

CHAPLAIN'S MESSAGE

A Sense of Awareness

By Chaplain Irvin H. Thompson



Do you ever notice how people sometimes stumble blindly through life without any regard for the feelings of others?

A young man in my office the other day said, "Chaplain, that person lets others walk over him." We see people doing this quite often — riding rough shod through life, thinking only of their own needs. We are prone to forget that others around us are having their problems.

As a former pastor, I saw that life is difficult for many, many people. Everyone has their battles to fight. I am aware that most of our problems are created by ourselves, but this gives society no reason to "walk on others."

Miriam Teichner in a poem entitled "Awareness" does an outstanding job in expressing my feelings about our need for being more sensitive to life and the needs of others.

God—let me be aware. Let me not stumble blindly down the ways, Just getting somehow safely through the days, Not even groping for another hand, Not even wondering why it all was planned, Eyes to the ground unseeking for the light,

Soul never aching for a wild-winged flight, Please, keep me eager just to do my share. God—let me be aware. God—let me be aware. God—let me be aware. God—let me be aware. God—let me be aware. God—let me be aware. God—let me be aware. God—let me be aware. God—let me be aware. God—let me be aware.

Let my hands, groping, find other hands. Give me the heart that divines, understands. Give me courage, wounded, to fight. Flood me with knowledge, drench me in light. Flood me, keep me eager just to do my share. God—let me be aware.

PROMOTIONAL OPPORTUNITIES

Present Center employees are encouraged to apply for the positions listed below. Applications should be accompanied by an up-to-date Form 58. The fact that positions are advertised here does not preclude the use of other means to fill these vacancies.

The positions described here are effective from April 26, to May 3, 1968. Mechanical Engineer, GS-11 or 12, PD No. 55504-1, Code 554 — The position is that of Mechanical Engineer in the Electro-mechanical Division, Engineering Department. The incumbent is responsible for the design and/or production engineering redesign, test, documentation, and evaluation of mechanical components and/or assemblies which improve the producibility ease of use, conservation of essential materials, and improves the performance and the reliability of miniature inertial systems of advanced guided missiles. The incumbent must have a Bachelor of Science degree in mechanical engineering.

General Engineer, GS-801-13, Code 5571 — This position is located in the Sidewinder Chaparral Systems Office, Engineering Department. Incumbent will be responsible for fulfilling various duties assigned by the Sidewinder - Chaparral Program Manager. The project engineers are responsible for various aspects of the program such as the guidance - control groups, missile components, auxiliary equipment, support functions, etc. The incumbent must have a Bachelor of Science degree in mechanical or electronic engineering and a minimum of six years experience in design, development or testing of missile systems or related fields. File application for above with Pat Gaunt, Bldg. 34, Rm. 34, Phone 71471.

COMPETITIVE PROMOTION EXAM Department of the Navy, Naval Weapons Center Corona announces a competitive promotion exam for General Foreman Public Works and Experimental Fabrication II, Annc. No. 08(68)WD-NWC, issued April 15, 1968. Competition is restricted to career and career-conditional employees of Navy activities within California. File Card Form NAVEXOS 4155-AB, Registration Card Form NAVEXOS-4156-AB and Standard Form 57 with the Personnel Officer, Naval Weapons Center Corona Laboratories, Corona, California 91720, not later than the close of business on May 6, 1968.

To Give LSD Talk Saturday, May 4

Dr. Sidney Cohen, a leading authority on LSD and author of two major books on the subject: "The Beyond Within" and "The LSD Story," will give a public lecture at 8 p.m., Saturday, May 4 at Burroughs High School. Tickets are \$1.50 each. Bakersfield College AS card holders are admitted free.

His discussion deals with the dangers, merits, medical uses, legal regulations and control of the drug.

He is Chief, Psychiatry Service, Wadsworth V.A. Hospital, Los Angeles, and Associate Professor of Medicine, UCLA. He holds degrees from Columbia University and from Bonn University and is a consultant to a number of national organizations, including the National Suicide Prevention Center and V.A. Research Committee on Psychiatry.

Dr. Cohen is also the author of two earlier books, one on "Mind and Psychiatry," and also "Psychochemotherapy: The Physicians Manual." He has published some 90 scientific articles, and has done research in this area for over 13 years. He is also on the editorial board of Psychosomatics, and the Journal of Psychopharmacology.

Blue Cross Ins. Agent At Community Center

Norman R. Smith, Blue Cross-Blue Shield (Service Benefit Plan) representative from Bakersfield, will be aboard the Center on Wednesday, May 1, at the Community Center from 9 a.m. to 4 p.m., according to T. J. Haycock, Head, Employee-Management Relations.

LOYALTY DAY MAY 1

A Proclamation By the President of the United States of America

Ten years ago, Congress set aside May 1st of every year as Loyalty Day — a time for all Americans to reaffirm their devotion to our national ideals.

This year Loyalty Day comes at a time when the most cherished beliefs of our Nation are being put to stern tests. It is a time when all of us should think deeply upon our principles, reaffirm their essential integrity, and bear witness to them in our lives.

We believe in freedom. So loyally let us act to make men free.

We believe in peace. So let us pursue it along every road of honor.

We believe in equality. So let us do what we must to assure it for all.

We believe in justice. So let us reverse and uphold the law upon which justice rests.

Moreover, we believe these principles are compatible. Freedom need not be sacrificed for peace, nor equality sought at the expense of justice.

Yet their achievement is not easy. It will come only if we are a people so united in our beliefs that we are not divided in our loyalties.

On Loyalty Day, 1968, every American should pause to look within himself and put a measure to the depths of his beliefs. Then let us act upon them, a free and united people, loyal as always to our heritage as Americans.

NOW, THEREFORE, I, LYNDON B. JOHNSON, President of the United States of America, do call upon the people of the United States, and upon all patriotic, civic, and educational organizations, to observe Wednesday, May 1, 1968, as Loyalty Day, with appropriate ceremonies in which all of us may join in a reaffirmation of our loyalty to the United States of America.

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

IN WITNESS WHEREOF, I have hereunto set my hand this eighth day of April, in the year of our Lord nineteen hundred and sixty-eight and of the Independence of the United States of America the one hundred and ninety-second.

LYNDON B. JOHNSON President of the United States

Wildflower Festival Starts Here Tomorrow

The Naval Weapons Center will open its gates this weekend to the 22nd Indian Wells Valley Wildflower Festival, presented by WACOM in the China Lake Community Center.

The festival will be held from 1 to 9 p.m. Saturday and from 10 a.m. to 6 p.m. Sunday. The Community Center building will be filled with wildflowers of all kinds, arranged into a wide array of bouquets displaying the varied spring beauty of the desert, reports Mrs. M. R. Etheridge, general chairman of the event.

The first local community wildflower show was held in Inyokern in 1940, according to Mrs. John L. Carr, serving as consultant to the flower collectors. Several more shows were held in that community, and in 1946 WACOM agreed to sponsor its first flower festival on the station.

Refreshments will be available in the show's tea room, and a number of desert-oriented publications will be on sale. Visitors will receive programs showing where the various parts of the festival are located.

Local musicians will provide background music throughout the hours of the show, under the chairmanship of Mrs. Ivar Highberg.

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The schedule for Saturday is: 1 p.m., Clayton Akima, organ; 2 p.m., Mrs. Alvin Jacobson, piano; 3 p.m., Mrs. Charles Van Hagan, organ; 4 p.m., Capt. M. R. Etheridge, piano; 5 p.m., Miss Kathy Knemeyer, piano; 6 p.m., Carl Morley, piano; 7 p.m., Mrs. Richard Jones, piano, and 7:45 p.m., James McLane, organ.

The Sunday schedule is: 10 a.m., Mrs. David Chapman, piano; 11 a.m., Mrs. William Werback, piano; 11:30 a.m., Mrs. Robert Fowler, piano; 12 noon, Miss Nancy Arsenault, violin, and Mrs. Jerome Zeutzius, piano; 12:30 p.m., Miss Laurie Preston, flute, and Mrs. Zeutzius, piano; 1 p.m., Samuel Gee, piano; 1:30 p.m., Miss Helen Hammer, clarinet, and Miss Elizabeth Ward, flute. At 2 p.m., Clayton Akima, organ; 3 p.m., Mrs. Charles Van Hagan, organ; 4 p.m., Paul Riley, piano; 5 p.m., Mrs. James Heflin, organ; and 5:30 p.m., Mrs. Jerome Zeutzius, piano.

Mrs. Etheridge extended an invitation for all local residents to visit the Festival.

Edwards Wins Tourney

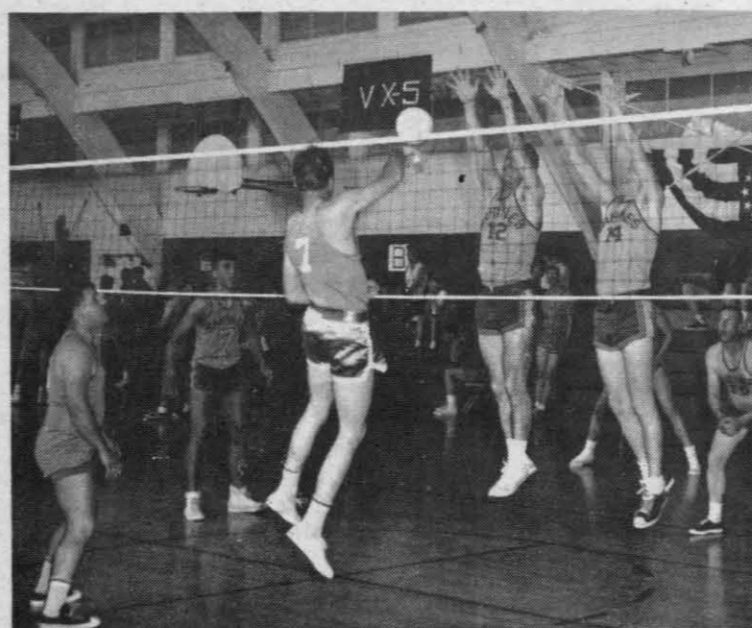


CHAMPS RECEIVE TROPHIES — These Edwards Air Force Base seven triumphed over six other volleyball teams in last weekend's Mojave Desert Inter-Service League championship tourney, hosted by the Center at the Gym. The China Lake team followed their 12-0 won-lost score with a 9-3 for second place. Norton Air Force Base brought up third with a 7-5, trailed by George Air Force Base, Barstow, 29 Palms and Nellis Air Force Base.

The Edwards AFB Winds won the 1968 Mojave Desert Interservice League Volleyball title recently in the annual tournament held at the Naval Weapons Center gymnasium. Edwards posted a perfect 12-0 record to win the championship while China Lake finished second with 9-3. Defending champion Norton AFB finished third in the seven-team event.

The most crucial games of the tournament came early in the day as Edwards came from behind to defeat China Lake twice. The Winds defeated the local club 15-13 and 16-14 then clinched the championship by defeating Barstow Marines in their 10th contest. After two early losses, China Lake won nine of their last 10 games to take the runner-up spot.

STANDINGS table with columns W, L and team names: Edwards AFB, China Lake, Norton AFB, George AFB, Barstow Marines, MCSC 29 Palms, Nellis AFB.



GEORGE, 29 PALMS BATTLE — Fighting it out in the middle of the MDISL tournament pack are the men of George Air Force Base and the 29 Palms Marines. China Lake placed second in the tourney, giving it a third place tie.

Pony Colt Players Can Still Apply

Boys interested in playing Pony-Colt League Baseball can still sign up. Pony Leaguers (13 and 14 year old boys) should contact Charles Martin, 214 Shangri La Circle, at Ext. 73734. Colt Leaguers (15 and 16 year old boys) should contact J. D. Williams. Williams may be reached during the day at the Desert Express, at 375-8214 or in the evening at 417 Florence, Ridgecrest, at 375-8083.

'Living Desert' Rolls Tonight At Museum

Walt Disney's one-of-a-kind film "The Living Desert" will be revived for a special showing to Maturango Museum members only, this evening at 7:00 in the Weapons Exhibit Center.

Jim Baird, president of the Museum board of trustees, points out that "Desert," brought out in 1952, was the product of three years of research in territory identical with that the Museum was established to preserve.

"I think the membership has a right to view this masterpiece with a feeling of true kinship," Baird commented when he booked the film.

Individuals or families who wish to see the film, who are not currently paid-up members, may pay dues that night, before or after the showing. They will be entitled to all the privileges of membership until, and including, the annual meeting in January, 1969. Activities will include frequent field trips led by experts, a "casual visitors' pass" to the China Lake Naval Weapons Center for those who would otherwise have to be sponsored for each visit and, participation in the Summer Youth Workshop. Dues are \$10 for a family, \$5 for an individual, and \$1 for a student of any age.

Museum activities for May are a "Look-in" featuring antiques and fine arts at the home of Edna and Paul McKenry, 411 Balsam St., Ridgecrest, on the 11th and 12th; and a Petroglyph Tour led by Director Kenneth H. Robinson, at which three out-of-town museum groups will be honored guests, on the 25th.

New Members Join Civil Air Patrol, China Lake Unit

Membership of Civil Air Patrol Squadron 84, Naval Weapons Center, was augmented recently by the transfer of four new members into the unit from other CAP units.

Joining the unit was Maj. James D. Rose of 330 Robalo, Ridgecrest, a former Idaho Wing Squadron Commander, who will assume duties as the local Squadron Commandant of Cadets.

According to Maj. C. T. Ross, Squadron 84 Commander, Major Rose will be responsible for the Cadet Aerospace Education Program and other Cadet activities including summer campments.

Transferring to the unit from Squadron 56 at Fullerton, California, are CAP Senior Members Mr. and Mrs. Earle Klamt and their daughter, CAP Cadet 3rd Class Sue Ann. The Klamts will assume duties on the Squadron Administrative Staff as Information Officer and Administration Personnel Officer.

Persons interested in contributing their time and efforts to the Civil Air Patrol program are urged to contact Mr. or Mrs. Klamt at 377-3421 for further information.

The unit is in urgent need of a squadron Chaplain to provide moral and religious leadership required for Cadets.



OPEN NAVY RELIEF DRIVE—Members of NAF Enlisted Wives Club receiving tickets from ticket chairman, Security Sgt. E. J. Roy, are (l-r) Mrs. Richard Gomez and Mrs. Don Williams. These young Navy wives will open the drive by selling tickets in front of the K and R Market Saturday, May 4, between 12 noon and 4 p.m. The K and R Market will donate 50 orange stamps for each ticket sold during this four-hour period.

TV Booster Equipment Here For Short Time

Television booster equipment already installed and adjusted which is presently boosting Channel 4 television reception in the China Lake area does not belong to Naval Weapons Center.

The equipment is on temporary loan to China Lake to demonstrate to viewers the high quality reception to be expected in the near future when booster equipment is purchased from donations received from the local TV Booster Fund Drive. The final goal during the drive amounts to \$50,000.

It was also noted the loaned equipment will have to be returned to the manufacturer if sufficient funds are not acquired to purchase it for the booster station here.

Television viewers can look at Channel 4 and notice the difference in reception since the booster equipment was installed. This gives the viewer an idea of the quality of reception to be received throughout this area when the Center is finally in a position to purchase its own equipment.

A note of advice to viewers who may feel their television reception has not improved since the installation of the booster equipment. Officials here have mentioned that the reception signal is "coming in good and strong." Therefore, if reception on your set or sets seems to be poor, it is suggested that the set be realigned to coincide with the new signal. A reliable television repair shop will be able to render this service of adjustment or realignment to meet the local signal requirements.

Since the beginning of the Center Booster Fund Drive, the success on the part of contributing donors has been outstanding. The current amount of money collected, as of this writing, totals \$13,400.

For better viewing on Channel 4 remember: Support your local television Booster Fund Drive campaign and make excellent television reception a reality.

Center Providing Work Experience

(Continued from Page 3) (Available under the Youth Opportunity Campaign to youths who did not obtain employment eligibility in the Office and Science Assistant Examination. Priority for appointments under the Youth Opportunity Campaign will be given to youths from disadvantaged families. Applicants must be 16 through 21 years of age. Children of Navy Civil Service and Navy Military members are navigated from employment. A representative of the U.S. Employment Service will interview employment applicants in the main office building of Burroughs High School from 8:30 a.m. to 4:30 p.m. on Wednesday, May 1. Applicants who are unable to attend the interview should send a completed application form SF-57, which is available at any Federal Installation, to the Employment Division, Code 652, at NWC.



KARL FRANK, NEW MANAGER of the Navy Exchange Service Station took up the duties of his new job recently. Frank, a veteran exchange supervisor, is the former manager of the Bennington Plaza Barber Shop.



SECURITY MEN HONORED — R. H. Bodwell (r), Asst. Security Head, presents (l-r) a 20-year Federal Service pin to B. C. Wells, a 20-year Federal pin to A. V. Raygor and a 30-year Federal pin to R. W. Todd. Todd came to China Lake in January, 1964, from White Sands.

The Rocketeer

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DIVINE SERVICES

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—(Chapel Annex, 95 King Ave.)—Sunday, 7:30 p.m.

DEADLINES: Tuesday, 4:30 p.m. Photographs. Tuesday, 11:30 a.m. The Rocketeer receives Armed Forces Press Service material. All are official U.S. Navy photos unless otherwise identified. Printed weekly with appropriated funds in compliance with NavExOS P-35, revised July 1958. Office at Nimitz and Lauritsen. Phones: 71354, 71655, 72082.

THE LOCKER ROOM

Summer Leagues

By ED RANCK



Posted on the bulletin board at the China Lake Bowl is the annual call for participants in the summer bowling leagues. The summer leagues will be in full swing within a month, and with this in mind we thought it was high time that someone placed the summer league scheme in its proper perspective.

Bowling, as most people know, is a sport in which almost anyone can participate. The game as played by some can be a highly lucrative profession, by others it is a great way for one to vent one's frustrations on 10 inanimate objects.

To say the game is played may be incorrect. You can play a game of golf or tennis but you will never hear someone say that they played a game of bowling. Therefore there must be work involved, and any bowler can tell you that the game can get to be a chore at times.

To place the summer leagues in their proper perspective, let's compare them with, for instance, TV's "Championship Bowling." Tuning in the tube we hear: "This is Jack Drees, fans, from the Golden Sunset Lanes in Joliet, Illinois, where today Don Carter and Billy Welu vie for the \$50,000 first prize in bowling's "Tournament of Champions."

We find out prior to the match that Welu and Carter have eliminated 141 other pros to gain the finals, some of whom made only a grand or so in prize money, hardly carfare home.

During the second game Welu is struggling. Having rolled a 269 in the first game to fall 26 pins behind, it seems that he is having trouble adjusting to alley 88. Drees tells the world in a whisper, "Billy's only had six strikes on 88 in the last nine frames, so he has to make an adjustment." Welu strikes. He has made his adjustment and solved old 88.

Having come from behind to win 859-844, Welu tells the TV audience that he had to move a quarter of a board to the right on 88 before he found the range. Carter allows that he just didn't have it today, takes his \$35,000 second prize plus the Cadillac he got for that 300 in the second game, and goes home.

The scene shifts to China Lake. Drees, wondering how he got there, sits behind the mike. "Good afternoon sports fans this is Jack Drees coming to you from the China Lake Bowl in China Lake, California, where today ABC's "Wide World of Sports" brings you the eighth and ninth-place trophy roll-off in the "Women's Saturday Morning Twosome."

Mabel Armbruster and Erma Ernst, a pair of old pros who bowl for the "Alley Cats" are matched against Sally Schwartz and Betsy Freed, a pair of upstarts who bowl for the "What Knots."

Erma and Mabel start quickly, opening up a huge lead and surging ahead, 48-27, at the end of the first game. Sally makes her move in the second game. Drees announces that she has moved over an alley, and is now using the approach on number one to hit the pins on number three. In the third game the "What Knots" apply the coup de grace. Betsy gets a strike. Final score: What Knots 151, Alley Cats 148.

In the post-game interview the What Knots attribute their success to practice and Sally's ability to "read" the alleys. The Alley Cats just had an off day, besides that, Mabel had a roast in the oven that she forgot to turn off.

The summer leagues are that way. You don't have to be a champ to participate and they are always a lot of fun. Besides, they make a lot of beer distributors happy.

Woodard Cosmetics Team Champs, Win '67-'68 League Bowling Title

The Premier League schedule came to a close recently with the Woodard Cosmetics team taking the 67-68 title, as expected. Despite a late season slump the Woodard club won easily, finishing 5 games ahead of second place Tom's Place. In the final night of action, Chuck Albright led the individual bowlers with 213-242 and a 644 series.

Chuck Cutsinger rolled 205 and 248 enroute to a 621. Cutsinger's 248 was high game for the evening. Other high series included Jim Peck 235-220 for a 624; George Bowles 212-212 for 618 and Ev Yelland 214-200 and a 602 series. 200 games

included Earl Roby 227-214; Fred Dalpiaz 222; Ray Freascher 211; Gordy Zurn 220; Bob Lockwood 202 and Gordy Zurn Sr. 205.

In the Desert Handicap League, Benny Whiteside led the way with 210-231-193 for a 634 series. Craig Rae finished a close second with games of 177-212-244 for a 633. Mary Jane Clark was high in the China Lake Women's Handicap League with 541. Gloria Ascroft rolled 206-527, while Wilma Johnson had a 505. In the Women's Scratch League, Erma Erickson had high series with 499 while Royce Dowd rolled high game with 199.

Golf Club's First Masters Tourney



MASTERS ASSEMBLE — Players in the China Lake Golf Club's first Masters Tournament are (standing, l-r) Bob Hooper, Ron Vetter, Lou Renner (2nd place), Jim Smith (Champion), Don Hiles, Fred Fuller and (kneeling, l-r) Joe Dorgan, Don Johnson and Tom Short (3rd place). Smith shot a 138 in the 36-hole tourney.

Gridiron Combat Schedules Set By Navy for 1968

Officials of the U.S. Naval Academy recently announced that Navy will play six hold-over football foes and four new opponents in 1968.

The schedule features games with both sister service academies — Army and Air Force—and inter-sectional battles with Michigan, Notre Dame, and Georgia Tech.

Penn State, the opening hurdle for the second straight season, Michigan, Pitt, Notre Dame, Syracuse, and Army are the clubs returning from the 1967 schedule. On the way to its first winning season since 1963, Navy beat five of those teams last fall, losing only to the Fighting Irish.

Homecoming foe Boston College returns to the Navy schedule after a one-year absence. The other newcomers are Air Force, Virginia and Georgia Tech. They replace Rice, William & Mary, Duke and Vanderbilt.

They Navy - Air Force game will be the third in the service series, which stands at 1-1. It will be played in Chicago's Soldiers Field — the Midshipmen's first appearance there since a 1928 meeting with Notre Dame.

Navy last met Virginia in 1961 when Bill Elias, now skipper of the Midshipmen, was head coach of the Cavaliers. The Navy - Georgia Tech rivalry resumes after a two-year lull. The Engineers won a 37-16 verdict at Atlanta in 1965, the last time the two clubs met.

SCHEDULE

- Sept. 21—Penn State at University Park, Pa.
Sept. 28—Boston College (Homecoming) at Annapolis, Md.
Oct. 5—Michigan at Ann Arbor, Mich.
Oct. 12—Air Force at Chicago, Ill.
Oct. 19—Pittsburgh at Annapolis, Md.
Oct. 26—Virginia at Annapolis, Md.
Nov. 2—Notre Dame at Philadelphia, Pa.
Nov. 9—Georgia Tech at Atlanta, Ga.
Nov. 16—Syracuse at Syracuse, N.Y.
Nov. 30—Army at Philadelphia, Pa.

Buy U.S. Savings Bonds

Jim Smith Is Champ In 1st Masters Meet

J. O. "Jim" Smith became the first Masters Champion of the China Lake Golf Club Sunday, April 7, when he nosed out Lou Renner by a single stroke on the final hole of the 36-hole tournament.

Smith netted 138 in the tight finish. Tom Short carded a fine 145 for third place, and was trailed by Bob Hooper, Fred Fuller, Joe Dorgan, Ron Vetter, Don Hiles, Don Johnson and Warren Stelzmilller.

Each of the players earned the right to the symbolic



TOP MASTERS AWARDED TROPHIES — Jim Smith, the China Lake Golf Club's Masters Champion for 1967-68 is congratulated by Art Hickle, tournament chairman, following Smith's recent close victory. Lou Renner (left) placed second and Tom Short (right) was third.

Club Drops Dues For New Members

The China Lake Boat Club is in full swing for 1968. At meetings during the last few months there have been lectures on recent trailer laws; talks on the conservation of fish; fish stocking and laws; box socials; a steak fry, and various films on outdoor activities.

Plans for April through July include a fish derby and fry at Lake Isabella, Saturday and Sunday, April 27 and 28, and a trip to Mission Bay and Sea World during the Memorial Day weekend.

Over the July 4th weekend, a trip has been scheduled to a California Edison construction

area featuring camping sites, museums, and several lakes with ideal fishing locations.

Hoping to attract more people to the Boat Club and its activities, club officials recently announced dropping the standard initiation fee for a two - month period. Only annual dues will be required by a new member. This offer remains in effect until June 6.

For more information about membership and club activities, call 375-7687; 375-4143 or Ext. 73563.

The Fleet Ballistic Missile weapon system was brought from conception to operation in less than four years.

Men of Talent Picked 'Plane Capt. of Month'



AN MERRITT R. SEAMSTER of NAF has been chosen Plane Captain of the Month this April. Merritt is a specialist on the T-28 prop aircraft, and has been here since January. He works great variety into his leisure time, with abstract painting as his "number - one hobby" and shade - tree auto mechanics as his other avocation. He enlisted in the Navy in September, 1966, in his home town of Atlanta, Georgia. Merritt makes his China Lake home at 304-B Princeton with his wife Barbara Anne and son Thomas, 10 months.

AN LARRY V. GALVIN has been chosen Plane Captain of the Month of VX-5 for April. Since arriving here last spring, Larry has made sports his chief off - duty activity, and last year made the Center All-Star softball team. He also plays golf and football and runs track. AN Galvin works with A-4 and A-7 aircraft on the VX-5 line, as his first regular duty assignment. He enlisted in the Navy in his home town of Cherokee, Iowa, in January last year, after attending college for a year in Iowa Falls, at Ellsworth Junior College.



PLANNING SEARCH & RESCUE MEET — Working out scheduling for the Kern County Sheriff's Search and Rescue Conference set for the weekend of May 25 and 26 are (l-r) Bernard A. Sword, China Lake Office of Civil Defense; V. A. "Slim" Cummins, China Lake Chief of Police; Don Glennon, Kern Co. Sheriff's Deputy, Ridgecrest Substation;

E. Dal Hughes, captain of IWV Mine and Surface Rescue Team; Capt. Robert Williamson II, NWC Executive Officer; LCDr. D. W. Strey, NAF Administrative Officer; Russell O. Huse, captain of China Lake Mountain Rescue Team, and A. H. Wacker, head of Public Works' Administrative Div. Scene of the conference will be Junction Ranch.

Center Providing Area's Youngsters Work Experiences

The Naval Weapons Center will participate in the campaign to provide summer employment opportunities for youth. Many summer jobs at NWC will be filled by high school graduates and college students who have successfully competed in the Office and Science Assistant Examination. A limited number of jobs will (Continued on Page 11)

Sheriff's Meet Comes On Search and Rescue

Capt. M. R. Etheridge, NWC Commander, has announced that certain range facilities of the Center will be placed at the disposal of Charles H. Dodge, Kern County Sheriff, for the Search and Rescue Seminar to be held here May 25 and 26. The Kern County Sheriff's Department is sponsor of this sixth annual event that brings together the skills of many public service rescue groups from the entire Southern California area.

Volunteer Rescue teams, with a total of up to 200 men from San Diego, Los Angeles, San Bernardino, Riverside, Ventura, Santa Barbara, Tulare, Inyo and Kern County are expected to attend the seminar. To effectively demonstrate joint effort procedures, military personnel from NAF and the Edwards AFB Survival School will participate. The China Lake Explosive Ordnance Disposal team will instruct on procedures for handling live ordnance, which is not uncommon at the site of a downed aircraft.

Both the China Lake Mountain Rescue Team under the leadership of Russ Huse, and the Indian Wells Valley Mine and Surface Team, guided by E. Dal Hughes, will actively participate.

Other activities at China Lake supporting the logistics and administration of the seminar are the local Office of Civil Defense, and the Public Works Department.

The site of all the activities will be Junction Ranch, located in the Northeast corner of the Center range. Because of limited facilities and potential hazards, the public cannot be invited to attend, and this portion of the ranges will be closed to visitors and holders of Center Recreational Passes on the weekend of May 25-26.

Kinman Given Master Degree

Darry Kinman, electronics engineer in Code 3519, has been awarded the Master of Science in Engineering degree by UCLA on the basis of courses and research done in the Off-Campus Graduate Program at NWC.

Mr. Kinman's thesis, High Speed Varactor Wave Guide Switch, was done under the supervision of Prof. Neville Rees who was the UCLA professor in residence at China Lake last year.

After receiving his B.S. in Engineering at Fresno State in June, 1960, Kinman came directly to NWC as a Junior Professional in Code 55. He later transferred to Code 35, and is now in the Armament Control Systems Branch where he designs microwave components and subsystems.



RISING IN THE RANKS — Examinations last February resulted in advancements for these NWC enlisted men. They are (l-r) FTMC J. C. Gilbert, PH-2 Ken Stephens of the Rocketeer, HM-1 J. H. Morsette, ETR-3 T. J. Dart, CS-2 M. Swaf-

ford, HM-3 R. T. Green, SK-3 A. L. Chaix, AK-1 H. A. Orders, ETN-3 T. H. Miller, DT-3 J. F. Keitel, HM-3 R. H. Gilmore, ETN-2 J. Daugherty, AK-2 I. Weinberg, CYN-3 B. E. Perrin, HM-2 C. B. Mount and HM-3 L. Wedel.



JUNIOR NAVAL CADETS VISIT—Cadets and their officers from North Hollywood visited the Naval Weapons Center, toured ranges and facilities and reviewed elements of the Center's mission Monday, April 8. Their introduction to the range of Navy R & D included a look at "Cities Under the

Sea" provided by George Wilkins of NUWC's Hawaii Branch. The Junior Naval Cadets of America is a scouting-type organization aimed at character development, but not military preparation. The Cadets' activities are similar to those of Boy Scouts, but sea-oriented.

Center Firemen Visit Local Homes, Receive \$4100 for TV Fund Drive

In four days since starting a personal call to Center homes, NWC Firemen raised more than \$4,100 in support of the current TV Booster Fund Drive. Funds are being raised throughout the Indian Wells Valley through personal donations to obtain new transmitting and amplifying equipment for the Community Television Relay System.

Nearly one hundred men (which, incidentally, is nearly 100 per cent of the NWC Fire Department) have volunteered to visit homes on the Center during their off-duty hours. When the fire truck stops on any block, children flock around the men to see the equipment at close range. In teams of two, the firemen, in dress uniform, visit each home to ask support of the drive.

Because courtesy has been stressed as paramount, good will and a cordial atmosphere is developed in each block as firemen make their rounds.

The TV Booster Fund Drive has been extended one week, from May 4 to May 10, to permit firemen to complete person-to-person contact.

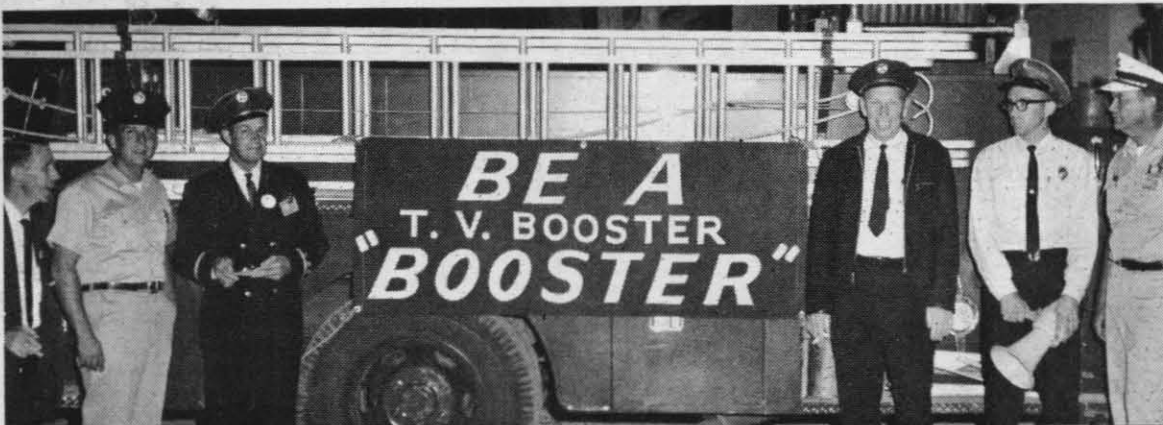
Firemen visit approximately 100 homes each evening between 5:30 and 9:00 p.m. and taper levels of activity in later evening hours so as not to interfere with children's bedtimes. Operations are directed by Chief J. R. Brust of the NWC Fire Department.

"Other groups have requested permission to sponsor activity in support of the valley-wide drive to collect \$50,000,"

said R. K. McKnight, chairman of the TV Booster Fund Committee. "The Elks will sponsor and arrange a formal dance on May 10, the closing day of the fund drive. The Cactus Squares will hold a dance on May 4, and the China Lake Bowl will sponsor a bowling tournament during May, all to benefit the Booster Fund."

McKnight went on to indicate that the Merchant's Association will promote the Booster Fund effort in the stores and businesses of Ridgecrest, in disbursing flyers, and promotional advertising. Television sales outlets, he noted, has unanimously moved to inform people and urge voluntary support. McKnight further noted that the Motel Owners Association sent forward a very sizeable check to the Booster Fund in behalf of that group. "One motel sent a check representing 5 per cent of the value of the television sets in their motel rooms," he continued, "which may be the largest single contribution to date."

Returns continue to come in by mail at a steady, slightly increasing, rate to sustain movement toward the fund drive goal of \$50,000. More than 20 per cent of the goal has been realized, with less than 1,000 contributors, (10 per cent), in posted ledger returns of the fund account. Late returns already establish that funds are available to purchase two channels of equipment, with receipts just over \$13,000 received by Wednesday morning April 24.



ONE OF MANY—One of many teams of off-duty firemen assigned to man the Naval Weapons Center Fire Stations take a brief break during an evening of collecting donations from Center residents for the local TV Booster Fund Drive. More than \$13,000 has been collected to date reaching toward

the goal of \$50,000. From left are Bob McKnight, Fund Drive chairman; Fireman John Trigg; Capt. Bill La Combe; Crew Chief Phil Kratz; Engineer Gary Brown, and Fire Chief Jack Burst, all posing for the photographer, PHAN Michael Krause, before the Fire Department's pumper truck.



NAVY WIVES GRADUATE —Recent graduates of the Navy Relief Training Course are presented certificates by Capt. M. R. Etheridge at a tea held at his home. Teacher Mrs. Jo Ann Borsic is at far right, front. Graduates are (front, l-r): Jean Dahlgren,

Mary Verich, Jean Mulligan, Joan Bustard, Joan Muncie, and Lois Lee. Back row, (l-r): Joan Ruess, Judy McCrimmon, Marie Wagner, Tess Jackson, Flo Carmody, Mary Romanum, and Betty Kirwin. Missing are June Gilbertson and Mary Taylor.



MECHANICS OF SAFETY—Security Policeman Sol Sherman inspects the rear axle and drive sprocket of the young man's bicycle while a girl waits her turn at the main gate.

Bike Safety Week will feature training and inspection programs at all local elementary schools. The bicycle mounted on the fence is an example of careless riding.

Summer School Bike Safety Week Set At All Valley Schools

Both primary and elective summer school programs have been approved for the China Lake Elementary School District for this summer by its Board of Trustees.

The summer programs are to be in operation from July 8 through August 9, 1968. The Board announces that anyone wishing to file an application for the position of teacher or student aide may obtain forms at the District Office on the Murray School campus.

Further information on the primary and elective summer school programs is to be released soon.

Children in grades 3 through 6 in the Indian Wells Valley will be given the benefit of a thorough program in bicycle safety as a part of Bike Safety Week, coming Sunday, April 28, through Saturday, May 4.

Classroom instruction will be provided by all of the Valley elementary schools, public and parochial, during the week, announced Howard Anderson, event chairman.

On Saturday, May 4, between 9 and 11 a.m., bikes will be given a mechanical safety inspection and riders will be given a riding skill test at six of the Valley school grounds — Inyokern School in Inyokern, Las Flores and James Monroe Schools in Ridgecrest; and at the Murray, Vieweg, and Desert Park Schools in China Lake.

Cyclists will be given operators' licenses upon successful completion of the classroom training and riding test. Owning a bicycle is not a requirement towards obtaining a license. The owners of bicycles will be given a written notice of any deficiencies found.

All of the schools in Indian Wells Valley will be co-operating in this program by conducting classroom training on safe bicycles and safe bicycle operation.

Law enforcement agencies are co-operating in Bike Safety Week by presenting training films at all schools in the Val-

ley. At China Lake, the Center Security Officers will license bicycles, as required by Center Regulations.

Bike Safety Week is sponsored throughout the United States by the Optimist International, an organization concerned with the welfare of youth. The Optimist Club of Ridgecrest - China Lake, Ted Edwards, President, is co-ordinating the efforts of school authorities, Parent - Teachers Associations, law enforcement agencies, Girl Scouts, Boy Scouts, and Veterans of Foreign Wars Ship 4084, headed by Capt. Fred Elliott.

The VFW conducts the "lite-a-bike" program in conjunction with the Bike Safety Week, and will have personnel at each of the six test locations to make minor repairs and apply reflective tape to the bicycles.

Western Auto, 1541 N. China Lake Blvd., will provide repair parts for bicycles during Bike Safety Week at a 10 per cent price reduction. The Automobile Club of Southern California has provided the films for the classroom training and educational handouts.

The Optimists are asking all parents of bike - age children to respond to this program by examining their children's bicycles and making necessary repairs and adjustments to insure safe operation.

Scout Expo '68 Plans Show Big Day Coming

One of the largest Boy Scout Expositions ever to be held here at Schoeffel Field is now taking form in planning, and has been set for Armed Forces Day, May 18.

The Exposition is to offer Scouts an opportunity to display their skills and to show Scouting in action, according to Exposition '68 planning committee chairman Dr. AlDean Washburn. Participating in the event will be Boy Scout, Cub Scout and Explorer units from Trona, North Edwards, Mojave, Boron, California City, Tehachapi, Kernville and Isabella.

A special feature for the Explorers and the older youngsters will be band concerts by the "Velvadeers" of West Covina, the "Rusty Pickles" from Buena Park and a local band. An accordion concert is planned for 3 p.m. on Exposition Day.

cooking, mountain climbing, fire building, backyard cubing and realistic first aid. A "Pinewood Derby" racetrack will be set up by one Cub pack for any Cubs who wish to bring their racers. There will also be a "Challenge Arena" in which any Scout can challenge another one in a particular skill. Members of the Order of the Arrow will handle refreshment booths.

Teamwork Pays

(Continued from Page 8) feature, so field tests were set up on the lava beds located in Hawaii. These antennas also might be of possible use in the very low frequency communication networks used by some of our submarines when submerged, as very low frequencies are the only way radio energy can be propagated to any depths in sea water.

The main areas of work at NWC Corona Laboratories deal with proximity fusing of guided missiles, and development of missile systems as a whole, according to A. E. Newlon, assistant laboratory director. Supporting these areas, Corona's research department seeks basic research in technology applicable to the labs development and system work.

The laboratory has in the past furnished design and production control for fuzes for all of the Navy missiles with the single exception of Polar is.

The laboratory (and its predecessor organization, the Bureau of Standards) has been in the missile system business since early World War II. One of the missiles developed by this early group saw actual service in World War II.

The present, largest and latest project in missiles at Corona is the Standard ARM (anti-radiation missile).

In 1956 a contract was given to Remington Rand to develop a thin magnetic film memory invented at Corona to the point where it could be used in a digital computer. The basic patent on thin - film memory belongs to Dr. R. L. Conger, head of the Electricity and Magnetism Division. This memory is now in use in the Univac 1107 and also in the Burroughs B8500 computers. The vacuum deposition technique of thin films of ferromagnetic material spurred wide spread research into magnetic properties of thin ferromagnetic layers. Use of this technique is highly desirable in military applications where space and weight are premium factors.

Corona Laboratories continually studies the counter-countermeasure susceptibility of missiles and associated radar — that is, guidance radars or acquisition radars. Determining the susceptibility of these missiles to countermeasures, and counter - countermeasures is a never ending job.

Basic contributions have evolved from working with very low frequencies. By very low frequencies is meant the region of 10 to 20 kilohertz. This work was originally an attempt to find a means of detecting ballistic missile launches. The idea was that ionized trails left by these missiles might have some effect in very low frequency spectrums. The work did not turn up any conclusive method. However, something else resulted from this exploration. The conventional low frequency antenna at that time occupied miles of real estate, was massive in size and priced in the tens of millions of dollars.

Some of the lab's research people got to work on the idea and finally discovered a means of getting an antenna. It was not quite as efficient as the larger antennas, but could be constructed much cheaper and easier by laying parallel conductors on the surface of the earth. This would be most effectively done over an area that has as low a dielectric constant as possible. At the time it was known that lava beds had this low dielectric constant

Micro-wave radiometry is another line of investigation which has been going on at the laboratories for a number of years. This technique utilizes the radiation of any warm body. The differences in radiation between the earth and a tank or a gun forms a contrast that can produce a picture of the area.

One can observe waterways and bridges, for instance, because their temperatures vary slightly. The equipment used is sensitive enough to pick up the differences in radio frequency radiation as a consequence of that temperature.

Another area under research is the field of non-aqueous batteries—reserve batteries which will give much higher amounts of energy per unit volume. In respect to these non-aqueous batteries the Corona Labs research department has been investigating the use of ammonia solutions in various properties with liquid ammonia. Researchers have achieved fairly large increases in battery capacity. Voltages of these batteries vary only about 10 per cent over the entire military temperature range. Actual implementation of these batteries has not been accomplished with respect to ordnance devices, however, one of their former contractors has applied the results of this work to these types of batteries for other government agencies, plus other limited commercial applications. Corona Labs has made heavy contributions in this area and they're continuing to carry on research in this fruitful field.

In charge of the non-aqueous battery research program is W. C. (Bill) Spindler of the Electrochemistry Branch, headed by Dr. C. P. Haber of the Chemistry Division.

In addition to the projects already covered, Corona Labs has a tremendous array of missile fuzes requiring continued development. Some have been through program development stages for a decade or longer, with successive improvements become necessary as speed and tactics of targets and launch aircraft increasingly make earlier designs obsolete. The lab people have a busy time trying to stay ahead of the fast-paced changes.

Commenting on the development and research of fuzes in general, Newlon said, "the people involved in this type of project at Corona Labs have a 'cradle to grave responsibility' meaning from original idea to deployment in the Fleet. Actually, they're never free of the demand from the Fleet for assistance pertaining to the fuzes even though the fuzes might have been in production for many years.

Newlon reflected, "Let's take a fuze like the Terrier, Tartar or Talos . . . there may be fuzes in use by the Fleet that were primarily designed for an earlier era, but the Na-

vy now wants these fuzes to have increased capability.

"Frequently, the lab will make studies on how to upgrade these fuzes. Sometimes, this can be done relatively simply; other times it requires a complete new concept to meet current requirements. But the entire effort devolves on the people at Corona Labs. We are here to serve the Fleet and to furnish it continually with the best equipment we know how to design."

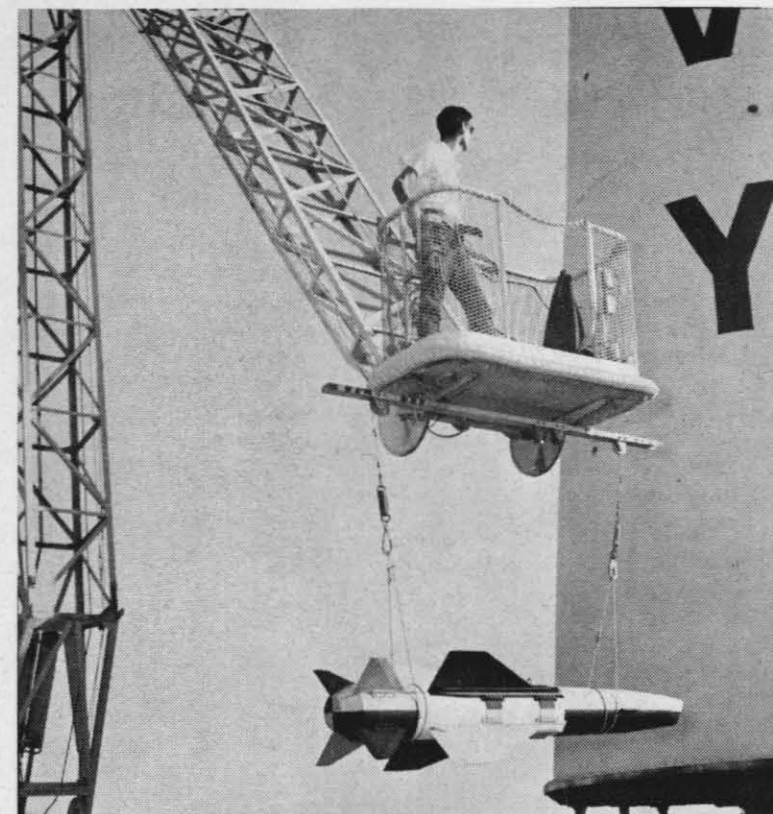
With respect to the complexity of a modern proximity fuze there may be some people who visualize the fuze as the type that goes in an artillery shell. These fuzes bear no relationship to that comparison whatsoever. The proximity fuze is a very complex device which has to take into account many and varied signals. One is the exact time to trigger the warhead. Measured in milliseconds, it has to be accomplished at exactly the right time or the warhead will be almost completely ineffective. It cannot pass the target or trigger before it gets to the target. Some of these fuzes are actually miniature radars; either very short pulse radars or ones which work on infra-red radiation.

Another device that is a portion of the fuze is a safety arming mechanism which will frequently be a very complicated electro - mechanical device. The purpose of this device is to prevent the explosion of a warhead when it is in the vicinity of friendly forces. The arming device must keep the warhead inert while the missile is in storage; has to keep it inert while it's on the aircraft; and after it's launched from the airplane until it has achieved a safe separation distance. In addition, you get safety and freedom from enemy countermeasures by holding off operation of the fuze until, perhaps, the last moment when it's approaching the target, then the fuze is turned on. The warhead, itself, would most likely have been armed sometime before.

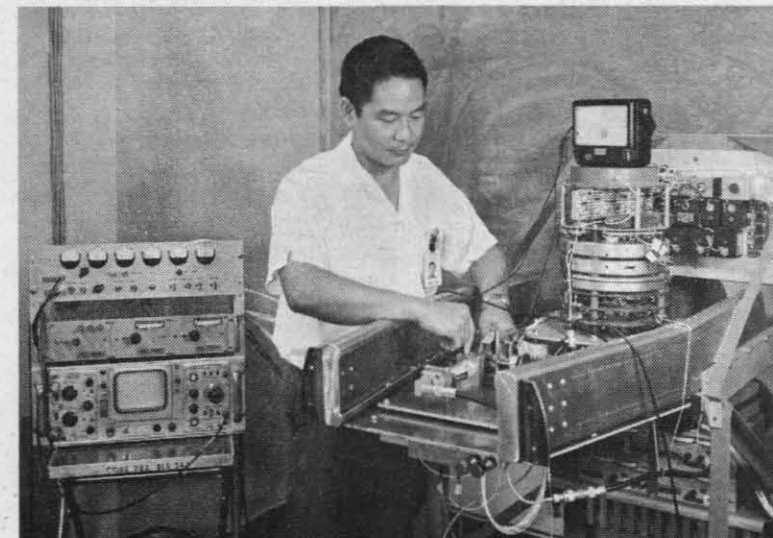
The safety and arming devices (also referred to as "S" and "A's"), are quite complicated and sophisticated mechanical devices. The missile should be able to survive a drop on the deck, for instance, with the fuze able to sense there has not been an intended launch. But it also somehow, must sense when the missile has actually been launched.

Corona Laboratories, in its historical position has been a pioneer in evolving guidance concepts and implementing those concepts. In electro-optical guidance in particular and in initial work on anti - radar guidance. In addition to the missile systems, Corona Labs, not only historically, has had an active participation in theory and application conception of guidance systems, but this work is continuing as an active part of the missile systems research at the Laboratory.

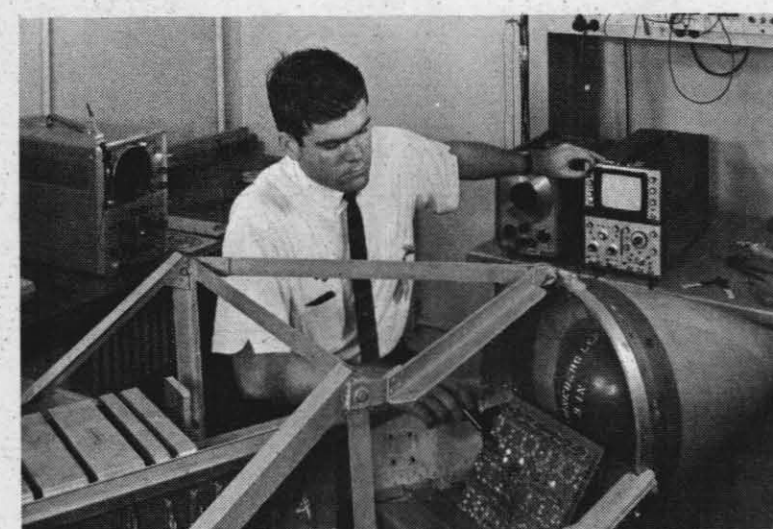
Today, Corona Laboratories are applying the skills acquired through nearly 25 years of missile development not only to the development of guidance systems for missiles of tomorrow but also to missile fuze development and supporting research.



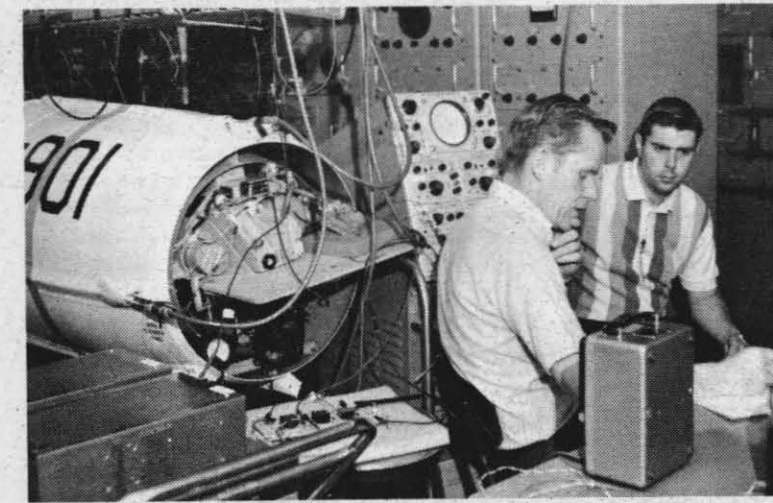
PREPARING FOR TEST—Missile mock-up being hoisted to its resting place atop the 72-foot tower. The tower can support weights of as much as 500 pounds and can withstand wind gusts up to 100 miles per hour.



MISSILE SEEKER — A prototype missile seeker is undergoing a sensitivity evaluation for an advanced ARM program in the Ordnance Div. at the labs by W. Haw.



CAPTIVE FLIGHT — An advanced automatic gain control (AGC) system for the super-seeker related to PRASE is being prepared in the Guidance Division at NWC Corona Labs for a captive flight test by R. D. Bliss.



MISSILE CHECK TEST —Donald P. Nickeson (l), and Martin J. Zvada, of the Missile Countermeasure Division (Code 74) at NWC Corona Labs, perform a simulated flight of a TALOS missile. A closed-loop test installation involves an analog computer to determine the vulnerability of Navy missiles to possible enemy countermeasures.

Labs Aim: Professionalism

(Continued from Page 7)
ared in their areas, yet all working toward developing Navy weapons. On the surface some of the research would appear to have very little relation to this. But a great variety of information is needed to build a modern missile weapon.

Corona Laboratories has a particularly good location relative to the educational field. It is surrounded by universities of stature, giving the people an excellent opportunity to pursue advanced degrees. Those who have not achieved their degrees also have a good chance to continue their education. Thus the laboratories have people on board who are achievers. A good example of this determination is that many of them have come up with a great number of patents. Among these are some of the basic patents of the Walleye weapon, AIM point correlator, and many others.

With this sort of research, Commander Forbis feels that Corona Laboratories fits quite well into the "Center of Excellence" concept established with the Naval Weapons Center Headquarters at China Lake.

The Commander stated, "We do a great deal of basic research and basic investigations into types of weapons that fit very nicely into the air picture. Certainly our work has been primarily with the initial stages of development rather than carrying development further down stream as has been done at China Lake. As a result many of the innovations which have started here have ended up in weapons where development was completed at China Lake. This I would expect to continue as the years go along."

Commander Forbis' role is to furnish support to the technical departments. He likens the technical departments as squadrons aboard an aircraft carrier. As Executive Officer he is concerned with the ship's functions of in this case, the laboratories functions—in support of the operating unit or the technical departments.

Another Naval officer is assigned to the laboratories. Lieutenant Jack W. Eyer, a naval aviator, is a project officer working in the Standard ARM program. He had previously worked with the weapons development group, headed by Fred Alpers. Lieutenant Eyer was in an A4 squadron, and now flies some of the test flights for Corona Labs at China Lake, Pt. Mugu, White Sands Missile Range, and other areas.

In addition, an Air Force liaison officer, Lt. Col. Dick Markel, is assigned to Corona and works with the Standard ARM group since the Standard ARM weapon is also utilized by the Air Force.

The three Navy officers find themselves, at times, having some difficulty in spreading themselves around to add "the saltwater flavor" to the various scientific efforts. However, the advantages of having regular Navy officers head the laboratory are indeed apparent. The civilian community finds it has many operational questions that naval officers have the answers for.

It takes money (and plenty of it) to operate an organization the size of NWC Corona Laboratories. D. J. Morrison, Head, Central Staff, gave an idea of the financial planning involved regarding employment of scientists, engineers, technicians and others. Corona Labs is one of two laboratories operating under the Navy Industrial Fund which differs from all of the others in the manner of their funding and accounting.

The basic aspect of this type of financial operation is that the laboratory acts as a contractor to its "customers" who are also its project managers. It's a standard double-entry bookkeeping system in which costs to each customer are charged to the program which is assigned.

This is a unique system to identify the actual account of weapon and weapon project developments in a regular commercial type costing system.

This was an outgrowth of recommendations of the first Hoover Commission and was legislated in August, 1949.

Current Navy plans project a conversion of all of the other research and development laboratories to this system as soon as necessary funding can be provided. Each laboratory, according to its needs, is provided with funds similar to the capital funds which a corporation must set up to do business.

The laboratory is under the Naval Materiel Command. Its technical direction is exercised through the Director of Naval Laboratories and the NWC Commander. Approximately 85 per cent of the effort is in support of the weapons programs of the Naval Air Systems Command. Its next largest effort is in support of the Naval Ordnance Systems Command.

In addition to supporting its own scientific work, the Corona Laboratories have the additional responsibility to provide all financial and other support services to a tenant activity known as the Fleet Missile Systems Analysis Evaluation Group. This group of 400 technical people is a cost center in the operation of Corona's financial system, but it comprises a burden of about one-third of the support organization in maintaining all of the services which it requires.

During 1968, the laboratory plans to perform 1,074 man years of work in the lab areas. This will involve a payroll of better than 12 million dollars and the total effort, including equipment and supplies will total in excess of \$14 million. This is only a third of the laboratories \$45 million program for the year. The other \$30 million will be contracted out to industry to support the development, production, and design efforts which Corona scientists conceive.

The in-house effort of the laboratory is directed principally at the more creative aspects of research and development. Through experimental tests and bread-board devices the basic systems designs are provided in order to most effectively guide, and direct the defense contractors in the work they do.

The ratio of external effort to internal work in the labor-



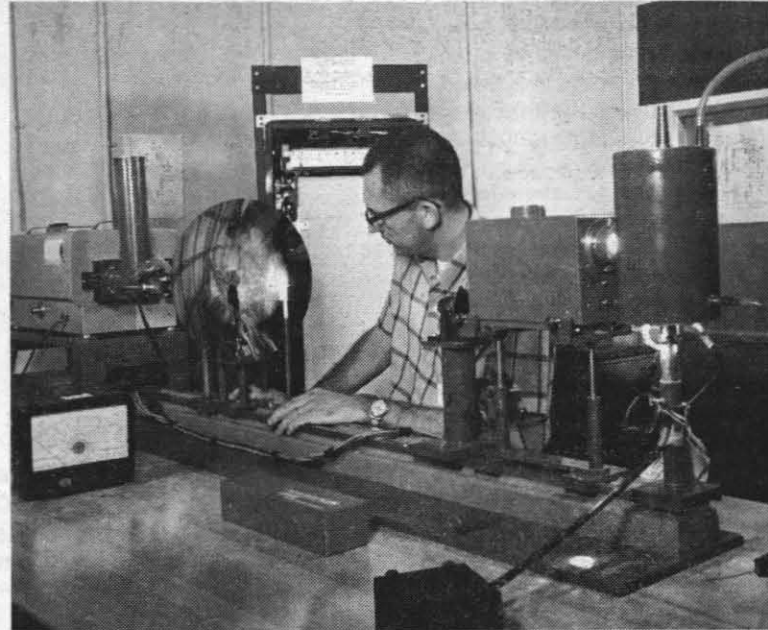
AERIAL VIEW — The main distinguishing feature, from the air at least, is the rather imposing lake situated in the center of the Corona Labs complex complete with Spanish-styled boat house presently used as a club. The new radio fuze model range, largest building seen (lower left) is now complete. The mass of buildings (lower right) are the main NWC Corona Labs complex. Structures in upper portion of picture belong to the California Rehabilitation Center. Entrance road leads to main gate.

atories is a continuing and growing matter of concern because it is desirable to have something in the order of a one-to-one ratio of external-internal effort. With too low a level of in-house effort the major occupation becomes writing and administering contracts and you lose in advanced technical competence. This is an essential element in the laboratory's work, particularly when scientific and independent exploratory development comes with essentially free decision as to how work will be organized and directed, and latitude in the type and kinds of work that will be explored. This incentive to the scientific people allows them to stretch their imaginations and have the funds to explore and establish the merit of their creative ideas.

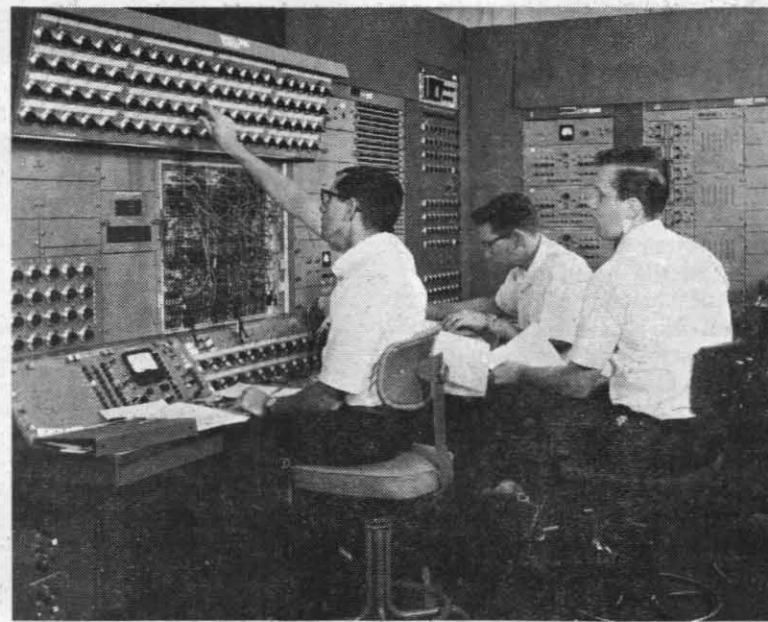
Some of the programs at Corona are jointly sponsored by the Army, Navy and Air Force. Essential tasks are conducted in support of NASA, DASA, ONR, CCA and a great deal of work is interchanged between various laboratories to exploit the specialized potentials that each of them enjoys in either tests or some other aspects of research and development.

The laboratory talks to its customers in terms of what it will cost to have an engineering or scientific specialist perform one man-year of effort. Naturally, all of technical publishing, printing, financial and housekeeping functions are treated as overhead burden and allocated proportionally to these man-years of direct work. In this way a customer may be told that his job is supported at a certain number of man-years of effort — this is direct effort and the cost

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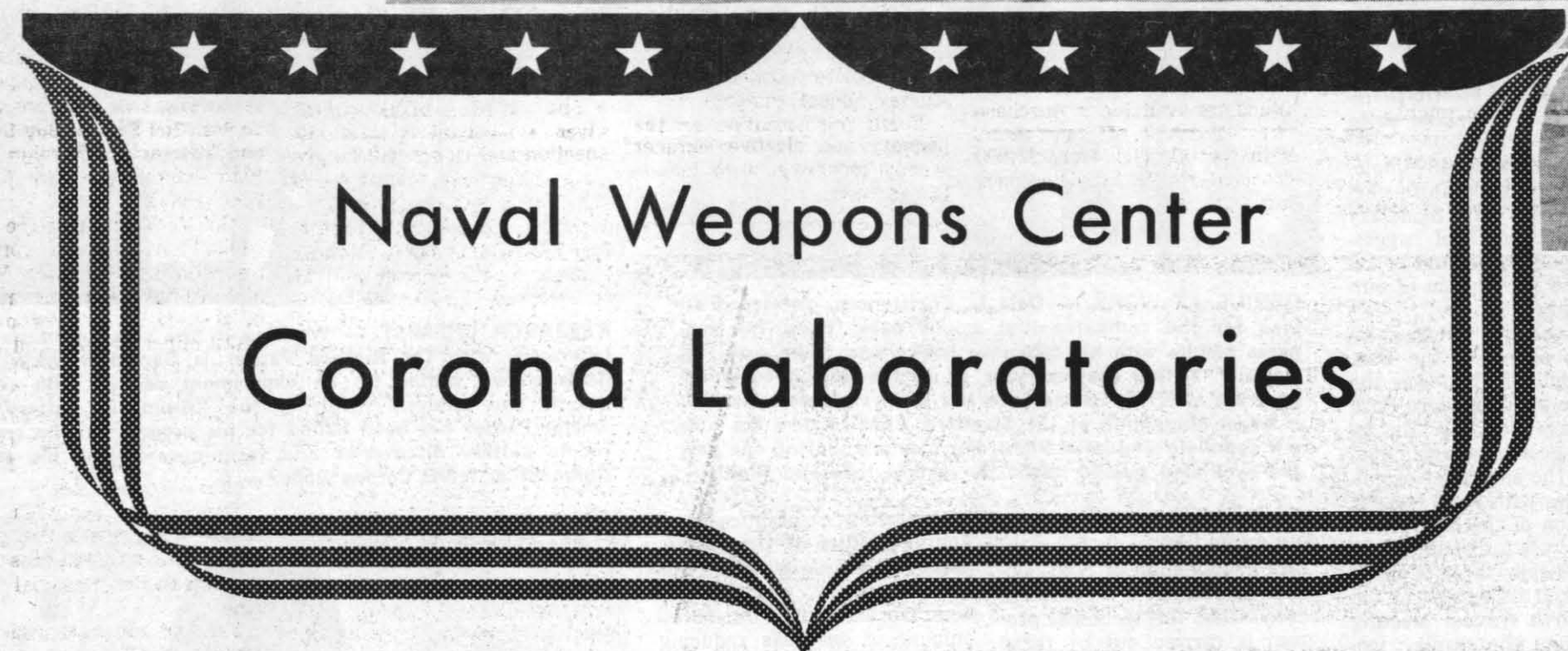
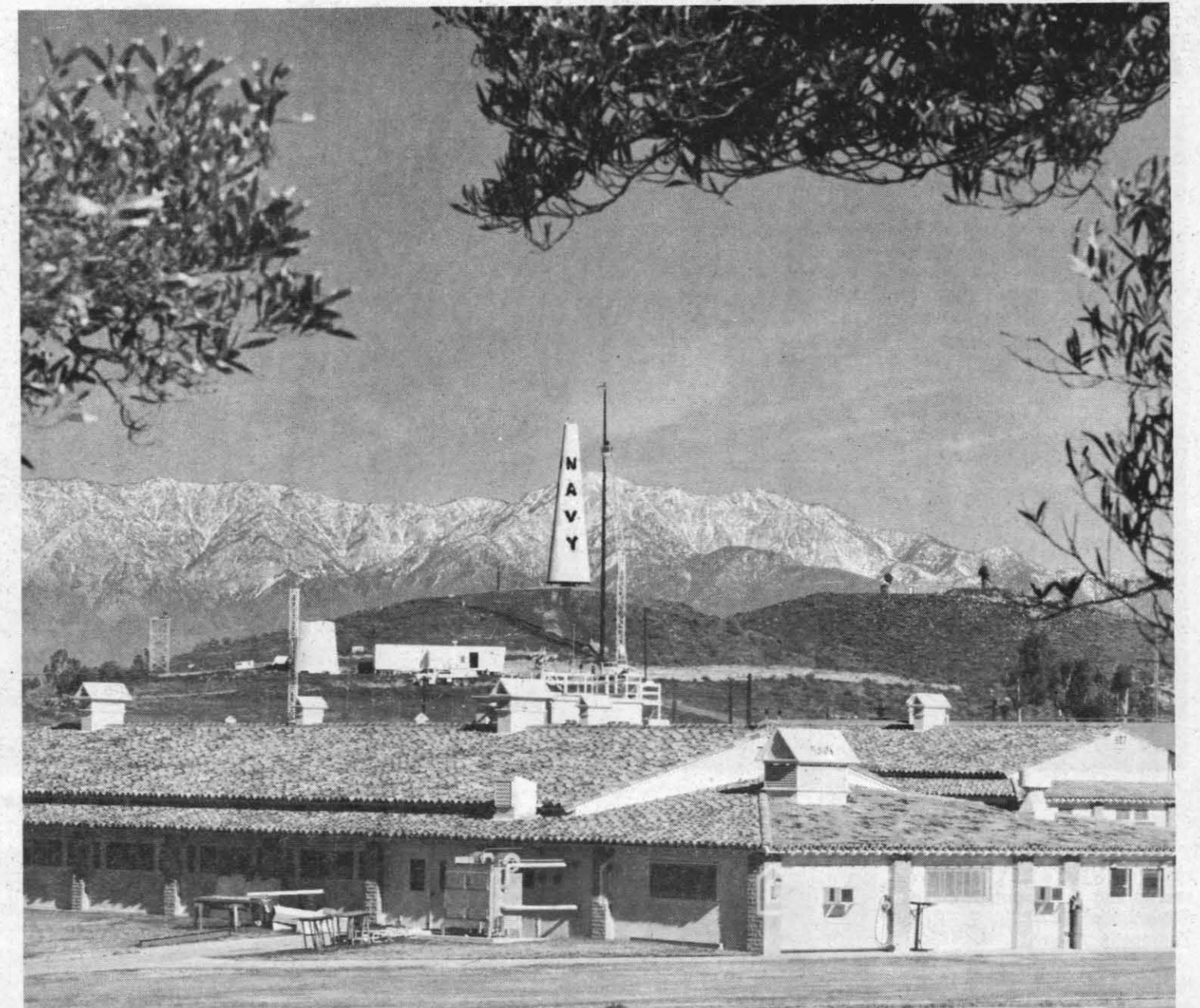
CHECK AND DOUBLE CHECK — Dr. H. H. Caspers observes the fluorescence of europium trifluoride using a half-meter Jarrel-Ash monochromometer in the Research Department at NWC Corona Laboratories.



ANALOG COMPUTER — A section of NWC Corona Laboratories analog computer facility where missile flights are simulated for navigation computer design. Handling the problem are J. R. Oliver (l), mathematician N. B. Wilson, and a contractor's representative.



SPANISH STYLED STRUCTURES—Resembling a college campus the NWC Corona Laboratories scientific, technical and support personnel find the area a pleasant place to work. Surrounded by scenic mountains and over-shadowed by the 72-ft. rotatable tower (background), Corona Laboratories carries out its mission of research and development.



Research and Development, A Major Role of NWC Corona Laboratories

BY MILT SHEELY AND GLENN I. VORAN

Not too long ago Corona Laboratories became a very important part of the Naval Weapons Center. So it seemed like a good idea to spend a day or two making a first hand tour of this research and development facility to meet with a few of the people concerned with the research contributions being made to the Navy and to our Country.

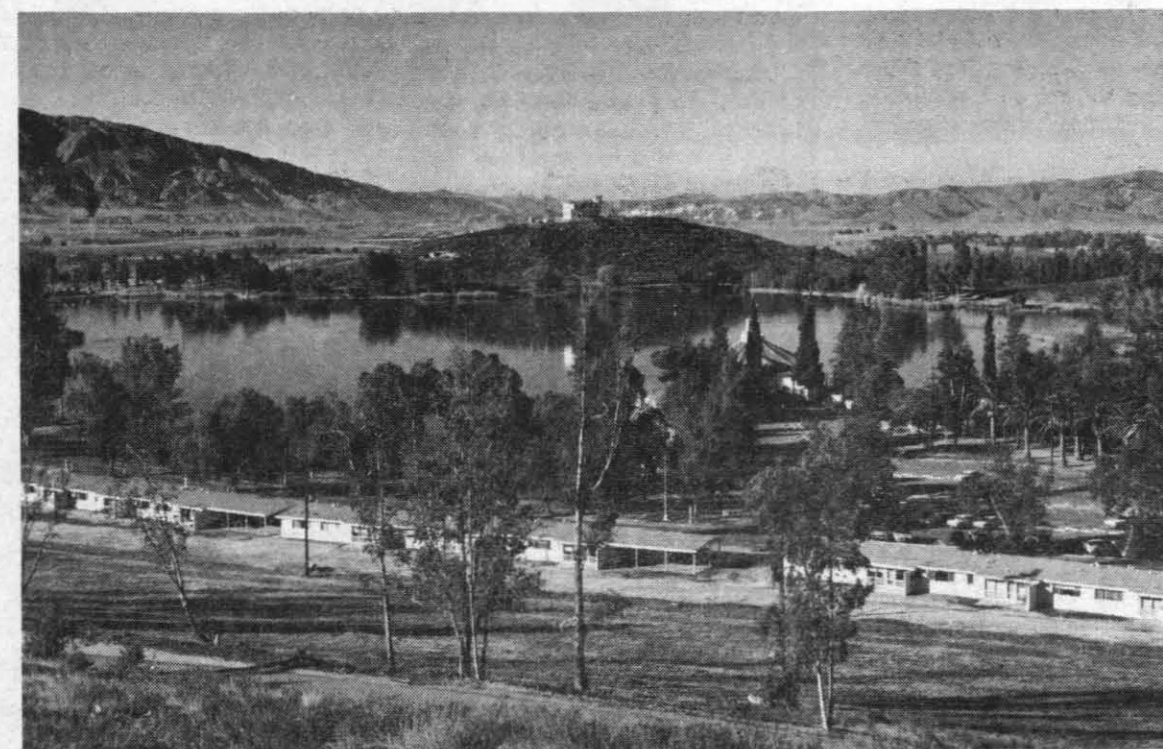
This major element of the Naval Weapons Center is located some 50 miles east of Los Angeles and about 120 miles south of China Lake.

Formerly known as the Naval Ordnance Laboratory, Corona (NOLC), the laboratories are engaged in a program of research and engineering that is related almost exclusively to the development of Navy guided missiles.

Furthermore, the Corona Laboratories represents a high concentration of talent within the Department of Defense. Of a total staff of 1000, more than 400 are professional engineers and scientists (primarily electronics engineers and physicists). An addition 175 are highly skilled technicians.

The activities and outstanding accomplishments at NWC Corona Labs do not vary too much from those activities that take place at China Lake. It is true that the Corona Community is not on as large a scale as China Lake, but this does not seem to lessen the vigor and endeavors of its people.

For instance, one person receiving distinction is Frederick C. Alpers for his scientific efforts on the Walleye job. (Continued on Page 6)



SCENIC NWC CORONA LABS — Buildings in foreground house the dispensary and other assorted laboratories and facilities looking across the lake directly at "Hill B" where electronics engineers run fuze antenna patterns and perform maintenance. "Hill B" also houses one polar and two rectangular plotters. The Norconia Club and surrounding recreation area is operated by the Recreation Department at Corona.

Accomplishments Set NWC Corona Among Best In Nation



CAPTAIN R. L. WESSEL
Commanding Officer



DR. F. S. ATCHISON
Technical Director



COMMANDER R. E. FORBIS
Executive Officer

(Continued from Page 5)
received NWC's highest research and development award (November 1967), the L. T. E. Thompson Award.

A dedicated research scientist, Dr. Richard E. Panzer presented a paper, "Evaluation of Cathode Matrices in Liquid Ammonia Cells," last October. He has been working on various phases of electro-chemistry in liquid ammonia since 1964.

A ceremony saw 45 employees at Corona Laboratories being presented with monetary awards, for beneficial suggestions; inventions related to research; and recognition of outstanding work.

Quite recently, another facility was added to the Center's capabilities. This was the completion of the modern Fuze Model Range Building. The facility will permit accurate simulation of the encounter of guided missiles with their targets, at a fraction of the cost of the field tests, when instrumented.

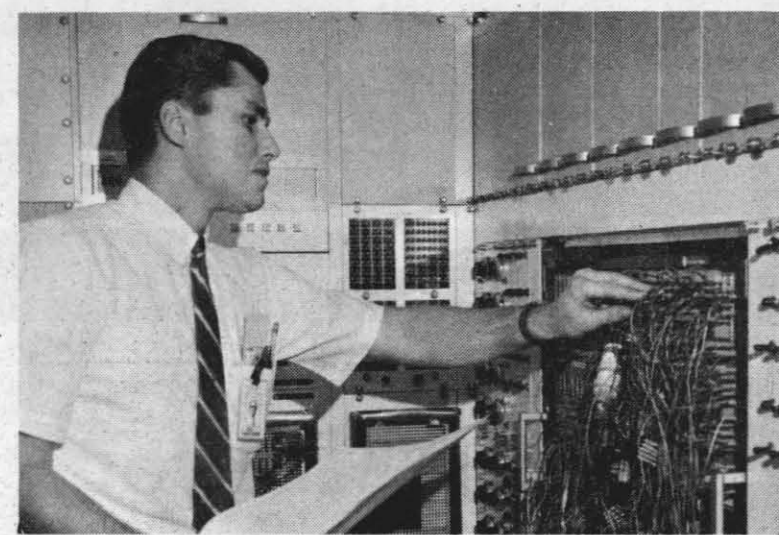
In the display area, Corona Labs entered its exhibit at the AIAA Fourth Annual Meeting in Anaheim. The display featured solar flare propagation and its effect on very low frequency communications — the display was constructed by the Illustration Branch at the Laboratories, headed by Jean Haist.

Last November, 100 Firemen representing various Naval activities gathered at Corona to compare notes and tour the facilities during their three day meet.

Another day in the life of the Corona community saw 26 senior industrial engineering students from California State Polytechnic College at Pomona being briefed at the laboratories by Dale L. Christensen (Code 4251) on analog computers.

Corona wives also make it a point to consider their role a mighty important one. One hundred eighty of the fairer sex gathered last Fall at the Norconian Club for luncheon, and learned new tricks in decorating items for the home while there.

The impressive accomplishments for Corona Laboratories



GENIUS AT WORK — Dale L. Christensen, developed an idea for the computer that would work. Here, he compares results with his computer hook-up to make sure "all is well." Within the last year or so the analog computer program at NWC Corona Labs has been expanded. Results: a larger simulation of the Standard ARM to give the missile complete simulated flight. For example, during one day, the simulated missile might fly several thousand flights.

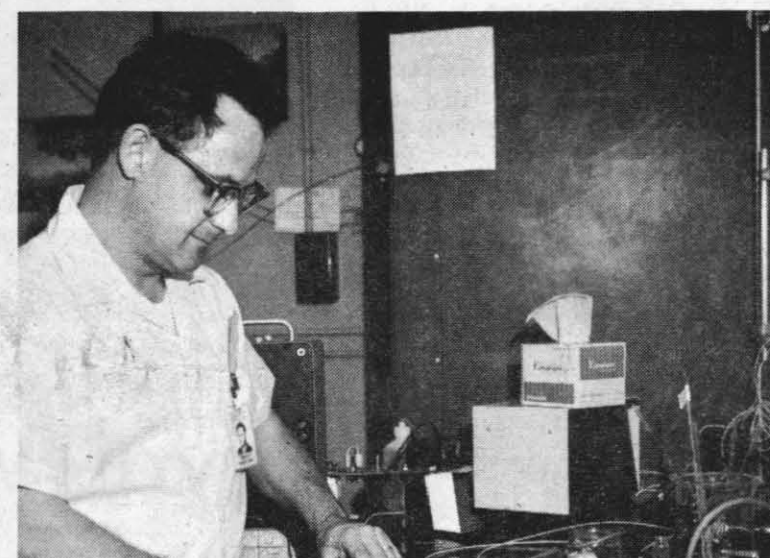
ies recorded by its people goes on and on.

An examination of NWC Corona Laboratories' operation reveals that the technical program is carried out by three departments (Fuze, Missile Systems, and Research) and includes work in six major areas: missile fuze development, missile systems development, guidance systems, counter-counter measures, telemetry, and research in new materials and techniques that have potential military application.

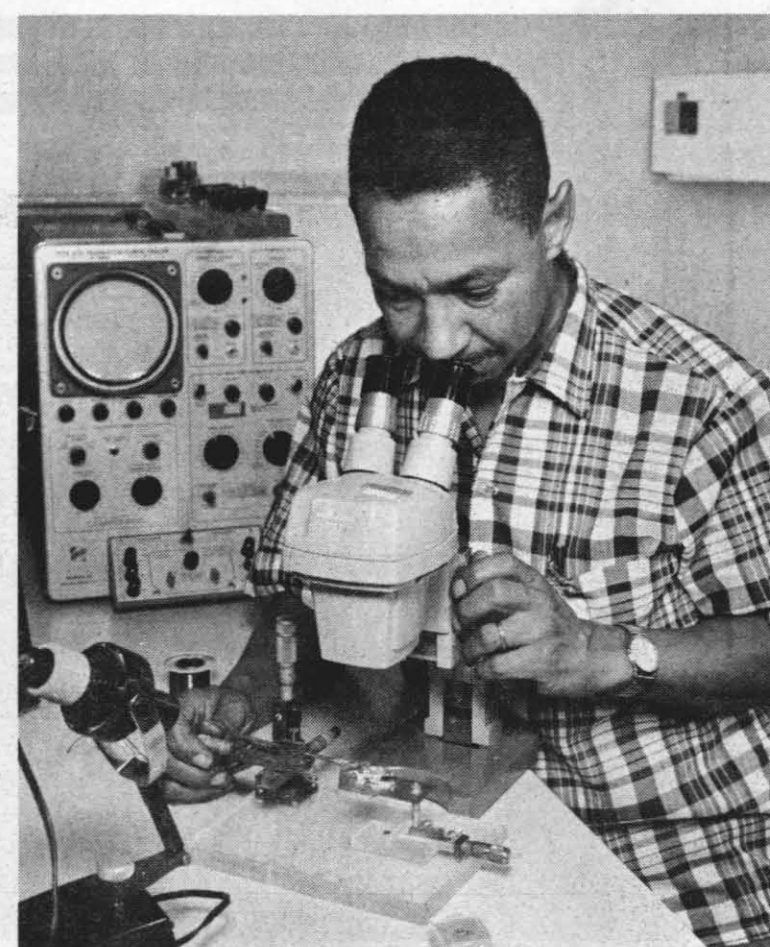
Best known within the Navy for its work in proximity fuzing, Corona is currently involved in research and development on fuzes for the Terrier, Tartar, Talos, Sidewinder, Standard Missile, Sparrow III, Bullpup, Shrike, Walleye Phoenix Standard ARM, Chaparral, and Condor missiles.

In the missile systems area, Corona has been assigned technical responsibility for the development of a new major attack missile, Standard ARM, and is engaged in the development of a family of new missile weapons.

Supporting this systems effort is work on advanced microwave and electro-optical guidance techniques that will provide a significant extension



RESEARCH CHEMIST — Working in the same chemistry laboratory with Dr. Richard Panzer is Gerald D. McWilliams shown setting up an experiment dealing with research and analysis involving the "Ammonia Battery." Doctor Panzer has been hailed for his progress in the ammonia battery discoveries and techniques during his assignment at NWC Corona Labs.



REPLACING A LEAD — Robert W. Yancey of Components and Circuits Branch is replacing a lead in an integrated circuit video amplifier of a microwave radiometer for use in a future guidance system.

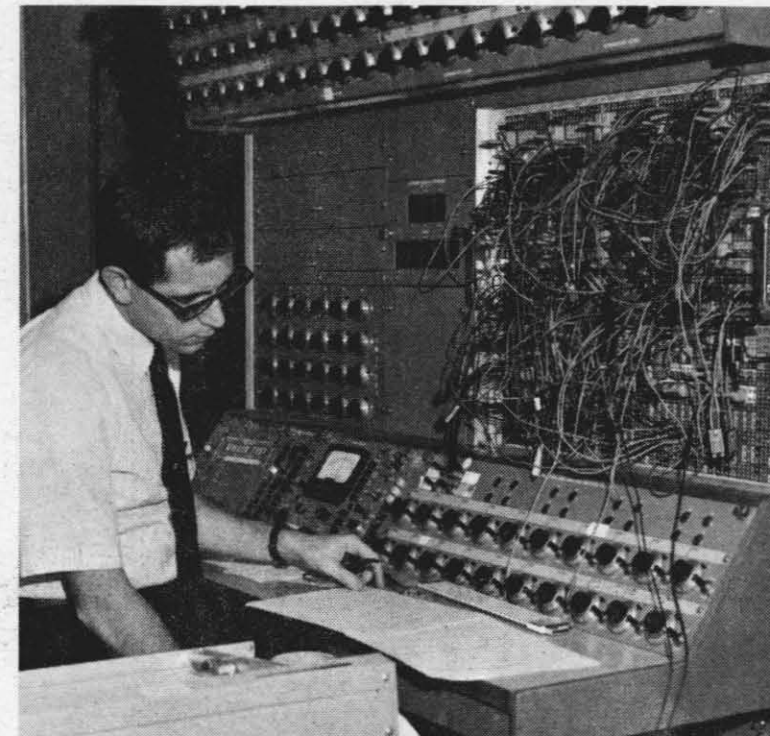
in operating capabilities. Continuing studies of the susceptibility of missile guidance systems to enemy countermeasures are leading to the development of methods reducing such susceptibility.

In the field of telemetry, Corona is responsible for the design, development, and evaluation of data-handling techniques and instrumentation for almost all Navy missiles.

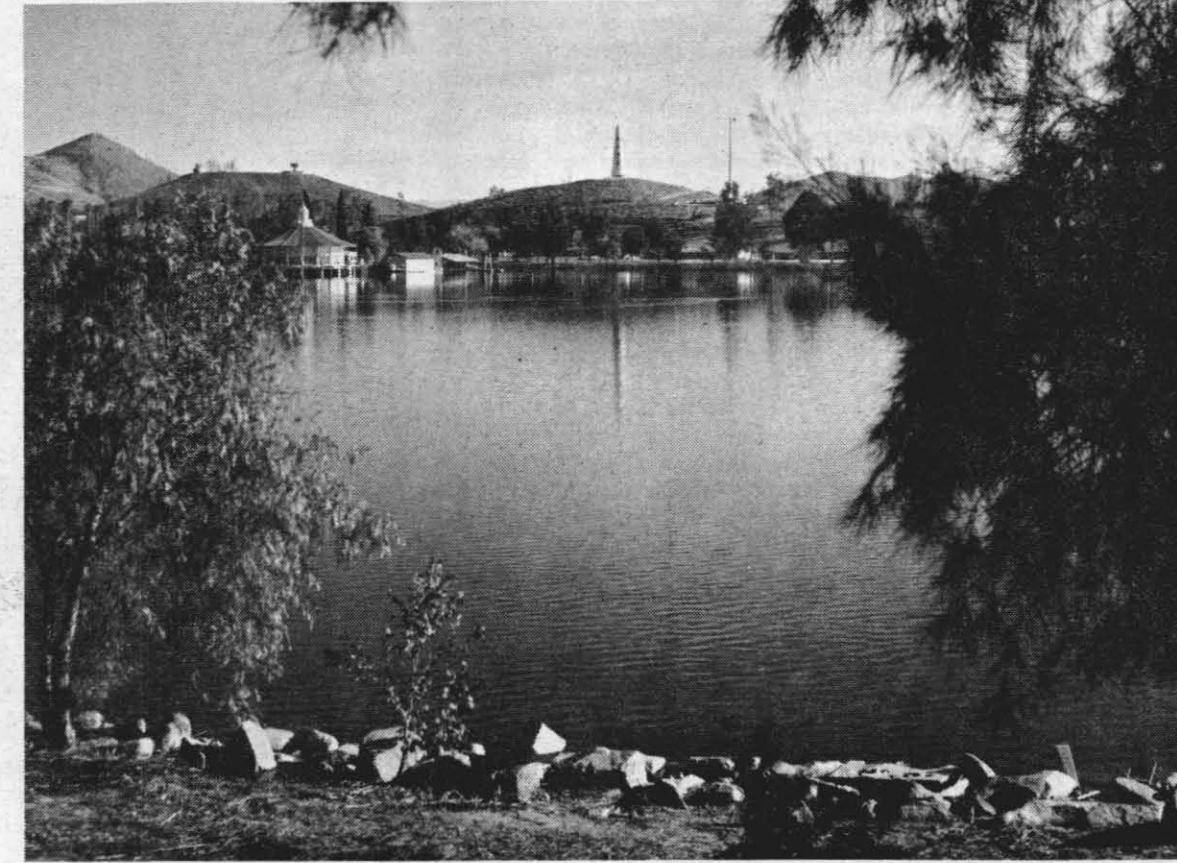
The research program includes a variety of highly specialized investigations in the broad areas of electricity and magnetism, infrared, chemistry and electronics.

Corona Laboratories is headed by a Navy Commanding Officer, Captain R. L. Wessel. Dr. F. Stanley Atchison, Laboratory Director, has held this position since 1955. As one of the scientists sent here when it was first established as a research activity of the National Bureau of Standards, Dr. Atchison is thoroughly familiar with the work and personalities of the laboratory's scientists.

Captain Wessel officially took command of NWC Corona Laboratories on December 6, 1967. His previous assignment was Officer-in-Charge of the Livermore Division, Re-



MATHEMATICS EXPERT — Joe R. Oliver, mathematician expert at NWC Corona Labs looks for a guidance scheme for a missile during one of his trajectory analysis studies conducted in the analog computer area.



FROM THE OTHER SIDE OF THE LAKE — Loaded with fish and topped with a variety of duck, this scenic photo shows NWC Corona Labs on the other side of the lake. The Norconian Club (l) is used for various activities and houses boat docks underneath the structure. Noted, dead center, the VHF/UHF Test Facility which makes use of a rotatable 72-foot solid-foam polyurethane tower mounted on a naval gun mount.

PHOTOGRAPHS BY PHC JERRY A. WILLIAMS and NWC Corona Photo Lab

search and Development Group, Field Support Agency at Lawrence Radiation Laboratory, Livermore, California.

Captain Wessel was born in Fresno, California, in 1919. He was graduated from the Engineering School, University of California in 1941 and also attended Harvard University and Massachusetts Institute of Technology.

He entered the Navy in 1941, and was commissioned in July, 1942. During World War II, he served in motor torpedo boats in the South Pacific, at Guadalcanal; in the Philippine campaigns, and in the Southern France campaign.

The Corona Laboratories Commanding Officer has served aboard heavy cruisers USS Toledo and USS Rochester, and destroyers USS N. K. Perry, USS F. E. Evans, and USS Shields.

Other assignments included Research and Development Surface Fire Control Systems, Bureau of Naval Ordnance; Technical Training Group, Armed Forces Special Weapons Project, Albuquerque; and Air and Surface Weapons Applications, Naval Ordnance Laboratories, White Oak.

An interview with Commander Roy E. Forbis, Executive Officer, revealed some interesting notes about his personal feelings and his attachment to his role at the laboratories.

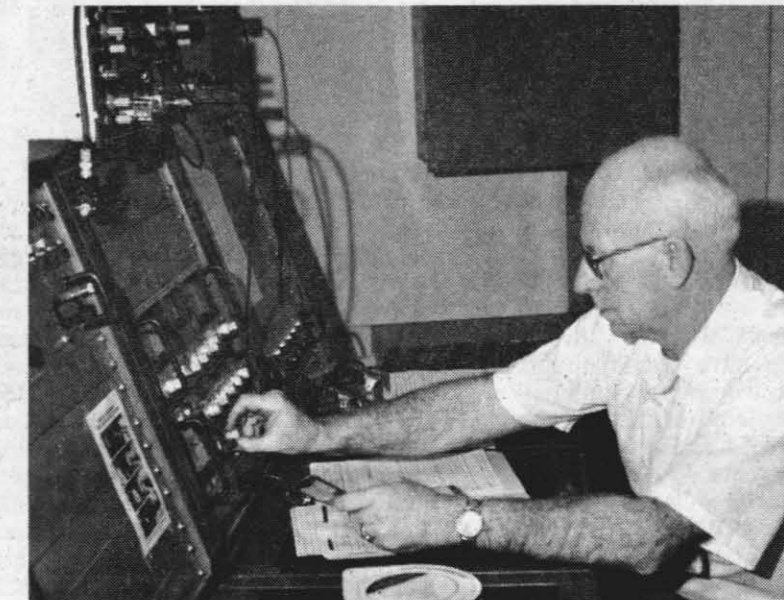
"Duty is a real experience here for a Naval Officer," he commented. The Commander has been assigned at Corona for almost two years now. When he first reported, he recalls it was like reporting to a professor of a Naval science campus. All the people seem to be in pursuit of various intellectual-type activities doing research in their various fields particularly engrossed in their own programs and abounding with enthusiasm.

The Commander had previously served in strictly military type commands and the change here is one reason he enjoys his assignment at Corona.

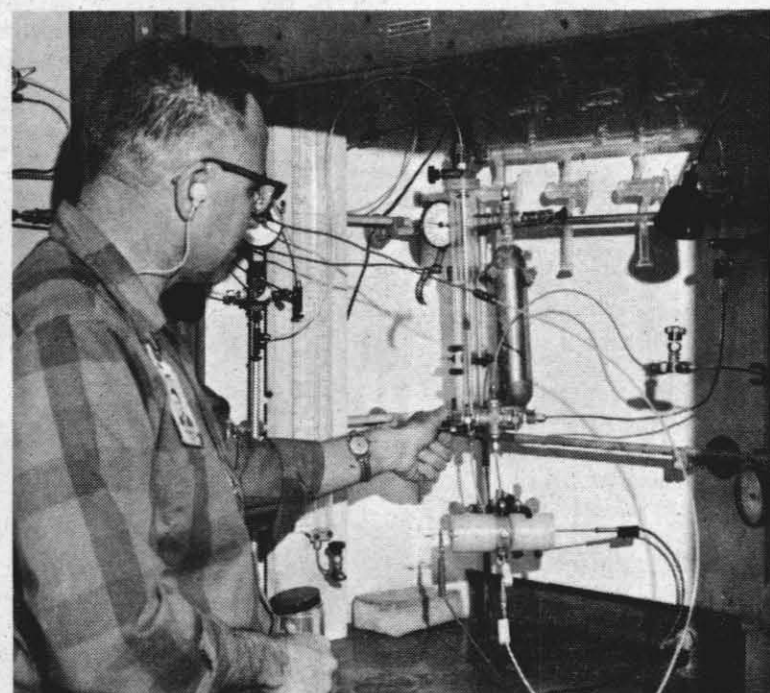
The laboratory works in many areas of research and development, it was related by Commander Forbis. There are many programs somewhat sep-



NEW BRANCH ALSO IMPORTANT — The Mechanical Engineering Branch of the NWC Corona Labs Engineering Division (Code 574), was recently established as a new branch. Edwin W. T. Des Marets, (l) mechanical engineer, coordinates a design project with Florence A. Lessman, engineering draftsman, on a phase of work required for the production of test equipment, or development of models required for test purposes.



READY FOR TESTING — O. Lynn La Berdeaux, seated at the "335 Shaker" console makes adjustments to test a Standard ARM electronics assembly. Berdeaux is an Environmental Laboratory Test Engineer at Corona Labs.



DEDICATED SCIENTIST — Dr. Richard E. Panzer has been working on various phases of electro-chemistry in liquid ammonia since 1964. Last October, he presented his paper, "Evaluation of Cathode Matrices in Liquid Ammonia Cells."



PROFESSIONAL AT WORK — Building models is one way of passing time for some people, but for Elwood S. Neuman of the NWC Corona Laboratories Electronic Hobby Shop, it takes an electronics technician's know-how to assemble "stacks" including its complete circuit for use in a missile.

(Continued on Page 8)