R)-Restricted, persons under 16 a

PARENTS"

"OTLEY" (91 Min.)

(Spy / Comedy) Unambitious, perennial

'loser" Otley gets invited to a party and

ends up the foil of an espionage double

cross in this frantic farce that shows the

mod-hippie scene and a hysterical chase

Short: "Taiwan Today" (19 Min.)

-MATINEE--

"AROUND THE WORLD IN A DAZE"

(93 Min.) Three Stooges

1:00 P.M.

Shorts: "Little Bo Beeped" (7 Min.)

"Manhunt" (No. 4, 20 Min.)

"THE INCREDIBLE JOURNEY" (80 Min.)

Walt Disney Production

7:30 P.M.

(Adventure) A bull terrier, a Siamese cat

and a Labrador retriever set out to find

the way home to their "humans" and a

series of adventures befall them before

they reach their goal. A lesson in survival.

Short: "Mysteries of the Deep" (24 Min.)

SUNDAY-MONDAY SEPTEMBER 14-15

"100 RIFLES" (110 Min.)

Raquel Welch, James Brown 7:30 P.M.

border to Nogales in his search for a bank

robber and gets forced into leading a bat-

tle between the Yaquis and an evil gener

ale as Raquel lights the romance fuse!

(Western) A gringo lawman crosses the

**(A, Y, C)

Tom Courtenay, Romy Schneider

7:30 P.M.

(Y)-Youths 13-17

(C)-Children 8-12

(M)-Mature for Y & C

mitted only with parent or lega

SEPTEMBER 12

SEPTEMBER 13



TO APPEAR AT COMMUNITY CENTER-The "American Eagle Blues Band," above, will provide the entertainment at a dance sponsored by the China Lake Youth Center tonight at the Community Center, beginning at 8 p.m., and ending at 1 a.m. The dance will be open to all junior high, high school and college students of the local area. Passes may be obtained at the gate for those residing off-Center. Admission is \$2 per person and \$1 for Junior and Senior Student Members. All members and guests are cordially

Tri-Valley BPWC Will Hold Fall Conference Sept. 27-28 at COM

and Professional Women's 61 president of Tri-Valley Club will hostess the thir- District, she has visited China teenth Fall Conference of the Lake many times, and was Tri-Valley District BPWC on the featured speaker at Bos-September 27-28 at the Com- ses Night in 1966. missioned Officers' Club on the Center.

Marjorie Reed, Immediate Past President of China Lake BPWC is conference chairman in charge of all arrangements.

"Our Liabilities to Our Community" has been selected as clubs located throughout the theme for the confer- Owens, Kern River, Searles, ence announced Betty Jack- Antelope, Indian Wells and son, President of Tri-Valley San Fernando Valleys, will at-District. At 2 p.m., Saturday, tend the conference. Ida Marthe 27th, a Civic Participatin is in charge of room retion Panel will present "What servations with local motels Every Women Doesn't Know." for the out of town guests.

feature a "Welcome to Tri- will be furnished by the lo-Valley District," presided over cal club under the chairmanby Mary Weightman, District ship of Alice Lafleur. Jan Ed-2nd Vice-President. "The Gav- wards, President of Kern Desel and Aye," a parliamentary ert BPW, is in charge of deworkshop will be held on Sun- corations for the luncheon. day morning.

State Representative at the for the conference. Business conference will be Marion women of Indian Wells Val-Burbridge, President-Elect, Calley who would like to join ifornia Federation of BPWC. the BPW are invited to at-This will be the first time tend the conference. Addithat a member of this dis-tional information may be had trict has served as its State by phoning Marjorie Reed at Representative at the confer- Ridgecrest, 446-3822.

The China Lake Business ence. Mrs. Burbridge was 1960-

The China Lake PBW Club will be represented by President Irene Branham and June Redfroe, First Vice-President. June Wright and Millie Gregory are alternates.

Mrs. Reed estimates a crowd of 250 ladies, representing 28

The Saturday banquet will Decorations for the banquet TUESDAY-WEDNESDAY SEPTEMBER 16-17 "CHITTY CHITTY BANG BANG" (143 Min.) Dick Van Dyke, Sally Ann Howes 7:30 P.M. (Musical/Fantasy) DON'T MISS this ex-

travaganza about the kooky inventor of a weird auto that coasts on water and sails There is no registration fee through the air. *(G) THURSDAY-FRIDAY

SEPTEMBER 18-19 "DEATH OF A GUNFIGHTER" (94 Min.) Richard Widmark, Lena Horne, John

7:30 P.M. (Western) Can a man who has been marshall of a small town for 20 years refuse to resign, and fight off the entire gunslinging council? *(M) **(A MY) Short: "The Old West Trail" (17 Min.)

Youth Activities **Holds Dance At Community Center**

The China Lake Youth Center will offer a youth and adult oriented square dance instruction program beginning on September 16, 1969 at 6:30 p.m. at the Community Center. Bill Grady, well known in

square dance circles in this area for the past 11 years, will be the instructor.

Age limits for youngsters will be 12 through 18 years. Youth Center membership paid through March 1970 is required, or the youngster may pay a \$5 registration fee. A \$10 adult registration fee will be charged.

For further information contact Youth Activities at Ext. 72909.



EASY DOES IT-Two male turtles, owned by Mr. and Mrs. Edward Price, 511-B Lexington, are seen in the midst of a pitched battle in the Price's backyard. It seems that the combat is over the attention of a female turtle, also owned by the Price's. This picture was taken just as the two combatants met head-on and the collision caused their forefeet to come off the ground as each turtle tried to flip the other over on its back.-Photography by PH2 Michael F. Krause

Assessments Due GEBA-CLMAS

Assessments No. 184-112 are ment. Those who mail their now due for the death of Roy payments may send advance Vernon Brown, 51, announced Lawrence R. Mason, secre- and postage costs. tary-treasurer of the Govern- Mail payments to Lawrence ment Employees Benefit As- R. Mason, 208 Bonita St., Ridgesociation and the China Lake crest, Calif. 93555. Mutual Aid Society. Mr. Brown All Corona transferees are passed away September 6 at invited to join the associathe San Diego Hospital from tions, which pay \$500 each to a brain tumor.

paying the \$1.20 assess- 2846.

27-Dance step

29-Adhesive

substance 30-Man's

31-Hole 32-Proposition 33-Symbol for

41-Claw 43-Tavern 44-More vapid 46-Climbing

device 49-Swiss river 50-Once more 52-Guido's high

note 53-Period of time 54-Harvests 55-Tear

DOWN

1-Long, slender fish 2-Mature

payments to save on check

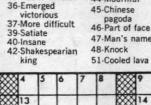
beneficiaries to taling \$1000. Membership applications can All GEBA-CLMAS members be obtained by phoning Larare encouraged to be prompt ry Mason at Ridgecrest, 375-

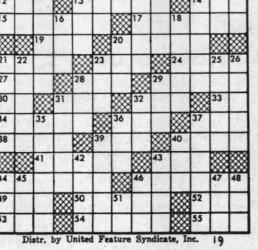
CROSSWORD PUZZLE

3-Armed bands 4-Shut up 5-In music, high 6-Cyprinoid fish 7-Country of Asia 9-Young boy 12-Time gone by 8-Snare 13-Church official 14-Man's name 15-Feel indignant 11-Parent (collog.) 16-Lamprey 17-Ached 19-Place 21-City in Russia 35-Public official 36-Emerged 22-Wireless 23-Crony (collog.) 44-Mournful 24-Country of

25-Essence 26-Wants 28-Possessive





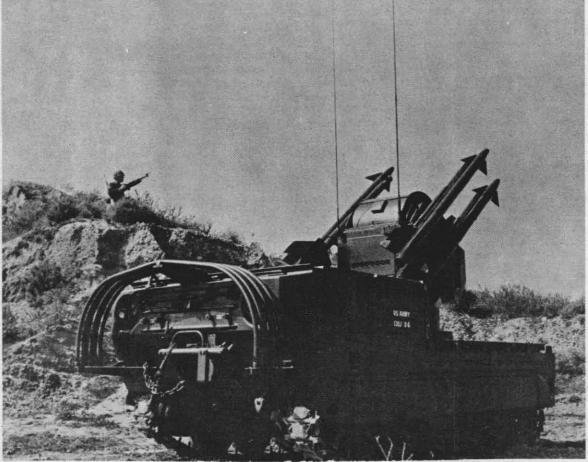


From	— STAMP
ro	



Naval Weapons Center, China Lake, California

Fri., Sept. 12, 1969



KEY ARMY SYSTEM—Chaparral, a surfaceto-air missile developed at the Naval Weapons Center, is now part of a key air defense system of the Army. Shown above is a complete fire unit in the field that was developed by the Aeronutronic Division of

WILLIAM R. HATTA-

BAUGH, Head of the Prod-

uct Design Division of the

Engineering Depart ment,

has accepted the chairman-

ship of this year's Combined

Federal Campaign at NWC.

The campaign, scheduled for October 15 to November 15,

is a once-a-year fund drive

that supports the IWV Uni-

ted Fund, National Health

Agencies, and International

Weather Forecast

Weather forecasts for the

Service Agencies.

Philco-Ford. Completely self-contained, the unit carries four missiles ready to fire and eight in storage. For more details on the Center's role in developing this program, see the pictures and story that are printed on pages 4 and 5.

Center Announces Opening Dates For Upland Game Bird '69 Season

hunting for upland game birds on the north range. Dates for the hunting weekends are: October 25 and 26; November 1 and 2; and November 8 and 9. Chukar, valley and mountain quail, cottontail and jackrabbits may be tak-

fornia Fish and Game Code apply to hunting on the Center. Legal bag limits and forced by personnel of the Department of Fish and Game. Nearly 260 square miles of

the north range is in the hunting area. New boundary signs will be posted and limits of hunting areas strictly enforced by NWC Security Department and the DFG. Hunters are reminded that Renegade (Little Petroglyph) Canyon is outside the hunting area.

Two overnight campsites will be available for hunters. Junction Ranch and Burcham Springs will both be open for overnighters. Check point Center will be the Darwin session. Gate, seven miles south of the town of Darwin.

Open All Night

China Lake area may be ob-New this year will be the tained by dialing 712215 or 712216 or 712217. The Atopening of the gate on Friday at 8 p.m. and remaining mospherics Studies Branch of Systems Development Decamp and be ready for an partment prepares the forecasts on a daily basis. According to biologists of

Following the annual meet- DFG who recently completed ing of the NWC Natural Re- brood counts on the range source Management Board the bird population is good last month, approval has been to excellent. Tally this year received from COMNWC for was nearly nine juveniles

game experts hunters will work to get their birds. Plentiful food and abundant water throughout the summer have kept the birds widely scattered over the range. Recent thunderstorms have added more water to seeps and pot holes so the wily chukar All restrictions of the Cali- will have an advantage over scatter gunners this season.

Seventh Year

The October 25 opener will other regulations will be en- mark the seventh consecutive year of upland game hunting at NWC. Last year a total of 3,721 hunters took the field during the open weekends to bag 4,588 birds. This figures out about 1.23 birds per hunt-

> Over the past six years more than 10,500 hunter days have been spent on the Naval Weapons Center during the open hunts. Average take amounted to a little over one bird per hunter.

> Limits for 1961 hunting season are: Chukar, 6 per day, 6 in possession; all species of quail, 10 per day, 10 in pos-

Hunting on the Naval Weapons Center at China Lake has become a highlight of upland game season for many California sportsmen. Since July the Center has receivto permit hunters to make ed many letters and inquiries about the hunting season. early start on opening day. A number of articles have ap-(Continued on Page 3)

NWC Bluejacket **General Mess Galley Captain Chosen for Exemplary Work**

CS1 Clifford H. Stone, Galley Captain at the NWC Galley, has been named "Bluejacket of the Month" for September. In addition to his duties as Galley Captain, Stone is also the Assistant Chief Commissaryman.

The 14-year veteran attended Calhoun City High in Oxnard, Alabama, close to his home town of Anniston. He is a graduate of Class "B" School at Newport, Rhode Island.

Stone was chosen for his rival.

pense paid weekend in Bak- cording to his father. ersfield by the Greater Bak- Mrs. Stone is interested in ersfield Chamber of Com- ceramics and art work, a hobmerce.

Prior to departing the lo- she can. cal area, the Stones will pick up a new car from Doug The Stones reported aboard

field by representatives of since his arrival. the CofC, and Stone will be When asked if he had exinterviewed on KERO-TV.

le will be hosted by the on an LST has to stand out cated at 200 Union Avenue, duty assignments. The ships where they will receive lodg- are small and the galley sufing and meals.

receive discount certificates explained. from other participating merthree weekends of public per adult bird. But, add the to the selectee upon his ar-

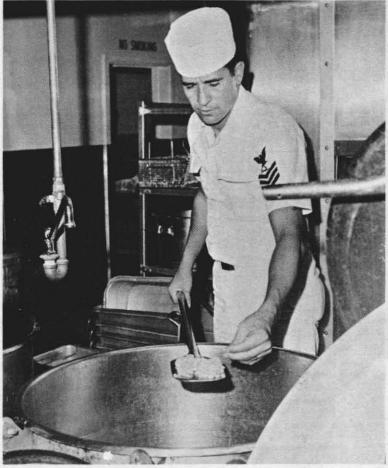
honor as a result of his ex- Stone has been married for emplary work habits, military 11 years and has four childbearing, and his ability to ren: Jinnia Lee, 10, Billy Alsupervise men and work bert, 8, Jim Edward, 5, and Deanna Sue, 3. Jinnia plays As a result of his selection, the piano and Billy is interhe and his wife Ginger Ann, ested in sports. Young Jim is will be treated to an all-ex- looking forward to school, ac-

by she pursues as often as

Butler, owner of Desert NWC in February 1968, and Motors, which they will use luckily for Stone, as he is an during the weekend holiday. avid fisherman. He has visit-They will be met in Bakers- ed most of the upper lakes

perienced any unusual duty, While in that city the coup- Stone replied, "Being a cook Royal Palms Motor Hotel, lo- as one of my most unusual fers from manpower short-Stone will receive gift cer- age. Also the size is a liatificates from Brock's Depart- bility when it comes to cookment Store, 1918 Chester Ave- ing in a bad storm," he comnue; Valley Office, 1622-19th mented. "Trying to hold on St.; the Cue Ball, 2111 Chester to the bulkhead with one Avenue, and the Kern County hand, and a pot with the oth-Museum, 3801 Chester Avenue. er in a badly pitching sea, In addition the Stones will is quite an experience," he

"I've seen it so bad that chants, which will be included I've cooked scrambled eggs in a hospitality packet given in one of the big pots, 'cause



A PINCH OF SALT-CS1 Clifford H. Stone, NWC's "Blueiacket of the Month" for September, is shown preparing food for the evening meal in the NWC Galley. Stone, who is Galley Captain, is a 14-year veteran of the Navy. Chosen for his exemplary work and outstanding attitude, Stone and his wife will be treated to an all-expense paid weekend in Bakersfield by the Bakersfield Chamber of Commerce as a result of his being chosen Bluejacket of the Month.



TOUR NWC FACILITIES—Faculty members of the Bakersfield College, Desert Division, are shown in the Michelson Lab machine shop during a tour of NWC ranges and facilities September 4. The orientation included witnessing delivery tactics; tour of ground ranges and the community; and a tour of Michelson Laboratory. The group was welcomed by Lt. (j.g.) J. E. Terrell, Administrative Assistant to Capt. M. R. Etheridge, NWC Commander.

velopment schedule. When ex-

tensive data requirements re-

quired a long countdown,

many of the early test firings

This required not only pro-

ject personnel, but also ordn-

ance, range, and NAF drone

support personnel to be on

siet at very early hours. Some

of the environmental tests

conducted by Code 45 requir-

ed 24-hours-a-day, 7-days-a

Because of background and

sun reflection, the supersonic

guidance and control groups

always took place after dark.

Many of the explosive type

rumbles heard in the Valley

past two years, have been Cha-

parral going for a preflight

test ride down the Code 30

SNORT track. A very special

the families for their cooper-

port given after many a very

nam veterans discharged to

Aug. 4 raised the ledger count

started at 2:30 a.m.

week test cycles.

CHAPLAIN'S MESSAGE

High Holydays



By Student Rabbi Robert Klensin

Jews throughout the world will begin observing the High Holy Days-Rosh Hashana, the New Year, and Yom Kippur, the Day of Atonement—this evening, September 12.

Rosh Hashana is the Jewish New Year, but that is where the similarity to January 1 ends. Rather than being a time of frivolity and merriment, Rosh Hashana is a time to slow down from the rapid pace of our everyday life and step back to look at the purpose of life, asking-why are we here? It is a time to consider how the quality of our lives may be improved. If we rejoice, it is only in the knowledge that life holds the promise of better things for the year to come and that it is within our power to make it better.

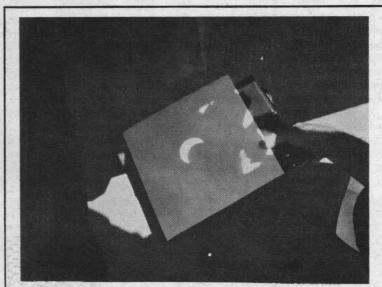
The ten days between Rosh Hashana and Yom Kippur are spent looking back over the past year, at the mistakes we have made and the wrongs we have committed. This period is called the "Ten Days of Penitence."

The Hebrew word for "Penitence" is also translated "Return." And so it is that through penitence we return to God and a better life. As the Prophet Ezekiel taught, God does not desire the death of the wicked, but rather that he should change his ways and live.

The High Holy Days end with Yom Kippur, the Day of Atonement. It is taught that God will forgive us for our sins if we truly repent and sincerely plan to do better in the coming years. However, on Yom Kippur, a person will not be forgiven for sins against his fellowman unless he makes amends first with the individual involved.

There can be no question that by striving to make our lives more productive, we are inscribing ourselves in the book of Life that we may have a fuller and more meaningful life. If we sincerely mean the promise we make to God and ourselves to do better during the coming year, then truly the new year will be a good year.

In one of the central prayers on Rosh Hashana and Yom Kippur, we pray for the day when all men and nations will live together in brotherhood, justice and peace. May this year erence. bring us closer to that goal.



SOLAR ECLIPSE—This is a shot of the solar eclipse which took place at approximately 12 noon yesterday as viewed through a pair of focused binoculars on a piece of paper. The photo was taken by N. Purcell and K. McPeters.

DIVINE

Morning Worship-8:15 and 11 a.m.

Roman Catholic (All-Faith Chapel)-

Sunday School-9:30 a.m., Chapel An-

nexes 1, 2, 3, 4 (Dorms 5, 6, 7, 8) lo-

Daily Mass-11:30 a.m. in Blessed Sac-

rament Chapel. Saturday, 8:30 a.m.

Confessions-7 to 8 p.m. Saturday.

NWC Jewish Services (East Wing All-Faith

Chapel)-8 p.m. every first and third

Sabbath School-10 a.m. to noon, every

King Ave.)-Sundays, 7:30 p.m.

rian Fellowship—(Chapel Annex 95, 95

Protestant (All-Faith Chapel)

The Rocketeer Official Weekly Publication

U. S. Naval Weapons Center Ching Lake, California

Capt. M. R. Etheridge, USN "J." Bibby

Joan Raber Associate Public Affairs Officer (Acting Director of News Bureau

> Jack C. Lindsey Staff Writer

William P. Valenteen, Jr.

Lucille Edwards

PH1 Gary D. Bird, PH2 Delmar E. Hart PH2 Michael F. Krause, AN Maurice Dias Staff Photographers

DEADLINES:

. Tuesday, 4:30 p.m. .. Tuesday, 11:30 a.m.

The Rocketeer receives Armed Forces Press Service material. All are official U. S. vy photos unless otherwise identified. Printed weekly with appropriated funds in compliance with NavExos P-35, revised July 1958. Office at Nimitz and Lauritsen. 71354, 71655, 72082

PROMOTIONAL OPPORTUNITIES

ROCKETEER

the positions listed below. Current applications (SF-171) or Standard Form 58 ringing your work history up-to-date hould be forwarded as described below. The fact that positions are advertised here does not preclude the use of ther means to fill these positions. Part of the ranking process of those rated as assically qualified will be a supervisory appraisal form that will be sent to the employees present and most recent previous supervisor. Selection shall be made without discrimination for any nonmerit reason and without favoritism bas-ed on personal relationship or patronage

Administrative Officer, GS-00341-13, PD No. 140139, Code 4002-The incumbent work in the Weapons Development Depart-ment. Must maintain familiarity with and analyze the administrative operations of all the divisions, anticipate the need for and recommend management studies of the organization, functions, procedures, forms, etc. Must encourage sound managemen principles and practices throughout the deartment through contact with the technial/administrative and staff/administrative personnel. Incumbent's primary responsibility is for the non-technical administration including finances, manpower, facilities, and equipment. Minimum Qualification Reauirements: Three years general experience nistrative, professional, investiga tive, technical or other responsible work which provided opportunity for the applicant to gain a general knowledge of management practices and administrative processes and skill in dealing with others in person-to-person work relationships and the ability to exercise mature judgment. Three years specialized experience in administrative, supervisory, managerial, professional or technical work which provided the ar plicant an opportunity to acquire a knowledge of management principles, practices, ing of the needs and problems of administering public programs. Job Relevant Cri-teria and/or Selective Placement Criteria: Candidates with a bachelor's degree or an advanced degree will be given pref

Chipp, Bldg. 34, Rm. 26, Phone 72676. Computer Operator, GS-332-7, PD No. 717043-2, Code 1781—Incumbent operates the Univac 1005 which is linked to the Univac 1108 during production runs. When the 1005 is operated by itself it becomes a complete computer system, but when it operates remote to the Univac 1108, it pecomes part of that large complex computer system. Incumbent assembles the program run decks, assigns tapes, punches and sets up the control cards specifying error conditions and runs the programs according to instructions. Extreme accuracy and strict adherence to program write-up's result in costly computer time. Minimum Qualification Requirements: 2 years gen eral and 3 years specialized. Must pass the of general experience or have completed 2 years of study in a school above the high school level, or have completed an which included at least 300 hours of "hands on" training, or have any equivalent combination of experience, education, and training. In addition to having met the above, must have had 3 years of specialized experience; or must have had 2 years of specialized experience; or have any cation and training. Advancement Potential: May advance to GS-9. File application for the above with Sue

Prasolowicz, Bldg. 34, Rm. 28, ext. 71577. Supply Clerk (Typing), GS-2005-04 or 05 PD No. 31027-1 or PD No. 725041, Code 2552-Performs clerical duties involved in the procuring, shipping, receiving and controling of ammunition and explosives. This includes the necessary follow-up on procurement. The incumbent will furnish the technical departments with information on the status of orders and receipts. Minimum Qualification Requirements: At the GS-4 level, one year of general experience and one year of specialized experience. At the GS-5 level, one year of general experience and two years of specialized experience General experience is defined as clerical or office work of any kind which has demonstrated the ability to perform satisfac torily at the grade level of the position. Holy Mass-7, 9:30 a.m., and 12:30 p.m. Specialized experience is defined as experience in supply work or closely related activities: (a) which has required the applicant to acquire and apply knowledge of the rules, regulations, procedures and program requirements of one or more areas of a supply system; and (b) which has demonstrated the applicant's ability to perform at the level of the position to be filled. Job Relevant Criteria: (1) Actual experience in initiating or processing the paperwork involved in controling, receiving, shipping and procuring ammunition and explosives. (2) Experience in controling, re-

ceiving, shipping and procuring any type supplies in the federal service. (3) Ex-(Continued on Page 7)

'DESERT PHILOSOPHER'.

Potpourri

By "POP" LOFINCK

On the way over to Victorville last Saturday, I observed kids picking up aluminum beer cans along the highway. They sell the cans for one-half cent a can, and they were doing well and getting exercise in the open air.

When they came to their pick-up truck they dumped the beer cans in the pick-up and proceeded. The pick-up goes on ahead to where the next bagfulls will have been accumulated. They can't sell the so-called "tin" beer cans. They cannot

be melted-down. They are not just tin — but iron with a very

thin coating of tin. I was amazed at the growth of Victorville. It is now a city! NO FOOTPRINTS IN THE WATER

As you may know, Whales are mammals. They galloped around on land for eons of time - then went back to the ocean. In fact, the skeletons of today's Whales still have

They can't breathe in water like fish. They surface to rid their lungs of stale air and refill with pure air.

Maybe the human race can eventually take to the ocean plenty of room out there. Kids could have a baby Whale for a playmate instead of a puppy dog. Robbers could escape easily, leaving no footprints on the

It would be fun to touch a Whale with an electric prod such as the cowpokes used on cattle (a hollow cane full of storage

batteries see the Desert Philosopher column of August 8.) Untrained horses are loaded into trucks with the electric prod also - they don't go up the tailgate ramp on the double it's on the triple or quadriple.

Why doesn't some advanced thinker train Whales to pull boats around harbors?



DON'T BEG, HOGAN-The principal characters in "Under the Yum Yum Tree," the China Lake Players presentation which will be performed Sept. 19, 20, 26 and 27 in the Murray School Auditorium, are seen in the rehearsal picture. Joan Leipnik, standing, will play Irene Wilson; Flo Gerrish, seated, will enact Robin Austin; Frank Pickett, on sofa with Flo, plays the role of Dave Manning; and in the background, G. Robert Pinney, who is the unscrupled Hogan. T'e Lawrence Roman play will begin each evening at 8:15. Chuck Moore, a VX-5 sailor, is the technical director. An unusual feature of this production is two other Navy men behind the scenes: Stan Young, stationed at NAF, who will handle the lighting chores, and Dave Earle, who is also at NAF. All three men come highly qualified, having worked in a great many productions. Tickets may be purchased from the Gift Mart in Ridgecrest, or from the Station Pharmacy.



ADVANCEMENT TO THIRD CLASS — Capt. Charles W. Fritz, right, Commanding Officer of VX-5, congratulates three new Third Class Petty Officers on their promotion. The enlisted men were rated during the month of August following a Navy-wide examination. The men are: YN3 Benton, AMS3 Sweikow and ATN3 Moore. A fourth man, AE3 R. Eichenhofer, was also promoted to Petty Officer Third Class, but is not pictured.

AAUW To Hold Annual Luncheon At Powers Home

The American Association of University Women (AAUW) will hold their annual membership potluck luncheon at the home of Mrs. Kenneth Powers, 306 Intrepid on the Center, Saturday, September 20. beginning at 1 p.m.

All women who are college graduates are eligible to join AAUW, and are cordially invited to attend. Current members are asked to bring a

During the course of the Study groups will include: "Our Beleagured Earth-Can Man Survive," and contemporary English and American play reading.

The purpose of AAUW, since Fall Activities its founding in 1882, is to unite college-educated women for practical educational work to promote intellectual growth, and advancement of women, and to be responsible to

the society in which we live. For further information, please call Mary Kate Price,

AIAA Holds Swim Party And Barbecue

the American Institute of Aeronautics and Astronautics (AIAA), will sponsor its annual barbecue and swim party on September 16, beginning at 5:30 p.m., at the NAF Pool. Swimming, volleyball, and softball are on the agenda, as

AIAA members are asked to contribute \$1 per person for the barbecue dinner and refreshments. New Junior Professionals are also invited as special guests.

well as AIAA slides and soar-

ing films.

The China Lake Ballet Society will hold their annual fall sign-up for ballet lessons, which will be given to both children and adults, Sunday, September 14, from 2 to 5 p.m. at 72 Rowe Street. For further information, call Ann Short, 446-

PROMOTIONAL OPPORTUNITIES

(Continued from Page 2) perience in either controling, receiving, shipping, or procuring supplies in the federal rvice. (4) Experience in initiating or pro-

viding the paperwork necessary to control, receive, ship or procure supplies in a non-government activity. Advancemen Potential: GS-5 Supply Clerk (Typing) if hired at the GS-4 level. File applications for the above with Carole Cadle, Bldg. 34, Rm. 26, Ext. 71648.

Clerk-Stenographer, GS-312-4 or 5, PD No. 6917033, Code 171—This position serves as secretary and clerical assistant to the Head, Management Division (the immediate supervisor) and to the Management Planning and Communication Staff, Code 1712. Min-imum Qualification Requirements: Qualified Steno. Advancement Potential: GS-5.

Prasolowicz, Bldg. 34, Rm. 28, Ext. 71577.

WACOM Members Gather To Begin

The Women's Auxiliary of the Commissioned Officers' Mess (WACOM) will hold their annual Membership Coffee in the Mojave Room at the COM on September 16, from 10 a.m. to 12 noon.

All interested ladies are invited to participate in the get-together in order to meet their neighbors and sign-up

For further information. ladies are invited to call Flo Carmody, Publicity Chairman, at 446-2655.

The ladies' night physical education class will continue, however. Meetings will be held on the patio. The Gymnasium pool will also remain in operation during the time that the gymnasium undergoes refurbishing.

Club Chaparral Feature 'Beat Incorporated⁴

Mike Weinberg, manager of pearance.

Club Chaparral would like that many of the Chaparral to invite all members and components, such as GCG and guests to come out for an eve- rocket motor were supplied for ning of fun and entertainment. flight from specimen lots that

NWC Plays Major Role In Chaparral

of these road tests was conducted at the U.S. Army Desert Proving Grounds, Yuma, Arizona

During this test, Chaparral structural simulation missiles were carried. In a subsequent test here at NWC, which was designated the XP-100 mile test, structural missiles were carried again; but during some phases of this testing, a tactical GCG was mounted to the structural missiles. The most grueling and de-

finitive of the Chaparral road tests was the 4,000-mile test which was conducted at Aberdeen Proving Ground, Aberdeen, Maryland. This series of tests was conducted under the direction of the White Sands Missile Range executive test agency. The tests combined phases

of engineering test, safety

test, and engineering design test as specified in U. S. Army Test Command Project Number 3-6-9230. Test objectives included an evaluation of the effects of transportation vibration and shock on both ready-to-fire and stored Chaparral missiles; a determination of durability of both missiles and the launch and control pallet; and an evaluation of the practicability and adequacy of maintenance

During these tests the vehicle and missiles were driven over the entire spectrum of terrain that is avilable at Aberdeen. This included gravel and unpaved roads, ramps, rough open country, swamps, streams and watercourses, steep grades, and side slopes. After all runs were completed, it was found that cumulative test milage actually totaled more than 5,800 miles, rather than the scheduled 4,-

Throughout all of these tests NWC engineers and technicians have been present. In early phases Barney Kinkennon, of Code 4051, and Ben Tidwell of the project office monitored tests. In later phases, Roy Eisenhower provided field support.

While qualification and

titudes, ranges, velocities, and

Frequently, these paramet-

ers were established to test

the Chaparral missile at the

very limit of its seeker or

flight performance range. Al-

though actual test results can-

tion with the flight test ser-

These favorable results

were achieved despite the fact

aspect angles.

road tests were being accomfor the coming season. plished to meet U.S. Army requirements, plans were be-

ing advanced for actual firing of Chaparral missiles at White Sands Missile Range, White Sands, New Mexico. Here with technical support being provided by NWC Chaparral flight test engineer, Paul King, tests were conducted to measure Chaparral's flight performance against drone targets. The test plan specified a wide range of targets, al-

the Club Chaparral, has an- not be tabulated here, both nounced that "Beat Incorpora- the U. S. Army evaluators and ted," a folk-rock band, will Chaparral management personprovide entertainment for club- nel at NWC expressed satisfacgoers tonight, and tomorrow night "Martha Lov and The Three Beats," will make an ap-

(Continued from Page 5) had been subjected to the sive overtime to meet the devehicle, the XM-730. The first rigors of the qualification test program. **Had Setbacks**

When considering all of the testing, whether qualification. road, or flight tests, it cannot be said that failures and setbacks did not occur. Indeed, some of the flaws and design inadequacies that came to light as a result of the tests and long work hours for the Chaparral Project Team, the support groups at NWC, and the supporting contractor.

However, none of these discrepancies was of a serious nature, and none delayed the over-all progress of the Chaparral development effort. For that matter, the whole deve- from 9 to 12 p.m. over the lopment phase was accomplished in only 2 years and 8 months. From the time the Army made the decision to develop the Chaparral system thanks is extended to all of to the time production hardware was delivered to Army ation and understanding suptroops was 32 months.

long work day. **Over-all Management** Only exemplary cooperation between the Armed Ser-**Vet Population** vices and the various agencies within each could have History's Highest brought about the development of the Chaparral system in such a short time. The inter-The G.I. roll call passed the relationships and excellent co-27,000,000 mark last month. operation of the officials of In announcing the new to-U. S. Army Missile Command tal of enrollees, the Veterans (MICOM), the Naval Air Sys-Administration said that Viet-

to the highest peak in history. ject Team of NWC have made In reviewing the veteran population, the VA notes that this possible. One of the major contributhe average age of all 27 miltions not yet mentioned has lion veterans has increased to been the wives and families 44.3 years.

tems Command (NASC), and

the many test agencies and

ranges with the Chaparral Pro-

sive amount of travel and

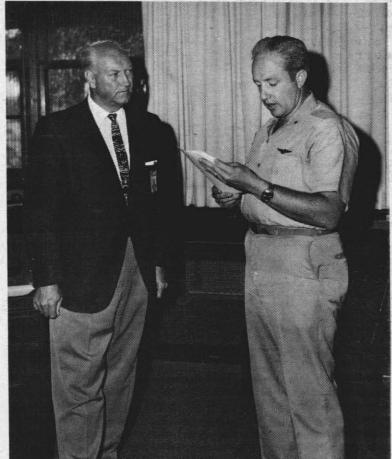
duty off-Center for those work-

Of the portions of the pro-

ing on the program.

of the people working on Broken down by wars, the Chaparral. average age of veterans on the Being an Army system, many portions of the program are conducted at off-Center locations requiring an exten-

Spanish - American (6,000 veterans) 90.3 years; World War I (1,647,000) 74.7 years; World War II (14,592,000 veterans) 49.7 years; Korean Conflict (5,847,000 veterans) 40 gram conducted at NWC, years; and Vietnam era (3, 169,000 veterans) 26.2 years. many have required exten-



PERSONNEL COMMENDED-M. H. Johnson of the Corona Laboratories was among those Center personnel who received Letters of Commendation from the Chaparral Management Office, Redstone Arsenal, for their work during the evaluation phases of the Army Chaparral program. Others who were similarly honored were John Lamb, Dick Boyd, Roland Baker, Chuck Smith, and Martin Landau.



Golf Club Championship Tourney Matches Set for Final Weekend

With the China Lake Golf Club championship tournament half over, this Saturday's pairings have produced some interesting matches. Joe Jones and Curt Bryan fought it out on Sunday, September 7, after both had received bye's the day before. Jones emerged the winner and will play R. Moore tomorrow morning at

Moore defeated J. Striches Saturday and moved into a match against C. Clark on Sunday after Clark had sent E. Nelson down to defeat on

opening day.

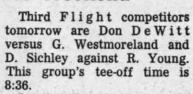
Marv Rush, who had a bye on opening day, met Max Smith Sunday, who had beaten Mike Hines on the first day of play. Rush was the victor and receives a bye to-morrow, as D. Schoelkopf, who had defeated H. Pangle in the opening round, withdrew.

Rush will play the winner of the Jones-Moore match on Sunday, September 14.

In the First Flight on Saturday, Stump received a bye and P. Pilcher defeated D. Hiles. Pilcher won the match Sunday against Stump and will go up against G. Bruce at 8:12 a.m. tomorrow. Bruce had a default Saturday, and beat F. Santangelo, who had won his match against R. Pinto

opening day.
Playing with Bruce and Pilcher tomorrow morning will be G. Wydra and F. McElfish, who made it to the semifinals by virtue of wins over W. Stelzmiller and G. Boyts, respectively. On opening day McElfish had to go 21 holes before he finally defeated C. Wack, 1-up. Boyts knocked off W. Irby opening day to start his way up the ladder.

Second Flight matches tomorrow morning are: Jim Peck against Elmer Davis, teeing off at 8:24, and J. Siebold vs. M. Landau in the same



the Fourth Flight, Ed Donahue, who had to scramble to win his match last Sunday, 1-up after 19 holes, will tee-off at 8:48 against Mike Sanitate. Rounding off the four-some will be W. Koch and

Beginner's Class In Kodokan Judo Taught by Woman

Margaret Gulick, a Burroughs High School physical education instructor, and U.S. Judo Association District Coordinator for Central California, will instruct a class in Kodokan Judo beginning September 16 in the Burroughs High School Wrestling Room,

The class is primarily for beginners, and will be available for boys, girls, men and women above the age of 7.

In preparation for the course, Mrs. Gulick recently completed two weeks of intensive training with Olympic and world champions at Camp Bushido, in Olympic Valley, California. There will be a fee of \$15

with monthly dues of \$4 for Juniors (under 16), and \$20 with monthly dues of \$5 for those over 16 years of age. The initiation fee covers the cost of the complete Judo uniform, a full year membership in the Armed Forces Judo Association, and a one year membership in the Amateur Athletic Union.

All students will be eligible for promotion within two months under the new United States Judo Association rules.



TOURNAMENT WINNERS-Pat McDonald, right, instructor for the China Lake Youth Center's golf class, is shown with the winners of the Summer Golf Program Tournament held September 5. Shown from left to right, the boys are: Mark Loper, 1st place Juniors; Keith Adicoff, 1st place Seniors; and Jim Carmody, 2nd place Seniors.



SUMMER ACTIVITY OVER—The group of youngsters pictured above are shown following the completion of a tournament held at China Lake Bowl September 3, under the direction of Dean Ray, seen in the background. The youths bowled in the summer

program sponsored by the Youth Activities Center each Wednesday and Thursday, from 10 to 11 a.m. Some of the youngsters are holding trophies and certificates which they won in the tournament.

-U. S. Navy photo.

Friday, September 12, 1969

Scoring Low As Premier League Takes to Lanes

The Monday Night Premier League started its fall season September 8 with a new 20point system of scoring. Team play was hotly contested as bowlers rolled against their opposite in each game, the victor scoring one point. The team scoring the most pins in each game was awarded one point; the team with the most total points for three games received 2 points; making a possible total of 20 in a night that a team could gar-

This method replaces the 3-point scoring system, whereby a team got 1 point for each

Scores were low as bowlers shook off the doldrums of summer. New pins and resurfaced lanes also helped to keep scores low, a handicap which will wear off quickly now that the house is full

Dan Branson opened the season with a nice 579 series, followed closely by Ray Freascher, 574; Bob Sickles, 572; and Jack Lindsey, 566. Sickles had high game for the night, 243.

Ace-TV garnered all the high team honors, hitting a 960 enroute to a nice 2713 series. As most of the team averages in the league are right around 900, those figures will go up.

Following is a list of standings after the first week of

Dick Tolkmitt, Secretary of the Midway League, reports that after two weeks of play there is a three-way tie for first place between NAF, CPO and the Alley Kats. Each team has won seven games and lost one. Close on their heels are the Pincrackers and the Mixers with identical 6-2 rec-

In play September 10, Ray Freascher had high individual series, a nice 594, followed by Bob Owens with a 568 and M. Baican with a 567. J. Irvin had high game for the evening, scoring a 231.



GIRLS' SOFTBALL-Cdr. S. S. Bates, Head of the Command Administration Department, gives a few pointers to the pitcher for team #2 during the All-Star game played at Reardon Field, September 3. Dr. A. Adicoff and Gene Harbin were the coaches of the winning team #2, while Bob Battaglia and Carol Hape coached Team #1. The teams were made up of girls from both A and B League.

Bakersfield Welding had high team game in the handicap division, hitting 1064. NAF took scratch honors, rolling

PREMIER LEAGUE

eam-	W.	L.
idgecrest Bowl	14	6
tarlite	13	7
ice TV	11	9
Cirkpatricks	11	9
urn	10.5	9.
V Trophy	9.5	10.
oyd's Auto Parts		11
Nercury Moving	9	11
om's Place	7	13
. L. Navy	6	14
		-

According to Bill Nicol, he Center Gymnasium will be closed indefinitely beginning Monday, September 15, for a complete refurbishing.

Flag Football **Kickoff Slated** For September 16

Flag Football will begin September 16 at 7:30 p.m., with the Wolves meeting NAF at Schoeffel Field. This year's Flag Football season will see four teams: the Wolves; Ace TV; NAF, and VX-5, clash twice a week, on Tuesday and Thursday, at 7:30 each night. On September 18, Ace TV will meet VX-5 in the other game to be played next week.

The league promises to be a tough one this year, as the players do not wear padding, and some of the bone-crushing blocks are enough to disable a well-padded fullback. All Center residents are cordially invited to come out to the games. Following is a complete

schedule:
1969 FLAG FOOTBALL SCHEDULE September— 16-7:30 p.m.

18-7:30 p.m.	Ace TV vs. VX-5
23-7:30 p.m.	Wolves vs. VX-5
25-7:30 p.m.	NAF vs. Ace T
30-7:30 p.m.	Wolves vs. Ace T
October-	
2-7:30 p.m.	VX-5 vs. NAF
7-7:30 p.m.	Wolves vs. NAF
9-7:30 p.m.	Ace TV vs. VX-5
14-7:30 p.m.	Wolves vs. VX-5
16-7:30 p.m.	NAF vs. Ace T
21-7:30 p.m.	Wolves vs. Ace T
23-7:30 p.m.	VX-5 vs. NAF
28-7:30 p.m.	Wolves vs. NAF
30-7:30 p.m.	Ace TV vs. VX-5
November-	
4-7:30 p.m.	Wolves vs. VX-5
6-7:30 p.m.	NAF vs. Ace T
13-7:30 p.m.	Wolves vs. Ace T
18-7:30 p.m.	VX-5 vs. NAF

New Hours Set For Camp Gear Check-out

Ray Gier, Athletic Director for NWC, has released new hours that camping equipment may be checked out by Center employees, beginning September 15, Monday through Friday, from Building 52.

Shotguns, rifles, sleeping bags, cots, ice chests, stoves, heaters, tents, thermos jugs, lanterns, rods and reels, may be checked out for a daily charge by military personnel and any civilian Center employee who has been employed on the Center for less than one The hours are: 10:00 a.m. to

1 p.m., and 2:30 to 6 p.m.

Residents Can Now Call For Emergency Aid

Help Line, Inc., an emergency telephone service for China Lake, Ridgecrest, and surrounding areas, will begin operation this Sunday, the organization's board of directors has reported.

Telephones will be manned by trained volunteers every day, including weekends, from 6 p.m. to midnight. Persons who are faced with any kind of crisis situation may call the Help Line, 446-5531, and receive immediate emotional support, plus, if needed, referral to local agencies or organizations which can provide necessary aid.

NWC has provided office space for the group as well as desks and other furniture. Since the effort is a community-wide one, volunteer workers have been recruited from both China Lake and Ridgecrest. Churches and other organizations, agencies, and individuals have combined their efforts to organize this muchneeded service.

Additional persons are still needed to serve as volunteer telephone answerers. Each worker will be given an intensive 16-hour training course, and may work one or more three-to-six hour shifts per month. Persons wishing more information may write to P.O. Box 5658, China Lake, or may contact Help Line Director of Training, Dr. C. Douglas Lind, at 446-4387.

PWOC Invite Rev. C. French As Speaker

The Protestant Women of the Center will meet at 7:30 p.m., Tuesday, September 16, in the East Wing of the Cha-

Rev. Charles French of the Covenant Presbyterian Church in Ridgecrest will be the speaker. He has chosen as his topic "Take Off Your Mask" and his remarks will introduce the new study topic for the circle meetings which are held monthly. Refreshments will be served following the

of the Protestant Women, has issued an invitation to all interested women to attend the meeting.

Stone Selected As Bluejacket

(Continued from Page 1) I couldn't keep eggs from

sliding off the grill, he added. "However, it was a big waste of time because most of the men don't bother to eat anyway in a sea like Stone has received the

Navy Unit Commendation, Good Conduct Medal, with cluster, National Defense Ribbon, China Service, and the Vietnam service ribbon with The Stones reside at 308

Dorado St., in Desert Park.



FLOYD A. KINDER, Head, Photophysics Branch of the Systems Development Department, has been named to take over as the NWC Liaison Officer in Washington, D.C., during the period September 29 through November 24.

Bird Hunting

peared in the public press featuring hunting as well as the total natural resource management program on NWC lands.

All indications are a record-breaking crowd of sportsmen will be scattered over 260 acres of the north range for the opener on the weekend of October 25 and 26.

No special passes are required in advance for access tor (Research), all at NOTS to the range during the three hunting weekends. All cars will pass through a check point manned by Security Department where permits will

During these three weekends: October 25 and 26; November 1 and 2; and November 8 and 9, the two-car restriction on travel on the range for recreation purposes is lifted. The restriction against two-

wheeled vehicles on the range applies during the hunting weekends. No firearms other than legal gage shotguns may be taken on the range. Cameras, hunting dogs are per-

Again, this year hunters are cautioned to take only legal species of birds. Two exotic species planted experimentally last year may not be taken. These are the crested tinamou and the seesee partridge. The tinamou is a distinctive bird about the size of a guinea fowl with a thin upswept crest. It is tan and brown barred. The seesee partridge is about the size of an eastern bobwhite quail with slaty to tawny plumage and a distinct speckled collar. Legs and beaks of the seesees are yellow to orange in contrast to the bright red of the chukar.

Drivers are reminded that roads on the range are rough. Caution is required at all times and extra care is urged for drivers of low-slung vehicles. Late flash floods have roughed up the roads and made high centers in many places. Driving off established roads or trails will not be permitted.

No gasoline or other services are available on the ta Barbara, the United World range. Tanks of water for radiators are spotted along main roads but hunters are advised to carry sufficient drinking water for their use.

Dr. Howard Wilcox Will Lecture At **Community Center**

A former NWC Assistant Technical Director, Dr. Howard A. Wilcox, an independent Consultant specializing in technical, management, educational, and government-industry problems, will give a technical lecture at the Community Center September 15, beginning at 9:30 a.m.

The lecture will deal with the technical aspects of "A Science of Human Values," based on a forthcoming book on the subject that he has written.

Dr. Wilcox graduated mag-na cum laude from the University of Minnesota in 1943, with a B.A. in physics. He taught physics at Harvard and Radcliffe during 1943-44 and then served on the Staff of the Los Alamos Scientific Laboratory from 1944 to 1946.

He obtained his M.A. and Ph.D. in physics from Chicago University in 1948. His long and varied career

seen many significant posts since 1950, including: a member of the Physics Department and of the Radiation Laboratory of the University of California at Berkeley; Project Engineer on SIDEWIND-ER at NOTS; Head, Weapons Development Department, Head, Research Department, and Assistant Technical Direc-



DR. HOWARD A. WILCOX

(now NWC); Deputy Director Defense Research and Engineering in the Office of the Secretary of Defense in Washington; Director of Research and Engineering for the General Motors Defense Systems Division; Technical Director of Advanced Power Systems, GM Research Laboratories at Santa Barbara, and finally, on September 1, 1967, the sole owner of his consultantship.

Dr. Wilcox has devoted the major part of his professional life to problems of scientific research, engineering, management and education related to the national defense For three years he served

as Chairman of the Educational Program at the Center. In addition, he has given four special courses of lectures in mathematics for pre - college students.

Dr. Wilcox is a Fellow of the American Physical Society, and a Member of the American Association for the Advancement of Science, the American Institute of Aeronautics and Astronautics, Phi Beta Kappa, Sigma Xi, The Research Society of America, Tau Beta Pi, the Affiliates of the University of California at San-Federalists, and the American Civil Liberties Union.

All interested Centerites are cordially invited to the lecture.



NEW CITIZEN-SD1 Jose F. Ibanez, a native of the Philip pines, became a new United States Citizen on August 22 in Superior Court. Ibanez, who entered the Navy in February, 1955, has been at NWC for a year and a half. His reason for becoming a citizen, he stated, was that all three of his children had been born in the United States. Ibanez, his wife, Lourdes, and three children: Angelica, 7, Joseph, 6, and Grace, 2, live at 313 Cisco St., on the Center. For relaxation Ibanez enjoys oil painting, and recently completed a course in automotive mechanics.

Hoffman New IEEE Chairman

John Hoffman, of Riverside, has been elected to serve as Chairman of the Antennas & Propagation/Microwave Theory & Techniques Chapter in the Foothill Section of the Los Angeles Council of the Institute of Electrical and Electronics Engineers. Hoffman is employed at the Naval Weapons Center Corona Laboratories in the Radio Frequency Branch.

A letter received from G. M. Goldenstern, Chairman of the Los Angeles Council of IEEE, stated in part: "It is a be selected as a leader out of the thousands of IEEE members in his field as it is also a recognition of his past service. However, it is also an honor and a compliment to his employer because it is evi-

Special recognition is not a new experience for Hoffman. He was selected to serve in Vietnam in a overall laboratory assistance program. He helped to compile and put research techniques to work directly in the field in order to eliminate much of the delay ordinarily encountered in conceiving, designing, and building new weapons and equipment needed in the fighting areas. The purpose of his assignment was to gather compliment for Mr. Hoffman to information and conduct studies on current operations for the purpose of assisting the Commander Naval Force, Vietnam, in carrying out the responsibilities of his command Hoffman returned from Viet-

nam in March.

dence of the caliber of the

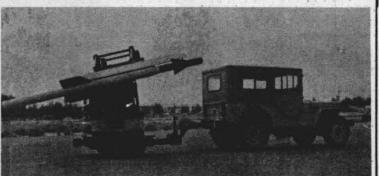
people which he employs."



FORTY YEARS SERVICE—Charles P. Harsch, a security guard at the Corona Laboratories, is shown above being congratulated by Cdr. C. D. Brown, Officer-in-Charge, on the completion of forty years of service with the Navy. Harsch served in the enlisted ranks from 1929 to 1949, and has been in the Federal Service ever since.

NWC Personnel Play Major Role In Army Weapon Development

Concept Of A System

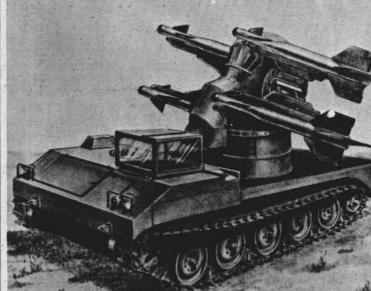


HAMBURGER (GROUND ROUND) 1957-1960



OSPREY 1961 - 1963





NWC CHAPARRAL 1963 - 1965



ARMY CHAPARRAL 1965 TO PRESENT



TEST FIRINGS—A specially constructed fifty-foot tower, especially designed to withstand helicopter operation, was built by Code 30 for a low-altitude test firing. In this test, the target was demolished and the tower was hardly damaged. Test firings at China Lake required extensive support from all departments. For this test, a surplus helicopter was provided by NAF. Countdown for the firing began





ROUGH TREATMENT - In the course of the evaluation phase of the program, the missile was subjected to over one hundred miles of "worst case" rough environment testing to measure the amount of shock and vibration that the system would withstand. The photos above attempt to show the kind of treatment to which it was subjected. Extensive support was provided by Public Works Vehicle Maintenance personnel in the repair and maintenance of the vehicle during test runs.

Summary of Work Tasks and Organization Shows Army Go-Ahead Key Commitment

The story of Chaparral is a familiar one to many at the Center because it is a story essentially about NWC, and a system which had its origins in early phases of the Sidewinder program.

Some will recall the first efforts in surface-to-air evaluation programs which were called variously "Small Sam" or "Hamburger" (Hamburger meaning Ground Round as opposed to the airborne Side-

Subsequent studies, in conjunction with the Bureau of Naval Weapons resulted in the definition of a dual radar/IR system for use on de-

This system, called OS-PREY, was mounted on the side of the 5"/38 gun mount and contained a mix of both radar homing and IR homing Sidewinder guidance units. Although complete technical development plans of the system were prepared (completed), funding limitations resulted in cancellation of Osprey prior to development.

Upon cancellation of the Osprey system, Station efforts were once again directed to-IR only, systems.

To differentiate between this simple system and the more complex radar/IR Osprey system, the name was changed to Chaparral. Additionally, the Chaparral system, being later in time, utilized the newer Sidewinder 1C missile which provided significant gains in performance and fewer changes to adapt to the surface launch environment. These studies were conducted in the Infrared Systems Division (Code 405), and utilized the same expert team that was responsible for the development of the Sidewinder 1C.
Army Gives Go-Ahead

The key commitment that finally put Chaparral developmental efforts on the path toward production and its ultimate role as an air-defense weapon was a decision by the Department of the Army in late 1965.

U. S. Army officials had been kept aware of the early efforts by NWC to adapt Sidewinder 1C for a groundhad witnessed the military potential and engineering design evaluation being conducted here at the center, between January and October 1965, and were deeply impressed with the Chaparral missile's performance, fast reaction and launch time, and excellent capability against low flying targets.

Perhaps the most impressive part of the Military Potential program was the ability of NWC to conduct such an extensive project in such a short time frame (9 months). During this period, the prototype design was established; the Sidewinder missile was modified in accordance with the new design, utilizing hardware manufactured in NWC shops; and a flight evaluation program was con-

Mr. Roland E. Baker put his entire Mechanical Design

ducted.

Branch to work on airframe and propulsion design improvements and on defining the interface and launcher en-

Mr. E. E. Creer supplied information on over 1,000 firings of the rocket motor to establish safety confidence for Army personnel;

Eighty percent of the Electronic Design Branch (Code 4051), headed by Mr. C. L. Neal, performed the design changes on missile electronics, provided flight test support, and an interface defini-

Additional support on missile checkout was provided by the Optical Design Branch under the direction of Dr. E. E. (Mickey) Benton; and the job of defining design changes and performance obtainable from these changes was the responsibility of Mr. W. Gene Younkin, Head of the System Analysis Branch (Code 4055).

In summary, within the short time frame of 9 months, NWC established the Chaparral missile design, obtained missile hardware, fabricated a temporary launching system (in later phases the aeronutronic-designed launcher was utilized) and conducted a flight test program to verify the missile performance.

(Normally, it takes 5 months to get a contract set-up, one to two years to set up a production line, which doesn't leave much time for the people to design and test fabrication of hardware.)

In the month following the conclusion of the military potential flight evaluations, the U. S. Army made the decision to proceed with the Cha-Army funds were received in late 1965 for support of the NWC effort which would transform the basic prototype design utilized in the military potential program into an optimum ground-to-air missile defense system.

Tasks and Organization

With the Chaparral development task now definitely assigned to NWC, Code 40 management selected John W. Roland E. Baker as Project Engineer. The selection of curate assessments of these men was based on their prior knowledge of the Chain the Small Sam/Osprey programs. To them, fell a series minate with the operational Chaparral System.

Lamb and Baker formed a project team and assigned responsibilities to various engineers and skilled tecnicians. An impressive share of the effort was assigned to other departments of NWC, including Codes 55, 45 and

was to set up the engineer- the all-up missile prior to fir- ing which the missiles were ing development that would ing. This phase of development mounted on the launcher rails transform the design from was completed by Don Win- of the carrying vehicle. the prototype to a completed design including full engineering drawings and a documentation package that would face between vehicle and mis- ing completed a sequence of



Chaparral Project Engineer, discusses the results of a recent test run through the jungles of Panama during Army Tropical Evaluation Tests held in that area. In the photo

this effort was accomplished ral Project office. by the Chaparral Project office, a large amount of support control sections.

engineering development efforts in this area became the parral system. Additional responsibility of Jim Bowen ments were conducted. who already had several years of experience on the producer guidance unit.

effectiveness.

Reliability estimates for Truly, the schedule of qualigiven in 1965.

The first of these tasks ing missle components and the form of road tests, durters of Code 5523. Interface

task was handed to Chuck Although the majority of Frederickson, of the Chapar-

Working closely with the Aeronutronics Divison of Philwas provided by the Engin- co-Ford, he listed all of the eering Department in finaliz- required interface data reation of guidance unit design quired and then, through a and procurement of guidance comprehensive review of both Sidewinder and Chaparral pro-The job of directing the grams, collected all of the required data. Where data did not exist, tests and measure-Qualification Testing

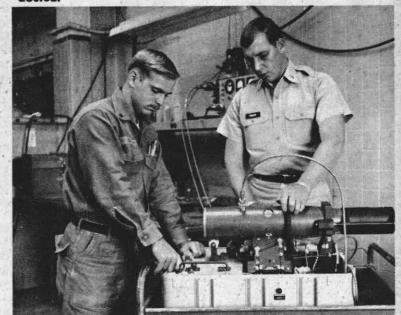
Perhaps the largest task in tion support of the Sidewind- the Chaparral development cycle, outside of project man-Systems analysis, which in- agement itself, was that of vestigated mission effectiveness Qualification Testing. Chaparand missile lethality was as- ral was to be carried aboard signed to Dr. M. Rogers, Weap- a tracked vehicle over and ons Systems Analysis Divi- through the dust and mud of sion. Mrs. B. A. Fouse coord- roads, primitive trails and inated fuze data from Stanley even in open country. The Blank of John Nasternaro's missile and all of its com-Division (Code 504) in Corona ponents were required to be Lamb as Project Manager and and combined it with latest "battleground" environment an lethality data to provide ac- the viscous shock and unending vibration experienced aboard a tank-type vehicle.

parral System, as well as Chaparral were conducted to fication testing for Chaparral their earlier ground-to-air predict possible failure rates was enormous. For conveniflight and evaluation efforts and modes before the system ence, the qualification test was placed into an operation- series may be thought of as al state. Considerable support divided into two phases—the of tasks which was to cul- in this area was provided by first consisting of qualification reliability contractors. Bill of separate components of Marsh from Computer Appli- the missile, such as guidance cations, Inc., Ridgecrest office, control group (GCG), warhead, has worked on the organiza- target detecting and arming tion and direction of the re- devices, rocket motor, fins and liability task on Chaparral wings. The other stage of qualsince Army go-ahead was ification consisted of all-up Chaparral missiles in what U. S. Army procurement of might be considered a Chaparral included test equip- "ready-to-fire" condition. Phas-ment and test sets for check- es of this evaluation took cognizance of James Bowen,

Chaparral components and all-up rounds that were sub-The complexities of inter- jected to environmental testbe suitable for mass produc- sile were considerable. This over 280 different procedures.



at left, some of the foliage still clings to the vehicle and attempts to show that the system remained intact despite the severity of the terrain through which the tests were con-



MISSILE CHECKOUT-Sp/4 David Bernt (I) and First Lt. David Priddy are shown above preparing to check out a Guidance and Control Section of a Chaparral with the AN/ ASM-79 missile test set. The test set is part of the Army's Air Defense Battalion Test Equipment for the missile. The two Army personnel shown above and Sp/5 Rayner have been assigned to NWC as support personnel for the Chaparral missile.

The test procedures included the normal exposure of components to shock, vibration, cor rosion, acceleration, rain, sand and dust, temperature shock

and life tests. Other more unusuanl tests. such as acoustic, overpressure, to simulate nuclear blasts, and blast erosion, were also scheduled for some of the missiles.

Acceptance tests of the GCG. as well as a complete series of environmental tests to fol-Code 5571. Work with the GCG required monitoring of a lengthy list of over 160 separate parameters for each guidance unit; and painstaking, almost constant, liaison with the General Electric Company who was assembling the preproduction GCG

The bulk of environmental testing on most other Chaparral components was equally detailed. But these difficult phases, too, were completed in a commendable and timely manner through the efforts of Ed Creed of the Chaparral Project office, who worked in conjunction with Jerry Halpin, Code 4533. Ed Creer also retained cognizance of the Chaparral wing vibration tests which were conducted in the Central Engineering Test Lab by Peter Bouclin, Code 5517.

Army Road Tests At the same time that the Chaparral was being qualified through all of these major efforts in laboratory testing, the U.S. Army began evaluation of the missle on the prototype tracked carrying

(Continued on Page 7)