was employed by a Federal agency in Northern California at the time of retirement or death; or currently employed in a Federal agency in Northern California under the President's Stay-in-School Campaign, or have been employed during the summer of 1972 under the Summer Youth Opportunity Program; and a high school senior graduating in January or June 1973.

The scholarship will be based on scholastic ability, leadership potential and a 1200-word essay.

Deadline for making application for the scholarship is April 1. Application forms may be obtained by contacting Mrs. Dorothy M. Evans, Training and Special Program Branch, ext. 5624.

For the 36th year, Zonta International, a service organization of executive women in business and the professions, is announcing the Amelia Earhart Fellowship Awards to women for advanced study and research in the aerospace sciences.

The \$3,000 grants, established in 1938 as a memorial to Zonta's famed air pioneer member, are supported by more than 600 Zonta clubs in 45 countries.

Zonta's confidence in women's potential in the aerospace sciences has been rewarded by the distinguished contributions made by those who have received the 116 Amelia Earhart Fellowships. A bachelor's degree 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 potential and commendable character.

Recipients from 14 countries include students whose degrees were earned in North America, Europe, the Middle and Far East, and Australia. Fellowships have been used at graduate schools in the United States, Canada, Germany, Switzerland, United Kingdom, Japan and Italy.

Candidates or instructors wishing to recommend students, write: ZONTA INTERNATIONAL, 59 East Van Buren Street, Chicago, Illin

How to appraise files in 60 seconds

(Continued from last issue, second part of a three part series.)

Step 2. Check for the number of file guides in the drawer.

Every active file drawer should have five to 15 guides in a drawer. Anything less means the file clerks are spending too much time, pushing and pulling and fingering through the file to find the desired record.

A guide is supposed to do just that - guide you to the folder or record you are looking for. It eliminates having to search through most of the file to insert or find the desired item. Contrary to popular belief, the eye is faster than the hand. The hand is only faster in magic tricks. When hand work is converted to eye work, time is saved, production and efficiency are increased and the filing operation is speeded up.

Time studies show that over 90 percent of each filing and finding operation takes place while the file drawer is open. A drawer without guides poses a serious problem to the file clerk. She must guess where the folder is in the

drawer, try her guess, move forward or backward in the drawer, fingering the folder tabs as she goes. She tries again and eventually finds the wanted folder.

It is obvious that if a drawer of 150 folder were equipped with 15 file guides (one for every 10 folders) the clerk could spot with her eye the guide behind which her folder will be located. By placing her hand half way between this guide and the next she will be within five folders of the one she wants. The hit-and-miss spot checks are eliminated and filing speeds go up.

In very active files it is advisable to use between 15 and 25 guides per drawer. Filing supply manufacturers provide preprinted indexing sets for most types of filing. Most commonly used are alphabetical A to Z sets.

A file without guides means the file supervisor might not know that guides are of prime importance to an efficient and productive file sys-

tem, or it means that management has no appreciation of the value of guides.

Step 3. Take notice of the folders used in the file.

Are the file folders all of the same basic tab style? Or are the folders a mixture of different types and tab sizes? Are the folders all 11-point stock? (A point is 1/1000ths of an inch and 11-point is considered an excellent weight for most filing operations.) Or are the folders a mixture of manila folder stock, kraft stock, durox stock and various pressboards?

A file is in trouble if there is a conglomeration of file folders in the drawer. More than any other tip during your 60 second appraisal this one gets to the heart of the problem. A well run file will in variable have uniform weight, size and tabbed folders. There will be a scheme to the arrangement and it will probably tie into the guiding used in the file.

Explorer I is 15

America's first artificial Earth satellite, Explorer I, was launched 15 years ago today.

The 30.8-pound object, shaped like a stovepipe, 6 in. in diameter and 80 in. long, entered the U.S. and the western world into the age of space. Explorer I's principal scientific achievement was a major one - the discovery of the Van Allen Radiation Belts surrounding Earth.

ASTROGRAM Admin. Mgt. Building
Phone 965-5422

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Ames' women in management

Human Studies Branch

Dr. Joan Vernikos Danellis is Chief of the Human Studies Branch. She oversees the work of four other scientists, and the joint work of the branch.

The group, as their name implies, investigates human reactions to a space environment. Their work has included a bed-rest study to determine the affects of prolonged weightlessness, studies for early detection of disease, studies to determine man's tolerance to acceleration, and how group interaction affects work levels.

Presently emphasis is on possible affects of extended stays in space, as will be required for Space Shuttle missions.

As Dr. Danellis says, "We are developing a set of criteria for Space Shuttle passengers. Many of them will not be trained as astronauts are. They will often be just off-the-street people, of all ages, both sexes and varying physical conditions. We must devise a simple test to determine which criteria must be met before they are permitted to work on the Space Shuttle."

Each of the scientists, including Dr. Danellis who has a Ph.D. in pharmacology, conducts individual research. The group also works together on joint investigations.

Records and Reports Branch

When an Ames employee wants to know when he is eligible to retire, or what life insurance benefits are available to him as a federal employee he goes to Elizabeth H. Thomsen, Chief of the Records and Reports Branch.

She and five assistants process all personnel actions, maintain personnel records, administer the center's Ready Reserve and Military Detailee programs, obtains draft deferments for essential center employees, and advises on personnel rules, regulations, policies and procedures.

Ms. Thomsen is the center authority in regulatory matters and personally reviews non-routine actions.

She says, "I love it. I wouldn't go anywhere else. And my girls are just great. They're all hard workers."



JOAN DANELLIS



ELIZABETH H. THOMSEN



RUTH E. RICHARDSON



SARAH S. OGATA

Publications Office

Sarah S. Ogata has been Chief of the Publications Office since October, 1972. Prior to that time the office was called the Manuscript Branch and the now-retired Ms. Carol Tinling was chief.

Under Sarah's supervision two Ames employees and six contract employees edit, type and arrange for the publication of Ames' research, journal and meeting publications.

Among other responsibilities the group prepares for the publication of technical manuscripts of the Aeronautics, Space Sciences and Life Sciences directorates.

Payroll and Travel Office

Ruth E. Richardson is an important lady in the lives of all Ames employees. She is head of the Payroll and Travel Section.

She coordinates the work of 12 full-time employees, and varying numbers of part time help. Everything from paychecks, with their myriad deductions, to travel arrangements and achievement award checks are processed through her section.

The recent computerization of Ames' payroll process brought extra work and headaches to her office. "But," she says "I work with a wonderful group of people. Helen Bolt, for instance, worked hundreds of hours on her own time, coming back here many nights and weekends

to work on the conversion."

"The whole section," she continued, "is hard working."

Gladys Harrison E.M.S. secretary

Dr. Gladys Harrison, LRP, was elected Council Secretary for the Electron Microscope Society recently. She will hold the office for two years.

The national society, founded in the early 1940's, meets yearly to promote the use of the sophisticated microscopes, and to disseminate information gained from their use.

Stamp Offer

Manned Spaceflight Covers has available key event covers throughout the flight of Apollo 17. Included are launch covers cancelled 12/7/72 a.m., Kennedy Space Center and Cape Canaveral, along with Houston covers cancelled 12/6/72 p.m. since the launch of Apollo 17 occurred at 11:33 p.m. Houston time. Available are fifteen other event covers cancelled on various dates throughout the flight. Prices of Apollo 17 covers are 50¢ each. Manned Spaceflight Covers is proud to offer covers with pictures of the crew in full color at this very reasonable price.

In addition, Manned Spaceflight Covers obtained the first and last day cancels of the Skylab (SMEAT) Test, that lasted fifty-six days beginning on 7/26/72 to 9/20/72. For the specialist, a limited number of covers cancelled for each of the fifty-six covers is priced at \$25. The individual first and last day covers are 50¢ each.

Further information, current price lists of Apollo 11, 12, 13, 14, 15 and 16 can be obtained by writing to Manned Spaceflight Covers, P.O. Box 10791, Houston, Texas, 77018. A self-addressed, stamped envelope is requested.

GOLF

As a result of a recent change in the Ames Golf Club constitution membership in the club has been extended to the immediate families of regular members as well as those of retired Ames employees.

In a second change, the Ames Golf Champion will be the person who has the lowest scratch average in 6 of the regularly scheduled Ames Golf Tournaments. Clark White has agreed to extend the current membership drive until December 1973. However, he would appreciate receiving your dues soon. Winners of the match play tournament for 1972:

- Championship Flight-Ruben Ramos
- Runner-up-Owen Koontz
- First Flight-Steve Hing
- Runner-up-Ed Courtney
- Second Flight-Vance Oyama
- Runner-up-Earl Menefee
- Third Flight Bob Marraccini
- Runner-up-Bob Sheaffer
- Winner of Director's cup-John Hawkins.
- Ames Golf Club Champion-Two winners- Ruben Ramos and John Hawkins.

Thank You

"I want to thank all my friends at Ames for the sincere expression of sorrow at the death of my wife Catherine, and for all those cards, flowers, and gifts. I thank you kindly.

Anthony Quartuccio"

"Working for over 32 years at one location sounds like a long time. Now that I have retired it seems like only yesterday (Aug. 1940) I came to Ames as a starry-eyed young engineer. The years have been good to me and I can sincerely say that I have enjoyed them all. I want to thank every one for having made my professional career so successful and enjoyable.

I also want to thank all of you who contributed to my wonderful retirement party. It was a great way to get me started in my new career of doing things I haven't had time for. The down parka and camera bag are going to Aspen with me for five weeks of skiing - a great way to start retirement. Thanks Again,

Noel Delany"

It's just Max

To avoid some past confusion in the future, those who have occasion to call Layton Yee or Max Wilkins at ext. 6083 should not get excited if they hear a rather strange voice answering the phone. It is from neither a Martian nor a robot but just Max who had his larynx removed last summer and temporarily must use an artificial voice. If he cannot be understood, please leave a message.

Chinese Banquet

... by Guy Wong

One hundred and sixty gourmets gathered at the Golden Pavilion Restaurant in Los Altos to welcome in the Year of the Ox. Half of the group was from Ames.

Gourmets Pat and Nadine Malone took the opportunity to celebrate their 26th wedding anniversary at the dinner.

John and Pat Habermeyer even took time out from their 'diet' rituals to help celebrate.

Starting with the hors d'oeuvres, the 1000 year eggs and fried won tons and followed by such dishes as sizzling rice soup, sesame chicken, Hangchow Duck and cashew prawns, the happy faces reflect the full enjoyment of the dinner by all those who were present. Watch for the 9th Chinese Dinner in about 3 or 4 months.

WANT ADS

AUTOMOBILES

1968 Open Road 11 1/2 ft. fully self-contained camper. Spic & span. 356-2368.

69 Mustang Mach1, 4-spd. a.m./f.m. stereo, radials, new brakes. \$1700. 286-0891.

69 Ford P.U., F100, auto., P.S., air cond., radio, trailer bumper, best offer, call 968-1200.

60 VW bug, \$200. 968-6033.

HOUSING

FOR SALE
Clearlake view lot, close to golf, tennis, fishing. Pd \$7000, sacrifice \$4800/1000 down or trade, 328-8756.

Sunnyvale home, \$53,000. Ten rms. 6-br, 3-ba., fully carpeted and landscaped. J. Miller 736-2696.

Brother of Ames employee living near Copenhagen interested in trading homes during month of June, 73, call 968-521.

By Owner: 3-br, 1-ba, ranch style near Los Altos High. Drapes, w/w carpet. \$32,500. 941-1398.

MISCELLANEOUS

FOR SALE
Baby Parakeets, \$4.50, 739-6054.

18" Admiral color TV, 6/6/71, \$150 or offer, 967-4110.

Bed, fold roll away, new cond. \$20 967-4110.

Desk \$10, 967-4110.

Zenith 3-band console radio, collector's antique circa 1935, factory new cond., 10825 Alderbrook, Cupertino.

Ski boots, size 9, used once \$30. Cheryl 732-3745, after 5 p.m.

6 ft. modern vinyl sofa w/ matching chair, brown, \$100. 321-0625 after 5.

Wrought iron/glass top coffee table, \$75. 321-0625 after 5.

Flying club (P.A. airprt) 2 openings, beginners or aerobatic student learn in C150 or Citabria, 968-9200.

HQ-170 Amateur band receiver w/ speaker, new cond. \$150, 327-9286.

4' x 6' car top baggage carrier, \$7.50, 378-1055.

Sailboat, well-equipped Coronado 25 w/ aft galley, Ballena Bay berth, \$5950, Alan Faye, 867-2866.

Attractive young male lab-shep. dog free to good home, ex. disposition. Housebroken, shots, 851-8028.

Slantboard, folds for storage, new, \$20, call 257-7454.

Borrowed & not returned, one lead hammer mold, please return to Phil Barozzi, 220-1, ext. 5177.

Found-grn overnight bag in Sunnyvale h.s. gym, 1/31/73, contained shoes, shirt & tie. Ext. 5330.

Basenji pups welped Oct. 29, call Randy Hitchens 377-4588.

Flying club (P.A. airprt) 2 openings, beginners or aerobatic student learn in C150 or Citabria, 968-9200.

Drop leaf, maple table, 42" wide, extended seats 12. \$65, call 967-2306.

Small buffet, light antique finish 325-4182 eve.

WANTED
Atlas or dictionary stand, bookcase, file cabinet, 325-4182.

King size (at least double) mattress in fairly gd cond 408/338-3156 after 5

JOGGERNEWS

... by Jerry Barrack

Paul Sebesta, Vito D'Aloia, and Jerry Barrack ran in the 20 kilometer (12.4 mile) Championship Race at Woodside on Jan. 21. A cool, moist, overcast day provided nearly perfect running conditions for Jerry and Paul who finished in 1:21:06 and Vic who wasn't far behind with 1:24:00.

Dale Shute, 51, provided an inspiration for all in 1972 by running a total 1781 miles, participated in 10 AAU sanctional races, and won one trophy. Well done Dale!

Night differential

The Comptroller General has recently ruled that night differential will now be considered base pay for wage board employees when their positions are converted to the General Schedule.