Make Own Equipment For Optics Research

(Continued from Page 1)

spectrometer. This one, on which Hal Bennett and Dennis K. Burge concentrated, can measure minute changes in the growth of a film on a surface. It can "see" a film of one atom in thickness, or one "monolayer." It is equipped with extremely good polarizers which can be adjusted to pass no more than .00001 part of a light beam.

Jean Bennett can be persuaded to take chief credit for a tailor-made photoelectric scanning comparator that measures relative lengths on a surface. It measures with an uncertainty of only two-tenths of a micron, at least 30 times better than with visual measurements.

A system she added to the device prints out readings on a paper tape with a least-count of one-tenth micron. Straight commercial models have a least-count of one full micron.

One or the other partners have assembled various other devices impressive to professional and untutored alike, nearly filling the Physical Optics Section's laboratory in Mich Lab.

Co-Workers Also Unique

If the Bennetts' technical devices are unique, so are their research co-workers who work with them to produce and operate the equipment. Among these are Terence Donovan, due to embark on a NOTS fellowship in September to prepare for a Ph.D. in solid state physics; Richard Fryer, previously a NOTS Junior Professional who took his Master's at Michigan State last year and came to the Branch in April; and Ed Ashley, who gained his considerable usefulness "on the job."

Ashley is a Navy veteran of World War II and the Korean conflict who donned the white hat 25 years ago and took his optical training (then including work with vacuums) in Washington, D.C. and at Norfolk, Virginia.

"We worked hard to get him," says Jean Bennett. "You can't just go to school and learn what Ed knows about vacuum equipment." After retiring as a Senior Chief, Optical, in 1961, he came to work for NOTS with three years' experience here from a Navy tour of 1955 to 58.

Dennis Burge, a versatile member of the team, is now with his wife in Afghanistan climbing Himalayan mountains with a party from Los Angeles. He came to NOTS in 1956 and joined the Physical Optics Branch in September, 1962. He holds a Master's degree from the University of Nevada.

Whether one observes the Physical Optics Branch's equipment, its personnel or the resulting advances in science it produces, the natural comment to make is "It's unique!"

Acey-Deucey Dance Tonight and Saturday

Outstanding guitarist Merrell, composer of such hits as "Wipe Out!" "Sorry for Yourself," and "I Saw Suzie Crying" will bring his popular four-piece "Exiles" to the Acey-Deucey Club for a two-night stand this Friday and Saturday.

Dinner is from 6 to 9 p.m. and Dancing from 9 p.m. 'til 1 a.m.

Heralds Harold's Night

DICK RUSCIOLELLI CALLS attention to Harold's Club Night to be held at the Officers Club Saturday, Aug. 21. Co-chairmen Doris Valitchka and Helen Fletcher say "you won't go home in Dick's predicament if you turn out for the affair." The gala event will feature dinner and dancing on the lanai with a true Harold's Club atmosphere.

Chemicals Can Be Dangerous

Amateur chemistry experiments with home cleansing compounds can be deadly, warns Claude V. Leape, safety officer with the Safety Development Division.

Recently, he reported, there have been four cases of persons being overcome by chlorine gas as a result of mixing household cleaners, the latest of these late last week.

"When any of the bleaches, such as Clorox or Purex or other hypochlorates, are mixed with toilet bowl cleansers, such as Draino or Sani Flush," he explained, "deadly chlorine gas is released.

"Breathing this gas in a confined space for a period of time can be deadly."

Leape advised against mixing any two compounds together unless it is positively known that they will not create a toxic atmosphere.

SHOWBOAT

FRIDAY AUGUST 13
"GIRLS ON THE BEACH" (80 Min.)
Martin West, Moreen Corcoran, the Beach Boys
7:30 p.m.
(Musical in color) A group of young surfers get into a barrel of trouble when they try to impress a bikini-clad gang of vacationing coeds that they can get the Beatles to appear at the girls' benefit show. The jet action surf set is loose! (Adults and mature youth)
SHORT: "Half Fore Hare" (7 Min.)
"Fabulous California" (18 Min.)

SATURDAY AUGUST 14
—MATINEE—
"BOY WHO CAUGHT A CROOK" (72 Min.)
Don Beddoe
1 p.m.
SHORT: "Dog Watched" (7 Min.)
"Monster and the Ape No. 13" (19 Min.)
—EVENING—
"BATTLE GROUND" (118 Min.)
Van Johnson, George Murphy
7:30 p.m.
(War Drama) Suspense, comedy and action point up the famous story of Bastogne and "The Battle of the Bulge" and the men who fought the fog and the Nazis to the climactic never-to-be forgotten reply . . . "NUTS" to a Nazi ultimatum. (Adults and mature youth)

SUNDAY-MONDAY AUGUST 15-16
"DR. NO" (111 Min.)
Sean Connery, Ursula Andress, Jack Lord
7:30 p.m.
(Adventure in color) Here's the first JAMES BOND, Agent 007, film! Bond goes to Jamaica to investigate a Chinese scientist's island stronghold and is beset by kidnapping, car crash, poison bugs, an oriental charmer and even a flame-thrower tan before he solves the fantastic plot. Sex, skullduggery and thrills galore! (Adults and mature youth) ALSO: "TO BEEP OR NOT TO BEEP" . . . with that everlovin' ol' ROADRUNNER . . .
SHORT: "To Beep or Not To Beep" (7 Min.)

TUESDAY-WEDNESDAY AUGUST 17-18
"WARLOCK" (122 Min.)
Richard Widmark, Henry Fonda, Anthony Quinn
7:30 pm.
(Western) A solidly-packed two hours of action tells of a gunslinger who is hired to rid a town of marauding cowboys, one of whom becomes a deputy, in partial opposition to the gunman. There's romance, blazing guns and sudden death. (Adults and very mature youth)

THURSDAY-FRIDAY AUGUST 19-20
"GIRL HAPPY" (96 Min.)
Elvis Presley, Shelley Fabares, Gary Crosby
7:30 p.m.
(Musical-comedy in color) Elvis and his combo play a date for the college crowd at Ft. Lauderdale and also act as undercover chaperones for the daughter of a club owner. And when she finds out . . . WOW! Hip music on the Bikini Scene. (Adults and youth)
SHORT: "Call Me A Taxi" (7 Min.)

Navy Research Lab

The Navy's Research Laboratory was first in the world to develop an electron memory tube with indefinitely long memory and instant erasure capability.

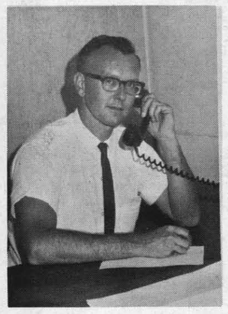
Flag Carried 1777

The U.S. flag was carried against the British in its first battle Aug. 3, 1777, at Ft. Stanwix, N.J.

Concert Assn. Offers Preferred Ticket List

Comedy, dance, music and more varied music will be the fare for this 1965 Civic Concert season — especially for theatregoers who arrange to secure their season tickets well ahead of the annual rush, according to Billie Hise, New Sales Chairman for the China Lake Civic Concert Associatin.

"Everyone who places his name on the preferential sales list," she explains, "will be called the day after the announcement of the current season's artists is made. The people on this list will have first chance to buy a season ticket before the sales campaign starts."



LOU BAGGE
. . . concert ticket chairman

She says the preferential sales list is designed with those in mind who are new in the community and those who did not hold a season ticket last year.

"This does not commit the person to buy or assure him positively that he will get a seat," she adds, "but it gives a chance to get in ahead of the rush." If renewals of tickets now held by people in Trona, Ridgecrest and China Lake go as they have for the past few years, there will be only about 275 seats available for sale this time."

All those interested in making use of the preferential sales list for the Civic Concert's 1965 season should call or write Henry L. Bagge at P.O. Box 377, China Lake, or call ext. 72431 after 4:30 p.m.

Members of the China Lake Civic Concert Association who had season tickets last year will be mailed renewal notices on September 1, at which time they will be able to send in their checks for the seats.

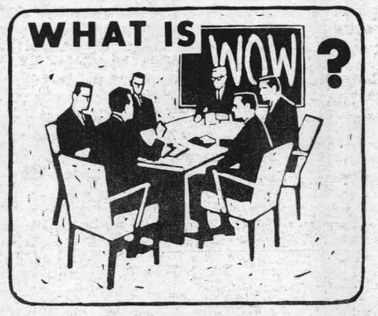
WEPTU 774 Has Reserve Openings

If you are a naval reserve officer and want to both broaden and up-date your knowledge of naval weapons, in addition to earning promotion and retirement points, an opportunity to do so awaits the reservist with the local WEPTU 774, according to LCdr. Howard Anderson, the unit's executive officer.

At present there are vacancies in the unit for reservists with the following designators 1105, 1515, 1315, 1305 and 1355.

Those interested should contact LCdr. Anderson at Ext. 9275 or 72920.

The unit meets the second and fourth Wednesday of every month at 1900 in Conference Room B, Michelson Lab.



From _____ PLACE HERE STAMP

TO _____

JP's, Recent Grads, Summer Employees Party Tuesday Eve

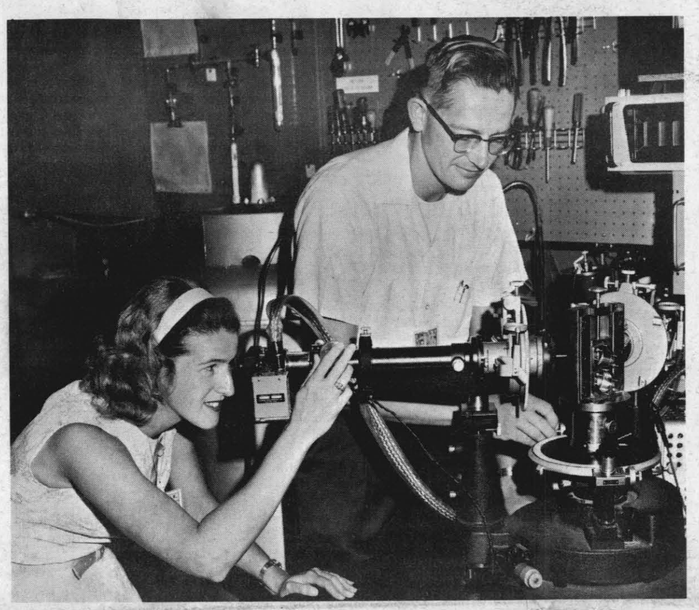
NOTS Junior Professionals, recent college grads, and summer employees will meet at the Officers Club's swimming pool and Lanai Tuesday evening, August 17, for their annual party.

From 7:00 to 10:00 p.m., they and their guests are invited to enjoy swimming, a hamburger buffet and entertainment. Those supervisors who can't miss the fun may obtain their tickets, $2.00 each, in their department offices.

Further information may be had from Conrad Bridges, ext. 71325.

ROCKETEER
NOTS
FROM UNDER THE SEA TO THE STARS
Vol. XX, No. 32 Naval Ordnance Test Station, China Lake, California Fri., Aug. 13, 1965

Husband-Wife Scientist Team



DRS. JEAN AND HAL BENNETT of Research Dept's Physical Optics Br., measure polarization of light reflected from a sample mirror produced in their ultra-high vacuum system. Device is an ellipsometer, originally a divided circle spectrometer.

Make Own Equipment For Optics Research

Collaboration, a professional skill for scientists of today working in increasingly complex and growing fields, is literally a way of life for two of NOTS' researchers.

Working from their office in Michelson Lab, Harold E. Bennett, head of Research Department's Physical Optics Branch, and his wife Jean, a research physicist, work together with a room-full of complex, minutely accurate instruments, many of which they have tailor-made from commercial components.

Here Since 1956

The Drs. Bennett have been at work at China Lake since 1956, when they came from the Air Force's Wright Air Development Center at Dayton, Ohio.

They met and married at Pennsylvania State University in their first year of graduate study. Hal Bennett had graduated from Montana State University, and Jean from Mt. Holyoke College in Massachusetts.

"We're so used to working closely together both in the lab and at home," says Jean Bennett, "that we often carry the problems of optics home to the dinner table."

It should be a good place for them to talk about their common profession, for, as Jean claims, "Hal says one reason he married me was that he didn't like to eat in the restaurants near the University — my cooking was much better!"

Design Own Instruments

Important technological advances, below the short reach of bold headlines, are the subjects of several papers the Bennetts have written jointly and with other researchers.

Much of the gain in skills and information so made has come via an array of special instruments put together by the Drs. Bennett with other members of the Branch.

At least to the non-scientific observer, the most arresting device in the Bennetts' arsenal is their ultra-high vacuum system for evaporating highly reflective metals onto optical surfaces.

The mirrors so produced are from five to ten times smoother than commercially obtained optical flats, due to special polishing, and some have higher reflectivity than has ever been reported before.

Edmond J. Ashley, a former Navy opticalman, worked with the Bennetts in combining a bakeable electron gun from one commercial company with a control panel and evaporation tanks from another to produce the unique instrument.

The device uses an ion pump and three sorption pumps to create the vacuum. The electron gun evaporates metals, such as silver and gold, onto polished, fuzed quartz surfaces.

Mirrors produced in this system enabled Jean Bennett and Ed Ashley to produce a recent professional paper showing that silver and gold have much higher reflectivity than previously obtained. These materials, as processed here, may well be of great use in future deep space systems.

Modifications Increase Usefulness

Other devices include a specially modified ellipsometer which started out, from the factory, as a divided circle

(Continued on Page 8)

Cdr. Van Grundy New Admin. Officer at NAF

Commander Bryson (Sam) Van Grundy Jr. is the new administrative officer at the Naval Air Facility. He reports from the aircraft carrier USS Hancock (CVA-19) where he served as assistant air officer from Feb. 1963 to June of this year.

CDR. VAN GRUNDY, JR.
. . . new Admin. Officer

Cdr. Van Grundy relieves Cdr. Martin M. Manger, who has served as administrative officer for the past one-and-half years. Manger now moves over to NAF's operations officer slot.

The new administrative officer entered the Navy via the Naval Aviation Cadet program in Aug. 1942. He took his general line and pre-flight training at Monterey, Calif.

He received his wings and ensign commission at Corpus Christi, Tex., in January of 1944.

Though born in Sterling, Colorado, where he attended Colorado A&M, Cdr. Van Grundy now claims Coupeville, Washington, as his home town.

Coupeville is on Whidby Island, the home of the Naval Air Station and Heavy Attack Squadron 10 with which Cdr. Van Grundy served as operations officer from Jan. 62 to Feb. 63. In addition to the World War II Victory Medal, the veteran combat pilot holds the National Service, the American Theatre, the Naval Reserve, and the Navy Expeditionary Medals, as well as a Navy Unit Citation.

Married to the former Lillian Rae of Shellbrook, Saskatchewan, the Commander and Mrs. Van Grundy have six children, Vern Jr., 21; John, 18; Donald, 14; Ella Louise, 13; Robert, 12; and Stephen, 10.

Apprentice Train'g Program To Be Phased Out in '68

The Station's Apprentice Program will be phased out by 1968 according to an announcement by Station Management.

The decision was based on changes in the program requirements of the Station, the availability of skilled journeymen in the labor market, and the increased availability of craftsmen graduated from educational institutions.

Apprentices presently employed in the program will continue with the planned schedule until they have completed their four years of training it was emphasized.

A beginning apprentice class will not be hired this year or in subsequent years, a management spokesman stated.

With the phase-out of the apprentice program, on-the-job training for department employees will be re-emphasized.

Each department is encouraged to review its needs for journeyman training and to seek the assistance of the Personnel Department in meeting these needs.

Blue Cross Ins. Agent To Visit Station Wed.

John Shelley, Blue Cross representative from Bakersfield, will be at the Community Center on Wednesday, Aug. 18, from 9 a.m. to 4 p.m.

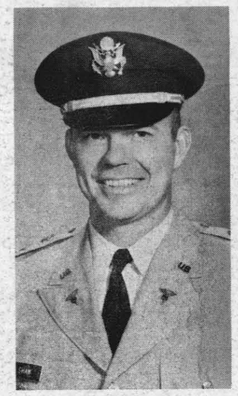
Son of NOTS Pioneer Returns from Vietnam

After 11 months in South Vietnam as a medical advisor to that nation's 25th Army Division, U.S. Army Captain Dale L. Shaw returned home to China Lake with his father for a 15-day visit last month.

The son of Robert E. Shaw, the Station's ninth civil service employee, Capt. Shaw returned July 18 to his boyhood home town, and left again last Tuesday for a student tour at the Army's Command and General Staff College at Ft. Leavenworth, Kansas.

Dale Shaw graduated from Burroughs High School in June, 1951, and attended Pomona College in Claremont, California, where he received his Bachelor of Arts degree in 1956.

One of three children to the Robert Shaws of 202-B Mitscher, China Lake, Dale's brother Carl lives in San Jose and his sister, Arlene, is a Riverside resident. He came to the then near wilderness of China Lake in 1944 with his father, who helped build the first Station facility. Shaw, senior, is now quarterman in Public Works Department's electric shop.



CAPT. DALE L. SHAW

Son Sees Hopeful Signs

"During my tour in Vietnam, I was amazed at the creativity of the Vietnamese in the way they are improving their industry and farming capabilities," Capt. Shaw commented. "And when I arrived back in

(Continued on Page 2)

CHAPLAIN'S MESSAGE

Navigation By Stars and Clouds

By CHAPLAIN E. G. CULLEY, USNR-R

Navigation is defined as "the science of locating the position and plotting the course of ships and aircraft." This is accomplished by plotting one's position relative to some heavenly body; e.g. the sun or any of several stars. This is possible because the course of these stars is constant so that the position is always predictable to an exact degree. These stars do not wander aimlessly about the universe.

Clouds are not predictable. They come and go without any constant pattern. Their fickleness is not always readily observable, especially with high clouds. You may stand and watch them without detecting any change; so that they appear to be permanent. But if you look away for five minutes and then look back you can see that they have changed and moved. No navigator would ever attempt to navigate by taking a "cloud sight."

Many years ago on the farm my father hired a man to lay off rows in a field. He told the man to make them straight, adding, "Use the mule's ears as the rear sight on a gun, pick some object on the far side of the field as the front sight, and you will have straight rows."

A little later he noticed the man making a big curve. Running out to stop him, Dad asked him why he was not doing as he had been told. He replied, "I am—I'm sighting on that little white cloud over there." Some people navigate their lives in this fashion.

Only one star is constant enough to use in navigating the course of life: "Jesus Christ, the same yesterday, and today, and forever."—Heb. 13:8

Medic Advisor Back From Viet

(Continued from Page 1)

the States, I was pleasantly surprised again to see how well informed the American people seem to be about the situation over there." As concerning his experience as a medical advisor, he reported that the embattled nation's severe climate poses a problem in adjustment for Americans, which they generally overcome well.

Performance Earns Honors

Capt. Shaw's performance in Vietnam earned him recommendation for the Combat Medic's Badge (equivalent to the Combat Infantryman's Badge), the Bronze Star, and the Air Medal (for 100 hours flown in support of combat missions).

'We had to fly to most of our destinations," he said, "since the roads were mined so often."

He entered the Army as a Second Lieutenant in 1956 through the Medical Service Corps Career Course program, then attended the Instructor's Training Course, followed by study at the Defense Language Institute at Monterey.

He is married to the former Beverlee Walters, of Torrington, Wyoming, whom he met at Ft. Sam Houston in 1957, when she was an air line stewardess. The couple has three children, Scott, 3½; and daughters Kim, 6½, Tana, 5.

Civilian All-Stars Play Military Al-Stars Tonite

The Civilian All-Stars will meet the Military All-Stars in a seven inning game tonight at the Beer Hut at 8 p.m.

Denny Crager from the Kunz Photo team will manage the Civilian All-Stars team.

Civilian batting order is as follows: R. Short, third base; D. Crager, catcher; D. Martin, shortstop; M. Smith, second base; J. Dowda, first base; F. Carson, left field; L. Buckley, center field; D. Paradise, right field; D. Merritt, pitcher.

The Rocketeer

Official Weekly Publication of the U. S. Naval Ordnance Test Station China Lake, California

Capt. John I. Hardy, USN
Station Commander

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Public Information Officer

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Editor

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Budd Gott
John R. McCabe

Staff Photographers
Robert Hancock, PH2; Seth Rossman, PH3; Dennis Smith, PH3; Jerry Willey, PHAN; and Ralph Robey, PH2 (Pasadena).

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

The Rocketeer receives Armed Forces Press Service material. All are official U.S. Navy photos unless otherwise identified. Printed weekly with appropriated funds in compliance with NavExos P-35, revised July 1958. Office at 50 King St., Bldg. 00929. Phones — 71354, 71655, 72082.

DIVINE SERVICES

Christian Science (Chapel Annex)—Morning Service—11 a.m. Sunday School—9:30 a.m.

Protestant—(All Faith Chapel)—Morning Worship—8:30 and 11 a.m. Sunday School—9:30 a.m., Chapel Annexes 1, 2, 3, 4 (Dorms 5, 6, 7, 8) located opposite Station Restaurant.

Roman Catholic (All Faith Chapel)—Holy Mass—7, 9:30 a.m., and 5:30 p.m. Sunday.
6 a.m., Monday through Friday; 8:30 a.m., Saturday.

Confessions—8 to 8:25 a.m., 6 to 8:30 p.m., Saturday; Thursday before First Friday, 4 to 5:30 p.m.

NOTS 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—For information about meetings, write P.O. Box 5674, China Lake.

58 MEMBERS of the Indian Wells Valley Swim Team were honored at the potluck Awards Dinner Friday evening, Aug. 6, at Richmond School. Award winners were part of nearly 100 team members and families at affair. High-point winners for the 1965 season were Curt deCrinus and Barbara Manger (8 yr. and under), Brock Logan and Kathy Manger (9-10), Jonathan Allan and April Manger (11-12), Nick Kleinschmidt and Dede Fletcher (13-14), and Bruce Auld, Jane Winward and Ann Allen (15-16).

PROMOTIONAL OPPORTUNITIES

Electronic or Mechanical Engineer (Instrumentation & Control) GS-13, Code 5520—The incumbent will share responsibility for the Guidance and Control Unit of the Sidewinder 1A and Sidewinder 1C air-to-air missiles. It requires special technical faculties in such unrelated areas as microowave, infrared, radar, servo-mechanics, hot gas generators, gyro operation, electro-optical systems, turbines, alternators, aerodynamic heating and stress and flutter in airframes.

Performance of tasks will require the incumbent to be familiar with all aspects of the guidance and control.

File applications for above with Loretta Hetherington, Bldg. 34, Rm. 34, Phone 71514.

Control Systems Analyst, GS-9, GS-11, or GS-12 — Applicants must have (1) understanding of fundamental analysis techniques for linear, non-linear and sample data control systems; (2) familiarity with more advanced techniques such as state variables; and (3) familiarity with digital computer programming and analog computer operations.

File applications for above with Sandi Craig, Bldg. 34, Room 28. Phone 72676.

Supervisory Mathematician, GS-13, Code 3037 — Serves as Head, Digital Research Section, Data Computation Branch, Assessment Division, Test Department. Supervises mathematicians in the design, development, and implementation of programming systems as applied to large scale scientific digital computers. Develops utility routines, consults, and provides liaison with computer research organizations.

File applications for above with Joan Lines, Bldg. 34, Rm. 34. Phone 71514. Deadline for filing: Aug. 20.

NAVY OVERSEAS VACANCIES

Supv. Planner & Estimator (Public Works), Quarterman, Refrigeration & Air Conditioning Mechanic, Kenitra, Morocco; **Translator (Typing), GS-1045-7,** Ravat, Morocco.

Supervisory Firefighter (General), GS-081-9, Italy.

File applications for above with: Navy Overseas Employment Office (Atlantic), Headquarters, Naval District Washington, Washington, D.C. 20390.

Parents Urged To Register Kindergarten Pupils Now

All parents who were not able to register their kindergarten children or other pupils new to the China Lake District during the regular registration period which ended last week are encouraged to register their children at the earliest possible date.

Registrations can be made at the district office located at Murray School Monday through Friday from 8 a.m. to 4 p.m. except during the lunch hour, 11:30 to 12:30, states Harold E. Pierce, district superintendent.

Although kindergarten registrations are still being accepted, placement in classes will only be made up to the point of space availability. After placement space has been exhausted, children's names will be placed on a waiting list in the order of registration and assignment to school and classes will be made when vacancies occur.

Proof of birthdate is required for kindergarten registrations. The child must be five years old on or before Dec. 2, 1965. No exceptions to this requirement of law can be made.

New transfer pupils at other grade levels must present report cards or transfer slips for verification of grade placement.

Both kindergarten and new pupils to the district must present evidence of polio immunization or a written statement by parents requesting exemption from this requirement because of personal beliefs or medical necessity. A doctor's signed statement is required if the claim for exemption is medical necessity.

Parents of kindergarten pupils will be contacted either by postcard or telephone before the start of school to be informed of their child's school and class placement and the time the child and his parent(s) are to report the first day of school.

Parents are urged to make every effort to register their children for school immediately. They are reminded that enrollment and attendance in summer school does not constitute registration for the fall school term.

STATION LIBRARY LISTS NEW BOOKS

A complete list of new books is available in the library.

Fiction

Branson—The Salisbury Plain.
Bryher—Visa for Avalon.
Knebel—Night of Camp David.
Peters—Who Lies Here?
Wilder—Fruit of the Poppy.

Non-Fiction

Campbell—Understanding Stocks.
Clements—A-B-C of Flower Arranging.
Dahl—Always Ask a Man.
Hillaby—Journey to the Jade Sea.
McClement—Anvil of the Gods.
Pratt—Parapsychology: An Insiders View of ESP.
Zolotow—Stagestruck: The Romance of Alfred Lunt and Lynn Fontanne.

GENERAL MESS MENU

FRIDAY, AUGUST 13

D—Clam chowder, seafood platter, franconis potatoes, spinach, salad bar, sandwich bar No. 6, lemon meringue pie.
S—Breaded veal cutlets, tomato gravy, mashed potatoes, succotash, salad bar, gold cake with caramel fudge frosting, cold drink.

SATURDAY, AUGUST 14

B—Grilled breakfast steak, fried eggs, waffles, syrup, tomato juice, cereal.
1000 ADD: vegetable soup, grilled cheese sandwiches, salad bar, ice cream, cold drink.
1000 OMIT: breakfast steak, waffles, syrup.
S—Maryland fried chicken, giblet gravy, bread dressing, mashed potatoes, peas, salad bar, jellied fruit, cold drink.

SUNDAY, AUGUST 15

B—Cereal, grilled ham steak, fried eggs, waffles, syrup, chilled fruit juice.
1000 ADD: Chicken noodle soup, tom-tom steak, French fried potatoes, salad bar, ice cream, cold drink.
1000 OMIT: Ham steak, waffles, syrup.
S—Oven roast beef, natural gravy, oven brown potatoes, carrots, salad bar, bread pudding, cold drink.

MONDAY, AUGUST 16

B—Cereal, French toast, fruit, grilled pork sausage patties, Swedish tea ring.
D—Grilled ham slices, raisin sauce, buttered whole potatoes, cabbage, carrots, salad bar, sandwich bar No. 5, pineapple pie, cold drink.
S—Onion soup, parmesan croutons, baked beef loaf, brown gravy, potato patties, O'Brien corn, salad bar, lemon coconut cake with lemon cream icing, cold drink.

TUESDAY, AUGUST 17

B—Cereal, fruit, fried eggs, luncheon meat, home fried potatoes, sugar crullers.
D—Yankee pot roast, vegetable gravy, mashed potatoes, mixed vegetables, squash, salad bar, sandwich bar No. 6, blueberry pie, cold drink.
S—Spaghetti, meat sauce, meat balls, parsley buttered cauliflower, pizza pie, French bread, salad bar, orange cake with orange sugar topping.

WEDNESDAY, AUGUST 18

B—Cereal, fruit, creamed beef on toast, hash brown potatoes, snickerdoodle.
D—Roast leg of pork, brown gravy, baked potatoes, sour cream, peas, salad bar, sandwich bar No. 1, apple pie ala mode, cold drink.
S—Pepper pot soup, grilled frankfurters, mustard buttered potatoes, sauerkraut, salad bar, pineapple-upside-down cake, cold drink.

THURSDAY, AUGUST 19

B—Cereal, ham omelet, O'Brien potatoes, pecan rolls, fruit.
D—Chicken noodle soup, fried chicken, brown chicken gravy, mashed potatoes, Buttered corn-on-the-cob, bread dressing, salad bar, sandwich bar No. 2, Cherry pie, cold drink.
S—Pork chop suey, shrimp fried rice, green beans, beets, salad bar, strawberry short cake with topping, cold drink.

FRIDAY, AUGUST 20

B—Cereal, fruit, navy baked beans, grilled Vienna sausage, iced cinnamon rolls.

MENU SUBJECT TO CHANGE

NOTS Establishes New Facility at Sylmar

NOTS Pasadena

VIRGINIA E. LIBBY — EXT. 638

Ribbon cutting ceremonies were held last week at the new NOTS Pasadena facility leased from Bendix Corporation at Sylmar, Calif. This facility will be used for several months as a training activity in the theory of operation, maintenance, preparation and turnaround of the MK 46 Mod. 1.

Personnel from Commander, Key West Test and Evaluation Detachment (COMKWESTEVDET); and Commander, Naval Torpedo Station, Keyport, Washington; and related Navy organizations are expected to receive training at this school.

The facility will also be used for inspection, acceptance testing and assembly of the torpedo forebodies and afterbodies.

On hand to greet Captain G. H. Lowe, Officer in Charge, NOTS Pasadena, and key NOTS people, at the ceremony were David H. Brown, General Manager of Bendix Pacific; G. L. Muller, Bendix MK 46 Project Manager; and A. J. Ellertson, Torpedo MK 46 Engineering Manager.

Attending from NOTS in addition to Capt. Lowe were Leonard Freinkel, Assistant Head, Underwater Ordnance Department, C. G. Beatty, MK 46-1 Project Manager; M. O. Heinrich, MK 46-1 Deputy Project Manager; Mabry Van Reed, Pasadena Plans and Range Director; and George Pollak, Deputy for Administration.

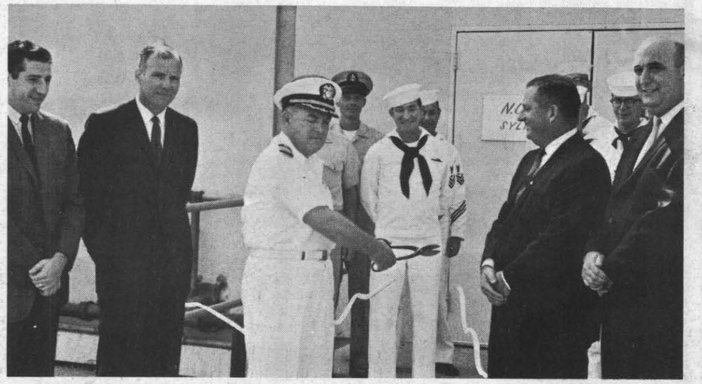
Deluxe Luncheon At Coffee Port

Your ESO Coffee Port Committee announces a new "Deluxe Luncheon" to be offered featuring a higher quality entree at a slightly higher price. In addition, menus will be posted every week to allow the "brown bagger" to join the rank of Coffee Port Patrons. Remember, you help your ESO by patronizing your Coffee Port.

Suggestions to improve the Coffee Port service are welcome, and may be submitted to Committee Chairman Gerrit DeVries or committee members — James Caraher and Ensign David Mather.

LT. WILLIAM JOHN LEONARD, recently associated with the Moray project at NOTS, China Lake, has reported to Pasadena as Assistant Technical Officer (Subsurface). He previously served in the Engineering Department aboard the USS Skipjack, and as a Weapons Engineer on the USS Sailfish. A native of Southern California, he received his commission in October 1961.

CAPT. G. H. LOWE, Officer in Charge, NOTS Pasadena (front row right) and D. A. Kunz, Head, Systems Operations Division (back row right) recently hosted Long Beach Naval Shipyard personnel who toured Pasadena facilities and attended briefing sessions. Shipyard visitors are (front row l-r) Cdr. J. B. Berude, Design Superintendent, and Capt. Jamie Adair, Shipyard Commander. (Back row l-r) J. R. Cole and W. A. Walker, both Asst. Chief Design Engineers.



MAKING IT OFFICIAL—The new NOTS Facility at Sylmar is officially opened as Capt. G. H. Lowe snips the ribbon. Sharing the moment (l-r) are: M. O. Heinrich and C. G. Beatty of UOD's Torpedo Development Division; David H. Brown, General Manager, Bendix Pacific; and G. L. Muller, Bendix MK 46 Project Manager.

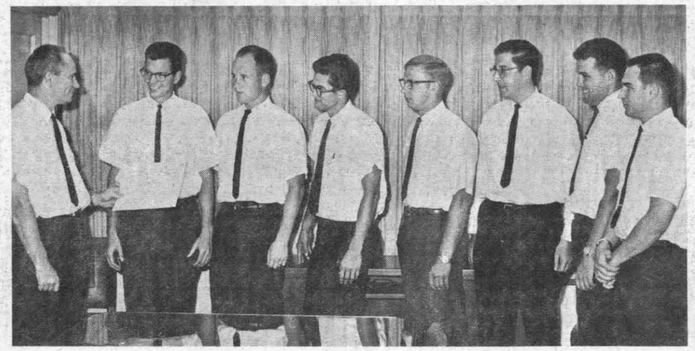
Bad Guys Lead In Final Round

BY RAY HANSON

The Bad Guys are undisputably in the driver's seat as the NOTS summer bowling league moves into its final round. The evil ones have stretched their lead to 3.5 games over the second-place El Toros. The next position week could be the wildest thing since the battle of Chickamauga.

High scores for the 10th week are as follows: team series, Go-Go's, 2883; team game, Alley Smashers, 1005; men's series, Ray Hanson, 684; men's game, George Jackson, 256; women's series, Pris Springer, 632; women's game, Jane Gaghagen and Barb Ring, both 215.

CLASS STARTS—MK 46 training sessions get underway at new NOTS Facility at Sylmar with arrival of first trainees: Key West Test and Evaluation Detachment personnel from Key West, Florida—LCdr. J. J. Wachtel, in charge; H. U. Blaxton, TM1; W. R. Bullock, TM2 (SS); P. D. Hann, TMC; J. F. Harris, TM1; W. L. Hayes, TM1; G. E. Kisslan, TMCS; J. J. Nanry Jr., TM1; R. E. Sims, TM2; C. M. Smith, TM3; J. D. Veatch, TM2; C. W. Walls, TM1; H. E. Williams, TMC.



W. E. HICKS, Head of the NOTS Pasadena Junior Professional Program (and Assoc. Head, Underwater Ordnance Department) (l), congratulates the graduating JP's (l-r from Hicks)—Don Putz, Ron Rodeman, Rich Uhrich, Gary Drage, Pat Fetta, Jim Alsup, and Rick Marrone. JP's not present for the picture are Mike Ball, Pat Burke, Tom Wolfe, Roland Schuh and John Pernicka.

PROMOTIONAL OPPORTUNITIES

Secretary (Stenography), GS-5, PD: OP80076, Code P808 — Serves as secretary to the head of the Systems Operations Division. In addition to taking and transcribing dictation and the full range of secretarial functions, is responsible for general office management and miscellaneous administrative duties for the Division Head.

Model Maker (Electronic); Hourly Salary Range: $3.51 to $3.81; Code P8084. DUTY STATION: Morris Dam. Construction, modification, assembly, and test of developmental and experimental electronic components of underwater models. Devises, fabricates, and checks performance of electronic circuits of models. Constructs special tools and test fixtures as required, and participates in test operations.

Engineering Technician (Mechanical), GS-12, PD 24028 Am 2; Code P8092 — Responsible for the planning and implementation of documentation requirements for major weapon development programs assigned to the UOD and for translating developed designs into documents which delineate the weapon as a standard unit of Navy material. This includes specifications, ordnance data, OrdAlts, Revision Directives and proposals, and RudTorpes, etc.

NOTS Educational Fellowship Program

NOTS Fellowships

(Continued)

land. The Kruegers have a daughter and a son.

Donald G. McCauley was awarded a nine-month NOTS Fellowship to continue his studies at the University of California at Davis toward a Ph.D. in Physics.

McCauley began his Ph.D. studies at the University of California at Davis in the fall of 1964, supporting himself and his family on a half-time teaching assistantship.

He has been at NOTS since 1962, arriving shortly after graduating from Chico State with a BA in Physics. He is a member of the Photophysics Branch of the Test Department.

His investigations have included the use of lasers in optical ranging and communication systems.

McCauley was born in Louisville, Kentucky and is married and has a son.

Charles M. Merrow was granted a nine-month NOTS Fellowship to work toward a Ph.D. in Mathematics at the California Institute of Technology.

He works in the Simulation and Computer Center in the Guidance and Control Division of the Underwater Ordnance Department in Pasadena.

Merrow received his BA degree in Mathematics at Whitman College in 1962 and was awarded an MA in Mathematics at the University of Washington in 1963.

He has been at NOTS since June, 1962. His primary interests are numerical analysis and probability and communication theory.

Merrow was born in Decatur, Illinois, and is married.

Robert H. Nunn was granted a nine-month extension of his NOTS Fellowship to continue his studies toward a Ph.D. in Engineering at the University of California at Davis.

Nunn graduated from UCLA in 1955 with a BS in Engineering and received an MS in Engineering from UCLA in 1964 under its China Lake graduate program.

He was a naval aviator from 1955 to 1959 and has been at NOTS since January, 1960. He is a member of the Applied Research Branch of the Propulsion Development Department. His special interests are fluid mechanics and reaction propulsion and power.

Nunn was born in Tacoma, Washington. He and his wife have three sons.

David K. Pack was awarded a twelve-month extension of his NOTS Fellowship to continue his studies toward a Ph.D. in Mathematics at the University of Oregon.

Pack's first contact with NOTS was during the summer of 1954 as a student employe. He returned as a permanent employee in 1959 following graduation from the University of Utah with a BS in Mathematics.

Pack is an operations analyst in the Weapons Planning Group and has made a special study of socio-politico-economic problems. He is married and has two sons.

Fletcher R. Phillips, Jr. was granted a nine - month extension of his NOTS Fellowship to continue his studies toward a Ph.D. in Engineering at the University of California at Los Angeles.

He began his Ph.D. studies at UCLA in the fall of 1963 under a NOTS Fellowship. He was awarded a BS degree in Mechanical Engineering by the University of Southern California in 1958 and received an MS degree in Engineering from UCLA under its China Lake graduate program in 1964.

Phillips was born in Los Angeles, is married, and has two daughters and a son.

James B. Ridlon was granted a nine-month extension of his NOTS Fellowship to continue work toward a Ph.D. in Oceanography at Oregon State.

Ridlon graduated from the University of New Hampshire in 1950 with a BS degree in Geology. In 1954 he received an MS in Geology at the University of Colorado.

ONE OF MANY ACTIVITIES for which Michelson Laboratory is a center, the advancement and improvement of scientific personnel is also one of the most important.

He has been at NOTS since 1961 and is a member of the Earth and Planetary Sciences Division of the Research Department. The Ridlons have one daughter and two sons.

Merle E. Ross was granted a twelve-month extension of his NOTS Fellowship to continue his studies toward a Ph.D. in electrical Engineering at Montana State.

Ross graduated from St. Louis University in 1959 with a BS in Electrical Engineering and came to NOTS immediately thereafter.

He is a member of the Special Projects Branch of the Aviation Ordnance Department.

In January, 1964, after completing several UCLA courses under the China Lake extension program, he enrolled at Montana State in pursuit of the Ph.D. in Electrical Engineering.

Ross was born in St. Louis, Missouri. He and his wife have two sons.

Jeffrey M. Speiser was awarded a nine-month NOTS Fellowship for work towards a Ph.D. in Engineering at UCLA.

He is an electronic engineer in the Electronics Branch of the Underwater Ordnance Department in Pasadena. His specialty is communication theory.

Speiser received his BS in Electrical Engineering at the Massachusetts Institute of Technology in 1962 and was awarded an MS in Electrical Engineering by the University of California at Berkeley in 1963.

Speiser was born in New York City. He has been at NOTS since June, 1963.

Clinton L. Spindler was awarded a nine-month NOTS Fellowship for work toward a Ph.D. in Engineering Mechanics at the University of Washington.

He received a BS in Mechanical Engineering from the University of Nebraska in June, 1958, and an MS in Engineering from the same institution in February, 1960.

First employed at NOTS during the summer of 1959, he returned for permanent employment in February, 1960. He is a member of the Applied Research Branch of the Propulsion Development Department. His specialty is reaction propulsion and power.

Spindler was born in Chappell, Nebraska. He is married and has one daughter.

William B. Stelwagon, Jr. was given a nine-month NOTS Fellowship to attend the University of California at Riverside to continue studies toward a Ph.D. in Mathematics.

He is employed in the Applied Mathematics Branch of the Mathematics Division of the Research Department.

He received his Bachelor's Degree in Mathematics from the University of Florida in 1959 and was awarded a Master of Arts Degree in Mathematics by the same institution in 1961.

Stelwagon was born in Philadelphia, Pennsylvania. He and his wife have a daughter and two sons.

William J. Stronge was granted a nine-month NOTS Fellowship for study toward a Ph.D. in Applied Mechanics at Stanford.

He is a mechanical engineer in the Detonation Physics Group of the Research Department.

He received his BS degree in Mechanical Engineering from Oregon State in 1960 and an MS degree in Engineering from UCLA through its China Lake graduate program in 1964.

His work at NOTS has been in the area of hypervelocity terminal ballistics.

Stronge was born in Chicago, Illinois, is married, and has one son and one daughter.

Mrs. Yvonne Treadwell was awarded a nine-month NOTS Fellowship to pursue studies at UCLA toward an MS in Social Psychology.

Mrs. Treadwell has been at NOTS since 1953, advancing from an initial position as secretary to her present assignment as a research psychologist in the Creativity Research Group in the Personnel Department.

She was awarded a BA degree in Social Psychology by UCLA in 1962. At present she is pursuing a study of the personality variables associated with creativity.

Mrs. Treadwell was born in Knoxville, Iowa. She has a son who will be enrolling at Bakersfield College this fall as a freshman.

Lowell H. Wilkins was granted a four and one-half month extension on his NOTS Fellowship to complete work toward a Master's Degree in Physics at the University of Idaho.

Wilkins enrolled at the University of Idaho in the fall of 1964, supported by the NOTS Fellowship. He expects to receive the master's degree in January, 1966.

He received a BA in Physics at Brigham Young University in 1961 and came to NOTS in June of that year.

He is a member of the Optical Design Branch of the Weapons Development Department and has worked on the design of optical tracking instruments.

Wilkins is a native of Duchesne, Utah, is married, and has three daughters.

Three Employees To Receive Doctorates

Those who expect to receive their Ph.D. degrees at the end of the summer are the following:

T. Ross Clayton who is a member of the Station's Central Staff, is a candidate for a Ph.D. in Public Administration at the University of Southern California.

Howard R. Kelley, a member of the Aeromechanics Division of the Weapons Development Department, has been pursuing a Navy sponsored graduate program at Pennsylvania State University in the hydrodynamics of submerged bodies.

Jon Leonard, a member of the Propulsion Systems Division of the Propulsion Development Department, is a candidate for a Ph.D. in Mathematics at the University of Arizona.

WEPCOSE Awards Granted to Four

Robert K. Bonner received a WEPCOSE Award and will enter the University of California at Berkeley to study for an MS in Electronic Engineering.

Bonner first came to NOTS in 1962 under the NOTS and University of California cooperative work and study program. He returned for permanent employment in June of 1964 upon receiving his BS degree in Electronic Engineering.

He is employed in the Electronics Branch of the Engineering Department and his specialty is product engineering.

Bonner was born in Denver, Colorado. He is married and has two daughters.

W. Richard Compton received a WEPCOSE Award and will enter Stanford University for study toward an MS in Systems Engineering (Aeronautics).

Compton graduated from California State Polytechnic College, San Luis Obispo, in June, 1962, with majors in Aeronautical Engineering and in Mathematics.

He came to NOTS immediately thereafter and is a member of the Aeromechanics Division of the Weapons Development Department.

His primary interst is thermal analysis, with application particularly to aerodynamic heating.

Compton was born in Visalia, California. He is married and has one son.

Dennis L. Holdaway received a WEPCOSE Award and will study for an MS degree in Electrical Engineering at the University of California at Berkeley.

Holdaway came to NOTS in February, 1963, following his graduation from Brigham Young University with a BS degree in Electrical Engineering.

He is employed in the Track Instrumentation Branch of the Test Department. His work has been primarily concerned with data acquisition in supersonic track tests, range timing and communication systems.

Holdaway is a native of Deweyville, Utah.

Edlin E. Patterson received a WEPCOSE Award and will enter the University of California at Berkeley to study for an MS degree in Electronic Engineering.

He graduated from Chico State with a BS degree in Electrical Engineering in June, 1960. He spent the next three years as a naval officer on Guam and came to NOTS in August, 1963.

Patterson is presently employed in the Electronics Systems Branch of the Test Department where he has participated in the design and development of electromechanical impulse gauges and passive radar detection systems.

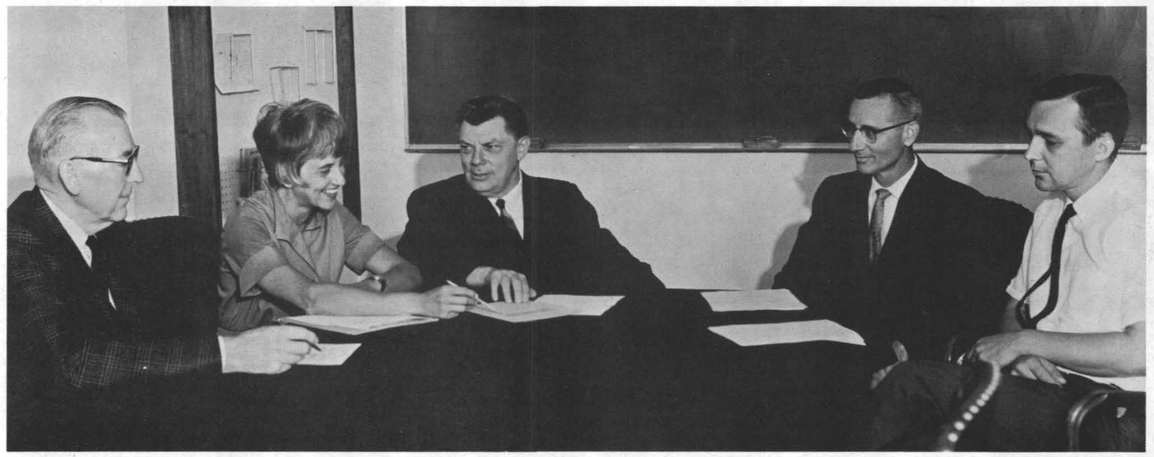
The Pattersons have three daughters and two sons.

ROCKETEER SUPPLEMENT

Featuring Opportunities for Graduate Training

VOL. XX, NO. 32 U. S. NAVAL ORDNANCE TEST STATION, CHINA LAKE, CALIFORNIA AUGUST 13, 1965

NOTS Educational Fellowship Program



EDUCATION DIRECTOR Dr. A. G. Hoyem meets with (l-r) Mrs. Lois Allan, UCLA representative; Dr. Ivar Highberg, chairman, education committee; William E. Davis, chairman, administrative development committee; and Ed Zwerski, head of professional development branch, personnel department.

29 Employees Receive Grants, Awards This Year

Twenty-nine NOTS employes have been awarded graduate study fellowships for the coming year according to an announcement made this week by the Station's Education Director, Dr. A. G. Hoyem.

Fourteen are extensions of previous NOTS fellowship grants, 10 are new NOTS fellowship awards, four are WEPCOSE awards and one is a Senior NOTS Fellowship.

Established in 1951

The educational fellowship program was initiated in 1951 to encourage and enable interested and qualified employees to undertake advanced academic training which would increase their competence and the competence of the Station in the ordnance science field.

120 Grants

One hundred and twenty employees have received grants to support graduate study since the program was inaugurated. Most of the participants in the program have had the master's degree or the Ph.D. degree as their ultimate objective.

Of those who have received grants for the coming year, six will be pursuing the master's degree and twenty-two the Ph.D. Of those pursuing the master's, one will be doing so in Physics, one in Psychology, and four in Engineering.

22 Study for Ph.D.

Of those pursuing the Ph.D., six will be doing so in Engineering, six in Physics, three in Mathematics, two in Materials Science, one in Metallurgy, one in Oceanography, one in Instrumentation, one in Engineering Mechanics and one in Applied Mechanics.

Supplements Off-Campus

These fellowships and awards for graduate study supplement the off-campus educational program conducted at China Lake by the University of California, Los Angeles.

Each applicant for an off-Station advanced study fellowship is expected to have made utmost use of the on-Station academic program through satisfactory completion of the courses which are appropriate to his needs.

An employee who wishes to obtain a master's degree in Engineering or plans to pursue a Ph.D. in that field is expected to complete the requirements for the master's degree through the on-Station program.

All applicants for grants to support Ph.D. study are expected to have completed all prerequisites for the graduate program they plan to pursue, and to be able to satisfy the school's foreign language requirement.

Applications Reviewed

Applications for fellowships for advanced study in the fields of engineering and physical science are reviewed by the Education Committee for Ordnance Sciences; those for study in other fields by the Administrative Development Committee.

The names of those selected by these committees are submitted to the Associate Technical Director, the Technical Director, and the Commander of the Station for approval. Final selection rests with the Commander.

Background Studied

In the selection of nominees, careful consideration is given to the academic record of the candidate, the caliber and nature of his past or prospective contributions to the Station, the adequacy of the on-Station academic program for fulfillment of his educational objectives, the extent of his participation in that program.

In addition, the adequacy of his proposed plan of study, the period of university residence required to attain his educational objectives, and the relationship of his course of study to the Station's needs, are taken into consideration.

Participants in this off-Station advanced study program agree to remain in the type of work to which the training is related and in the employment of the Department of Defense for a period equal to three times the duration of the training received.

The Education Committee

The Education Committee for Ordnance Sciences is chairmanned by Dr. I. E. Highberg who is the Head of the Station's Test Department and Assistant Technical Director for Tests.

The committee formulates policy for the professional development of scientists and engineers. In addition to reviewing applications and submitting nominations for advanced study fellowships, the committee also has cognizance of the UCLA extension and graduate program and the Station's program of daytime classes which provide specialized science and engineering training in areas closely related to the Station's work.

Advisory Capacity

The committee serves in an advisory capacity to the Technical Director and appointments to it are made by him. The committee at present is comprised of twelve members, each of whom has demonstrated a keen interest in the Station's educational program. The Education Director serves as the Executive Secretary of this committee.

Committee Members

In addition to Dr. Highberg, present members of the committee are the following: Dr. R. F. Rowntree of the Weapons Planning Group, Amy Griffin of the Test Department, R. T. Carlisle of the Weapons Development Department, Dr. R. T. Merrow of the Propulsion Development Department, Dr. W. S. McEwan, John Pearson, and Dr. G. J. Plain of the Research Department, F. L. Carlisle of the Engineering Department, Dr. Halley Wolfe of the Underwater Ordnance Department, Dr. T. W. Milburn of the Behavioral Sciences Group, and R. M. McClung of the Aviation Ordnance Department.

Administrative Development Committee

The Administrative Development Committee is chairmanned by W. E. Davis, Head of the Planning Staff of the Aviation Ordnance Department. Other members are R. W. Bjorklund, Head of the Station's Central Staff; R. A. Harrison, Head of the Station's Personnel Department; K. W. Heyhoe of the Central Staff; L. O. Mesple of the Engineering Department; and W. H. Funkhouser of the Personnel Department who acts as the committee's Executive Secretary.

Advises on Policy

The cited functions of this committee are to formulate, recommend and advise on policy for the development of administrative staff personnel and to provide guidance on the conduct of education and training programs for junior and senior administrators.

NOTS Fellowships

NOTS Fellowships are open to NOTS engineers, scientists, and administrative personnel who possess bachelor's degrees and who have made full use of the on-Station academic program to increase their knowledge and skills.

The awards were initially limited to one academic year, but can now be extended one year at a time to provide a total of three academic years of fellowship support.

Extensions are subject to satisfactory progress in achieving the planned academic goal.

Allowances Increased

The stipend has also been increased to facilitate paying the greatly increased costs of higher education and to encourage employees who have demonstrated the capacity for advanced training to temporarily relinquish a well-paying job in favor of more training.

The recipient of a fellowship or an award now receives his regular salary while in school. He also receives an allowance for books and may obtain reimbursement for the total cost of tuition, fees, and moving expenses in excess of $500.

In the interest of economy, NOTS fellows are encouraged to attend schools in the western United States. Attendance at schools elsewhere may be authorized if the proposed academic program is closely aligned to the Station's needs and is not available at western schools.

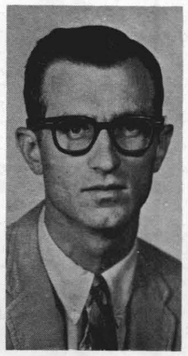
WEPCOSE Program

WEPCOSE denotes Weapon Control Systems Engineering. This program was initiated in 1962 and is sponsored by the Bureau of Naval Weapons. It

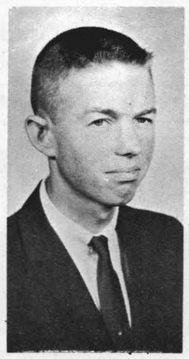
(Continued on Next Page)

Recipients of Fellowship and Awards for Advanced Study

DR. MARTIN KAUFMAN

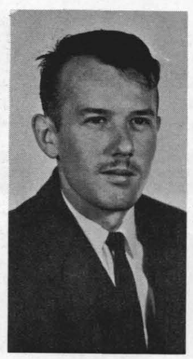


JOSEPH S. BRUGLER

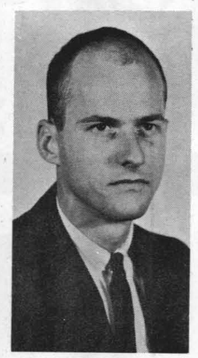


TRUMAN C. BERGMAN

JEFFREY M. SPEISER

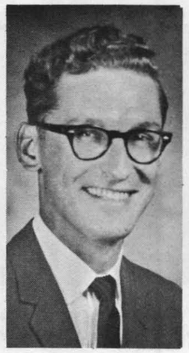


NICHOLAS BOTTKA

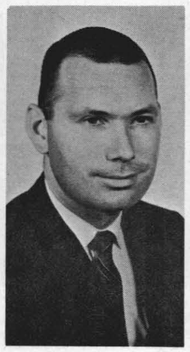


RICHARD S. HUGHES

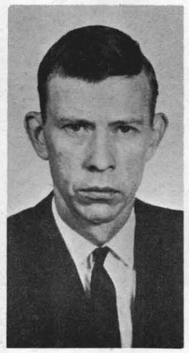
DAVID K. PACK



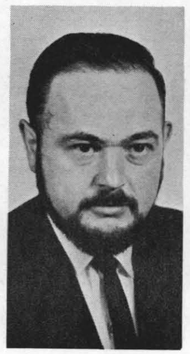
LAWRENCE J. GRAY



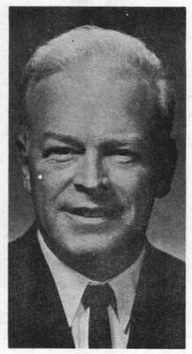
F. R. PHILLIPS, JR.



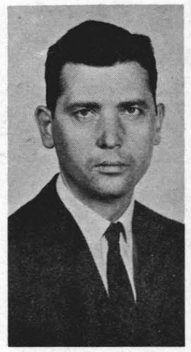
CLINTON L. SPINDLER



DAVID B. FENNEMAN

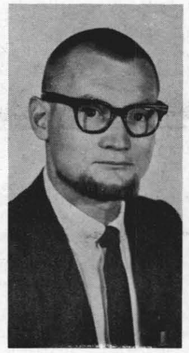


JAMES B. RIDLON

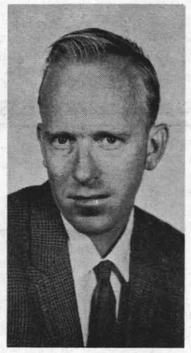


ROBERT H. NUNN

W. B. STELWAGON, JR.



WILLIAM J. STRONGE



TERENCE M. DONOVAN

YVONNE TREADWELL

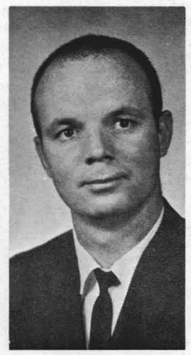
GEORGE A. HAYES

CHARLES B. BENHAM

PETER G. KRUEGER

GEORGE W. BYRAM

MERLE E. ROSS



LOWELL H. WILKINS

CHARLES M. MERROW

WEPCOSE Program

(Continued)

has the primary objective of meeting through formal academic training a continuing need for qualified engineers in the field of Weapon Control Systems Engineering.

Provides Graduate Training

The program provides graduate training in Systems Engineering and in Operations Research and the recipient of a WEPCOSE Award may attend any one of the following schools:

Massachusetts Institute of Technology, Rensselaer Polytechnic Institute, Ohio State University, University of Michigan, University of Washington, Stanford University, University of California at Berkeley, University of California at Los Angeles, California Institute of Technology, and the University of Rhode Island.

Options under Systems Engineering include Aeronautics, Astronautics, Electronics, and Underwater Engineering.

Twenty of these awards are at present available to employes within the Bureau of Naval Weapons establishment. This past spring NOTS submitted five nominees for these awards; four were selected. The award is for one academic year.

The applicant should be employed in the field of Weapon Control Systems Development, hold a degree in Aeronautical, Electrical, Chemical, Electronic, or Mechanical Engineering or Physics, and possess an aptitude for the study program offered.

In addition, it is recommended that the candidate have completed a minimum of two advanced mathematics courses beyond differential equations and a basic course in servomechanisms.

A candidate for Operations Research study should also have some training or experience in operations research, statistics, and probability.

Applicants from west coast BuWeps activities report to Point Mugu where they undergo a personal interview and are subjected to a full day of aptitude testing. Final selection is made by a Bureau designated committee.

NOTS FELLOWSHIPS

Dr. Martin H. Kaufman is the recipient of a NOTS Advanced Research and Study Fellowship for postdoctoral research at the Universities of Milan and Naples.

Dr. Kaufman plans to spend the first six or seven months of his year abroad with Professor Alphonso Liquori at the University of Naples collaborating with him on stereoregular polymerization research.

Following his stay in Naples, he will go to the University of Milan for further research, working with Nobel Laureate, Professor G. Natta.

Dr. Kaufman received his BS in Chemistry from UCLA in 1946 and his Ph.D. in Chemistry at the Polytechnic Institute in Brooklyn, New York in 1952.

He came to NOTS in 1953 and is currently Head of the Solid Propellants Branch of the Propulsion Development Department.

Holds 21 Patents

He has been granted 21 patents during his twelve-year employment at NOTS and holds the first patent for fluorocarbon propellants. His research has been concerned with pressed, plastic bonded explosives and fluorocarbon propellants.

Dr. and Mrs. Kaufman and their family of two daughters and a son plan to leave for Italy the middle of August.

Charles B. Benham will return to UCLA this fall to continue work toward a Ph.D. in Engineering under a nine-month extension of his NOTS Fellowship.

Benham is a native of Greensville, Oklahoma. He graduated from the University of Colorado in 1958 with a BS in Mechanical Engineering and received an MS in Engineering from UCLA in 1963 through its off-campus graduate program at China Lake.

He has been employed at NOTS since 1958 and is a member of the Liquid Propulsion Technology Group in the Propulsion Development Department. His primary field of interest is heat and mass transfer.

The Benhams have two daughters.

Truman G. Bergman will continue studies toward a Ph.D. in Physics at Colorado State University under a nine-month extension of his NOTS Fellowship.

Bergman received a BS in Physics from the University of California, Berkeley, in 1961 and an MS in Engineering from UCLA in 1964 through its China Lake graduate program.

He is a native of Tulare, California and is married and has two daughters. He is a member of the Photophysics Branch of the Test Department where he has worked on lasers. His primary interest is physical and applied optics.

Nicholas Bottka will begin work toward a Ph.D. in Physics at UCLA under a nine-month NOTS Fellowship.

He is the recipient also of a Rotary fellowship for graduate study at the University of Gottingen, Germany, during the 1966-67 academic year.

The Rotary award specifies that he spend the summer of 1966 touring Germany, talking to Rotary Clubs and being a good will ambassador.

Bottka expects to return to UCLA in the fall of 1967 to continue his graduate studies.

He was born in Hungary. He arrived in the United States in 1956 via Venezuela and came to NOTS in 1963 after receiving his BS in Physics from UCLA.

Bottka is employed in the Physics Division of the Research Department and is investigating the optical properties of semiconductor surfaces.

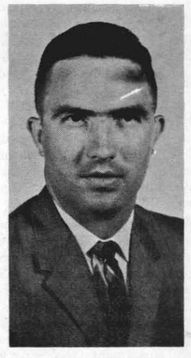
Advanced Research Study Fellowships

These fellowships are available to senior professionals who have been at NOTS at least six years, who have a Ph.D. degree or possess comparable training and experience, and who have made significant contributions to the Station's technical program. The number of such fellowships is limited to two per calendar year.

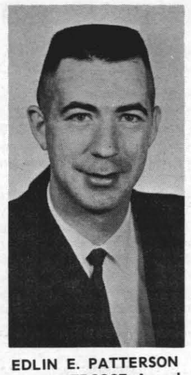
The fellowship is for one calendar year and the applicant is given wide choice in the school or schools that he may wish to attend.

ROBERT K. BONNER
. . . WEPCOSE Award

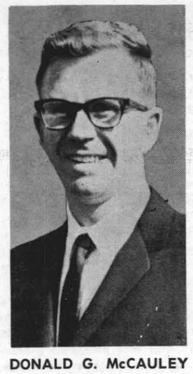
W. RICHARD COMPTON
. . . WEPCOSE Award



DENNIS L. HOLDAWAY
. . . WEPCOSE Award



EDLIN E. PATTERSON
. . . WEPCOSE Award



DONALD G. McCAULEY

Joseph S. Brugler was awarded a nine-month NOTS Fellowship for study toward a Ph.D. in Electrical Engineering at Stanford.

He graduated from Stanford with a BS in Physics in 1958 and with an MS in Electrical Engineering in 1963. He began his employment at NOTS in 1958 and returned to Stanford in the fall of 1962 on a BuWeps Fellowship to work for his master's degree.

Brugler is employed in the Aviation Ordnance Department and has been engaged in missile development with primary responsibility for system analysis and design.

He is a native of San Francisco and is married and has a daughter and a son.

George W. Byram received a three-month extension of his NOTS Fellowship to continue work this summer toward an Sc.D. in Instrumentation at MIT.

Byram began his doctorate studies at MIT in the fall of 1963 under a WEPCOSE award and continued the studies this past year under a NOTS Fellowship. He has been granted a fellowship by MIT for the coming year.

A native of North Carolina, he graduated from Georgia Institute of Technology with a BS in Electrical Engineering in 1961 and with an MS in Electrical Engineering in 1962. In 1964 he was awarded a Master's Degree in Aeronautical Engineering at MIT.

He has been at NOTS since 1961 and is currently a member of the Systems Operation Division of the Underwater Ordnance Department in Pasadena. His primary interest is electronic circuit theory and its applications.

Terence M. Donovan was awarded a nine-month NOTS Fellowship for study toward a Ph.D. in Materials Science at Stanford University.

He is a research chemist in the Physical Optics Branch of the Physics Division of the Research Department. He is investigating the optical and photo-electronic properties of crystalline solids.

Donovan received a BS degree in Chemistry from San Jose State in 1956 and was awarded an MS in Physical Science from Stanford in 1961. He has been at NOTS since 1956.

He is a native of Chicago, Illinois, is married and has two daughters and a son.

David B. Fenneman received a nine-month extension of his NOTS Fellowship to continue work toward a Ph.D. in Physics at the University of Illinois.

Fenneman is a member of the Liquid Propulsion Technology Group of the Propulsion Development Department. His work involves trajectory analysis and investigations into the dynamics of spinning bodies.

A native of San Pedro, California, he has been at NOTS since 1959, arriving shortly after his graduation from the University of California at Berkeley with a Bachelor's Degree in Physics.

Lawrence J. Gray was awarded a nine-month extension of his NOTS Fellowship to continue his studies at the University of Illinois toward a Ph.D. in Physical Metallurgy.

He is a member of the Advance Systems Branch of the Underwater Ordnance Department in Pasadena where he has been engaged in investigations into the radiometric characteristics of the ocean.

Gray received a BS in Physics from Loyola University in 1960 and an MA in Physics from Southern Illinois University in 1962. He came to NOTS shortly after receiving his master's degree.

Gray was born in Chicago, Illinois and is married.

George A. Hayes was granted a three-month extension of his NOTS Fellowship to continue his studies toward a Ph.D. in Materials Science at Stanford.

He began his Ph.D. studies at Stanford in the fall of 1962 under a NOTS Fellowship. He expects to receive the degree in December of this year.

Hayes received a BS degree in Metallurgical Engineering at the University of Idaho in 1956 and was awarded an MS degree in Metallurgy at the University of Utah in 1957.

He came to NOTS in November of 1957 and is at present a member of the Detonation Physics Group in the Research Department. His research has concerned the metallurgical effects in metals exposed to impulsive loads.

A native of Coeur d'Alene, Idaho. he is married and has a daughter and a son.

Richard S. Hughes will continue his studies at the University of California at Riverside toward a Ph.D. in Physics under a nine-month NOTS Fellowship.

He began his studies at the University of California at Riverside in the fall of 1964 under a BuWeps Fellowship. He received his BS degree in Physics from La Sierra College in Arlington, California, in 1962 and came to NOTS shortly thereafter.

Hughes is attached to the Photophysics Branch of the Test Department where he has worked on lasers and on underwater optical problems. He and his wife have a daughter and two sons.

Peter G. Krueger was awarded a nine-month NOTS Fellowship to continue his studies toward a Ph.D. in Physics at the University of California at Riverside.

Krueger began his Ph.D. studies at the University of California at Riverside in the fall of 1964 under a BuWeps Fellowship.

He has been at NOTS since 1962, arriving shortly after receiving a BA in Physics from La Sierra College.

Krueger is a member of the Optical Instrumentation Branch of the Test Department and has been concerned with the evaluation and analysis of photo-optical tracking equipment.

He was born in Lodz, Po-

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