



ALL HANDS

NOVEMBER 1976

Below: An F-14 from the aircraft carrier USS John F. Kennedy (CV 67) keeps an eye on a Russian Badger during a recent NATO exercise. (Photo by PH3 Pete Huffman.)



Chief of Naval Operations: Admiral James L. Holloway III

Chief of Information: Rear Admiral David M. Cooney

OIC Navy Internal Relations Activity: Captain Edward G. McGrath

Director, Print Media Division: Lieutenant Commander D. McCurrach

Editor: John F. Coleman

Production Editor: LT John Alexander

Research Editor: Ann Hanabury

Layout Editor: E. L. Fast

Art Editor: Michael Tuffli

Staff: LTJG Bill Ray

JOC Bob Rainville

JO1 Jerry Atchison

JO1 (SS) Peter Sundberg

DM1 Lloyd Marshall

PH2 Terry Mitchell

PH2 M. Lee Dumond

JO2 Dan Wheeler

JO2 Davida Matthews

JOSN Francis Bir

Edward Jenkins

Elaine McNeil

All Hands, the magazine of the U.S. Navy, published for the information and interest of all members of the Naval service, is issued monthly by the Office of the Chief of Information, Room 2E329, Pentagon, Wash., D.C. 20350. Issuance of this publication is approved in accordance with Department of the Navy Publications and Printing Regulations, P-35 (revised January 1974). Opinions expressed are not necessarily those of the Department of the Navy. Reference to regulations, orders and directives is for information only and does not by publication herein constitute authority for action. All original material may be reprinted.

ORIGINAL ARTICLES and information of general interest may be forwarded addressed to the Editor, All Hands, Navy Internal Relations Activity, Print Media Division, Room 1044, Crystal Plaza No. 6, 2221 Jefferson Davis Highway, Wash., D.C. 20390.

DISTRIBUTION: All Hands is distributed to all Navy activities on the standard Navy Distribution List (SNDL) on the basis of one copy for approximately six naval officers and enlisted personnel on active duty. Limited distribution to Marine Corps activities is effected by the Commandant.

PERSONAL COPIES: The Magazine is for sale by Superintendent of Documents, U.S. Government Printing Office, Wash., D.C. 20402. The rate for All Hands is \$1.65 per copy; subscription price is \$19.00 a year, domestic (including FPO and APO address for overseas mail); \$23.75 foreign. Remittances should be made payable to the Superintendent of Documents and forwarded directly to the Government Printing Office.

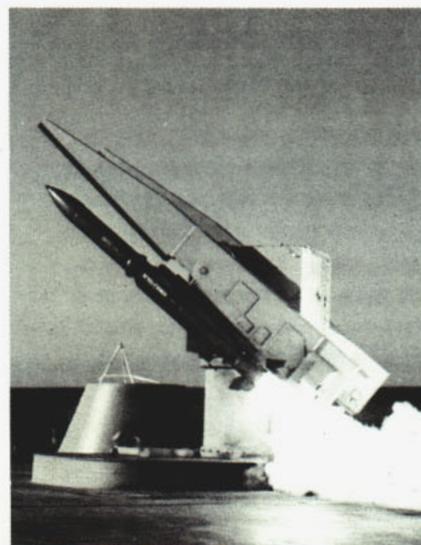
Answers to quiz on inside back cover: 1 (i); 2 (f); 3 (n); 4 (a); 5 (l); 6 (b); 7 (j); 8 (e); 9 (h); 10 (d); 11 (m); 12 (c); 13 (k); 14 (g).



Page 10



Page 14



Page 28

ALL HANDS

**MAGAZINE OF THE U.S. NAVY—54th YEAR OF PUBLICATION
November 1976
NUMBER 718**

Features

- 4 USS Detroit Overhaul
- 10 Overhaul Cycle of a Ship
- 14 Interview with VADM J. D. Watkins, Chief of Naval Personnel, on the Enlisted Advancement System
- 22 The Ins and Outs of Buying a Camera
- 28 Aegis Weapons System
- 38 An Old Navy Vet Looks at Today's Submarines
- 42 Visit to Tangier by USS Nimitz (CVN 68) and USS South Carolina (CGN 37)

Departments

- 2 Currents (Formerly Navy News Briefs)
- 20 Grains of Salt
- 21 From the Desk of MCPON
- 34 Bearings (Short Items From the Fleet)
- 46 Mail Buoy (Formerly Letters to the Editor)
- 48 Information Exchange
- Inside Back—Stern Shots (A Quick Photo Quiz)

Covers:

Front: P-3A Orion Patrol Aircraft from Patrol Squadron Eight (VP 8) in flight over the Atlantic.

Back: Art Cover by LTJG Bill Ray covering the Tangier story on page 42.

Currents

Antarctic Cachets

Will Be Available. Stamp collectors may obtain postmarks and station cachets for Amundsen-Scott South Pole and McMurdo Stations during the 1976-77 season. Philatelic mail will be processed and returned as soon as it is received. Because this service to philatelists is in addition to the regular duties of station personnel, collectors are asked not to send more than two envelopes for cancellation. Philatelic mail not received in time to be processed for the last flight from Antarctica (scheduled for the middle of February 1977) will be held for an early flight following the austral winter (early October 1977 for McMurdo and early November 1977 for South Pole). Mail should be marked "McMurdo Station" or "South Pole Station" in the lower left corner of the outside envelope. It should be addressed: Philatelic Mail Clerk, McMurdo Station, U.S. Naval Support Force (Antarctica), FPO San Francisco, Calif. 96692.

NRL Reports

Laser Breakthrough. Scientists at the Naval Research Laboratory (NRL) have been able to generate a laser beam at a wavelength of 53.22 billionths of a meter, the shortest wavelength of coherent radiation ever reported. According to Dr. R. A. Andrews, a member of the NRL team credited with the breakthrough, the accomplishment is a major step toward the eventual development of an x-ray laser system. The researchers say these systems, when developed, will open up new ways of processing and testing new materials for use in electronics, will aid in photographing tiny particles such as molecules, and will make possible the production of faster, more sophisticated miniaturized electronic equipment.

Night Attack

Weapons System Tested. The Naval Weapons Center (NWC), China Lake, Calif., has come up with a new heat-seeking night attack weapons system for air-to-surface missiles. The system has shown 100 per cent reliability in validation tests at NWC, China Lake, and at the Pacific Missile Test Center, Point Mugu, Calif. The Night Attack Weapons System is being developed as a low-cost system capable of clear day/night "fire-and-forget" operation to provide first pass, standoff launch capability against tactical targets. The system uses a forward-looking infrared (FLIR) system for target detection which is being developed for the A-6E and A-7E aircraft and is planned for the F-18.

New Overseas

Charter Flight Eligibility Announced. A new definition of "immediate family" makes it possible for "in-laws" to participate in low-cost overseas military charter (OMPC) flights. The Civil Aeronautics Board has ruled that "immediate family" now includes parents-in-law and the children of both sets of parents of qualified Department of Defense sponsors. Previously, only active duty military and DOD personnel living outside CONUS, their spouses, children and parents, were eligible for the charter flights. This travel offered by four commercial firms, is performed at personal expense while the sponsor is on active duty with the U.S. armed services outside the continental United States. The OMPC flights are independent of Military Airlift Command (MAC) charters.

Sea Services

Take Second Place in Chess Tourney. The Sea Services Chess team (Navy, Marine Corps and Coast Guard) captured second place honors in the 17th Annual Armed Forces Chess Tournament held recently in Washington, D.C. The Army team won in both team and individual competition. The winning team was presented the Thomas Emery Trophy with the best individual player of the 18 contestants also receiving an award. Navy members of this year's Sea Services team were: DP3 Stephen D. Greanias, USS Fulton (AS 11); SN Matthew A. Beelby, NavAirSta, Meridian, Miss.; ETR3 Charles Lawton, USS Hunley (AS 31); and SN Cesar Santiago, USS Proteus (AS 19).

Navy Ends

Its Proficiency Flying Program. The Navy terminated its Proficiency Flying program on October 1. The program had provided aeronautically designated personnel 0-5 and below the opportunity to maintain basic aviator skills while serving in assignments that did not require operational flying as part of assigned duties. The program was dropped because of budgetary constraints. The action is expected to save an estimated \$6.5 million annually. About 1850 Navy and Marine Corps pilots will be affected. Aviators returning to operational billets will undergo additional hours of refresher training to compensate for the loss of proficiency flying.

December and

January Advancement Quotas Released. Enlisted advancement quotas for December and January were released by the Bureau of Naval Personnel. Advancements will be effective on the 16th of the month and are authorized for nearly 10,000 personnel.

		USN/R	TAR
Dec	E-5	2636	43
	E-6	1298	49
Jan	E-5	3562	56
	E-6	2263	85

Life in the Yards

from Detroit to Bath ...and back again

Story and Photos by JO1 Jerry Atchison

Every morning at 6:45 AM, CWO 3 Richard Church, USN, commutes from Bath, Maine, to Detroit. And, every evening he makes the return trip. It's a routine he'll follow until next March or April.

Church isn't a millionaire traveler nor has he discovered the ultimate TAD ripoff. He's the ship's Bosun aboard the fast combat support ship USS *Detroit* (AOE 4) which can be found these days berthed at the Bath Iron Works, adjacent to cranes, buildings and equipment—a ship in the middle of overhaul.

A ship overhaul, technically, is an extensive period of time set aside for major ship repair and refurbishing. But, for the sailor who experiences one—and most do—overhauls conjure up a mixed bag of emotions. Borrowing from Dickens, overhauls have been described as “the best of times . . . the worst of times.”

“They may not be the best or the worst times,” said one *Detroit* sailor, “But they sure are *different* times.”

And so they are. During an overhaul, the familiar seagoing routines give way to controlled pandemonium as civilian shipyard workers swarm over the decks, ripping out the old and installing the new.

Bath, Maine, is only a 19-minute flight north from Boston, but a world away from the big city hustle and noise. Nestled between the Kennebec River and the

low, pine- and birch-covered hills of Maine, it is a town of 18th and 19th century homes.

In the middle of town is the Bath Iron Works and towering over both the Iron Works and the town is USS *Detroit*. The Navy ship has become an important member of the community—a kind of long term houseguest.

Detroit's skipper, Captain Guy Cane describes the relationship: “In my book the big difference (between this and some other overhauls) has been the great attitude on the part of the Bath community regarding *Detroit* . . . It's a family and ‘hometown’ kind of feeling that best describes the situation.”

Friendly relations between sailors and townspeople are not a mere dividend—they are essential. The ship is shut down—no air-conditioning, fresh water or waste disposal—so much of the crew must live in the small local community and all go on liberty there.

Officers and chiefs have been put up in local motels. Other senior petty officers stay at two-men-per-room barracks at nearby Naval Air Station, Brunswick. Although the remainder may live aboard a refurbished berthing barge tied alongside *Detroit*, many have opted for apartments in town.

“We've joined in—become a part of the community,” said Church. “When the call went out from the local hospital for emergency donations of

Quarters for muster is held each workday.





blood, the crew turned out in force. That's one example of the town needing us just as we need the town."

The relaxed mix of sailors and civilians is highlighted at the main gate to the shipyard.

Early every workday morning, shipyard workers and sailors mingle as they head from town to *Detroit* and the day's work.

Seaman Keith Wiley is one of those. "I'm sharing an apartment with others in town," he said. "We get a bit crowded sometimes, but it's nice to get off the ship in the evening, particularly after the long hours we put in at work."

Three times a day sailors can be seen strolling to a nearby church. The building enjoys this unusual daily popularity because it has been converted, by the shipyard, into a chow hall. The stained glass windows help counter the typical Navy galley atmosphere.

As sailors make their way to the church-turned-

Above left: Chipping, priming and painting are the order of business for Detroit sailors. Left: Detroit flanked by berthing barge during overhaul. Below: Detroit's bow appears to jut into downtown Bath.

galley, Bath residents greet them from the steps of large old seafaring captains' homes built during the 1800s.

The friendly feelings are not lost on the sailors. *Detroit* is undergoing a complex overhaul which means a lot of hard work and long hours for all. Friendly people, however, make the job much easier.

When at sea, *Detroit's* job is as complex as the multifarious overhaul she is now undergoing. She is a multi-mission ship, almost the size of an aircraft carrier—with a crew of only 600. Operating at high speeds, the ship furnishes rapid, simultaneous delivery of petroleum products, ammunition, freight, provisions and mail to "customer" ships while steaming close alongside.

"We do the jobs of stores ships, ammo ships and oilers, all rolled into one—with only a fraction of the crew," said Church, who is also one of the men responsible for seeing supplies get passed successfully from ship to ship.

In only a minute, *Detroit's* equipment can transfer enough fuel to fill the tanks of 1000 family cars. She completely resupplies the Navy's largest aircraft carriers, furnishing everything from food to fuel, in four





to six hours. And, she can do all these things at speeds up to 30 knots.

The six-year-old ship has performed all these tasks at a considerable pace. Her many deployments with the 6th Fleet in the Mediterranean have taken their toll on men and machinery. It was time for her maze of winches and rigs to be repaired or replaced, her miles of wiring to be inspected and her bulkheads to be chipped, primed and painted.

"When you realize that many pieces of our equipment had only an estimated five years between overhaul requirement under normal usage and then consider we've had more rigorous than normal operating schedules, you come to appreciate why it's time for *Detroit's* overhaul," Church said.

He speaks over the deafening noise of the shipyard. All around, chipping and jackhammers, winches and other equipment together create a battering sound that subsides only at the end of the day.

Decks are strewn with cables and lines running from ship to shore, worklights are strung through passageways and up ladders. The huge shipyard crane gingerly lifts a bulkhead that had been cut away earlier and sets it on the pier.

And over the whole ship swarm sailors and shipyard workers. Hundreds of tasks must be performed by hundreds of men in only a few months. Jobs are broken down into the number of manhours required for each. The manhours are matched up against the time remaining in the yard and the work effort increases.

The ship, once so familiar to the crew, is undergoing a rapid transformation. Well-known passageways between work spaces are sealed off as work continues, leaving some sailors momentarily puzzled, looking for a new route to their jobs. The elevators, normally used to haul supplies from storage areas below deck up to staging areas, are filled with the debris of the job at hand.

Sailors facing many days of hard work ahead find some consolation. Weekly hops have been scheduled between nearby NAS Brunswick and Norfolk—*Detroit's* home port. Those who have not brought their families to Bath look forward to these weekend trips. Sailors have enrolled in evening classes at nearby colleges and technical schools. Spectator events are offered in the area which provide reduced admission to *Detroit's* crew.

"And a lot of guys have their cars here so they can

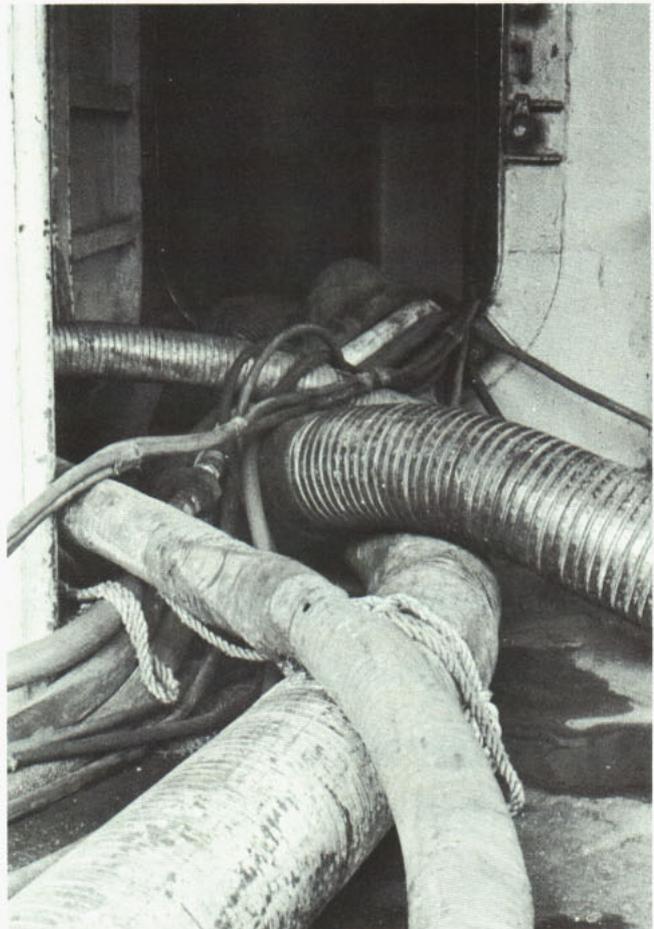
zip down to Boston for a weekend or over to Brunswick," Church said.

The work being accomplished in *Detroit* represents more than two years of planning by hundreds—both on the ship, in Bath and in Washington, D.C. Millions of dollars are being spent to ensure the ship can perform her mission at peak efficiency.

It is work that requires long hours on the job, separations from family and friends and life in a different environment. But it is necessary work, for *Detroit* and for all Navy ships. Although the inevitable overhaul will probably never win a popularity poll among Navy people, it does represent a unique experience, and produces an equally unique life style.

And, like all experiences, it has some advantages. As SN Wiley put it, "You know, I've never been to Maine before. I'm kind of enjoying this." ⚓

Photo by JO3 Kenneth Anderson





making the pieces fit

Overhaul Cycle is Built into Each Ship's Lifespan

All right jigsaw puzzle fanatics, try this one on for size. Here's your challenge—a puzzle containing hundreds of thousands of pieces, costing millions of dollars and subject to numerous changes.

If you say you can put together any puzzle, think again. Your time on this puzzle is limited. Each piece must be in place at exactly the right moment. Not only that, but you're probably going to have to go out and scare up some of the missing pieces yourself.

It may seem an impossible task to some, but it's a pretty accurate description of the work that goes into planning and executing the periodic overhaul of a Navy ship.

Ship overhaul is a big job that grows bigger every year as weapons systems grow larger and more complex, as propulsion systems become more complicated, as ship missions and responsibilities expand and, of course, as the ships themselves get larger and larger.

Today the job of overhauling a ship the size of USS *Detroit* (AOE 4) reaches mammoth proportions.

How is the job of pulling together men, money and machinery handled? How does the Navy know what to fix and when to fix it? What new systems will be added to a ship in overhaul—or taken off?

The Navy's jigsaw puzzle experts have the answers.

The *Detroit* overhaul project officer at the Naval Sea Systems Command in Washington has an office best described as a graph maker's dream . . . or nightmare. Commander Richard R. Walters' job is to make sure the overhaul of *Detroit* stays on schedule and within budget. Referring from chart to graph to file folder, CDR Walters explained how the decision is made to place a ship in overhaul and how long that overhaul will take.

"Every ship has an overhaul cycle built into her lifespan," he said. "In the case of *Detroit* we figure this class ship should go into the yards for about eight months every four or five years."

Figuring when a ship is due for overhaul is only the first step. Long before a ship enters the yards, Navy

planners are busy evaluating information from a variety of sources and formulating plans for what must be fixed, replaced or modified.

"First, the crew report deficiencies as they occur. They also monitor equipment performance and try to anticipate breakdowns before they happen. Some equipment may be working fine but its estimated lifespan tells us that perhaps it should be replaced or overhauled during the overhaul period.

"Then there are new systems that higher authority has decided to install in a ship during her scheduled yard period. For example, in the case of *Detroit* we are adding the NATO *Sea Sparrow* weapons system. This affects the length of overhaul because it is the controlling alteration. That is, it is the single piece of work that will take the longest and therefore, requires the other work to be fitted around it."

But these are not the only variables that go into

determining what will be done and how long it will take.

"Two major factors that must be considered are, how long can the type commander afford to have one of his ships out of action and how much money do we have to complete the necessary work," CDR Walters said.

As each variable is tacked onto the task of overhauling the ship, the puzzle becomes more intricate. Variables still exist that must be considered.

"You can't do the job if you don't have enough people with the proper skills. Both the civilian shipyard and the ship's company must have the manpower to do the job," he said.

All these factors—time, money, material, manpower and needs of the service—are brought together. A balance is sought. Schedules are modified and tasks examined. Once priorities are established, you've got



a systematic working plan for the overhaul of a ship.”

This is not to suggest that this plan is final. Ship overhaul planning can begin as much as two years before the ship enters the yards. And it goes on right up to the day the overhaul period is completed.

“It has to be an extremely flexible plan because things are constantly changing. The ship may develop previously unreported problems, specifications may change, material may be delayed, or operational requirements of the ship may be modified. All these must be cranked into the system.”

It’s very important to determine what must be done in the yards. It’s equally important to determine *how* it must be done. It’s the classic problem of fixing a bulkhead, only to rip it out when new equipment must be installed.

Mistakes like that can’t be made. To make sure they’re not, every task to be performed during an overhaul is analyzed. Before the first wrench is picked up or the first bolt loosened, Navy planners figure:

- How long will it take?
- How many men will be required and with what skills?
- What parts are needed and where will they come from?
- What tasks must be performed before, and what tasks after, the particular job under study?
- What is the priority of the task?

That is a job bigger than any one individual. Decisions that affect a ship overhaul can emanate from many sources ranging from the Chief of Naval Operations to the fireman who tends the boilers. Besides the project officer and ship skipper, experts are called in on all phases of ship overhaul and repair. They might include experts from the civilian shipyard performing the overhaul, people from the type commander’s staff, experts on weapon and propulsion systems, and on and on.

And, perhaps most importantly, it includes the men who will perform many of the repairs and operate the ship once she rejoins the fleet.

“In the end the ship’s force has to do a lot of work because there are more repair items than money and time available,” said CDR Walters.

“That’s the one variable you can’t schedule but you can depend on—the sailor who works a 12- to 14-hour day in the yards. He’s separated from his family, the living conditions are sometimes marginal but he does a helluva good job,” CDR Walters said.

—J. A.



ALL HANDS TALKS WITH

Chief of Naval Personnel on The Enlisted Advancement System



Why was the Meritorious Advancement Board phased out? Who really pays the piper when discrepancies in examination results crop up—the individual or the local command? What happens if a selection board examiner finds that a candidate's performance evaluation is missing?

In the interview that follows, the Chief of Naval Personnel, Vice Admiral James D. Watkins, addresses these and other issues related to the enlisted advancement system.

Q. *Admiral Watkins, our first question is one asked frequently by Navy enlisted people: Why are 95 per cent of all enlisted test-takers allowed to pass the advancement exams while only a portion of those are actually advanced?*

A. This is a question that comes up time and again in my visits to the Fleet, and I feel it very important that all Navy Personnel understand and appreciate the rationale for this policy.

I'm afraid there's a misconception that allowing 95 per cent of all test-takers to pass an examination represents a gross relaxation of our advancement standards. This is simply not the case. The 95 per cent figure was not chosen arbitrarily. It was selected after very careful study. After all, 95 per cent of all test-takers are not necessarily advanced—they merely move into the field of consideration.

Let me give you a little background on this. In 1973 we conducted an extensive review of the enlisted advancement system. Then, as now, advancement was based on a final multiple score (FMS) computation, with this FMS computation made up of several factors including time in service, time in rate, awards, exam score, performance, etc. The results of the review proved conclusively that because of the weight then given each of these factors the advancement advantage went to the best test-taker at the expense of many outstanding performers who were only average test-takers.

There were two reasons for this. First, the exam contribution towards final multiple score was 40 per cent for pay grades E-4, E-5 and E-6, while the performance contribution was only 25 per cent. Secondly, the pass score was set so high in many ratings that exam score was really the sole determinant as to whether an individual was going to be advanced. In order to be eligible for advancement based on your FMS computation you had to pass the test, but with such high pass scores FMS computation was merely a mechanical device to determine which advancement increment a selectee was going to be in rather than a

means to determine best qualified.

The review also determined that our advancement system could conceivably have been culturally biased because analysis revealed that exam content and high pass scores did not allow many of our personnel an equitable advancement opportunity when all traits were considered. Many minority personnel, for example, who were outstanding performers could not bring their truly exemplary qualities into the advancement process since they could not make the high cutoff scores to even be considered. As a matter of fact, this was a particularly serious problem at the E-4 level where they were perpetually stymied at their first real opportunity to move up the advancement ladder.

So, the review fostered two major policy changes. First, the examination pass score was revised, across all pay grades, to allow 95 per cent of the test-takers to move into the zone of consideration. This change merely allows 95 per cent of all test-takers to have their FMS computed so that all of their advancement factors are brought to bear and the individual is not rejected out of hand by exam score alone. Secondly, increased

‘... increased emphasis was placed on performance...’

emphasis was placed on performance, and the weight of the exam score in the FMS computation was modestly adjusted downward a like amount. Instead of the old 40/25 per cent mix of exam/performance in pay grades E-4 through E-6, the chart below shows the new percentages that have been adopted:

	E-4/5	E-6
Exam	35	30
Performance	30	35
Other	35	35

This increased emphasis on performance simply means that we are striving to advance the “best qualified” candidates with leadership and technical skill weights in better balance. Certainly, sufficient knowledge of skill in a rating must be demonstrated on an exam. The actual score on the exam itself remains an important factor as shown by the still-significant weighting factors I have shown in the table. However, we recognize, and must demand, that sustained superior performance be the major criterion for advancement selection, particularly in our senior pay grades.

Q. Admiral, could you discuss the effect of these changes at specific pay grades?

A. Yes, because I think it important that we understand the differences. At the E-4 level, due to our significant shortage of third class petty officers, we are, in effect, saying that the majority of all “qualified” E-4 candidates will be advanced. If our manning in E-4 ratings dictates that we advance all candidates who pass the exam, and we assume that all candidates who compete for E-4 are fully qualified for the next higher rate in all respects, then it is logical to assume that we are going to advance every candidate who passes the exam. But let’s not overlook that term “qualified.” “Qualified” for advancement means having met all requirements. *The most important requirement to be met in the enlisted advancement system is the commanding officer’s recommendation.* It’s the direct responsibility of the commanding officer to recommend for advancement only those personnel who are fully qualified for the next higher pay grade. Therefore, it must also be assumed that every individual participating in an advancement exam is fully qualified and we should have no hesitation about advancing any or all of them if our manning in that rate permits it.

Now, as we move up the pay grade ladder, increased emphasis is placed on performance, less on exam, and quota limitations on advancements come into play. You’ll find that it is increasingly difficult to make E-5, and virtually impossible to make E-6, with a low exam score. This is true because you just can’t overcome a low exam score and achieve an FMS high enough to assure advancement with the quota limitations imposed on these pay grades.

Finally, the same rationale applies to our chief petty officer grades as it does for E-4/5 and E-6s—only more so. Records of E-7/8/9 candidates are sent to selection boards as a result of FMS’ derived as shown on this chart:

	E-7	E-8	E-9
Exam	60	50	40
Performance	40	50	60

The records of 50 per cent of all E-7 candidates and 75 per cent of all E-8/9 candidates, determined by FMS, in each rating are considered “selection board-eligible” and appear before selection boards. The odds that one of these candidates will achieve a high enough FMS to appear before a selection board with an exceptionally low exam score are slim to none. Further, selection of one of these low exam scoring individuals by a board would have to be based on truly exceptional performance.

I know this is a lengthy response, but your question

is extremely pertinent. It is most important that Navy personnel know that we are not sacrificing quality for quantity. We are striving, and always will strive, to select the very best qualified individuals to fill the Navy's manning requirements based on the advancement recommendations of commanding officers.

Q. *Some Navy people ask us why the Meritorious Advancement Board was canceled. Does that action tie in with the new 95 per cent pass mark policy?*

A. Yes, it does. In fact, they're closely related. We canceled the Meritorious Advancement Board because it had served its purpose. It was no longer a necessary part of the enlisted advancement system.

Established in 1970, the Meritorious Advancement Board was designed to provide a very limited advancement opportunity for top-performing E-6/7 candidates who had repeatedly failed to obtain high enough exam scores to have their Final Multiple Score computed for advancement. But now that we've changed the exam policy to allow 95 per cent of all test-takers to pass, top-performing E-6 candidates who were average test-takers can now pass the exam and bring their stronger advancement factors into consideration.

At the same time, our newly established E-7 selection board reviews each candidate's record guided by the entire spectrum of performance factors. By instituting the 95 per cent pass score and the E-7 selection board, we have provided equitable advancement opportunity for those individuals who would have previously come under the meritorious advancement approach.

Q. *Admiral, could you tell us why we have Passed-Not-Advanced (PNA) points? What purpose does this system serve?*

A. We have long felt that individuals who have not been advanced in a particular pay grade should receive some credit for their past accomplishments in advancement competition. So, in 1972 the PNA points system was adopted as a compromise between requiring all candidates to start each new exam cycle from scratch, and not requiring them to retake advancement exams at all.

Candidates who PNA an examination accumulate points, based on their exam score and performance marks. These are applied to their final multiple score in the next competitive examination. This accumulation builds over a specified number of exam cycles,

that is, as long as an individual continues to PNA a rating examination for the same pay grade.

'The PNA system encourages continuing individual outstanding performance.'

The PNA system encourages continuing individual outstanding performance. The system provides a candidate with the credit necessary to increase his or her opportunity for success in future advancement attempts.

Q. *We sometimes hear that errors in filling out exam paperwork slip through the system unchecked, affecting individual results. Is this a problem?*

A. It's a problem with which I'm very concerned. Examination discrepancies indicate a lack of concern for our individual Navy men and women on the part of some of our local commands.

To begin with, candidates are required to verify all information on their worksheets and to transcribe this information accurately to their answer sheets. Unfortunately, in many cases, candidates transcribe this information incorrectly.

These errors *should* be caught by command examination boards since these boards are required to check and verify all candidates' answer sheets for correct information before forwarding them to Pensacola. It's obvious, looking at the large number of discrepancies which appear cycle after cycle, that these command examination boards are simply not doing the job. The majority of discrepancies on answer sheets received at Pensacola should have been detected at local command levels. Failure to scrutinize answer sheets closely severely penalizes the individual candidate because his or her advancement results are necessarily delayed until the discrepancy is cleared. It's important that we all do a better job in this area, exam-takers included.

Q. *Admiral, could you explain the new "Token" Advancement policy and how it will affect Navy members?*

A. Until recently, the so-called "Token" Advancement policy meant that we were advancing five per cent of test-passers in each rate manned at or above 100 per cent of the Chief of Naval Operation's require-

ments. This "Token" Advancement policy was instituted to ensure that we maintained some advancement flow in our overmanned rates.

We have found, however, that the blanket five per cent policy was too large a percentage at pay grades E-7/8/9 because of the relatively small size of these pay grades. To correct the problem, the E-7/8/9 "Token" Advancement policy has recently been modified.

The new "Token" policy for E-7/8/9 is based on projected manning figures, but will authorize only one advancement per cycle for rates with projected manning over 100 per cent of CNO requirements.

Additionally, *no* E-7/8/9 advancement will be authorized for rates with projected manning over 110 per cent of CNO requirements. Because the Navy must adhere strictly to specified total limits at these high pay grades, allowing a more lenient "Token" policy in any one rating would work to the disadvantage of another group.

It's important to remember that these changes apply to E-7/8/9 rates only. The five per cent "Token" policy for overmanned E-4/5/6 rates has not been revised.

Q. *Admiral Watkins, this year's selection board criteria provided for consideration of a male candidate's sea duty. Now, if a member wanted sea duty but got detailed to shore duty instead, how can he be sure the board will recognize that he had no choice?*

A. Let's clarify that a bit. My direction to enlisted selection boards states that candidates for advancement should have been at sea *recently enough* to indicate

'The boards were reminded that not all selectees could be serving currently on sea duty...'

current qualifications. The boards were reminded that not all selectees could be serving currently on sea duty, and that some ratings just don't offer extensive opportunity for sea duty.

At the same time, conversely, senior officers and master chiefs who sit on the enlisted selection boards are very aware that Navy men and women must go where the detailer sends them within the sea/shore ro-

tation established for their rating. Nevertheless, all other things being equal between two candidates of the same rating, the individual who has demonstrated professional capabilities in a variety of assignments, both at sea and ashore—as demanded by his rating—will get the nod.

Q. *How can selection board candidates have confidence that their records are correct and up to date?*

A. The service records of all selection board-eligible candidates are pulled from the files and carefully examined several weeks before the board goes into session. The people who examine service records are pros who do a terrific job in catching misfiled, missing and incomplete documents. If an examiner finds that a performance evaluation is missing, a message is immediately sent to the individual's command, requesting that information.

It's important to remember, though, that our examiners have no way of knowing whether essential information concerning awards, educational accomplishments, and so forth, should be, but are not on file.



Individual candidates are responsible for keeping their division officers informed of achievements so that this information is reflected in annual performance evaluations.

There is a special form which has just been made available (Enlisted Performance Evaluation Report—Individual Input, NavPers 1616/21), by which enlisted members can ensure that significant accomplishments or special recognition are brought to the attention of the reporting senior. As you know, the practice of forwarding to the Bureau copies of commendatory cor-



respondence pertaining to enlisted personnel for filing in service jackets was discontinued on September 1, 1976. An initial distribution of the new form was made to commands last month; they will become available through the Navy Supply System by February 1977.

One additional point on this subject I'd like to mention. All enlisted service records in the bureau are currently being converted from paper to microfiche. Before the conversion takes place each record undergoes a stringent examination. In the future, the quality

and accuracy of all personnel records will be greatly improved as a result of this conversion.

Q. *Along those same lines, Admiral, how does being an "examination discrepancy" affect selection board consideration?*

A. Beginning with the January 1977 CPO examination cycle, candidates in a discrepancy status will remain selection board-ineligible until discrepancies are cleared by parent commands.

This may seem a little harsh, but let me tell you what was happening under the old system. We used to pass the names of candidates in a discrepancy status to the selection boards. By doing so, we placed a major burden on members of the selection boards who were forced to spend large amounts of time clearing discrepancies when they should have been able to devote their full attention to the selection process. As I stated before, clearing discrepancies is a command responsibility. We can no longer afford to burden our board members with the task.

Q. *Two questions—what factors are being considered in E-7/8/9 selection boards? And, also, what has been the effect of going to a board system as opposed to the final multiple system?*

A. Deliberations of selection boards are not recorded, but certain general areas of consideration undoubtedly receive continuing emphasis. These areas include: performance evaluations, demonstrated leadership, personal awards, educational achievements, career patterns, sea duty experience and potential for future service at the next higher pay grade.

Certain specific guidelines are forwarded to each selection board in what we call a "precept." It's through this precept that the board is instructed to evaluate candidate performance in such important areas as human goals, recruiting and sea duty participation.

Within the guidelines contained in the "precept," the selection board members are free to develop their own criteria to help them select the "best qualified" candidates for E-7/8/9. Selection board members have been routinely unanimous in their stated belief that this method of selection is far superior to the old examination/final multiple method of selecting our chief petty officers. I wholeheartedly agree with them.

Now, under the old system of final multiple, selection too often was a reward for longevity and test-taking ability. Selection boards go far beyond these factors.

Frankly, I am convinced that the selection board system is responsible for the advancement of the truly best qualified E-7/8/9 candidates in the Navy's history.

Q. *Admiral, why must selectees wait so long for advancement, up to 12 months for E-7/8/9?*

A. First, let me say we're concerned about this problem. However, there are several valid reasons for the

'Our advancement system is "vacancy driven".'

delay between selection and advancement. Our advancement system is "vacancy driven." By this I mean that we determine initial selection numbers long before a board meets, based on projected vacancies throughout the 12-month advancement cycle. We have strict quotas imposed on our selection rates. These quotas come from Congress in the form of manpower authorizations, as well as from within to ensure that proper career development is available in each rate/rating.

As much as we might like to advance all selectees at one time, we're forced to spread advancement dates over the same 12-month period that we use to project advancement openings.

Actually, it's a lot like running a motel. You have only so many rooms and you can only put people in rooms which are vacant. On the other hand, we never want a room to remain vacant and so we identify individuals ahead of time and in a priority listing.

There's one other thing I'd like to mention on this subject of advancement delay. There's a tremendous amount of work to be done between the time advancement exams are administered and the selection board list is published. Records must be prepared for review and discrepancies must be cleared by the examiners. Added to the time required to ready records, six to eight additional weeks are required for the selection board to complete its deliberations.

The Navy is not unique in this "wait-time" problem but you can be sure that we're doing our best to keep it to an absolute minimum.

Q. *For those people farther down the promotion ladder, could you tell us how good the advancement opportunity to E-4 is these days?*

A. In a word, outstanding. For the past several cycles, and for as far as we project in the future, the

opportunity will continue to be exceptional.

But let me take this opportunity to make a very important point on this subject: If the Navy is going to be able to justify to Congress our stated requirement for additional petty officers, we simply must show that we're capable of producing the required numbers we request.

The number of personnel taking the E-4 examination in February 1976 fell considerably below Navy needs. Preliminary indications are that significantly fewer personnel took the August '76 exam than we expected. It's up to all of us to ensure that *all* eligible and qualified petty officer candidates participate in the advancement process.

In my travels I've heard the excuse that it's not worth studying for the E-4 exam because the pay isn't really any better. But if personnel are counseled to look beyond basic pay, the entitlements to travel and transportation allowances for E-4s alone are worth a great deal.

Furthermore, married E-4s receive even more entitlements not extended to nonrated personnel, including such things as family separation and overseas station allowances. Becoming a petty officer is good for the individual and good for the Navy. We must get this word across loud and clear.

Q. *Finally, Admiral, what impact will the new back-dating procedures have on the advancement of individuals placed in an "examination discrepancy" status?*

A. First, let me explain why this change was necessary. We recently reviewed our methods for determining the advancement date, for pay purposes, of candidates who have been in a "discrepancy" status. Our study revealed that by the time some discrepancies were cleared, we were actually permitting some "retroactive" advancements. For example, suppose an individual in a discrepancy status would have been advanced in February, but it took until March to clear the discrepancy, in this situation we had been assigning a retroactive advancement date in February. Unfortunately, this procedure is contrary to existing laws.

Obviously, we had to change our system. The new procedure allows a selectee in a discrepancy status to be advanced on the date his discrepancy is cleared. Once this has happened, the individual can seek relief from the Board for Correction of Naval Records to obtain a corrected advancement date based on his Final Multiple Score computation. (—▶)

GRAINS of SALT

Steam clouds on the horizon

By LT. Tom Davis

The War of 1812 was fraught with disadvantages for a young United States. Her Army and Navy were small and ill-prepared for a confrontation with the world's greatest sea power, Great Britain. American merchants didn't want war and decried it as a disruption of trade. Citizens in major port cities—Boston, Baltimore, Philadelphia and New York—feared that the British fleet would attack by sea or blockade their harbors.

Yet, for one man, it could be said that the war presented not a disadvantage but a great opportunity—a chance to set before the world the unparalleled advantages of steam-powered ships. The war afforded Robert Fulton the opportunity to present his plans for a steam-powered floating gun battery to an ad hoc committee to determine the best way of defending New York Harbor.

He proposed that a ship be built on two hulls joined by decks and beams housing a 16-foot paddlewheel. One hull would contain a copper boiler and the other a steam engine capable of turning at least four knots.

The vessel was envisioned as being 170 feet from bow to stern and 66 feet athwartships, and equipped with 30 long-barreled, 32-pound cannons. To further enhance her effectiveness, plans were made to heat cannonballs in the ship's furnace, making them incendiary projectiles. Additionally, she would mount two Columbiad 100-pounder submarine guns capable of

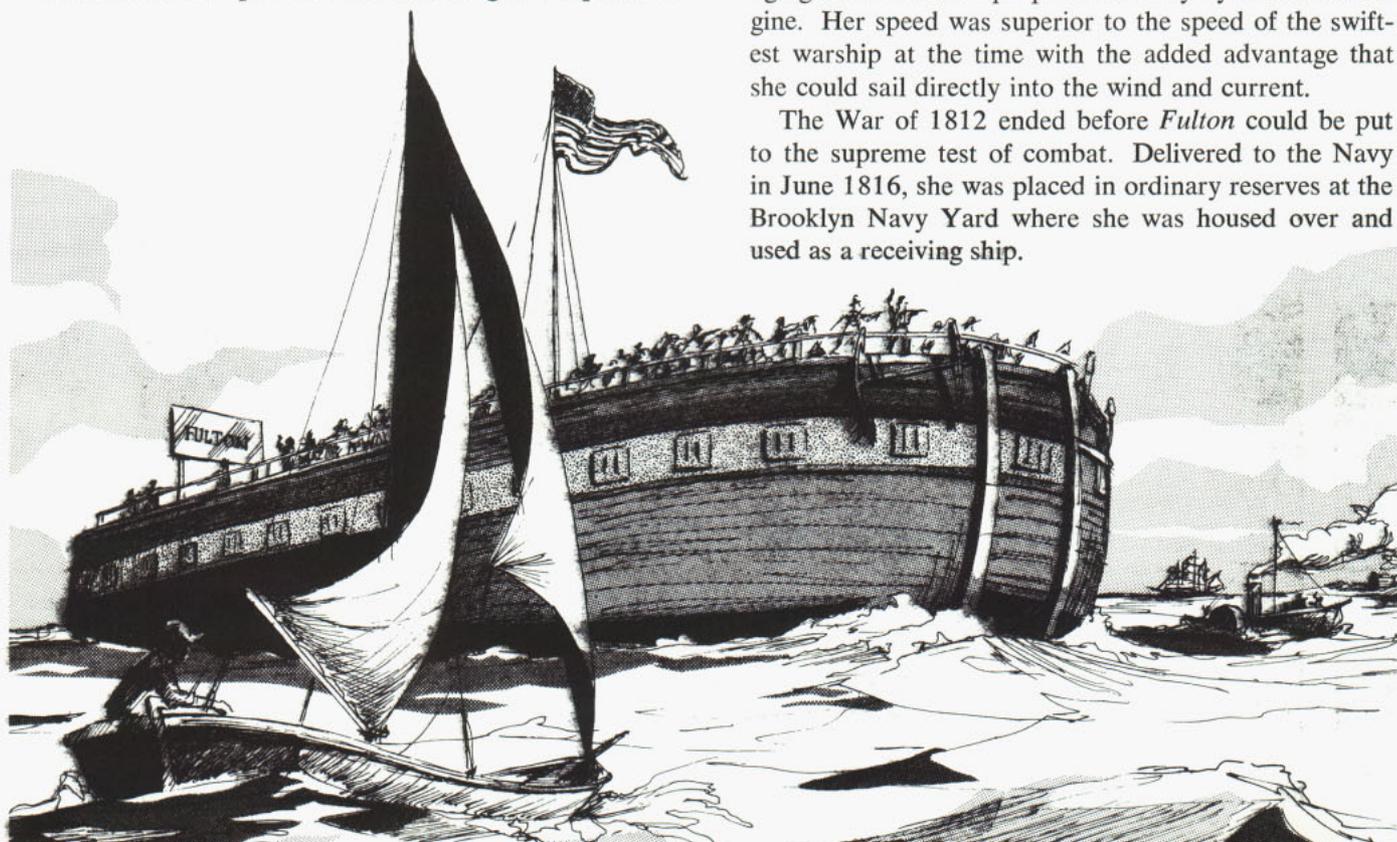
piercing hulls of enemy ships while her own hull—of 4'10" solid timber—would be impervious to cannon.

Believing such a ship to be "the most formidable engine of warfare ever conceived," Congress authorized President Madison to build one or more floating batteries for defense of "the waters of the United States" in March 1814. By June, a keel had been laid and work had begun on the boiler and engine at Fulton's Engine Works on the Hudson River. In spite of war-imposed shortages of iron, copper, coal and lead, the hull was completed in only four months and the ship was christened *Demologos* (voice of the people) and launched October 29.

Efforts were intensified to complete construction of her machinery and to collect armament. Robert Fulton, seriously weakened by his nearly superhuman efforts to complete the battery, contracted pneumonia and died in late February 1815. By early June, however, machinery was installed and *Demologos* was renamed *Fulton* in honor of her builder. During the same month, *Fulton* made her maiden voyage around New York Harbor under the command of Captain David Porter.

On July 4, she completed a 53-mile voyage to the ocean and back, averaging more than six knots. On September 11, rigged with lateen and jib sails and fully armed, *Fulton* sailed again to the ocean and back, averaging five knots and propelled entirely by her steam engine. Her speed was superior to the speed of the swiftest warship at the time with the added advantage that she could sail directly into the wind and current.

The War of 1812 ended before *Fulton* could be put to the supreme test of combat. Delivered to the Navy in June 1816, she was placed in ordinary reserves at the Brooklyn Navy Yard where she was housed over and used as a receiving ship.



from the desk of the **Master Chief Petty Officer of the Navy**

A SAILOR'S WIFE is an integral part of the Navy. At the most basic level, she maintains the household in the absence of her husband. More importantly, she can directly affect the motivation, morale and performance of the Navy member. But, because of the unique nature of the naval service, the spouse who adopts the Navy way of life must adapt to situations which have no civilian counterparts.



MCPON Robert J. Walker

Although the household maintained by the Navy wife while her husband is on shore duty is practically indistinguishable from those in the civilian community they live in, there are subtle differences. The Navy member leaves for work like everyone else, but in a Navy uniform. The sailor stands duty watches, may shop at base commissaries and exchanges or live in government housing.

Sea duty alters the day-to-day functioning of the Navy family. The wife, remaining ashore, must maintain the house or apartment, care for the children, do the shopping, pay the bills and see to the frustrating tasks that never seem to appear until she is alone.

The rotation policy of the Navy also requires the Navy wife to make adjustments. On one hand, rotation means moving the household every few years but, on the other, it introduces variety into what might otherwise be a dull, routine existence. And, rotating to overseas duty is an experience that can offer the chance to broaden one's horizons culturally.

With the Navy wife asked to take such an active part in Navy life, it becomes our duty to provide as much support, physical and emotional, as possible.

The audience addressed in this article is Navy wives; however, I realize that a significant number of Navy husbands act as counterparts of the wives. Most information in this article is also applicable to husbands.

The Navy Wifeline Association is a nonsocial, non-profit, informational and educational organization of Navy wives. Through the Association, the wives of officers and enlisted personnel anywhere in the world can join together in a working force to complement the

Navy's efforts on behalf of its dependents by lending the women's point of view.

The Navy Internal Relations Activity publishes a free quarterly newsletter, "Wifeline, the magazine for Navy Dependents," which is distributed to commissaries, medical facilities, and Navy housing. Information booklets dealing with such subjects as protocol, tradition, benefits, moving, duty overseas, and travel and privileges may be obtained by writing: Navy Wifeline Association, Building 210, Washington Navy Yard, Washington, D. C. 20374.

The Navy Wives Club of America is the country's only national federation of Navy, Marine Corps and Coast Guard wives. The club exists to promote a relationship among the wives of enlisted men of the United States Sea Services and to extend relief assistance to needy members and their dependents.

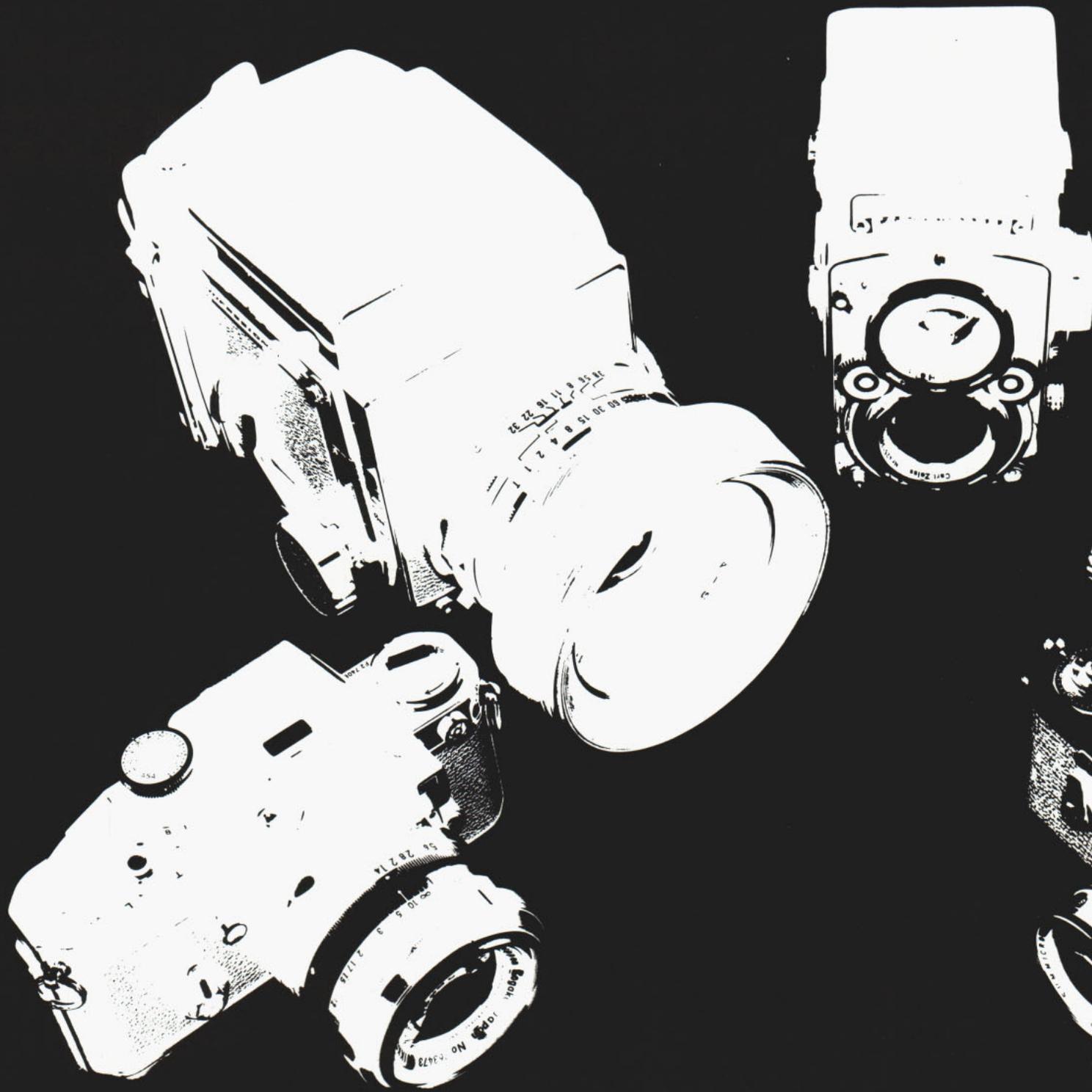
The club does welfare work locally, and is known nationally for its Scholarship Foundation. Membership is open to wives of enlisted Navy, Marine Corps and Coast Guard personnel, regular, reserve or retired status, and to the widows of enlisted men.

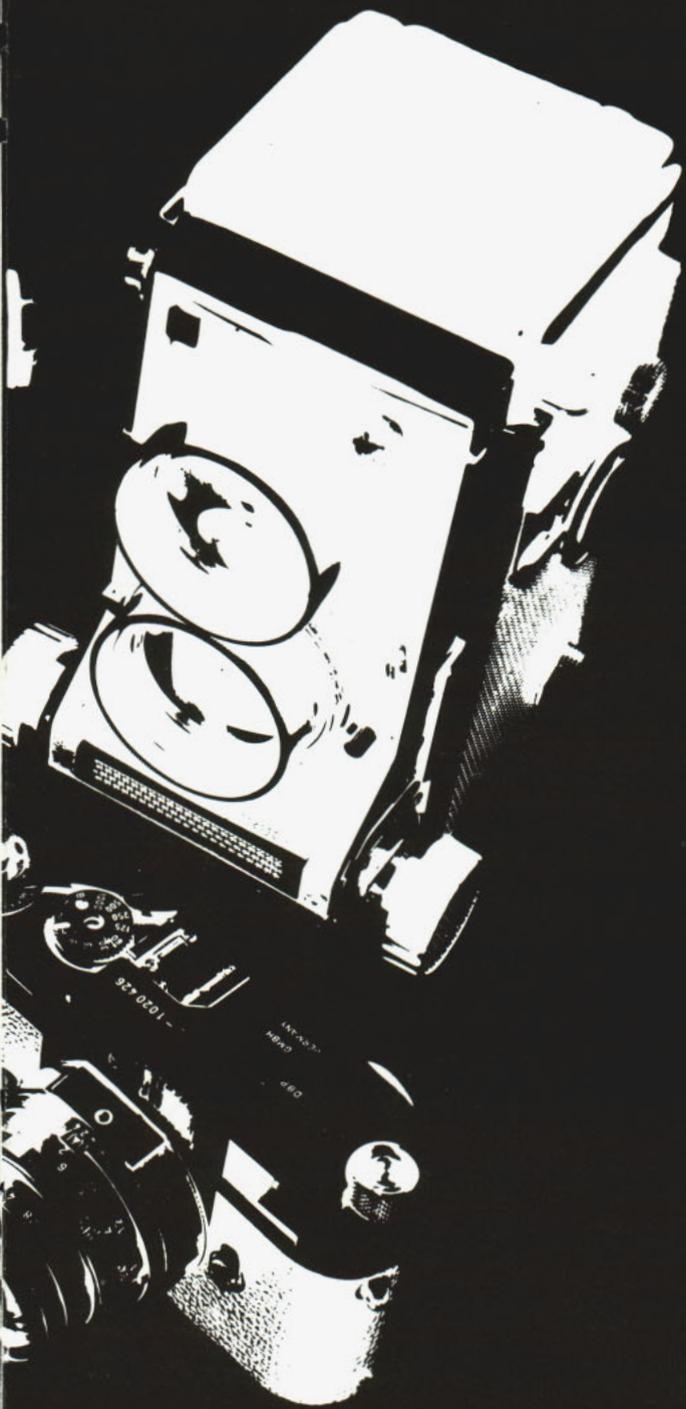
The Navy Relief Society is a private, charitable organization whose purpose is to assist members of the Navy and Marine Corps, and their dependents. The assistance is available to all eligible families who have the need for assistance with problems which are beyond their capabilities to handle. Assistance is in the form of no-interest loans; the services of a Navy Relief nurse; help with transportation and housing; information on dependents' benefits, allowances, pensions, government insurance; locating and communicating with Navy personnel; and advice about community resources such as help for the handicapped, special schools, welfare, etc.

The American Red Cross and the Navy Relief Society have entered into an agreement on procedures under which assistance is given to service personnel and their dependents. Although the assistance given by the two organizations is similar, this agreement allows appropriate referrals to be made to either the Red Cross or Relief Society.

Other assistance available to the Navy wife exists in the privileges enjoyed by shopping at local commissaries and exchanges; open messes and clubs; special services; local wives clubs and activities; military scholarship funds; personal services centers; casualty calls program; and Navy chaplains and lawyers.

Because the Navy wife is an essential part of the Navy family, she deserves all the encouragement she can get. I urge all Navymen to support their wives personally, through direct reassurance of their importance and our need for them, and professionally, through information about the Navy-sponsored or affiliated organizations and programs available to them. ↓





BUYING A CAMERA THAT WILL DELIVER THE GOODS

By PH2 Terry Mitchell

"Now you may have an exposure problem with your automatic exposure SLR unless you work on identifying the proper latitude of your niblik diameter as opposed to your focal length when computed at mumble, mumble, mumble. . ."

Huh?

If you're the ardent camera buff in search of a new camera, you've probably heard much the same before. You want a camera that lets you take good pictures. The mumbo jumbo of camera salesmen confuses the novice and can result in a sales pitch-dazed purchaser leaving the shop with an outfit he doesn't need and what's worse, can't operate.

But the modern-day shutterbug intent on buying a new camera ought to understand some of the jargon before that trip to the Navy exchange. If you decide beforehand on what types of pictures you want to take, you can spot the type of camera that will deliver the goods at a price you can afford.

Cameras are usually classified according to the type of viewing system used to compose a picture in the camera and the size of film used (format).

In the breakdown by viewing system, cameras will fall into four basic groups: single-lens reflex (SLR), twin-lens reflex (TLR), rangefinder and view camera. These four break down into subcategories depending on the film size employed. For example, small format cameras (16mm, 35mm) usually mean small, portable models. Large format cameras (2¼ x 2¼, 5 x 7) mean more bulky models and higher potential quality.

35MM SINGLE-LENS REFLEX

One of the most varied and popular cameras today is the 35mm SLR. The main reason for this is that with an SLR, you actually see what the lens sees; the same lens which is used for forming the image on the film also provides the image in the viewfinder.

Many 35mm SLRs have a light-metering system built into the viewing system. This, coupled with shutter speed and diaphragm controls, allows the photographer to measure the amount of light in the scene

and set the exposure accordingly (see accompanying story).

The variety of lenses is just about endless for the 35mm SLR. Focal lengths from 8mm to 1500mm, and practically any length in between, are available for anything from special effects to an ordinary snapshot of a shipmate. The lens most cameras are equipped with is the normal lens, usually 50mm in focal length, and the fastest lens for that particular camera. (A lens is considered fast when it has a wide aperture, permitting more light, and therefore faster shutter speeds).



LARGE FORMAT SINGLE-LENS REFLEX

Like its smaller cousin, the large format (120/220) SLR has many of the advantages mentioned already. But as film size grows, so does the camera size. Somewhat more cumbersome than the 35mm SLR, the large format is more difficult to handle.

Unlike the eye-level operation of the 35mm SLR, the large format SLR is designed to be used at waist level, with the photographer looking down and through the camera viewing system. It can be used at eye level with the addition of a costly prism accessory. Besides the advantage of eye-level viewing, the prism also corrects the image in the view finder. Without the prism, the image in the view finder is upright, but is reversed laterally. This right-for-left swap is difficult to over-

SHEDDING LIGHT ON THE SUBJECT

If you've bought your first adjustable camera and are a bit nonplussed by the various dials, meters and buttons, it might be a good idea to keep in mind that capturing an image on film is simply a matter of controlling the light that strikes the film.

You can't control how much light is reflected off the image being photographed (assuming you have no flash) but you can control the amount of light that passes through the lens and onto the film. Here's how.

First, is the aperture or diaphragm opening of the lens. It adjusts much as the pupil of the human eye does, narrowing down to pinhole size for bright light, or opening wide in the dark. The range of openings are called f-stops. The smaller the f-stop, the larger the opening. Therefore, f2.8 is wide open on many lenses while f22 is probably the smallest opening on most standard lenses. By adjusting the f-stop you control the amount of light that passes through the lens when the shutter is clicked.

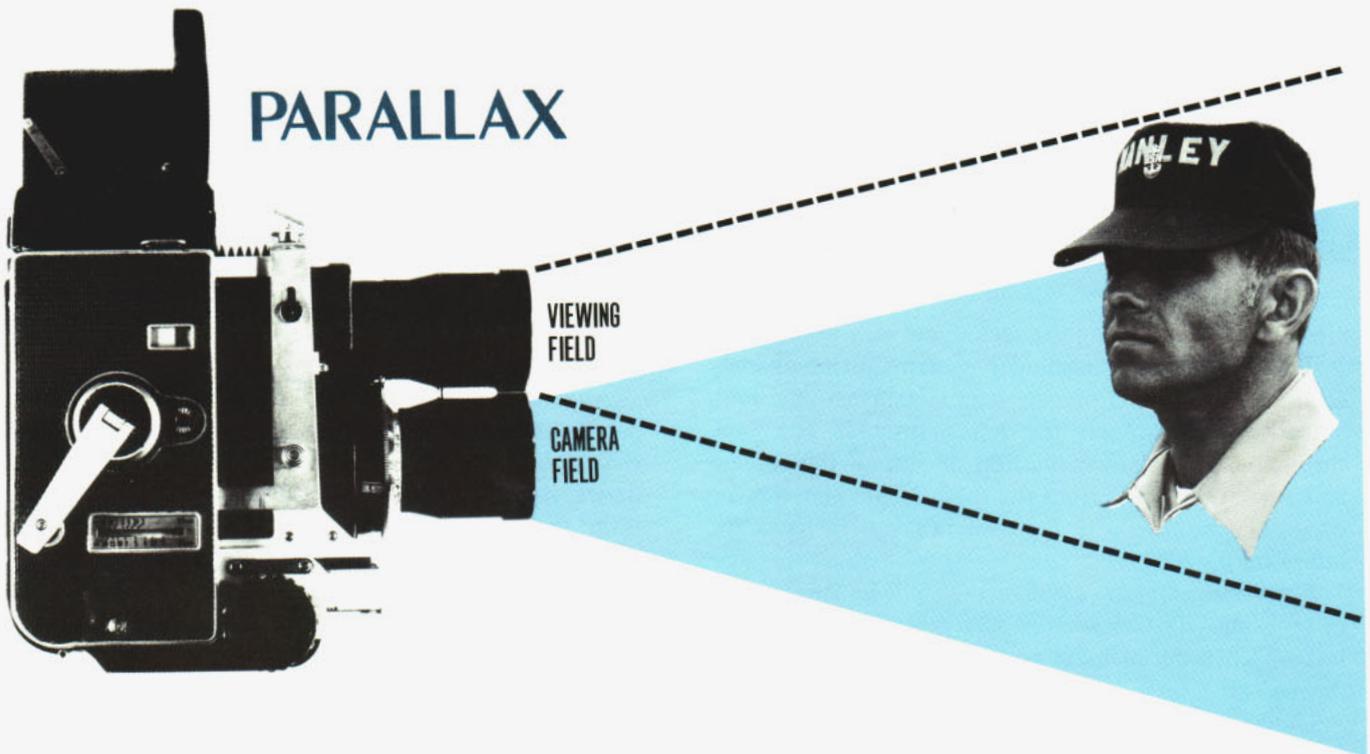
But the click of that shutter also helps to determine the amount of light that passes through the lens. Your shutter speed will let a lot of light through if it is very slow and hardly any light through if it is fast.

Your shutter setting and f-stops are directly in proportion in determining how much light is caught on the film. For example, if you take a well exposed picture and your shutter setting is 1/60th of a second and your f-stop is f8, you should get the same results by speeding the shutter up one notch to 1/125th of a second while opening the diaphragm to the next wider f-stop (f5.6).

You don't need a computer to figure these numbers out. If your camera has a built-in light meter, you need only adjust both f-stop and shutter speed until the meter tells you that you have the right setting. If you don't have a meter, take a look at the sheet of paper that comes packaged with the film. This usually includes recommended settings for various light conditions (i.e., bright sun, hazy, shadow, etc.)

Once you've mastered the ability to allow the proper amount of light to strike the film, things get kind of fun. It is usually just a short stop from there to processing and printing your own film as the photography bug bites the seasoned novice.

Just remember, control the light and you've controlled the picture.



come when shooting action-type pictures. The prism is perhaps the best accessory for the large format SLR and should be considered the first accessory to be purchased.

With its bigger film size, the large format SLR will yield higher quality enlargements than the 35mm format. However, 120/220 roll film is not as widely available in some Navy ports of call. This may necessitate your carrying a large film supply instead of purchasing it as you go. Again, many of the so-called special roll films are manufactured only in the 35mm format. (This is not to slight the 35mm, which, in the hands of a "good" photographer, can produce fine-grain, flawless pictures which do not fall apart in the enlarger.)

One last thing, if you intend to shoot color slides, as many Navy people do, the 120/220 format requires a special projector for viewing.

SLR ACCESSORIES

Many camera manufacturers seem to be in a race to see who can manufacture the most accessories for their systems. Granted, each accessory has an application, but many are far too costly for the average photographer. In addition, you must consider the basic question, "Will I use this accessory enough to justify my buying it?"

Frequently purchased accessories include camera

Parallax is caused by two lenses having slightly separated positions on the camera body. The result is that a person's eye does not see exactly what the camera sees.

bags, tripods, flash attachments and light meters. These items are basic to most camera systems. On the other end of the sophistication scale are such items as lens attachments for electron microscopes, filters for every conceivable photographic situation, and lenses that require either three tripods or six strong men.

But whether you pay \$5 or \$500 for an accessory, make sure you completely understand its application before you leave the store. The story of the fellow who buys an extra lens for his camera, takes it home, doesn't realize it is not compatible with his camera and ends up stripping the threads on the lens is an often-heard tale.

The best way to decide what accessories you need is to check the catalogue of accessories for your brand of camera and determine which would be an absolute necessity.

RANGEFINDER CAMERAS

Rangefinder cameras vary in format from 16mm (small film size used in simple-to-operate "tourist" cameras) to 4" x 5" (large format used largely in press cameras).

The main difference between rangefinders and other cameras is the optical system, or "optics," used for



viewing and composing the scene you wish to film.

The optics of a rangefinder camera are completely separate and apart from the lens system, so you don't actually look through the lens. Instead, you look through a little sight at the top or side of the camera and somewhat offset from the main lens. The viewing optics synchronize with the camera's lens to focus the image on the film.

Most rangefinders employ the split-image method of focusing. The viewfinder will present two identical images when out of focus and as the camera is focused on the subject, these two images will converge.

Unlike the SLR, the image you see in the rangefinder viewfinder is not affected by the magnification of the lens. To give you an idea of how different lenses will affect the picture, lines are etched in the viewfinder.

Lens variety is not quite as extensive with the rangefinders as with the SLRs and many models do not feature interchangeable lenses. Because of its simplicity, as compared to the highly engineered SLR, the rangefinder camera is less prone to mechanical malfunctions and is easier to repair.

The rangefinder camera has its disadvantages, too. Because of the viewing system, the rangefinder is hard to focus with the longer focal length lenses. In extreme close-ups, a gremlin, called parallax, creeps in. Parallax is caused by the fact that lens and viewfinder look at an object from different angles. Thus what

you see (in the viewfinder) may not be what you get (on film).

Anyone who has used a rangefinder camera for any length of time will tell you there is more room for error. Because of the separation of lens and viewfinder, it is entirely possible for a finger or neckstrap to drop across the lens, or for a lens cap to be left on without the photographer's knowledge.

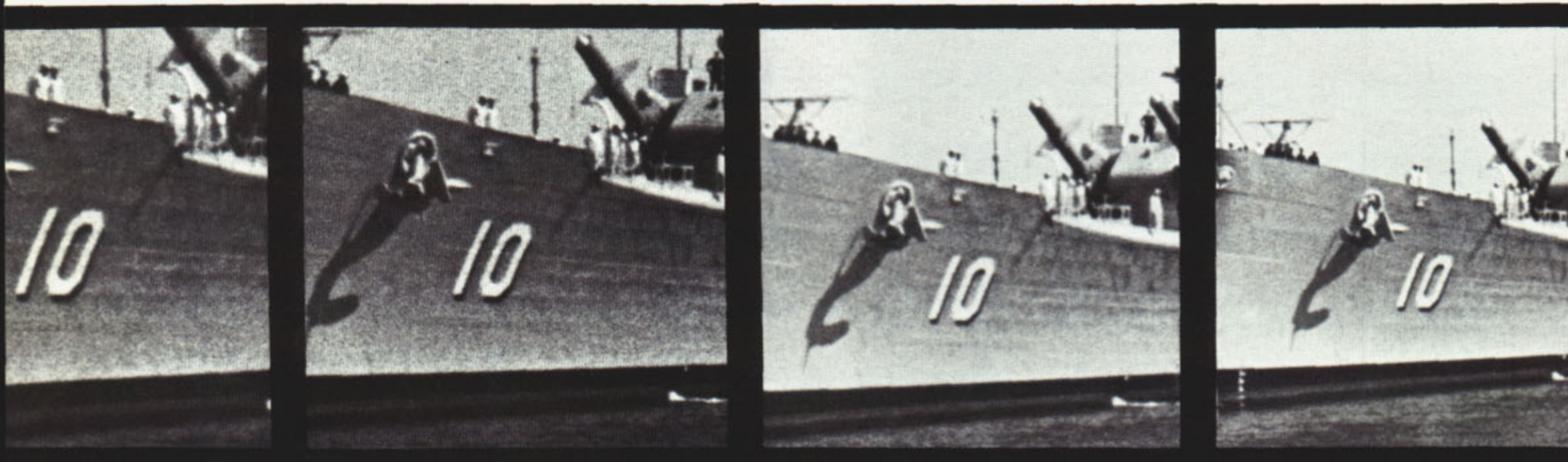
TWIN-LENS REFLEX

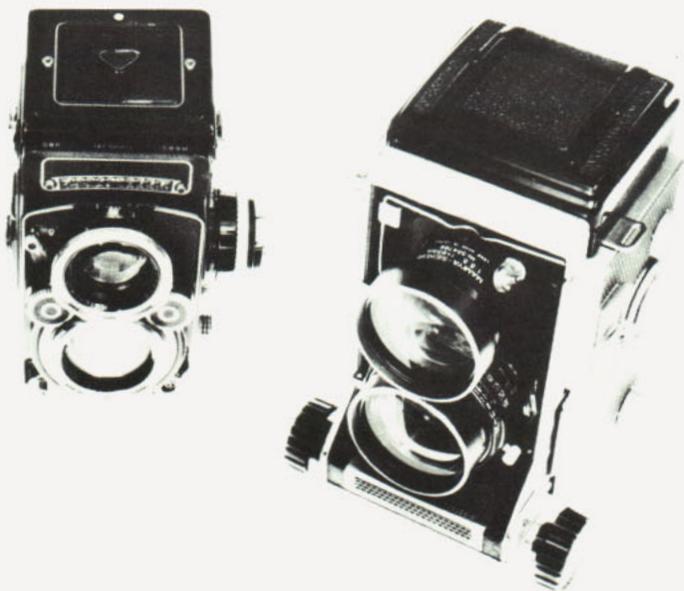
Just as the name implies, twin-lens reflex cameras do have twin lenses—the top lens is for viewing the subject and the bottom lens forms the image on the film.

Unlike the rangefinder camera, it has a focal length that duplicates the camera lens, so you see virtually what the camera "sees."

Like the rangefinder camera, the viewing lens is synchronized with the taking lens to assure accurate focusing. The image is presented on the ground glass in the viewfinder just as in the large format SLR. Again the image is right-side-up, but reversed from right to left, necessitating use of the prism viewfinder for correct viewing.

The TLR shares other advantages and disadvantages with its cousins. Like the rangefinder camera, it has a parallax problem in a close-up situation. It may even be more pronounced because of the size of the camera.





feel the need for a lot of lenses, perhaps the TLR is not for you. But if you want an extremely reliable, simple, sturdy, large format camera at a reasonable price, pick the TLR.

Yes, there are more basic, and more highly sophisticated cameras. But the cameras described here are the most widely used by professionals today. They are quick in operation and are easily portable, which makes them a good choice for the shipboard photographer or the photographer ashore with limited locker space. ⚓

That's another thing it shares—size. TLR cameras use the same 120/220 film as the large format SLRs, thus offering better quality enlargements. Again, as the size of the film increases, so does the size of the camera. TLRs are hard to handle simply because of their vertical design. The purchase of a good hand-grip to fit the camera is a must.

Lens interchangeability is severely limited to a few of the more advanced, more costly models. If you

Popular film sizes used today are the 35mm format (above) and the 120 format (below).



AEGIS

lightning quick
thunderous

By LCDR D. S. McCurrach

The year is 1992. A powerful American carrier task force is underway in the North Atlantic. A deteriorating international scene makes the possibility of an enemy strike against the force ominously real. The form of that attack, if it comes, has been well established by years of deepwater tactical exercises conducted by the enemy. It will be a massive, coordinated antiship missile attack launched from aircraft, ships and submarines, and aimed at the heart of the force—the carriers.

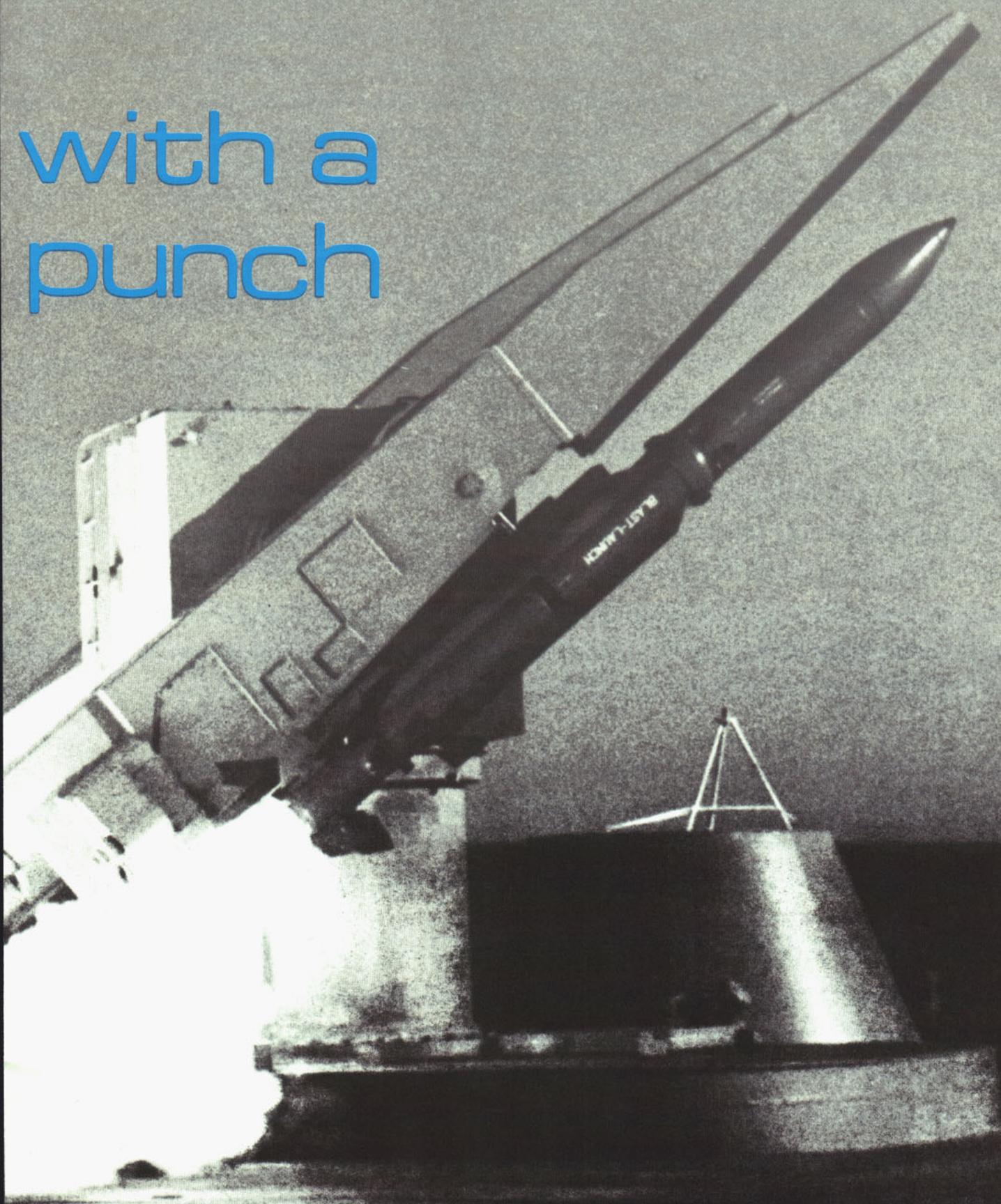
Miles from the carriers, at irregular distances and intervals, a screen of strike cruisers and guided missile destroyers scan the depths and skies. Their assigned mission has suddenly taken on critical importance.

They must defend the carriers against missile and air attack. In concert with the carriers' own fighter aircraft, these ships stand as the main line of defense.

Fore and aft on each cruiser and guided missile destroyer on double-rail launchers are the ships' main battery—sleek, surface-to-air missiles. They stand ready to respond, automatically and in rapid-fire succession, to the orders of the world's most advanced and sophisticated anti-air detection and missile guidance system. That system is *Aegis*. Upon its sophisticated electronics and computers will depend the survival of the task force.

The scenario, of course, is fictitious and speculative. The threat is

with a
punch



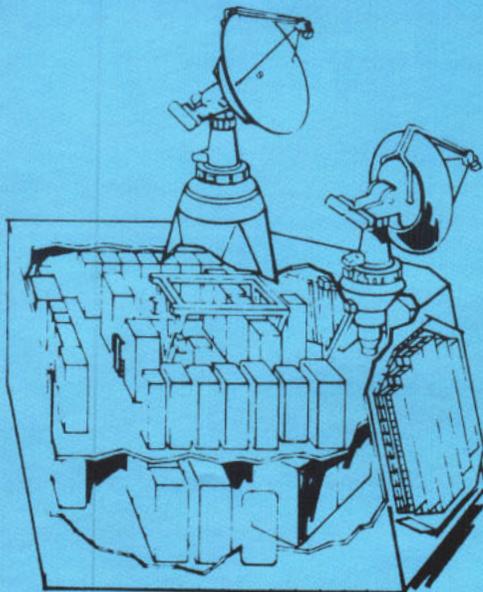
not; nor is *Aegis*. *Aegis* is on its way to the fleet, and it represents one of the most important developments in fleet defense in recent years. It will be a bulwark of the U.S. fleet of the future. It isn't too early to understand its capabilities.

Aegis is not simply an anti-air missile; it is a complex system with several components, just like a modern stereo system. *Aegis* is complex because the job of detecting, targeting and shooting down missiles and aircraft has become highly complicated.

Today, several functions are necessary to down an "incoming." The target must be located, of course. Then, it must be clearly identified as "the enemy"—no small task in the busy skies over a task force. The target must be "tracked;" that is, followed electronically to determine its course and speed. "Phoney" targets (created through electronic illusions) must be weeded out. An anti-air missile must then be assigned to the target, after threat priority has been determined.



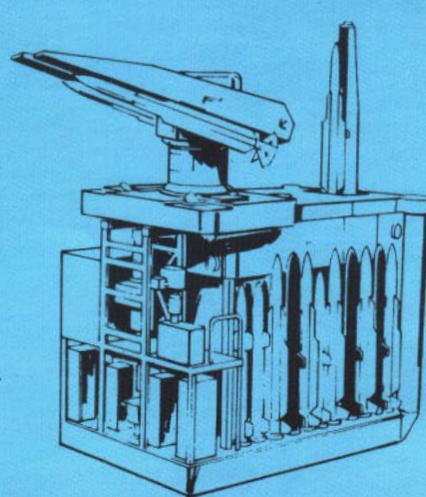
what makes it tick



MK-90 and MK-91 Guidance Illumination Radars

Illuminate targets for homing by missiles.

AN/SPY-1 Radar
Electronically scanned.
Detects and tracks
multiple targets and
guides interceptor
missiles
simultaneously.



MK-26 Launcher
Digitally controlled. Launches
both anti-air, anti-surface
and anti-submarine weapons.



RIM-66C/SM-2 Missile
An evolution of the
already operational
Standard Missile.



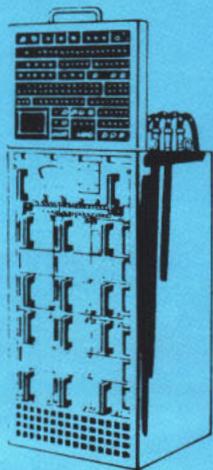
The missile is then launched and guided close enough to the target so that the warhead will destroy it.

If even that complicated procedure seems reasonable, consider the confusion of a massive, coordinated all-at-once attack from several altitudes and directions by missiles traveling at supersonic speeds. Anti-air warfare has had to come a long way from the days of the Mark 1, Mod 0 eyeball.

The Navy thinks *Aegis* is equal to the task. Why? Because it can perform the several functions just covered automatically, superfast and in the most challenging of circumstances. The technical aspects of *Aegis* are sophisticated but, basically, the system uses a computer-controlled radar and fire control system to provide wavetop-to-stratosphere, split-second defense against aircraft, missiles and even ships.

At the heart of *Aegis* is a unique new radar called the AN/SPY-1A Radar. AN/SPY-1A is a jack-of-all-trades. It scans the skies for possible targets. It tracks all in

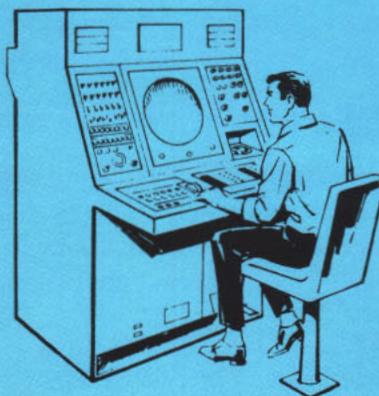
Above: AN/UYA-4 computer-controlled console.



AN/UYK-7 Computers
Standard-computer for automatic control of system operation.



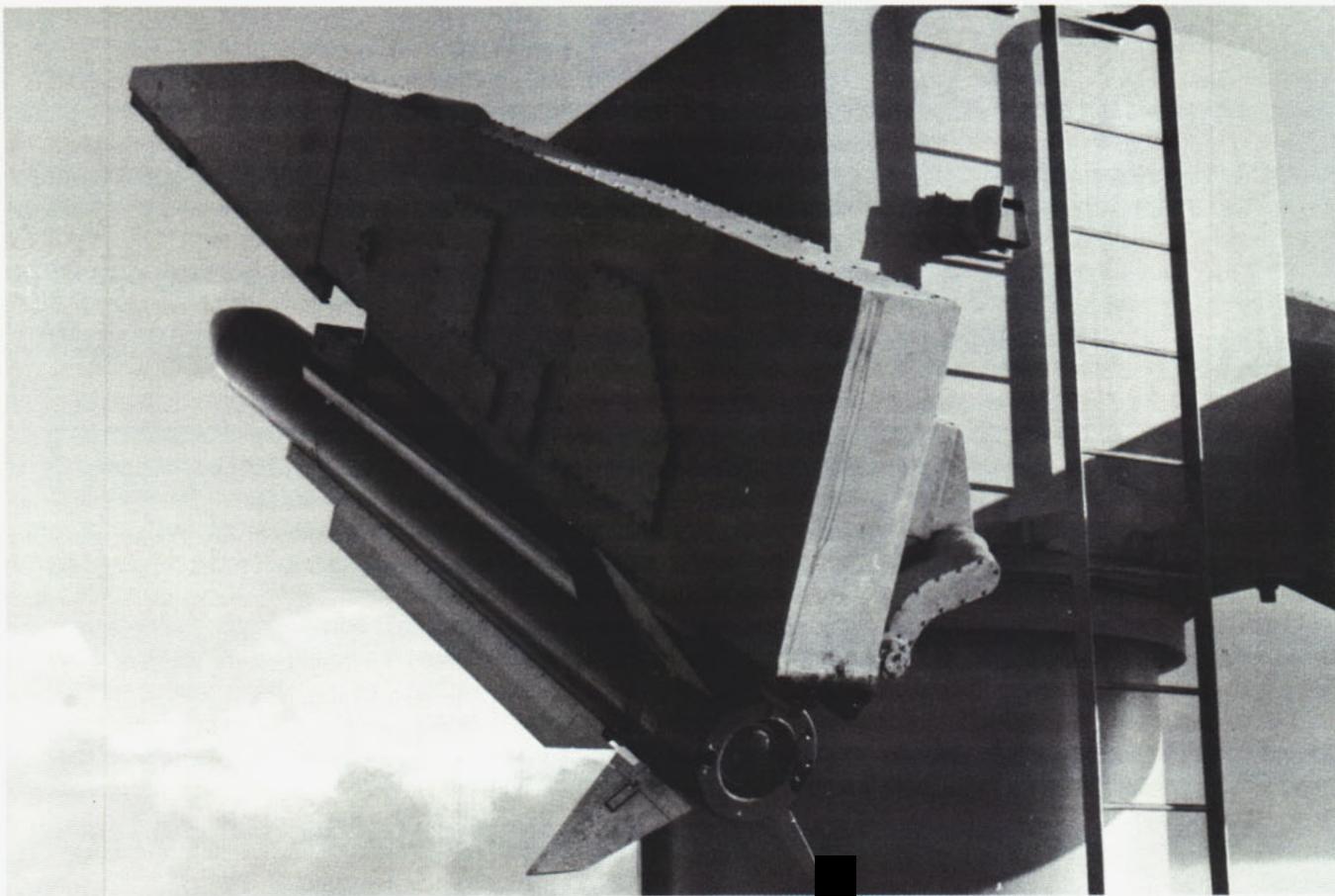
MK-545 Operational Readiness Test System (ORTS)
Diagnoses availability of overall system to promote high operational readiness.



AN/UYA-4 Displays
Instant, comprehensive display of threat situation for command decision.



Integrated Logistics System
Minimizes cost over life cycle while achieving the required degree of operational readiness.



its field of view. It neutralizes attempts to jam the system electronically. And it transmits command guidance orders to *Aegis* missiles. Incredibly, it does all these things at the same time!

AN/SPY-1A "talks," by computer, with another system, the Guidance Illumination Radar. These "illuminators" follow the incoming target and bounce radar energy against it. Thus illuminated, *Aegis* missiles can home in on the reflections in the same way a moth is attracted to a light bulb. The illumination radar "sets up the pins" and AN/SPY-1A tells the missiles how to "bowl them over."

All this would be impossible without modern, high-speed computers. *Aegis* uses three: one for AN/SPY-1A control; another for weapons control; and a third for "command and decision." Many manual functions are unnecessary because of the

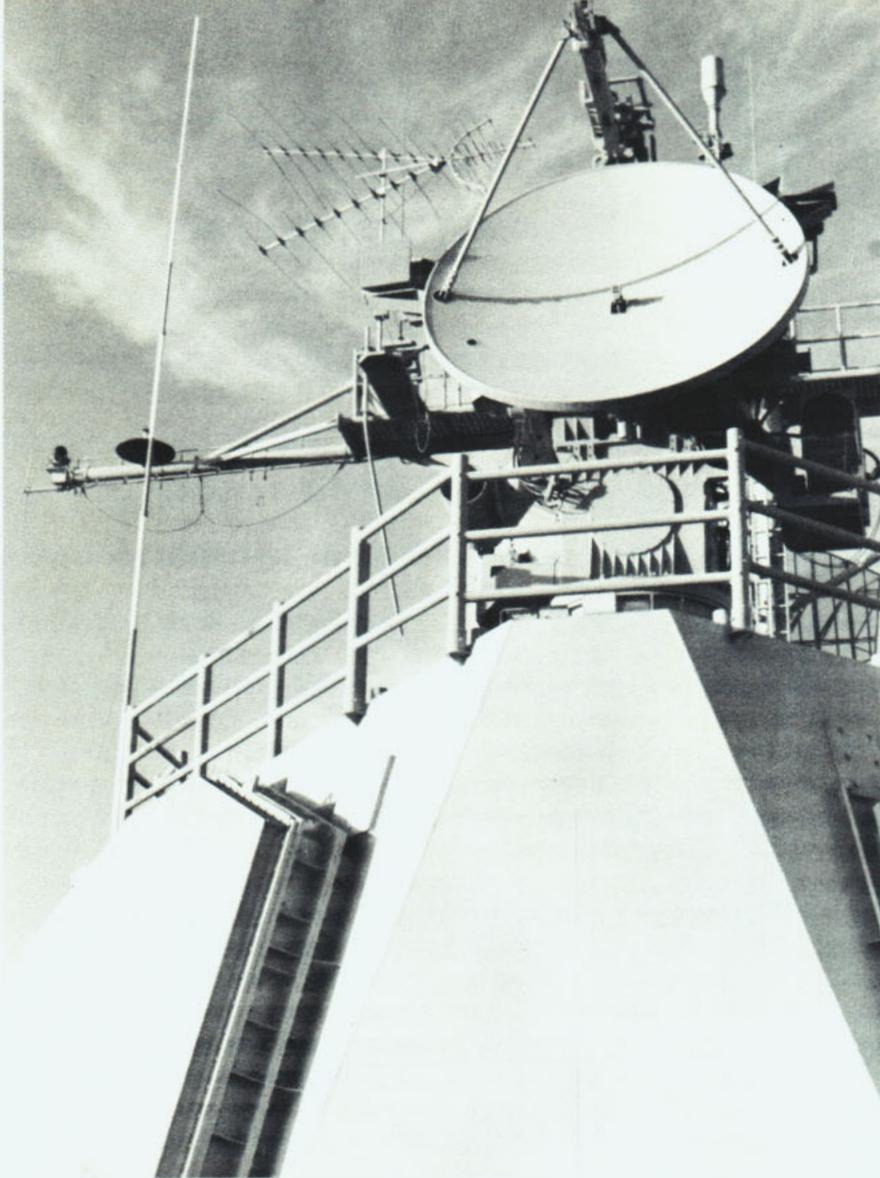
computers—permitting *Aegis* its speed of operation. But the captain and his weapons team exercise final control of *Aegis* throughout the operation, monitoring the situation instantly over visual displays that show the threat situation.

Aegis' knockout punch is provided by the Standard Missile-2, an improved "next generation" version of the *Standard* Missile-1, which is currently operational. The missile is fired from the Mark 26 launcher. After firing, the MK26 transfers another missile onto the launcher rail almost instantaneously. The *Standard* missile is not only effective against enemy aircraft and missiles, but can be used against ships as well.

How does *Aegis* handle a massive coordinated attack? It is done by coordinating or "integrating" ship and task force defense. *Aegis* is no introvert. It is capable of ex-

changing data with other sensor and weapons systems on the ship, or with other ships and aircraft. Thus, *Aegis* can coordinate its own operations with other air defense systems such as the currently operational *Tartar*, *Terrier* and *Talos* missile systems. This gives a fleet equipped with *Aegis* a total capability that exceeds the sum of its individual parts.

Aegis will be a highly capable defense system that will serve the fleet of the near future. As such, it should give pause to any potential enemy contemplating an offensive strike at sea. ⚓



Far left: Aegis Weapon System structural test aboard USS Norton Sound (AVM 1).
Left: Guidance radar illuminates targets for homing by missiles.

aegis: wear it in health

With the possible exception of Sir Walter Raleigh's mud-drenched cloak laid at the feet of Queen Elizabeth I, the Aegis is the most famous item of wearing apparel ever tailored. Ancient Greek literature, particularly Homer's *Iliad* and *Odyssey*, tells us that Zeus gave the Aegis—a goatskin covering—to his favorite daughter Athena after he had endowed it with superhuman protective powers. Athena made the garment part of her everyday

garb and by its powers was virtually invulnerable in the face of her enemies.

The protective shield was, on occasion, lent to Apollo to panic his Achaean foes, and to Achilles for use as a buckler. If death was an inevitable part of the plans of the gods, the Aegis was sometimes draped about the slain soldier, as in the case of Hector, to protect the body from mutilation at the hands of the enemy.

Bearings

Every Kid's Dream



Photo by JO3 Gary Smith.

Every kid, at one time or other, has wanted to be like Roy Rogers, Fireman Freddie or Popeye the Sailor. But how many have had the opportunity to realize even one—much less two of their childhood dreams?

Hospital Corpsman 2nd Class Robert W. Johnson has. He's a sailor (although not in the tradition of Popeye) and he's also a fireman (minus the Dalmatian).

When ship's work is done, Johnson changes hats and continues his day as a Jacksonville, Fla. volunteer fireman. From his home on the outskirts of Jacksonville, he says he answers about 25 fire calls a month.

"It's something I enjoy," he says. "Of course the primary concern of

the department is to prevent injuries and save lives. That's where my medical training has proved an invaluable asset."

In addition to his normal workload as leading petty officer of the USS *Kalamazoo* (AOR 6) medical department, the corpsman is required to attend two hours of firefighting school a week. The extra devotion to the jobs he's undertaken has not gone unrecognized—he was recently selected as *Kalamazoo's* first "sailor-of-the-month."

When he retires from the Navy, Johnson plans on a firefighting career. When he starts fighting fires regularly he may have time to work on becoming—maybe a cowboy—who knows?

Digger

CWO2 Bob Clark collects shark teeth but doesn't worry about being chewed in half doing it.

Clark also manages to stay high and dry. He conducts his searches—in the San Joaquin Valley, a 20-million-year-old burial ground for sharks and other sea life.

He's been an avid digger since his cub scout days. As a matter of fact, his first date with his wife was at a digging site. During his recent tour in Bahrain, his entire family became used to the idea of sudden stops in the desert to dig and sift through the sand. Even his children are becoming proficient at unearthing bones and teeth.

Besides teeth, his collection includes a wide array of colorful glass beads, old bracelets and ancient coins.

But Clark wants, most of all, to find the ever-elusive, six-inch shark's tooth—in perfect condition.



USS Virginia

As most any schoolchild can tell you, the Commonwealth of Virginia is called Mother of Presidents because so many of her favorite sons have called the White House "home." Since the nuclear-powered guided missile cruiser USS *Virginia* (CGN 38), commissioned September 11, is the eighth ship to bear her name, the state may well qualify as Mother of Navy Ships as well.

Five of the previous *Virginias* were ships of the fleet dating back to 1777. The other two were Confederate States Ships, the most famous being the ironclad CSS *Virginia* (originally *Merrimack*) which battled the Union ironclad *Monitor* in the 1860s.

USS *Virginia* outshines all predecessors in fire power, speed and range. Capable of speeds in excess of 30 knots and containing enough fuel for 10 years of continuous

operations, *Virginia's* armament equips her to take the offensive in the presence of air, surface or sub-surface threats.

Her weapons delivery systems include two guided missile launchers with antisubmarine rocket (*Asroc*) capability; two 5"/54-caliber, light-weight gun mounts; two 3-barrel torpedo launchers; and a light airborne multipurpose system (LAMPS) helicopter. Additionally, she boasts long-range surface/air search and fire control sensors and a new long-range sonar system.

Carrying a crew of 28 officers and 459 enlisted men, the Navy's newest nuclear-powered ship is capable of operating independently or with nuclear or conventionally powered strike forces.

USS *Virginia* is the first of her class and will no doubt be remembered, in the tradition of her namesakes.

Newport News Shipbuilding and Dry Dock Co. photo



Buzzy Afternoon



Photo by TD3 John Laski.

What began as a routine picnic turned into a "B-z-z-z-y" Sunday afternoon for Lieutenant James Grace and his wife, Pat, of the Melville Navy housing area, Newport, R.I.

Within a matter of seconds, a swarm of bees surrounded the Graces and their neighbors' children.

"At first I thought they were locusts," said Mrs. Grace. "They formed a group and took over our hammock." Later, the bees reclustered in a nearby tree.

The base fire department was called but their efforts proved futile as the bees were determined to stay. It was decided that bee expertise was needed.

Enter Chief Aviation Antisubmarine Warfare Technician Jack "Buz" Greene, an apiarist (a beekeeper). With Greene's help, the bees moved into a new home, and the Graces had their peaceful backyard restored. Chief Greene's bonus was some extra bread—and honey to go along with it.

They tell you where to go



Tower personnel from left: AC3 Rita Neis, AC2 Kris Scudder, LT Sherry Robinson, AC3 Susan Hanna, and AC2 Gayle Broome. (Photo by PH3 Harry Hillstrom)

There's a group of women at NAS, Pensacola, Fla., who will tell you exactly where to go—if you're a Navy pilot, that is.

Seven Navy women—one officer and six enlisted—can be found on any given day manning (womaning?) the air traffic control facility there. Although women have been working as air controlmen since World War II, a female voice delivering landing and takeoff instructions still manages to catch some pilots by surprise.

AC3 Conlee Steenberg, who works in the radar room, had one man tell her, "Any woman who

takes care of her fingernails can't be a good air controlman."

"We had to convince them," said AC3 Rita Neis. And convince them they did. AC2 Kris Scudder remembers one time when Steenberg was guiding a student pilot by radar. Scudder got the handoff for visual approach.

Suddenly the student's quivering voice asked, "Aren't there any men there? Are the women taking over?"

"You bet they are," she said and proceeded to guide the pilot.

She also remembers asking an approaching visiting pilot for a

"proposal," an air control term for his estimated time of departure (ETD). "He answered with, 'Will you marry me?'"

"Now, to avoid embarrassment, I make it a point to ask them for their ETD," she said.

At NAS Pensacola where all Navy and Marine Corps pilots receive their basic flight training, it's definitely the women who are in control. Besides, it must be comforting for the sometimes nervous student pilot to hear a soothing feminine voice announce, "You're cleared for landing on runway four and looking fine."

Swimming Champ

Lieutenant Frederick Schlicher of VP-23, won his fifth gold medal by defeating such swimming greats as former Olympic Gold Medalist Carl Robie and two-time World Record Holder Ken Walsh at the 1976 National AAU Master's Swimming Championships.

During the week-long competition at Mission Viejo, Calif., Schlicher won the 100-, 200- and 500-yard freestyle, the 100-yard butterfly and 200-yard individual medley. He was also named to the AAU All-American Swimming Team for the third consecutive year.

Schlicher, a former three-time All-American at Southern Methodist University, also won the 1976 National AAU Master's Outdoor Swimming Championships at St. Louis, Mo., and the New England Regional Master's Championship at Brown University, Providence, R.I., where he set two outdoor national records.

The championship swimmer presently holds 11 indoor national swimming records and three outdoor national titles.



Schlicher shows the four gold medals he won earlier.

Charlie



When *USS Lexington (CVT 16)* gets underway she is escorted seaward by Charlie and when the ship returns Charlie is there to welcome her home.

Charlie, a bull sea lion, is the adopted mascot of the 1200 crewmembers homeported at Pensacola, Fla. He was discovered in the summer of 1970, just a yearling pup from the Gulfarium at Fort Walton Beach. Since then, Charlie has been living in the waters off Allegheny Pier where *Lexington* berths at the Naval Air Station.

Benny Sugg

Data Processing Technician First Class William H. Quigley, Jr., had a good idea awhile back. The people who run the Navy Beneficial Suggestion Program thought it was a good idea, anyway. It saved the Navy about \$60,000 and earned Quigley a \$1000 bonus.

The *John F. Kennedy (CV 67)* sailor realized there was a problem with a computer readout system link between the Tactical Support Center and the S-3A *Viking* ASW aircraft—it didn't give a quick, complete postflight analysis of the plane's mission.

"We needed a way to put the

computer symbols into plain English," he said.

After more than a year of trial and error, he finally perfected a program, analyzed the end product and submitted it as a beneficial suggestion.

The resulting printout encompasses all the required postflight reconstruction data including the kind of contacts made, crew activity and other operational events aboard an aircraft during a mission. As a result of his ingenuity, Quigley's program system has been recommended for use aboard each of the 12 aircraft carriers with similar requirements.

If you've got a notion how to do it faster, cheaper or better, put it in writing. Under the "Benny Suggs" program, sailors can make money for suggestions, inventions or scientific ideas which contribute to the economy or efficiency of government operations.

The cash award amounts are relative to the value of the suggestion—if you're interested, check out Secretary of the Navy Instruction 1650 series.



"You mean to say this isn't a dependents' cruise?"



Looking at today's subs

through the
misty eyes of
yesteryear

**Story and Photos by JO1 (SS)
Pete Sundberg**

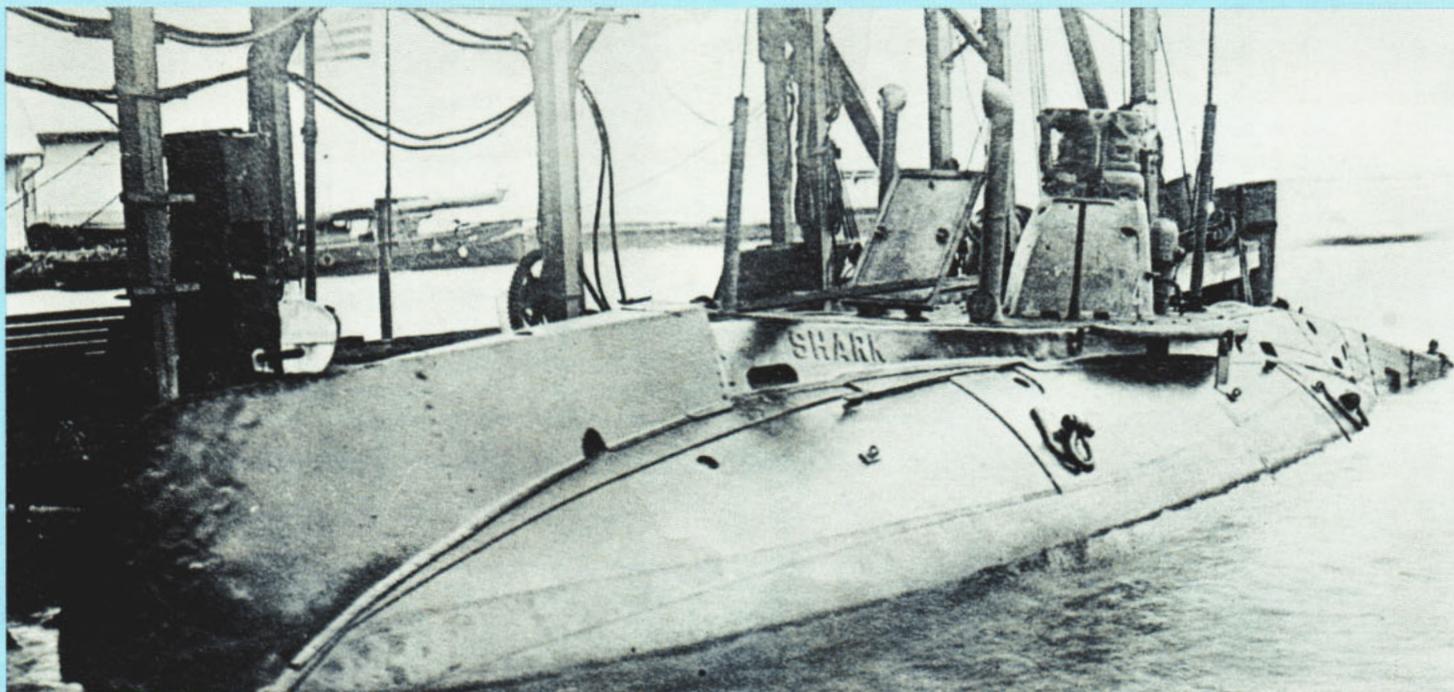
Sixty-eight years have passed since Willard R. Clewell was a 19-year-old sailor in the Navy's fledgling submarine force. Possibly the oldest living submariner in the U.S., he recently made his first visit to the submarine capital of the world at Groton, Conn.

As he sat in the cramped control

Dale (DD 4), pulled into Cavite in the Philippines, for liberty and much-needed repairs. The Navy's fledgling submarine force (always short of men) happened to be operating from Cavite.

While in port, Clewell met an officer from *USS Shark* (SS8), who happened to need a mechanic. Clewell was a mechanic and, soon after meeting the officer, was

“...thought they were something dreamed up by Jules Verne”



center of the attack submarine *USS Richard B. Russell* (SSN 687), the 87-year-old retired chief machinist's mate reminisced about those early days.

In 1908 when Clewell enlisted, the submarine service consisted of four small undersea craft.

“I heard there were subs somewhere, but I had never seen one, knew little of them and quite frankly thought they were something dreamed up by Jules Verne,” says Clewell. “I never thought I'd ever see one, much less serve in one.”

Clewell's submarine adventures began in a rather unconventional manner. His ship, the destroyer

ordered to duty aboard *Shark*. It was as simple as that.

“They didn't ask me if I wanted to go aboard that contraption,” he said. “I was just sent over there.” He learned later that submarine duty was supposed to be voluntary.

Shark had been commissioned in 1903, only three years after the Navy's first submarine, *USS Holland* (SS1), went into service. *Shark*, flagship of the four-boat squadron homeported in Cavite, was 63 feet, 10 inches long and 11 feet, 11 inches wide.

A 1934 newspaper account of *Shark* called her a deathtrap due to lack of safety features.

“Well, she never leaked so I

USS Shark moored at Cavite, Philippines, 1908.

didn't worry,” says Clewell.

Unlike today's *Russell*, there were no modern conveniences on the *Shark* for her 11-man crew. No bunks, no cooking facilities and no head. Clewell, the only machinist aboard, had sole responsibility for the propulsion plant—a gasoline engine.

“At night, since we had no bunks, we'd sleep on deck with a monkey wrench wrapped in a rag for a pillow. Most of the time we couldn't sleep because that rock-crusher of an engine made such a hell of a racket,” explained Clewell.

In addition to his basic pay, the

no bunks, no cooking facilities,

young submariner earned an extra \$5 a month for submarine duty plus \$1 a dive up to 15 dives.

"It was pretty good living back then," says Clewell. "And we always made sure we got those 15 dives." The crew got those 15 dives by going from island to island giving diving demonstrations to the local residents.

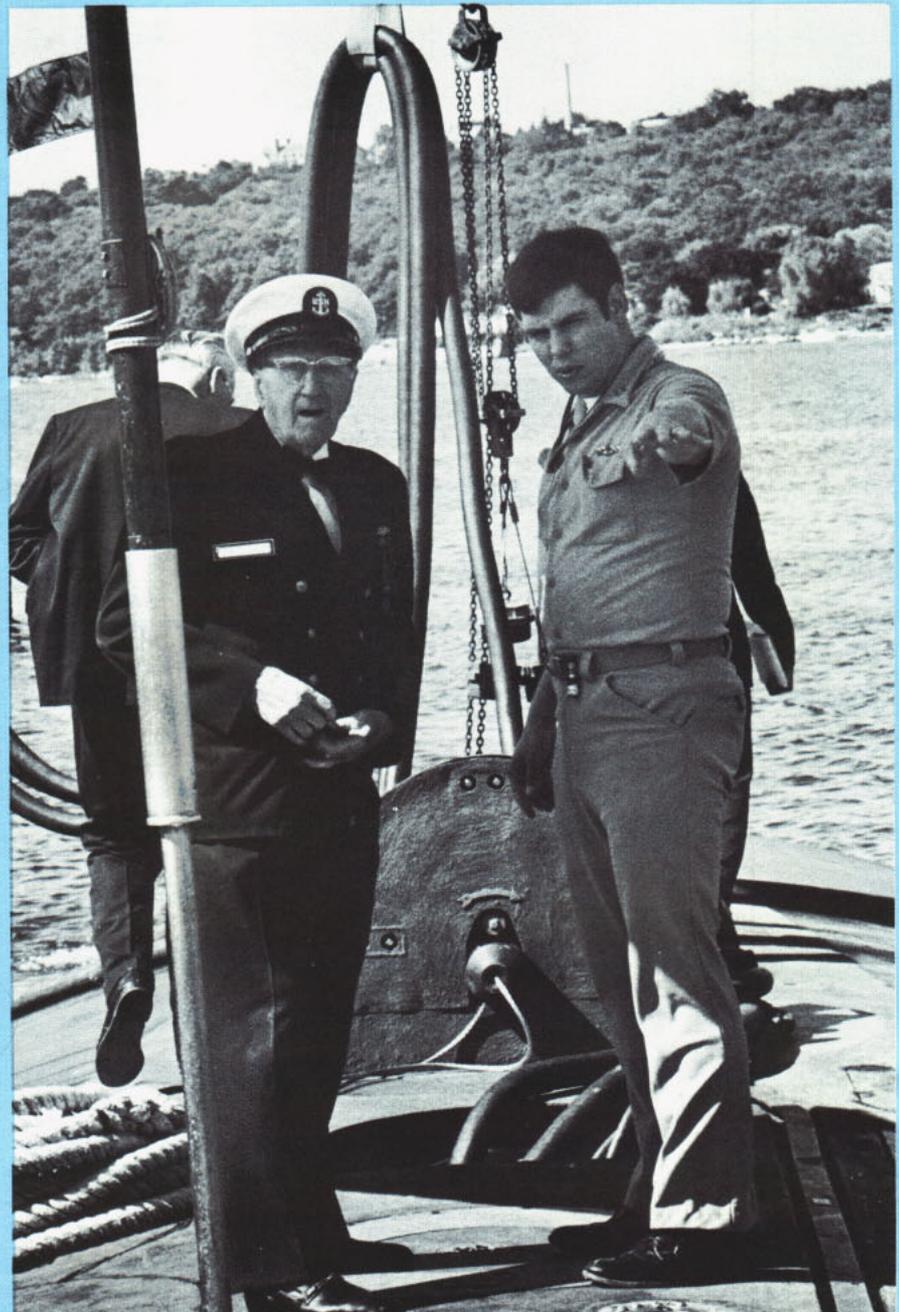
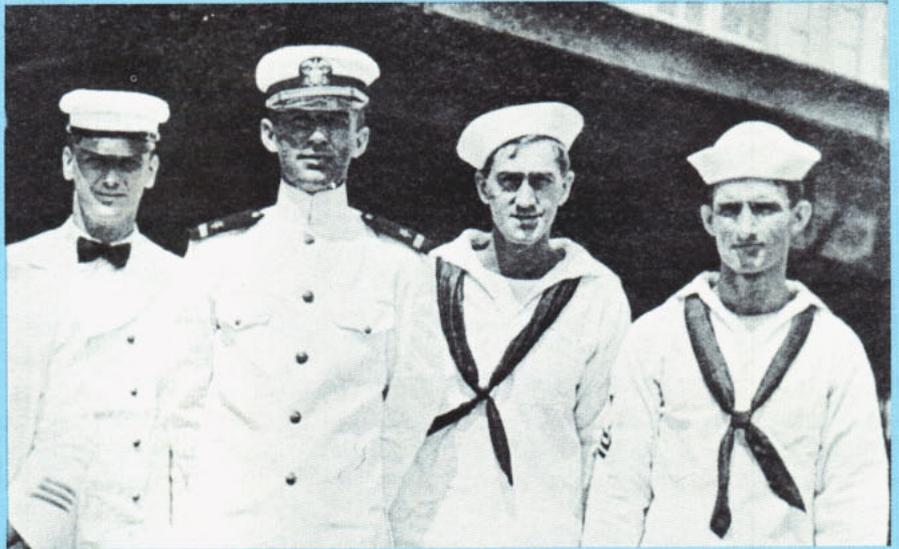
"We'd put on a regular show for the people. They'd never seen a sub and would shout 'much grande pesca,' very big fish."

Clewell discovered how small his "fish" actually was when he toured the modern *Russell*.

"I can't find words to describe what I saw in that submarine," he said. "You really have to know what you're doing to operate that boat. Back in my day, it was mostly trial and error. There's no room for that now."

The first submarine escape was from *Shark*. "A midshipman by the name of Deam swam out of the torpedo tube," explained Clewell.

Deam made the historic escape from a depth of about 20 feet. Today's prospective submariners must successfully escape from 50 feet before being graduated from Submarine School.



Above: 19-year-old Willard R. Clewell, standing, second from right, with USS *Shark* crewmembers.

Right: Lieutenant Jay Walker, weapons officer of USS *Richard B. Russell* (SSN 687), conducts a tour of the sub.



“getting to
the surface
is the main
idea...”

But submarine escapes haven't changed all that much since the days of *Shark* as Clewell discovered when he toured the Subbase Diving Tank.

“Getting to the surface is the main idea. That hasn't changed,” he said. “We'd have to slowly swim up, but all these young fellows have to do now is put on an inflatable jacket, step out an escape hatch and shoot to the surface at 425 feet per minute. Not only that, but they wear a hood over their head that allows them to breathe on the way up.”

The last stop on Clewell's tour was the submarine base museum. Models, pictures, plaques and sub-

marine memorabilia decorate the museum. Clewell saw how the submarine evolved over the years.

“The basic concept hasn't changed but the technology certainly has,” he said.

As he walked through the museum, the old man suddenly stopped and pointed to an old photo. He was speechless for a moment. For there, in a glass-enclosed case was a picture of *Shark*—with young Willard R. Clewell standing on the main deck.



القصة

VISIT TO
TANGIER





SOUTH CAROLINA/NIMITZ

Children's voices followed the visitors through Tangier's winding, narrow streets. "Americain, Americain," they shouted. Curious Moroccans stopped the visitors time after time and asked the same question: "Are you from the big ship with the planes on it?"

The "Americains" were, indeed, from the big ship with the planes on it. Anchored off the coast of this northern Moroccan city were America's newest aircraft carrier, USS *Nimitz* (CVN 68) and the nuclear-powered cruiser USS *South Carolina* (CGN 37).

The visit of *Nimitz* and *South Carolina* marked a number of "firsts" — first visit of a nuclear-powered ship to Tangier and the first port call by *Nimitz* on her maiden Mediterranean deployment. But for the average Navyman and local Moroccan citizen, the significance of the visit was lasting memories of brief encounters with another culture far removed.

From the liberty boat making its way to the fleet landing, the U.S. sailors saw an altogether unfamiliar view; prominent minarets and domed mosques dominated the skyline. Ashore, they found a Moslem city that contrasts, yet coexists with the modern trappings of an international port.

Contrasts and counterpoints dominated the scene.

Moroccans in colorful, flowing robes, miniskirted tourists, veiled Moroccan women scurrying along the narrow, cobbled paths of the Casbah, sailors clicking cameras, the blare of rock music from a nearby bar, the wail-like chant of the Moslem holy men calling the faithful to prayer.

During the ships' three-day stay, sailors toured Tangier and its en-





virons in buses which departed from fleet landing. A well-known hotel catered a Moroccan night—complete with bellydancers, a Moroccan folk music group and offerings of “harira” soup and “couscous,” the national dish. Another group of sailors ate a Moroccan meal under tents while watching an exhibition of riding skills by Berber horsemen.

For the daring, there was a chance to don Moroccan regalia and pose for photos as they rode (or tried to ride) camels, the ships of the desert.

Some sailors preferred a more sedentary approach to studying the local culture. The many sidewalk

cafes dotting the main thoroughfares of the city offered a vantage point. Here, the panoramic scenes of the city unfolded for the visitors while comfortably seated.

Turbaned hawkers of trinkets paraded; money changers shouted their rates—eager to change American dollars to dirhams. Occasionally, a Berber tribesman leading a horse passed by, skillfully dodging the tiny, speeding European cars.

The curious walked through the fabled Casbah to join the mainstream of Moroccan life. A former fortified city overlooking the Bay of Tangier, the Casbah is still the old Arab residential quarter of the city.

Sailors walked along its narrow, winding, up-and-down maze of passageways. It was an easy place to get lost and many U.S. Navymen, without compass or guide, spent hours lost and disoriented within those alleys.

Also within the Casbah is the former Palace of the Sultan, now a national museum. It is a classic display of Moorish architecture and handicrafts. Walking through the palace, one could easily conjure visions of movie sets for Arabian Nights. But this one could have been the original setting.

The medina, shopping center of Tangier, is lined with bazaars and shops that attracted sailors to bargains on handicrafts, tapestries, leather items, engraved daggers and many other items.

Here the art of bargaining and haggling is practiced daily, and the crews of *Nimitz* and *South Carolina* matched wits with skilled merchants.

From vantage points throughout the city, the people of Tangier flocked to get a view of the American ships in port. Guest tours of the ships provided many Moroccans a closer view of these during the three days *Nimitz* and *South Carolina* remained in port.

When the visit was ended, U.S. Ambassador to Morocco Robert Anderson joined Admiral James L. Holloway III, Chief of Naval Operations, in declaring the visit a success. For the sailors of *Nimitz* and *South Carolina*, success was measured in unforgettable encounters, scenes and events—and perhaps a seasick ride on a camel. ⚓

Mail Buoy



Proper Uniform

SIR: I thoroughly enjoyed the first half of Taffrail Talk in the July 1976 issue, but I think you blew the mission in the second half by printing the picture of J01 Tom Jansing in civilian clothes. I have been wearing my uniform for 25 years and it chaps my okole' to see sailors on

the job wearing civilian clothes in pictures appearing in official publications.—DTCS D. A. J.

•Your point is well taken.

There was no intent to slight or downgrade the uniform.—Ed

Army-Navy Game

SIR: Taffrail Talk in the February 1976 issue related an incident of great personal interest to me. It seems that an 85-year-old retired chief was notified that he was actually a lieutenant (jg) in the retired ranks since he had held a commission in another branch of the service before retirement.

I also served on active duty with the Army both as a chief warrant officer and first lieutenant before "going Navy." Additionally, I was a captain in the Army Reserves for 10 years. Now I am on temporary active duty as a chief gunner's mate, but my retirement will be as a Reservist since I have insufficient active duty time for a regular retirement. Currently, I have 23 "good" Reserve retirement years and am considering retiring in the near future.

Kindly advise if I can be retired in the Naval Reserve as a lieutenant by virtue of my having held O-3 rank in the Army.—GMGC J. L. H.

•The law, 10 U.S.C. 1374, provides for transfer to the retired list in the highest permanent or temporary rank or rate in which service was satisfactory in any branch of the Armed Forces.—Ed

Seabee Coverage

SIR: I have been in the Seabees for three-and-one-half years and every time I read ALL HANDS I can't help wondering why it always covers only the Fleet and not the Seabees.—BUCN M. P.

•We did a spread on NMCB 10's "Return from Diego Garcia" in the July 1975 issue. We continue to do features on the Seabees such as "CAT Team" in the September 1976 issue. We are always interested in receiving input from Seabee units describing their current projects.—Ed

Line Officer's Star

SIR: Your column entitled "For the Navy Buff" (June 1976) was excellent. Please make it a regular feature. As part of my contribution to your effort, I remember reading many years ago in ALL HANDS that the reason the line officer's star points down is as follows:

The star worn by the line officer above his rank stripes is not a mark of rank itself, whereas the star displayed by an admiral on his flag, etc., is a mark of rank. Therefore, in order to display a difference between a line officer's insignia and a flag officer's rank device, the line officer's star points down in a direction opposite the flag's star. Am I correct?—LCDR J. A. H.

• *We have been informed that there is no information available in the files of the Navy Uniform Board (other than the ALL HANDS article in the June 1976 issue) which indicates the origin of the line officer's star and why it is placed on the sleeve with a single point down. Sorry we can't help but maybe someone out there has the straight scoop.—Ed*

Fleet Reserve

SIR: I become eligible for transfer to the Fleet Reserve July 1977. Currently I am on shore duty and scheduled for transfer November 1976. I know that I am required to serve a minimum of one year at my new duty station, but I have been told that the year begins as of the day I report aboard and not my day of transfer.

Could you please set me straight on this matter?—ABFC V. H.

• *A member must complete a minimum of one year on board the current duty station before transfer to the Fleet Reserve. The one-year requirement is computed from the date the member reports on board his new duty station and not the date he is transferred from his previous duty station.—Ed*

Early Takeoffs

SIR: I know in the early days of Navy aviation Navy ships were rigged with platforms to enable

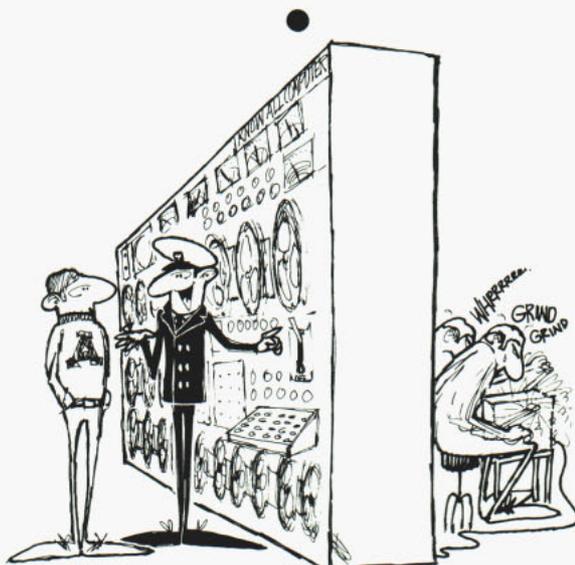
aircraft to take off and land on other than aircraft carriers. Has this ever been tried in recent times?—AT3 W. T. B.

• *As an item for your "ever-heard-of" collection—ever hear of the LST that was an aircraft carrier? The records show that USS LST 525 actually did serve as an aircraft carrier during World War II. Fitted with plywood flight decks, she carried 10 Piper Cubs and their Army pilots and operated off the west coast of France in 1945.—Ed*

Displacement

SIR: Please settle a dispute for me. One of my shipmates claims the word "tonnage" originally was used to show how many barrels of flour a ship was capable of carrying. I say it has always referred to a ship's displacement in the water or the gross pounds of cargo it was capable of carrying. Who is correct?—BM2 J. P. L.

• *In a way, you're both wrong. According to our Naval History department, tonnage was originally spelled "tunnage" and referred to the number of "tuns" a ship could carry. A "tun" was a barrel normally used for transporting wine—not flour—and tunnage specified the number of barrels that would fit into the ship's hold.—Ed*



"Why, yes . . . of course our computers depend on people-generated input . . ."



Information Exchange



Q. *Can I get any help from Navy legal officers to ensure that my personal legal affairs are in order?*

A. That's one of the jobs of Navy Legal Service Officers which are available worldwide. Legal Assistance Officers can provide a number of services including legal advice, preparation of legal correspondence, negotiation of legal matters and, in limited cases, legal representation. As for your personal affairs, under the Navy Legal Checkup Program a review is made of your legal situation to determine any potential problems. This involves filling out a Legal Affairs Questionnaire and consulting with a Navy Legal Officer. The checkup is recommended on an annual basis. See your legal officer for details.

Q. *Whatever became of USAFI, the program where you could get college credit by taking a test?*

A. It was canceled, but a new program, called DAN-**TES**, is now serving the same function. DAN**TES** stands for Defense Activity for Non-Traditional Educational Education Support. DAN**TES** sponsors three major credit-by-examination programs: the College Level Examination Program (CLEP); the DAN**TES** Subject Standardized Tests (DSST); and the General Education Development Exams (GED). GED is provided at overseas locations only. DAN**TES** also publishes a catalog containing over 10,000 independent study courses in all levels and areas of education. You can enroll in any one by filling out DD Form 2004. For information, see your command's education officer or Navy Campus for Achievement advisor.

Q. *Do ships of the Military Sealift Command participate in Navy fleet operations? Are Navymen assigned to MSC ships?*

A. The Military Sealift Command is very much a part of the Navy and takes part in fleet exercises on a regular basis. In fact, MSC has status as a Navy fleet and the commander, a Navy rear admiral, answers directly to CNO. Seventeen MSC ships currently support the fleet—eight oilers, four tugs, a stores ship and four ballistic missile resupply ships. In all, MSC owns or controls about 100 ships with missions that include sealift in support of military forces, peacetime delivery of military sea cargo, and support of oceanographic and research efforts. Although most MSC ships are

manned largely by civil service mariners, the oilers, tugs and stores ship have Navy detachments on board.

Q. *I've heard that the Navy has a program through which an individual can obtain an exchange of duty with another person of the same paygrade and specialty. How does it work and what is it called?*

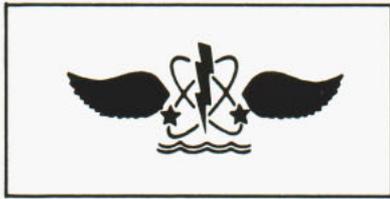
A. You're referring to the SWAPS Program, a no-cost-to-the-government method by which a Navy member is able to exchange duty stations with another willing member. It's especially appealing to first-termers on sea duty who have no other rotation plan. Under the program's provisions, a Navy man or woman can find his own swap and submit a request, via the CO, to Chief of Naval Personnel; or a Navy member can ask Chief of Naval Personnel to find another individual whose request complements his own. There are, however, several requisites for eligibility. They are: a minimum of nine months aboard present command before submitting request and at least 12 months remaining before PRD; an individual must not have received orders; non-career-designated persons must have enough obligated service remaining to serve a minimum of 12 months at the receiving command; an individual must have no record of repeated disciplinary offenses and no evaluation mark below 3.0 for the past 24 months (none below Good Upper Half for E-5/6 or below Bottom 50 per cent for E-7/8/9); and must be willing to accept no-cost orders. Other requirements are outlined in the Enlisted Transfer Manual NavPers 15909B), Chapter 16.01.

Q. *Are any plans afoot to prepare Unrestricted Line junior women officers for division officer and/or department head assignments?*

A. BuPers is fostering a program aimed at providing leadership and management training (LMT) for women officers over and above that received at OCS or NROTC. This program will provide most junior women officers with LMT after their initial tours at one of the two-week courses offered at Little Creek and Coronado. When possible, BuPers will order women officers to their new duty stations via one of the LMT schools. In addition, commands are being encouraged to send women officers not so ordered by BuPers to the LMT courses whenever possible. ↓

Stern Shots

"Stern Shots" is a new feature for *All Hands*. A quiz on various aspects of the Navy, designed to test your knowledge of the sea service, it will appear on the inside back cover regularly. Answers to the quiz can be found on the inside front cover, beneath the credits. The *All Hands* staff wants to hear your ideas for future "Stern Shots" topics. Write: Editor, *All Hands* Magazine, Navy Internal Relations Activity, Print Media Division, Crystal Plaza No. Six, Room 1044, Washington, D.C. 20360.



a



b



c



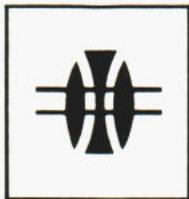
d



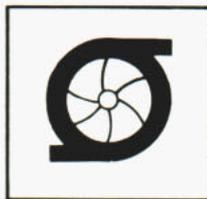
e



f



g



h



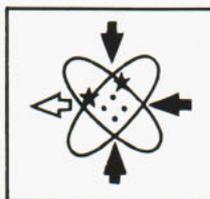
i



j



k



l



m



n

Each of the insignia shown represents an occupation in today's modern Navy. See if you can match all of them by placing the appropriate letter for the rating badges next to the rates listed below.

- _____ 1. Legalman (LN).
- _____ 2. Missile Technician (MT).
- _____ 3. Ocean Systems Technician (OT).
- _____ 4. Aviation Antisubmarine Warfare Operator (AW).
- _____ 5. Data Systems Technician (DS).
- _____ 6. Engineering Aid (EA).
- _____ 7. Machinery Repairman (MR).
- _____ 8. Aviation Fire Control Technician (AQ).
- _____ 9. Gas Turbine System Technician (GS).
- _____ 10. Utilitiesman (UT).
- _____ 11. Navy Counselor (NC).
- _____ 12. Trademan (TD).
- _____ 13. Molder (ML).
- _____ 14. Opticalman (OM).

Answers inside front cover.

SOUTH CAROLINA
& NIMITZ
CHARMED
IN TANGIER
...PAGE 42

