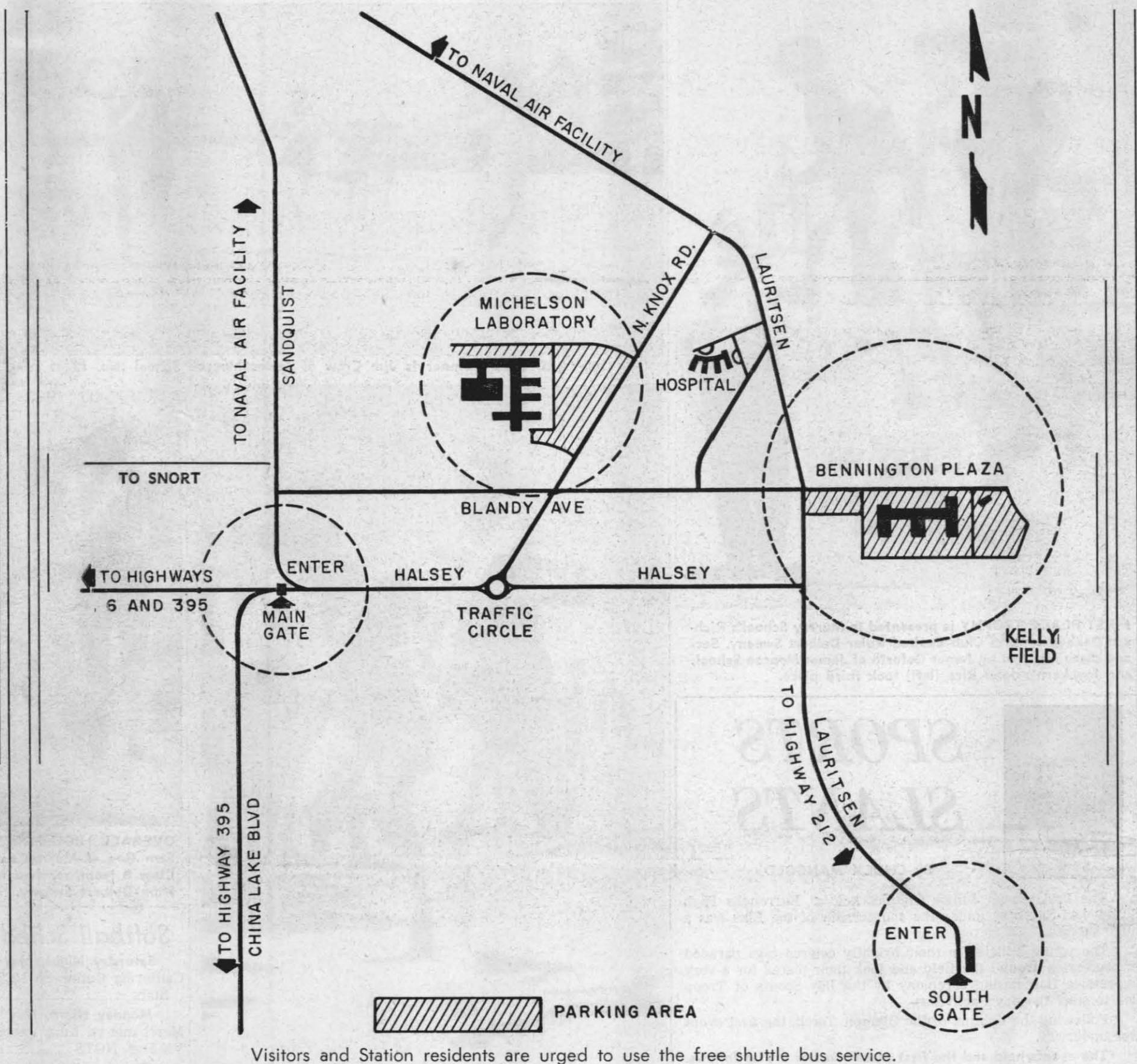


Your Guide to Armed Forces Day Events



SCHEDULE OF ACTIVITIES

9:00 a.m. - 4:00 p.m.	Gates open to public
9:00 a.m.	Static displays of aircraft and equipment on view (NAF).
9:15 a.m.	Burroughs High School Band to present Armed Forces Day concert (NAF).
10:00 a.m.	Parachute Jumping Demonstrations by China Lake "Skydivers" (NAF).
10:30 a.m.	Drone Demonstrations, using the QF-9 (NAF).
10:45 a.m.	Navy Aircraft to perform High-Speed Fly-By (NAF).
11:00 a.m.	Firefighting and Helicopter Rescue Demonstration (NAF).
12:30 p.m.	Naval Air Facility Closed to Public.
10:00 a.m. - 2:00 p.m.	Movies at Station Theater (Bennington Plaza).
12:30 p.m.	Selected Areas of Michelson Laboratory open to public with displays. SNORT area open to public with displays, track sleds and camera facilities.
1:00 p.m.	SNORT movie every half hour until 3:30 p.m.
2:30 p.m.	SNORT Demonstration firing.
4:00 p.m.	Michelson Laboratory, SNORT area and Station closed to public.

Famed Michelson Laboratory Shows Special Exhibits

As the Navy's largest permanent center for weapons research and development, NOTS provides Armed Forces Day visitors with a special array of displays and exhibits at Michelson Laboratory.

They will be able to view limited areas of the huge laboratory, which will be open from 12:30 to 4 p.m.

"Twenty Years of Progress," a weapons display designed and constructed for the visit of the late President John F. Kennedy last June, may be seen with exhibits of LASER work conducted here.

IBM computers, Analog Computers, a spacemets display, a closed-circuit television demonstration, a Sidewinder display, Data Readers, Meteorology display, Environmental Test Laboratory will be open for public viewing in addition to numerous other exhibits.

Museum Open

The Maturango Museum will be open tomorrow to greet visitors from 10 a.m. to 5 p.m. Cold drinks will be on sale for 10 cents each.

ARMED FORCES DAY BUS SCHEDULE

Station bus transportation has been provided between key areas on the Station during your visit. It is recommended that private cars be parked in assigned lots (see map), and busses utilized for transportation needs.

Busses

8:30 - 10:30	Small bus shuttle between Main Gate and Bennington Plaza via main entrance Michelson Laboratory both ways.
9:00 - 10:30	Six busses shuttle between Bennington Plaza and NAF.
10:30 - Noon	Seven busses shuttle between Bennington Plaza and NAF via main entrance Michelson Laboratory both ways.
Noon - 12:30	Four busses shuttle between Bennington Plaza and Snort via main entrance Michelson Laboratory.
12:30 - 4:00	Seven busses shuttle between Bennington Plaza and Snort via main entrance Michelson Laboratory.

From _____

TO _____

PLACE STAMP HERE

Open House at NOTS - Armed Forces Day WELCOME ABOARD!

Special Four-Page Supplement on NOTS Pasadena Armed Forces Day Pages 5 thru 8.



Vol. XIX, No. 19 Naval Ordnance Test Station, China Lake, California Fri., May 15, 1964

Navy Relief Fund Drive Under Way

The Navy Relief Society's annual call for contributions, dedicated to rendering aid in times of need to Navy and Marine Corps personnel, moves into its third week of action on Station next week.

Cdr. Robert C. Fenning, Senior Chaplain (Code 111) is coordinator for this specific drive. Key representatives in each military command unit and civilian departments have been appointed.

Remember June 5

The current campaign will continue through June 6, with the preceding evening of June 5 being the "big one" here. At 4:30 p.m. on that Friday, a cart filled with scores of gifts donated by Ridgecrest merchants will be distributed to lucky ticket holders in front of the Commissary. Ticket donations are 50 cents each or three for one dollar.

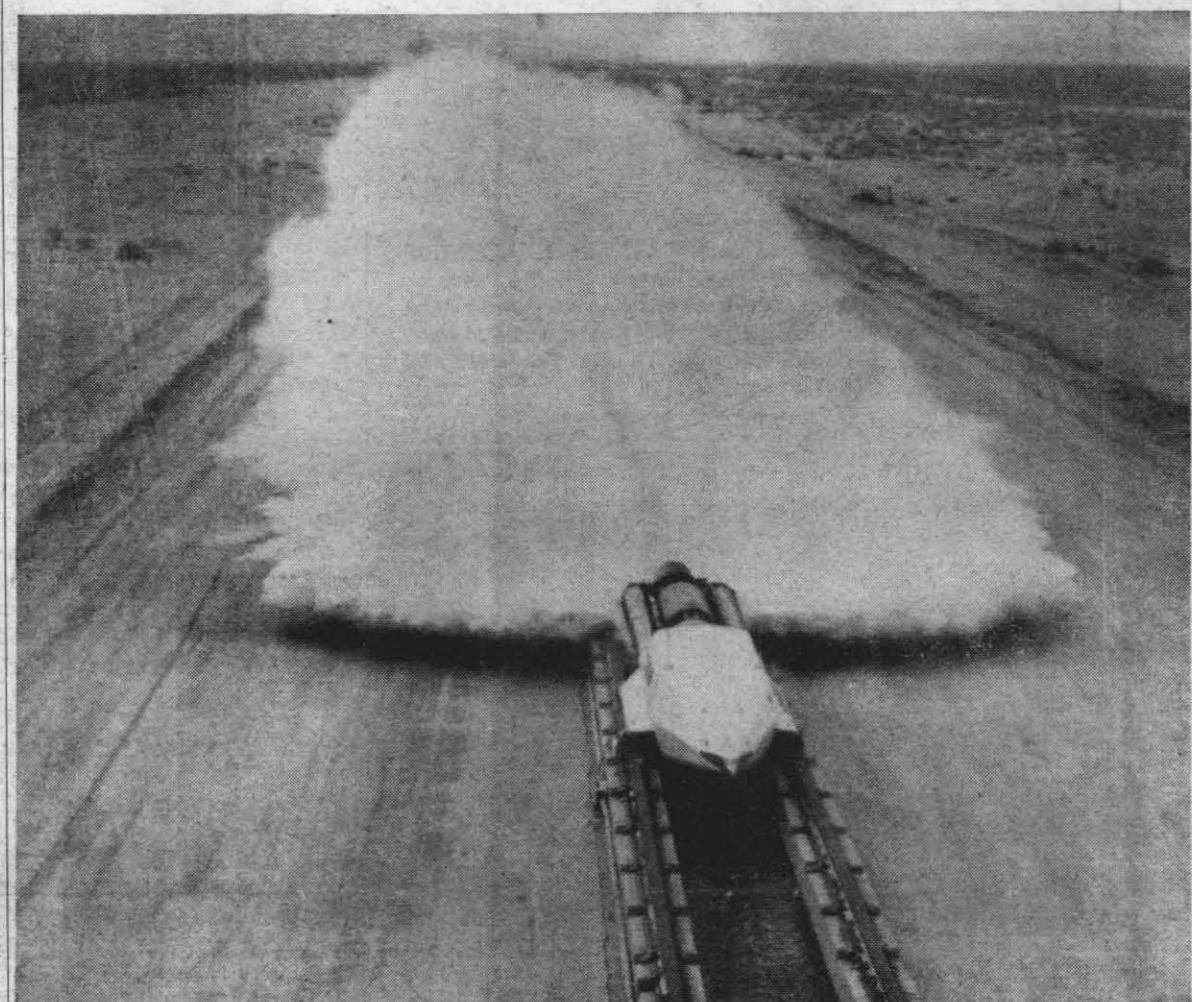
The careful of gifts will be on display tomorrow, Armed Forces Day, at the Naval Air Facility exhibit. During the following two weeks it will be taken on a tour of the Station. Included are radios, luggage, hams, gift certificates, etc.

The Society functions to aid Naval and Marine Corps personnel and their dependents, and the current drive is pointed primarily toward military personnel, but civilian friends of the Navy are encouraged to contribute toward its success.

Every Dollar to Relief

The Society's "overhead" is kept at a minimum by services of nearly 7000 volunteer wives of naval personnel. It is now sufficiently endowed that all staff employees are paid from income; hence, 100 percent of every dollar donated is used directly for relief purposes.

Funds collected here will be turned in to Chaplain Fenning's office adjacent to All Faith Chapel. A receipt will be provided for funds received.



SNORT (Supersonic Naval Ordnance Research Track) demonstration firing will be a feature of Armed Forces Day activities at NOTS. It's scheduled for 2:30 p.m.

'Twenty Years of Progress' Program Awaits Visitors

China Lake joins U. S. Forces throughout the world tomorrow in the 15th annual observance of Armed Forces Day, opening the command's major test facilities for a day-long program of Open House activities.

With strong emphasis on the sciences involved in weapons research and development work, some 20 displays and exhibits will be on hand at Michelson Laboratory for public viewing.

'20 Years of Progress'

A special display on LASER work conducted here, along with a "20 Years of Progress" exhibit that depicts weapons developed at China Lake, are included in the array of attractions.

Limited touring of Michelson Laboratory spaces is to be permitted starting at 12:30 p.m., and movies of the late President John F. Kennedy's visit to China Lake last June are included in the program.

'Assignment China Lake'

"Assignment China Lake," an hour-long television news film broadcast earlier this year from Los Angeles, will be repeated over Bakersfield's Television Station KERO, Ch. 23, tomorrow at 4:00 p.m.

Static displays of aircraft and equipment used at the Naval Air Facility will be on public view throughout the morning.

The China Lake "Skydivers," a group of local parachute enthusiasts, will perform jumping demonstrations starting at 10 a.m. A jet drone demonstration is to follow and a high-speed flyover of Crusader, Phantom and Skyhawk aircraft will demonstrate near sonic speeds for the public.

SNORT Firing

The Supersonic Naval Ordnance Research Track area opens to the public at 12:30 p.m., with a live, demonstration firing scheduled for 2:30 p.m.

Meanwhile, the public is invited to inspect numerous test sleds used in work conducted at the SNORT area. A documentary film will be shown every half hour between 1 and 3:30 p.m.

Radio listeners in the Indian Wells Valley, unable to attend tomorrow's Armed Forces Day program here at China Lake, will get a special, "live" broadcast from the scene of action.

Through the remote facilities of Radio Station KLOA, the radio coverage will originate at (Continued on Page 10)

Greetings From Your Hosts



WM. B. McLEAN
Technical Director

Welcome to the U.S. Naval Ordnance Test Station! Your visit with us today and the interest you have shown in the work we do here is deeply gratifying.

Our major facilities have been opened for your inspection throughout the day. Events of special interest have been scheduled at the Naval Air Facility and on the Supersonic Naval Ordnance Research Track.

As your hosts and, on behalf of our Navy Community here at China Lake, we wish to thank you for coming. We trust that your visit is informative and enjoyable.



CAPT. CHARLES BLENMAN JR.
Station Commander

POWER FOR PEACE

MAY 16, 1964

Students, Sponsors Reap Benefits in On-the-Job Work Experience Program



WORK EXPERIENCE CLASS from Burroughs High School, largest in program's seven year history, includes from left (seated) Dwight Morgan, Annette Haymaker, Dave Ross, Susan Bertine, Carol Heddell, Program Coordinator Ray E. Draper, Susan Campbell, Mary Anne Wentink, Danny Jockisch, Mar-

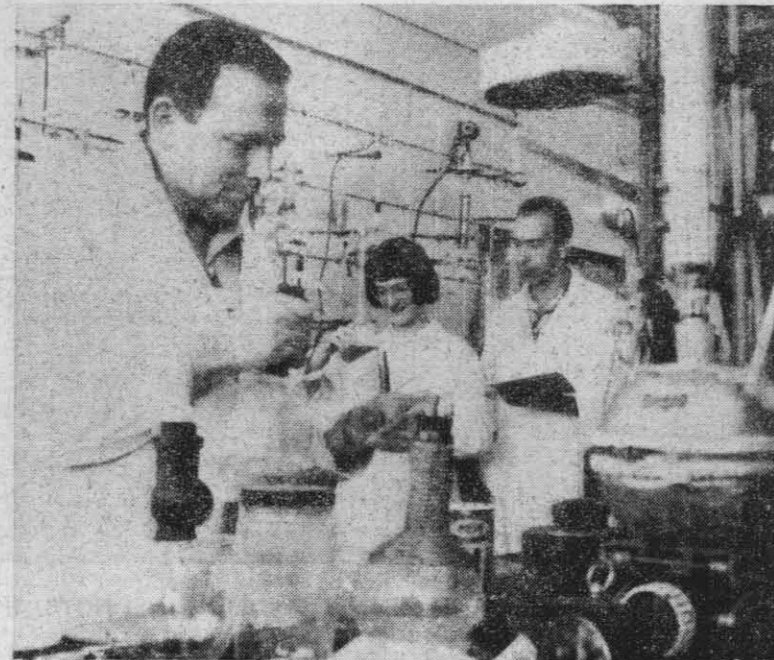
garet Wall and Jackie Leininger. (Standing) Thomas Ward, Alfred Lester, Robert Johnson, Janie Evans, Mark Johnston and Linda Jean Kee. Not present for picture are Michael Murphy, Elizabeth Stevens, Thomas Falgatter and Peter Dietrickson, III.

Tickets On Sale For Barbershop Harmony Show

With proceeds earmarked for the Indian Wells Council for Retarded Children, tickets are now on sale for the joint China Lake Sweet Adelines and the Men's Barbershop Society's production "Belles and Beaux" to be held at the Station Theatre at 8 p.m. on May 23.

Theme will be show business at the turn of the Century. Playing the leads in the musical skits will be June and Dean Hewitt, Cecile Abbott and Dr. Rex Shacklett.

Tickets are available from Vursa Van Buskirk, FR 5-4802. Price is \$2 for adults and \$1 for students and servicemen.



SCIENCE STUDENT Annette Haymaker, 17, is working under direction of Dr. Wayne Carpenter, Organic Chemistry Branch, Research Department. Dr. Arnold Adicoff (foreground) is one of the scientists in the Branch.

Voted Mother of the Year 'Oklahoma' To Be Staged By College



LOUELLA FENNING, wife of the Station Chaplain, opens gift from All Faith Chapel's Protestant Congregation Women's Guild following her selection as "Mother of the Year" at the annual mothers-daughters banquet last Friday evening. Emma Lou McGuire, left, Guild president, made the presentation.

Rodgers and Hammerstein's "Oklahoma!" will be presented by the Desert Division of Bakerefield this summer, the College announced this week.

The show will be staged for four performances, July 17, 18, 24 and 25 in the Multi-Use Room, and a new raised seating arrangement will be installed which will provide visibility from every seat.

Auditions for the production have been set for May 25 and 26 in the Multi-Use Room on the Burroughs Campus at 8 p.m., according to Director John Lawson.

Those wishing to participate in the show as actors, singers, dancers or instrumentalists should attend one of the auditions, he said. Any who cannot make either audition may contact the College Office, FR 5-2348.

A meeting for those interested in promotional and technical aspects of the production has been set for Friday, June 5 in the Multi-Use Room at 8 p.m.

(This is the first in a series of articles on the Work Experience Program being conducted at NOTS. Each of the reports illustrates vivid dedication, not only of the scientists, administrators and coordinators who are devoting their time and effort to directing the paths of their future counterparts, but also the dedication of the students themselves who accept the challenge with eagerness and "sound, adult logic.")

A "Work Experience Program" designed to give students at Burroughs High School experience in professional work they'll face in life ahead is concluding its seventh year here at the U.S. Naval Ordnance Test Station.

Originally established for science students under the sponsorship of the Research Society of America, the program has been expanded to include administrative as well as vocational areas of work experience.

The Key: Extra Effort

The key to the program's success is the enthusiasm and extra effort put forth by both the students and sponsors, according to one official.

Of the current class, 10 girls and 10 boys, all but one are in their senior year at Burroughs. The investment of 10 school hours per week (and many put in extra time at home, according to the program coordinator) gains the student a full semester credit.

"That's important," observed one student. "But, the most important thing to me has been the experience I have gained."

School Coordinator

Ray E. Draper, a biology instructor at Burroughs and the program's school coordinator, outlined the program's objectives and the cooperation it has gained.

Associated with the program for three years, Draper cites the most beneficial objective as the realistic, practical experience that students get.

"From that point on, the rewards are unlimited. Industry itself benefits. Call it a long range investment from which dividends are assured eventually."

"The existence of the program is inspirational to other students. It gives classroom work added meaning and significance, too," he adds.

From its point of establishment, the program has gained momentum and support from Station personnel. Scientists here are quick to recognize the potential it offers their professional ranks.

Drs. Harold E. Bennett, President of the local Research Society of America unit, and Marguerite M. Rogers, Program Coordinator for RESA, both praise the program's existence.

"I regret we didn't have such a program when I was in high school... at a time when experience of this quality is so vitally important to young people interested in science," commented Dr. Bennett, Head of the Physical Optics Branch, Research Department.

This year's program has nine students enrolled in the laboratory areas.

Davis Sparks Expansion

William E. Davis, Head, Planning Staff for Aviation Ordnance Department, and a staunch supporter of the program, sparked its expansion into administrative and vocational areas.

At his suggestion, made to the Station's Administrative Development Committee two years ago, he reasoned that the addition of an administrative work experience area would have "far reaching benefits."

Citing the obvious profession-

al advantages already realized in the technical or scientific areas, he pointed to the "visible short range rewards for serious effort invested by students and the influence this would have on others at Burroughs."

Four students in the administrative area were sponsored last year and seven are enrolled in the 1964 program.

The Technician and Artisan Committee early this year sanctioned the establishment of a vocational work experience area for the high schoolers, welcoming the opportunity to sponsor this phase of the program.

Four students have subsequently been assigned to shops on the Station.

Praise From Students

In the final analysis, the program's ultimate value rests with the students engaged in the program. How do they feel?

David Ross, 18, a senior at Burroughs and the son of Mr. and Mrs. J. W. Ross, 133 Church St., claims, "I found that there's a lot more to motor repair work than I ever imagined. It has certainly shown me the practical end of motor work."

David works under the sponsorship of Earl Shaw, Quartermaster Electrician and, like his fellow students in the vocational phase, are under the immediate direction of supervisory personnel.

Another senior, Thomas Ward, 18, son of Dr. and Mrs. Newton E. Ward, 505 Essex Ave., interpreted the program's values in a more philosophical manner.

"Assigned to work under the direction of Melvin Keith, Weapons Development Department, young Ward feels the program "teaches one about working at any job; how to get along with others, establish cooperation and work effectively."

Jacklyn Leininger, 18, a second-year enrollee, is assigned this year to the Systems Analysis Branch, Weapons Development Department.

The daughter of Mr. and Mrs. Jack T. Leininger, 201 Shangrila, Jacklyn cites two benefits she has realized: "To gain experience of working in a scientific atmosphere and to help me select a career."

Learning First Hand

Another girl student in the program, Annette Haymaker, 18, emphasized the value of "working with my sponsor... learning lab techniques first hand." She emphasized the value represented and influence exerted through the professional-student relationship.

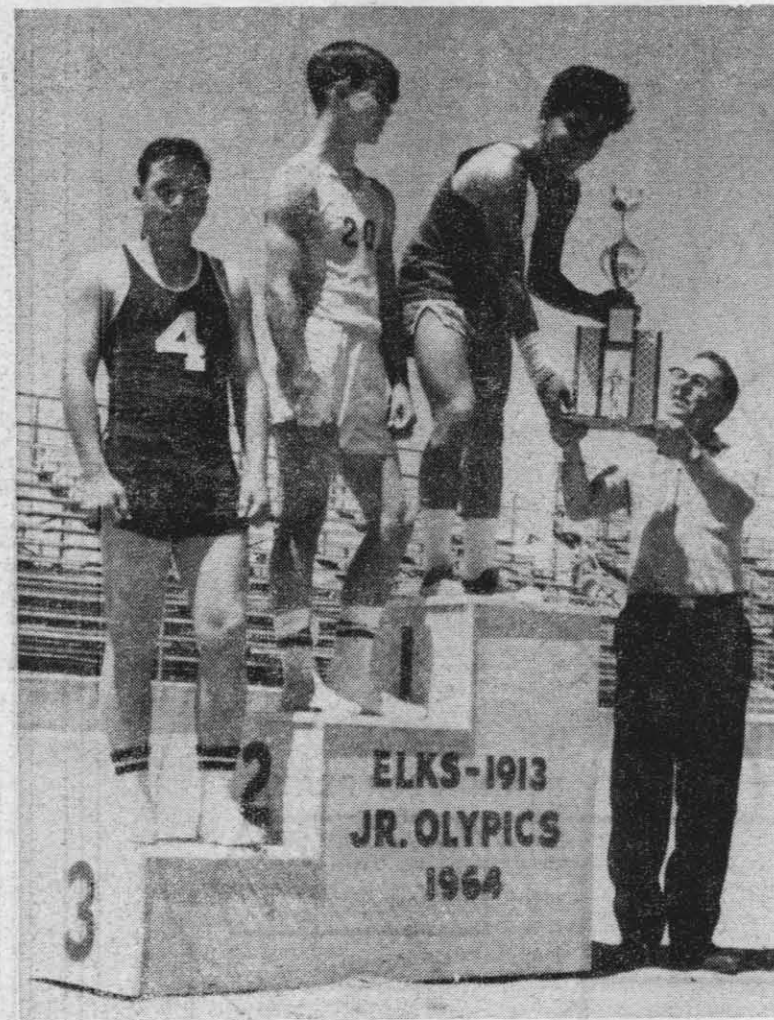
"We're away from the theoretical, classroom atmosphere for two hours a day," another student noted, summing up the positive effect this had on his attitude.

The process of selecting students for the program is based on attitude and demonstrated motivation, according to Draper.

"While scholastic standings are important, the most desirable quality in the student is

(Continued on Page 10)

Winners in the 1964 Junior Olympics



FIRST PLACE TROPHY is presented to Murray School's Richard DeLeon by Elks Club Exalted Ruler Delbert Sweany. Second place was won by James Goforth of James Monroe School, and Inyokern's John Rice (left) took third place.



100-YARD DASH winner is Jim Crow of James Monroe School (No. 12 at left).



BREAKING THE TAPE in the 880-yard Class A run is Jay Leininger of Murray School. Right behind him is Gary Bessee also of Murray.



OVERALL HIGH POINT man, Sam Gee of Murray School's Class B team, receives trophy from Delbert Sweany.

SPORTS SLANTS

By CHUCK MANGOLD

The first annual Junior Olympics held at Burroughs High School last Saturday under the sponsorship of the Elks was a huge success.

The young athletes in their brightly colored togs paraded in procession around the field and took their places for a very impressive flag raising ceremony by the Boy Scouts of Troop 291 to start the day's activities.

Following the lighting of the Olympic Torch, the first event was underway.

The events held and the first place winners are as follows: A 100 yd. dash, Jimmy Crow, Monroe; B 100 yd. dash, Richard DeLeon, Murray; A 200 yd. dash, Gary Travis, Murray; B 75 yd. dash, Sam Gee, Murray; C 75 yd. dash, Steve Parker, Monroe; A 440 yd., Ralph Holgate, Monroe; A 880 yd., Jay Leininger, Murray.

A broad jump, James Goforth, Monroe; B broad jump, Richard DeLeon, Murray; C broad jump, David Williams, Monroe; A hop-step-jump, Gary Travis, Murray; B hop-step-jump, Sam Gee, Murray; C hop-step-jump, Donald Lint, Monroe;

A shot put, Mike Sizemore, Murray; B shot put, Merle Hunsaker, Murray. Softball throw, Gary Debbs, Monroe.

A 440 yd. relay, James Goforth, Ralph Hogate, John Franich, Jimmy Crow, Monroe. B 440 yd. relay, Sam Gee, Ralph DeLeon, Floyd Salyer, Merle Hunsaker, Murray. C 440 yd. relay, Steve Millikan, L. Fagelson, M. Daniels, Tom Metcalf, Murray.

A high jump, Steve Compton, Murray. B high jump, Pat Mead, Murray.

PERPETUAL TROPHY WON BY MURRAY SCHOOL

The perpetual trophy was won by Murray School with a score of 116 points, followed by Monroe with 72 points and Inyokern with 10 points. High point athlete award wound up in a tie between Sam Gee and Richard DeLeon. The perpetual trophy was accepted by team captain DeLeon.

Being an annual youth day event, plans have been started for a bigger and better Junior Olympics for 1965 which will include a group of pee-wee events and a contest between bands and baton twirlers.

Carl Bowser, Jack McGinnis, Doug Brewer and Bill Johnson, physical education instructors, are to be congratulated for a job well done.

NOTS ALL-STARS LINEUP VS. CALIFORNIA CUTIES

NOTS All-Stars manager Pete Zamarron has named the starting batting lineup against the California Cuties for tomorrow night. Leadoff man will be Gallien, of, followed by Siebold, of, Clayton, of, Crager, c, Thompson, p, McLain, 2b, Palmer, ss, LeBlance, 1b, Harley, ss, Carson, u, Ferguson, u.

Cuties lineup is Scraggie Maggie, c, Liza Jane, p, Dinah Sore, 1b, Hefty Helen, 2b, Viola Lynn, ss, Fifi the Flirt, of, Main Street Sally, of, Beulah, 3b, Leaping Lena, of, Skinny Minnie, u, Dumpy Dora, u.

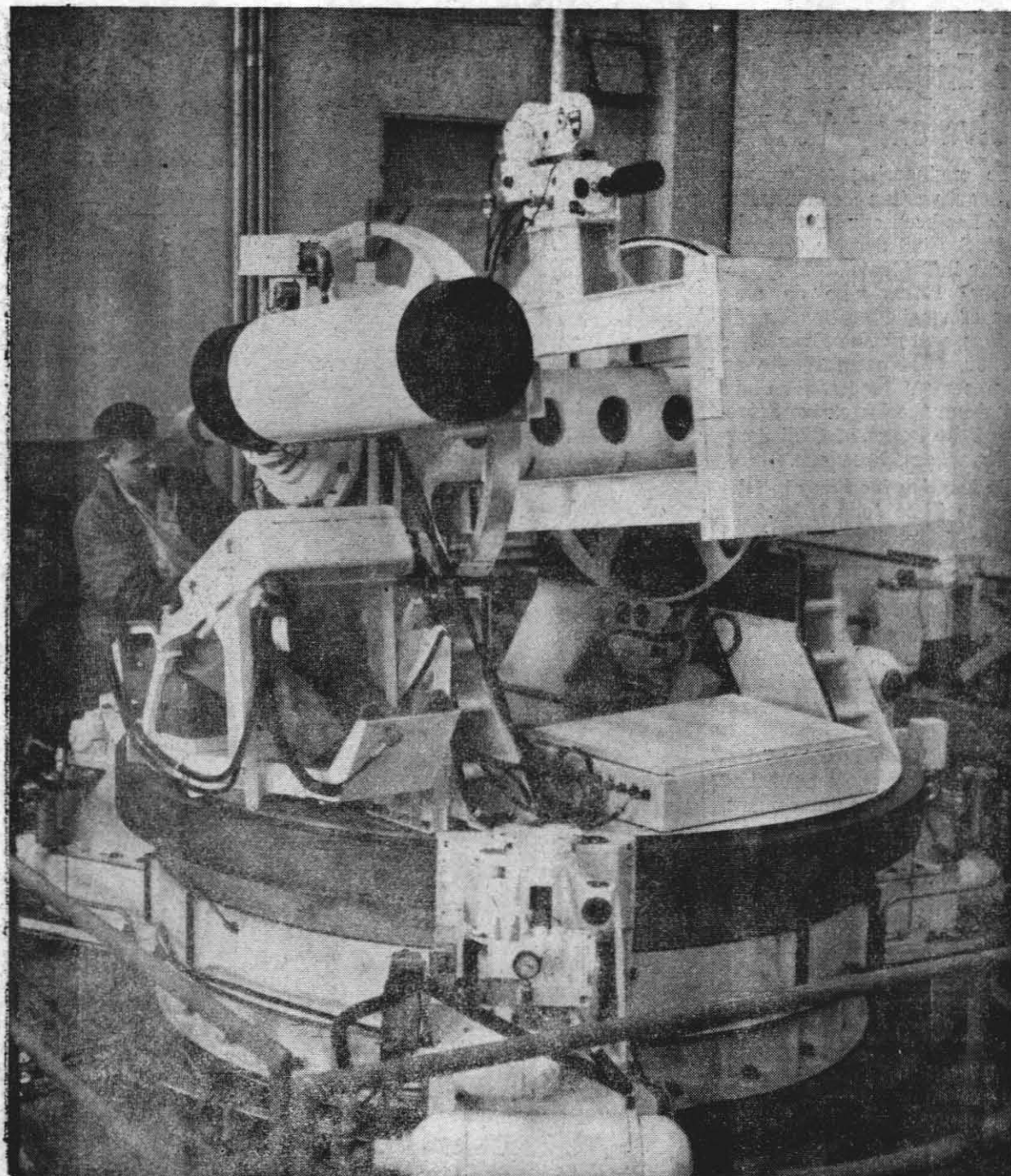
Here Armed Forces Day



CALIFORNIA CUTIES softball team will take on the NOTS All-Stars at Schoeffel Field tomorrow night at 8. Admission is free. Pony-

Colt League will operate concession stand. Cuties will also put on their comedy act at the Acey-Deucey Club from 10 to 11 p.m.

Some Key NOTS Projects of the Past Year



TIM, a Tracking Instrument Mount developed by NOTS, measures the thermal protection needed by astronauts during a spacecraft's re-entry into the earth's atmosphere after an orbital flight. Jimmy Josephson checks out instrument before it was airlifted to Ascension Island in the South Atlantic to track the re-entry of an Apollo-shaped vehicle.



RAP, Rocket Assisted Projectile's fluorocarbon propellant is examined by Charley Rodgers and Jud Eldridge of the Propulsion Development Department. Project incorporates use of a rocket motor to give 5-inch projectile longer range. Men wear protective clothing. Both are pioneers in solid propellant research at NOTS.



HIGHPEG, the Navy's fastest gun, is shown with its 887 armor-piercing 20mm cannon shells, which gives the Skyhawk fighter 10 times the gun firepower of its World War II predecessor. Gun underwent tests here and was demonstrated during President Kennedy's visit to NOTS in June of '63.



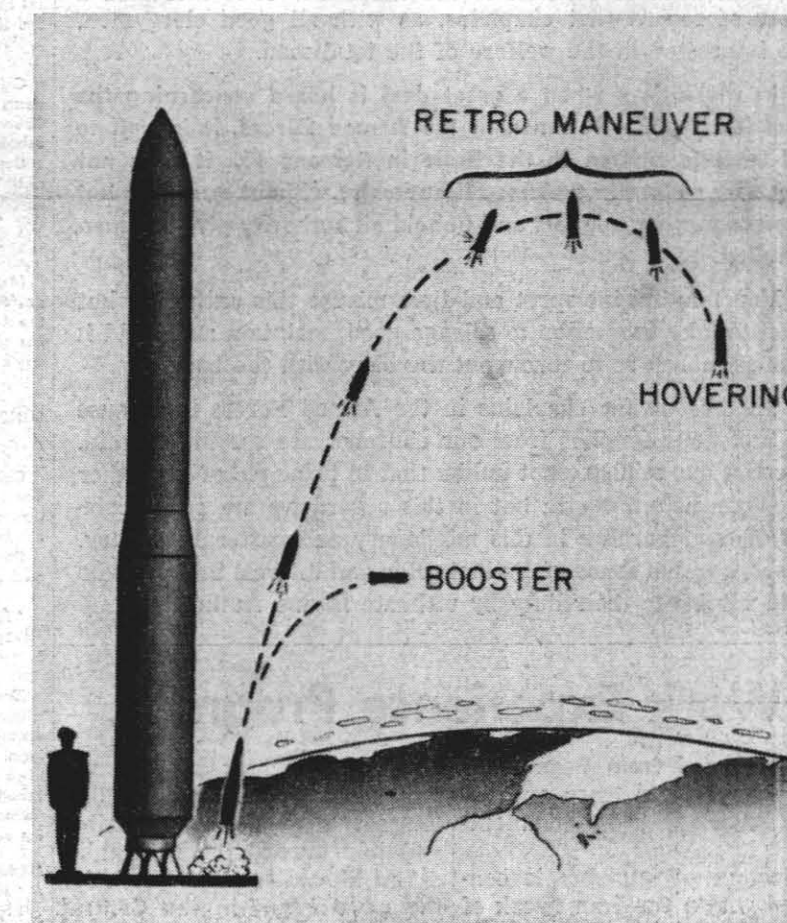
REDEYE, a joint Army-Marine Corps shoulder-fired bazooka-type surface-to-air missile, is currently undergoing tests and evaluation here by Marine and Army personnel.



SHRIKE, air-to-surface anti-radar missile mounted on an AF-1E aircraft, is in final development stages here.



TAIL ROCKET developed by NOTS is used to increase glide ratio of NASA's M-2 flight vehicle. Rocket was credited with enabling pilot to land his craft safely at Edwards Air Force Base.



HOVERING ROCKET SYSTEM — Artist's conception shows trajectory of Hovering Rocket System being developed by the Propulsion Development Department to place a 700-lb. payload at high altitudes.

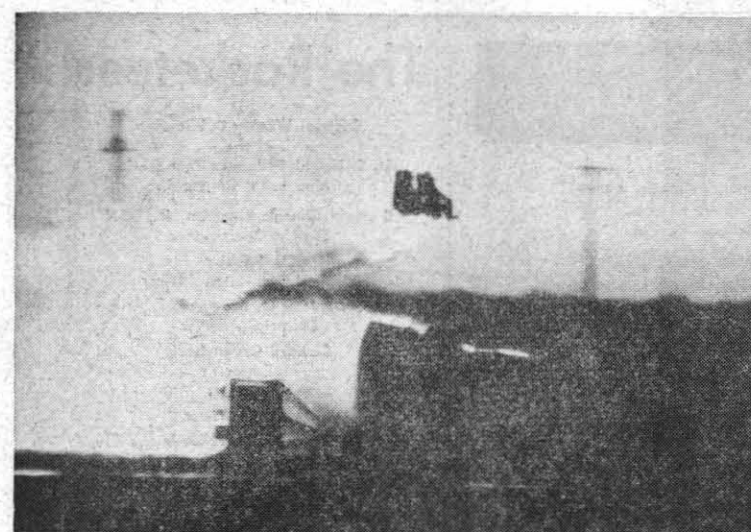
'Stormfury'



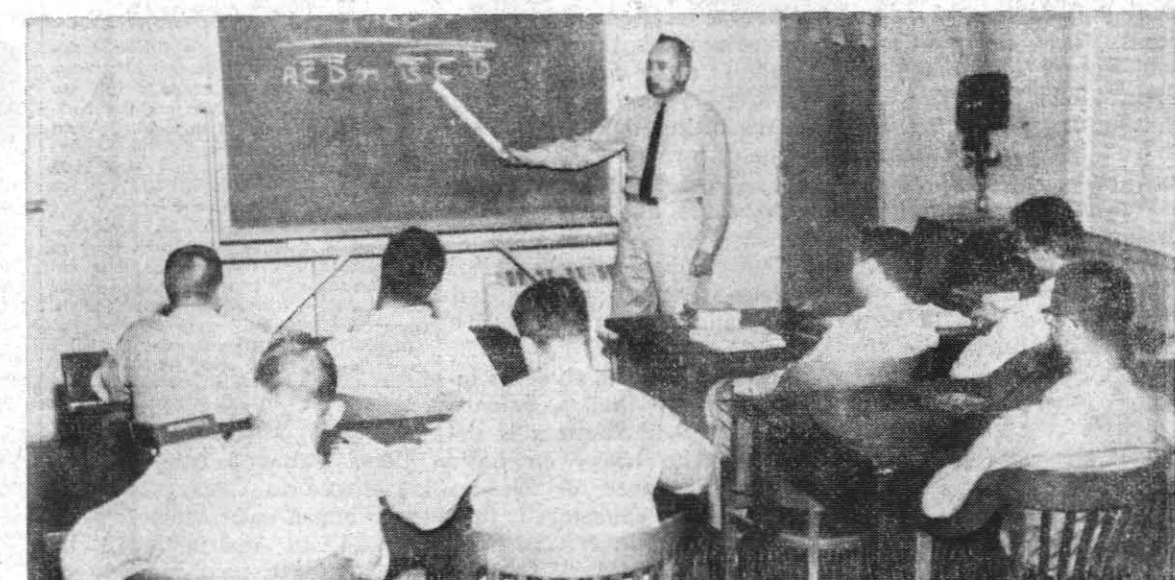
CYCLOPS II silver iodide dispensers are loaded into bomb bay of A3B aircraft by R. C. Noles and William Burson. A team of NOT Scientists, led by Dr. Pierre St. Amand, achieved remarkable success in retarding hurricane "Beulah" with iodide seeding off Puerto Rico during Project Stormfury.



DR. WM. B. MCLEAN (right) prepares to climb into observer compartment of the French Diving Saucer "Denise" during tests off San Clemente Island.

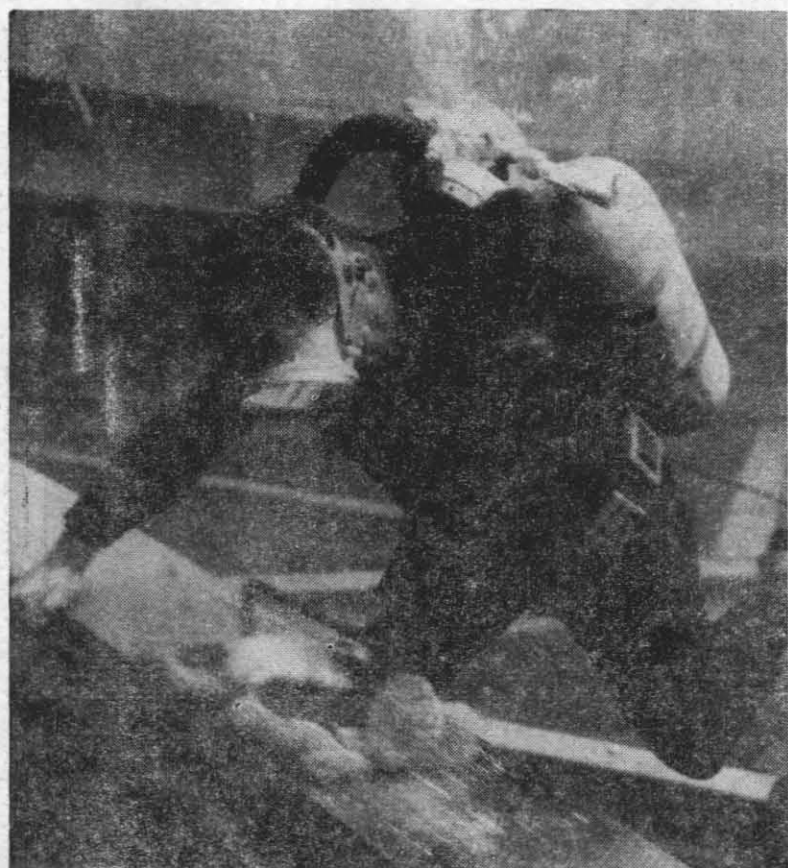


GEMINI SPACECRAFT dual seat ejection system is tested on NOTS Supersonic Test Track. Ejection system provides astronauts with method of escape during launch pad phase and early part of powered flight. First system test was made here while astronaut Gordon Cooper was on his historic 22-orbit flight.

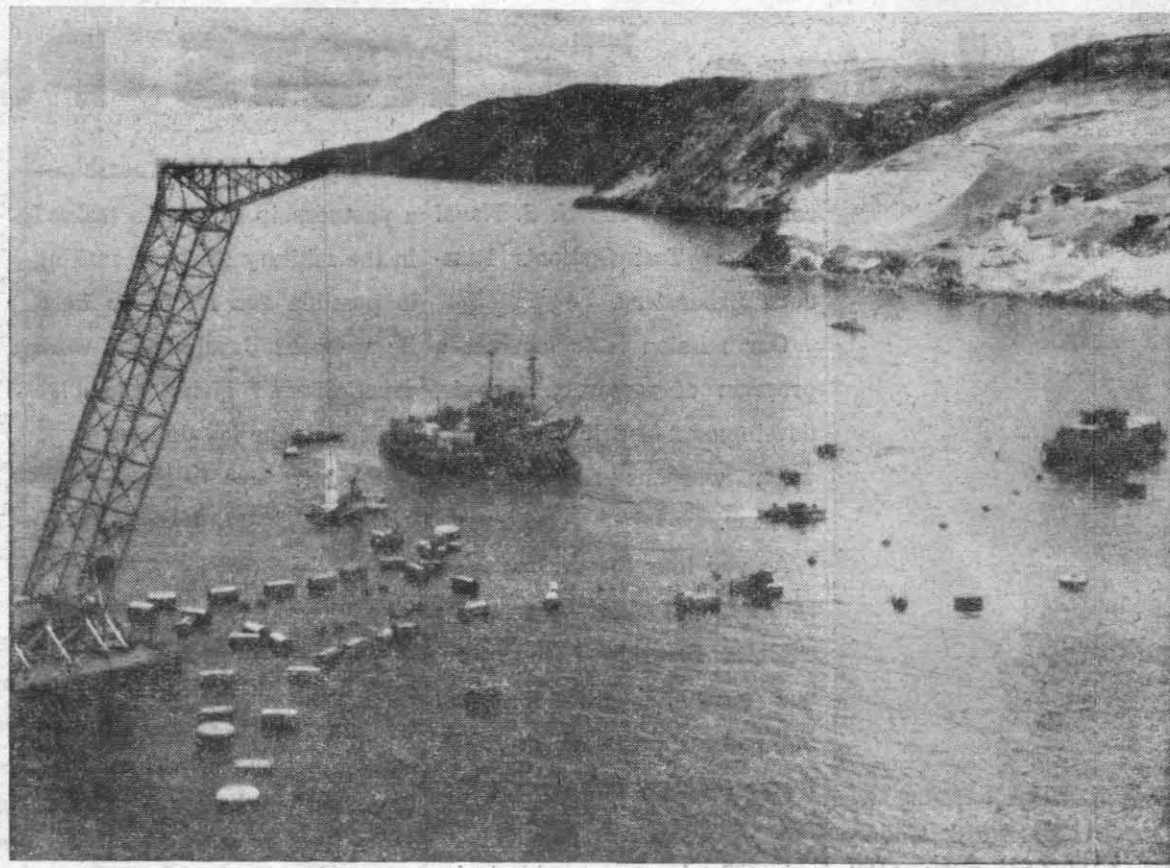


DIGITAL FIRE CONTROL CLASS is conducted by A. P. Taylor, FTC, for members of the Station's Guidance Radar Branch. This 200-hour course of Basic Fire Control Digital

Techniques was the first of its kind to be conducted by the Navy. Course was prepared by the Navy's Typhon Training Unit, Baltimore, Md. Twenty completed the course.

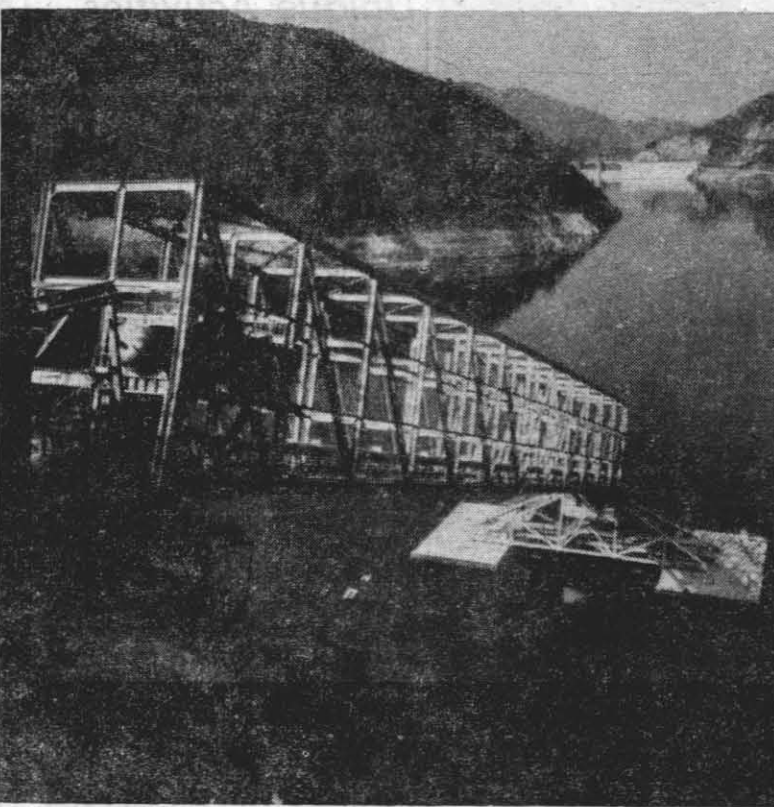


DIVER — A NOTS diver checks underwater equipment off San Clemente Island. The NOTS divers supports all NOTS projects involving underwater work, be it an engineering task, welding, burning, or explosives work. Divers recover torpedoes, make underwater repairs to equipment.



SCI RANGE — At the San Clemente Island test range, many major milestones have been reached in the Polaris Program, including the first inert ballistic missile to be fired from underwater and a short time later the first underwater launch with propulsion thrust. The giant Fish Hook crane (left) has been used to test the Polaris missile since early phases.

POLARIS

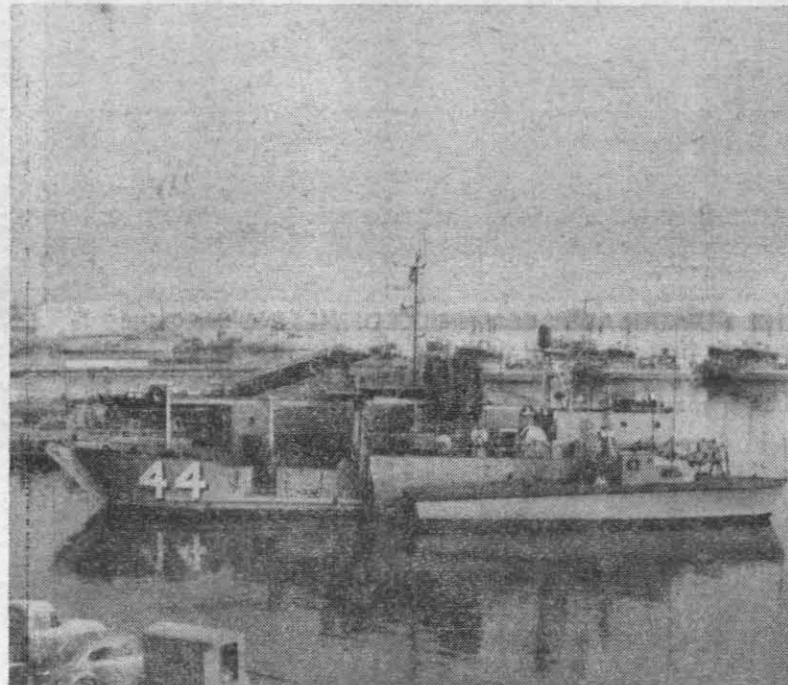


MORRIS DAM — The only facility of its kind in the country, the Variable Angle Launcher at the Morris Dam Test Range is a giant blow gun. Missiles are launched by compressed air through launching tubes, easily achieving velocities up to 1,000 feet per second or 682 miles per hour. It is adjustable in angle from 0 to 40 degrees for making water-entry studies of projectiles.

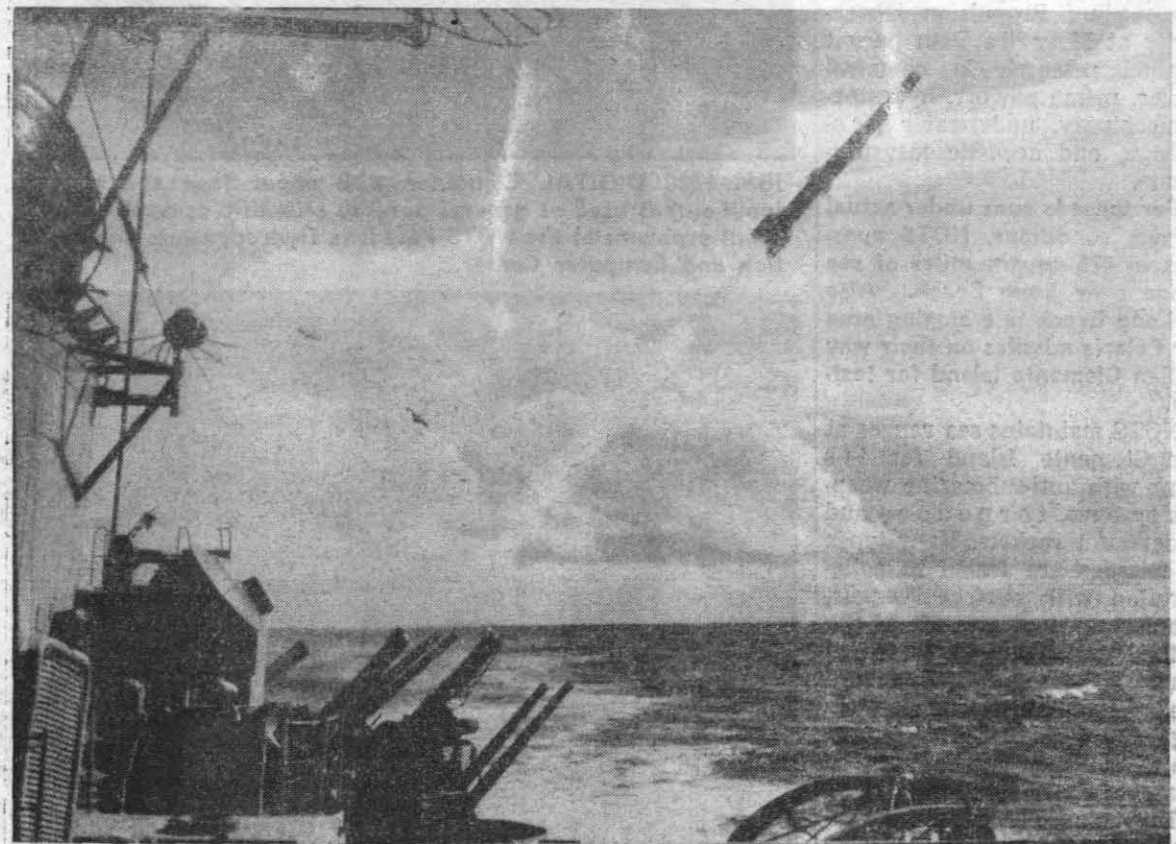


POLARIS — Launched from underwater, Polaris makes a short controlled flight at the San Clemente Island sea range. These tests demonstrated the ability of Polaris to accomplish the transition from underwater launch to controlled powered flight — a forward step in the development of the Navy Polaris Missile prior to operational service aboard nuclear powered submarines.

Long Beach



LONG BEACH — Based at Long Beach, the NOTS fleet consists of 12 boats. Each boat can be used for a variety of projects supporting all NOTS sea operations.



ASROC — Deadly ASROC missile is fired from shipboard. The front half of this missile is a deadly homing torpedo that is boosted by solid propellant rocket to the target area.

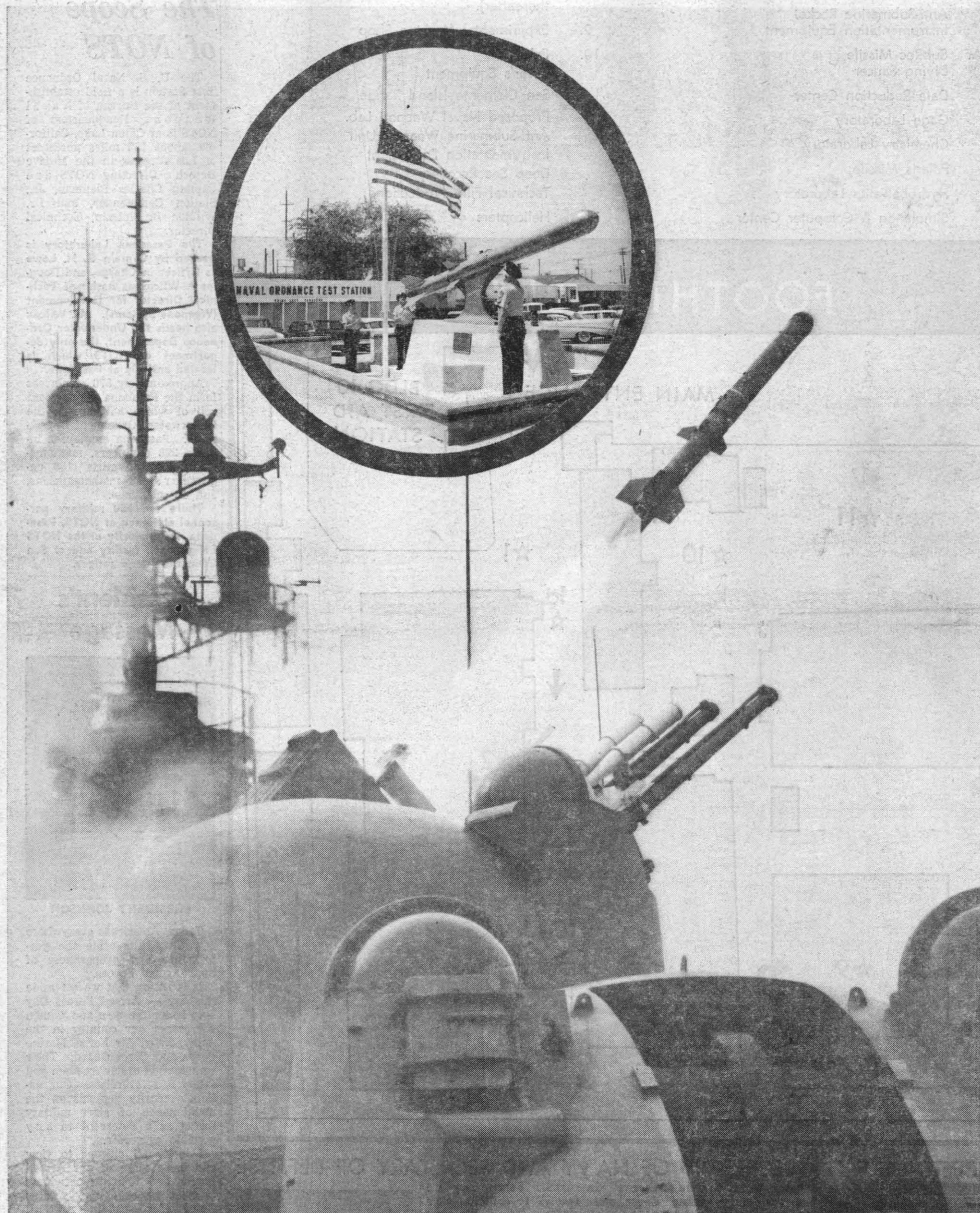
The rocket booster separates in flight and a parachute lowers the torpedo into the water where it seeks out its submerged target. ASROC was developed by NOTS.



SOUVENIR EDITION



Armed Forces Day

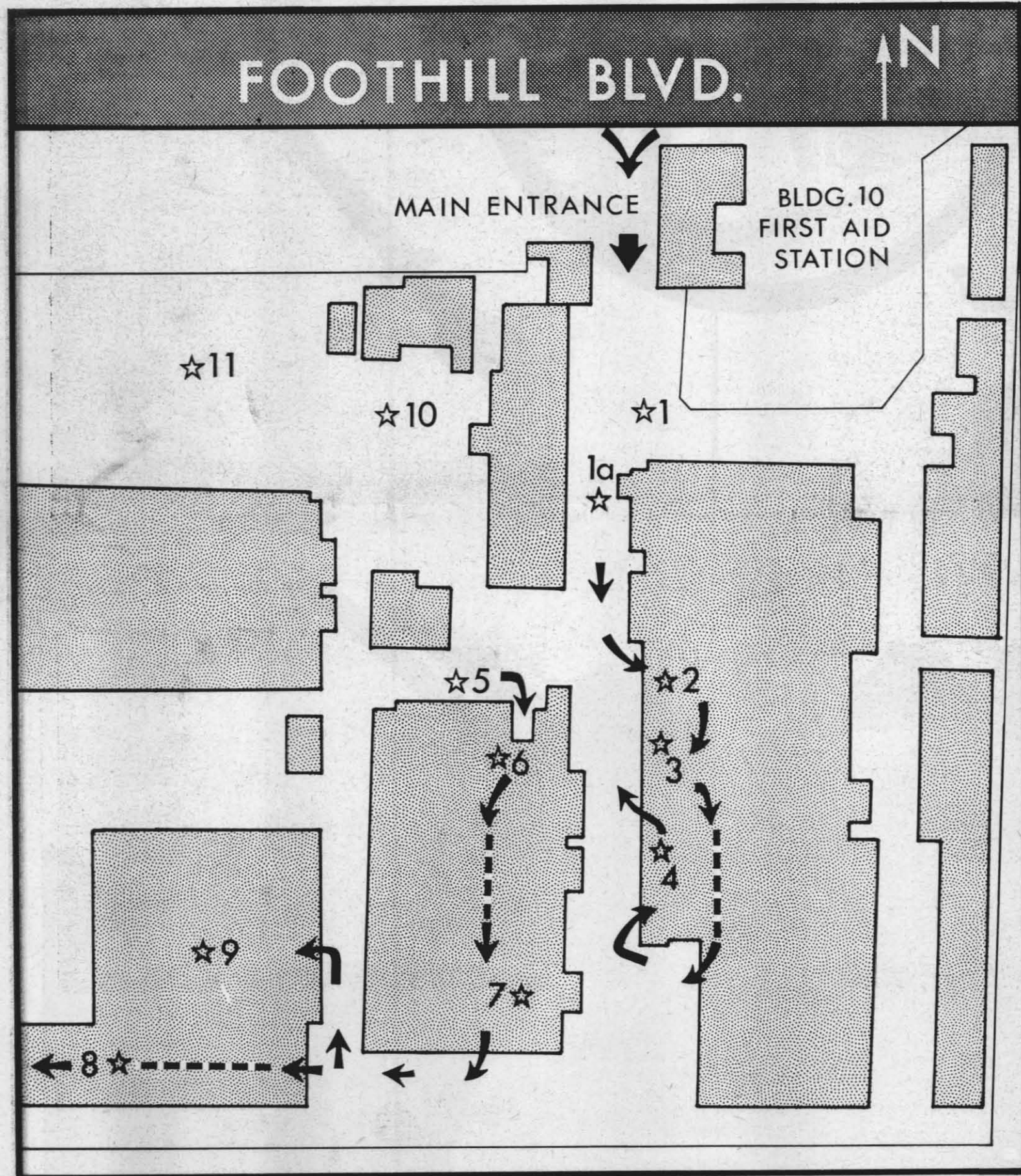


U. S. NAVAL ORDNANCE TEST STATION,
PASADENA, CALIFORNIA

Navy Science For Defense

ARMED FORCES DAY OPEN HOUSE SCHEDULE OF EVENTS

- | | |
|---|--|
| 1. Exhibits
Anti-Submarine Rocket
Instrumentation Equipment | 8. Movie (Begins 10:30 a.m. and every 45 min. thereafter). |
| 1A. SubRoc Missile
Diving Saucer | 9. Experimental Machine Shop |
| 2. Data Reduction Center | 10. Exhibits
Diver's Equipment
San Clemente Island Range
Proposed Naval Weapon Lab.
Anti-Submarine Weapon Unit
Instrumentation Equipment
Deep Sea Recovery
Technical Film Productions |
| 3. Gage Laboratory | 11. Helicopters |
| 4. Chemistry Laboratory | |
| 5. Polaris Missile | |
| 6. Hydroballistics Laboratory | |
| 7. Simulation & Computer Center | |



The Scope of NOTS

The U. S. Naval Ordnance Test Station is a field establishment of the Bureau of Naval Weapons, Headquarters of NOTS is at China Lake, California, about 155 miles northeast of Los Angeles in the Mojave Desert. Directing NOTS are Captain Charles Blenman, Jr., Station Commander, and Dr. William B. McLean, Technical Director.

The Pasadena Laboratory is headed by Captain G. H. Lowe as Officer in Charge, and Douglas J. Wilcox as Assistant Technical Director for Development (Weapons Systems). Mr. Wilcox also heads the Underwater Ordnance Department, the only department of NOTS which is located entirely at Pasadena.

Approximately 870 employees form the Pasadena employment roll of which half are in the Underwater Ordnance Department. Pasadena employees include 228 engineers, mathematicians, and scientists (153 engineers, 33 mathematicians, and 42 scientists).

There are 150 military personnel stationed at NOTS, Pasadena, the majority at the NOTS Long Beach facility and at San Clemente Island ranges.

President's Message



PRESIDENT JOHNSON

Today, Americans everywhere can view with pride the performance and preparedness of their Armed Forces.

It is fitting that we set aside this day — Armed Forces Day — to honor the men and women who serve our country in the Army, Navy, Air Force, Marine Corps and Coast Guard. Their contribution to our freedom and safety is measureless. Our national security depends on the maintenance of alert military forces as a deterrent to any possible aggressor.

I invite all citizens to view and learn more of our Armed Forces and their preparedness to meet this challenge. And as Commander-in-Chief, I urge all of my countrymen to join me in honoring our servicemen and women on Armed Forces Day, 1964.

—Lyndon B. Johnson
President of the
United States

Cover Credit

Cover page was designed by Richard C. Frederick, Head of the Art Section.

GREETINGS FROM SECRETARY OF NAVY AND SECRETARY OF DEFENSE



SECNAV PAUL J. NITZE

Never before in time of peace has the Navy-Marine Corps team been better prepared to utilize its power to aid in the preservation of a peaceful world. All of us, in uniform and out, can be justifiably proud of the role we play in the drama being constantly unfolded on the world stage. We believe that the many strengths of our Defense establishment will make the continuation of peace a certainty.

—Paul Nitze
Secretary of the Navy

On Armed Forces Day we must resolve to continue our ready military forces. We must resolve to demonstrate our willingness to risk their use where our vital interests are at stake.

We must continue to hold out a helping hand to those nations directly opposed to Communist aggression and those nations which are striving to provide better life for their people. And, we must resolve to continue to keep open the door to peace.

—Robert S. McNamara
Secretary of Defense



SECDEF R. McNAMARA

Welcome To NOTS Pasadena Labs



D. J. WILCOX Head, Underwater Ordnance; Asst. Tech Director For Dev. (Wpns. Systems).

We take great pride in welcoming you to the U. S. Naval Ordnance Test Station's Pasadena Laboratory.

Our mission is to conduct a program of research, analysis, development and test of underwater weapons and weapons systems.

As you tour the various laboratories, and view the weapons exhibits throughout the area, our personnel will tell you more about the work of NOTS theme — Navy Science For Defense.

NOTS takes great pride in its people. Here is employed a

civilian-military partnership—a partnership of people trained in the military sciences, making it possible for NOTS to keep its weapons development work practical and giving you the most for your tax dollars.

Introduce to Fleet
Military personnel also aid in getting new weapons accepted by and introduced into the Fleet.

The civilian-military team is concerned not only with immediate weapon requirements, but also with research on weapon systems that will be required many years from now.

The NOTS approach consists basically of being geared to

carry on the entire spectrum of weapons development. With the ultimate objective of filling the needs of the Fleet, the military-civilian team has the ability to conceive the ideas for a new weapon, create the design, demonstrate its feasibility for Fleet use, develop the weapon, and carry it through the evaluation.

We hope that your visit is pleasant and informative. Remember, this is your Navy. The work done here by military personnel, civilian scientists, engineers, and technicians is for you, the citizens of our country.

We must continue jointly to maintain "Power For Peace."



CAPT. G. H. LOWE
Officer in Charge

NOTS Pasadena's Unique Activities

The Pasadena Annex encompasses a wide area of unique research and development activities — ranging from the Foothill Laboratory, to Morris Dam in the San Gabriel Canyon, and ranges at Seal Beach, Long Beach, and 60 miles off the coast to San Clemente Island.

At the headquarters laboratory on Foothill Boulevard, a military-civilian team directs the many facets involved in weapon system research, development, and evaluation. In addition to the administrative offices at Foothill, are numerous research and test facilities.

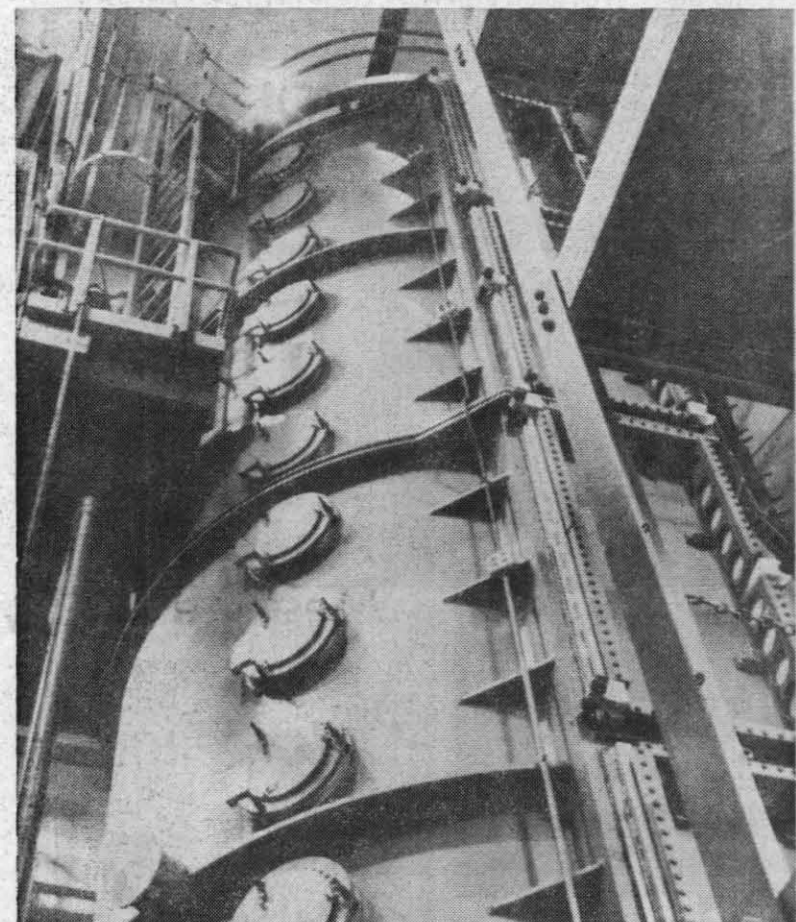
These include a Hydrodynamic Simulator for testing ASW missiles, torpedoes, and torpedo components under conditions prevailing in the actual sea environment, a Variable Atmospheric Tank for testing scale weapons models in the water environment, a Chemistry Research Laboratory, a Hydropropellants Lab, a Gyro Lab, Structures Lab, and an Electronic Lab to mention but a few.

At Morris Dam, a great outdoor laboratory exists with many types of launching facilities for torpedoes and underwater rockets. Water-entry studies are made and short-duration runs of full-scale missiles are made. Propulsion laboratories at Morris Dam permit applied research in chemical power, prime movers, hydro-turbomachinery, underwater propulsion, and acoustic measurements.

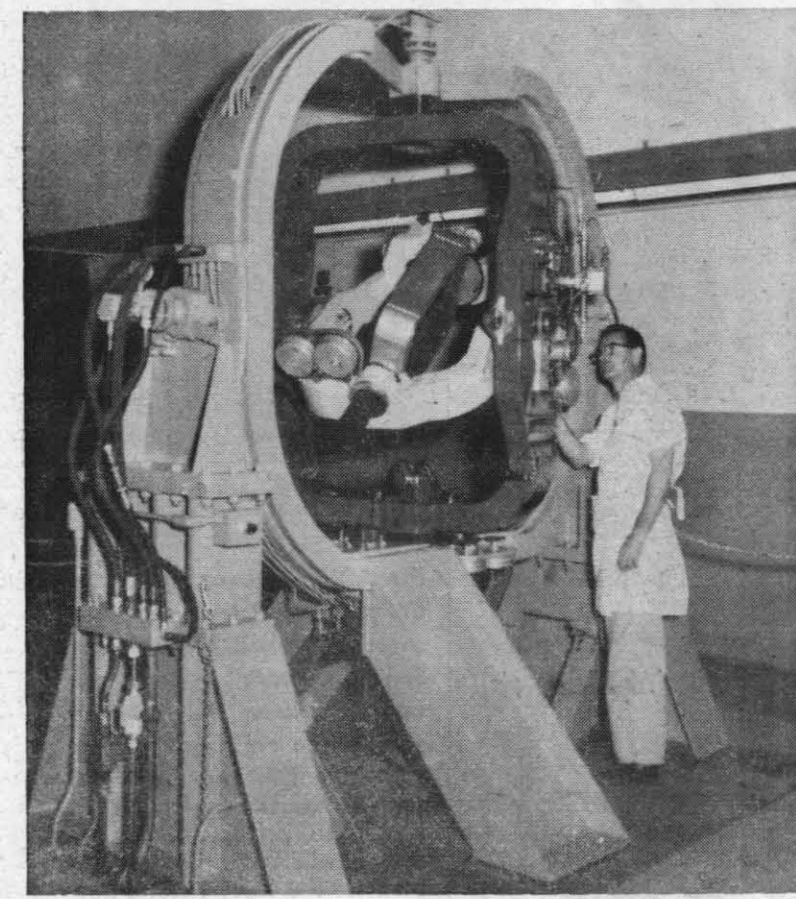
For torpedo runs under actual service conditions, NOTS operates in 475 square miles of sea range near Long Beach. Also at Long Beach is a staging area for Polaris missiles on their way to San Clemente Island for testing.

NOTS maintains sea ranges at San Clemente Island for its work with anti-submarine weapons systems, torpedoes and underwater rockets. Many types of missiles are tested in collaboration with surface vessels, submarines, and aircraft of the Pacific Fleet. Cameras and other instrumentation record the phases of missile launchings and trajectories from aircraft, surface vessels, and a strategic shore location.

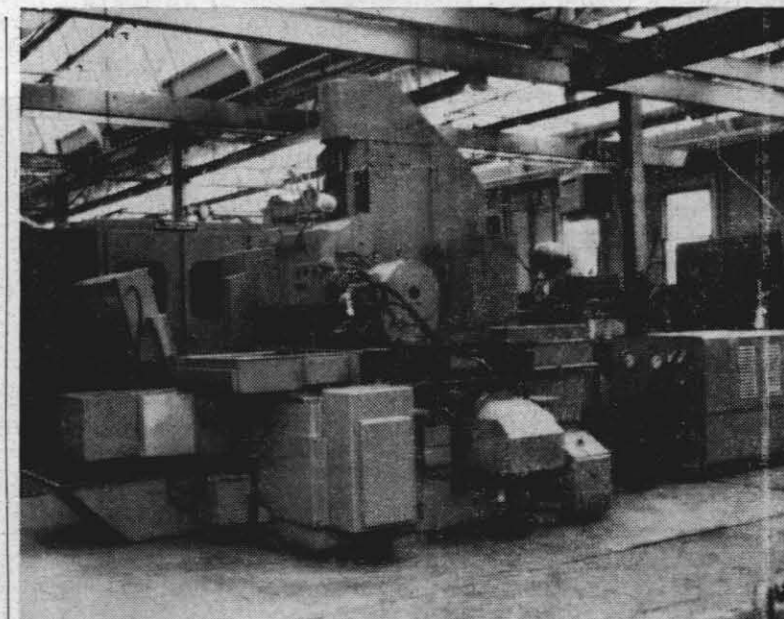
Through these activities and facilities, NOTS, the largest Naval activity in the Pasadena area, makes a large contribution to the defense of our country.



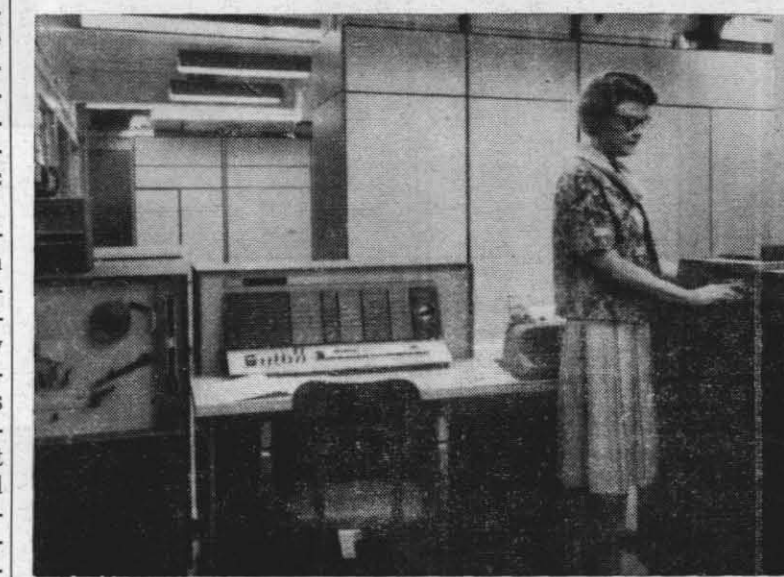
IN THE MODEL LABORATORY is the Variable Atmospheric Tank (VAT), a 12-foot diameter, 39-foot high pressure tank. VAT can accommodate 1/5 scale models of large missiles. Photographic data is obtained during tests with high-speed cameras mounted at strategic portholes. The latest addition to the Model Lab is the VAT Mounted Vertical Water Tunnel, which is used to investigate hydrodynamic problems. The VAT serves as a stilling chamber for the Water Tunnel.



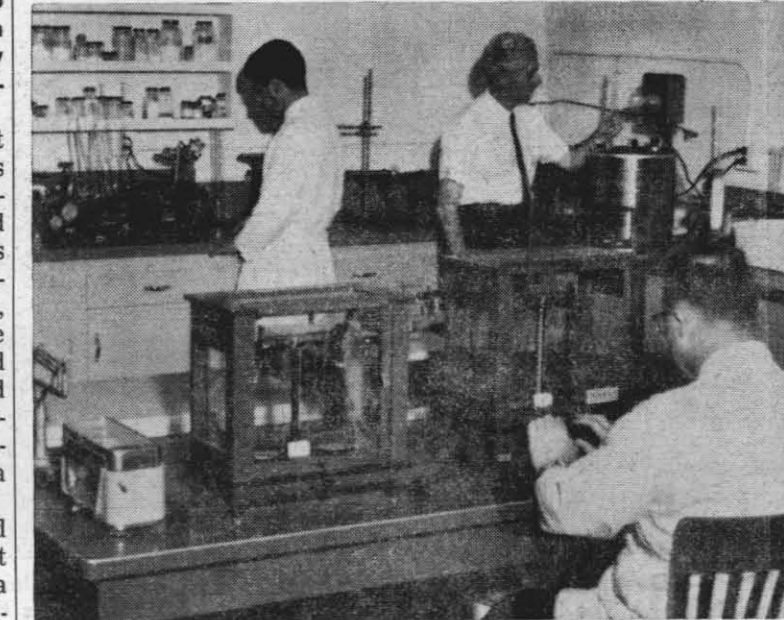
THE FOUR-AXIS FLIGHT TABLE is used in simulation studies, simulating the actual movement of torpedoes in the water.



THE NUMERICALLY-CONTROLLED MILLING MACHINE is another first at NOTS since we are the first Navy Laboratory, and believed to be the first government lab, to obtain such a machine.



IBM 1620 DIGITAL Computer with paper tape and card input-output used as general purpose scientific computer for small problems at the NOTS Pasadena Hydrodynamic Simulation and Computer Center.



CHEMISTRY LAB — Chemical drag reductions studies are currently being carried on in the chemistry lab.