

Theft of Blinkers Causing Accidents

A serious problem has arisen in the last few months in China Lake concerning the malicious theft of warning blinker lights from road barricades.

These blinkers warn approaching traffic at night of road hazards, ditches and various construction projects. When they are removed the motorist often fails to see the obstruction until it is too late.

As a result of the missing blinkers many accidents and near misses have occurred.

The Public Works Department has reported that in the last three months approximately 36 of these warning blinkers have been removed from barricades and stolen. Parents are requested to inform their children of the seriousness of this situation.



THE GOOD LIFE — Cdr. J. J. Braun, (l), Executive Officer, Air Development Squadron Five, congratulates AZ1 William Sapp after he re-enlisted for four more years in the Navy. Sapp's wife, Janet, and their four children consider the Navy a "good life."

Arrival of Richard Wadman, Youth Director Big Boost To Center's Recreation Programs

The arrival of Richard Wadman, recently assigned Director of Youth Activities for NWC and the completed renovation of the Youth Center are being celebrated today from 10 to 5 p.m. with an Open House. Young people of all ages, their family members and guests are invited to attend the affair.

According to Special Service officials, Wadman is the first professional, full-time director the Center has had for several years. Experienced in all phases of youth activities, Wadman is anxious to begin a well-organized program for the Center's young people.

Asked how he plans to get underway with this important task, he commented, "I will need the cooperation of all young people interested in helping to form not only the best activity program at NWC, but hopefully, one of the outstanding programs in southern California."

Bright Future

"We can do it too," he continued, "as long as the people will assist us in making their improvements known. I want to emphasize, this is their program, and it will only be as successful as they desire to make it."

Wadman also stated, "The program is being organized to encompass all youth activities here. We hope it will become a 'help-all-program.'"

Prior to his assignment to China Lake, Wadman headed the youth program at Eighth Air Force Headquarters, Westover Air Force Base, Massachusetts. Well-grounded in a background of planning and



RICHARD WADMAN, NEW DIRECTOR

organizing youth activities, his experience includes positions as an Air Force Youth Director in Newfoundland; Municipal Recreation Director in Dover and Portsmouth, New Hampshire, and scoutmaster, committeeman and commissioner for the Boy Scouts of America. He also served on the Governor's Council on Youth and was a member of the New Hampshire Recreation Society and National Recreation and Parks Association.

Air Force Veteran

An Air Force veteran of eight years service, Wadman saw duty in Weisbaden, Germany; Paris, France and various assignments to U.S. Air Force bases throughout the United States.

Lecturer To Speak On Automation Next Thursday

Professor Maurice Verhelst, Institute of Applied Economics, University of Louvain, Belgium, will be at the Naval Weapons Center on Thursday, September 7, 1967, to present a lecture on the Formation of an International Data Processing Group.

This lecture, which will be held at 9:30 a.m. at the Community Center, is the eighth of a series in the area of computer sciences sponsored as a joint effort by the Office of Naval Research, the Naval Ordnance Systems Command, and the Naval Weapons Center.

The International Federation of Information Processing Societies has a membership of over 25 National Societies, including the American Federation of Information Processing Society.

During the past 12 months there has been formed within the IFIP framework, the IFIP Administrative Data Processing Group, having three broad purposes: (1) studying systems, (2) collecting and disseminating information, and (3) promoting training, all with the view to develop and otherwise improve administrative data processing activities throughout the world.

Professor Verhelst is Secretary of the Administrative Data Processing Group's Board of Directors and will discuss some of the potential contributions and future impact of the group.

Such areas as the automation of population register systems, information storage and retrieval, and project planning in countries of the world where the level of computer technology is substantially different from that in the United States, will be included.

SHOWBOAT

FRIDAY **SEPTEMBER 1**
"ONE MILLION YEARS B.C." (91 Min.)
Raquel Welch, John Richardson
7:30 P.M.

(Adventure) Thrill to the unusual adventure of a cave man who finds another tribe, and beautiful Raquel. See the battles against survival and giant prehistoric monsters. It's all on the big screen as if you were really there! (Adult, Youth, Very Mature Children.)
Short: "Beauty and the Bull" (16 Min.)

SATURDAY **SEPTEMBER 2**

—MATINEE—
"MARCO POLO" (92 Min.)
Rory Calhoun
1:30 P.M.

Shorts: "Now, Hear This" (7 Min.)
"Adventures of Jesse James" No. 11 (13 Min.)

—EVENING—

"THE GLASS BOTTOM BOAT" (110 Min.)
Doris Day, Rod Taylor
7:30 P.M.

(Comedy) Doris helps Pop run the boat on weekends but works in a space lab during the week. Her run-in with her boss (who she's never seen) is the basis for this wacky, fun-filled tale. Filmed at colorful Catalina Island. (Adult, Youth, Children.)

SUNDAY-MONDAY **SEPTEMBER 3-4**

"HOW TO SUCCEED IN BUSINESS WITHOUT REALLY TRYING" (119 Min.)
Robert Morse, Michele Lee, Rudy Vallee
7:30 P.M.

(Musical/Comedy) Here's that fun-filled Pulitzer prize-winning farce about the window cleaner who buys a book (about the title), butters up the right people and makes his mark in industry. His total concentration and angle-shooting are a sight to behold and it's all set to lilting tunes. (Adult.)

TUESDAY-WEDNESDAY **SEPTEMBER 5-6**

"EIGHT ON THE LAM" (106 Min.)
Bob Hope, Phyllis Diller
7:30 P.M.

(Comedy) Bob's a widower-bank teller with seven kids and an oversize dog. You'll roar at his predicament when he finds 10 one thousand dollar bills. The stellar cast helps to make this the wackiest Hope you'll ever see. F-U-N-I (Adult, Youth, Children.)
Short: "Sacre Bleu Cross" (7 Min.)

THURSDAY-FRIDAY **SEPTEMBER 7-8**

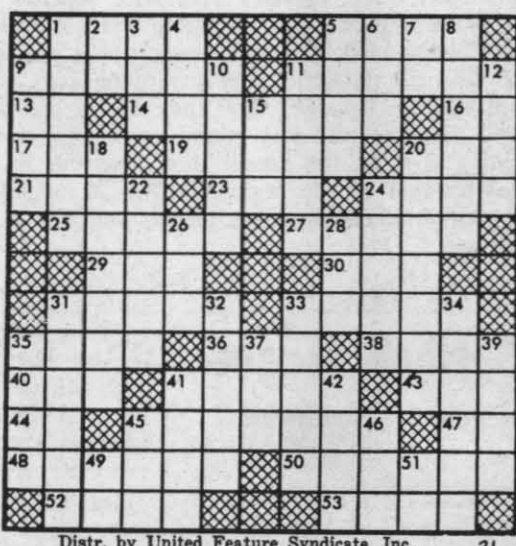
"THE RED DRAGON" (88 Min.)
Stewart Granger, Rossano Schiaffino
7:30 P.M.

(Adventure) Actually filmed in mysterious Hong Kong, this tells of jewel smugglers and the exciting adventures of an FBI agent assigned to trap them. Behind the Bamboo Curtain life is cheaper and the dolls are deadlier! (Adult.)
Shorts: "Jet Pink" (7 Min.)
"Window in the East" (9 Min.)

★ **SHARE IN FREEDOM** ★
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CROSSWORD PUZZLE

- Answer to Previous Puzzle
- ACROSS**
- 1-Vata
 - 5-Hastens
 - 9-Indian tents
 - 11-Condition
 - 13-Indefinite article
 - 14-Shreds
 - 16-Printer's measure
 - 17-Paid notices
 - 19-Condensing
 - 20-Wager
 - 21-Allows
 - 23-Meadow
 - 24-Run easily
 - 25-Room
 - 27-Ransacks
 - 29-Game at cards
 - 30-Conjunction
 - 31-Narrow openings
 - 33-Name
 - 35-Barrocauda
 - 36-Fuss
 - 38-Of the same nature
 - 40-Above (poet.)
 - 41-Sailing vessel
 - 43-Yellow ocher
 - 44-Sun god
 - 45-Indisposition to action
 - 47-101 (Roman number)
 - 48-Barbers
 - 50-Juncture
 - 52-Plumlike fruit
 - 53-Let it stand
- DOWN**
- 1-Delicate
 - 2-Above
 - 3-Openwork fabric
 - 4-Close securely
 - 5-Possessive pronoun
 - 6-Possessive pronoun
 - 7-Latin conjunction
 - 8-Slumbers
 - 9-South African Dutch
 - 10-Gravestone
 - 11-Wind
 - 12-Heraldry: grafted
 - 15-Golf mound
 - 18-One who procrastinates
 - 20-Containers
 - 22-The face (colloq.)
 - 23-Bumpkins
 - 26-Obtained
 - 28-Japanese sash
 - 31-Lances
 - 32-Transactions
 - 33-Sounds a horn
 - 34-Draw out
 - 35-Classify
 - 37-Click beetle
 - 39-Flutter about
 - 41-Dirk
 - 42-Fruit seeds
 - 45-Artificial language
 - 46-Skill
 - 49-Man's nickname
 - 51-Diphthong



Distr. by United Feature Syndicate, Inc.

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RADM. F. A. BRANDLEY



RADM. M. E. DORNIN

RADM. Dornin Takes Command In Eleventh Naval Dist. Ceremonies

In a Change of Command Ceremony yesterday, Rear Admiral Marshall E. Dornin took over the helm as Commandant of the Eleventh Naval District at the Naval Training Center in San Diego, California.

RADM. Frank A. Brandley, whose naval service began 42 years ago at the Naval Academy, ended his career and his job as Commandant of the district. He served as Commandant since December 30, 1965.

Distinguished Career

Adm. Brandley distinguished

himself throughout his career, primarily as an aviator, commanding officer of aircraft carriers Hornet and Kula Gulf and the seaplane tender Suisun.

The new skipper, is a native of California, was born in Berkeley January 25, 1908, attended public schools in San Francisco and was graduated from the Naval Academy in 1930.

His early service included duty on the battleship Colorado in the Pacific; the destroyer

Parrott of the Asiatic Fleet; the battleship New Mexico of the Pacific Fleet, and the Naval tanker Brazos.

Prior to the outbreak of World War II in December, 1941, Adm. Dornin was assigned to the staffs of Commander Train and Commander Service Force, Atlantic Fleet.

World War II Action

Later as skipper of the USS Abbott, he participated in operations in the Marshall Islands.

(Continued on Page 3)

Command Change Ceremonies Ready For Fri., Sept. 15

September 15th is the day set aside for Captain Melvin R. Etheridge to take over command here, relieving Captain G. H. Lowe, present skipper.

Captain Lowe will continue his tour as Commander of the Naval Undersea Warfare Center in Pasadena and San Diego, California.

Scheduled to arrive at the NWC Sunday, Captain Etheridge, a Naval Academy graduate and combat veteran of World War II, brings with him to his new post training and experience in Navy operations both in the air and under the seas.

Captain Etheridge has served with Squadrons VX-22 and VA-42; on the Staff of the Commander, Naval Air Force, U.S. Atlantic Fleet, and at the Nuclear Weapons Training Center, Pacific.

He has also served aboard the USS Independence as Nuclear Weapons Coordinator, Operations Officer and Executive Officer, and aboard the oiler USS Caliente as Commanding Officer. Other tours have been with the Armed Forces Special Weapons Project and the Joint Staff of the Joint Chiefs of Staff.

He is married to the former Margaret Ann Ennis of Annapolis, Maryland. They have two children, Melvin Jr., a Midshipman second class at Annapolis, and Margaret Ann, who will enter Burroughs High this Fall as a freshman.



TEMPERATURES

	Max.	Min.
Aug. 25	96	71
Aug. 26	101	63
Aug. 27	101	69
Aug. 28	104	62
Aug. 29	106	68
Aug. 30	106	71
Aug. 31	106	65

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Fall Semester
Education
Schedules On
Pages 5, 6, 7, 8



Vol. XXII, No. 35 Naval Weapons Center, China Lake, California Fri., Sept. 1, 1967

Anechoic Chamber for Shrike To Make Standards for Fleet

Designed as Apex For Triangular Control System

The key facility for the quality testing of the Navy's Shrike anti-radar missiles will soon be in operation at China Lake, as work nears completion on the third radio-frequency (RF) anechoic chamber to be built here.

Engineering Department's Systems Electronic Design Branch is the builder of the 312 square-foot anechoic chamber, with its attached instrumentation room and separate components testing screen room in the Engineering Wing of Michelson Lab. Texas Instruments, Inc., is the prime contractor for the project, to be completed by the end of this month.

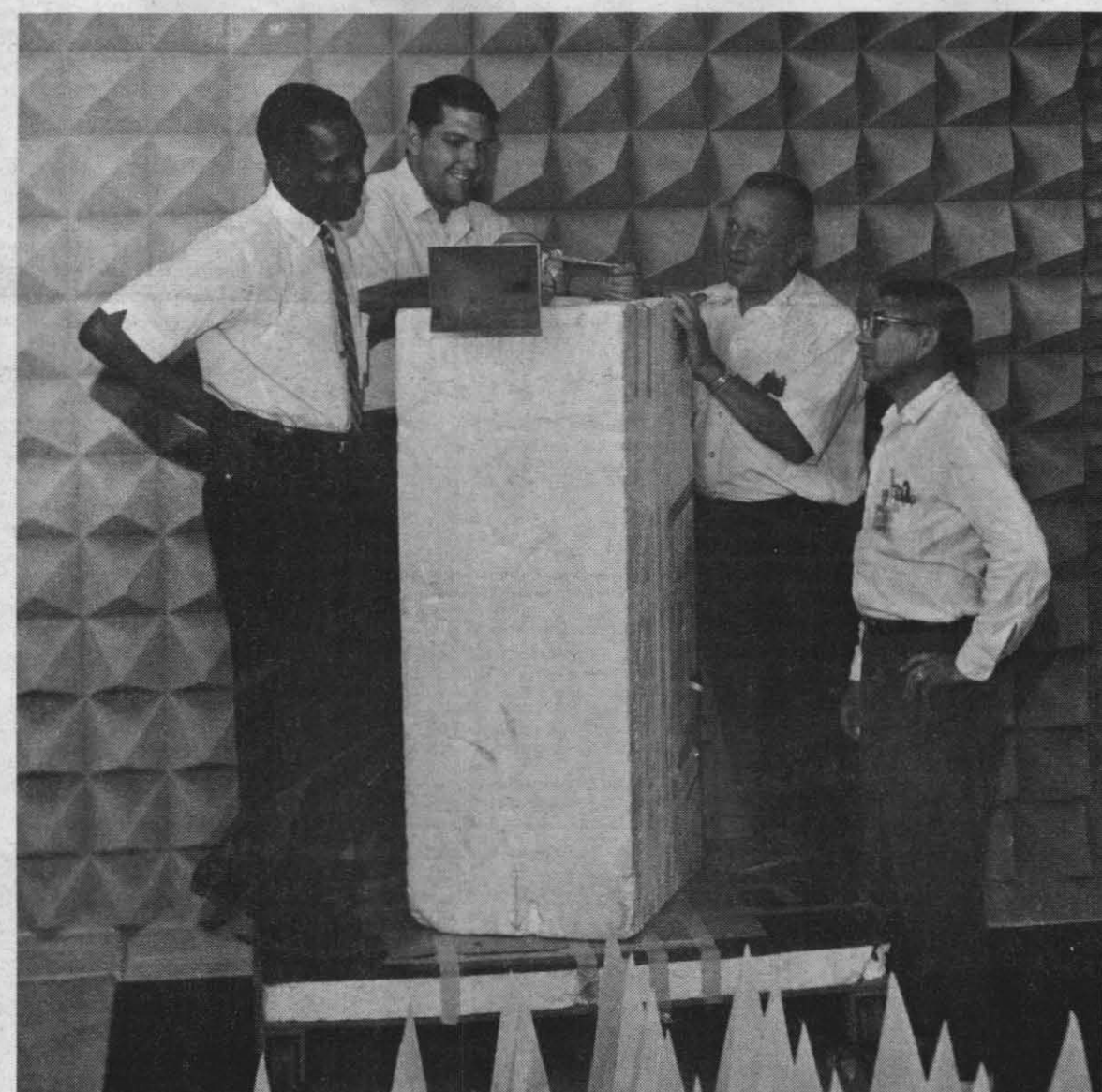
Similar facilities will be working with the Center's in a three-cornered program to guarantee perfect Shrikes for the Fleet. One has been in operation at Pt. Mugu since last March and another is just starting operation at NAS Alameda.

Aim at Double Duty

Douglas L. Cobb, chief engineer for the building project, explains that the Center's new anechoic (without echo) chamber will be used to control production and re-worked weapon testing for the other two chambers, and to set their standards. It will also test system improvements and modifications.

"We hope also to be able to handle overflow work from the original chamber and the recently built big one run by the RF Measurements Branch in Weapons Development Department," says Cobb. "This new chamber can help RF Measurements to concentrate on purely research and development work."

The design and specifications for the new chamber were made by Isaac W. Guinn, who left China Lake and the System Electronic Design Branch last



GATHERING FOR A TEST — A transmitting horn mounted on a temporary stand in the rough-finished RF anechoic chamber in Michelson Lab is the subject of interest of four project workers of Code 5525. From left are Emanuel Dunn, chamber build-

ing project leader; technician Mark White; Charles Endres, future test supervisor, and technician Rick Amecua. Tests are proceeding this month for anechoic efficiency of RF deadening cone materials (seen behind group, on floor).

January. Since the project was born two years ago, he worked with Emanuel M. Dunn, who has continued to coordinate purchasing and construction. Charles W. Endres, working with chamber construction efforts now, will be test supervisor for the operational facility.

The range of the Shrike anechoic chamber will be — to start out — two to eight gigacycles (2,000 to 8,000 megacycles), but will eventual-

ly reach 12.5 gigacycles (GC). This range fits well inside the much larger one of the huge new chamber operated by Code 40 on Waterline Road near the Thompson Aeroballistics Lab. The big chamber's range extends downward to the 30 to 500 megacycle area, much used for communications.

Testing operations are now underway in the chamber to get top RF reflection deadening from the foam rubber, carbon imbedded, spiked and flat

lining materials. The materials, covering all four walls, floor and ceiling of the chamber, are designed to create a spherical quiet zone three feet in diameter around the test item's antenna. This means an attenuation, or reduction, of at least 40 decibels within that zone, according to Cobb. He notes that the chamber's metallic walls and ceiling provide an attenuation of 100 decibels, shutting

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TO _____

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pressible flows. Normal and oblique shocks, one dimensional adiabatic and diabatic compressible flows. Elements of compressible aerodynamics; similarity parameters.

*Engineering XL 198, Gas Phase Chemical Kinetics (4) \$55
Instructor: A. S. Gordon, Ph.D., Head, Chemical Kinetics Branch, Research Department
Tues-Thurs, 6:45-8:45 p.m., Michelson Laboratory, Conf. Rm. D (21 meetings, 3 Oct-14 Dec)
Prerequisite: An undergraduate physical chemistry course; consent of instructor
Text: Benson, Foundation of Chemical Kinetics, 1960, (McGraw-Hill) \$15.00

Starting with collisions and the Maxwell-Boltzmann energy distribution, a simple concept of chemical reactions is developed. The strengths and weaknesses of the concept lead into unimolecular reactions which are analyzed from a number of viewpoints. All the important concepts of reaction rate theory, including order, molecularity, consecutive, concurrent, branch and chain branch will be presented and discussed.

Mathematics XL 132, Introduction to Complex Analysis (4) \$55
Instructor: R. B. Lelpink, Ph.D., Research Mathematician, Research Department

Tues-Thurs, 4:30-6:30 p.m., Michelson Laboratory, Conf. Rm. D, (21 meetings, 3 Oct-14 Dec)
Prerequisite: Math. 12C or 13C
Text: Pennisi, Elements of Complex Variables, (Holt, Rinehart, and Winston) \$8.50

Complex numbers, functions, differentiability, series, extensions of elementary functions, integrals, calculus of residues, conformal maps and mapping functions with applications.

Mathematics XL 150A, Probability and Statistics (4) \$55
Instructor: J. R. Harvey, Ph.D., Research Mathematical Statistician, Research Department

Tues-Thurs, 4:30-6:30 p.m., Training Bldg., Rm. 212, (21 meetings, 3 Oct-14 Dec)
Text: Hogg and Craig, Introduction to Mathematical Statistics, (Macmillan) \$8.50

Discrete and continuous probability, distribution functions, random variables, law of large numbers, central limit theorem.

*Physics XL 108, Physical Optics (4) \$55
Instructor: B. A. Roberts, Ph.D., Research Physicist, Research Department

Mon-Wed, 4:30-6:30 p.m., Training Bldg., Rm. 206, (21 meetings, 3 Oct-14 Dec)
Prerequisites: Physics 110B and 131

Text: Ditchburn, Light, (Interscience) \$13.00
Interference, diffraction, dispersion, molecular scattering, absorption of radiation. Anisotropic media; crystal optics, optical activity, Faraday and Kerr effects. Non-linear optics. Theory of spectral line width. Coherence and partial coherence.

*Physics XL 112A, Thermodynamics (4) \$55
Instructor: J. L. Stanford, Ph.D., Research Physicist, Research Department

Tues-Thurs, 6:45-8:45 p.m., Training Bldg., Rm. 203, (21 meetings, 3 Oct-14 Dec)
Text: Bell, Fundamentals of Statistical and Thermal Physics, (McGraw-Hill) \$12.50

First and second laws of thermodynamics; entropy and other thermodynamic equations of state. Applications to gases, magnetic and electrically active solids. Thermodynamics of phase transitions, superconductivity, liquid helium, and adiabatic demagnetization. Statistical mechanics of classical and quantum distribution functions.

GRADUATE PROGRAM SCHEDULE. The following course is open only to students who have graduate status at UCLA.

Engineering 215B, Solid State Electronics; Metals, Semiconductors and Superconductors (4) \$55

Instructor: V. L. Rehn, Ph.D., Head, Electron Structure of Solids Branch, Research Department

Tues-Thurs, 4:30-6:30 p.m., Training Bldg., Rm. 206 (21 meetings, 3 Oct-14 Dec)
Prerequisites: Engr. 115A and Physics 131

Texts (Required) Ziman, Theory of Solids, (Cambridge University Press) \$8.50
Griffith, Theory of Transition Metal Ions, 1961, (Cambridge University Press) \$19.50
Schiff, Quantum Mechanics, 2nd ed., 1955, (McGraw-Hill) \$9.95

Basic theory of conductivity. Properties of semiconductors. Electronic processes within semiconductors; transport and optical phenomena. Applications. Superconductors: thermodynamic, electric, and magnetic properties.

UCSB EXTENSION OFFERINGS

**The Teaching of Geography in Elementary Schools, X 324.22 (3 units, \$40)

Instructor: Dan W. Butler, Employee Development Officer, U.S. Naval Weapons Center (M.A.)

Wednesday, 7-10 p.m., October 4-November 29, 1967
Location: Cafeteria, Desert Park School
A study of the inter-relationships between the elements of physical and cultural geography with special reference to the problems teachers meet when developing their social studies programs and when dealing with current world affairs.

**Art in Elementary Schools, Part I, X 324.7A (3 units, \$40)
Instructor: Mrs. Hope C. LaCombe, Jr. High Art Teacher, China Lake Elementary School District (B.A.)

Thursday, 7-10 p.m., October 5-December 7, 1967
Location: Rm. 17, Murray School
Art experiences for all grades. Correlation of art with the social studies. Understanding and creative use of materials, tools, ideas, and their sources, as they apply to elementary education.

**Field Science for Teachers, Part I, X 320.4A (3 units, \$40)
Instructor: Lloyd Brubaker, Science Teacher, Murray School (M.A.)

Friday, 7-10 p.m., September 15, 1967 (1st meeting only; subsequent meetings to be arranged)

Location: Rm. 17, Murray School
Exploration of desert natural history with focus on ecology. Methods of conducting laboratory exercises. Designing field trips and preparing ecological collections will be stressed. Part I of a 3-part sequence.

**Prerequisite: Teaching credential, employment as a teacher or equivalent background.

SAN FERNANDO VALLEY STATE COLLEGE

History X446—19th Century European History: (3) Graduate and Upper Division Credit. Per Unit: \$16.50

Classes will meet Friday evenings 6-9 p.m. and Saturday mornings 9-12 Noon. Meeting dates are: 6-7, 20-21 October; 3-4, 17-18 November; 8-9 December and 6-7 January. Midterm exams will be held sometime between 4 and 17 November. Final exam some time after the 7th of January.

BAKERSFIELD COLLEGE DESERT DIVISION

September 2 College aptitude and placement tests:
English Classification 8 A.M.
School and College Ability Test 9:30 A.M.
Reading Placement 11:30 A.M.
Mathematics Placement 2 P.M.

September 5 Open registration 5 to 9 P.M.
September 6 Instruction begins
September 8-20 Late registration in office for classes not closed
September 20 Last day to change audit to credit or credit to audit in adult education course.

October 30-November 3 Midterm examinations
November 6 Midterm scholarship reports due
November 23-24 Thanksgiving Holidays — no classes
December 1 Last day to drop a class

December 18-January 1 College aptitude and placement tests:
English Classification 8 A.M.
School and College Ability Test 9:30 A.M.
Reading Placement 11:30 A.M.

January 17-23 Final examinations
January 26 End of semester

SCHEDULE OF CLASSES. * Classes so marked are adult classes and may be taken without credit. All other classes are graded classes and must be taken for credit.

DAY CLASSES

Business 54—(Consumer Economics) PERSONAL FINANCE
Tues. and Thurs., Sept. 7, 10:30-11:53 A.M.
Room 1, 3 units Mr. Albanese

Biology 10—INTRODUCTION TO BIOLOGICAL PRINCIPLES
Mon. and Wed., Sept. 6, 1:30-2:53 P.M.
Conference Room, 3 units Mr. Marsh

(Prerequisite: A qualifying score on a college aptitude test or "B" in high school biology or "C" in high school chemistry or physics or a "C" or higher in Life Science 53)

English 1A—EXPOSITORY COMPOSITION
Tues. and Thurs., Sept. 7, 1:30-2:53 P.M.
Room 2, 3 units Mrs. Higbee

(Prerequisite: Level 1 classification or a grade of "C" in English 50)

English 50—INTRODUCTORY COMPOSITION
Tues. and Thurs., Sept. 7, 9:10-10:23 A.M.
Room 2, 3 units Mrs. Bacon

(Prerequisite: Level 2 classification or a grade of "C" in English 50)

English 53—BUSINESS CORRESPONDENCE
Tues. and Thurs., Sept. 7, 1:30-2:53 P.M.
Room 1, 3 units Mrs. Greco

(Prerequisite: Level 2 classification or a grade of "C" in English 50 or 62)

Health Education 1—PRINCIPLES OF HEALTH EDUCATION
Mon. and Wed., Sept. 6, 12:30-1:23 P.M.
Conference Room, 2 units Mr. Marsh

History 17A—HISTORY OF THE UNITED STATES
Mon. and Wed., Sept. 6, 10:30-11:53 A.M.
Room 2, 3 units Mr. Rosenberg

(Prerequisite: Qualifying score on a college aptitude test or "C" or higher in Social Science 53A)

Mathematics 51—BUSINESS MATHEMATICS
Mon. and Wed., Sept. 6, 9:10-10:23 A.M.
Room 2, 3 units Mr. Matulef

Mathematics D—INTERMEDIATE ALGEBRA
Tues. and Thurs., Sept. 7, 12N-1:23 P.M.
Room 2, 3 units Mr. Keranen

(Prerequisite: Mathematics A or equivalent)

Mathematics C—TRIGONOMETRY
Mon. and Wed., Sept. 6, 9:10-10:23 A.M.
Room 3, 3 units Mr. Keranen

(Prerequisite: Mathematics B or D or equivalent)

Office Skills 50A—BEGINNING TYPING
Mon. and Wed., Sept. 6, 1:30-4 P.M.
Room 2, 3 units Mrs. Greco

Orientation 1—EDUCATIONAL AND VOCATIONAL PLANNING
Wed., Sept. 6, 3-4 P.M.
Room 2, 1 unit Mr. Riley

Psychology 1A—GENERAL PSYCHOLOGY
Tues. and Thurs., Sept. 7, 10:30-11:53 A.M.
Room 2, 3 units Mr. Riley

Political Science 2—COMPARATIVE GOVERNMENT
Tues. and Thurs., Sept. 7, 10:30-11:53 A.M.
Room 3, 3 units Mr. Rosenberg

Social Science 53A—INTRODUCTORY TO SOCIAL SCIENCE
Tues. and Thurs., Sept. 7, 3-4:23 P.M.
Room 2, 3 units Mr. Rosenberg

EVENING CLASSES

Accounting 53A—PROPRIETORSHIP ACCOUNTING
Mon. and Wed., Sept. 6, 8-9:23 P.M.
Room C12, 3 units Mr. Albanese

(Prerequisite: Mathematics 51, may be taken concurrently)

Art 3A—BASIC DESIGN
Tues. and Thurs., Sept. 7, 8-10:00 P.M.
Room G02, 2 units Mrs. Guzman

Art 3AB—JEWELRY
Mon. and Wed., Sept. 6, 8:30-9:30 P.M.
Room G01, 3 units Mr. Drow

Art 3CD—JEWELRY
Mon. and Wed., Sept. 6, 6:30-9:30 P.M.
Room G01, 3 units Mr. Drow

(Prerequisite: Art 3AB)

Art 33A—ELEMENTARY PHOTOGRAPHY
Mon. and Wed., Sept. 6, 5:30-8:00 P.M.
Room L39A, 3 units Mr. Vollner

Biology 10—INTRODUCTION TO BIOLOGICAL PRINCIPLES
Mon. and Wed., Sept. 6, 6:30-7:53 P.M.
Conference Room, 3 units Mr. Marsh

(Prerequisite: Qualifying score on college aptitude test or "B" in high school biology, or "C" in high school physics, or a "C" or higher in Life Science 53)

Biology 10Lab—INTRODUCTION TO BIOLOGICAL PRINCIPLES
Mon. and Wed., Sept. 6, 5-6:23 P.M.
Room D29A, 1 unit Mr. Marsh

(Prerequisite: Concurrent enrollment in Biology 10)

Business Administration 1A—PRINCIPLES OF ACCOUNTING
Tues. and Thurs., Sept. 7, 8-10:00 P.M.
Room 2, 3 units Mr. Albanese

Business Administration 18A—BUSINESS LAW
Mon. and Wed., Sept. 6, 6:30-7:53 P.M.
Room C12, 3 units Mr. Albanese

Chemistry 1A—GENERAL INORGANIC CHEMISTRY
Mon. and Wed., Sept. 6, 5:30-10:00 P.M.
Room D29B, 5 units Mr. Pakulak

(Prerequisite: Grade "C" or higher in Chemistry 2A or a grade of at least a "B" in high school chemistry and elementary algebra)

Chemistry 2A—INTRODUCTORY GENERAL CHEMISTRY
Tues. and Thurs., Sept. 7, 5:30-10:00 P.M.
Room D29B, 5 units Dr. Cleaves

(Prerequisite: Mathematics A)

Data Processing 50—INTRODUCTION TO BUSINESS DATA PROCESSING
Tues. and Thurs., Sept. 7, 6:30-7:53 P.M.
Room Study Hall, 3 units Mr. Zaharias

(Prerequisite: Permission of instructor)

Data Processing 56—KEYPUNCH (6 weeks of instruction)
Mon. and Wed., Sept. 6, 6:30-9:00 P.M.
Administration Building, 1 unit Mrs. Peck

Data Processing 61A—COMPUTER PROGRAMMING
Mon. and Wed., Sept. 7, 6:30-9:30 P.M.
Room M45, 2 units Dr. Walker

(Prerequisite: Mathematics D or equivalent and a qualifying placement score)

Drama 27—THEATRE: Acting, Production, and Management
Tues. and Thurs., Sept. 7, 6:30-10:00 P.M.
Multi-use Room, 1 unit Mr. Kubik

Economics 1A—PRINCIPLES OF ECONOMICS
Tues. and Thurs., Sept. 7, 6:30-8:00 P.M.
Room 2, 3 units Mr. Albanese

Electrical Technology 69A—Basic Electronic Test Equipment (Electronic Troubleshooting)
Mon. and Wed., Sept. 6, 5-8:23 P.M.
Room TC212, 2 units Mr. Wood

Engineering 22—ENGINEERING DRAWING
Tues. and Thurs., Sept. 7, 5:30-7:30 P.M.
Room M47, 2 units Staff

(Prerequisite: One year of high school mechanical drawing or Industrial Drawing 50A)

English 5A—SURVEY OF ENGLISH LITERATURE TO 1900
Mon. and Wed., Sept. 6, 6:30-7:53 P.M.
Room 3, 3 units Mrs. Higbee

(Prerequisite: English 1B or permission of the instructor)

English 1A—EXPOSITORY COMPOSITION
Mon. and Wed., Sept. 6, 6:30-7:53 P.M.
Room 2, 3 units Mrs. Bacon

(Prerequisite: Level 1 classification or a grade of "C" in English 50)

English 50—INTRODUCTORY COMPOSITION
Mon. and Wed., Sept. 6, 5-8:23 P.M.
Room 4, 3 units Mrs. Bacon

(Prerequisite: Level 2 classification or a grade of "C" in English 60)

English 52—READING IMPROVEMENT
Tues. and Thurs., Sept. 7, 8-9:00 P.M.
Room B09, 1 unit Mrs. Bacon

(Prerequisite: Level 2 classification or permission of instructor)

English 60—BASIC USAGE AND GRAMMAR
Mon. and Wed., Sept. 6, 5-8:23 P.M.
Room 2, 3 units Mrs. Higbee

(Prerequisite: Level 3 or higher classification or a grade of "C" in English 60)

English 080—SPECIAL REPAIR ENGLISH
Tues. and Thurs., Sept. 7, 6:30-7:53 P.M.
Room M46, 3 units Mrs. Bacon

(Prerequisite: Level 4 classification)

English 5—SPELLING IMPROVEMENT
Monday, Sept. 11, 8-9:00 P.M.
Room M45, 1/2 unit Mrs. Bacon

(Required of students in English 50 and 1A who fail the spelling classification test. Open to all students)

*French 52A—ELEMENTARY CONVERSATIONAL FRENCH
Mon. and Wed., Sept. 6, 8-9:30 P.M.
Room D21, 2 units Mr. Afrank

Geology 10—INTRODUCTION TO GEOLOGY
Tues. and Thurs., Sept. 7, 6:30-7:53 P.M.
Room M41, 3 units Dr. Austin

German 1—ELEMENTARY GERMAN
Mon. and Wed., Sept. 6, 7-10 P.M.
Room D26, 4 units Mr. Kirk

Health Ed. 1—PRINCIPLES OF HEALTH EDUCATION
Tues. and Thurs., Sept. 7, 8-10:00 P.M.
Room M46, 2 units Mr. White

History 17A—HISTORY OF THE UNITED STATES
Tues. and Thurs., Sept. 7, 6:30-7:53 P.M.
Room M42, 3 units Mr. Rosenberg

(Prerequisite: Qualifying score on a college aptitude test or "C" or higher in Social Science 53A)

History 4A—WESTERN CIVILIZATION
Mon. and Wed., Sept. 6, 8-9:23 P.M.
Room 4, 3 units Mr. Rosenberg

*Home Economics 51A—SEWING
Tues. and Thurs., Sept. 7, 7-10:00 P.M.
Room C18, 2 units Miss Dixon

Industrial Drawing 30A—INDUSTRIAL DRAWING
Mon. and Wed., Sept. 6, 6:30-9:30 P.M.
Room M48, 3 units Mr. Davis

Journalism 10A—FUNDAMENTALS OF JOURNALISM
Tues. and Thurs., Sept. 7, 6:30-7:23 P.M.
Room C11, 2 units Mrs. Higbee

Journalism 10BCD—ADVANCED JOURNALISM
Tues. and Thurs., Sept. 7, 9-10:00 P.M.
Room 1, 2 units Mrs. Higbee

Journalism 10ABCDLAB—WRITING LABORATORY
Tues. and Thurs., Sept. 7, 7:30-9:00 P.M.
Room 1, 1 unit Mrs. Higbee

(Prerequisite: None)

Life Science 53—GENERAL BIOLOGY
Tues. and Thurs., Sept. 7, 5:30-7:53 P.M.
Conference Room, 3 units Mr. Marsh

(Not open to students who have completed Botany 1, Zoology 1A, Physiology 1, or high school biology with a grade of "B" or higher)

Mathematics A—ELEMENTARY ALGEBRA
Mon. and Wed., Sept. 6, 6:30-9:00 P.M.
Room L35, 3 units Mr. Whittingham

Mathematics B—GEOMETRY
Mon. and Wed., Sept. 6, 5-7:23 P.M.
Room M41, 3 units Mr. Griffin

(Prerequisite: Mathematics A)

Mathematics C—PLANE TRIGONOMETRY
Tues. and Thurs., Sept. 7, 5-6:23 P.M.
Room 3, 3 units Mr. Keranen

(Prerequisite: Mathematics B and D)

Mathematics 3A—ANALYTIC GEOMETRY AND CALCULUS
Tues. and Thurs., Sept. 7, 8-9:23 P.M.
Room 3, 3 units Mr. Keranen

(Prerequisite: Mathematics 3B)

Mathematics 22—ELEMENTARY PROBABILITY AND STATISTICS
Mon. and Wed., Sept. 6, 7:10-9 P.M.
Room M42, 3 units Mr. Dinsmore

Mathematics 53A—BEGINNING MATHEMATICS FOR ELECTRONICS
Mon. and Wed., Sept. 6, 5-6:23 P.M.
Room L39B, 3 units Mr. Matulef

Mathematics 54—INDUSTRIAL MATHEMATICS
Mon. and Wed., Sept. 6, 8-9:23 P.M.
Room M41, 3 units Mr. Griffin

Mathematics 080—BASIC ARITHMETIC
Mon. and Wed., Sept. 6, 5-6:23 P.M.
Room 3, 3 units Mrs. Compton

*Metal 51—GENERAL METAL
Tues. and Thurs., Sept. 7, 6:30-9:00 P.M.
Room G03, 3 units Mr. Gonder

Music 14—COLLEGE CHOIR
Mon. and Wed., Sept. 6, 8-9:53 P.M.
Room F01, 1 unit Mr. Sherburn

(Prerequisite: Interview by director of choir)

Office Skills 50A—BEGINNING TYPING
Mon. and Wed., Sept. 6, 5:30-7:53 P.M.
Room 1, 3 units Mrs. Greco

(Prerequisite: Open only to students with no previous typing instruction)

Office Skills 51—DEVELOPMENTAL TYPING
Mon. and Wed., Sept. 6, 8-9:23 P.M.
Room 1, 2 units Mrs. Greco

(Prerequisite: One semester or more of previous typing instruction)

Orientation 1—EDUCATIONAL AND VOCATIONAL PLANNING
Tuesday, Sept. 12, 8-9:00 P.M.
Room D27, 1 unit Mr. Riley

Physical Education 31A—STANDARD RED CROSS FIRST AID
Thursday, Sept. 7, 8-10:00 P.M.
Room D27, 1 unit Mr. White

Physics 1A—MECHANICS
Mon. and Wed., Sept. 6, 8:30-9:30 P.M.
Room L39B, 3 units Mr. Matulef

(Prerequisite: Concurrent registration in Mathematics 3A)

Physics 2A—GENERAL PHYSICS
Tues. and Thurs., Sept. 7, 6:30-7:53 P.M.
Room L39B, 3 units Mr. Matulef

Physics 3A—GENERAL PHYSICS LABORATORY
Tues. and Thurs., Sept. 7, 8-9:30 P.M.
Room L39B, 1 unit Mr. Matulef

Police Science 53—CRIMINAL EVIDENCE
Wed., Sept. 6, 7-10:00 P.M.
Room L36, 3 units Mr. Whaley

*Police Science 76—CIVIL DEFENSE AUXILIARY POLICE
Mon., Sept. 10, 8-10:00 P.M.
Room L36, 3 units Mr. Whaley

Home Economics 75E—SANITATION & SAFETY
Tues., 6:30-9:30 P.M.
Room D23, 1 unit Staff

Physical Education PE-48AD—BADMINTON
Mon. & Wed., 4:00-5:30 P.M.
Gym, 05 units Staff

Psychology 51—APPLIED PSYCHOLOGY
Tues. and Thurs., Sept. 7, 6:30-7:53 P.M.
Room 4, 3 units Mr. Riley

*Russian 52A—ELEMENTARY CONVERSATIONAL RUSSIAN
Mon. and Wed., Sept. 6, 5-6:23 P.M.
Room D23, 2 units Miss Rindelaub

Secretarial Training 50A—ELEMENTARY GREGG SHORTHAND
Tues. and Thurs., Sept. 7, 5:30-7:53 P.M.
Room 1, 4 units Mrs. Greco

(Prerequisite: Office Skills 50A or one year of high school typing with a grade of "C" or better and a qualifying score on a college aptitude test)

Social Science 53A—INTRODUCTION TO SOCIAL SCIENCE
Mon. and Wed., Sept. 6, 6:30-7:53 P.M.
Room M42, 3 units Mr. Rosenberg

(Prerequisite: Qualifying score on a college aptitude test)

*Social Science 90—Pre-Retirement SEMINAR
Tues., Sept. 12, 8-9:23 P.M.
Room L38, 0 units Mr. Fekrat

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This course is designed primarily for scientists and engineers who need help in organizing and presenting the results of their work in written form, including illustrations. This is not an English composition course. Some basic elements of good reporting are included with the accent on application of these elements to technical prose. Practice in abstracting and other brief forms of writing will be included.

S&E 25, Transition From Development to Fleet Introduction, 16 Hours (8 meetings)

Instructor: H. T. Lofe, Head, Fleet Engineering Division, Engineering Department
Location: Room 211, Training Center
Dates: 25 October - 13 December 1967 (Wednesdays)
Hours: 0800 - 1000

This course deals with the problems encountered in carrying a new weapon from its feasibility and early development state to full production and subsequent introduction into Service use. Emphasis is placed on the requirements which must be met, since many of the problems can be averted by proper advance planning. SECRET clearance is required for this course.

S&E 30A, Explosives, 16 Hours (8 meetings)

Instructor: H. J. Gryting, Tech. Assistant, Code 45402, Propulsion Development Department
Location: The Hut, Bldg. 937, Training Center
Dates: 5 October - 30 November 1967 (Thursdays)
Hours: 0800 - 1000

The coverage in this course includes history, detonation process, chemistry, calculation of detonation pressures and velocities, energy translation into warhead effect, formulation, processing, loading, theoretical and practical warhead design, initiation, instrumentation, range testing, target response, and explosives working of metals. CONFIDENTIAL clearance is required for this course.

JOURNEYMAN & TECHNICIAN DEVELOPMENT CLASSES

Nature of the Program — These courses are designed to make a variety of development opportunities available to artisans and technicians in a range of skill areas. The NWC Courses listed contain a suggestion for suitable participants. These suggestions do not arbitrarily limit the kind of participant accepted. Each supervisor should determine, with his employee, the courses most needed for each individual's development. The Programmed Instruction section of this bulletin offers many courses that should prove helpful to Journeymen and Technicians.

REGISTRATION: Registration for this semester begins immediately. To enroll, send your completed Course Enrollment Form 11ND/NOTS 12410/28 to Code 654. Enrollees will be notified of their enrollment status prior to the beginning of classes.

Solderification (36 Hours)

(Time and Dates to be Announced)
Coordinator: R. Fredric Ladda
Location: Training Center
Suggested for: Assemblers, Helpers, Journeymen and Technicians

This class will give classroom and lab instruction in soldering and packaging of electronics equipment in accordance with Shop Practice 19 as written by NAFI.

Using MIL. Std. 3C (16 Hours)
(Time and Dates to be Announced)
Coordinator: R. Fredric Ladda
Location: Training Center
Suggested for: Journeymen, Draftsmen, Supervisors and Professionals working with these standards.

This course is designed to better acquaint Center personnel with this standard. Establishment of rules; principles and methods of dimensioning and use of tolerances to define the geometric characteristics of objects defined on drawings.

The purpose of the standard is to keep a uniform procedure for stating and interpreting requirements shown on drawings.

Fluid Power — First Course Industrial & Mobile Hydraulics & Pneumatics Laws, Theory and Application

Coordinator: C. P. Flagg
Location: To be Announced
Suggested for: Personnel now working with hydraulic or pneumatic equipment, and who would like to learn more about the functions and applications of such equipment.

This course consists of lectures on theory and application of fluid power components. While some basic laws of fluids will be discussed, the use of mathematics will be held to a minimum.

The design and working principles of such items as PUMPS, MOTORS, CYLINDERS, VALVES, etc., will be discussed together with their FUNCTION, CHARACTERISTICS, and LIMITATIONS. It is not the intent to teach this class how to design pumps or valves. The sole purpose of studying the design of components is to get a better understanding of how they function and thus enable the user to intelligently select, apply, or operate them. Several representative and well-known commercial examples of each will be discussed. Typical applications and circuits will be considered only after the components are thoroughly understood.

Hydraulics will be the primary subject since there is a much greater variety of hydraulic components than pneumatic. Pneumatics can be covered quite rapidly as the components are very similar but much less complex.

The course consists of 8 classes of approximately 2 hours each. Times and dates to be announced.

PROGRAMMED INSTRUCTION

The Autotutor Mark II teaching device is designed to make the fullest use of the Intrinsic Programming Method. This method uses student feedback to control the rate of teaching and the order in which new supplemental or review material is presented to the student. Intrinsically programmed material makes it possible to combine the patience and efficiency of a machine with the individual attention of a personal tutor.

ENROLLMENT PROCEDURE: Submit a completed Course Enrollment Form 11ND/NOTS 12410/28 to Code 654. The Autotutors are located in the Training Center. Employees are scheduled on an individual basis for two hour sessions. Phone 72648 or 72686 if you have any questions on these programs.

1. Introduction to Pert (4 hours)

Pert (Program Evaluation and Review Technique) makes it possible to speed up only those components that will materially contribute to reaching the target date or achieving objectives. This course will effectively familiarize the student with the technique underlying the Pert system. From basic instruction he will move quickly to practical application. Designed for estimators, accountants, engineers, cost control managers and new supervisors.

2. Basic Statistics (16-24 hours)

Statistical techniques are many and varied, but most depend upon a few basic principles. This course explains and examines those basic principles.

3. Career Arithmetic

This course was designed to meet the growing need for effective basic and remedial instruction in this frequently troublesome area of mathematics. It may be used with equal effectiveness at any age level. The student encountering fractions for the first time can proceed without trouble and the college student whose early education did not adequately prepare him for a college mathematics course will also find a review course invaluable.

Fractions (8-15 hours)

Decimals (6-15 hours)

Percentage (7-15 hours)

Ratio and Proportion (3-8 hours)

4. Slide Rule Fundamentals and Mathematical Introduction

Slide Rule Fundamentals (Part 1 & 2) (2-10 hours)
This course virtually guarantees each student a high level of achievement with the slide rule. Extensive use of illustrations and non-technical writing makes it possible for classroom students (from 10th grade to college level) to complete the program.

A Mathematical Introduction to Slide Rule Fundamentals (2-10 hours)
This course covers mathematics basic, from factors and products through logarithms and the development of slide scales. Its coverage of selected mathematical subjects makes this course equally useful for students of varying interests exclusive of the slide rule.

5. Introduction to Algebra (4-8 hours)

This course is a review in Mathematical Truths, Prime, Techniques, Negative Numbers, Fractions, and Rational Numbers. This is not an indepth algebra course, but rather a program designed to prepare students for the study of algebra.

6. Trigonometry (2 volumes) (8-12 hours)

Volume 1 covers Angles, Triangles, Ratio and Proportion, Similar Triangles, Sine Ratio, Sine, Cosine and Tangent Ratios, Complementary Functions, and Reciprocal Functions. Volume 2 covers Solving Oblique Triangles; The Law of Sines; Functions of Obtuse and Reflex Angles; The Reference Angle; Proof of Law of Sines for Obtuse Triangles; Law of Cosines; Radial Measurements; Inverse Functions.

7. Introduction to Computer Mathematics (8-20 hours)
This program is designed to provide the student with a useful understanding of the octal and binary number systems used in electronic computers to perform complicated mathematical computations.

8. Computer Programming (4 Volumes) (8-12 hours per volume)

This program is designed in four parts to teach the student what computers can do and how to tell them what to do; i.e., how to get numbers in; how to tell them what to do; arithmetic; how to get answers out; etc. Neither electrical circuitry nor internal functioning of computers is covered.

Part I. Introduction to Programming—Computer Math

Part II. Program Design and Flowcharts

Part III. Advanced Techniques

Part IV. Business and Science Applications —

—FORTRAN LANGUAGE

9. Elementary Electronics (16-20 hours)

This course was designed to provide basic comprehension of the fundamentals of radio and electricity. It is especially useful as an introduction to more advanced study of electronics and for improving technical qualifications of personnel involved in work for which a basic knowledge of electronics principles is helpful. It begins with an introduction of the unit of electricity and proceeds through instruction in electrical circuitry, alternating current, and magnetism.

10. Electronics (6 parts-10 reels) (12-15 hours each reel)

This course conforms closely to standard electronics-curricula in schools and industry its 12,000 frames of program material provide slightly more than two semesters of instruction at 8 hours per week. It can be successfully studied by students of 10th grade level and above, and is ideal for usage in senior high schools, junior college, and in technician-training programs for industry, the military or government agencies. The lessons include: Direct Current, Alternating Current, Reactive Circuits, Principles of Vacuum Tubes and Transistors, Special Purpose Tubes and Test Equipment, Amplifiers and Oscillators.

11. Management Series

These films are designed to introduce the manager to the newer concepts of managerial science as well as to improve his skills through review of time-tested techniques in effective management.

Effective Planning (3-5 hours)

Effective Delegation Practices (5 hours)

Effective Organization Practices (3-5 hours)

Effective Decision Making (6 hours)

Effective Use of Executive Time (6 hours)

Effective Managerial Control (4-6 hours)

12. Career English Series (6 volumes)

These six volumes cover a major area of English grammar, thoroughly discussing the basic rules, giving numerous examples, and providing extensive drill in correct usage. The areas dealt with are:

Sentences, Nouns and Pronouns (6-8 hours)

Verb Usage (10-12 hours)

Modifiers (8-10 hours)

Connectives (8-10 hours)

Sentence Completers (8-10 hours)

Sentence Types (6-8 hours)

13. Improve Your Punctuation (6-12 hours)

A quick review and refresher course in basic punctuation. Strongly recommended for all personnel.

14. Improve Your Writing (6-12 hours)

Part I gives you a practice in writing grammatically correct sentences: You will learn how to recognize and avoid such errors as disagreement of subject and verb, faulty reference of pronouns and dangling modifiers. Part II helps you polish your style; it illustrates points as how to avoid wordiness and how to achieve variety.

15. Reading Comprehension (4 reels—3-6 hours each)

This course is designed for students whose reading skills have not matured and who require additional help in comprehension, direction following and the use of basic references. This course requires a variety of activities from the student. As he progresses through the program, the student is actively engaged in recognizing correct statements, following directions and correcting mistakes.

16. Basic Map Reading (2 reels—20 hours)

Developed for the U.S. Marine Corps this course assumes no prior map reading skills on the part of the student. The course systematically and thoroughly covers all phases of reading, interpreting and using topographical maps as well as modern military maps. The main topics covered are: Topographic Symbols; Elevation and Relief; Map Scales; Coordinates; Azimuths; Orientation; Military Symbols; Marginal Information and a final test and review. The Test and Review consists of an imaginary invasion of Virginia, and the student using military maps applies the map reading skills he has learned to help repel the enemy.

17. Blueprint Reading & Shop Mathematics (7 reels—50-70 hours)
This course is designed to teach the basic fundamentals of Blueprint reading and the application of Shop math in conjunction with shop drawings. Little or no prior experience is assumed and the course is designed primarily for people who need to know how to interpret shop drawings. Areas covered include: Blueprint Symbols and Abbreviations; Lines and their uses; Types of Blueprints; Scale Drawings; Measurements and Tolerances; Section Views; Thread and Thread Data; Elementary Arithmetic; Introduction to Fractions; Decimals; Systems; Percentages; Areas; Volumes; Angles; Ratios Rate and Percentages Proportion; Inverse Proportion; Pulleys and Gears; Cylindrical and Conical objects Micrometer and Vernier Caliper reading; Introduction to Logical Thinking in Troubleshooting and How to Troubleshoot Machinery.

18. Scientific Notation (2-4 hours)
Working with very large or very small numbers is tedious and error forming. Scientific Notation eliminates much of this tedious and error by using the numbers between one and ten raised to the power of ten. Designed around a mathematical review this program covers how to write numbers in Scientific Notation; Review of Significant Figures; How to Multiply, Divide, Square, Add, Subtract and extract Square Root using Scientific Notation, and Determining order of Magnitudes.

HOME STUDY COURSES AND CAREER PROGRAMS

Enrollment in the following courses starts immediately. Submit a NOTS enrollment 12410/28 to Code 654. For further information call extension 72648/72686.

No. 100—Basic Arithmetic — 30 Hours

This course includes positive whole numbers, common fractions, decimals and percentages.

No. 103—Basic Drafting—54 Hours

This course includes the use of tools and materials, geometry of drawing, lettering, orthographic projections, pictorial projections, perspective projections.

No. 105—Basic Craft Tools—40 Hours

This course includes instruction in the use of common hand and power tools, fastening devices, measuring, laying-out, testing, grinding, metal cutting, and safety precautions.

No. 111—Basic Principles of Electricity—25 Hours

This course includes an introduction to electricity, voltage, current, and resistance, magnetism and electromagnetism, sources of electricity, energy and capacitors.

No. 112—Basic Control Theory & Control Circuits—40 Hours

This course includes a study of basic control theory, electronic control circuits, pneumatic control circuits, electric control circuits and an introduction to instrumentation.

No. 115—Basic Water & Sewage—36 Hours

This course includes sources of water and impurities, elementary arithmetic, elementary hydraulics, fundamentals of water and sewage chemistry, personnel safety, records and reports.

No. 116—Basic Boiler Feedwater Manual

This course is designed to provide the Boiler Operators, Boiler Inspectors, and Maintenance Personnel, with a working knowledge of the basic rudiments of boiler-feedwater. It presents a guide for the proper day-to-day controlled care and treatment of boilers and their related equipment.

No. 120—Basic Heating and Maintenance

This course gives practical information and problems about the installation, operation and maintenance of heating facilities and systems.

No. 185—Supervision & Management for Navy Civilian Personnel

This is an updated version of the course, "Fundamentals of Supervision for Navy Civilian Personnel Study Course."

No. 211—Intermediate Electricity (Alternating Current)

Series and parallel alternating current circuits; inductance; capacitance; motors; generators; transformers, and instruments are discussed in this course. A knowledge of mathematics to the level of trigonometry and completion of prerequisites for No. 212 are prerequisites for this course.

No. 212—Intermediate Electricity (Direct Current)

Beginning with the fundamental concepts of electricity this course includes simple series and parallel DC circuits; compound and bridge circuits; conductors and wiring techniques; motors; generators, and indicating instruments. Knowledge of basic algebra is a prerequisite to this course.

No. 215—Intermediate Course Water—40 Hours

This course contains information on water supply and water works, development and water sources, pumps and metering. A prerequisite to this course is No. 115, Basic Water and Sewage.

No. 216—Intermediate Course Sewage—40 Hours

Introduction, sanitary sewage, collection system, sewage pumps and metering are included in this course. Prerequisite to this course is No. 115, Basic Water and Sewage.

No. 230—Intermediate Heating & Maintenance

This course contains information on warm-air heating; domestic hot-water heating; high-temperature hot-water heating; feed-water, condensate and pump systems; steam plants and steam distribution.

No. 315—Advanced Course Water—72 Hours

This course is a general introduction to preventative maintenance, laboratory control methods, water treatments, distribution systems, valves and storage. Prerequisites are No. 115 Basic Water & Sewage Course and No. 216 Intermediate Course Sewage.

No. 316—Advanced Course Sewage—72 Hours

This course includes a study in preventative maintenance for equipment, preventative maintenance practices, sampling methods, laboratory tests and procedures, sewage and industrial waste principles, sewage and industrial waste equipment and treatment and refuse disposal. Prerequisites for this course are No. 115 Basic Water and Sewage Course and No. 216 Intermediate Course Sewage.

No. 402—Training and Career Development Program Guide for Utilities Operating, Maintenance and Supervisory Management Personnel

The objective of this program guide is to define a career ladder structure by which employees in any and all utilities ratings may prepare, through progressive study and job application, for advancement to career target position, from older to Master Mechanic.

No. 403—Training and Development Program for Maintenance Control Personnel, Planners and Estimators, and Maintenance Inspectors

The objectives of this program are threefold:

a. To encourage and motivate eligible journeymen to complete for Planner and Estimator and Maintenance Inspector positions.

b. To provide immediate training and development to update the knowledge and skills of on-center Planners and Estimators and Maintenance Inspectors.

c. To train potential Planners and Estimators and Maintenance Inspectors — personnel on established registers for the position.

The plan may be applied at three levels of participation:

a. Level 1 participants should be incumbent Planners and Estimators and/or Maintenance Inspectors where this latter rating is used.

b. Level 2 participants should be on-center personnel who have qualified for promotion to maintenance control occupations by passing competitive examinations.

c. Level 3 participants should be on-center journeymen who have not qualified via competitive promotion examinations.

An explanation of how the plan is to be used for each level of participation, with a general outline of the training required at each level, is offered in this manual.

COURSE SCHEDULE — FALL 1967

- University of Southern California
- University of California at Los Angeles
- University of California at Santa Barbara
- San Fernando Valley State College

- Bakersfield Junior College, Desert Division
- On-Center Short Courses
- S & E Day Classes

- Journeyman & Technician Development Classes
- Programmed Instruction
- Home Study Courses & Career Programs

PREFACE

This Course Schedule provides detailed information about programs and individual courses open to Center employees during the Fall 1967. The Schedule covers all courses that have been formally scheduled to date. It includes accredited university and junior college courses; on-center short courses in a variety of areas; programmed instruction (Autotutor) and home-study courses.

These courses were developed largely in response to needs identified by the various departments of the Center in their annual

call for training estimates for FY 1968. Departments are encouraged to continue working with their Personnel Management Advisers in the identification of training needs and to discuss development plans and courses.

Additional copies of this Course Schedule may be obtained from your Department's Personnel Management Adviser.

RAYMOND A. HARRISON
Head, Personnel Department

U S C SCHEDULE OF CLASSES

Three graduate courses in Public Administration will be offered at China Lake by the University of Southern California during the Fall Semester, 1967. An undergraduate major in engineering, business, or physical, biological or social sciences is acceptable as pre-professional background for Public Administration courses. Single courses can be taken for information purposes, if an employee so desires.

PA 590, Fundamentals of Public Administration: (4)

Ted Thomas
Thursday, 21 September 1967, 1630-1800, 1900-2200
Training Center, Bldg. 947, Room 205

Meeting Dates: 21, 28 Sept.; 12, 26 Oct.; 9, 16, 30 Nov.; 14 Dec.; 4, 18* Jan.

Governmental role in modern society; significance of public administration to policy processes and governmental effectiveness. * FINAL EXAM

PA 501, Science and Public Policy: (4)

Dr. Ed Jones
Wednesday, 20 September 1967, 1900-2200
Training Center, Bldg. 947, Room 205

Meeting Dates: Weekly
This course is part of the Research and Development Administration specialization. Local and visiting specialists in the field will be guest lecturers.

PA 513, Problems in the Administration of Financial Resources: (4)

Neely Gardner
Tuesday, 19 September 1967, 1630-1800, 1900-2200
Training Center, Bldg. 947, Room 205

Meeting Dates: 19 Sept.; 3, 17, 31 Oct.; 14, 28 Nov.; 12 Dec.; 2, 16, 23* Jan.

Alternative sources of public revenue; public credit; administrative aspects of budgetary planning and control; financial organization; intergovernmental financial relationships. * FINAL EXAM

Mathematics 22 — Elementary Probability and Statistics: (3)

(Bakersfield College)

Joe Dinamore
Monday, 11 September 1967, 1900-2200
Room 4, Bakersfield Junior College, Desert Division

Statistics is a prerequisite to PA 591, Complex Organizations for all students. PA 591 will be offered Spring, 1968.

REGISTRATION: Mr. Philip Hutchins, U.S.C. Extension Division, will hold registration in Room 107, Training Center on Friday, 8 September 1967 at 1300. Tuition is \$50 per unit. Payment of tuition may be made in full or arrangements are available for deferred tuition (subject to a \$5 non-refundable service charge).

TUITION REFUND: To be eligible for a full tuition refund (excluding service charge), an employee must submit NOTS Form 12410/28 to Code 654 and must receive a grade of "C" or higher upon completion of the course. Partial tuition refunds will be made by the University to eligible employees who wish to withdraw prior to the third meeting of the course.

BOOKS: Texts have been ordered and will be available at the time of registration. If further information is desired, contact (Code 654) extension 71451/71480.

UCLA SCHEDULE OF CLASSES

REGISTRATION. Extension registration will be held 0800-1200, 27 September-6 October in the Education Office, Rm. 1004, Michelson Laboratory. Fees are payable by check or money order at the time of registration. CASH CANNOT BE ACCEPTED. The amount of the fee is listed after each course.

GRADUATE STUDENTS IN ENGINEERING. The Department of Engineering, UCLA, allows 3 years for the completion of the master's degree. During 3 quarters of this time, the graduate student must carry 2 courses. These quarters may be chosen by the stu-

dent to best benefit his program of study. (During the quarters in which he is enrolled in two courses, the graduate student is authorized to take up to 8 hours per week excused time for study purposes in addition to tuition refund.) During the remaining quarters, one course will suffice for academic residence. Students working on the Thesis Plan are required to take nine courses with thesis. Five of the courses must be strictly graduate work. Two of the five graduate courses may be individual study (Engineering 598) involving work on the student's thesis.

COUNSELING. Limited counseling is available regularly in the Education Office, Room 1004, Michelson Laboratory, during office hours, 0800-1200.

USE OF OFFICIAL TIME AND/OR TUITION REFUND ELIGIBILITY. If an employee's supervisor certifies that the training is relevant to his present or projected work assignment, the employee may do one of the following: (1) If carrying 2 or more courses, request permission via his departmental channels to use official time to study not to exceed 8 hours per week for 11 weeks; (2) If carrying 2 or more courses and authorized to use 4 or less hours of official time to study for one 4-unit course, submit one copy of NOTS Course Enrollment and/or Tuition Refund Certification 11ND NOTS 12410/28 prior to the first class meeting to establish tuition refund eligibility for a second 4-unit course; or (3) Submit one copy of same form to establish tuition refund eligibility for each course prior to the first class meeting.

REFUNDS. Refunds will be made under the following conditions if tuition refund eligibility has been established: (1) Successful completion (a grade of "C" or higher) of a course; (2) Withdrawal prior to the second meeting of class and presenting admission form to the Education Office; or (3) Withdrawal after second meeting and before fourth meeting — tuition refund minus \$10.00 will be made by the University.

WITHDRAWALS AND AUDITING. The last day for graduate students to drop courses without penalty of failure is 13 November 1967. Petition forms are available in the Education Office. The last day for extension students to decide to audit a course (no credit) is the first meeting after the mid-term. The instructor will request each student to indicate his desired status on the mid-term grade report. Graduate students who have dropped a course and extension students who are auditing a course may continue to attend class without the obligation of submitting homework or taking examinations.

TEXTBOOKS. Each student is responsible for purchasing his textbooks. Order blanks are available in the Education Office.

CLEARANCE. All persons, whether or not employed by the Naval Weapons Center, who fulfill the

116 High School, College Students Spend Summer Helping Center's Staff

Last week's issue of the Rocketeer carried an article about college graduates and faculty members who are working at NWC this summer. A second group involved in the Summer Employment Program are 116 recent high school graduates and college students with one to three years of college education. In addition a third group of 23 youths, who are still in high school, are employed through the Youth Opportunity Program, according to Joe Doucette, Employment Division Head of the Personnel Department.

The high school graduates and college students serve as office and science assistants. They are employed at the GS-2 through GS-4 grade levels as clerks, typists, technical aides, and library assistants, in a wide variety of projects throughout the Center, Doucette explained.

Those who are still in high school are titled as working aides, and are employed in a wide variety of tasks, ranging from parts assemblers, laboratory assistants, to general grounds maintenance. For many of these students, it is their first real work experience, Doucette pointed out.

The two programs are four fold in their purpose, to give students experience in a real work situation, to acquaint them with the Center's research and development programs to make them more likely to consider NWC for future permanent employment, to allow NWC supervisors to evaluate them for future employment, and to provide additional manpower and talent to complete NWC tasks where assistance is needed, Doucette concluded.

Listed below are this summer's office and science assistants and the departments to which they are assigned.

Commander's Office

Cheryl Campbell, office assistant.

Weapons Planning

Judy A. Semesky, a student at San Bernardino Valley College, is assigned to the Weapons Planning Group as an office assistant.

Central Staff

Assigned to Central Staff as office assistants are Frank K. Campbell, Jr., San Diego State; David V. Hill, Brigham Young University; Kerry E. Hise, University of California, Davis; Cathay Haymaker and Patricia Kooztz, Burroughs High School graduates; Elizabeth Stevens, Robert M. Johnson, Timothy N. Tiffany, UCLA; and M.A. Morgan, Michael I. Sieckowski, California State Polytechnic College, San Luis Obispo, is assigned to the department as an accounting technician while Jane D. Arnold is assigned as a math aide.

Naval Air Facility

James Nicol is assigned to NAF as a physical science aid and Yvonne E. Even as an office assistant.

Supply

Nancy L. Hicks, Gale R. Schneider, and Doris D. Temple, all Burroughs High School graduates, and A. Donette Dixon, Bakersfield College, are assigned to Supply as office assistants.

Systems Development

Engineering aides assigned to the Weapons Development Department are Fred M. Ashbrook, California State College, Long Beach; Richard E. Bennett, San Jose State; Gregory K. Garmon, George D. Mason, Bruce L. Simpson, all of California State Polytechnic College, San Luis Obispo; and Robert Williamson III, Burroughs High School graduate.

Math aides are Julie Campbell, University of California, Santa Barbara; Chendal P. Coulter, University of California, San Diego; Robert J. Swan, University of Wisconsin; Mary A. Wentink, California Western University; S. Mark Metcalf, Thomas S. Ross, and Andrew R. Werback, Burroughs High School graduates.

Physical science aides are Danilo Mangapit, UCLA, and John B. Seybold, University of California, Riverside. Office assistants are Robert B. Speckles, San Jose State; Linda J. Brown, University of California, Santa Barbara; Evelyn A. Evans, California State Polytechnic College, San Luis Obispo; Janice E. Hadden and Rhoda M. Howell, Burroughs High School graduates. Physical science technician Rodney M. Durham, Fresno State College.

Aviation Ordnance

Engineering aides assigned to the Aviation Ordnance Department are David S. Hartman, University of California, Santa Barbara; Brian Jones, Eric Heimdahl, and William Fallgatter. Math aides are Sandra Doucette, University of California, Riverside; Ralph Bucher, and H. Swift. Physical science aide is Stephen G. Nelson. Office assistants are Judith Heinze and Patricia L. Grody.

Weapons Development

Physical science aides assigned to the Weapons Development Department are Thomas M. Allan, University of California, Berkeley; Robert D. Anderson, University of Michigan; Billie J. Higbee, University of Arizona; Dwaine K. Campbell, and Robert F. Ferrone, Burroughs High School graduates.

Math aides are Alice E. Bolstad, Chico State College; William E. Lemei, University of California, San Diego; and Marilyn J. Rogers, San Diego State. Engineering aides are Michael A. Caffery, Michael L. Griffin, Eric L. Lundstrom, and Wesley L. Willert, Burroughs High School graduates; and R. A. Roseberry.

Office assistants are Janet C. Kozachenko and Wanda E. Smith, Fresno State; Mary J. Glaviano, Chico State; Catherine Higberg, Whitman College; Kathleen M. Klein, Dominican College; Marilee A. McCambridge, University of Santa Clara; Teresa L. Borges, Cynthia J. Brown, and Marguerite P. Ford, Burroughs High School graduates; Carol A. Smith, Cheryl E. Keith, and Cordelia S. Jones.

Electronic technician Alfred N. Lester, Jr., California State Polytechnic College, San Luis Obispo. William C. Knoblauch, Sacramento State, accounting technician.

Propulsion Development

Assigned to the Propulsion Development Department are Beverly J. Antrim, physical science aide, Fresno State; Martha A. Berkund, math aide, Chico State; and Florence Wilson, office assistant, Bakersfield College.

Research

Physical science aides assigned to the Research Department are Bruce A. Auld and William A. Treadwell, Bakersfield College; James A. Hefflin, University of California, San Diego; Susanne V. Hering, University of California, Santa Cruz; Owen A. Modine, California State Polytechnic College, San Luis Obispo; Michael K. Yamada, University of California, Berkeley; Thomas J. Frisbee and I. Scott Hall, University of Redlands.

Engineering

Engineering aides assigned to the Engineering Department are John S. Licwinko, University of California, Davis; David K. Bates and Terry A. Belisle, Burroughs High School graduates. Physical science aides are Dwight D. Morgan, University of California, Berkeley; and Steven E. Steele, Bakersfield College.

Math aide is Patricia L. Heddell, University of California, Santa Cruz. Electronic technician is Richard M. Hensley, California State Polytechnic College, San Luis Obispo. Office assistants are Michael P. Boyt and Kathleen Strang, Bakersfield College; and Michael J. Machowsky, Burroughs High School graduate.

Personnel

Office assistants assigned to the Personnel Department are Annette L. Haymaker, San Diego State; Carolyn J. DeHam and Sherida L. Johnson, Burroughs High School graduates; and Kathleen Meyer.

Public Works

Assigned to the Public Works Department are Frank E. Schroder, engineering aid, California State Polytechnic College, Pomona, and K. L. Schall, office assistant.

Technical Information

Assigned to the Technical Information Department are office assistants Christine Auld, San Fernando Valley College; Vicki L. Johnson, Willamette University; Cheryl L. Robertson, Burroughs High School graduates; and Marie A. Torkelson, Bakersfield College.

Others assigned to the department are Ann A. Arnold, University of California, Berkeley, library technician; and Cheryl A. Randies, Oklahoma State University, physical science aide.

Security

Dale W. Johnson, Bakersfield College, is assigned to the Security Department as an office assistant.

Command Administration

Assigned to the Command Administration as office assistants are Robert L. Braitman, Fresno State College; Carol A. Heddell, University of California, Berkeley; Margaret Lowe, Bakersfield College; Lovell D. Smith, Brigham Young University; Anthony E. Welch, University of California, Santa Barbara; and Erika J. Smith.

Working Aides

Twenty-three youths are employed under the Youth Opportunity Program as working aides this summer at NWC. Assigned to the Public Works Department are Basil Phillips, Wayne Taylor, Anthony Doresey, Junior East, Richard Bowdley, and Paul Joques.

Working with the Supply Department are James T. Hamilton, Jr., Thomas I. Lopez, David Austill, Robert Theriot, and William Van Hook.

Assigned to the Systems Development Department are Homer Ambert and Morris Harris while Edwin Camus and Ronald Hardison are assigned to the Aviation Ordnance Department.

Assisting the Weapons Development Department are Steven Rose, Mark A. Roy, and Joe King. Lending a hand with the Propulsion Development Department are John Riley and Gilbert Chavarria. John Worring works with the Technical Information Department. Salvatore B. Ordaz and Jose R. Estrada contribute their talents to the Command Administration Department.

RAdms. Epes, Bakutis Visit Center

RAdm. H. H. Epes, Jr., Commander of Carrier Division One, and RAdm. F. E. Bakutis, Commander of Fleet Air, Alameda, made a briefing-packed visit to the Center Thursday, August 17, to review projects and research and development work.

RAdm. Epes' visit here was also a return to the scene of an old command of his. He was VX-5's second commanding officer, taking charge of the Squadron as a Commander in 1953. He then led VX-5 into one of its major growth periods as it began receiving some of the newest aircraft in the Fleet at the time. The new planes included the F3D Banshee, F7U Cutlass, F9F Cougar and F3D Skywarrior.

The Squadron was also ready to begin development of tactics for the Fleet which would enable a pilot to deliver a nuclear weapon and successfully escape its effect.

Traveling with RAdm. Epes' was his Air Warfare Officer, Cdr. Donald Loranger, VX-5's previous commanding officer.

RAdm.'s Bakutis and Epes were briefed on the Center's general range of weapon development, and specifically on Shrike, Walleye and the Free Fall Programs. Capt. W. B. Muncie, CO of VX-5, then hosted the admirals during a review of the Squadron's activities.

Anechoic Chamber Readied for Shrike

(Continued from Page 1)

out any RF radiation from the outside.

Advanced Features Used

Among the efficiency-boosting advanced features of the chamber are a power leveling system designed by FAM Engineering of Palo Alto to keep variations from the one-kilowatt transmitting level to a minimum over the frequency range.

A unique attenuator system is another advanced feature. This motor-driven coaxial "step attenuator" will enable the test operator to vary transmission signals from zero to 60 decibels to within an accuracy of two decibels.

Texas Instruments, the prime contractor, supplied a special feature in a transmitting antenna usable over the whole two to eight GC frequency range — promising a cut in test time and boost in convenience over the two antenna system normally required over that range.

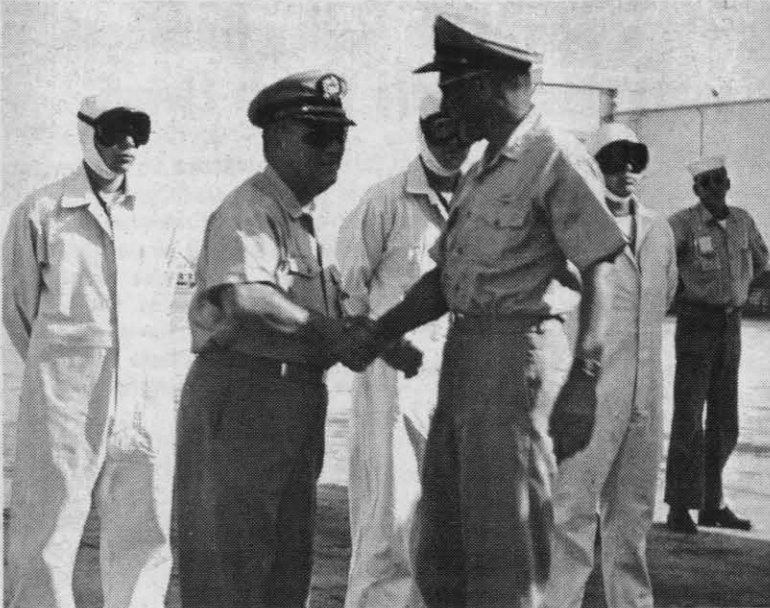
Additional equipment to arrive at the chamber site by the first of 1968 include two self-contained temperature chambers to test complete Shrike missiles over a range of minus 85 degrees to plus 180 degrees Fahrenheit. The cost of the whole facility, funded by Naval Air Systems Command, includes \$200,000 for the main chamber and its instrumentation.

Bonus Usefulness Foreseen

"Although this facility has been designed for Shrike testing, we hope to do other work for Center projects as well," comments Doug Cobb. "We may be able to ease the heavy workload at the other facility, as well as handle Shrike."



RADM. H. H. EPES, Commander, Carrier Div. One, (center) is introduced to Paul D. Stroop, VAdm., USN, ret., by Capt. G. H. Lowe, NWC Commander. RAdm. Epes was VX-5's second commanding officer, and Stroop was the fifth commander of the Center when it was NOTS. RAdm. Epes and RAdm. F. E. Bakutis were honored guests of the Command Wednesday, August 17.



RADM. F. E. BAKUTIS, Commander, Fleet Air, Alameda (r) is greeted by Capt. G. H. Lowe, NWC Commander, on arrival at NAF for a day of briefings Wednesday, August 17. He and co-visitor RAdm. H. H. Epes reviewed general and specific weapon projects, VX-5 development and test activities.

Housing Office Stocking Items For Tenants' Use

The Housing Office is now stocking items for tenants willing and able to do minor household repairs. These include cabinet hinges and catches, faucet washers, electric outlet covers, towel bars, sink stoppers, sprinkler repair parts, etc. Participation by tenants in this program is encouraged to reduce costs on service calls (average call costs \$20 including overhead costs) and to permit more rapid accomplishment. These items may be obtained during normal working hours. The variety of items in stock will be expanded as the demand indicates.

Budget restrictions have limited funds to the point where work on less essential items of this nature must be deferred up to three or four weeks so they can be handled more economically in groups by trade specialty and housing type.

In the future tenants calling 7177 on items of this kind are asked not to make repeat calls until one month has elapsed. Work requiring skilled craftsmen will continue to be accomplished as rapidly as possible.

Labor Day Safety

The local Metal Trades Council has joined the Center and various civic organizations in calling for an extra measure of safe driving and vacationing over this Labor Day weekend.

The National Safety Council and the AFL-CIO have made safety for Labor Day a national project again this year, and the Indian Wells Valley Metal Trades Council is implementing it here.

"The Council is extending a special appeal to all citizens of China Lake and Ridgecrest and outlying areas to observe the Labor Day weekend using every effort to make it a safe holiday," says Joseph Lechner, president of the local.



CPO Luau Features Feast and Fiesta

"We were completely sold out and filled to the fences," exclaims Ray Wahoff, manager of the Chief Petty Officers' Club. "This was one of the most successful Luau's the Club has had!"

Feasting, dancing and entertainment filled the evening of Saturday, August 26 to and beyond 2 a.m. A group well known to the Club called the "Royal Hawaiians" furnished both the victuals and the entertainment — but the group needs some explaining.

The polygot bunch — the annual power behind the Club's Luau — is led by Vince Villa and two close friends of his, Arthur St. Germain and Yik Chan. They are volunteers and

first-class cooks, as the feasters learned. Joined this year by Chuck Norrington, they prepared the cooking pit and the beef, pork and fish roasted therein.

They were joined under the Royal Hawaiian name by a troupe of professional dancers under the incomparable "Auntie Becky Bodner," and performed the hula, bamboo, knife and fish dances, plus Auntie Becky's own comedy takeoff routine. The honorable cooks contributed something called the "stick dance," in which they were joined by the crowd.

—Photos by PH1 Gary Bird



FULL HOUSE — A capacity crowd filled the CPO Club's Luau for feasting, dancing and swinging entertainment.



DIETS DIED HERE — Luau-goers enjoyed beef, pork and fish cooked in an open pit, Hawaiian-style.



HULA — NEVER BETTER — Dancers perform the hula, one of several different dances staged by "Auntie Becky" Bonder's professional troupe at showtime.



AUNTIE'S INTERPRETATION — Auntie Becky Bodner put some new twists into Hawaiian dance at the Luau.



HOWDY!—Receptionist Vicki Wiruth shows how to greet a guest with style. Lucky guest is Dick Hitt.



HEY! WATCH THE HANDS — Bamboo stick dance drew the attention of every guest at the Luau.



WELCOME — Club manager Ray Wahoff (r) greets Liaison Officer Lt. Ken May of the Naval Air Facility.

Volunteer cooks apply their skills to the creation of exotic dishes made the long, slow way to satisfy the guests' appetites.



PLUS DANCING — A four-piece band plus one cook — Chan by name — and his guitar, provided music in a more familiar style for the crowd of dancers.



NAVAL UNDERSEA WARFARE CENTER

PASADENA, CALIFORNIA

Marine Scientists From NUWC, San Diego Division, Will Present Papers in Berne, Switzerland

Three marine scientists, James L. Cairns, Eugene C. LaFond, and Edward L. Smith, of the San Diego Division of NUWC, will leave September 24 for Berne, Switzerland, where they will present papers to the 14th General Assembly of the International Union of Geodesy and Geophysics (International Association of Physical Oceanography section). The Assembly convenes September 25 and adjourns October 7, 1967.

Cairns's paper, "Characteristics of Internal Tide in Shoaling Coastal Waters," is based on work he did as Senior Scientist in charge of research at the Navy Oceanographic Research Tower near San Diego.

Dr. LaFond will present two papers, each of which he co-authored with his wife, Katherine G. LaFond. The first, "Spring Circulation in the Bay of Bengal," is the result of a number of studies in the Indian Ocean and at Andhra University, where Dr. LaFond formerly was Professor of Ocean-

ography. The LaFonds jointly headed an expedition in 1963 during the International Indian Ocean Expedition.

LaFond's second paper, "Thermal and Current Shear Structures of the Upper 240 Meters in the Pacific Ocean," deals with current shears in ocean fronts and water mass boundaries. These oceanic features have been investigated through use of the NUWC thermistor chain and towed current meters.

Smith's paper, "Temperature Structure of Migrating Vortices on the Leeward Side of the Hawaiian Islands," presents findings from the Hawaiian area as a result of the 1964 Gyrat Expedition and the 1966 Japan Sea Expedition. Smith is Senior Scientist of thermistor chain operations at NUWC San Diego.

Dr. LaFond is Head of the Marine Environment Division at NUWC San Diego; both Cairns and Smith also are in that division.



MARINE SCIENTISTS from NUWC, San Diego Division, discuss the subjects of their papers to be presented to the 14th General Assembly of the International Union of Geodesy and Geophysics at Berne, Switzerland. From left — Edward L. Smith, James L. Cairns, and Dr. Eugene C. LaFond. —Photo by PH2 Ralph Robey

PROMOTIONAL OPPORTUNITIES

To apply for positions, contact Christine Marchand, Pasadena Personnel Division, Extension 278. A current SF-58 must be submitted when applying.

Diesel Engine Mechanic (PP), WB-11, \$3-53 to \$3-83 per hour, Code P7154 — Operates, maintains, inspects, troubleshoots, overhauls, and tests diesel-electric power plants and their various components and systems. Performs major overhauls and repairs of diesel engines. Duty station: San Clemente Island.

Engineering Technician, GS-9, or 11, Code P808 — Position is responsible for the Morris Dam photo optics needed to support Morris Dam test operations. The incumbent designs and installs photo-optical instrumentation. This includes underwater and AC camera housings, timing and sequencing systems etc., and is responsible for operation and maintenance during test operations.

Personnel Management Specialist, GS-12, P459 — Incumbent will coordinate the personnel development and employee management relations functions of the laboratory and serve as personnel management advisor to assigned organizations.

Computer Systems Analyst (Digital), GS-11 or 12, P801 — Will assist accounting and management personnel in the collection, organization, evaluation and reporting of information in a research and development laboratory, using Digital (UNIVAC 1108) Computers. Applicant must have experience in the design of data processing systems and a good knowledge of computer applications. A degree in Mathematics or Business Administration is desirable.

Management Analyst, GS-7, 9, 11, or 12, Code P19 — Responsibilities encompass the full range of management analysis duties and require studies of organization, methods, procedures, cost effectiveness, work simplification, manpower utilization, management engineering, etc. A college degree and knowledge of ADP and/or management information systems is desirable.

Management Technician, GS-5 or 7, P19 — Will perform duties in the areas of records, reports, forms, directives and correspondence. Experience with U.S. Navy manpower management programs and work simplification or administrative systems analysis is desired.



ALL SMILES — Among the technical personnel attending last week's meeting in Pasadena, were (l-r) Dr. C. R. Haupt, Sensor Development Department Head; Dr. G. H. Curl, Ocean Sciences Department; D. J. Wilcox, Associate Technical Director, NUWC;

Dr. Dan E. Andrews, Systems Development Department; Harold Turner, Head of Staff, Hawaii Division; and Dr. Don A. Wilson, Assistant Technical Director for Sensors. Selection of Wilcox and Wilson had been announced earlier.

Tanglefoots Win

BY RAY HANSON

The Tanglefoots tripped down the flowery path of success in the NOTS summer bowling league to take the title by five games over the second-place Team No. 4. The 'Foods (Di Garfield, Peggy Sheldon, John Watkins, and Ed Anderson) racked up 40 wins against only 20 losses in their victorious effort. The runner-up 4-some (Julie Hood, Linda Lindgren, Milt Blatt, and Al Roeske) posted a 35-25 mark. Third place went to the Gopher Brokes, fourth to the El Primos, fifth to Sam's Saints, sixth to the Sioux, seventh to the Christophers, and eighth to Foster's Follies.

High scores for the season were as follows: men's series, Jim Alsop and Bob Cowell, 717 (tie); men's game, Ray Hanson, 260; women's series, Dory Aitchison, 675; women's game, Elaine Colson, 260. Peggy Sheldon was chosen the most improved woman bowler, while Jim Alsop took similar honors among the males. The El Primos' 2444 was high team series for the season.

In Sweepstakes Week action, George Jackson took the men's singles title with a 609 series. Women's singles high series was Phyllis Henry's 627. Al Roeske and Milt Blatt won the men's doubles event with an 1196 series. Women's doubles honors went to Norma Sayre and Phyllis Henry, who racked up an 1174. Julie Hood and Milt Blatt won the mixed doubles crown with a bulging 1223. The high team series was posted by the Gopher Brokes, who swept the stakes with a 2363.

And let's not forget the high scores for the 15th week of regular season play: team series, El Primos, 2444; team game, Christophers, 838; men's series, Al Roeske, 654; men's game, Bob Hearn, 238; women's series, Elaine Colson, 635; women's game, Phyllis Henry, 229.

NUWC Technical Department Head Selections Announced

Kunz; Systems Technology, A. J. Tickner.

Wallace E. Hicks has been selected as Assistant Technical Director for Systems. Assistant Technical Director for Research is presently held by Dr. William B. McLean (acting).

Cdr. Henry H. Schleuning, Jr., representing Commander, NUWC, explained the command and staff functions of the new organization, withholding names of selectees until final approvals are obtained.

The group was served a selection of pastry, and coffee, to make the occasion even more festive.

The Naval Undersea Warfare Center will have three locations, as presently organized: Pasadena Headquarters, San Diego Division and Hawaii Division. Among the announcements made by Wilcox was the selection of Harold Turner as Head of Staff, Hawaii Division. Turner was present at the meeting.

Departments established and Department Heads selected at Pasadena are: Research and Engineering, (Dr. W. B. McLean, Acting); Ordnance Systems, C. G. Beatty; Systems, D. Cozen; Engineering, J. H. Jenkinson; Ocean Technology, D. A.

Public Affairs Office Established at NUWC, San Diego Division

A new Public Affairs Office was established at NUWC, San Diego Division, last week. The office is located in Building 101, telephone extension 554. Until billets are available and selections can be made for permanent personnel, the office will be covered by Carney Kramer, Public Affairs Officer, Pasadena, on Monday and Tuesday each week; and Nova Semeyn, Assistant Public Affairs Officer, Pasadena, on Wednesday and Thursday. Mrs. Pat Polakowki, of NELC Public Affairs Office, is assisting during this interim period through the courtesy of PAO, NELC, and NELC Command. We are very grateful for this assistance.



LABOR DAY

HONORING THE AMERICAN WORKER

Labor Day 1967 again reminds us of the indispensable part labor plays in our Defense program as a partner of the Armed Forces. America's working men and women are providing supplies and weapons vital to the defense of our country and allies.

GEORGE BERNARD SHAW

The late George Bernard Shaw said, "A day's work is a day's work, neither more nor less, and the man who does it needs a day's sustenance, a night's repose, and due leisure, whether he be painter or ploughman."

Labor Day, observed on the first Monday in September, has come to be one of the most generally celebrated holidays in the United States, including Hawaii and Alaska. The propriety of setting apart one day in the year in honor of labor was first suggested by Peter J. McGuire in 1882. He was then president of the United Brotherhood of Carpenters and Joiners of America, and was an active leader in the Knights of Labor.

In May of that year he submitted a proposal to the recently organized Central Labor Union in New York, "that labor should select a day for a parade to show the strength and the esprit de corps of the trade and labor organizations," and that the parade be followed by a picnic or festival, the proceeds from which should be divided among the organizations taking part. It was argued that there were other holidays "representative of the industrial spirit, the great vital force of the nation."

PROPOSAL ADOPTED

His proposal was adopted by the Central Labor Union and the first Labor Day celebration occurred on September 5, 1882, when the union held its parade in the streets of New York City. The General Assembly of the Knights of Labor voted for an annual celebration not long after this first parade.

On October 9, 1884, the Federation of Organized Trades and Labor Unions of the United States and Canada which later became the American Federation of Labor, meeting in convention in Chicago, voted to make the celebration national.

About two and a half years later the Legislature of Oregon, on February 21, 1887, set apart the first Monday in September as a state holiday in honor of labor. Within three months similar action had been taken by the legislatures of Colorado, Massachusetts, New Jersey and New York.

HOLIDAY PROCLAIMED

Before the middle of 1894 the day had been made a legal holiday in thirty states and on June 28 of that year Congress passed an act making it a legal holiday in the District of Columbia and in the territories. The day is now observed in every state.

In a final salute to the American working force around the world today, the appropriate words of Walter Dill Scott are quoted, "The man who is greatly interested in his work and who finds delight in overcoming the difficulties of his calling is not likely to become so tired as the man for whom work is a burden."

MOST FACILITIES OF NWC CLOSE MONDAY

Most of the Center's facilities will close Monday to observe Labor Day. According to Art Rutherford, Employee Services Board, Shopping Bag Market, Beauty and Barber Shops, Laundry and Dry Cleaners and Pharmacy will be closed on the 4th. The Station Restaurant will be closed tomorrow, Sunday and Monday. The Malt Shop will remain open Monday from 9 a.m. to 7:30 p.m.

Also closed will be the Bank of America, Credit Union, Commissary Store, Navy Exchange, both service stations and the Airline Ticket Office (JAMTO).

Special Service officials noted that sports-wide, everything will be open on the 4th, except softball games will not be scheduled at Reardon Field during Labor Day. Operating hours tomorrow for the Gym are 11 a.m. to 5 p.m. and Sunday and Monday from 1 to 5 p.m. Closed are the Library, Ceramics and Auto Hobby Shop and Community Center. All other special service activities will follow normal operating schedules.

CLUB SCHEDULES

Commissioned Officers' Club will be open from 12 p.m. to closing, the dining room will remain closed all day. Chief Petty Officers' Club will be open, including the pool, but the dining room will be closed. The Acey Deucey and enlisted men's clubs will operate from 12 p.m. to closing.



BOOK OF THE DESERT — Co-editors (l-r) Lorraine McClung and Elizabeth Babcock display the Indian Wells Valley Handbook produced by the China Lake Branch of the American Association of University Women.

Latest Indian Wells Valley Handbook Provides Insight Into Desert Living

The China Lake Branch of the American Association of University Women announced this week that copies of the latest edition of the Indian Wells Valley Handbook now are available for purchase.

The completely revised fourth edition contains 12 chapters, including three new ones: Old Towns with a Colorful History, Museums, and Camping. Other chapters are entitled Communities, Climate, Geology, Early History, Sightseeing, Wildflowers, Wildlife, Birds, and First Aid.

Copies are available at \$1.75, plus tax, from AAUW members Rhodan Glen, 1501-A Smith Rd.; Elizabeth Babcock, 49-A Strop Ave.; Lorraine McClung, 511-A Lexington Ave.; and Helen Alltop, 105-B Richmond Rd. In Desert Park they may be obtained from Jill Cooper at 334 Bonita St., and in Ridgecrest from Anne Heck, 217 Sunland Dr.

The Indian Wells Valley Handbook also will be available at the Maturango Museum and from Ridgecrest merchants at a later date.

Admiral Dornin, New Skipper

(Continued from Page 1)
lands, Hollandia, Guam and Saipan.

During 1947 and 1948, he served as Combat Readiness, Training and Antisubmarine Warfare Officer on the Staff of Commander-in-Chief, Atlantic Fleet, and later commanded Destroyer Division 162, which spent five months in the Mediterranean with the Sixth Fleet. He was also Commander Aegean Force and Commander Adriatic Force.

Adm. Dornin, in 1950 and 1951, attended the Naval War College, then served as Planning Officer and later as Assistant Superintendent of the Naval Gun Factory. In the fall of 1953 he assumed command of attack transport Melette which cruised the Mediterranean. Thirteen months later he became Liaison Officer to Congress, and attached to the Office of the Navy Judge Advocate General. In August 1956, he took command of the cruiser Des Moines.

In July 1957, he was selected for the rank of Rear Admiral and in September reported as Assistant Chief for Plans, Bureau of Naval Personnel, Navy Department.

Destroyer Boss

The Admiral assumed command of Destroyer Flotilla Three on October 15, 1959, with home port in Long Beach, California. After 18 months as Commander, he reported for duty in March 1961 as Superintendent of the Naval Postgraduate School in Monterey, California, where he served until August 1963.

In May 1965, he returned to the east coast and on June 18th took command of the Operational Test and Evaluation Force at Norfolk, Virginia. He assumed duties as Commandant, Eleventh Naval District, in San Diego, California on August 31, 1967.

Service Recognized

For outstanding service the Admiral has earned the Bronze Star Medal with Gold Star and Combat "V," a Letter of Commendation with Ribbon from Secretary of the Navy and the Legion of Merit.

Admiral Dornin has made frequent visits to VX-5 here with RADM. H. J. Epes who was the unit's second skipper from 1953 to 1954. Admiral Epes is presently Commanding Officer of Carrier Division One.



BASIC DANCE — Dancer's Workshop instructor Joan Leipnik and member Jim Moore practice basic modern dance steps in Community Center, where Friday classes will be held. —Photo by PH3 Jerry Willey

Dance Workshop Features Modern, Improvisations

The Dancer's Workshop will begin a nine-week Fall session on Friday, September 8, at 8 p.m., in Room D of the Community Center.

Although the primary emphasis is on modern dance and improvisation, the group will experiment with other dance forms, such as folk, jazz, and Afro-Cuban. Field trips to Los Angeles dance programs are planned.

Beginning and advanced students of dance will benefit from the basic approach to dance activity. Newcomers, both men and women, are invited to join members of Dancer's Workshop for these weekly classes.

Further information is available from Joan Leipnik at Ext. 725212.

CHAPLAIN'S MESSAGE

Popularity
or Progress

CHAPLAIN JUDE R. SENIEUR



Fads come and go. With some we laugh. With some we drool. And with some we become very, very tired. The present fad of reporting with screaming headlines the criticisms of "organized religion" is beginning to fall into this latter category.

Recently a clergyman heading a reputable west coast congregation dusted off a few old skeletons and rattled into the news. His fanfare was the old pitch about religion standing in the way of science. His examples were the traditional: Galileo, Spinoza, and the east coast martyr who was clipped for teaching the theory of evolution to high school kids.

Religion does not stand in the way of scientific progress any more than safety rules stand in the way of technical progress. The public is not permitted to walk through a half built building, fly in an untested plane, or consume an unverified medicine. The risks are left to the construction team, the test pilot, or the lab technician, not to the general public.

The church has safety rules too, and she has no intention of subjecting the general public to the risks of half-thought-out and unverified theories, no matter how promising they may be.

Philosophers and scientists are perfectly free to bounce around any ideas or theories they want to, but the moment they start bouncing them off the heads and hearts of the general public they will always find religion standing firmly in their way.

Religion is concerned primarily about progress toward eternity. When someone makes a breakthrough in knowledge about nature, religion is delighted to add the find to the stepping stones to eternity. But when the "inventor" is so impressed with his find that he attempts to "bury God" with his newly found knowledge, he invariably stumbles over his own shovel.

When scientists add their knowledge of time to the facts of eternity they make a real contribution to progress. But when, through intellectual pride, they let the flashbulb of their findings blind them to the ultimate realities, they lose themselves and confuse their followers. Christ called it "building on sand."

Religion will always oppose our building on the shifting sands of pride, popularity, or personal feelings . . . no matter how precious or "progressive" the bricks may be . . . just as religion will always favor another step added firmly to the ladder that leads to the fulfillment of our eternal destiny!

STATION LIBRARY LISTS NEW BOOKS

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

Fiction

Barlow—One Man in the World.
Boulle—Time Out of Mind.
Deighton—An Expensive Place to Die.
Elgin—The Wood and the Trees.
Sherman—Into the Noonday Sun.
White—The Crimshaw Memorandum.

Non-Fiction

Ardrey—African Genesis.
Cole—The Classic Cartoons.
Elon—Journey Through a Haunted Land.
Florin—Ghost Town Album.
Lewes—Jewelry Making for the Amateur.
Logan—Are You Misunderstood?
McClinton—The Complete Book of American Country Antiques.
Prochnow—The Successful Toastmaster.

The Rocketeer

Official Weekly Publication
U.S. Naval Weapons Center
China Lake, California
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DEADLINES:

News Stories—Tuesday, 4:30 p.m.

Photographs—Tuesday, 11:30 a.m.

The Rocketeer receives Armed Forces
News Bureau 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 Nimitz and Lauritsen.

Phones—71354, 71655, 72082

DIVINE
SERVICES

Christian Science (Chapel Annex)—
Morning Service—10 a.m.
Sunday School—10 a.m.

Protestant—(All Faith Chapel)—
Morning Worship—8:15 and 11 a.m.
Sunday School—9:30 a.m., Chapel Annexes 1, 2, 3, 4 (Dorms 5, 6, 7, 8) located opposite Center Restaurant.

Roman Catholic (All Faith Chapel)—
Holy Mass—7, 9:30 a.m., and 12:30 p.m.
Sunday.

Daily Mass—11:30 a.m. in Blessed Sacrament Chapel. Saturday, 8:30 a.m.
Confessions—7 to 8:00 p.m. Saturday.

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—For information write P. O. Box 5436, China Lake, or phone NWC Ext. 725591.

PROMOTIONAL
OPPORTUNITIES

Present Station employees are encouraged to apply for the positions listed below. Applications should be accompanied by an up-to-date Form 55. The fact that positions are advertised here does not preclude the use of other means to fill these vacancies.

Clerk Typist, GS-3, or 4, Code 403 — Performs clerical typist duties for the Head of the Advanced B/C Weapons Group and for other employees in the Branch. Includes typing technical notes and reports, correspondence, forms, statistical tables and inter-office memoranda. Receives telephone and office callers; receives and distributes incoming mail; arranges for travel; and maintains branch files.

Machinist, WB-11, \$3.59, \$3.74, \$3.89 per hour, Code 4571 — Machinist wanted who is willing to train for a rating of Machinist (Experimental Propellants), WB-13, \$3.72, \$3.87, 4.02 per hour. Training period is three months.

Model Maker (Machining), WB-14, Code 4553 — Machines, fits and assembles parts or hardware of experimental, prototype, and developmental ordnance; explosives and propellant processing equipment; and fabricates developmental models. Must be journeyman machinist.

Writer-Editor, GS-10B-9, 11, or 12, Code 4551 — Prepares technical publications in the form of technical reports, progress reports, specifications, manuals, proposals, project plans, test plans, test reports and other technical papers to support department programs. Three years general and two years specialized experience mandatory; BA or BS in related fields desired. File applications for above with J. W. Chipp, Bldg. 34, Rm. 26, Phone 72676.

Model Maker (Metal Components), JD No. 260-3, WB-12, Code 18 — This position is located in the Mechanical Branch, Instrumentation and Evaluation Division, Targets Department, NAF. Performs complex and non-routine work in the manufacture and machining of component parts and assemblies of experimental and developmental devices and equipment. Jobs are typically one-of-a-kind, involving unusual trade problems and requiring a high degree of ingenuity and responsibility. Makes own determination of machines, tools, and methods to use. Solves such problems as work layouts and machine setups, which are both complex and precise. Requires a minimum five years of progressively responsible experience in a machinist or machinist-like trade; one year of experience must be in the manufacture and machining of components of experimental devices and equipment.

Secretary (Typing), GS-31B-4, PD No. 718005, Code 18 — This position is located in the department office of the Projects Department of the Naval Air Facility. The incumbent acts in the capacity of personal assistant to the department head. In this capacity she relieves her supervisor of administrative details such as information communication control, receiving and screening mail, maintaining follow-up action on correspondence, initiating and composing a variety of correspondence on her own, and acting in a liaison capacity between her supervisor and his subordinates.

Clerk (DMT), GS-31B-4, PD No. 635046-1, Code 3578 — This position is located in the Special Operations Branch, Aviation Ordnance Department. The major duties of this position include typing, DMT, filing and providing phone answering services in support of the Branch.

File applications with Mary Morrison, Bldg. 34, Rm. 32, Phone 72032.

'DESERT PHILOSOPHER'

Bighorn Sheep

By "POP" LOFINCK



An authoritative book on "The Bighorn of Death Valley," was published in 1961 by the United States National Park Service. Authored by Ralph E. Wells, Park Naturalist and Florence B. Wells, National Park Service collaborator.

A detailed investigative program of research, behavior watching and intensive field work commenced in 1954.

Many people have never seen a desert bighorn sheep, although there was estimated to be between 600 and 900 head in the Death Valley National Monument in 1961.

So this column is a brief summary of the book "The Bighorn of Death Valley" which is in the NWC China Lake Library.

The survival of the desert bighorn — through long years of extreme draught conditions in the past — is no less than phenomenal. Some other species of animals perished. If a lamb survives for the first year it has a life expectancy of at least ten years.

One reason for bighorn survival is a deep instinct for conservation. Domestic sheep bands feed down to the bare ground, but the bighorn leaves a part of the plant to recuperate for future food. They move along nipping here and there — not devouring the whole plant.

"A general shortage of food critical enough to threaten seriously the survival of the species has not occurred in Death Valley, in the past 10 years, if ever." (This observation made in 1961).

During the depression, the taking over of springs by prospectors and poachers was serious. "Death Valley bighorn need water the year around, drinking every three to five days in hot weather and every 10 to 14 days in cold weather."

They can go longer without water in an emergency, maybe three weeks. They come to a spring all scrawny and pooped out, drink several gallons, then rest several hours and fill out like a prune in water.

"The general daily activity of the bighorn is divided between the effort of securing food and water and resting from the effort, with morning and evening play, especially on the part of the lambs."

"The leader is always a ewe, and if she is unafraid of people an entire band may become tame within days." One band got so tame they would leisurely cross the highway in front of cars, causing a traffic hazard — both to the cars and the bighorn.

Because "old mama" wasn't afraid they walked between cars within four or five feet of people. Shouting, yelling and honking horns, didn't concern the bighorn.

"The climbing ability of the bighorn is as phenomenal as legend would have it, but under ordinary circumstances, the animals take the easier route and rest often."

"Fighting as an expression of serious hostility on the part of either sex at any age, seems almost nonexistent." The fighting between males seems to be less of a fight than a ritualistic test. Serious injury is rare and occurs primarily as a result of some miscalculation or accident. Contestants may feed and water and travel together between dashes—and the presence of an ewe neither precipitates nor prevents a contest. If a young ram attacks an old mature ram, he is ignored by the old ram.

"Lambs learn mostly from mother. Mature rams appear to be indifferent to lambs, sharing no responsibility, but presenting no hazard to them. The lamb begins to learn immediately by emulating it's mother.



DESERT BIGHORN SHEEP — These sheep are skilled climbers, wintering in the foothills and spending their summers in the higher mountain ranges. The adult rams have huge curling horns; the ewes, short

stubby ones. Lambs are born in winter or in early spring. Though the Bighorn Sheep once were abundant, they have become a vanishing game animal. Diorama courtesy of Nevada State Museum, Carson City, Nev.

THE LOCKER ROOM

The Champions

By ED RANCK



Winning a championship, whether it be the heavyweight championship of the world or the three-legged race title at a company picnic, can be one of the more pleasant things that can happen to an athlete. When you are the best in your particular class, it matters little that the world doesn't find out about it; it's still a great feeling.

SLOW START

When you are on a softball team and your club starts slowly; is plagued by injuries to key players; then wins the battle over three or four legitimate contenders in the last month of the season, then winning a championship is particularly satisfying. The 1967 China Lake softball season came to an end this week and team members of the new champions, Ace TV, should enjoy admiring their trophies this winter, because they certainly earned them.

This year's pennant race was perhaps one of the best seen here in years. Five of the nine teams in the league were in serious contention for the title and three clubs held a clear cut lead at one time or another. In the end it was Ace who outlasted them all.

Softball, like any other competitive sport, is a team game. That is to say, you can have a couple of standout ball players and be a winner, but it takes a good effort by all members of the ball club to create a champion. There were, however, some ballplayers who we feel contributed a little extra to the team's overall performance, and these players we will talk about here.

VALUABLE PLAYER

Shortstop Tom Taylor was perhaps the club's most pleasant surprise. Through the stretch drive he was certainly Ace's most valuable player. Taylor joined the club shortly before mid-season. He came with the reputation of being a light hitter, but ruined that reputation in just a few games. He went three for four in his first time out, and from that time on was the key man in many of Ace's victories through the latter part of the season. He was hitting .442 pending the outcome of Ace's final game, a mark that could give him the league's batting title.

Dennis Carson was another player who made a large contribution. His batting credentials alone tell much of the story. As this is written, he is hitting .343, has nine home runs and 29 runs batted in — the latter two figures being tops in the league. Dennis played second base and left field for Ace, and was a fine defensive performer throughout the season.

In softball, they say that pitching is the name of the game. For Ace, pitching wasn't the thing that carried the club to the championship, but the performance of Bert Andreassen and Frank Robinson played a big part.

PRE-SEASON FAVORITE

Ace was picked by many to take it all this year, and the reason was Andreassen. Bert has been one of the finest pitchers in the area for years, and because of this Ace was the pre-season favorite. Andreassen started strongly, but was injured in the early part of the year. A recurrence of the same injury at mid-season forced him out for the year. It was at this point that Robinson became the mainstay of Ace's defense. Although many felt that Frank wasn't in the same class as some of the better pitchers in the league, he posted a 12-2 record, best in the league, and was perhaps the steadiest pitcher in the league this year.

Outfielder Bill Marten also played a big part. A solid performer on defense, Bill also hit .381 for the champions and drove in 19 runs, many in key situations. Add to this a strong supporting cast consisting of Duke Martin, Andy Gilpin, Harlan Hersley and Gerald Crow plus a bench consisting of Tom Talley, Mike Sorge and Jim Crow and you have what it takes to make a winner.

WHAT IT'S ALL ABOUT

A lot of teams felt that they could beat this club this year. Some people felt that they were not a particularly strong ball club, and it's doubtful that any team went into a game against them without thinking that they had a genuine chance to beat them. To some this may sound as though a lot of people aren't giving the team the credit they deserve. In fact, though, it is a compliment of the highest order. It means that you won because of a maximum team effort, and this is what the game is all about.

Softball League

FINAL STANDINGS

	W.	L.	GB
Ace TV	19	5	
Triangle Sporting Goods	16	6	2
Ridgecrest Tigers	14	9	4 1/2
Engineers	14	10	5
Magic Cleaners	13	10	5 1/2
NAF Hawks	11	12	7 1/2
VX-5 Vampires	8	16	11
Genge Industries	6	18	13
NWC	4	19	14 1/2

When you leave your vehicle be sure to switch the engine off, put the parking brake on, remove the key from the ignition and take it with you.

Detours frequently route you over roads you aren't familiar with. Be ready for something unexpected from either another driver or the road.



SOFTBALL CHAMPS — Ending the NWC softball season with an impressive 19-5 win record last Tuesday night, Ace TV ran away with the 1967 China Lake Softball League

Tourney title. The team began the season with setbacks, but soon recuperated and continued to battle for the top spot in the league playoffs at Reardon Field.

Flag Grid Teams
Still Required

Athletic Director Ray Gier invites NWC football team members to submit team rosters for the formation of the 1967 China Lake Flag Football League.

The first meeting is set for September 7th at 2 p.m. to select teams and coaches for the opening day of play on September 18.

Team rosters, limited to 16 players, including coaches, should be submitted to Gier's office prior to the September 7th meeting.

Cyclists To Make
Carson City Run
To Western Rally

A three-day ride to Carson City, Nevada, for the big Western States Rally is coming up tomorrow for the members and friends of the local Gypsy Wheels Motorcycle Club — giving them just enough time to unpack and repack from last weekend's Big Bear Run.

The Big Bear weekend campout featured beautiful riding weather plus side trips to Halcolm Valley, Moon Ridge and Pine Cone Camp according to Hal Schlarman of the Club.

Interested cyclists, both civilian and military, are invited to join Club members for the Carson City Run to leave Ridgecrest tonight. The plan is to camp out in Bishop and ride to Carson City Saturday morning for the parades, special shows and demonstrations of rider skills.

On the schedule for the near future are another installment of the local Poker Run and the big Death Valley Tour the last weekend in October.

The Club membership of some 41 people plans to join the Center's Safety Department soon in producing a Rider Skill and Safety course, called of particular benefit to military cyclists and dependents.

Wood also noted additional

Ace TV Softball Team Wins League Title
After Long Competitive Battle on Field

Ace TV completed the seasons long climb through the standings of the China Lake Softball League last Thursday night, winning their 19th game of the year to clinch the 1967 championship at Reardon Field. Ace defeated the NAF Hawks 7-0 to mathematically eliminate second place Triangle Sporting Goods from the race. The win left Ace two games ahead in the loss column with one game to play.

Triangle clinched second place downing NWC 18-7, Monday evening. A fourth inning grand-slam homerun by Ed Ranck, and Maury Gartrell's solo shot were the big hits as Triangle won the game in five innings. Pete Klassen won his 15th game of the year, tops in the league, and Mike Choiniere was the loser.

Engineers Drive Hard

Ross Clayton scattered four hits as the Engineers defeated third place Ridgecrest, 3-1. Bob Crawford collected three hits and drove in two runs as the Engineers built a 3-0 lead in the first six innings. The Tigers threatened in the bottom of the sixth when Jim Dowda drove home Mark Stoner with a single run, but Clayton retiring Lou Radcliff on a pop fly to end the threat. Bill Brown was the loser for Ridgecrest.

Roy Dotterweich tripled home Larry Galvin in the top of the ninth inning to give the VX-5 Vampires a 6-5 win over Magic Cleaners. Jeff Mayen drove in three runs and scored twice as the Vampires pulled

to a 5-4 lead in the first four innings. Magic tied the game in the fourth, when Buddy Defes drove home Jim Lutz. Joe Quenga allowed Magic two singles over the last five innings in a fine performance to win his third game of the year. Earl Roby went all the way for Magic and was tagged with the loss.

Bill Byrd homered and drove in three runs and Tom Mather collected three hits as Genge Industries pounded out a 16-5 win over NWC. Genge scored eight times on six hits in the top of the fifth to break open a tight game. Mather tripled home two runs and Byrd hit a three run homerun later to put the game away. Bruce Brown was the winner for Genge, while Bert Lambert lost it.

Hawks Score

The NAF Hawks scored nine runs in the last four innings as they came from behind to defeat the Engineers 13-12. Trailing 12-4, NAF scored three in the fifth inning and two in the sixth, then tied the game when Ernie Norton tripled home three runs in the bottom of the seventh with two out. In the eighth Larry Brown singled, moved to second on Stan Salami's sacrifice, then scored on two consecutive wild pitches. Jerry Rafalski was the winner in relief for NAF while Ross Clayton took the loss.

In action Tuesday night, Magic Cleaners defeated Genge 5-4 and the VX-5 Vampires downed Ace TV 7-1.

New Fedco Station Gives Fast Service

Partial operation of the new Federal Employees Discount Corporation, (Fedco), service station began Monday, August 28th, according to officials of the Employee Services Board.

George Wood, manager, and his experienced sales people are ready to provide customers with friendly and efficient service, even though the services are presently limited to gasoline, lubrication and oil changes.

Wood also noted additional

supplies to include batteries and tires, will be available to customers Tuesday, September 5th. He reminded motorists that Fedco service is available to anyone paying for their purchase.

Fedco membership cards are required only when a customer desires to open a charge account with the service station. Applications for membership can be obtained at the station or in the Employee Services Board office located in Bennington Plaza.