April 1988

NAVAL ORANGE

SPECIAL: First Ever Alumni Issue

THE CARRIER BATTLE GROUP--

--AMERICA'S BIG STICK

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CONTRIBUTORS

Colonel Smith
Charles Simons
Will McCann
Paul Jones

Harry Hall
Greg Jordan
Mark Madden

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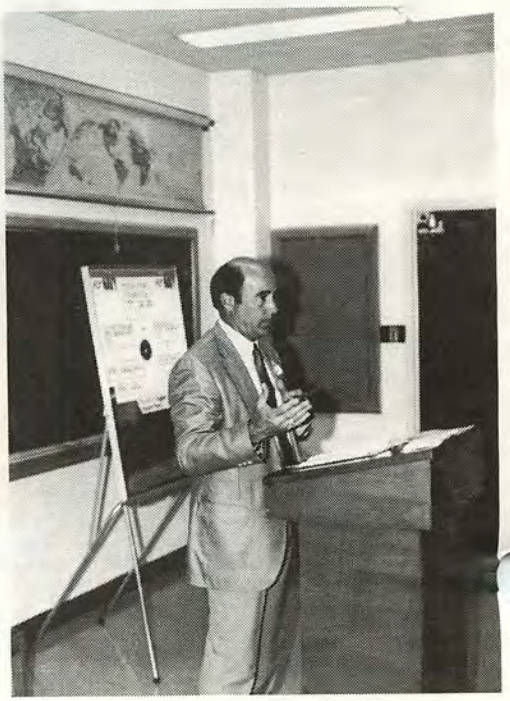
FEBRUARY MIDSHIPMAN OF THE MONTH -- MIDN 3/C SEKNICKA

Midn 3/C John Seknicka has been selected Midshipman of the Month for February. He is majoring in History with a minor in Government and hopes to graduate in the Spring of 1990. His plans at that point include attending the Naval Flight School in Pensacola. His 277 PRT score should help him achieve the high standards required for flight.

Congratulations are in order to Midn Seknicka for the exemplary leadership abilities he has shown at the Unit.

LTGEN GRAY ADMINISTERS THE OATH OF OFFICE AT '87 SPRING COMMISSIONING CEREMONY



PRESIDENT SIMONS OPENS THE BUSINESS MEETING AT FALL '87 REUNION

THE COLONEL'S CORNER

This issue of the NAVAL ORANGE is destined to become something of a pioneer in University of Texas NROTC publications. For the first time, the Orange will not only be mailed to all UT NROTC alumni identified by address, but will also include a special section devoted to alumni information and events.

The combined undergrad/grad approach was developed for a number of reasons, not the least of which was to communicate more effectively with our alums, while at the same time keeping them up-to-date on newsworthy items unique to Longhorn midshipmen and officer candidates. Our hope is for future editions to include an expanded alumni section, possibly chronicling a specific class in each issue. Now, after having been exposed to the literary merit of the Orange as a student, one can continue to enjoy this highly-regarded epistle for the remainder of his or her life. That assumes, of course we can determine a correct address and offer articles that stimulate interest.

Among the articles in this issue pertaining to alums are notes from the President of the Alumni Association (Charles Simons, '63), a brief financial report from the Secretary and Treasurer (Will McCann, '61), and an article specifically detailing the resurrection of the Crow's Nest (Paul Jones, '56).

Also included is a blank form for use by those wishing to attend the next alumni reunion scheduled for 15 October 1988, held in conjunction with the UT-Arkansas football game here in Austin. If you were fortunate enough to attend last fall's reunion, please pass the word! We hope to see more former or current Navy and Marine officers at each gathering! A few photos from recent alumni events are also included, and if donations accrue accordingly, we will add more to each future issue of the Orange.

Present plans call for a special alum section in the fall and spring issues of the Orange, and possibly more often if affordable. Two alums who have specifically offered their services for collecting and compiling alumni news are listed below, and all alums are encouraged to submit any items of interest:

Howard Smith '74
17614 Heritage Cove Dr.
Webster, TX 77598

Ed Mergele '75
535 Tresvant Dr.
Webster, TX 77598

If you know someone who didn't receive this inaugural issue of the Orange, please forward their address to the unit and we'll send 'em a copy. Meanwhile, welcome aboard, and let's work for a meaningful association and another super reunion.

S.K. Smith
Colonel, U.S. Marines

COLONEL SMITH EXPLAINS PORT AND STARBOARD TO RADM KOENIG ('58) DURING BREAK IN FALL '87 REUNION

LASERS--POSSIBLE DEFENSIVE APPLICATIONS

by Midn 3/C Harry Hall

With the ever-increasing technological advances of 20th century civilization, modern man has seen drastic changes in modern military warfare.The Navy has devoted an increasing amount of appropriations to beam weapons research, which includes particle beam weapons and high energy lasers (HELs). HELs at present include several different configurations, but three general types--the Gasdynamic Laser (GDL), the Electro-Discharge Laser (EL), and the Chemical Laser (CL)--are recognized as prime candidates for a laser weapons system. HELs on an orbiting platform could, in the future, effectively patrol the skies, survey the seas, knock down incoming ICBMs, and become a demonstration platform for an effective shipboard missile defense system.

A brief rundown on the three main candidates follows. The Gasdynamic Laser is a variation of the carbon dioxide laser. Instead of using electricity to cause a population inversion, the GDL derives energy from hot gases which are expanded and cooled through expansion nozzles, thereby causing the population inversion, which in turn produces the laser beam energy. GDLs have been likened to gas turbines in that they require a supersonic flow of gas. Perhaps the most attractive aspect of the GDL is the power output it can produce--up to 400,000 watts today, with the possibility of increasing power in the future. GDLs are extremely bulky and complex, however, making them unlikely candidates for mobile ocean or space platforms.

The second candidate is the Electro-Discharge Laser, which is an improvement on the electrically-excited carbon dioxide laser. The EL requires that the gas flow and the electrical discharge be perpendicular to both the laser resonater and to each other. As in the GDL, gas flow is important. The transverse design makes it much easier for the laser to get rid of excess heat and contaminants. This makes the EL more efficient than the GDL. Drawbacks on the EL include the requirement for a large power supply, which makes this type of laser system hard to push into orbit.

The last candidate, the Chemical Laser, derives its laser energy from chemical reactions that occur between a fuel and an oxidizer, which in most cases are hydrogen and fluorine, respectively. Free atoms are released from the fuel and oxidizer and then passed through expansion nozzles (similar to the GDL nozzles). The gas that forms after expansion is a mixture of vibrationally-excited hydrogen fluoride molecules, which release photons when they change to pure hydrogen and fluorine. Mirrors are situated to reflect these monochromatic photons to effectively direct the laser beam energy. The CL is the most likely candidate for a weapons system primarily because of two main advantages: more energy can be stored in chemical rather than electrical form, and the laser emits small wavelengths. Small wavelengths cause a smaller focal spot on the target, which means more power density per unit area and a greater lethality on the target.

Extensive Navy research is being conducted into the use of blue-green lasers for space-based antisubmarine warfare surveillance. However, space-to-earth lasers, for the most part, include possible battle stations that would be put into low earth orbit for the purpose of defending the US against hostile ICBMs. For this task, the CL has been nominated as the most effective and feasible of the laser weapons systems. Although several plans are on the drawing board for such a space-based system, perhaps the most realistic is that presented to Congress by four laser experts. It would require 18 battle stations orbiting the earth at an altitude of 1087 miles. There would be no gaps in the system for a missile to slip through since six stations would be evenly-spaced in one of the three different orbiting rings. Another plan calls for a 100-satellite network, each satellite housing a 25 megawatt laser. This system seems rather unfea-

sible, seeing as how the most powerful CL to be developed thus far can produce only 2.2 MW (the Navy Sea Lite Laser). Such a system seems unlikely before the year 2000.

Although the prime candidate for the laser battle station is the CL, the possibility of the X-Ray Laser has been considered. This laser would employ a nuclear bomb inside a structure of laser rods (optics) which, when detonated, would send out an intense electromagnetic pulse containing x-rays. These x-rays would travel through the precision optics and to the target(s), hopefully destroying them before the station was destroyed. Along with the usual problem of tracking and beam control, there is the added problem of nuking nearby friendly satellites when the bomb detonates. Also, there is an added limitation of a one-shot capability with such a system.

Space-to-space laser weapons systems would comprise mainly anti-satellite lasers as well as anti-ballistic missile lasers (since ICBM trajectories extend out into space, space-to-space lasers are ideal for intercepting them before they can do any damage). An hydrogen fluoride chemical laser of 10 MW power would be used. This laser battle station would be more effective than a land-based system due to the absence of atmospheric effects; however, it would be susceptible to attack from other ASAT systems.

High energy lasers <u>can</u> work as weapons, but it is going to require a major effort to pull all of today's existing technologies into a workable, effective laser defense system. What has become known as the laser triad might provide answers to the question of feasibility in some systems. The first leg of the triad, the two to three megawatt (and some cite up to five megawatt) chemical hydrogen fluoride laser Alpha will determine whether or not lasers can be scaled up to higher power levels. The second leg, the Large Optics Demonstration Experiment, will determine the effectiveness of an adaptive optics system in a 4-meter aperture mirror (this size aperture figures prominently in the plans for earth-to-space laser assemblies). The final leg of the triad will address the questions of pointing and tracking. The need for effective pointing and tracking systems will probably require the most effort, with chemical laser theory and large optics technology being more developed. The fact remains that it is going to take more time to develop existing technologies in order to create and put into orbit an effective laser missile defense system. It is certainly affordable, once the system has been implemented; it has been estimated that $230.00 worth of laser gas could destroy the same target it now takes a $3 million ABM to destroy. Between 18 and 30 five-megawatt battle stations could engage as many as 3000 targets (estimated), those targets escaping destruction being intercepted by either a particle beam point defense system or other ABMs of a layered defense system. But, if the problems can be overcome, and research progresses steadily, the US might expect to see laser battle stations orbiting overhead in the not-so-distant future.

Navy plans to bring space-based HEL systems "down-to-earth" include installation on air defense ships, e.g. cruisers, and for Close In Weapons System (CIWS) applications. Advantages of HEL weapons are their extraordinary lethality, precision, operational cost-effectiveness, and (with a nuclear-powered warship) an almost infinite reload capability. Research is progressing rapidly to minimize atmospheric problems of heating and refraction.

Picture yourself, one day in the near future, standing tall on the bridge of the USS *Galveston* as she slowly slides out into a channel of gold-speckled water lit by a rising sun. The *Galveston* is the Navy's newest, top-of-the-line Zeus class cruiser; her officers are a part of the newest elite corps in the Naval Service, and you are in charge of them. Your ship's mission remainslargely the same as that of the old Aegis class ships, yet your capacity to defend the mighty carrier battle groups is infinitely greater. Nothing can get through your protective laser screen; nothing can harm the charge you watch over. You, and your ship that has mastered the power of Zeus' potent thunderbolts, are the true lords of the sea.

THE CIWS

by Midn 3/C Mark Madden

United States Navy vessels are at sail at all times all over the world. They are projections of power with many different functions; but, no matter what their specific function is, at any given time they must be able to protect themselves against all possible enemies. In order to accomplish this task, the Navy has created for itself a sophisticated, high-tech network of both offensive and defensive weapons. The Phalanx Close-In Weapons System (CIWS) is one such system. The Phalanx system is a scanning unit, a tracking unit, and a very effective firing unit, all in one relatively small package. Its primary goal is to seek out and destroy low-flying hostile cruise missiles that may have slipped through other defenses. It is completely automatic as soon as it is turned on; with no outside interference or assistance, the CIWS is able to perform its job very quickly and efficiently.

The key to the Phalanx is its pulse doppler radar. This radar has advantages over other types of radar for the tasks of finding, tracking, and firing upon an incoming missile. It uses doppler shift between the pulse and the echo to search for moving objects. The lower velocity objects can be filtered out, allowing the radar to find the characteristics of a cruise missile target without the confusion of tracking other slower (or stationary) objects at the same time. This radar can determine range to objects as well. It uses a single 360-degree antenna, with the entire assembly being housed in the weapon's dome. The radar gives information directly to the fire control system, which then does a great deal of work: it takes the data from the radar input, finds where the target is, predicts where it will be, decides if it is hostile, and tracks it. If the target is determined to be hostile the computer will then manipulate the electrohydraulic system to move the gun assembly, place it on target and open fire. Fire control simultaneously measures the distances to the target and the distances of the projectiles it is firing at; by utilizing a closed-loop feedback pattern, the computer can compare the two readings and send signals to the guidance system to correct for any error very quickly, thus eliminating the target.

The Phalanx is called a "close-in" system and is actually a last line of defense. If it misses the target, the target gets the ship. Therefore, it is important that the system does not miss. In order to accomplish this, the Phalanx is equipped with the M61A1 Vulcan 20 mm Gatling gun. With a capacity of 989 rounds and a firing rate of 3000 rounds per minute, the CIWS is deadly force. The Vulcan 20 mm has six rotating barrels; the multiple barrel configuration gives the gun longer life due to better heat dissipation and less erosion, while the barrels are fed by a linkless feed system consisting of a conveyor belt enclosed in a flexible chute. This feed system plays an important part in the quick-fire capability of the Phalanx.

Even the projectiles are specially designed for an anti-cruise missile purpose. In order to take out a missile, the projectile must have a high muzzle velocity; the Phalanx system accomplishes this by using a smaller projectile with a casing (called sub-caliber). This allows the gun to use less powder and get a high muzzle velocity along with a spinning effect that stabilizes the projectile. As the round leaves the barrel, the casing separates and the accuracy and the velocity benefit. Hopefully the target is destroyed.

The Phalanx CIWS is designed for three confrontations, and then it can be reloaded in a matter of minutes if necessary. It is only one part of a network of defense systems designed to locate and destroy incoming targets. If a missile were to somehow get through other defense systems, the CIWS would be a valuable asset to have onboard. It can be installed on almost any type of ship without taking up very much space relative to the size of other weapons systems.

The editors would like to clarify a misconception concerning the reporting of the battalion survey article. The article should have started "Last November" rather than "Last month." The editors regret the mistake.

THE CVBG--IVAN'S WORST NIGHTMARE

by Midn 3/C Greg Jordan

What started with a weak airplane launched from a heavily-modified coal ship has, in the following 70+ years, become one of the world's most formidable weapons. As one of the most expensive and most technologically advanced ships in existence, an aircraft carrier alone (with air wing) would be quite an able man-of-war; but, when mated with its protective screen of escort and support ships, the task force becomes a weapon capable of meeting any threat on any of the world's oceans.

Before WWII, when the abilities of the aircraft carrier had not yet been fully explored, many officers (namely battleship captains) thought aircraft carriers were not the stuff wars were won with; indeed, the "covered wagons" were mocked openly until the Japanese attack on Pearl Harbor when, out of necessity, they became the mainstay of the US Navy. At that time the unproven tactics and ships themselves were put to the ultimate test: "do or die." They were called upon to defeat a navy which had just demonstrated its ability to use effectively its ship-borne aircraft. Less than two years later, with the advent of Task Force 58, the Navy displayed its expertise in the use of carrier-based aircraft in combination with battleships and other large combatants. The Navy adopted the task force principle in its operation, wherein the composition of forces and the nature of command should be determined by the mission assigned. With its heavy carriers, escort carriers, and numerous escort and support ships (including the battleship *Missouri*), Task Force 58 captured numerous Japanese outposts from the Gilbert Islands to the Sea of Japan and destroyed countless numbers of enemy ships and aircraft in its 23-month drive to the Japanese mainland. The tactics used in that campaign have become (although somewhat modified through the addition of new equipment) standard operating procedure.

A combat air patrol (CAP) consisting of several fighters flies a perimeter patrol at a distance of 300 to 600 miles from the battle group. Screening frigates form a circle at approximately 30 miles with destroyers closer in at 10 to 20 miles. Cruisers take up station two to five miles from the carrier, and the formation could be modified as necessary due to proximity of enemy forces, weather, or other factors. If submarines are assigned to the force they normally patrol along the threat axis in an anti-submarine capacity in addition to the airborne ASW provided by the carrier air wing. ASW aircraft include fixed- and rotary-wing and land- and carrier-based planes. These and other operating procedures (with the obvious exception of those involving equipment not at that time used, i.e. helicopters, etc.) were initiated in WWII.

The CAP operates in an early-detection and interception capacity. In the event of an aircraft or missile attack on the group, the CAP is the first line of defense and would take actions necessary to repel such an attack. Frigates operate in conjunction with S-3 and helicopter assets in anti-submarine warfare. These components make up the first line of defense for the entire carrier battle group. The destroyers and cruisers which are stationed closer to the carrier provide a second line of defense should any attackers elude the first. Guided missile destroyers in cooperation with a single Aegis-capable cruiser and its AN/SPY-1A radar can, through data links, put up a wall of missiles in a matter of minutes. The Aegis class cruiser is capable of simultaneous tracking and targeting of over 200 targets, and with its range of missiles (including the Standard dual purpose missile) can handle high missile saturation situations (i.e. lots of vampires). Point defense is provided by the Sea Sparrow and Vulcan Phalanx Close-In Weapons System. These short-range weapons comprise the last line of defense before the carrier itself is involved.

In order to be of any use, a carrier task force

must be able to strike land or sea targets effectively and decisively, and survive counter-attacks to strike again. Standard procedure for a carrier-based strike against a land target dictates a two-pronged attack from a carrier stationed 100 to 200 miles offshore. Two separate groups of attack planes (A-7, A-6, or F/A-18, whatever composes the air wing) approach the objective at night or at first light and carry out a missile or bomb or combination attack. Electronic jamming or deception measures are provided by EA-6B Prowlers, which stand off the attack site but remain in close enough to provide effective electronic warfare, one Prowler per attack group. A pre-attack fighter raid may be sent ahead of the main attack group to destroy or suppress any resistance that may be offered by the hapless victim. At approximately one-half the distance between the target area and the carrier group the CAP is on station. The patrol concentrates on the threat axis but does not neglect the flanks or rear and thus lessens the probability of a successful counter-attack. The CAP consists of two pairs of F-14s, each with an E-2 close by for forward air control duty; the E-2s would coordinate all friendly air traffic and direct the fighters to enemy air contacts. LAMPS helicopters operating off the destroyers are the next components of the carrier group one encounters on approach to the carrier. These LAMPS helicopters serve to expand the radar and sonar horizon of the destroyer/cruiser screen; they are equipped with sonar and torpedoes and, in coordination with a patrolling S-3, prosecute any enemy sub contacts on the "attack side" of the group. The next station is patrolled by an EP-3 or EA-3 to provide electronic-counter-counter measures to defeat any enemy attempts at electronic warfare; the plane patrols in a line parallel to the motion of the carrier at a distance of 10 to 15 miles. On station just aft of the carrier is a third pair of F-14s prepared to aid wherever necessary; they may be called upon for point defense at the carrier against enemy fighters or sent out to the CAP as reinforcement. Also on station in the immediate area of the carrier are two H-3s which recover any downed airmen or men-overboard. At all times ASW measures are taken in the rear and on the flanks of the group to resist any counter-attack attempts made by enemy forces.

A strike against a naval target is conducted in much the same manner as the one described for a land strike with minor modifications. First, only the general location of the target may be known and thus the attack groups must be prepared, and be able, to search for the enemy force. The CAP and other defensive measures must be less concentrated due to this degree of uncertainty and allow for the possibility of a counter-attack from more angles. More care for defense against surface-to-surface missiles must be provided. Another difference is evident in the more elaborate use of ECM; EA-6s would stand off the attack and carry out deceptive or jamming measures. Deception has at least two advantages over jamming: 1) false targets are provided for enemy missiles, and 2) the false targets could appear to come from bearings opposite the direction in which friendly forces are located and thus misdirect a counter-attack. This strike could be modified according to the objective and is therefore adaptable to many different environments and situations.

The carrier task force has been used successfully in real combat and in US and NATO exercises. The striking power and survivability of such a group has been demonstrated, yet there is still much heated debate over the practicality of these huge (91,487 tons displacement, USS *Carl Vinson*) ships. Regardless of all the talk, the Navy continues to build and use these elaborate battle groups, and they should continue to operate for some time to come.

THE AEGIS MISSILE SYSTEM

by Midn 3/C Richard Metzger

AEGIS is the name given to the United States Navy's most advanced surface-to-air weapons system. This system uses a phased array radar and the most efficient computers at the Navy's disposal. The system is designed to defend against aircraft, anti-ship missiles, stand-off jamming aircraft, and reconnaisance aircraft. Countering such targets requires a fast, efficient radar system with very high speed computers and good systems organization, all of which the Aegis system encompasses.

The Aegis system has seven basic components, among them the missiles, the launching system, the fire control, and weapons control systems. The multi-function phased array radar (the AN/SPY-1A) is employed to carry out surveillance and the simultaneous detection and tracking of multiple targets. The primary function of this radar is to search for and acquire targets and to track them to whatever extent may be necessary. Another function is the two-way link with the missile for midcourse guidance. The missile itself is the SM-2 version of the Standard which has a command guidance capability and a self-contained navigation capability provided by inertial navigation, plus command correction, followed by terminal homing. These improvements on the missile have given it a much more efficient trajectory. The inertial navigation system aboard permits the missile to perform its own midcourse navigation, and a telemetry link between the missile and radar is used to report the missile position back to the ship.

Presently the Aegis missile system employs the Mk 26 fully automatic dual purpose launcher; however, in the coming years, the Mk 41 vertical launcher system will be employed for use as the main Aegis launching system. The launcher receives commands and pre-launch orders for the missiles from the Mk 1 weapons control system. This system in turn receives weapon assignment commands and special threat criteria from the Mk 1 command and decision system and tracking data from the multi-function radar. The weapons control system then analyzes these inputs and processes them for the possibility of engaging the targets. Commands may then be sent to the launcher, Mk 99 fire control, and the multi-function radar if midcourse guidance is required. The Mk 99 fire control system serves the purpose of illuminating the target during the homing phase of the missile's flight. This system employs the AN/SPG-S2 (slaved) radar. Inputs to the system come from the Mk 1 weapons control system, which is passing on data from the multi-function radar system.

The best way to appreciate the organization of the Aegis missile system is to follow through in a scenario from detection to target engagement. First, the Aegis system operates in four modes: automatic special, automatic, semi-automatic, and casualty. The AN/SPY-1A radar system, the Mk 1 weapons control, and the Mk 1 command and decision system all make up the detection and decision loops of the Aegis system. Target detection will initially come from the Aegis radar, another ship's or plane's sensors, or data from another ship or airplane. In the automatic special mode all targets meeting certain predetermined threat criteria are automatically fired upon unless manual override is invoked. In the other three modes, the Mk 1 weapons control system will insert targets into the engagement queue and schedule equipment for launch and terminal illumination. Trial intercepts are computed and time of fire predicted. All data is then fed back to the command and decision center. This center is also receiving target destruction data from radar control and electronic warfare data from the ship's command and control center. In addition, all subsystems are constantly

continued; see Aegis on page 12

ALUMNI ASSOCIATION NEWS

THE PRESIDENT'S CORNER by Charles Simons

This newsletter marks the first edition of what I hope will be a semi-annual attempt to keep the U.T. NROTC alumni informed about their Association and the NROTC Unit.

After several false starts, it now appears that the Association has gained a foothold, and with your help, will flourish into a first-rate organization intent on maintaining the University of Texas NROTC Unit as the best in the country.

As background for those of you who are just becoming acquainted with the Association, the first attempt,in recent times, to establish ourselves as a viable group was made by John Engstrom, U.T Class of '66. Although John suffered through a lot of growing pains, his efforts established a good data base and created enough interest which ultimately paid dividends. We all owe John a round of thanks and sincerely appreciate his continued involvement in the Association.

Recently, we have experienced two significant events since reestablishing ourselves. The first was the spring commissioning ceremonies which the Naval Unit hosted for all the services. The guest speaker was LtGen. D'Wayne Gray, U.T. Class of '52, who was Commanding General, Fleet Marine Forces Pacific at the time, and who is now retired. General Gray delivered a truly memorable talk and rekindled the spirit of service in those alums able to attend the ceremony. Among many noteworthy attendees was Admiral Weldon Koenig, U.T. Class of '58, who is C.O. Naval Training Center Orlando, Florida. Preceeding the commissioning ceremony was a business meeting at which an interim board was selected and given the responsibility of developing the necessary framework within which the Alumni Association could operate. Following the commissioning was an attitude adjustment hour , Bar-B-Que, and story swapping session at a nearby American Legion Hall.

The second noteworthy event was the fall reunion, which coincided with the U.T. vs. Texas Tech football game. The day's activities got underway with a business meeting, followed by a tailgate party held in the Navy's spaces on campus. Of significance was the election of permanent officers to the U.T. NROTC Foundation Board and the election of the Crow's Nest Advisory Board. A list of officers for both groups is included below for your information.

Following the game (which marked a turnaround in the Longhorn's season) I, along with my wife Patti, had the pleasure of hosting the attendees at an outdoor get-together at our home. While I can't speak for the entire group, let it be known I had a great time, and am looking forward to this fall's reunion to be held October 15, 1988 in Austin (Texas vs. Arkansas). Please mark your calendar and make reservations and plans to attend. We are working with several local hotels for the best deal to book the reunion and give us a rate on the rooms. Stay tuned!

I have been asked on several occasions why an Alumni Association is needed; the answer is simple. The Naval Service needs good officers. Our Unit needs quality midshipmen to train to fill that need and can use our help in recruiting qualified high school graduates into the NROTC program. Finally, once enrolled, the midshipmen need our help in the form of tradition, role models, scholarship assistance, and personal contact support as they progress through the University.

The restructuring and resurrection of the Crow's Nest is a good example of meeting a need which directly benefits the midshipmen. While the Nest has by no means been the only focus of our attention this past year, the results are very gratifying and give authenticity to the notion that we can be of genuine benefit.

Enthusiasm for a group of unknown midshipmen is difficult to generate or convey

THE PRESIDENT'S CORNER

through a newsletter. It more often comes about through personal contact which sheds light on a problem and gives us the opportunity to offer a solution. Enthusiasm is contagious, and is what everyone caught at our last two gatherings. Money was raised for expenses. Attorneys and physicians offered their services to the midshipmen, and Alums in other fields pledged their expertise for the benefit of the young men and women who will soon be charged with the responsibility of defending our country. More importantly, the midshipmen caught the sense that they are a part of a worthwhile organization (the Sea Services) and that such means a great deal to a lot of people.

Elsewhere in this edition are reports from various people who are donating their time and energy to the Association. Some of the issues to be dealt with this year are finances, Crow's Nest, scholarship awards, and some kind of a dues structure to help defray expenses. We would all gladly accept any help offered. In the meantime, welcome aboard and I'll see you in October.

U.T. NROTC FOUNDATION BOARD OF DIRECTORS

Charles Simons	President	Austin
Will McCann	Sec/Treasurer	Austin
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Howard Smith		Houston
Ed Mergele		Houston
Kirk Cansler		Austin

FINANCIAL REPORT

by Will McCann

Thanks to your generosity we now have $2,657.00 to use to help our deserving midshipmen.

Now that the fund is in operation, there will be occasions to draw upon it to help those for whom it is intended. Please continue your generous contributions. You may send your tax-deductible contributions to:

NROTC Alumni Association
c/o Will McCann
Suite 201
3811 Bee Cave Road
Austin, Texas 78746

Navy alumni outnumber Marine alumni approximately 5 to 1. This means that the Marines will have to work five times as hard to match the Navy contributions (Colonel Smith was heard to say, "Fortunately this is not difficult.").

ASSOCIATION NOTES

Your Association has provided assistance to two midshipmen thus far. One midshipman needed legal assistance when a bank sought to repossess his car as a result of his father's bankruptcy. An alumnus who is an Austin lawyer provided legal counseling without charge. Another midshipman needed extensive dental work prior to commissioning. The Association found a retired Navy dentist who would do the work for a 25% discount, and it provided financial guarantees pending payment by the midshipman after commissioning.

Members of the Association have many varied talents and they are ready and willing to assist when they can.

THE CROW'S NEST: A New Direction

by Paul Jones

At the outset, let the reader know that your writer is not a fair and impartial witness. On the subject of the Crow's Nest, he is in fact biased and prejudiced. With that out of the way, let us proceed.

Your writer lived in the Crow's Nest during the years 1952 to 1956 (i.e. the "OLD Nest"), in a variety of locations, none of which could be termed first class living conditions. In truth, most of the places we inhabited would not meet the federal standard of "decent, safe, and sanitary." Nonetheless, it was our home and we Nesters were generally proud of it. In our day, for many of us, it was a substitute for the fraternity most of us could not afford and it gave us a rally point around which much of our University lives revolved. With old Ella May in the kitchen, the food was excellent and few of us lost weight during our stay at the Nest (e.g. Rex Stallings!!). With the mixture of upper classmen and youngsters, there was always a blend of "maturity" and youthful exuberence that at least somewhat inhibited the hell-raising that many consider the constitutional right and/or duty of college students.

After leaving UT, and for many years thereafter, I lost track of many of the people and things that had been so important while in college, including the Unit and the Nest. Time was not kind to the program during the anti-war years of the late '60s and '70s. As I recently learned, it was even less kind to the Nest and the traditions that meant so much to me and those of my era. To say that the Nest fell into disrepute during that period would probably be kind. But with the arrival on campus of Colonel Steve Smith and his staff, a new era dawned. Colonel Smith learned of some of the traditions of the Old Nest, ran down some of us old hands who now live in the Austin area, and laid the keel on which the New Nest is being built.

I had the privilege of being invited to dinner at the Nest recently, after which I attended an officer's meeting. I asked them about problems and goals that they have and I wanted to share their answers with you. Overall, the progress could probably be best characterized as "all ahead slow," but at least it is forward.

For the short haul, survival is the key goal! The outrageous City of Austin utility rates have caused a serious crimp in the budget, but the men are making ends meet on a monthly basis. This does not, however, leave much of a surplus to pay the rental payments for the summer, and this is presently the greatest cause for concern and alarm. If we are unable to secure active duty or midshipmen tenants for the summer months, the Nest could find its tail in the caliche once again. The extended goals involve securing decent furniture that the Nest owns, such as desks, dressers, beds, and the like. The goal of the officers is to prepare and send to each prospective midshipman (male and female) a recruiting brochure depicting life at the Nest and offering it as an alternative to other campus housing. It is their desire to maintain a mix of "veterans" and freshmen at the Nest, but arriving at a proper mix is a delicate task.

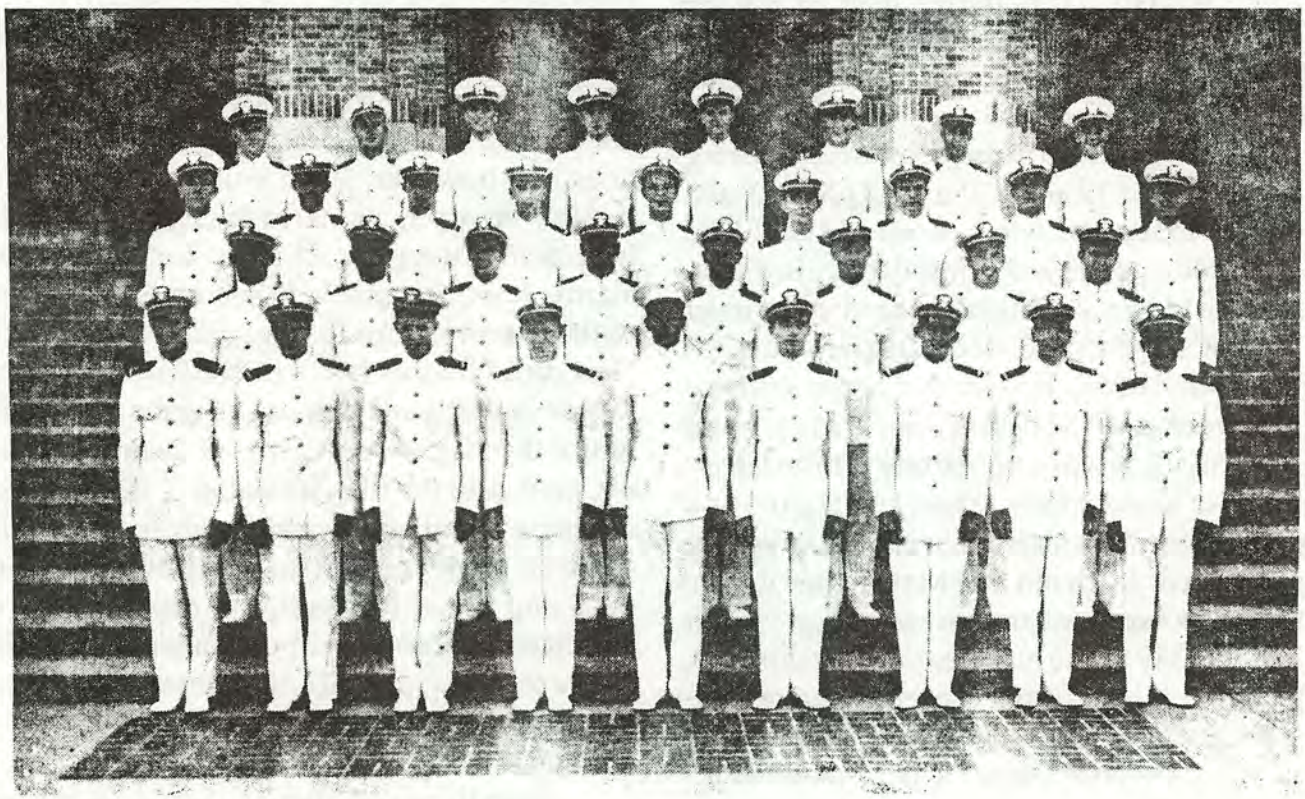
Everything considered, I was most pleased with the attitude and progress the Nest has made since September. I would, however, urge those of you who care about and desire to support the Nest and are in a position to give of your funds, if not of your time, to send whatever you can to the Midshipman's Foundation, Crow's Nest Division. We will see that it is used to keep alive and further the growth of this worthwhile adjunct to the Midshipman's Foundation, the Naval ROTC Unit, and the University of Texas.

PUBLICATIONS STAFF

ADVISOR.....LT. MOYNIHAN
PUBS OFFICER.....DAVE DULEVITZ
ASST. PUBS.....JIM FIELDS
LONGHORN LOG.....ERIC WILLS
ASST. LOG.....BRETT COHEN

ALUMNI PHOTO SECTION

COMMISSIONEES, JULY 1945



1st Row—J. J. Walsh, D. C. Brown, M. K. Holmes, B. W. Quarles, C. M. Hardy, T. A. Stansbury, L. Leonard, G. A. Klumb, C. Fitzgerald.
2d Row—J. L. Wolf, R. C. Newman, H. D. Anderson, H. L. Hook, W. C. Preusse, L. D. Jeffery, V. E. Crews, D. E. Wilson.
3d Row—R. A. Manogue, E. B. Johnson, J. A. Taylor, B. J. Clark, L. D. Williams, J. B. Moore, T. W. Glocker, D. Le Roux, W. B. Silvis.
4th Row—J. B. Macy, F. Crow, D. M. Krause, M. B. Lanier, B. Overstreet, C. A. Brown, B. Jamison, E. Schutze.

(Aegis, continued from page 8)

being monitored by the Mk 1 operational readiness test system. This system relays back to the Mk 1 command and decision center the operational readiness of all systems aboard through the entire target detection and engagement cycle. Weapons assignment and threat evaluation processes are then carried out so that the engagement decision can be taken. At that point the Mk 1 weapons control system will send pre-launch orders and commands to the Mk 26 missile launcher. Once the missile is deployed it will use its own inertial flight guidance system in addition to command corrections for midcourse flight. For the homing phase the missile will get help from the Mk 99 fire control system for target illumination, and engagement with the target will be made.

Aegis is the US Navy's missile system of the future. Its most important operation is the destruction of small, fast moving targets in any hostile environment. The role of the Aegis system will be the defense of a task force which may include a carrier and other types of capital ships.

MIDSHIPMEN AND ALUMS AT FALL '87 REUNION

WILL McCANN ('61) AND PAUL JONES ('56) RELAX AT THE SIMONS HOME AT THE CONCLUSION OF THE FALL '87 REUNION

FALL '87 REUNION BUSINESS MEETING

✂✂ **PLEASE CUT OUT AND RETURN PROMPTLY !!** ✂✂

Charlie--

I do [ ] / do not [ ] plan to attend the Fall '88 Alumni Reunion 15 October '88 in Austin. Enclosed is a $30.00 deposit to cover the costs of _____ tickets and reserved room for _____ adults. I understand that final payment will be requested when Reunion plans are finalized.

NAME_____
STREET_____
CITY_____ STATE____
ZIP_____PHONE(___)_____

Please make your check payable to the
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Executive Officer
Naval ROTC Unit
RAS 104
University of Texas
Austin, TX 78712-1184

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