

Visitors To Hear 3rd Marine Band At Flight Show

Visitors to the Flight Demonstration on Armed Forces Day, Saturday, May 8, will be privileged to hear the 3rd Marine Aircraft Wing Band, a group of 40 musicians, as much at home supporting parades and ceremonies as it is playing concerts or dance music.

With a repertoire of music ranging from regimental to rock, the versatile musicians of the El Toro, California-based 3rd Marine Aircraft Wing Band entertain thousands of people every year at appearances throughout Southern California and the Western United States.

The group is slated to play prior to the flight demonstration at NAF and during pauses in the show.

The Marines, generally wearing the traditional dress blue uniform, maintain an extensive selection of arrangements that run the gamut from Beethoven to the Tijuana Brass and from Broadway show tunes to Sousa marches.

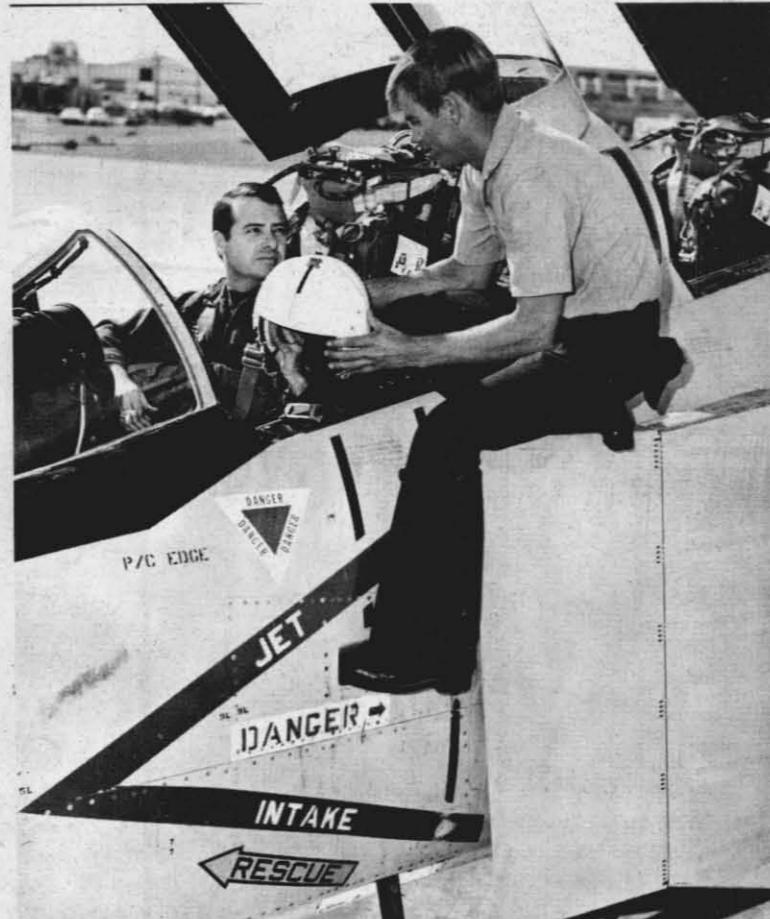
Included within the band is a 16-piece dance band that offers the "big band" sound and a five-piece combo for entertaining at military receptions and official functions aboard the air station.

The band's public appearances over the past year include participation in the Pasadena Tournament of Roses Parade; The Rose Festival in Portland, Oregon; The Pima County Fair in Tucson, Arizona; the week-long Fiesta Celebration in San Antonio, Texas; Denver, Colorado's Military Tattoo; and the Panhandle South Plains Fair, Lubbock, Texas.

The bandsmen, like all Marines, are considered to be fighting men first and as such maintain proficiency in general military subjects, weapons and physical fitness. This necessitates many hours of training in subjects other than musical. As part of the combat-ready 3rd Marine Aircraft Wing, they must accompany the unit whenever and wherever it goes.

With all this, the band still maintains a standard of musical performance that ranks them among the best of military bands.

Officer in charge of the band is Chief Warrant Officer Andrew M. Olesak; Master Gunnery Sergeant Thomas J. Cook is assistant band leader; Gunnery Sergeant Ronald E. Kelly is drum major; and Gunnery Sergeant Charles L. Butler is leader of the 16-piece dance band.



UP, UP AND AWAY—Cdr. Roy Cobb and Airman Arthur Jensen complete pre-flight inspection before Cdr. Cobb takes off for a practice run in the F4J Phantom jet, in preparation for Armed Forces Day Open House, Saturday, May 8. Highlights of day-long activities on the Center will include flight demonstrations at 9:55 a.m. and displays located in Michelson Laboratory, Maturango Museum, and the Weapons Exhibit Center, plus the annual Boy Scout Exposition.

PROMOTIONAL OPPORTUNITIES

(Continued from Page 2)

clude responsibility for the maintenance engineering of the AWG-10 fire control system, review and evaluation of the A7E radar system and flight test and evaluation of particular radar systems. Minimum Qualification Requirements: Bachelor's in engineering and 3 years experience in appropriate subject matter field. Job Relevant Criteria: Technical understanding and hardware experience with the AWG-10 fire control system. Experience in applying maintenance engineering to fleet systems. Thorough technical understanding of airborne radar in general. Experience in flight testing and evaluation of airborne radar.

File application for the above with Sue Prasolowicz, Bldg. 34, Rm 206 ext. 2577.

Clerk-Typist, GS-322-2, 3, or 4 (1 vacancy) Code 95—This position is located in the Office of Patent Counsel. Incumbent has the responsibility for the timely processing of invention disclosures. If disclosures are defective in any respect incumbent initiates corrective action. Thereafter incumbent is fully responsible for the proper security markings and handling of all future correspondence relating to the case. Initiates correspondence to Office of Naval Research appraising them of appropriate information relative to disclosures. Most correspondence prepared is for off-center distribution and for the Patent Counsel's signature. Must be familiar with work of a technical nature as the workload originates in the fields of mechanics, chemistry, electronics and law. Duties involve legal and technical typing of patent applications, amendments to applications, drawings, appeal briefs and all forms related to a completed patent application. Maintains extensive docket on patent cases, maintains case files and administrative files. Minimum Qualifications: high school or 6 months experience for GS-2, 1 year experience for GS-3, 2 years appropriate experience for GS-4, as outlined in X-118. Job Relevant Criteria: Must be accurate typist as erasures, deletions, interlineations, etc. can create doubt as to validity of legal documents. Advancement Potential: Incumbent may advance as high as GS-5 upon demonstrated ability to perform full range of duties involved in this position.

File application for above with Beverly Saiger, Code 457, Ext. 2371.

Supervisory Employee Development Specialist, GS-235-13, Code 654—Incumbent is Head, Employee Development Division, Personnel Department. Incumbent's primary areas of concern are the study of the motivation and change of people in work organizations; the generation of specific studies and policies relating to employee development at the Center; the administration of the employee development program; participation in the management of the Personnel Department and representing the Center in employee development matters. Minimum Qualification Requirements: 3 years general in personnel work and 3 years of specialized experience; or bachelor's degree and 3 years specialized experience. Job Relevant Criteria and/or Selective Placement Criteria 1) Experience in a generalist personnel organization or experience in all four functional specialties; 2) Personnel management experience in an R&D activity; 3) Must be knowledgeable in the behavioral sciences as it relates to personnel administration. This includes knowledge or

experience about such areas as organizational development, team development, sensitivity labs, etc., 4) Advanced degree preferred. File application for the above with Sue Prasolowicz, Bldg. 34, Rm 206 ext. 2577.

Mechanical or Aerospace Engineer, GS-11 or 12, Code 4572—Minimum Qualification Requirements: Minimum of Bachelor Degree in Engineering and 3 years of appropriate experience. Job Relevant Criteria: Experience in the design and development of solid propellant rocket motors with a strong background in: Thrust vector control systems including: hot gas secondary injection; liquid secondary injection; movable nozzles; auxiliary power supplies; hydraulic & pneumatic control systems. File above applications with Pat Gaunt, Phone 2723, Bldg. 34, Room 202.

Painter, WG-41002-09, JD No. 202, Code 70412 (2 vacancies)—Prepares wood and metal surfaces for painting and paints wood and metal parts, equipment, interiors and exteriors of buildings, surfaces of towers, and other structures, using brushes, spray guns, and other means of application. Applies various other protective or decorative coatings. Blends colors, and mixes paints and other surfacing materials. Qualifications Requirements: Rating will be on the basis of the appropriate J-Element Standard in accordance with the CSC Handbook X-118C.

Fellowship Day To Be Celebrated In Local Program

Church Women United will celebrate May Fellowship Day on Friday, May 7, at 11:45, with a luncheon and program at St. Michael's Episcopal Church. Ladies of St. Michael's and the American Baptist Church will be hostesses for the event. A nursery will be provided at the church, which is located at Drummond and Sanders Drive in Ridgecrest.

A special play, "Five in a Living Room", which is designed to point up common problems in family relationships, will be presented to lead into group discussion to be moderated by Mrs. Esther Osman. Mrs. Osman is the wife of NWC Chaplain R. E. Osman.

Cost of the luncheon is \$1.00. Reservations are requested to be made by Monday, May 3, and may be made with Mrs. Ada Scarborough, 446-2214; Mrs. Ruth Farrington, 446-3386; or Mrs. Betty Heflin, 446-4975. All women in the valley are invited to attend.

SHOWBOAT

MOVIE RATINGS
The objective of the ratings is to inform parents about the suitability of movie content for viewing by their children.
(G) - ALL AGES ADMITTED
General Audiences
(GP) - ALL AGES ADMITTED
Parental Guidance Suggested
(R) - RESTRICTED
Under 17 requires accompanying Parent or Adult Guardian

FRI 30 APRIL

"JULIUS CAESAR" (116 Min)
Charlton Heston, Jason Robards
7:30 p.m.

(Historical Drama) The Shakespearean classic is done in somewhat modern terms as it tells of Caesar conqueror of the Pompeyan army and of the conspiracy against him. (G)

SAT 1 MAY

—MATINEE—
"INSPECTOR CLOUSEAU" (95 Min)
Alan Arkin
1:00 p.m.

Short: "Shooting of Caribou Lou"

—EVENING—
"GOODBYE GEMINI" (90 Min)
Judy Geeson, Michael Redgrave
7:30 p.m.

(Drama) Murder, gore and perversion result when a third party comes between an exceptionally close pair of twins. They unite against the "invader" of their insane world, but retribution becomes inevitable. (R)

Short: "Eye to Europe" (17 Min)

SUN and MON 23 MAY

"THE GOOD GUYS & THE BAD GUYS" (91 Min)
Robert Mitchum, George Kennedy
7:30 p.m.

(Comedy-Western) Imagine Mitchum as marshall of a frontier town where parking lots are replacing the hitching post, and Kennedy as a once-notorious outlaw now facing a medicare future! (GP)

Shorts: "Chaser on the Rocks" (Roadrunner) (7 Min)

"Carnival in Rio" (9 Min)

TUES and WED 4-5 MAY

"TORAI TORAI TORAI" (144 Min)
Jason Robards, Martin Balsam
7:30 p.m.

(War Drama) ACADEMY AWARD WINNER FOR Special effects. Don't miss this superbly spectacular re-creation of the infamous attack on Pearl Harbor. Authenticity extends to the point of part of the film being actually produced in Japan to give a dual viewpoint. A film for those too young to remember and for those too old to forget! (G)

THURS and FRI 6-7 MAY

"PERFECT FRIDAY" (94 Min)
Ursula Andress, Stanley Baker
7:30 p.m.

(Crime Comedy) An assistant bank manager selects luscious Ursula as an accomplice to rob his own bank during the manager's getting date. (R)

Short: "S.S. Manhattan" (12 Min)

4-H Club To Hold Annual Show At Vieweg School

The High Desert 4-H Club will hold its second annual Dress Revue at Vieweg School auditorium on May 1, at 2 p.m. Refreshments made by the cooking groups will be served after the revue. The public is cordially invited to attend.

The girls in the clothing project will model outfits they have made this past year. Exhibits from other projects, such as goat raising, experiments in electricity, and projects in food preparation will be featured. Members of the South Fork 4-H Club of Weldon will also participate.

For more information call Mrs. Robert Fowler, 446-4791.

Youth Center Parent's Night

The China Lake Youth Center has established a special night for parents and their youngsters. The facility will be open for this activity each Tuesday evening from 6 p.m. to 9 p.m.

Parents accompanied by a paid-up family member will be allowed the use of equipment for the evening.

Buy U.S. Savings Bonds & Freedom Shares

From _____

TO _____

PLACE STAMP HERE



MEMBER AT LARGE—John Scott, an enlisted man at VX-5, was recently elected to fill the post of Member at Large on the China Lake Community Council. Scott, who holds a degree in journalism from the University of Missouri, is a writer for Special Services and frequently assists the staff of The ROCKETEER with VX-5 news and special assignments. He is single and lives in the VX-5 barracks.

Gates . . .

(Continued from Page 7)

Advantage was taken this past year of Gates' knowledge of Control Theory and his interest in and knack for teaching by having him teach the course in Linear Control System Design offered under the USC Graduate Program in Engineering during the 1970 Spring Semester. He is scheduled to teach the same course again this coming fall. Along with his other duties he has served as an advisory member of the Education Committee for Ordnance Sciences this past year, in line with the current policy of having representation on the committee from those who have participated in the Center's Off-Center Advanced Academic Study Program.

Gates hobbies are skiing and motorcycling. He and his wife, Betsy and their daughter Allison and sons Tod and Jeffrey reside at 48A Rowe Street, China Lake.

AME3 E. F. Armenta

AME3 E. F. Armenta, an Aviation Structural Mechanic "E" Third Class at NAF, has been selected "Bluejacket of the Month" for April.

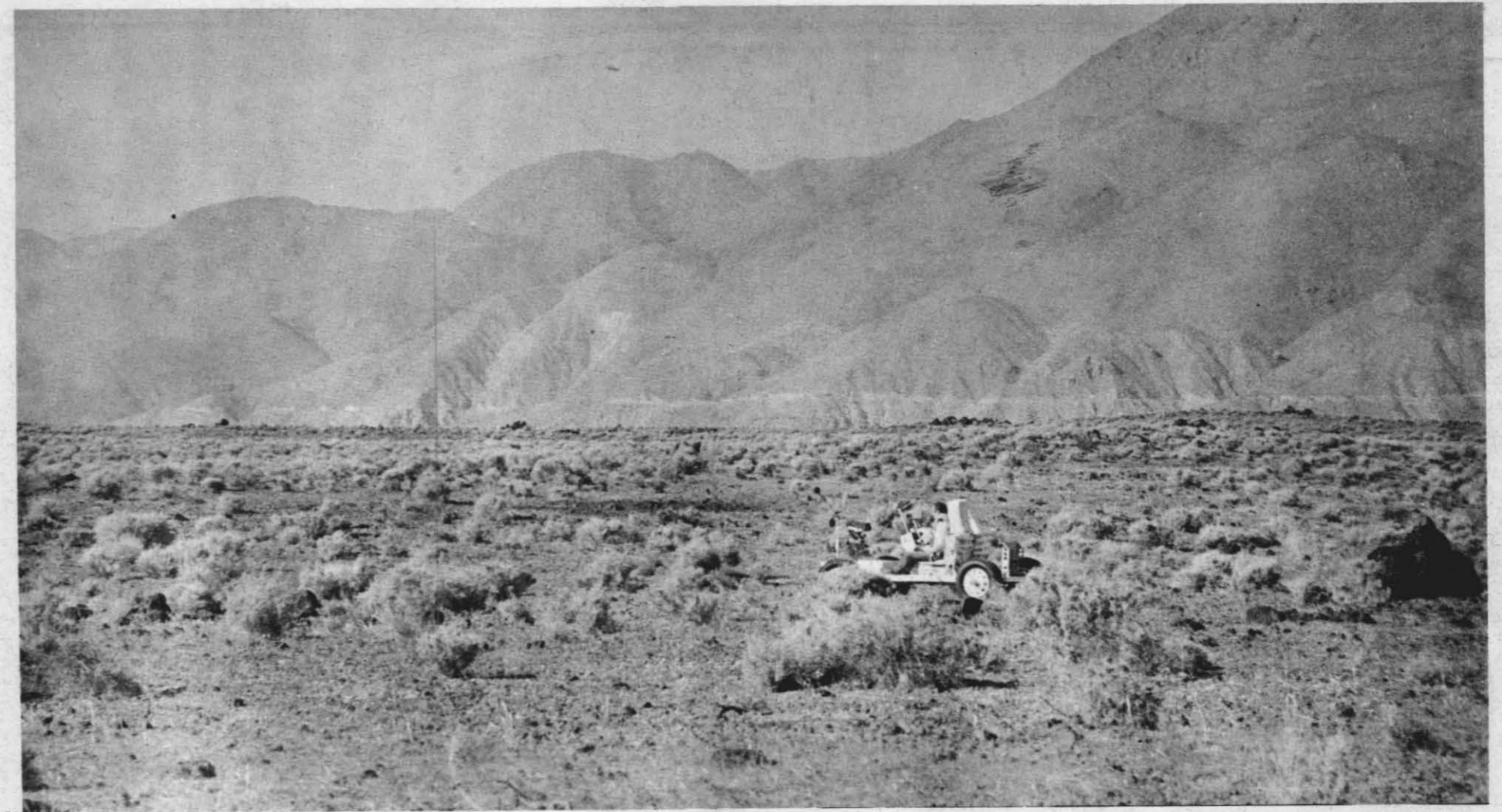
The Tucson, Arizona native and his wife, Mary, will journey to Bakersfield as guests of the Bakersfield Chamber of Commerce on April 30. While in that city, the Armentas will be hosted at the Imperial 400 for rooms and at Sambo's for meals, and will receive gift certificates and discount coupons from Bakersfield merchants. In addition, the April Bluejacket will be interviewed on KERO-TV for broadcast on a news program.

Doug Butler, of Desert Motors in Ridgecrest, will present the keys to a new Ford for the Armenta's use on the event-filled weekend.

Armenta has many interests including boxing, bowling, baseball, football and music. In 1967, fighting as a bantam flyweight, he reached the semifinals as a Golden Glove amateur. He still enjoys watching professional fights although he no longer participates.

He was a four-year man in baseball while attending Pueblo High School in Tucson and played football for NAF last season. He recently took up the sport of bowling and competes in the military league on Wednesday mornings at Hall Memorial Lanes.

Armenta is an accomplished musician (he plays the trumpet, guitar, drums and bass) and for a three-year period, between the



NASA PRACTICES AT COSO—Apollo 15 Crew Commander Col. David R. Scott, USAF, and Lt. Col. James Irwin, USAF, who will pilot the Lunar Module for the mission, take the simulated Lunar Rover vehicle for a spin during exercises conducted at NWC's Coso Test Range yesterday and today. The area was selected for the tests because of its close similarity to the same area in which they will be operating on the Moon. (For Details, See pages 4 and 5).

Armed Forces Day May 8

NAF's AME3 Armenta Is Named April Bluejacket

Eduardo F. Armenta, an Aviation Structural Mechanic "E" Third Class at NAF, has been selected "Bluejacket of the Month" for April.

The Tucson, Arizona native and his wife, Mary, will journey to Bakersfield as guests of the Bakersfield Chamber of Commerce on April 30. While in that city, the Armentas will be hosted at the Imperial 400 for rooms and at Sambo's for meals, and will receive gift certificates and discount coupons from Bakersfield merchants. In addition, the April Bluejacket will be interviewed on KERO-TV for broadcast on a news program.

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AME3 E. F. Armenta

couple have one daughter, Michelle, 2. They are expecting another child in August.

Mary's hobby is liquid embroidery and Armenta collects tropical fish. "Now there's a hobby that can get out of hand," he commented. At present he has 22 fish and one large tank, but plans for the future include another tank and some additions to his fish "family."

Since joining the Navy in April 1969 Armenta has attended AME "A" School, AA-TA4F "C" School, F-4B, J-"C" school and is presently taking home courses from USAFI in heavy equipment operation.



April 30, 1971 Naval Weapons Center, China Lake, California Vol. XXVI No. 17

Annual Wildflower Show Begins This Weekend at Community Center

A view of California's hi-desert natural beauty, amid the setting of a western mining town, presents an unusual opportunity for visitors who attend the 25th Annual Indian Wells Valley Wildflower Show to examine at close range over 150 varieties of wildflowers that are native to the surrounding area. The WACOM-sponsored show will be held this Saturday and Sunday, May 1 and 2, at NWC's Community Center. The show will feature a mining town setting in keeping with the theme "The Old West Revisited" and the silver anniversary of wildflower shows held in Indian Wells Valley since the establishment of the Naval Weapons Center.

Sponsored by the Women's Auxiliary to the Commissioned Officers' Mess, the silver anniversary celebration will feature over 150 wildflower specimens in an "Old West Revisited" setting—a mining town complete with a general store, church, a miner's cabin with outhouse and a livery stable. "Travelers" surveying the region may stop at "Sue's Sourdough Saloon" which will feature sandwiches, desserts, soft drinks and coffee. The "town" theatre will feature live entertainment, including barbershop quartets and individual and group musical numbers.

Variety of Displays
Original desert paintings by local artists will complement the displays, and an original Henry Mockett serigraph—a Mojave Yucca in bloom—will be offered as a door prize.

The Joshua Room will be the scene of an antique display by Mrs. Bernice Rogers and a display representative of the Maturango



HOLD ON TO YOUR HAT!—The 25th annual Wildflower show is coming! Barbara Lewis, the current Miss Ridgecrest-China Lake, sits in a field of wildflowers to remind local residents that the big wildflower show, presented annually by WACOM, will take place May 1 and 2 at the Community Center. Shirley Stephenson, WACOM president and chairman of the event, invites all residents of the Indian Wells Valley to come out and enjoy the entertainment and special exhibits at the Center. This year's theme, "The Old West Revisited," will be pointed out by "old-time" entertainers and special exhibits of ghost-town buildings and western streets in miniature.

—Photo by W. Fetzkeher

Show With 25-Year Run
Historically, the Wildflower Show has garnered valley interest and community effort. The first valley show was held at Inyokern in 1940, prior to the establishment of NOTS. In 1946 the first three-day

(Continued on Page 3)





STAR-SPANGLED ANNIVERSARY PARTY—L-R, Penny O'Hara, Faye Pippa, and Gunella Giegerich decorate the entrance of the Commissioned Officers' Mess for WACOM's Star-Spangled Anniversary Party to be held on May 8 commemorating 60 years of Naval Aviation. A no-host cocktail party begins at 6:30 p.m., and a buffet dinner begins at 7:30 p.m. Tickets are \$10.00 a couple and will be dinner receipts. All proceeds from the Anniversary Dance will be donated to the POW Wives Fund. COMNAVAIRPAC Band will provide dance music.

Navy Relief Fund Drive Gets Underway May 4

The annual drive for contributions to the Navy Relief Society will get underway May 4 through June 6, stated LCDr. R. A. Shepard, Commanding Officer of Enlisted Personnel, who is this year's fund drive coordinator. Key men have been selected and will contact NWC employees sometime during the drive to enlist support of the Navy Relief program. The drive will be culminated with the award of an automobile to a drive contributor on June 4. All persons who contribute donations to the drive will be considered eligible for the award. This year the person receiving

the car will have their choice of a 1971 Chevrolet Vega GT Hatchback sport coupe or a Chevrolet Vega station wagon. Other awards and gifts will be given donors at the end of the fund drive. The purpose of the Navy Relief Society is to assist, financially and with other services, the personnel of the Navy and Marine Corps and their dependents. Financial assistance may be in the form of an outright grant, a loan without interest, or a combination of the two, depending upon the ability of the individual to repay a loan in his particular circumstances. During 1970, the Society nationwide

(Continued on Page 7)

PROMOTIONAL OPPORTUNITIES

Applications for positions listed in this column will be accepted from current NWC employees and should be filed with the persons named in the ad. All others desiring employment with the Naval Weapons Center may contact the Employment Division, Code 452, Extension 2049. Current applications (SF-171) or Standard Form 172 should be submitted bringing your work history up to date if one has not been submitted within the last 4 months. The fact that positions are advertised in this column does not preclude the use of other means to fill these positions. Part of the ranking process of those rated as basically qualified will be a supervisory appraisal form that will be sent to the employees present and most recent previous supervisor. Selection shall be made without discrimination for any nonmerit reason.

Helper Pipefitter, WG-42004-05, JD No. 337, Code 70421—Assists the journeyman Pipefitter in performing the duties of a pipefitter and some of the duties of a plumber. Helps in the installation of pipe, fittings and fixtures to construct or maintain piping systems such as steam heating, steam power, hot water heating, hydraulic, high pressure air, nitrogen lines and oil line systems. Incident is a trainee and requires ability to learn and progress in the trade. Qualifications Requirements: Rating will be on the basis of the appropriate J-Element Standard in accordance with the CSC Handbook X-118C. Promotion Potential: Journeyman Level Pipefitter.

Helper Locksmith, WG-53011-05, JD No. 347, Code 70411—Assists the journeyman Locksmith in performing the duties of a Locksmith. Installs, opens and repairs all types of locks. Makes keys and changes combination on all types of locks. Opens combination locks on safes, safe files, vaults and doors where combination is unknown or defective. Opens key lock when key is not available. Does layout by making up codes and new combinations for cylinders, etc. Qualifications Requirements: Rating will be on the basis of the appropriate J-Element Standard in accordance with the CSC Handbook X-118C.

File applications and Supplemental Experience Forms with Dora Childers, Code 457, Room 210, Phone 2393.

Supervisory Electronic Engineer, GS-855-13, Code 3522, PD No. 7135045—This position is that of Head of the Advanced Guidance Branch, Code 3522, Electronic Systems Department. The branch is responsible for the exploratory, advanced, and engineering development of advanced radio frequency avionic and missile guidance systems. The majority of the branch efforts are concerned with advancing the state-of-the-art of broadband direction finding systems. Detailed component research and development is an associated area of endeavor. The incumbent is responsible for conceiving and planning all areas of experimentation, technical direction of these efforts along the most fruitful lines of development, and reporting on and documenting the results. Minimum Qualification Requirements: Bachelor's engineering and 3 years experience in appropriate subject matter field. Job Relevant Criteria: Advanced degree in electromagnetic theory preferred. 3 to 5 years minimum experience in microwave engineering including design and development experience in antennas, transmitters, receivers, strip transmission lines, and microwave component design including solid state devices.

Implementations and radio frequency test and evaluation is of fundamental importance. Must have evidence, such as patents or reports, of having contributing directly to difficult design and development problems in the areas of passive, semi-active, and active RF systems. Electronic Engineer, Supervisory, GS-855-13, PD No. 7135044, Code 3525—This position is that of Head, Aircraft Radar Branch, R. F. Development Division, Code 3525. Duties in-

Attention to Corona Credit Union Members

The liquidation ballot properly signed and your passbook must be submitted to NOLC Federal Credit Union by May 8, 1971 to insure that you get your money upon final liquidation. If neither your passbook nor the confirmation letter is received, the amount remaining to your credit upon final liquidation must be paid to the National Credit Union Administration, as Trustee, until such time as you will be able to prove your claim to it. If you have misplaced your ballot, contact the NOLC credit union office and a new ballot will be sent to you on request. If you have not sent it in, do so immediately.

A Presidential Proclamation Loyalty Day 1971

In this time, as throughout our history, the American nation rests fully and finally upon the loyalty of the American people. Every day Americans around the globe bear witness to their national allegiance. In doing so, some bear final witness by giving up their lives for the life of this Nation. Not all are called to that extremity. But all are called to that degree of devotion. For that reason it is fitting that we set aside one day in the year when every citizen may pause to reflect on his own debt to the devotion of other Americans, and to bear witness in every appropriate way to his own loyalty.

To that end the Congress by a joint resolution of July 18, 1958, has designated May 1 of each year as Loyalty Day and requested the President to issue a proclamation inviting the people of the United States to observe such day with appropriate ceremonies.

NOW, THEREFORE, I, RICHARD NIXON, President of the United States of America, do call upon the people of the United States, and upon all patriotic, civic, and educational organizations, to observe Saturday, May 1, 1971 as Loyalty Day, with appropriate ceremonies in which all of us may join in a reaffirmation of our loyalty to the United States of America.

I also call upon appropriate officials of the Government to display the flag of the United States on all Government buildings on that day as a manifestation of our loyalty to the Nation which that flag symbolizes.

IN WITNESS WHEREOF, I have hereunto set my hand this 10th day of March, in the year of our Lord nineteen hundred seventy-one and of the Independence of the United States of America the one hundred ninety-fifth.

Richard Nixon

CS Annuities To Be Adjusted

Information from the U. S. Civil Service Commission indicates a cost-of-living adjustment of Civil Service annuities amounting to 4.5 per cent will take effect June 1, 1971 for employees retiring on or before May 31, 1971. The Civil Service Retirement Law provides for an automatic increase of Civil Service annuities whenever the cost of living, nationwide, goes up by at least three percent over the Consumer Price Index (CPI) for the month used as the base for the most recent cost-of-living annuity increase and stays up by at least three percent for three consecutive months. The present base month is May, 1970. January, 1971, was the first month since May 1970 that the percentage increase in the Consumer Price Index equalled at least three percent over May, 1970.

Navy Wives Club now meets in Chapel Annex 95. Next meeting is May 12, 9:30 a.m. Nursery care provided. For transportation call Lori Boyd, 375-4953, or Diann Pottorf, 375-7385.



OASIS GARDEN CLUB PLANS SHOW—Members of the IWV Oasis Garden Club (l-r) Mrs. Richard Kistler, Mrs. Gene Younk and Mrs. Charles Woods, prepare for the club's 13th Annual Standard Spring Show to be held at the Community Center Thursday, May 6, from 2 p.m. to 8:30 p.m. Sections open for public participation are "Only A Rose" in the Artistic Division and "Bearded Iris" in the Horticulture Division. Entry blanks must be in by noon, Wednesday, May 5, and may be obtained from Mrs. L. Licwinko, 613 Ticonderoga.

Employee In the Spotlight

Norman L. Rump, Head, Explosives and Pyrotechnics Division, Propulsion Development Department, has made many contributions in his lifetime. And not all of them in his chosen field of work.

The developer of RAPEC, and manager of the program from 1957 to 1958, he is the man who also was responsible for the design of producing equipment for processing of the ZUNI, 2" .75 and 2" .0 GIMLET Rocket Propellants.

After transferring to the fledgling Naval Ordnance Test Station from Cal Tech in 1945, he carried on the work he had begun for Cal Tech as the person who designed the controls and put most of the buildings at the China Lake Pilot Plant into operation. He repeated this in 1945 and 1946 with the Pilot Plant at Salt Wells.

In 1947 he became Head of the Equipment Engineering section, in the old Explosives Department, Code 40 and made many operational changes. In 1955 he took over the Mechanical Engineering Branch, Code 4552.

In 1958 he became the Head of Code 455 and assumed the Head of the Propulsion Systems Division (Code 457) in 1959. In 1960 he became the Head of the Explosives and Pyrotechnics Division, Code 454.

The other interesting facet of Norman's contributions began in Paris, France, 44 years ago, while he was a student at the Lycee Janson de Sailly, a prominent school in that country. In 1927, one year before he completed an education began in 1920 at the school, he began a study of Tiger Beetles.

Because of his lifetime work studying these small creatures, the history of the Colorado River and that of Death Valley has been rewritten.

"A few years back I was working on a new bug found in the Colorado River Basin and during the process of my study I found a few things which didn't seem to jibe with the history of the Little Colorado River system," he elaborated. "I came to the inevitable conclusion that the Colorado at one time emptied into the Rio Grande River and because of my work geologists of the U.S. Geological Survey, and other interested groups, made a study of the evolution of the river itself and found evidence that I



Norman L. Rump

was correct. This occurred somewhere between 5 and 10 million years ago."

Norman has discovered new species of bugs by a new method of approach: first he determines that the bug must exist, and where. Then he goes and finds it. His current research with the bugs concerns their history and habits and relationship with other bugs. He is presently trying to correlate their history with the geological history of the Southwest.

Norman has two children, Marilyn Darrow, who lives in Bakersfield with her two children; and Robert, who recently completed a tour of duty with the U.S. Navy as a P-3 pilot. Marilyn is an art teacher and art student and Robert, who attended China Lake schools from kindergarten to two years at Bakersfield College and then graduated from San Francisco State, is currently seeking employment.

In addition to his work and his hobby, Norman finds time to serve on the Employee Services Board as Chairman of Food Services, and on the Board of Directors of the Ridgecrest Community Hospital.

Norman is a past president of the American Ordnance Association, China Lake Chapter, and is a member of RESA, AAAS (American Association for the Advancement of Science), California Academy of Sciences, Southern California Academy of Sciences, and the New York Entomological Society, and a member of the National Geographic Society since 1936.

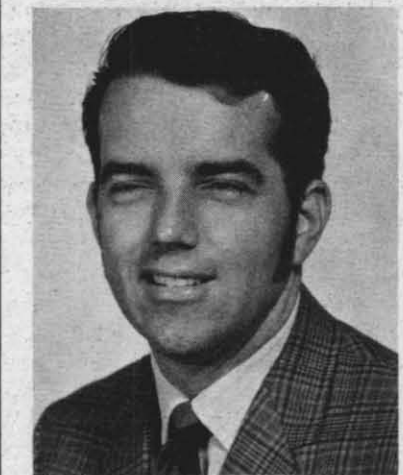


ELEMENTARY WINNERS—Judges of the 23rd annual Kern County Art Festival hold three of the winners in the elementary division. Bernice Jarrett, left, holds Beth Rohret's "Bird Talk," while Dan Castro displays Cynthia Hallstrom's "Alice's Backyard." Walter Giordano, right, holds "Flowers on a Vine," painted by Brian Wolfe. The paintings were judged best in their age category during the Festival, held April 24 and 25 in the Community Center.

Gates Receives Case-Western PhD In Engineering

Allen B. Gates, head of the Control Design Branch of the Engineering Department's Electromechanical Division, has received official notice from Case-Western Reserve University that he has completed the requirements for his PhD in Engineering and that the degree will be conferred on June 9, 1971.

Gates began his studies at Case in the fall of 1966 and remained there until July 1969 except for the summer of 1968 which was spent at China Lake. He was awarded an



Dr. Allen B. Gates

NWC Fellowship in the spring of 1967 which continued in force until January, 1969. His field of specialization was Automatic Control Systems Engineering. His PhD thesis was entitled "Experimental Modelling of Network-like Systems" and dealt with the development of computational techniques to determine the parameters of a system, given measurement data on certain voltages and currents or their equivalents in non-electrical systems.

Gates is a graduate of the University of Nevada where he received his Bachelor of Science in 1961 and Master of Science in 1963, both in Mechanical Engineering. His first contact with NWC was as a summer employee in 1962. On receiving the Masters he returned to China Lake. From March 1963 until June 1966 he fulfilled his ROTC service commitment with the Army emerging with the rank of Captain and Battery Commander in the Field Artillery.

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A Look Into The Past

From The Rocketeer Files

25 Years Ago . . .

The first Desert Wildflower Show was held in the old Movie Hut . . . Harvey Field (now Inyokern Airport), which proved to be the nucleus of NOTS and the small beginning from which evolved a major part of U. S. rocket development, was closed. Annexed by the Navy in Dec. 1943 as a fleet aircraft training base, Harvey Field was commissioned by the Navy on June 28, 1944 and named in honor of LCDr. Warren W. Harvey, USN . . . Ending a two-year tour of duty here, the last contingent of 28 WAVES departed for Camp Elliott . . . Dr. L. T. E. Thompson, Technical Director, told the PTA meeting that there were no rules applicable to the unique problems of a community the size of NOTS—an unusual community operating under unique conditions—but the problems were receiving attention in Washington and would be resolved in the course of time. Capt. John Hayward, PTA president, and Experimental Officer, announced the services of a civilian dentist had been arranged for and a chapel would be built within the next year . . . Cdr. James D. DeSanto and Mary Ehnborn were married in the temporary chapel; after his discharge from the Navy he became head of the Ground Range Section . . . Burroughs Choir sang at the Red Rock Canyon Easter Sunrise Service.

15 Years Ago . . .

With the accompaniment of the El Toro Marine Band, First Terrier Sam Battalion bid farewell to NOTS in parade ceremonies marking their transfer to Twenty-Nine Palms after a six-year tour at NOTS . . . The 11th Annual Desert Wildflower Show was held at the Community Center . . . Secretary of the Navy, Charles S. Thomas, made his first visit to NOTS . . . Construction of the new All-Faith Chapel got underway . . . Irving Bernstein, assistant director of the United Jewish Appeal, spoke at the NOTS Hebrew Temple on "Israel and Its Problems" . . . Public Schools Week was observed . . .

5 Years Ago . . .

Installation of a \$5,000 force-pound vibration facility at CLPL was completed, which provided China Lake scientists with the capability to determine how a given weapon or component will perform under the vibrations and temperatures of actual combat use . . . Burrell W. Hays was awarded a Sloan Fellowship for a year's study at MIT . . . Dr. Carl F. Austin of Research Dept., spoke on "Lunar Mining" at the Mojave Desert Section of the American Chemical Society's annual dinner meeting in Bakersfield . . . Girl Scouts from seven counties in Southern Calif. held the largest scout encampment ever hosted by the Command. The three-day event attracted 364 Cadette Scouts . . . A short item reported that the black silk neckerchief worn about a sailor's neck commemorates the death of Lord Nelson . . . The 21st Annual Wildflower Show was held.

CLPP Gate Reactivated

Effective Monday, May 3, 1971, the Main Gate to the China Lake Propulsion Laboratory will be reactivated by Police Division personnel. Entrance to the China Lake Propulsion Laboratory area will be granted ONLY to those personnel who have an exposed "L" on their Naval Weapons Center pass. Personnel not meeting with the above requirement may be processed for admittance at the CLPL gate.

The Rocketeer

Official Weekly Publication
Naval Weapons Center
China Lake, California

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DEADLINES:
News Stories Tuesday, 4:30 p.m.
Photographs Tuesday, 11:30 a.m.

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Phones 3354, 3355, 2347



Protestant (All-Faith Chapel)—
Morning Worship—10:00 a.m.
Sunday School—8:30 a.m., Chapel Annexes
1, 2, 4 (Dorms 5, 6, 8) located opposite Center
Restaurant.

Roman Catholic (All-Faith Chapel)—
Holy Mass—5:00 p.m., Saturday (Fulfills
Sunday obligation); 7, 8:30 and 11:15 a.m.
Sunday.

Daily Mass—11:30 a.m. in Blessed
Sacrament Chapel. First Saturday, 8:30 a.m.

Confessions—4 to 5 p.m. Saturday, and 8 to
8:25 a.m. Sunday.

NWC Jewish Services (East Wing All-Faith
Chapel)—8 p.m. every first and third
Friday.

Sabbath School—10 a.m. to noon, every first
and third Saturday.

Unitarian Fellowship—(Chapel Annex 95, 95
King Ave.)—Sundays, 7:30 p.m.



Sue Haack's 252 Game Leads Women's Scratch

The winter bowling season is grinding to a halt. Ace-TV has already received their trophies for winning the Premier League and the women's scratch league is rapidly drawing to a close. In action last Monday night, Sue Haack rolled a 585 series to lead the ladies with Rosie Pelley right behind with a 577. Pat McCollough had 562 and Wanda Billings a 553, Connie Evans, 537, Patty Maxwell, 536 and Aiko White, 533.

Sue had a 252 game, and Patty Maxwell rolled a 211. Aiko had two in the big bracket: 208 and 202 while Maggie Branson rolled 207, Grace Vorwerk, 204, and Wanda Billings and Rosie Pelley each had 200.

Friday Mixed 4-Some
FEDCO leads We by 1/2 game going into tonight's action, which will see the two top teams pitted against one another in position night play. In last week's scoring, Chuck Cutsinger led the league with a 597 series with Mike Crom the runner-up, shooting 591. Dean Ray had a 568. Mike had games of

222 and 204 while Cutsinger rolled a 225. Ed Plante had 223 and Jack Brown, 216.

Maggie Branson's 567 was high for the ladies while her teammate Darlene Herbstreit pounded out a 520. Willie Johnson had 524 and Grace Vorwerk, 520. Rosie Pelley also had a 524.

Mag hit a 215 single and Willie rolled 205. Grace had a 209.

Ginger Schorr converted the 6-7-10 split.

Supply Dept. Mixed
Bob Beyer's 597 was tops for the men and Barbara Beyer rolled a 552 to lead the ladies. George Beyer rolled a 215 game and Frank Carson had a 212. Bert French and Vern Logue recorded 211s and Bob Beyer had a 210. Barbara Beyer had games of 214 and 191 and Debbie Cornelius had a 190.

Ding-a-Lings
The Almost had a 2201 series and the Twinkle Toes rolled 790 to lead team events. Lori Boyd had a 524 series and Mary Shepard and Adie Bensene each rolled 200 games.

Training Not Required For Hunters Who Lose License

Hunters who lose their hunting licenses are no longer required to complete the standard hunter safety training course before buying a new license, says Hilton Bergstrom, hunter safety training officer with the Department of Fish and Game.

Hunters may provide evidence of the fact that the license was lost or destroyed by completing a declaration, made upon penalty of perjury, that such was the case. The declaration must be witnessed by a notary public or a license agent.

License agents will have supplies of the necessary declaration forms, Bergstrom says.

A new hunter safety law becoming effective June 1 makes it

mandatory that all hunters, regardless of age, present proof of having previously held a California hunting license before purchasing a new license.

Otherwise, the law states, the person must have a hunter safety certificate of competence issued in California or another state.

Names and addresses of hunter safety training instructors may be obtained from license agents, wardens and offices of the DFG.

Bergstrom also reminds hunters that a hunting license from another state will not be acceptable in applying for a California license, but a certificate of competence is not required to obtain a nonresident license.



NWC MDISL BOWLERS—This group of NWC keglers journeyed to Edwards AFB recently to participate in MDISL competition and took second place in the team competition. The bowlers are, l-r: Ralph Brewer, Jim Kincheloe, R.C. Jones, Thad Brightwell, Richard Bauers and Fred Akins.

Metal Trades Council Information
446-4776

Deep-Sea Fishing Trip Scheduled For NWC Military

Special Services will sponsor a deep-sea fishing trip for military personnel only on May 21. Fishermen who sign up for the trip will leave the Community Center at 1 p.m. on May 20 and will return at 7 p.m., May 21.

The trip is limited to the first 30 persons who sign up and pay a fee of \$7, in advance. The 83 foot converted Coast Guard Cutter "Miss Noris," has been reserved for the expedition.

All interested persons are asked to contact Special Services no later than 4:30 p.m., May 14, at NWC Ext. 3791.

Water Conditions Excellent For Trout Season Opener

Water conditions are excellent for the May 1 opening of California's general trout season and opening day prospects are excellent on such lakes as Crowley, Convict, June, Gull, Silver, Grant, Lundy, Bridgeport, and Lower and Upper Twin Lakes in Bridgeport.

According to the State Department of Fish and Game, 48 roadside streams and lakes in the Inyo-Mono county area are getting pre-season trout plants, and Forest Service, Bureau of Land Management, and country campgrounds below 8,000 feet are expected to be open.

Excepting a few high lakes that may still be winter-bound, all roadside waters from southern Inyo to northern Mono will offer good hold-over populations of rainbows, browns and brookies plus several thousand 2- to 8-pound brood trout planted since last fall and an additional 13 tons of rainbows being stocked just prior to opening day.

High lakes that could still be winter-bound or at least partially

ice-covered on May 1 include Sabrina, North and South lakes out of Bishop, Rock Creek Lake, the Mammoth lakes above Twin Lakes Mammoth, lakes in the Tioga Pass area and the Virginia lakes south-west of Bridgeport.

Streams that should produce good numbers of trophy-size trout include Birchim Canyon above Pleasant Valley Reservoir, Owens River above Crowley Lake, Rush Creek between Silver and Grant lakes, East Walker River below Bridgeport Lake, plus Buckeye and Robinson creeks in the Bridgeport area.

A rule change this year removed the prior lures-only restriction from that section of Hot Creek (Mono County) between the downstream boundary of Hot Creek Hatchery and the upstream boundary of Hot Creek Ranch.

However, all of Hot Creek from the upstream boundary of Hot Creek Ranch down to the Owens River remains restricted to fishing with artificial flies only.

Giants Lead Major Leagues After First Week of Play

After one week of play in the Major League of the China Lake Little League, the Giants lead with a 3-0 record, followed closely by the Red Sox, who have won 2 and lost none.

The Pirates' records is 2 and 1 and the Dodgers have won one and lost two. The Yankees have an 0 and 2 record, while the hapless Tigers are 0 and 3.

On opening night, April 20, two games were played. The Red Sox defeated the Dodgers, 8-4 and the Pirates manhandled the Yankees, 23-7.

Brian Carle (Giants) pitched a no-hit game against the Tigers the following night, winning 13 to 3 and the Red Sox won a 14-1 decision over the Yankees. On the 22nd the Giants continued their winning ways by defeating the Dodgers, 15-5 with Giant catcher Dwain Harbin going 3 for 4 with 5 RBI's. Bret

Catcott was the winning pitcher. In the other game on the 22nd, the Pirates defeated the Tigers by a two-run margin, 5-3.

On Monday, April 26, the Giants defeated only 4 and 2-3rds innings to the Pirates, 23-1, in a game called because of the 9 p.m. rule. The Tigers, looking for their first victory, fell to the Dodgers, 6-1.

In the Giant-Pirate game, Brian Carle recorded a 1-hitter and hit a towering home run over the center field fence. Bret Catcott hit a triple, two doubles and a single in a perfect night at the plate.

Chain of Fools At Jolly Roger

Bob Furey, manager of the Enlisted Men's Club, the Jolly Roger, has announced that the "Chain of Fools" will play Friday and Saturday night at the club.

Wildflower Show . . .

(Continued from Page 1)
show held aboard the Center was organized by Mrs. James B. Sykes, wife of Capt. Sykes, NOTS Commander. Jack Warner of Homestead assisted in this effort by devoting his personal time and his knowledge of desert flora.

The following year over 2,000 paying guests viewed 100 varieties of flowers in a quonset hut. In 1948 a rock display was added to the show and Mr. and Mrs. Jack Warner were joined by Mr. and Mrs. Vernon Carr, pioneer valley residents, and their son, John, in presenting the event. Musical presentations were added to the format in 1949 and the schools exhibited pressed flower projects.

Sylvia Winslow's desert paintings were featured in many shows after 1951. In 1952 she was chairman of the "Hacienda de las Flores" show—a greatly broadened event featuring photographs, paintings, Indian artifacts, fossils, rocks and minerals, slides, shadow boxes, butterflies, moths and fish displays.

In 1954 the Wildflower Show was the first event to be held in the new Community Center. During the early '60's the show expanded to include antique displays. The 1962 "Wildflower Roundup" featured three complete rooms—a Victorian bedroom and living room and an early American bedroom.

The show was featured on the Pan Pacific Television broadcast in 1963, and wildflower arrangements were judged in six major categories, including youth and "men only" divisions.

Mrs. Thomas D. Stephenson is general chairman for the show and Mrs. Duane Mack is show coordinator; she will be assisted by

Tour Is Slated
Mrs. Alice Dubin of the Maturango Museum will conduct a tour of the museum for members and friends of the Indian Wells Valley Newcomers' Club on Tuesday, May 4. All persons interested in attending the tour are asked to assemble at NWC's main gate by 10 a.m. to obtain passes.

New residents of the valley are especially invited to join the tour and other club activities. Details about the club may be obtained by calling Mrs. Kay Silverman, president, 446-6819, or Mrs. Carolyn Ogilvie, publicity chairman, 446-6027.

Mrs. P. G. Rivette. Business manager is Mrs. Roderick McClung.

Other chairmen include: Mrs. Kenneth Abplanalp, properties; Mrs. Harold Byrd, Tea Room; Mrs. Frederick Chenault, registration; Mrs. Robert Zimmer, flower receiving; Mrs. Alan H. Goettig, programs; and Mrs. G. W. Jauchler, door prize.

Mrs. Ivar Highberg will coordinate the music; Mrs. Roy Cobb will handle publicity; Mrs. G. W. Davis (of the Desert Art League) will be in charge of the painting display; Mrs. Rivette, posters; Mrs. Haskell G. Wilson will sell the wildflower stationery and Mrs. Hugh Hunter will handle flower arrangements.

ASPA Members Discuss Details Of Recent Trip

Members of the local chapter of the American Society of Public Administration (ASPA) who attended the National Conference in Denver, Colorado, recently, are expected to discuss the details of the proceedings at a meeting to be held at the COM on Wednesday, May 5 at 7:30 P. M.

H. G. Wilson, NWC Technical Director, and Dr. Walter B. LaBerge, NWC Deputy Technical Director, are expected to be present at the Wednesday gathering and are expected to participate in discussion of potential tie-ins of conference topics as they relate to the local scene.

At the Denver meeting, the China Lake Chapter of ASPA hosted a three-day session on Science, Technology and Public Policy, which was coordinated by H. G. Wilson and chaired by Dr. LaBerge. The session focused on issues connected with science and technology in the domestic policy arena. Other sessions of the conference addressed additional issues of Public Administration including Institutional Discrimination, New Public Administration, Federal Organization and Reorganization, and other topics.

All members and interested persons are urged to attend. For further details or information, contact Dan Burnett, ext. 2218, or W. E. Arnold, ext. 2210.



RECEIVE GROUP AWARD—Six employees of the Film Projects Branch of the Technical Information Department were recently awarded a Group Superior Achievement Award by K. H. Robinson, right, Head of TID. The employees are, front row, l-r: Zelma Walker, Verla Pieper, Marty Shelton, branch Head; back row, l-r: John Gerrard-Gough, Bill Beasley and Bill Blanc.

Dr. LaBerge Credits Practice And Simulation For Past NASA Successes

On Wednesday, April 21, at a joint meeting of the China Lake Section of the American Institute of Aeronautics and Astronautics (AIAA) and the National Society of Professional Engineers (NSPE), Dr. Walter B. LaBerge, NWC Deputy Technical Director, treated the guests and their wives to an insight into his experience with NASA's Apollo program.

Dr. LaBerge was the senior representative from Philco at Houston during the manned spaceflights and was responsible for the operation of the mission control center equipment complex. At the meeting, Dr. LaBerge discussed the relationships between ground computers, flight controllers and the astronaut crews, and the use of telemetry and computer data in performing the complicated NASA moon-landing missions.

Through the use of magnetic tapes recorded during the landing of Apollo 11, Dr. LaBerge was able to graphically illustrate a highly successful application of the use of ground controllers and spacecraft personnel working in tandem to resolve several critical problems that took place during that part of the mission.

Specifically, during this mission, a series of computer overloadings took place which the team of ground personnel and astronauts working together were able to resolve during real time. "They were able to accomplish this feat," he recalled, "as a result of having had the benefit of many hours of practice with pre-programmed computer missions in which the various failure modes that could be anticipated were intensely simulated and rehearsed."

"Similarly, many real-time situations occurred during the Apollo 12, 13, and 14 missions, which this same team of personnel and machinery were able to resolve using the same type of association. The problems that came up as a result of the lightning strike on the service module on Apollo 12, the problems arising from the explosion onboard the spacecraft during the outgoing leg of Apollo 13, and the complicated telemetry problems that were

encountered on Apollo 14, when the spacecraft's radar did not lock-up as expected, were all resolved as though they were almost expected to occur.

"Again, as a result of the expertise gained from the practice sessions undergone by the team with the computer, technical personnel at the Houston Manned Flight Center and the men in the spacecraft were able to overcome the spectacular difficulties. The mutual confidence that was displayed during these emergencies is well-worth noting and was a primary factor and the basic reason everything turned out so well."

When asked why he chose this particular topic on which to speak,



Dr. Walter B. LaBerge

Dr. LaBerge replied, "Well, first of all, I think the tapes will demonstrate vividly the pulse of the control problems related to what was probably the most important technological experiment of the systems.

"The Navy has a continuing problem of understanding the implications of the practical performance of its aircraft under varying conditions as it introduces new armaments and weapons; and with this capability, we could be continuously evaluating the questions associated with the things that modern technology can provide and for which the operational utility has never before been demonstrated.

"The experience I gained from having been associated with the Apollo program has convinced me that such an approach to the development of weapons systems is feasible and that the Navy and particularly, the Naval Weapons Center, has the ability to do it.

"This play includes a large cast and chorus," Lindsey said, "and all parts are open." Tryouts are scheduled for 7:30 p.m. and those who wish to try for one of the lead roles (Marian or Professor Hill) are asked by Lindsey to come prepared to sing a number from the show.

Lindsey also said that persons wishing any other role in the production may sing any song they desire at tryouts.

The play is scheduled for production on July 30, 31 and August 6 and 7 in the Burroughs High School Lecture Center.

"The new curtains are now in and the lighting control panels will be in, so I am looking forward to doing this big show on the lecture center stage," Lindsey remarked.

Music Man Tryouts Scheduled For May 17, 18, 19
Tryouts for "Music Man," the summer production of the Community Light Opera and Theatre Association, will be held May 17, 18 and 19 in the CLOTA hangar, Upjohn and China Lake Blvd., stated Jack Lindsey, who will direct the production.

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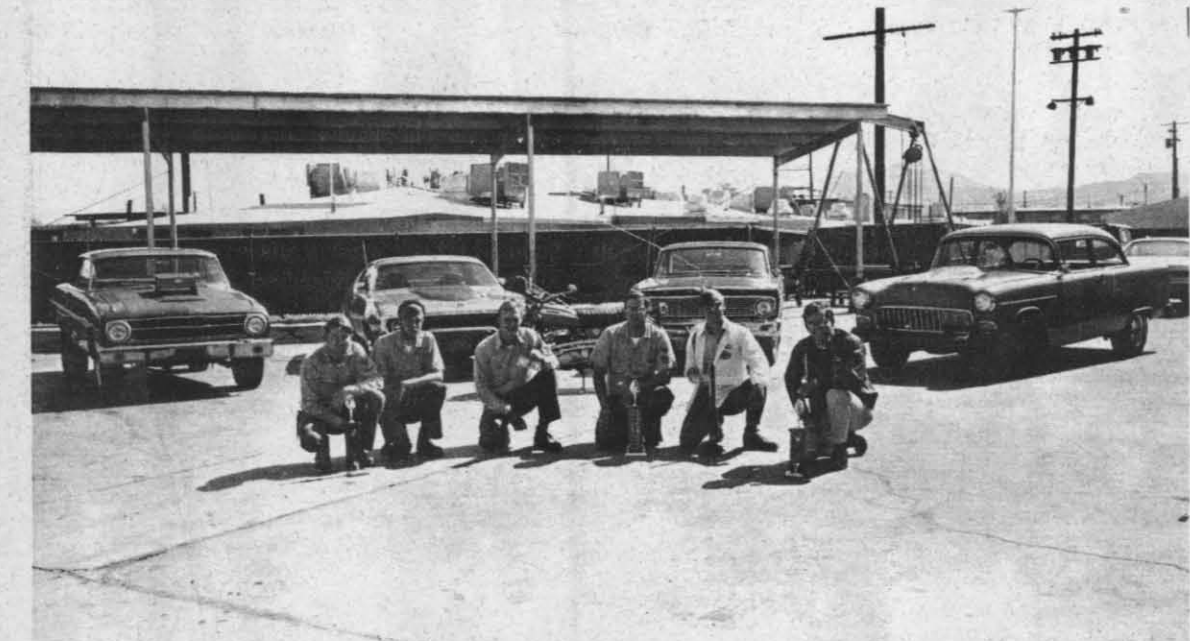
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TROPHY WINNERS AT DRAG RACES—Enlisted men from NWC who took home trophies at the recent NHRA drag races at the Inyokern strip include (left to right): Don Ward and P. E. Johnson, E-MP Class winner with their 1963 Ford Falcon; John Stewart, 3rd place stock eliminator

with 1971 Plymouth; Fred Pratt, motorcycle eliminator with 1971 Honda CL 350; John Bifner, street eliminator runner-up with 1964 Ford Falcon; and Ted Hartman, f-mp class winner with 1955 Chevrolet. The men did most of their work at the NWC Auto Hobby Shop.

Astronauts Make Practice Runs at Coso

Personnel from NASA's Manned Spacecraft Center in Houston, Texas, and representatives from the Lunar Surface Geology Experiment Team, Flagstaff, Arizona are on board today at the NWC Coso Test Range area conducting special exercises in preparation for the Apollo 15 space mission.

Taking part in the experiments in the Coso area, are Col. David Scott, USAF, who will command the mission; Maj. Al Worden, USAF, who will pilot the Command Module; and Lt. Col. James Irwin, USAF, who will pilot the Lunar Module. In addition, the backup crew for Apollo 15 is also taking part in the tests and includes: Captain Richard F. Gordon, USN, Vance Brand, and Harrison H. Schmitt.

The tests are being held at Coso because the area closely approximates the operating terrain (the Hadley-Appennine lunar region) in which the Apollo 15 astronauts will be conducting similar experiments on the moon. During the actual mission, which is scheduled to lift off on July 26, the astronauts will use a Lunar Roving Vehicle to transport them on three journeys to prospective important locations determined prior to the mission, and to new points they might select during the exploration. There will only be two exercises conducted during their stay at Coso, one in the area of Little Lake, and one in the area of Cactus Peak.

Primarily, the tests are a visualization exercise. That is, the experiments have been designed to test the astronauts ability to describe what they see and to detail this information by radio to observers stationed on the ground. At Coso, the "ground observers" are situated in a tent that simulates Houston's mission control center. They are "blind" to the exercise and receive their information by radio only. The tests are also designed to be

conducted during a time of the day that would closely simulate the same illumination parameters in which the astronauts would be working on the lunar surface. Wherever possible the same distances are used in the Coso tests that are expected to be experienced during the mission.

Earlier in the week, command module flyovers were simulated using two NASA T-38 jet aircraft piloted by an astronaut group from Ellington Air Force Base. The flyovers were designed to simulate the actual Apollo 15 flyovers that will take place prior to descent of the Lunar Module.

Capt. Harry Parode, NWC Assistant Technical Officer, coordinated NWC's role in assisting the NASA group in the performance of their exercises. He has been assisted on the project by Dr. Carl Austin and Ken Pringle of Code 603, who helped pick out the appropriate Coso terrain and made other arrangements; John DiPol, of Code 30, who arranged for radiocommunication requirements for the exercises; Ray Schreiber, Coso range supervisor; Cdr. V. E. Spradley, NAF Operations Officer, in charge of arrangements for the requirements of NASA's aircraft; Tom Boyd, of the Public Works Department, who handled ground vehicle requirements; Chief Kaupp, Security; Dick Rusciollelli, visitors arrangements; and Joan Taylor, Press Relations.

In addition to the NASA personnel, over 40 press representatives from various news outlets are on hand to cover the event. A complete list of NASA personnel who have been on board the Center

this week, and who will depart NWC later today, include:

Astronaut Group, Manned Spacecraft Center, Houston:

Col. David Scott, USAF, Commander Apollo 15; Lt. Col. James Irwin, USAF; Capt. Richard Gordon, USN; Dr. Harrison Schmitt, astronaut; Maj. Al Worden, USAF; Vance Brand, astronaut; Dr. Joseph P. Allen, Mission Scientist, astronaut; Dr. Bob Parker, astronaut, and Dr. Karl Henize, astronaut.

Lunar Surface Geology Experiment Team, Flagstaff, Arizona:

Dr. Gordon Swann, Principal Investigator; Mortimer Hait, Jr.; R. L. Sutton; G. G. Schaber; George Ulrich; Edward Wolfe; Rutledge A. Mills and two assistants: B. G. Tinnin and I. L. Wiser; Prof. William R. Muehlberger, Principal Investigator, Apollo 16-17 Surface Geology Experiment; Dr. Val Freeman; Prof. Leon T. Silver, California Institute of Technology.

Logistical Support Group, Manned Spacecraft Center, Houston:

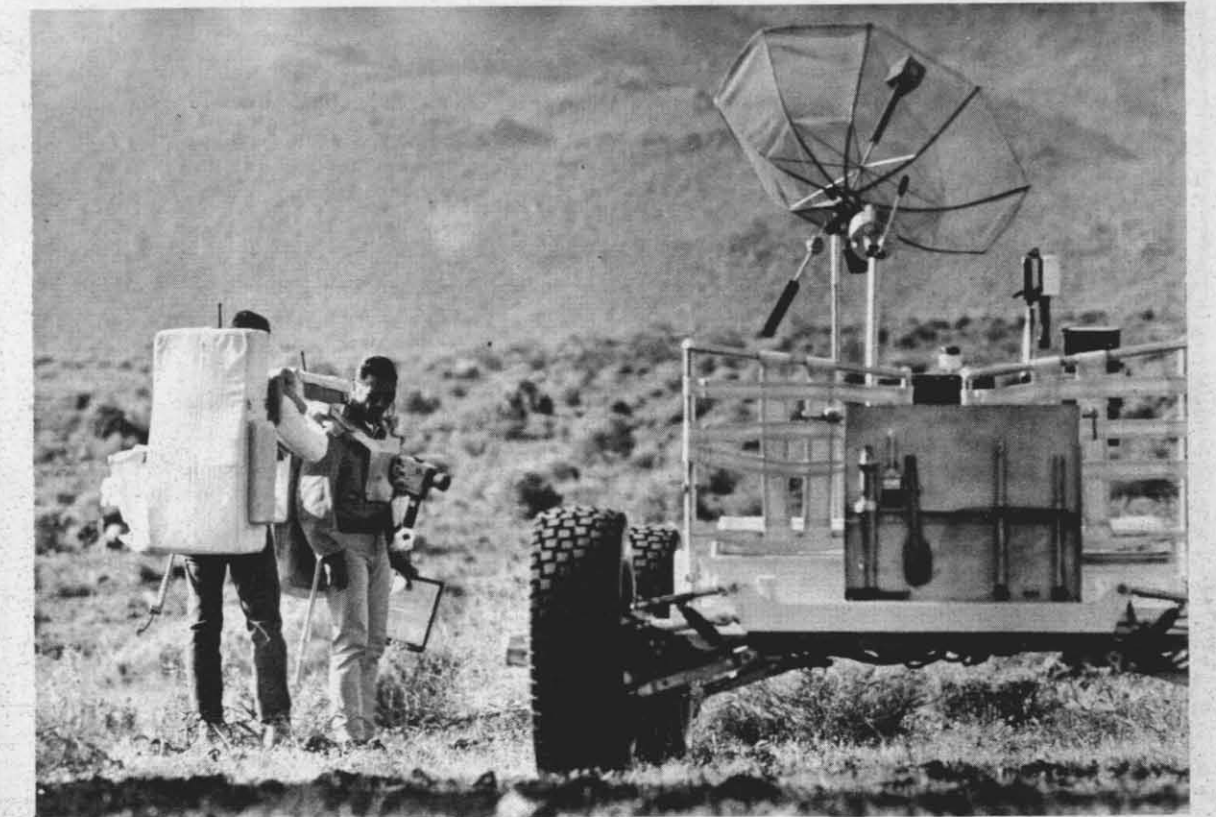
Ray Zedeker; Earl Quinn and Charles Syron, radio personnel; and Milton Reim, Public Affairs.

NASA Observers:

Dr. Rocco A. Petrone, Apollo Program Director, Washington, D.C.; Capt. Chet Lee, Apollo Mission Director, Washington, D.C.; Capt. Lee R. Scherer, Apollo Lunar Exploration Director, Washington, D.C.; Dr. Donald A. Beattie, Program Manager, Apollo Surface Experiment, Washington, D.C.; Anthony J. Calio, Director, Science and Applications, Houston; Dr. William Phinney, Houston; Dr. Gary E. Lofgren, Houston; and Dr. James Head, Bellcomm, Washington, D.C.



PRIME MOVERS—Dr. Carl Austin (l), head of NWC's Petrodynamics branch of the Research Department, talks with Dr. Leon T. Silver, a professor at Cal Tech, about the exercises. They were the prime liaison contacts for the Center and NASA relative to the selection of the Coso Test Range as the site for the experiments. Dr. Silver became acquainted with the area when he was associated with the Center in the early days of its founding, and Dr. Austin has a vast knowledge of the geological makeup and layout of the terrain.



LOOK FOR SAMPLES—Apollo 15 Crew Commander David Scott and Lunar Module Pilot James Irwin depart their simulated Lunar Rover vehicle to search for samples in the lava beds at Coso during NASA exercises yesterday. During the simulated mission, they took notes of their findings, photographed them, and radioed a description of them back to ground personnel who were situated in a tent and "blinded" to the local terrain. At one point during the trip, they had to stop and shoo away some curious cows grazing in the area.

NASA Apollo 15 Mission Details

Apollo 15 is scheduled for launch July 26, from NASA's Kennedy Space Center, Florida, to carry out the fourth United States manned lunar landing.

The 12-day mission, which will carry the first motorized vehicle to transport astronauts on the Moon's surface, will explore the Hadley-Appennine area of the Moon. This area is a northern plain cut by a large gorge that runs along the base of 8,000-foot mountains.

Apollo 15 will be commanded by David R. Scott, a USAF colonel; with Alfred M. Worden, a USAF major, as Command Module Pilot and James B. Irwin, a USAF lieutenant colonel, as Lunar Module Pilot. The backup crewmen are U.S. Navy Captain Richard F. Gordon, Jr., Civilian Vance D. Brand, and Civilian scientist-astronaut Harrison H. Schmitt.

The landing site is named for the nearby Appennine Mountains and the meandering Hadley Rille, half a mile wide, 600 feet deep, and 60 miles long. It is about three degrees east of the center of the Moon as viewed from Earth and 25 degrees - about 465 miles - north of the lunar equator on the edge of the massive Mare Imbrium (Sea of Rains). In contrast, the sites where Apollo 11, 12 and 14 landed are all within 70 miles of the equator. Apollo 13, which had planned a landing on the Moon, was unable to carry out its mission because of an explosion in one of its oxygen tanks.

A mission to the Hadley-Appennine region presents a unique scientific opportunity in the Apollo program. On the lunar surface the astronauts will obtain samples and make observations relating to three key problems.

First, they will collect materials from the base of the Appennine Mountains. Such samples are expected to contain a mix of the old lunar crust existing before the formation, probably by impact, of the Imbrium basin, perhaps more than four billion years ago, and of rocks from deep within the Moon which were ejected during the impact.

Besides extending the time-scale back beyond the 3.7-billion-year average age of Apollo 11 samples, these rocks are expected to be significantly different in composition from either the Apollo 11 or 12 basalts.

Second, the astronauts will make trips to the rille area in an attempt to obtain evidence bearing on the origin of these strange lunar features, resembling dry river beds on Earth. Samples from near the rille may indicate whether or not water was a factor in its formation. Visual observations and photography of the layering in the rille walls may indicate whether the structures are a result of collapse of lava tubes or erosion by, for example, volcanic ash flows or surface materials made to behave like fluids by degassing from the lunar interior.

Third, sampling of the fresh-looking mare and volcanic-looking features at this location is expected to extend the age scale established on Apollo 11 and 12 to younger ages.

The astronauts will use the Lunar Roving Vehicle to transport them on three journeys to prospective important locations determined prior to the mission and to new points they might select during the exploration. Contingency walking traverses will also be planned to accomplish as many of the scientific objectives as possible.

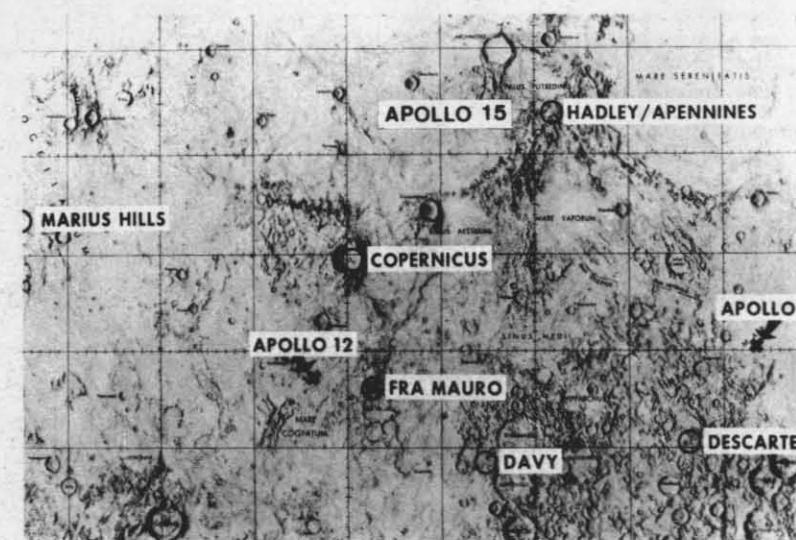
The astronauts will deploy a science station, the Apollo Lunar Surface Experiments Package (ALSEP), containing a seismometer,

magnetometer, heat flow experiment, and atmosphere and ion detectors. They will also set out a laser reflector larger than those left by Apollos 11 and 14.

The seismometer should be able to pick up seismic signals which originate in both highlands, east of the site, and in the mare basin, west of the site, which is the location of a major mascon - a large positive gravity anomaly detected by the unmanned Lunar Orbiter spacecraft.

Many scientists believe that the mascon is caused by dense rocks deep in the Imbrium basin. If so, seismic waves traveling through such rocks should have high velocities relative to the velocities already measured in lunar material.

The Apollo 15 mission will provide an opportunity to obtain a heat flow measurement near a highlands mass. Such data bears on the interpretation of the thermal history of the Moon and, when compared to data to be obtained at other sites, can lead to better knowledge of the origin of the very diverse maria and highlands.



The rille at Hadley-Appennine is thought to be associated with volcanic activity. If, in fact, there are lunar transient events around the edges of circular maria, it is possible that gases still escape from the lunar interior. The atmospheric and ion detectors on the Apollo 15 ALSEP, being near the head of Hadley Rille, will be in an excellent position to detect such events.

Apollo 15 will be the first mission to carry a new set of orbital sensors in the Service Module, including cameras, geochemical indicators, and a sub-satellite. Hadley-Appennine is particularly well suited for this payload because its high latitude results in far greater ground-track coverage than previous Apollo missions. The cameras and geochemical sensors will also be able to "map" a significant part of the lunar backside.

The sub-satellite is a small satellite that will be ejected from the Service Module early in the mission and remain in lunar orbit after the astronauts return to Earth. It will contain particle detectors and a magnetometer, thus providing data to correlate with the surface magnetometer and particle detectors, and an S-band transponder.



BACK-UP CREW DEPARTS—The back-up crew for the upcoming space mission was also on hand to participate in the exercises. Above, they depart in a second vehicle to move over the course. The simulated Lunar Module was situated on a truck bed (background).



GROUND PERSONNEL—Geologists from NASA who will be monitoring the astronauts' transmissions during their trips with the Lunar Rover also simulated their "blind" situation as they were manning their positions in the Manned

Spaceflight Center at Houston. The exercises were primarily set up to test the astronauts ability to describe the geological samples and other formations that they find during their trips in the vehicle.



MAN WITH CAMERA—Crew Commander David R. Scott (c) dons his life pack and camera rig with the help of two unidentified NASA technicians preparatory to boarding the simulated Lunar Rover for the first exercise which took place near

Little Lake. During the actual mission, Scott will be accompanied by Lunar Module Pilot James Irwin as they drive to and from work in the specially designed vehicle. Today's exercises are being conducted in the Cactus Peak area.