



USS Waddell DDG-24



1971 Command Narrative

From **3 to 28 January 1971**, WADDELL received a tender availability alongside USS SAMUEL GOMPERS (AD-37). Major work accomplished during this period included overhauls of 2A and 2B main condensate pumps, replacement of 93 feet of fuel oil piping in #2 fireroom and construction of WD Division recreation room.

On **2 February**, WADDELL left San Diego, bound for Hunters Point Naval Shipyard, San Francisco, California, arrived on 4 February and remained until 20 May for regular overhaul. Many extensive repairs, major modifications, and alterations were accomplished during this period. These projects included a TARTAR digital update, a distillate fuel conversion, gyro compass work, machinery repairs and extensive work on the radars, gun mounts, and electronics. For more detailed information, see Annex II on the shipyard period.

While in the shipyard, the Supply Department went through the Supply Overhaul Assist Program (SOAP). During SOAP, 6,100 items were off loaded as excess and a new load of 19,145 items were placed aboard.

Upon completion of the yard period, WADDELL spent the next few weeks conducting normal training exercises in the SOCAL OPAREA. The following is a breakdown of that period. On 24 May, ordnance was taken on at the Naval Weapons Station Seal Beach. On 26 May, 30 members of the Inter-American Defense Board went to sea aboard WADDELL for one day of various underway operations. During the day, WADDELL conducted ASW exercises with the USS CATFISH (SS-3342) in the SOCAL OPAREAS. During the exercises, WADDELL fired one MK-44 Mod 1 ASW Torpedo and 1 MK-44 Mod 1 ASROC at CATFISH. Both firings resulted in hits. Also on this day, WADDELL participated in a surface gunnery exercise which was observed by the members of the Inter-American Defense Board.

During the period of **20 May to 18 June**, WADDELL underwent SQT (Ship's Qualifications Trials). A SQT is conducted on all guided missile ships immediately after a shipyard overhaul. SQT is conducted by the Naval Ship Missile System Engineering Station, Port Hueneme, California (NSMSES). The purpose of a SQT is to assist ship's force in bringing the missile battery back up to a fully operational status after overhaul. The SQAT (Ship's Qualification Assistance Team) composed of an Officer in Charge, a project supervisor, and at least one expert technician for each major piece of equipment accomplishes this objective by correcting casualties, design

problems, and supply support problems. To verify fire control system operability, a complete set of systems tests, and live aircraft tracking are conducted and as a final test, missile firing exercises are conducted.

Concurrently with the missile system SQT a SQT was conducted on the 5"/54 gun system by NSMSES with a strong assist from NOSSOPAC (Naval Ordnance System Support Organization, Pacific). While the concept of a SQT has long been used for missile systems, this was the first time it was used on a 5"/54 gun system. For further information on this subject, see Annex III.



On **26 June 1971**, **Commander Peter K. CULLINS, USN** was relieved by **Commander Albert J. HERBERGER, USN** as the Commanding Officer of USS WADDELL.

WADDELL began the annual Refresher Training (REFTRA) on **6 July**, by shifting to Bouy #16, San Diego Harbor, for a one week period of inport training. The next week, on 12 July, WADDELL began the underway phase of REFTRA with the training battle problem. The next 6 weeks were spent at sea conducting various exercises and training problems, coming back into port each weekend. WADDELL made satisfactory progress in all areas of training and on 13 August she successfully passed the final battle problem thus completing Refresher Training.

During REFTRA, on 2 successive weekends, 17-18 and 24-25 July, WADDELL moored at San Diego Naval Station. During these two weekends, mount 51 was lifted, using a floating crane, so that a cracked spider could be removed and a new one installed. This was the first time anything of this nature had been done to a 5"/54 gun mount outside of a shipyard.

On 30 August the Modest Improvement Program (MIP) was installed on the AN/SQS-23F Sonar.

During the period of **16 August to 3 September**, WADDELL received a tender availability from the USS DIXIE (AD-14). During this availability, many work requests were completed, covering items uncompleted during the shipyard overhaul and deficiencies noted during REFTRA.

Annual Boiler inspections were conducted on 1A and 1B boilers on 26 and 27 August respectively.

On 24 August, COMCRUDESPAC representatives conducted the Annual Supply Inspection. WADDELL received a grade of satisfactory with individual grades as follows:

Organization, administration and training	93.00
Supply accounting	92.89
Material Support	88.38

Food Service 90.67

Ship's Service 92.77

Inventory accuracy on a sample of 200 items was 92%.

On 3 September, WADDELL unloaded 7 Improved TARTAR Missiles (RIM 24B) at U. S. Naval Station, San Diego. Six of these missiles were telemetry configured and one was warhead configured.

From **8 to 17 September**, WADDELL was again underway. During this period WADDELL was a member of the Blue Forces for the Fleet Exercise ROPEVAL 3-71. This exercise consisted of various exercises designed to test the ability of the ships to conceal their position from the enemy, and when located, to conceal their true identity, thus causing a delay while the enemy searches for the high value targets. On the last two days of this exercise WADDELL, along with 6 other guided missile ships, proceeded to the Pacific Missile Range for an exercise in coordinated designation, tracking and firing at high speed targets. WADDELL fired four improved TARTAR missiles (TIM 24B) during this period. One shot was a missile failure, two missiles lost their roll stability and front lock prior to intercept due to target maneuvers, and one shot was undetermined due to a loss of telemetry. In addition to the ROPEVAL training, WADDELL fired an Improved TARTAR at an AVR target. The shot was a failure with the missile impacting the water 75 yards short of the target due to poor terminal guidance.

The last half of September was spent in port and was a very hectic period due to many inspections. On 22-23 September the pre-deployment boiler inspection and annual boiler inspection on 2A boiler were conducted. On 24 September the Command Inspection was held. Commodore Mc GILL, COMDESRON THREE, toured the main spaces and was favorably impressed by their condition and appearance. On 30 September, WADDELL successfully passed her NWA (nuclear Weapons Acceptance Inspection). The annual PMS inspection was held 1 October.

On **6 October** a 25 knot economy trial was satisfactorily completed during a one week type training period. On return to port on 8 October, work was started on a foam firefighting installation for both firerooms. All work was done by a private contractor and was completed just prior to WADDELL's deployment to WESTPAC on 12 November. WADDELL sailed to the U. S. Naval Weapons Station at Seal Beach on 5 October for the pre-deployment loadout.

WADDELL underwent FORACS (Fleet Operational Readiness and Accuracy Check Sight) on 7 October. The FORACS range is located on San Clemente Island and consists of a control station and precisely positioned targets for the Sonar, Surface Search Radar, Gun Fire Control Radar, and optical devices. All stations were linked together by portable radios and as the ship steamed back and forth at slow speeds, marks were taken on the various targets and the ship's gyro reading was noted on signal from the test coordinator. When all data is compiled and analyzed, it provides accurate information on the error of the AN/SPS 10, AN/SPG 53A, AN/SQS 23F, and the bridge wing peloruses and the MK 19 master ship's gyro.

On **12 October**, Commodore McGILL, COMDESRON THREE, broke his flag aboard WADDELL, as he and his staff came aboard making WADDELL his flagship for the upcoming deployment.

WADDELL deployed on **12 November**. The transit to Pearl Harbor was routine in nature except for a refueling in which the fuel received was very much in excess of proper bottom sediment and water limits. Considerable stripping was required to obtain fuel within acceptable limits. It was still necessary to enter Pearl Harbor on 18 November to strip tanks and top off.

The transit to Pearl Harbor was made with WADDELL in a picket station for the USS CORAL SEA (CVA-43). Once in Hawaiian OPAREAS, WADDELL acted as plane guard for CORAL SEA from, 18 to 22 November.

The ship was inport Pearl Harbor from 22 to 26 November.

On **27 November**, WADDELL was once again under way with CORAL SEA, headed for Subic Bay, R.P. We were again in picket station 100 miles north, alert for the possibility of Russian aircraft overflights. None were detected and we arrived in Subic Bay on **9 December** where we remained until 12 December. While in Subic Bay, various jobs were completed by SRF Subic and by USS SAMUEL GOMPERS. On 10 December, WADDELL loaded 5"/54 ammunition at the Naval Magazine.

On **12 December**, WADDELL headed for the gunline, where she fired Naval Gunfire Support Missions from Pt. Allison, near the DMZ, in the Republic of Vietnam. 1,456 rounds of ammunition were fired, most of them on night harassment and interdiction missions into the southern half of the DMZ. During the period on the gunline, a German Newswoman, Fraulein Piltz, was picked up in Danang, and rode WADDELL for two days of firing and one UNREP. She was returned to Danang on 30 December. On **31 December** WADDELL departed the gunline area and headed for the Indian Ocean and operations with TF 74.

29 March 1972

A. J. Herberger

Commanding Officer USS Waddell DDG-24

ANNEX I- TENDER AVAILABILITIES

During the period 3 January to 28 January, while alongside USS SAMUEL GOMPERS (AD-37), WADDELL had 175 work requests accomplished and 30 work requests which were approved but not completed. This was due primarily to "ship to shop" screening of all work requests requiring removal of equipment. Most work requests submitted were items from the shipyard work package that had been screened for tender or ship's force accomplishment. Although a sizable amount of work was accomplished, the availability was considered to be only moderately successful. This is due to the following reasons:

1. During the first part of the availability, pre-overhaul boiler inspections required all four boilers to be opened and prepared. This also counted as the annual boiler inspection for 2A boiler.
2. Boilers had to be reassembled in record time to light off the plant for one week to load test all ship's service generators. Steaming watches cut into man-hours available for maintenance.
3. "Ship to shop" screening imposed a heavy load on engineers. Removal and installation of fuel oil piping in #2 fireroom coupled with boiler inspections, permitted no maintenance in that space beyond that required to steam the ship to Hunters Point.
4. Due to the length of the transit to Hunters Point it was unfeasible to tow the ship. Virtually all machinery had to be reassembled prior to departure for the shipyard.

During the period of 16 August to 3 September, WADDELL received another tender availability, this time from the USS DIXIE (AD-14). A total of 118 work requests were accomplished, 13 were accepted but not completed due to lack of material or other difficulties. Most work requests covered items uncompleted during the shipyard overhaul and deficiencies noted during REFTRA. Several drains, traps and valves were replaced in the HP and LP drain system, requiring high pressure welders in many cases. Numerous valves, relief valves and reduceers were overhauled. Many sheetmetal jobs were accomplished. This was considered a successful upkeep period, due in good measure to a "can do" attitude on the part of DIXIE and early submission of the

work package, which was delivered approximately 4 weeks before commencement of the availability and just a few days after DIXIE returned from WESTPAC.

While in Subic Bay, from 9 December to 12 December, WADDELL had various jobs completed by SRF Subic and by USS SAMUEL GOMPERS. Twenty items were left behind for pick up in January.

ANNEX II - OVERHAUL AT HUNTERS POINT



WEAPONS. During the period at Hunters Point Naval Shipyard, the major job for the Weapons Department was the conversion of both MK 74 MOD O analog fire control systems to MK 74 MOD 6 digital fire control systems. The central feature of this modification was the replacement of both MK 118 analog computers with MD 152 digital computers, also known as the UNIVAC 1219 general purpose digital computer. In order to convert digital information in the computer to analog form usable by the launcher and fire control radars, two MK 72 Signal Data converters are used. Another new piece of equipment, the MK 77 input-output console, is needed to insert or change computer programs and to extract data from the computer. To supply regulated power to these five units, two MK 9 motor generators were installed in the former TARTAR warhead magazine. Extensive rewiring of the fire control switchboard was required, as were extensive modifications to the AN/SPG 51C radars -- especially the operator's console and the data converter section. The AN/SPG 51C radars also received new high gain antennas and a new dummy load.

As a result of the conversion of the missile fire control system from analog to digital, the capabilities to cross-connect fire control computers and fire control radars, to track a target without using a computer and to control the 5"/54 gun mounts with the missile fire control radars were lost.

A significant gain with the new digital fire control system is the ability to fire the new Standard Missile with MK 56 dual thrust rocket motor (RIM 66B). This missile has a significantly greater range capability than the Standard Missile with the MK 27 dual thrust rocket motor (RIM 66A). To accommodate this missile, several minor alterations to the launcher were required. The most notable change was the covering of the top of the missile magazine, blast door, and a portion of the 01 level deck with Dyna-Therm, an ablative material designed to protect the deck from most blast effects.

The AN/SKQ 1 VHF telemetering ground station was removed during the shipyard period. TARTAR Check-Out, where the SKQ 1 was formerly located, was partitioned into two compartments. One was a workshop/tool storage area, for the Gunners Mates, and the other compartment became a Weapons Department Technical Library. Most technical publications were formerly stored in the TARTAR warhead magazine, but the installation of the MK 9 M/G sets necessitated their removal. A complete battery alignment was conducted by the shipyard with an assist from ship's force personnel.

Routine overhauls were held on all other weapons gear, with a large share of the work on most gear being done by ship's force. A significant job done by the shipyard was the reparkerizing of a large amount of hydraulic piping for the gun mounts, ASROC launcher and the TARTAR missile launcher.

OPERATIONS. During this period, the Operations Department was only involved with three major projects. A complete overhaul was made on both the AN/SPS 40 Air Search Radar and ORN-20 TACAN. In addition, the AN/SPA 4 radar repeaters in Combat Information Center were replaced by the AN/SPA 25 repeaters.

ENGINEERING. Aside from SHIPALTs, boiler work was relatively minor in nature, consisting of minor repairs to stacks, casings and brick pans, brick decks, minor brickwork, new superheater supports, superheater tube safe-end welding, and new burner tile. No tubes were replaced except where samples were cut. All boilers were acid cleaned. In addition to this, approximately 80% of the plant's fuel oil piping was replaced, and four main feed pumps overhauled.

In the enginerooms, both LP turbine casings were lifted to weld ninth state shrouding. Major overhaul of both sets of evaporators, two main condensate pumps, a lube oil pump, a main circulating pump, HP turbine nozzle block, all ship's service generators, HP and MP air compressors, and a lube oil purifier were undertaken. The F.W. drain tank in #1 engineroom was replaced.

Steering gear _____rams were repacked, and minor _____was performed on the steering gear.

Underwater _____routine in nature except that the port propeller was removed and reworked due to a deep cavitation, _____. Both gyros were extensively overhauled. A new galley dishwasher and new laundry presses were installed.

A considerable savings in TYCOM repair funds was realized by use of a concurrent tender availability with USS SAMUEL GOMPERS in San Diego for the duration of the yard period. A total of 94 jobs were accomplished in this manner. Twenty pumps were overhauled by GOMPERS, including auxiliary plant, evaporator, feed booster, and fire pumps. Many pieces of test equipment were calibrated. Truck delivery and pickup runs were made every two weeks. Disadvantages of this scheme included liason difficulties, loss of parts from machinery, and damage to equipment in return transit.

WADDELL's main machinery spaces did not meet the fire fighting standards as specified by General Specifications for Ships of the U.S. Navy, Section 9930.1, as noted by the last INSURV inspection. Work requests to correct these discrepancies were disapproved pending the issuance of NAVSHIPS SHIPALTS. Shop overload, excessive material load time, and unavailability of plans precluded accomplishments of a light water installation at Hunters Point Naval Shipyard. Most of the material pertinent to this alteration was procured by Hunters Point and was stored in San Diego while awaiting TYCOM approval. The job consisted of fabricating and installing four 50 gallon fixed foam stations located immediately outside each main machinery space, and related piping and stations in each space. At present, the installation is 50% complete, with both firerooms having this increased firefighting capability.

Extensive rejuvenation and modernization of WADDELL's wash rooms and water closet facilities was undertaken. Plans to remodel the heads on board were drawn and delivered to WADDELL by the design division of Hunters Point Naval Shipyard, while much of the actual installation was accomplished by ship's force personnel. The design included replacing existing wash bowls with porcelain bowls, installing stainless-steel mirrors at each wash bowl, fabricating formica vanities, providing overhead indirect flourescent lighting, and installing plexiglass doors on all shower stalls. Ship's force personnel accomplished most of the plumbing alterations necessary with the assistance of Shop 56. The total cost of this work was \$23,305.

Realizing the increased emphasis and need for habitability modifications, WADDELL formed a team from within its ranks, of personnel with both an interest and skill in the habitability area. These people devoted full time and effort to remodeling several compartments, CPO Lounge and recreation rooms for each division. The material necessary for these projects was ordered by the Supply Officer from private contractors via NSD San Diego Purchasing Department and transported to the ship by many modes. WADDELL's concept of employing ship's personnel resulted in a great measure of success, while at the same time considerably reducing applicable TYCOM expenditures in this area.

Further utilizing the team concept, WADDELL drew additional personnel from divisions throughout the ship and formed a 20-man all-purpose division responsible for ship's lagging, painting, fire watching, and vent cleaning. The headquarters for this division was the Commodore's cabin, which was also used as a control center. This team was monitored by the Damage Control Assistant who maintained direct liaison with shipyard personnel to determine the fire watch requirements for the following day. Flexibility was the key to the success of this operation. Personnel from the team were dispatched each morning and reported to the individual team leaders (i.e., lagging team leader). If additional fire watches were necessary, personnel were reassigned. The team succeeded in relagging 80% of the ship's fan rooms and numerous other minor jobs, thus lessening the burden on shipyard ladders, allowing them to concentrate on tasks requiring more experience. The team completely cleaned and refurbished the ventilation system. Virtually every ship's storeroom and several other spaces were repainted by the team, who frequently worked night shifts to paint many spaces that were unable to be painted during the day. In addition to the 20-man team, the DCA was given two personnel to handle routine administrative details. These men were responsible for filing the large amounts of shipyard-related paperwork that reached the ship, recording all phone messages, and maintaining a complete graphic account of all job orders and their current quoted prices.

Much of the success that WADDELL enjoyed during her overhaul period was a direct result of early definition of those tasks which were to be assigned to ship's force. Delays were minimized by employing a ship's force work package as set forth in COMCRUDES PACINST 4710-1. The work package in itself is a valuable tool in its entirety. However, in order to achieve the greatest effectiveness it is desirable to eliminate certain positions and tailor others to conform to the needs of the command and reflect the availability of resources during the period.

The most difficult problem encountered in preparing the package concerns the preliminary work list summary. In the initial preparation of the package, many tasks were underestimated. On the average predictions were low by 45-50%, while in some cases (e.g., test equipment calibration and bilge preservation) error was 300-400%. Essentially, these management mishaps were due to various shipyard delays, unplanned commitments, and vital interplay that necessarily arises throughout an overhaul period. Therefore it would be logical to safe-side when preparing these figures for an upcoming overhaul.

The manpower profile summary and the work list summarization charts are of dubious value due to the delays mentioned above and in all practicality constitute nothing more than an unproductive paperwork drill. The former of these aids is worthwhile only as a reminder to Division Officers of the commitments he has established for his personnel.

The PERT presentations are the most time-consuming instruments of the package. If tailored and prepared correctly, they can become an invaluable asset to the command. In this respect, it is imperative that one man take charge in organizing and briefing Division Officers in preparation of these aids so as to insure uniformity of presentations within the command. It is more beneficial to state approximate completion dates as opposed to inflexible drop-dead dates. This is to prevent the command from becoming overly skeptical when, viewing a seemingly unproductive initial period. The PERT concept is, however, quite valuable in allowing the command an effective yardstick for overseeing critical shipboard areas. In this manner, the ship can allocate sufficient "assist ship's force" man-hours to assist undermanned, overburdened divisions. To achieve maximum

efficiency from this instrument, it is most important to coordinate the ship's PERT Chart (from the shipyard) with the ship's force PERT Chart to eliminate many interface delays.

The key to success of this management tool is in its use to initiate advance planning. It is by no means an infallible doctrine to which inflexible adherence must be given.

ALLOCATION OF FUNDS AND MAN-DAYS

<u>Nature of Work</u>	<u>Man-Days (total)</u>	<u>Funds Authorized</u>	<u>Total Cost</u>
Repair	19,178	\$2,416,440 (Note 1)	\$2,288,950
Non-SMS ALTS	462	71,225	53,141
SMS ALTS	2,853	382,200	318,781
SMS ORDALTS	65	5,800	5,850
Non-SMS ORDALTS	<u>995</u>	<u>110,380</u>	<u>117,307</u>
Total	23,553 (Note 3)	\$2,986,075	\$2,784,029 (Note 2)

Notes:

1. "Fix Price" amount

2. It was initially estimated that 20,000 man days would be necessary to accomplish WADDELL's work package. As displayed above a growth of 3,553 man days was realized.

3. Each man-hour of work cost \$11.45. This figure includes labor and overhead only. Each man-day consisted of 6 man-hours, or a total of \$68.70.

The above is a breakdown of the major divisions of work accomplished during WADDELL's overhaul in Hunters Point Naval Shipyard 4 Feb to 20 May 1971.

Following is a further breakdown of the repair column above. The breakdown consists of the six major categories employed in the entirety of the overhaul period.

ALLOCATION OF REPAIR COSTS

<u>Category</u>	<u>Man-Days Expended</u>	<u>Cost</u>
Pre-overhaul Inspection	1,510	\$193,842
Standards	2,409	\$234,454
Hull, Machinery, & Electrical	6,354	\$762,987 (Notes 1-4)
Boilers	3,807	\$488,007 (Notes 5, 6)

Electronics	3,466	\$429,468
Ordnance	<u>1,632</u>	<u>\$180,192</u> (Note 7)
Total	19,178	\$2,288,950

Notes:

1. Includes habitability repairs to heads, \$25,805. See further discussion under "Habitability". Ship's force installed virtually all plumbing.
2. Includes design, fabrication, and installation of air conditioning ducting and chillers for TACAN room, and communications spaces, \$68,538. This included no repairs to existing chill water system or A/C units.
3. Includes design, and procurement of fire fighting equipment in main engineering spaces, \$30,060. Installation was accomplished in San Diego by private contractor.
4. Includes SHIPALT DDG-2-225D (LP turbine blade repairs), \$81,397.
5. Includes SHIPALTS DDG-2-251D (superheater safe and welds), \$147,579, and DDG-2-294D (replace burner leads), \$31,269.
6. Includes \$116,888 devoted to accomplishing two distillate conversion SHIPALTS, DDG-2-291D and DDG-2-2930. These two SHIPALTS consisted of modifying existing fuel oil pumps and piping to accommodate the conversion. Approximately 60% of the boiler package was covered by the 4 SHIPALTS in notes 5 and 6.
7. Includes \$68,538 expended for work on 5"/54 gun mounts.

All of the above figures are derived from Ship Departure Report, NAVSHIPS report (7303-4A (FA-905A), of 7 July 1971.

MAJOR MILESTONES DURING THE YARD PERIOD

5 Feb	Commence overhaul	27 Apr	Dock trials
17 Feb	Dock ship	4 May	Sea trials
31 Mar	Undock ship	12 May	Electronics sea trial
8 Apr	Light off first boiler	20 May	Complete overhaul

All milestones were met, except first boiler light-off which was ten days late due to acid cleaning of all boilers and technical difficulties encountered with superheater safe end welding. All boilers were lit off by 24 April, and load testing of all ship's service generators was completed in time to conduct complete dock trials on schedule.

SHIPALTS

The following SHIPALTS were accomplished:

DDG-2-101K	ACC air dryers - \$6,345.
DDG-2-166K	F.O. service systems. Installed F.O. return piping back to the service tanks in conjunction with the distillate conversion - \$26,941.
DDG-2-200D	Strengthen boat winch gear cases - \$480.
DDG-2-225D	Westinghouse L.P. turbine blade repairs. Welded ninth stage shrouding on both L.P. turbines to eliminate the possibility of tangential vibration and subsequent cracking of blades. Condition of turbine rotors and inner casings was excellent. Some erosion of blading was noted but it is arrested and blading does not require replacement - \$81,397, including minor repairs to turbines.
DDG-2-245K	Replace HP-LP thrust collars. Completed partial SHIPALT by replacing thrust rotor extension on both LP turbines - \$1,714.
DDG-2-251D	Relocate superheater end welds on Fester Wheeler boilers. Completed on all boilers - \$147,597.
DDG-2-274D	Replace MK 8 DRAI with MK 9 DRAI - \$285.
DDG-2-278D	Relocate MG set controls, moved from MG room to 1C room - \$1,003.
DDG-2-279K	NAVSHIPS work incident to ORDALT 6319 - \$1,165.
DDG-2-291D	Pump mods for distillate fuel. Entire distillate conversion was accomplished in outstanding manner by shipyard - \$48,194.
DDG-2-292K	Ballast for distillate fuel installed in #1 Fireroom (lead bricks) - \$13,407.

DDG-2-293K	F.O. system piping mods for distillate - \$48,694.
DDG-2-294D	Eliminate flexible burner leads. Existing tubing did not meet specs - \$31,169
DDG-2-296K	Digital Tartar Conversion. Controlling job in the shipyard - \$318,781 (does not include installation of hardware).
DDG-2-322K	Standard Missile blast protection - \$5360.
DDG-2-324D	Bilge overboard piping. Provides main deck risers for pumping bilges to donuts inport - \$5,625.

ANNEX III - WEAPONS SUMMARY

MISSILE SQT. The following is a breakdown of the events of the SQT. on 1 and ____ June, live aircraft tracking exercises were conducted with all three fire control radars as part of SQT. Exercises were terminated when casualties to the COSRO units on both AN/SPG 51C radars made them inoperable. On 5 June both AN/APG 51C radars were collimated with satisfactory results using the collimation tower on pier 5 San Diego, California. On 8-10 June, live aircraft tracking exercises were again conducted in the SOCAL op Area as a part of SQT. All three fire control radars were used successfully. NGFS exercises were also conducted at San Clemente Island to demonstrate the readiness of the gun mounts. On 15 and 16 June, aircraft tracking exercises were again conducted, this time under the supervision of MISTRAUPAC (Missile Training Unit Pacific) to train weapons and CIC personnel in AAW and to satisfy REFTRA requirements. These tracking exercises were also used to peak up the fire control systems for the next day's missile firings. The next day, 17 June, missile firings were conducted on the Pacific Missile Range. In the morning, three blast test vehicles were fired to test the effect of the increased blast from the more powerful MK 56 dual thrust rocket motor. The blast test vehicles were specially configured Standard Missiles (RIM66B). The launcher safety observer port cover was warped so that it could not be rotated, the end of the fast dolly wheel guide on the 01 level deck was eaten away, the surface of a magazine safety relief plug was eroded, and a de-icing plug was destroyed, but deck surfaces protected with Dyna-Therm were undamaged. That afternoon, three missile firings were attempted as the final phase of SQT. The first missile, an improved Tartar (RIM 24B) appeared to be a good shot until the fuze fired after 28 seconds of flight, causing the missile to destruct when only half way to the target. The second missile, another improved Tartar (RIM 24B) was a success with proper fuze action and a miss distance of 10 feet. The third missile, a Standard Missile (RIM 66A) was a dud because channel match was not obtained. Four days later on 21 June, a second Standard Missile (RIM 66A) was fired for SQT. A problem was also encountered with channel match on this shot, but the missile was fired using manual override. The missile did not see the target and the firing was a failure. Because of the problem with channel match, WADDELL went into Port Hueneme to have her Channel Selector tested by NSMSES representatives. The Channel Selector was repaired on 22

June. On that same day the dud Standard Missile (RIM 66A) which we had attempted to fire on 17 June was offloaded and truck for Naval Weapons Station, Seal Beach.

On the morning of 23 June the Standard Missile (RIM 667A), which had been onloaded the previous day, was fired as the final SQT firing. No problem was encountered with channel match, but the firing was a failure due to excessive miss distance of 64 feet, and no fuze action. Later that day and the next morning WADDELL fired _____configures Standard Missiles (RIM 66A) as a part of the AS 569 project. this project was designed to test and evaluate the new MK TDD (Target Detection Device) prior to its acceptance by the Navy. The first firing was a failure because the fire control radar was in the Improved Tartar vice Standard mode. This problem was later traced to a switch which was improperly wired. The second firing was a success with a 35 foot miss distance and proper fuze action. The third missile lost telemetry a few seconds after launch and could not be evaluated. The fourth missile was fired on the morning of 24 June. The missile had a miss distance of only 15 feet, but the fuze failed to function causing the firing to be rated as a failure. From 28 June to 2 July, NSMSES SAT (Special Assistance Team) composed of many of the SQAT members was aboard to correct several problems that they were unable to correct during the actual SQT due to a lack of time. On 30 June WADDELL offloaded 2 specially configures Standard Missiles (RIM 66A) at the Naval Station, San Diego, California. These missiles had been specially configured for AS 569 project and were returned to Naval Weapons Station Seal Beach.

ROPEVAL MISSILE FIRINGS

During ROPEVAL, WADDELL fired four improved TARTAR Missiles (RIM 24B). One shot was a missile failure, two missiles lost their roll stability and front lock prior to intercept due to target maneuvering and one shot was undetermined due to a loss of telemetry. In addition to the ROPEVAL training, WADDELL fired an improved TARTAR at an AVR target. The shot was a failure with the missile impacting the water 75 yards short of the target due to poor terminal guidance.

GUNNERY

During February 1970, while conducting Naval Gunfire Support off the Republic of Viet Nam, a shell fell out of the carrier of Mount 51 and became wedged between the spider and the deck. This cracked one arm of the spider and broke off a piece of it. The spider was checked by MOTU personnel shortly after the casualty and pronounced sound. During regular overhaul the spider was checked and x-rayed and determined to be sound by Hunters Point Naval Shipyard personnel. During gun SQT, however, it was determined that the spider was unsafe and required replacement. This job was accomplished by ship's force with an assist from NOSSOPAC. the job required the lifting of the mount approximately 2 feet and sawing the old spider in half. Due to space limitations, a small hand held saw had to be used to saw through the approximately 2 square foot crosssectional area of metal. It is believed that this is the first time that a 5"/54 mount has been lifted and a spider replaced outside a shipyard.

ORDNANCE

The following ordnance was taken on at Seal Beach on 24 May

26 Standard RIM 66B missiles with warheads

11 Standard RIM 66A missiles (exercise)

2 TARTAR RIM 24B missiles (exercise)

ASW Torpedoes

ASROC's

5"/54 gun ammunition

Various Pyrotechnics

The following ordnance was taken on at Seal Beach on 5 October:

11 Standard RIM 66B missiles with warheads

2 TARTAR RIM 24B missiles (exercise)

ASW Ordnance

5"/54 gun ammunition

The following ordnance was offloaded at Seal Beach on 5 October:

2 TARTAR RIM 24B; 1 warhead and 1 exercise

The following ordnance was expended during the year:

(Exercise)

2 MK 44MOD 1 ASW Torpedoes

3 MK 44 MOD 1 ASROC's

3 Standard Missiles (RIM 66B)

6 Standard Missiles (RIM 66A)

7 TARTAR Missiles (RIM 24B)

959 Rounds of 5"/54 ammunition

(Hostile Action)

1456 Rounds of 5"/54 ammunition

Operations Schedule

1 Jan - 2 Feb	Inport San Diego, California
2-3 Feb	Underway, enroute Naval Magazine, Port Chicago

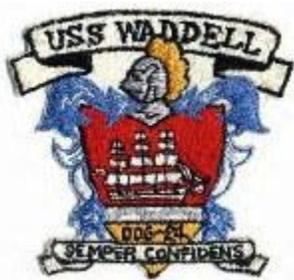
3-4 Feb	Inport Naval Magazine, Port Chicago
4 Feb	Underway, enroute Hunters Point Naval Shipyard, San Francisco, California
4 Feb - 20 May	Regular overhaul HPNSY, San Francisco
4 May	Underway for sea trials
12 May	Underway for sea trials
20-22 May	Underway, enroute Avalon Bay, Santa Catalina, Ca.
22-24 May	Inport, Santa Catalina, California
24 May	Underway, enroute Naval Magazine, Seal Beach, Ca.
24-25 May	Inport, Naval Magazine, Seal Beach, Ca.
25 May	Underway, enroute and NGFS San Clemente Island
25-27 May	Underway, SOCAL operation areas
2-8 Jun	Inport, San Diego
8-10 Jun	Underway, NGFS San Clemente Island, SOCAL OPAREA
10-15 Jun	Inport, San Diego
15-18 Jun	Underway, NGFS San Clemente, Pacific Missile Range
18-21 Jun	Inport, San Diego
21-22 Jun	Underway, PMR, enroute Port Hueneme, California
22-23 Jun	Inport, Port Hueneme, Ca.
23-24 Jun	Underway, enroute San Diego
24 Jun - 6 Jul	Inport, San Diego
6 Jul	Underway, shifted to San Diego Navy Buoy #16
6-12 Jul	Inport, REFTRA, Buoy 16, San Diego
12-13 Jul	Inport, Buoy 16, San Diego

13 Jul	Underway, SOCAL OPAREAS, REFTRA
13-15 Jul	Inport, San Diego
15-16 Jul	Underway, REFTRA, SOCAL OPAREAS
16-19 Jul	Inport, San Diego
19-21 Jul	Underway, REFTRA, SOCAL OPAREAS
21-22 Jul	Inport, REFTRA, Buoy 16, San Diego
22-23 Jul	Underway, REFTRA, SOCAL OPAREAS
23-26 Jul	Inport, San Diego
26-30 Jul	Underway, REFTRA SOCAL OPAREAS
30 Jul - 2 Aug	Inport, San Diego
2-6 Aug	Underway, REFTRA, SOCAL OPAREAS
6-9 Aug	Inport, San Diego
9-12 Aug	Underway REFTRA, SOCAL OPAREAS
13 Aug	Underway REFTRA Final Battle Problem
13-Aug-8 Sep	Inport, San Diego
8-17 Sep	Underway, ROPEVAL, SOCAL OPAREAS
17 Sep - 4 Oct	Inport, San Diego
4-6 Oct	Underway, SOCAL OPAREAS, enroute Seal Beach
6 Oct	Inport, Seal Beach
6-8 Oct	Underway SOCAL OPAREAS, FORACS San Clemente Is.
8 Oct - 1 Nov	Inport, San Diego
1-3 Nov	Underway, SOCAL OPAREAS; dependents' cruise; NGFS, San Clemente Island
3-12 Nov	Inport, San Diego

12-17 Nov	Underway, enroute Hawaiian OPAREAS
17-18 Nov	Underway, Hawaiian OPAREAS
18 Nov	Inport, Pearl Harbor, Hawaii
18-22 Nov	Underway, Carrier OPS with USS CORAL SEA (CVA-43) Hawaiian OPAREAS
22-27 Nov	Inport, Pearl Harbor
27 Nov-9 Dec	Underway, enroute Subic Bay, R. P.
9-13 Dec	Inport, Subic Bay, R. P.
13-15 Dec	Underway, enroute Danang, RVN
15 Dec	Inport, Danang, RVN
15-16 Dec	Underway, SAR Mission off Danang, RVN
16-28 Dec	Underway, enroute Pt. Allison, NGFS
28 Dec	Inport, Danang, RVN
28-30 Dec	Underway, enroute Pt. Allison, NGFS
30 Dec	Inport, Danang, RVN
30-31 Dec	Underway, enroute Pt. Allison, NGFS; enroute Danang, RVN
31 Dec	Inport, Danang, RVN
31 Dec	Underway, enroute Indian Ocean

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