

Barbara Lewis In Santa Cruz For State Pageant

By Budd Gott

The Indian Wells Valley's own comely Barbara Lewis, the current Miss Ridgcrest-China Lake, is competing with 33 other contestants throughout the state for the title of Miss California in Santa Cruz this week.

China Lakers will be able to see Miss Lewis, who was sponsored by WACOM when she won the Miss Ridgcrest-China Lake title, on television tomorrow night in her bid for the Miss California title.

On TV Saturday

The Miss California Pageant will be broadcast live and in color tomorrow at 9:30 p.m. on KTLA, Channel 5.

The telecast will open with a parade of the 34 contestants. The next segment will show the 10 finalists in swim suit, evening gown, and talent presentations. The final segment will show Karin Kascher, the current Miss California, relinquishing her crown to the Miss California.

Miss Lewis, who left last Sunday with her chaperone Margy Zinke, began a round of pageant activities on Monday which included a civic reception in the garden of the Santa Cruz city hall.

Each contestant was received by the city officials and at this time the first pictures were taken and the candidates were interviewed by the news media.

Tuesday morning's activities included an orientation meeting with chaperones, hostesses and other pageant personnel to become familiar with the rules of the Miss California Pageant.

Participates in Parade

Tuesday evening, the contestants, attired in their crowns and coronation gowns, attended a pageant dinner after which they participated in a night parade through the downtown area of Santa Cruz.

On Wednesday, the contestants were interviewed by the judges

and attended photo sessions and press conferences. Thursday, the girls began their first round of preliminary competition which continues through today. Tomorrow will be spent all day in final rehearsal for the Miss California judging and telecast in the evening.

An accomplished vocalist, Miss Lewis, a statuesque, 5-foot-8, green-eyed blond, is presenting two songs, "My Ideal" and "I Do," in the talent competition. Mrs. Ivar Highberg was her voice coach and Mrs. Bea Moore composed "I Do."

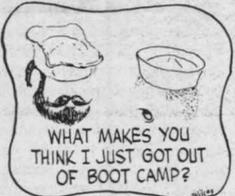
Winner Gets \$1,000

The winner of the Miss California Pageant will receive a \$1,000 scholarship, two wardrobes, a jeweled crown, and air travel for the year of her reign by Western Airlines. In addition, she will represent the state in the Miss America Pageant in Atlantic City in September.

A 1971 graduate of Burroughs High School, Miss Lewis is the daughter of Mr. and Mrs. Richard Lewis of Inyokern. Miss Lewis is the third Miss Ridgcrest-China Lake to reach the state finals. The Lewis' are in Santa Cruz for the pageant.

Messages

Supporters of Miss Lewis who wish to send "success messages" to her in her bid for the state title or gifts or flowers may address them to Miss Barbara Lewis, Drift Inn Motor Lodge, 110 San Lorenzo Blvd., Santa Cruz, 95060. Pageant rules prohibits her from accepting personal telephone calls.



NEVER LEAVE YOUR CAR UNATTENDED WHEN YOU STOP FOR SERVICE! YOUNG SERVICEMEN AND WOMEN ARE PRIME TARGETS FOR SWINDLERS. EACH ONE HAS A REGULAR INCOME. THEY'RE GOOD CREDIT RISKS. COMMANDERS INSURE THEIR TROOPS PAY THEIR DEBTS; AND THEY ARE TRANSPARENT-NOT AROUND TO BLOW THE WHISTLE ON CROOKED SCHEMES! (AFC)

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 18 JUNE 1971
"Z" (130 Min)
Yves Montand, Irene Pappas
7:30 p.m.

(Drama) Accorded outstanding ovations at many film festivals, this powerful combination of action and suspense shows insights into today's troubled politics. (GP)

SAT 19 JUNE
-MATINEE-
"SECRET OF MAGIC ISLAND" (65 Min)
Live animal cast
1:00 p.m.

Shorts: "Not in Nottingham" (7 Min)
"Mysteries of the Deep" (24 Min)

-EVENING-
"NOON SUNDAY" (93 Min)
Mark Lenard, John Russell,
Key Luke
7:30 p.m.

(Adventure) Two mercenaries are slipped ashore on the Island of Kapulu to disrupt a guerrilla plan to establish a rocket site. (R)
Short: "Magoo Meets Frankenstein" (7 Min)

SUN and MON 20-21 JUNE
"M A S H" (110 Min)
Elliott Gould, Donald Sutherland
7:30 p.m.

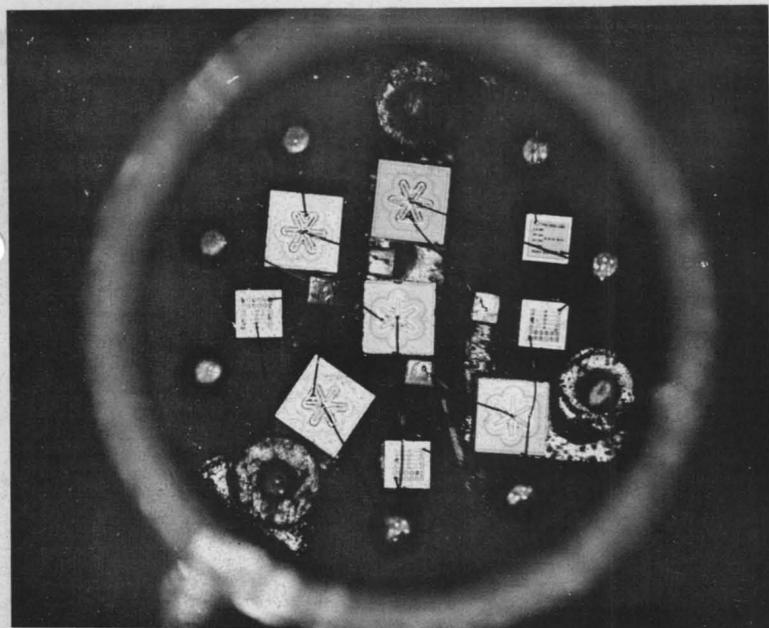
(Comedy) IT'S BACK! The laugh hit of 1970 that you wanted to see again. A Mobile Army Surgical Hospital team retains their sanity, in face of their horrible daily task, by zany hijinks of sex and scalpels, golf and gore, and irreverent jabs at the establishment and the military. (R)

TUES and WED 22-23 JUNE
"THE BAREFOOT EXECUTIVE" (96 Min)
Kurt Russell, Joe Flynn
7:30 p.m.

(Comedy) A TV network page discovers that Raffles, a pet chimp, can predict hit-or-miss value of TV pilot film ratings and the page's career begins to zoom. DISNEY does it again with wild slapstick fun! (G)
Short: "Mickey's Garden" (7 Min)

THURS and FRI 24-25 JUNE
"SOLDIER BLUE" (112 Min)
Candice Bergen, Peter Strauss
7:30 p.m.

(Western) Positively not for the squeamish this tells in graphic details of mistreatment of the Indian and of his retaliatory massacres as Candice, a former captive of an Indian Chief accompanies the military into battle. (R)
Short: "Pink Outs" (7 Min)



MINIATURE WORKHORSE—The actual size of this sweep amplifier is 0.3 inches. It contains 5 transistors and 4 thinfilm resistors. Shown at 20X magnification, the circuit is a product of the

Microelectronics Branch of NWC's Engineering Department. For more information on how the Center produces these tiny wonders, see page 3. —NWC Photo



Vol. XXVI No. 24 Naval Weapons Center, China Lake, California June 18, 1971

Local SAVE Member Wins High Honor

Ed Przybys, a member of the local chapter of the Society of American Value Engineers (SAVE) brought honors to the Indian Wells Valley recently when he received the Emeritus Member Award from the society's national headquarters.

Przybys' award was made on the basis of his outstanding contributions in the field of Value Analysis - Value Engineering (VAVE) over the past 10 or more years. The award was presented locally to Przybys by Elmer Slates, head of the Value Engineering group at NWC, who is the new Director of SAVE's China Lake Chapter.

Important Tool

Value Analysis - Value Engineering is a discipline dedicated to aid management in implementing change and improvements. Almost always, this change or improvement results in money saved without affecting the reliability or required function of the system or method studied.

Many times, Value Analysis shows that a certain function is no

longer required. Typically, VA-VE is a multi-disciplined team effort. The team is led by a trained Value Analyst who employs the following job plan:

- 1) The information phase; 2) the speculation phase; 3) the analysis phase; 4) the development phase; and 5) the implementation phase.

A team effort is almost a requirement for getting the facts, creative speculation on what else will do the job, overriding the Not Invented Here (NIH) syndrome, developing the proposal showing the function versus the cost of the change, and finally implementation of the change.

A typical Value Analysis - Value Engineering study recently performed by the Atlanta, Georgia chapter of SAVE resulted in initial savings to the local hospital of that city of \$50,000 annually. Their finding showed that the stainless steel ice water pitchers damaged by constant usage could be replaced by foam containers which kept the ice longer, thereby saving personnel time, extra effort and money.

The Value Engineers also performed equipment surveys to assure the equipment was safe, calibrated and represented the best buy for the dollar investment. Value Analysis - Value Engineering techniques are employed by government agencies and industries in the United States, Germany, Japan, and by the Department of Defense - but not to the fullest extent possible.

According to Slates, foreign countries, quick to adapt the techniques of VA-VE into most of their industry methodology, have gained a strong competitive position with the American market.



Ed Przybys

Navy Announces Uniform Changes

All Ranks To Be Affected; Optional Wear Set For '73

The Department of the Navy announced earlier this week the end of the traditional enlisted man's jumper, bell-bottom trousers, and white hat. The Secretary of the Navy, the Honorable John H. Chafee, has approved a new standard uniform for all navymen, from seamen to Admiral.

In making the announcement, Admiral Elmo R. Zumwalt, Jr., Chief of Naval Operations, said the change was a move to modernize uniforms and enhance morale. Gone will be the enlisted men's present service dress blue, undress blue and undress white uniforms; instead, they will be dressed in the new service dress blue uniform with white shirt, black tie and combination caps. Each rank and rate will have distinctive insignia. Enlisted men will, however, retain the tropical whites as well as their blue working uniforms.

In the Officer category, the service dress khaki uniforms will be eliminated in favor of the new summer weight service dress blue uniform. The officers will retain their tropical khaki and tropical white uniforms.

Chief Petty Officers will not be required to have either service dress khaki or service dress white, and in their places will be the summer weight service dress blues. As will the officers, the Chiefs will retain their tropical khaki and tropical white uniforms. Because of necessary changes and the time required to manufacture the new uniforms, it is expected that they will not be made available until July of 1973. At that time the Navy will begin issuing the new uniforms to recruits, and the uniforms will become optional for all active duty enlisted men.

The Navy has indicated that efforts will be made to introduce the new uniforms to Navy uniform shops in time for them to be available when wearing the uniforms becomes optional in mid-

1973. By July 1, 1975, inventories of present uniforms and materials should be reduced sufficiently to make the new uniform mandatory at that time.

The changes, which come only after long and exhaustive studies and uniform test periods, reflect a desire for improvement and change on the part of a majority of Officers and Enlisted men. The new blue uniform has been time-tested and is popular with ninety-two per cent of the Officers and CPOs now wearing it. Adm. Zumwalt feels it will represent the concept of one Navy, united in purpose and striving for common goals.

The cost of the new uniforms for those enlisted men already on active duty will be taken care of by an expected increase in their

clothing allowance. Officers will continue to pay for their uniforms from their salary.

It is recognized by Navy officials that there is great sentimental attachment to the current "Bluejacket" enlisted uniform both inside and outside the service. Nevertheless, over a period of years, the suitability, comfort and convenience of that uniform has been the subject of conversation and study.

This change has been made only after careful and deliberate consideration by personnel throughout the rank structure over a prolonged period. It is now being implemented as part of an overall effort to provide for the needs of Navy personnel.



Youth Center Movie Matinees

All Pictures Rated "G"
(All pictures begin at 1 p.m.)
MONDAY JUNE 14
PRIVATE WAR OF MAJOR BENSON
Charlton Heston, Sal Mineo, Tim Hovey and David Janssen
(105 Minutes)
A loud mouth Major, too tough for the Army, is forced to accept a transfer to a military school for young boys. Delightful fun follows as 300 future soldiers put him in full retreat.
-Second Feature-
SON OF ALI BABA
Tony Curtis
(75 Minutes)
A wicked Caliph uses a Princess to obtain the treasure of Ali Baba. After her father is captured, the Caliph's son appears and wins the hand of the beautiful Princess.

THURSDAY JUNE 24
WAR WAGON
John Wayne and Kirk Douglas
(105 Minutes)
Action loaded western adventure. Five men capture a horse drawn steel fortress on wheels, which carries \$500,000 in gold bullion, the property of a ruthless cattle baron. Action and suspense galore - a treat for all ages.
-Second Feature-
CRICKET ON THE HEARTH
(57 Minutes)
The delightful animated cartoon is based on the classic Christmas story by Charles Dickens. It tells the story of a poor toymaker and his daughter, and the very joyous Christmas they share, when a most unusual cricket enters their home. This is truly a film for all seasons and ages.

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SZCZYPIORSKI RE-ENLISTS—Aviation Storekeeper, First Class, Bernard J. Szczypiorski was sworn in for four more years by RAdm. W. J. Moran, Commander of NWC, during ceremonies held in the Commander's office last week. "Ski," usually called "Mr. Jones" in golf tournaments,

entered the Navy in January 1956 and hails from Philadelphia. As aircraft parts expeditor, Ski keeps the planes flying at NAF. His wife, Geraldine, and their children (l-r) Marie Theresa, Bernard, and Kathryn Marie were present for the swearing-in. —Photo by PH3 Ronald G. Mills, USN



LAST MINUTE ORIENTATION—Denny Cline, a member of the staff of the Technical Presentations Coordinator's office, offers a brief rundown on the Center's mission and accomplishments to Barbara Lewis, Miss

Ridgcrest-China Lake, who is in Santa Cruz this weekend competing for the title of Miss California. For more information on the pageant and when it will be aired, see page 8.

—Photo by PH2 Ron Mills



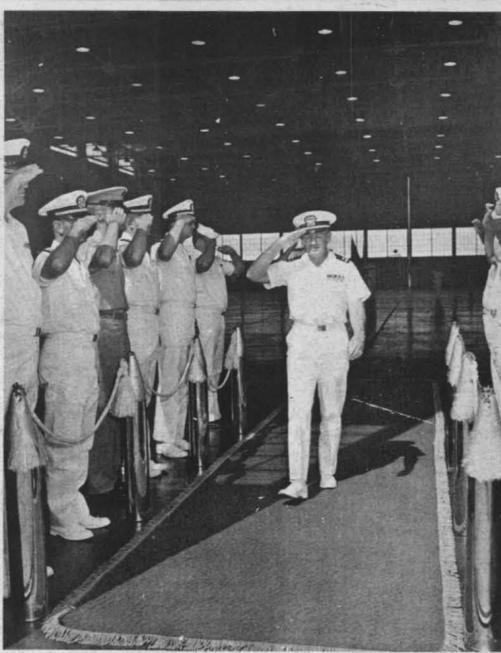
SHIPS FOR FOUR MORE—FTG1 Charles B. Farmer, an employee of Code 30 (he works in Digital Electronics) recently re-enlisted for four more years in the United States Navy, bringing his total enlistment time to over 18 years. Farmer's wife, Chiyo, and children, Charles, Jr., and Virginia Ann, look over the papers held by Lt. Cdr. R. A. Shepard, Commanding Officer, Enlisted Personnel. The Farmers came to China Lake in September, 1969.

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 652, 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 6 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.

Head, Technical Information Department, GS-14 or GS-15 (Code 75)—Responsible for management of Center's technical information requirements through subordinate staff of 130 personnel. Prefer applicants with background in science or engineering with managerial experience in R&D environment. However, applicants with administrative background will be considered if appropriate knowledge of technical information program requirements is evidenced. Minimum Qualifications: 1 year at the next lower grade as an Engineer, Scientist or Administrative Officer. Job Relevant Criteria: Demonstrated management potential.

File applications for above with Mary Morrison, Bldg. 34, Rm. 210, Ph. 2023. Inventory Management Specialist GS-2010-5, PD No. 7025016, 2582—Technically responsible for inventory management of aeronautical material controlled by this Command, through review, evaluation and adjustment of computer-generated inventory data. Minimum Qualification Requirements: Three years of progressively responsible experience in administrative, professional, investigative or other responsible work which has provided the applicant with a general knowledge of one or more aspects of the supply field. Must have included one year at the GS-4 level or its equivalent. Job Relevant Criteria: Must be familiar with inventory control procedures and regulations; must be knowledgeable in all phases of logistic management. Minimum Qualification Requirements: 2 years of progressively responsible experience in administrative, professional, investigative or other responsible work which has provided the applicant with a general knowledge of one or more aspects of the supply field. Must have included one year at the GS-4 level or its equivalent. Job Relevant Criteria: Must be familiar with inventory control procedures and regulations; must be knowledgeable in all phases of logistic management. Minimum Qualification Requirements: 2 years of progressively responsible experience in administrative, professional, investigative or other responsible work which has provided the applicant with a general knowledge of one or more aspects of the supply field. Must have included one year at the GS-4 level or its equivalent. Job Relevant Criteria: Must be familiar with inventory control procedures and regulations; must be knowledgeable in all phases of logistic management.



OVER THE SIDE—CWO2 Norm Bensene returns the salute of Officer and CPO sideboys during his retirement ceremonies at the VX-5 hangar recently. CWO Bensene, who began his naval career in 1950, reported to VX-5 in October, 1969 and served as the squadron's Material Control Officer.

—Photo by PH3 G. L. Smith

orders, mail collection and distribution, etc. Qualification Requirements: As defined in CSC Handbook X-118. Must be a qualified typist. "PREVIOUS APPLICANTS NEED NOT REAPPLY." Mechanical Engineer, GS-430-13, Code 505 PD No. 7158047—This position is located in the Fuze Department. Electromechanical Division. Incumbent acts as a professional expert and specialist in the development, test and application of unique and complex electromechanical components of guided missiles with particular emphasis on safety and arming devices and electromechanical fuze systems including explosive ordnance components. Qualification Requirements: As defined in CSC Handbook X-118. Job Relevant Criteria: Specific experience in the design, documentation qualification and production of Navy guided missile safety-arming devices and contact fuzes. The incumbent must be thoroughly familiar with modern production techniques and processes. File Above Applications with Pat Gaunt, Bldg. 34, Room 202, Phone 2723.

Machinist WG-34014-10 JD No. 1494 Code 5545—Performs all types of general Machinist work involving machine tool operation and the assembly, installation, and bench work required in the construction and repair of mechanical parts and assemblies. Works from blue prints, sketches, samples, and verbal instructions. Minimum Qualifications: Rating will be on the basis of the appropriate J-Element standard in accordance with the CSC Handbook X-118C. File applications and supplemental Rating Forms with Joan Macintosh, Code 657, Bldg. 34, Rm. 212, Ph. 2371.

Clerk-Typist PD No. 7055029, GS-322-4, Code 5500—Incumbent is responsible for Document Control in the Engineering Department. Receives all classified material up to and including secret documents, determines who are interested and contacts them to review or receive on a loan. Twice yearly conducts inventory on all charged documents. Receives and routes all incoming mail, consists of Naval Route Sheets, Naval Messages and other mail. Responsible for maintaining a Naval Message file. Provides typing services to the Head of Staff, and 2 administrative officers. Issues and receives all keys for the department, maintains the calendar of appointments for the Head of Staff, handles destruction of classified material for the office. Minimum Qualification Requirements: 2 years appropriate experience. Job Relevant Criteria: Personal initiative, good judgment, ability to type, knowledge of Naval Correspondence Manual, Communications Routing Guide, Document Control and security requirements. File application for above with Joan Macintosh, Code 657, Ph. 2371.

Helper (General) WG-47049-05, JD No. 144-2 Code 5445—Assists journeyman as required. Keeps journeyman supplied with tools and work materials and assists in performing work. Performs simpler elements of the trade alone, including the use of journeyman tools, etc. Qualification 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 rating forms with Joan Macintosh, Code 657, Bldg. 34, Rm. 212, phone 2371.

Engineering Technician GS-802-11, PD No. 6955108, Code 5552—Incumbent is responsible for the engineering review and checking of all documentation assigned to him by the

Continued on Page 7)



NAVY ACHIEVEMENT MEDAL EARNED—FTM-1 Paul Edward Steele was presented the Navy Achievement Medal by RAdm. W. J. Moran, NWC Commander, during ceremonies held in the Commander's office last Thursday. Steele's wife, Sanae, had the pleasure of pinning on the medal, which was awarded for "meritorious achievement while serving in U. S. S. Oklahoma City as Supervisor of the TALOS Computer Systems from November 1969 to December 1970 during combat operations. Steele was cited for his outstanding technical ability and administrative proficiency. At the Naval Weapons Center he is a fire control technician at the Weapons Control Facility on the G Ranges.

PROMOTIONAL OPPORTUNITIES

(Continued from page 3) Supervisory Fire Fighter (General), GS-081-06, 2 Vacancies, PD 784009 Code 842 This position is that of Assistant Fire Chief in the Fire Division, Security Department, Naval Weapons Center, China Lake, California. The incumbent will provide assistance to the Fire Chief in the overall administration and management, budget planning and training as well as the technical aspects of fire fighting. Job Relevant Criteria: Incumbent must be thoroughly familiar with all phases of fire department operation. Must have experience in structural, brush and crash fire fighting techniques. Must have administrative and supervisory ability. Minimum Qualifications: Applicants must have three years of general fire fighting experience, one and one-half years Airfield fire fighting experience and one and one-half years supervisory fire fighting experience. File applications for the above with Linda Grossman, Bldg. 34, Room 204, phone 2925.

Mathematician, Physicist or Operations Research Analyst, GS-1520, 1310 or 1515, GS-11, 12 or 13 PD 7040117 Code 4071 Incumbent performs weapons systems analysis using mathematical modeling techniques which simulate the function of actual or proposed systems. He also performs target analysis and vulnerability studies against various systems. He is responsible for reporting on his work both verbally and in written form. Minimum Qualification Requirements: General Experience: Bachelors degree or equivalent. Specialized Experience: In accordance with X-118. Job Relevant Criteria and/or Selective Placement Criteria: Extensive knowledge of and/or experience in computer simulation techniques is desired. Advancement Potential: May advance to GS-13. File applications for above with June Chipp, Bldg. 34, Rm. 206, Phone 2676.

Electronic Technician, GS-854-9, 10 or 11, Code 3522—This position is located in the Advanced Guidance Branch, R. F. Development Division, Electronic Systems Department. The incumbent is responsible for design fabrication and testing of electronic circuit assemblies for experimental missile seeker and avionics systems. About one-half of the assemblies will be stripline circuits which require high accuracy in preparing and aligning the individual parts. Job Relevant Criteria: The incumbent must have experience in layout and packaging of electronic systems for missile and avionics environments. He must be skilled in the techniques of miniaturization and be able to fabricate precision parts for stripline circuits. Minimum Qualification Requirements: 2 years general experience and 4 years

specialized experience. File application for the above with Sue Prasalowicz, Bldg. 34, Rm. 206 ext. 2577. Engineering Technician (Drafting), GS-802-9-11-12, PD No. 7130063, Code 30103—This position is located in the AGILE Program Office (Missile Engineering Group). The incumbent will assist in the integrated design and development of the new air-to-air AGILE missile. He will prepare conceptual design sketches, layouts of integrated assemblies, and shop drawings for fabrication of experimental hardware. The incumbent will work closely with project and design engineers involving all the specialties associated with a complete missile system, including aircraft interface. The AGILE missile is in the Advanced Development stage and opportunity remains for innovative design. Qualification Requirements: Appropriate length of experience in relevant areas consistent with grade level. Job Relevant Criteria: Applicant's experience should include a comprehensive drafting background. Candidates with college courses to the Associate Arts level will be given preference and should have a desire to work in a challenging and not completely defined technical environment. File above applications with Beverly Saiger, Code 657, Building 34, Room 212, ext. 2514.

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Serviceman's Benefits Family Separation Allowance

(This is the fourth in a series of articles on the breadth of servicemen's benefits available to members of the Armed Forces with which they and their dependents may or may not be familiar. In this context, the ROCKETEER will be featuring detailed subject explanations of various related topics in upcoming future issues.)

Morning toast and a cup of coffee in a pleasant room always started your day at home.

Now you're in another country, alone, and living in a rented room. You want the same comforts. The solution: buy a toaster and a coffee pot.

Both of those items—and the expense for the rented room—mean money out of your pocket, so to make an unaccompanied tour of duty less of a financial burden, the Congress authorized the payment of a new allowance for families in 1963.

This is the Family Separation Allowance (FSA), another benefit for members of the Armed Forces.

Extra Expense If you are living at home, as man of the house it is your responsibility to fix the furnace or the sump pump or start the car or do the myriad of tasks which befalls the head of a family.

If, because of military duty, you are half-way around the world, your wife will have to hire someone to do these many tasks. And that is where the Family Separation Allowance comes in.

Actually, there are two types of FSA.

So, back to your rented room overseas. If you must maintain a "home" for yourself because Government bachelor quarters are not available, and if your dependents are not permitted to join you during your overseas tour, then you may collect FSA Type I. This allowance is payable to all members of the Armed Forces with dependents, regardless of grade. The amount of this FSA is same as the basic allowance for quarters payable to a member without dependents in the same pay grade as you.

As you can see, FSA Type I is an allowance which takes care of some of the added expense you run into because you are maintaining a home for your dependents in one location and one for yourself in another location. It is payable only if you are serving overseas or in Alaska.

The second form of Family Separation Allowance, Type II, is designed to take care of those extra expenses such as the furnace, the sump pump, and the dead battery.

Temporary Duty If you are separated from your family for 30 days or more you may be eligible for the Type II allowance.

This allowance is payable to members of the Armed Forces who qualify for it whether they are serving in the United States or overseas. To qualify for the Type II allowance you must be an E-4, with over 4 years' service, or above and be entitled to a Basic Allowance for Quarters as a member with dependents.

You must also be serving in an area where your dependents are not authorized at Government expense, where they do not live at or near your duty station, or—if you are on TDY—away from your permanent duty station for 30 or more consecutive days in an area where your dependents do not

Contractor To Spray Wherry Monday, June 21

The Public Works Department has announced a special pest control spraying program to counter an extensive attack by aphids on Honey Locust, Oleander, and Juniper trees.

Starting Monday, June 21, in the Wherry Housing area, the pest control contractor will spray all of the trees and shrubs subject to the aphid attack. Residents are requested to remove all household items and toys from the areas around these trees and shrubs. They are also requested to keep their children away from the equipment and hoses used by the contractor in spraying. Once the spray has dried, it poses no threat to the health of safety of children, pets, or wildlife.

It is expected to take the contractor ten days to spray all the trees and shrubs that might be affected on Center. Because of the magnitude and urgency of this job, the contractor will be unable to notify residents individually in advance of the spraying. All trees and shrubs that can be reached by the sprayer hoses from the road or accessible alleyways will be sprayed. Should residents have any questions they should contact the Housing Office at extension 2941.

The Family Separation Allowances are important benefits for members of the Armed Forces. If you have any questions, see your personnel office for the answers.

A Look Into The Past From The Rocketeer Files 25 Years Ago . . .

The scuttle-but about a lost elephant enroute from India to China Lake, as a gift to NOTS ace flyer who in winging his way across the world had met favor with a Sultan who had given him a small empire and now a "pet", grew to such proportions as to attract the AP and UP reporters from the big city dailies . . . The search for 78-year-old prospector, Peter Wolfer, came to a tragic end when his body was found near an empty canteen in the Granite Wells area, 20 miles south of Trona. His body was taken on horseback to Barstow where it was sent to Los Angeles for burial . . . An order halting regular liberty schedules for NOTS Bluejackets was lifted with the news of settlement of the national maritime strike. Navy personnel would have been slated to form the bulk of the emergency crews in the event of Government's seizure of vital shipping . . . FAdm. Chester W. Nimitz read to the Senate Naval Affairs Committee a statement asking Congressional sanction of a proposed \$28,700,000 post-graduate school on the Pacific Coast to be built on a 300-acre site near Monterey, Calif. to supplement the already crowded facilities at Annapolis .

15 Years Ago . . .

The Navy Dept. granted a new wage schedule for per diem workers in the Mojave Desert area . . . Trustees of the Kern County Union High School District authorized a formal application for facilities and funds for a new high school . . . Budd Gott arrived from the San Francisco Naval Shipyard where he was the official Design Division reporter for the Shipyard's "Drydock", to become assistant editor of the ROCKETEER . . . Cooperation of the Station and Burroughs High School was stressed in the first program to give ten senior students exposure to scientific and professional pursuits through extra-curricular working assignments in the various technical departments. James Belisle, now of Code 5562, was one of those first ten work-experience students . . . The "Gooney Bird", one of many cameras used at NOTS sea ranges where photography was an essential part of the work, was built at Long Beach by test unit personnel and was adapted from a B-29 gun turret—an idea originating with Ernie Oeland who found the turret and started the project.

5 Years Ago . . .

A tribute to Father's Day featured a photo of the Arthur J. Arsenault, Jr. family of China Lake—Dad (and Mom) and 12 children . . . Coordinators of the Navy Relief Fund Drive sponsored a carnival which included live bands, street dancing, pony and horse rides, fire engine rides, clowns, a live radio broadcast, game booths, and food concessions . . . Maximum temperature for the week was on June 14 at 106° . . . Observance of the Army's 191st birthday was celebrated at this Navy base when Capt. Jonn I. Hardy, COMNOTS, assisted Lt. Col. Richard S. Clark, Army Liaison Officer at NOTS (now Dr. Clark of Code 6022), in cutting the birthday cake . . . The Indian Wells Valley Search and Rescue Team, dedicated to the location and recovery of lost or injured persons, produced a 30 minute motion picture, "A D-sperate Afternoon", simulating search and rescue operations for a small boy.

Center Library Lists New Books

- A complete list of new books is available in the library. FICTION Carr—Dark of the Moon. Dick—A Maze of Death. Mason—Brimstone Club. Percy—Love in the Ruins. NON-FICTION Baldwin—Strategy for Tomorrow. Brander—Australia. Clear—Common Cagebirds in America. Davis—Training your own Bird Dog. Evers—Evers. Greer—female Eunuch. MacLaine—Don't Fall Off the Mountain. Mead—Rap on Race. Myers—Every Employee a Manager. Organic Gardening—Complete book of Composting. Panetta—Bring us Together. Rice—C-5A Scandal. Roberts—Deborah. Sasaki—Modern Japanese House. Segerberg—Where have all the Flowers, Fishes, Birds . . . Studenrauch—The Fun of old Cars.

The Rocketeer

Off-List Weekly Publication Naval Weapons Center China Lake, California

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K. H. Robinson Head, Technical Information Department

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PHCS C. E. Bruce, PH1 D. C. Manderscheid, PH3 Ronald G. Mills, Staff Photographers

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

The Rocketeer receives American Forces Press Service material. All are official U.S. Navy photos unless otherwise identified. Printed weekly with appropriated funds by a commercial firm in compliance with NavExos P.35, revised July 1959. Office at Nimitz and Lauritsen. Phones . . . 3354, 3355, 2347



DIVINE SERVICES

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.



Red Suits Sparkle At Bjorklund Swim Meet

The IWV Rotary Club sponsored 5th Annual Bjorklund Memorial Swim Meet was held last Saturday at the NWC Officers' Club Pool, and saw the Indian Wells Valley swim team taking on four other Kern County clubs in an invitational meet.

At the end, final point totals showed Coach Carol Chatterton's red-suits on top with 617½, followed by the Aqua Aces with 381. A close third was Park Stockdale with 366½. Fourth went to Bear Mountain with 269, fifth to Wasco with 217. A lone swimmer from Delano scored 9 points.

A team trophy was presented to the Indian Wells Valley Swim Team by Les Garman, outgoing president of Rotary. He was assisted by Gordon Chantler, trophy chairman.

Individual trophies to the high point winners in each age group were also presented by Mr. Garman. These trophies went to Vickie Rungo, Derek Eskew, Tara Sullivan, Ken Butcher, Julie Foss, Steve Hamm, Billy Tuttle, Craig Fulwyler, Jan Hillard, John Nielson, Cathy Bishop and Mike Bishop.

The 5½-hour long competition matched swimmers in 54 individual events and 20 team relays. 6 age groups from 6 and under to 15 and over were represented. Ribbons were awarded for 1st through 6th place in each event. 1st, 2nd, and 3rd place winners for the IWV team are as follows:

Individual Medley—1st to Anne Hugo, Jan Hillard, Kris Bjorklund; 2nd to Steve Hamm, Jon Allan; 3rd to Pryor Bonnor, Louise Hugo, Susan Goettig, Steve Forrester.

Butterfly—1st to Vickie Rungo, Kirsten Ronning, Jan Hillard, Sharon Fletcher; 2nd to Anne Hugo, Gary Randle, Karen Smith,

Lisa Falterman, Bruce Hillard; 3rd to Kirk Odencrantz, Susan Goettig, Greg Moore.

Backstroke—1st to Jayne Stillwell, Jon Allan; 2nd to Cheryl Randle, Steve Hamm, Mike Hamm, Carol Seeley; 3rd to Jenny Rungo, Sharon Zaharias, Susan Goettig, Kris Bjorklund.

Breaststroke—1st to Kirsten Ronning, Bobby Gilmer, Kris Bjorklund; 2nd to Sharon Zaharias, Martin Forrester, Steve Forrester, Lisa Falterman, Ricky Lovern; 3rd to Vickie Rungo.

Freestyle—1st to Jenny Rungo, Vicki Rungo, Jan Hillard; 2nd to Paige Sorbo; 3rd to Anne Hugo, Steve Hamm, Carol Seeley.

Freestyle Relay — IWV girls took 1st in the 7-8, 9-10, 13-14, and 15-17 age group.

Medley Relay — IWV girls took 1st in the 7-8, 9-10, 13-14, and 15-17 age group. The 15-17 boys tied for first place with the Aqua Aces.

Pool Records were broken by Mike Bishop of the Aqua Aces in Individual Medley event for 15 and over boys. Tara Sullivan of Park Stockdale raced to a new record in 9-10 girls backstroke, while John Nielson of Bear Mountain set a record time in the 13-14 boys backstroke.

This week the IWV swim team will compete with the Barstow Sea Serpents there in a dual meet Wednesday and on Saturday they will host Bishop, Tehachapi, and Ridgecrest.

SLO-PITCH STANDINGS

	W	L	GB
VX-5	4	0	—
Bakersfield College	4	0	—
Central Staff	4	0	—
C.B. All Stars	3	1	1
Supply Department	2	2	2
Bombers	2	2	2
Saints	2	2	2
Roadrunners	1	3	3
Muthas	1	3	3
Huff-n-Puff	1	3	3
NWC	0	4	4
Razberries	0	4	4



BJORKLUND MEET—Tara Sullivan, a member of the Park Stockdale swim club that competed this weekend in the 5th annual Bjorklund Memorial swim meet, reaches the wall first in the 9-10 Girls Free-style event. Carol Chatterton's Redsuits won the meet held at the COM by amassing a total of 617½ points.

Burroughs' Beatty Wins Tennis Crown

Boyd, Miller Win At Mixed Doubles

This is the year of the Burro in China Lake tennis.

After years of watching more experienced players dominate local tournaments, high school players Debbie Hazen, Linda Cutsinger and Ted Ribultan stormed into the quarter finals and semifinals—and Chuck Beatty won it all.

Fourth-seeded at the start of the tournament, Beatty upset defending champion Dick Boyd in the semifinals and then went on to defeat Gary Fry for the championship.

Beatty began his drive to the title by mastering Burroughs teammate and doubles partner Ted Ribultan 6-1, 6-0 in the quarterfinals to set up his showdown with top-seeded Boyd.

Boyd took the first set easily 6-1, but Beatty staved off impending defeat by winning the second set in sudden death 7-6.

Steadily controlling play in the third set even on Boyd's serve, Beatty won the set 6-2 and proceeded to the finals Sunday.

Retaining his form of the day before, Beatty outlasted the powerful Fry 6-4, 6-2 for the singles crown.

In men's doubles Fry and Bernie Wasserman mowed down second-seeded Duncan Cleaves and Dick Mello 6-1, 6-2 after eliminating No. 1-seeded Boyd and Nick Schneider 6-4, 7-5 in the semifinals. Cleaves and Mello defeated Beatty and Ribultan 6-1, 1-6, 6-4 to advance to the finals.

Joan Leipnik and Sherry Miller were the stars of the women's singles and doubles and mixed doubles—only the supporting cast changed.

Leipnik defeated Miller 6-3, 6-3 for the singles crown and the two teamed to defeat Janie Cleaves and Jackie Haff in the women's doubles 6-4, 6-4.

In the mixed doubles, Miller and Boyd combined to defeat Leipnik and Jim Smith 6-2, 6-2.

Golf League Standings

Code 5563	17
NAF	16½
Code 30	15½
Code 551	15
NWC Officers	13½
The Duffers	13
Transportation	13
Chaparrals	13
ROCKETEERS	10½
Code 3532	10½
Sandbaggers	10
General Engineers	10
Bat Chiefs	9½
The Titleists	9½
Central Staff	8½
Code 3563	6
Iron Men	3

THE SCHEDULE

Tuesday, June 22	
Front Nine	
5:15	Engineers vs. Chaparrals
5:23	Iron Men vs. Central Staff
5:31	Transportation vs. Code 551
5:39	Duffers vs. Code 30
Back Nine	
5:15	Code 3532 vs. Bat Chiefs
5:23	Code 5563 vs. Rocketeers
5:31	Code 3563 vs. Sandbaggers
5:39	Titleists vs. NWC Officers

PREVENT FOREST FIRES



Tennis Club president Nick Schneider (left) and Special Services director Gabe Imer congratulate Sherry Miller and Dick Boyd on their first place finish in mixed doubles. They defeated Joan Leipnik and Jim Smith in the finals 6-2, 6-2.

Ace-TV Retakes Softball Lead As League Nears Halfway Mark

After falling behind A & L Tire the week before, Ace TV won twice last week to retake the lead in the China Lake Softball League by ½ game and set up an A & L - Ace showdown next Monday at 8 p.m. on Reardon Field.

Ace moved ahead in the seasaw race by stifling NAF, 10-0, and defeating the Valley Merchants, 4-0, both on two-hitters by Bert Galloway.

Galloway had a no-hitter through the first five innings against NAF, as the only two Hawk base runners reached first on errors. Galloway struck out 14 and was never in trouble as Ace bats staked him to a 2-0 lead in the first inning on Chuck Newmeyer's single and Frank Carson's homer.

Ace exploded for five more runs in the fourth inning and completed the scoring with Bill Underwood's two-run homer in the seventh.

Galloway produced a carbon copy of the NAF victory two nights later as he allowed just two hits and struck out 14 in Ace's 4-0 win over the Valley Merchants.

Ace took a 2-0 lead in the second inning when Jim Bevan walked, Jerry Kissick singled, Bill Stuart reached first on an error and Underwood doubled.

The Merchants' Billy Brown limited Ace to two hits over the next three innings, but the same quartet returned for an encore in the sixth: Bevan singled, Kissick doubled, Stuart walked and Underwood singled to produce two more runs and Ace's sixth victory of the season.

Bud Eyre Chevrolet found a long-lost relative last week. They pounded their cousins the Maulers, 14-1, for their first win since May 18—the night they beat the Maulers in their season opener.

Hank Green hurled a one-hitter (he had a perfect game through the

first 10 hitters) and struck out 10 to keep the Maulers under wraps for the extent of the five-inning contest.

Denny Crager's first inning double and Wally Parmenter's second-inning homer were Bud Eyre's only extra base hits, as Buddy Deffes' 3-for-3 performance headed a 10-singles attack.

Maintaining their aplomb, Bud Eyre topped previously-unbeaten A & L Tire, 5-3, to move into fourth place in league standings.

Bert Andreason held A & L in check as Bud Eyre built up a 2-0 lead in the top of the fourth on singles by Parmenter, Jim Bradberry, Buddy Phillips and Andreason.

Bud Eyre added two more runs in the top of the sixth when Roger Short reached first on an error, Phillips doubled, and Andreason and Crager singled.

Although Andreason struck out the side in the bottom of the sixth, A & L rallied for three runs on Drex Moulder's single, an infield error, singles by Andy Gilpin and Tom Taylor, and Gordy Irvin's double.

Bud Eyre got an insurance run in the top of the seventh when Tom Haus singled, Parmenter forced him at second and came around to score on Bradberry's double.

SOFTBALL SCHEDULE	
Monday, June 21	
6 p.m.	NAF vs. Valley Merchants
8 p.m.	Ace TV vs. A & L Tire
Tuesday, June 22	
6 p.m.	Maulers vs. A & L Tire
8 p.m.	Valley Merchants vs. Bud Eyre
Thursday, June 24	
6 p.m.	Valley Merchants vs. Maulers
8 p.m.	A & L Tire vs. NAF

STANDINGS

	W	L	GB
Ace TV	6	1	—
A & L Tire	5	1	½
NAF	3	3	2½
Bud Eyre	3	4	3
Valley Merchants	2	4	3½
Maulers	0	7	6

Microelectronics: Tom Thumb World

Recipe for Microelectronics: Take equal parts of electronics, chemistry, photography, art, and jewelry-making, mix in a super-clean kitchen, and cook in a vacuum oven. Result: Tiny wafers that contain complete electronic circuits so small that a microscope has to be used to see some of their parts.

This is the type of activity, delicately speaking, that goes on constantly in the Microelectronics Branch of the Engineering Department which is headquartered in the Center's new multi-million dollar Solid State Devices Facility. The branch is managed by Henry Blazek. It is principally concerned with development and application of microminiaturized electronics and solid-state devices in three major technological areas: Hybrid circuit fabrication; Thin Film deposition; and Special Devices.

A select staff of physicists, electronic designers and mechanical engineers provide the talent to man the operation.

Working in a field in which a home-radio transistor is considered huge, the branch uses the latest solid-state components, techniques, and equipment to cram the equivalent of hundreds of elements onto a tiny piece of ceramic. Ultra-precision is the order of the day; there is literally no room for error. Working for the most part with binocular microscopes, putting the tiny pieces together in their proper places is, at best, an exercise in patience and attention to minute detail.

Although much too complex to describe at length, the evolution of a microelectronic circuit goes something like this:

First, the functional circuit is designed and laid out on a Mylar sheet, and then transferred to a Rubyolith master, which must meet the highest precision requirements. To attain this precision, the circuit is laid out with the aid of a coordinatograph. This is an ultra-precise machine with an accuracy of one-thousandth of an inch over a 48-inch square area. In some cases, a computer-driven automatic plotter can be used in design and layout.

This master is then photographed with a special camera that maintains the specified accuracy and reduces the original layout down to the actual size of the final product, often less

All Out-Patient Records To Get Number Change

According to a recent communication from Capt. G. W. Jauchler, NWC Senior Medical Officer, all dependent out-patient treatment records are now being converted to a terminal digit Social Security number filing system. The sponsor's social security number is being utilized as the basis for establishing this system. Accordingly, it is requested that all personnel with dependents who are authorized treatment at the dispensary make a concerted effort to forward his social security number to the NWC dispensary prior to any anticipated medical care.

than one-tenth of an inch. In addition, the camera can provide multiple prints of the circuit on a single film so that a number of exact duplicates can be made at the same time.

The finished film is then used to produce masks for screening the circuitry on the substrate wafer — in the case of thick-film — or to deposit metallic conductors and resistors for thin-film circuitry.

Interconnections between the tiny elements and conductors are made by thermal compression bonding of hair-like gold wire to the various points under a microscope. The complete circuit is then hermetically sealed in a special dry-nitrogen chamber.

The finished product, which looks like a piece of fine jewelry — and often is more expensive — is the combination of an unbelievable number of elements that in earlier days were vacuum tubes, resistors, capacitors, etc. into a complete functional circuit.

As mentioned earlier, the Microelectronics Branch (Code 5525) is principally working in three major specializations: Hybrid circuit fabrication, Thin-film deposition, and Special devices.

Their work in Hybrid circuit fabrication is involved with the handling of semiconductor chips that are so small that if these materials were used to build a good quality radio, the entire receiver could be placed on the head of a pin. Using equipment that utilizes microscopes and special handling manipulators in an environment of heated gases, the transistors, diodes, resistors and capacitors (all in chip form) are eutectic-soldered into position, and the tiny wires (.0001" in dia.) are interconnected and bonded to the various contact areas.

The technical expertise behind the Hybrid circuit fabrication capability in the branch is provided by Richard Tolkmitt, Les Mayer, Jerry Brown, and Marcella Sudderth. The group is capable of design analysis, interconnect layout, master artwork preparation, ceramic metallization, chip attachment, wire bonding of interconnections and parameter testing.

Thin-Film Deposition
The techniques available to the branch for work involving vacuum deposition of materials include those that are related to the use of resistance-heated sources, elec-

tron-beam bombarded sources, and sputter deposition. The basic principle behind each technique is heating — by contact with an electrically heated wire — and bombardment with a beam of free electrons and-or a beam of ionized gases. According to Charles Cutsinger, who heads up this area of effort, each of the aforementioned techniques is utilized for distinct applications.

Using these techniques, as many as four different materials may be sequentially evaporated without exposing the previously deposited film to atmospheric conditions. In this way, special multi-layer optical filters can be fabricated that consist of as many as a hundred alternating layers of evaporated material.

Special Devices
The activity of the Microelectronics branch in fabricating special solid-state devices is keyed to utilizing the capabilities that currently exist in the branch with respect to the fabrication of hybrid circuits, thin-film deposition, and the semiconductor (S-C) diffusion area. These special skills were put to excellent good use recently in the fabrication of a micro-miniature amplifier that will operate while immersed in liquid nitrogen (at a temperature of -210 degrees Centigrade). This work provided a basis for future effort that will be directed toward constructing an integrated circuit amplifier (single chip) that also will be capable of operating at liquid nitrogen temperatures.

Astro Society Schedules Goble Lecture June 23

The China Lake Astronomical Society, in cooperation with the Alexander F. Morrison Foundation, is sponsoring an illustrated popular lecture "The Exploration of Mars and Venus—Accomplishments of the Mariner Spacecrafts." The lecture will be given by Max E. Goble, Assistant Chief, Mission Operations, Mariner Mars 1971, Jet Propulsion Laboratory.

Goble, whose experience at JPL includes work with Ranger and Surveyor spacecrafts, will speak on the history of the Mariner program, beginning with Venus 1962, continuing through highly successful Mars 1969, and emphasizing the expected scientific return from the recently launched Mariner, Mars 1971.

The public is cordially invited to the lecture, which will be given at 7:30 p.m., Wednesday June 23, 1971 in Panamint Hall of the China Lake Community Center. Admission is free.

Malloy Retires Friday June 25

L.Cdr. A. E. "Scotty" Malloy of NAF will conclude 30 years of military service next Friday when he goes "over the side" at inspection and retirement ceremonies scheduled to be held at 10 a.m. at Hangar Three.

The Marine Band from Barstow will be on hand for the inspection ceremonies and will also participate in the retirement activities that are planned. All interested parties are asked to attend.



ARMY OFFICER PROMOTED—LtCol. George L. O'Grady, Jr., Army Liaison Officer assigned to NWC, was "Major" O'Grady when he reported aboard the Center last July. His new rank became official as Mrs. O'Grady pinned on the bright silver oak leaves during promotion ceremonies conducted last week by NWC Commander, RAdm. William J. Moran.

—Photo by PH3 Ronald G. Mills, USN

Furey Books 'Trojan Horse', LUAU Scheduled At COM

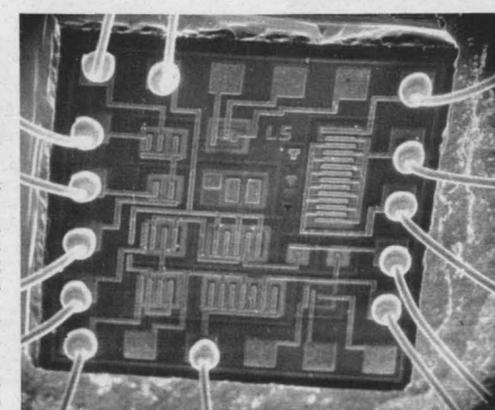
Bob Furey, manager of the Jolly Roger EM club, urges all members to catch the sound of a 9-piece aggregation that he has booked into the club on Saturday night, "The Trojan Horse." Dancing will begin at 9 p.m. and continue until 1:30 a.m.

On Friday night, the "Golden State Music Co." will be on hand, complete with Go-go girls at the local nightery.

The menu for the annual Commissioned Officer's Mess Luau is fit for a king, if your name is Kamehameha. Consisting of whole sucking pig, oysters Molokai, chicken Hawaiian style, dressed salmon, dressed turkey, roast prime rib, cold ham with pineapple, assorted Hawaiian salads, vegetables, creme caramel, and fresh fruit, the fare promises to leave Luau goers gorged and satisfied.

Jack Roberts, manager of the COM, planned the menu personally, and assures all those who attend of an evening of fun and food topped by no other date all year.

Reservations should be made early today, or stop by the COM to pick up the tickets. They are priced at \$7.50 each. Naturally, there will be Hawaiian entertainment, complete with floor show.



TINY CIRCUIT—The only way to get a good look at this tiny integrated circuit is by magnifying it 50 times as has been done here. This circuit, which is designed to operate at liquid nitrogen temperature (-210 deg. C.) contains 9 transistors and 2 diodes. Its actual size approximates the area inside this square.

GHOST TOWN OF BODIE REFLECTS ROMANTIC GOLD RUSH DAYS

Saga of Historical Past Told In West's Toughest Mining Camp

Photography and Layout by Frederick L. Richards

The mining town of Bodie is undoubtedly the best example of a California desert ghost town. Saved for posterity under State Park status, Bodie's streets, buildings and equipment are in a condition of "arrested disintegration" and remain symbolic segments of the miners' rugged existence.

There is no modern restoration of the 1868 historic structures; no repainting, nothing in the way of preservation that would impair the weather-beaten, aging naturalness.

Located between Lee Vining and Bridgeport 13 miles off Highway 395 in Mono County, Bodie was known as one of the West's most colorful and prosperous mining towns after the discovery of gold in 1859. In the 1870's the mines produced \$100 million in high-grade ore.

Bodie had its share of murders, gunfights, vigilante raids and hangings. "Boot Hill" is populated with many of the area's ruthless and notorious outlaws who gave Bodie the reputation of being "the toughest gold camp in the West."

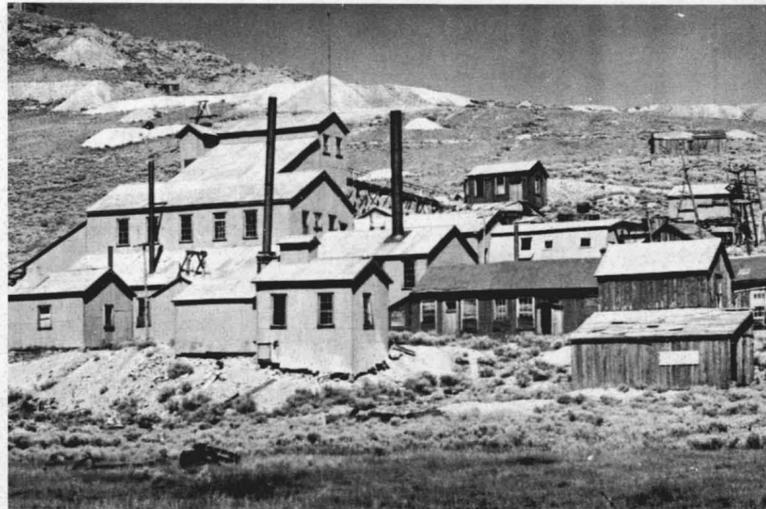
Every other building on Bodie's mile-long Main Street was a saloon or gambling hall until the first disastrous fire of 1892. Lavishly gowned ladies from the ruby-lighted streets of Maiden Lane and Virgin Alley entertained the miners nightly in the more elite halls. Opium dens with teakwood bunks and silk curtains flourished for a brief period in Bodie's Chinatown.

Bodie's "respectable element" conducted monthly dances and elaborate social affairs at the Miners Union Hall. No party or banquet was complete unless the menu included oysters on the half-shell, which explains why visitors to Bodie find oyster shells strewn about the town. The oysters were shipped in ice from San Francisco via Carson City and Benton.

Bodie's domestic water supply is piped in from Rough Creek Springs in the 9000-foot Potato Peak area about four miles west of town. As a result of the water's purity, and a fact often overlooked, Bodie also became famous for a superior quality beer produced by the town's five breweries.

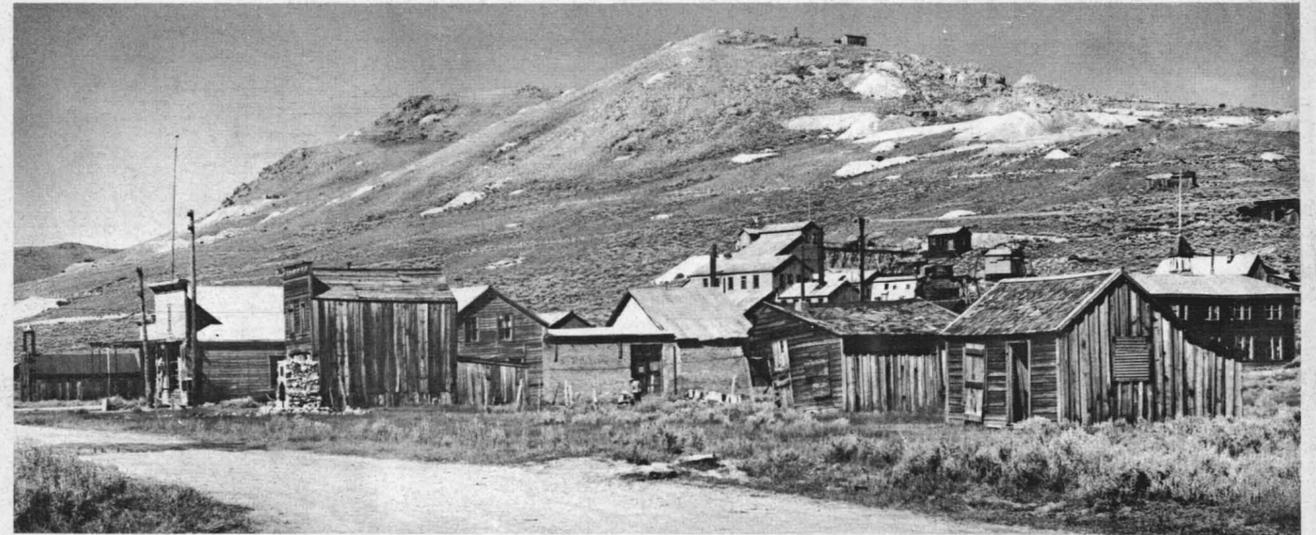
The peak of population and production in Bodie came in the 1870's when the town numbered 10,000 residents, gradually dwindling to 2,000 in 1890. Today the only inhabitants at this historic site are two custodian park rangers and their families.

There are no campsites or food sources in Bodie, and the dirt roads are rough but passable. Visitors are advised to visit the town during the summer and fall months only, and may spend time in the well-stocked Cain Museum and make leisurely tours.



OLD STANDARD MILL—Between four and five hundred Bodie men worked here and in the Standard Mine for a daily wage of four to six dollars. Built in 1896 after the first mill burned to the ground, this mill was the first commercial

plant in the world to import hydro-electrical power to operate a 20-stamp ore processing system. The electric power that replaced the plant's steam boilers came from a generator site located at Green Creek thirteen miles from Bodie.



WHERE IT ALL STARTED—A section of Bodie's south Main Street with old business buildings at the foot of towering Bodie Bluff with mine scars and tailings still in evidence. Old-timers say an estimated \$150 million in gold is still encased here until the day it can be profitably mined. At the far left of the scene is the Bodie Firehouse with its 200-lb bronze fire bell. Next to the firehouse is the

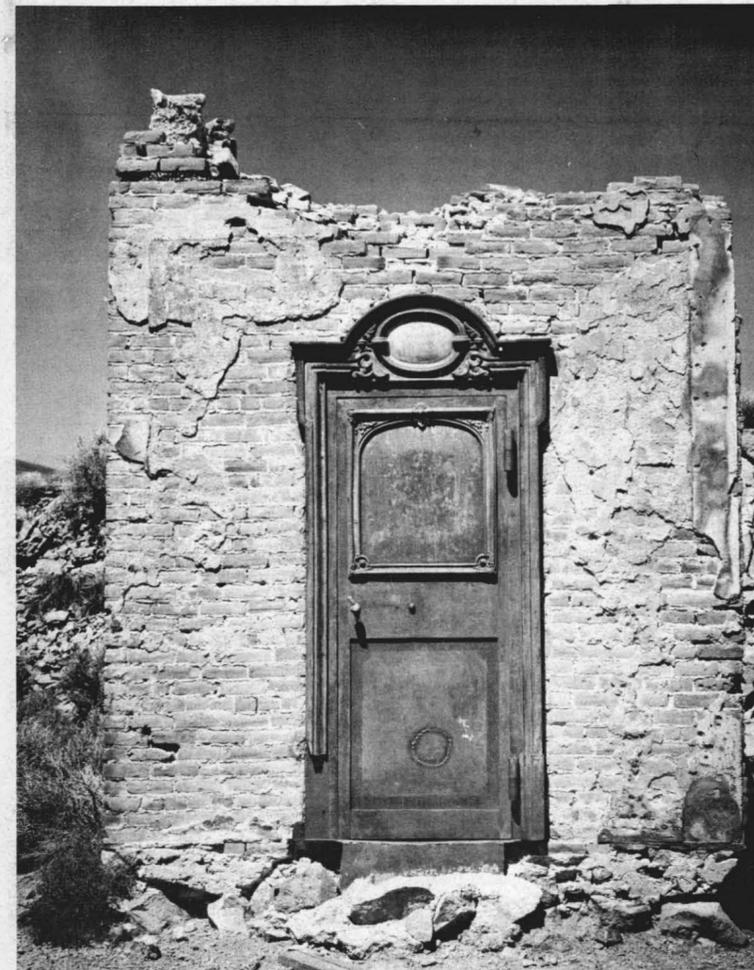
Bodie Land Office Building, and at the far right is the stalwart Bodie schoolhouse with original furnishings still intact. In the background is the famous Standard Mill with corrugated iron roofs and sidings. At the 8,400-foot elevation, Bodie suffered many severe winters with snow in 8 to 10-foot drifts and the thermometer dipping 30 to 40 degrees below zero.



JAIL HOLDS ONLY MEMORIES—This original Bodie building was used mostly for the town's disorderly drunks and a number of stage robbers and desperadoes for brief periods. An active vigilance committee disposed of some alleged murderers before the Sheriff could bring them to trial.



THE DRUGGIST LEFT IN HASTE—This apothecary's case was found in the Federal Assayer & Chemist Building and was the property of August Soderling, the last chemist in Bodie. The collection includes prescription drugs and chemicals with faded labels still attached.



BANK VAULT SURVIVES FIRE—The Bodie Bank, owned by James Stuart Cain, escaped a devastating fire in 1892, but wasn't so fortunate in the holocaust of June 23, 1932, when all but the Bank's vault went up in smoke. Cain unlocked the vault next day after the fire and found the

valuables all intact. Note the round, welded patch in the steel door's lower panel. Bank robbers cut the lock with an electric drill back in 1914, entered the vault and left with \$4,000 in cash and jewelry. They were looking for a bar of gold bullion worth about \$10,000 that Cain shipped out the day before.



CAIN HISTORICAL MUSEUM—Housed in one of Bodie's original buildings, the Miners Union Hall, the Cain Museum contains a wealth of memorable items including two horse-drawn hearses, shown here, with plate glass and etched silver trappings. These hearses were rented for \$20 per day, including horses.



LITTLE WORKHORSE OF STANDARD MILL—This is one of the first electric motors to operate by long distance power in the industrial world. It received its "juice" from the Green Creek hydroelectric plant 13 miles from Bodie, and ran the gold ore stamping system in the Standard Mill. A plate on the side of the motor reads: Bipolar Motor—NO. 1092-3 KW—500 Volts -- Patented Dec. 23, 1879 -- General Electric Co., Edison System. Engineers were convinced that the transmission lines must be straight since the current might jump off on a curve.



INTERIOR OF LOCAL CALABOOSE—Two of the three barred doors in the Bodie Jail stand ajar after vandals removed the locks. Historians say the only escapee from this wooden bastille made his exit through a hole cut in the roof. Dangerous prisoners were held in the Bridgeport Jail.



WEATHER-BEATEN LANDMARK—The famous Miners Union Hall was the scene of many Bodie social gatherings and town meetings. The false front and raised wooden sidewalk were typical of the Bodie main street buildings. Surviving all three fires, it now houses the Cain Museum.



VISITORS ARE WELCOME—Bodie was designated California Historical Landmark No. 341 in 1962, and is now protected by state park rangers. Here, at the entrance to the Cain Museum, two visitors scan bulletin board. Note raised sidewalk.