

MINIATURIZATION IS *BIG*

Hybrid microelectronic lab useful centerwide

By Mary Ann Brett

You may think you're removed from such state-of-the-art technology as hybrid microelectronics circuitry, but if you own a telephone, mini television, microwave oven, computer, or pacemaker, simple forms of this technology are right in your home. Miniaturization of complex Navy Avionics equipment is on the cutting edge of this technology here at the Center's Hybrid Microelectronics Laboratory (HML). NADC engineers and scientists are developing ways to apply this technology to Naval Aircraft systems. The HML, part of the Communications Technology (CT) Division, has equipment which allows Center personnel to design miniaturize and fabricate electronic equipment for communications, navigation, ASW, radar and sensor systems applications. The HML includes thick and thin film microelectronic RDT&E capability. The thick film process is used for applications requiring size reduction while thin film techniques are used for size reduction and microwave frequency applications.

"Thick Film circuitry is geared for low cost," explained John Misoni, Head of the lab. "The thick film process is virtually the same as silk screening fabric," he said. A clean room environment; however, is necessary because of the 10 mil line widths and spaces required by the design.

He explained how a stainless steel screen with a photographically defined pattern is used to print a thick film circuit. The pattern can be determined in two ways - a designer can manually lay out the circuitry according to its intended use or the designer can use Computer Aided Design - CAD, to define the components/conductors, move them around in different combinations on the monitor and then generate a layout with individual patterns for each screen. Next, the screen printer forces a metallic material through the screen and prints the image onto the bare ceramic substrate thereby defining a pattern of conductor traces for the circuit. The wet print is then dried and fired at a high temperature (up to 900°C) which permanently bonds the print to the substrate. Subsequent print dry and firings of dielectric resistor, or other conductor materials (with different screens) complete the circuit. Misoni stressed precision of line widths and resolution as being critical to the design.

"However," he said, "if the design application calls for higher circuit



Photo by NADC Photo Lab

John Misoni, Hybrid Microelectronics Laboratory Manager, aligns hermetic package sealer to seal guard receiver demonstration hybrids.

DECORATION FOR EXCEPTIONAL CIVILIAN SERVICE

PRESENTED TO

DR. DONALD P. McERLEAN



By Mary Ann Brett

Dr. Donald P. McErlean, head of the Air Vehicle and Crew Systems Technology Department, was recently presented the most prestigious Air Force award for civilians, the Decoration for Exceptional Civilian Service. He received the award for his work at the Air Force Systems Command, Wright-Patterson Air Force Base prior to arriving at NADC in May 1987.

McErlean was cited by the Secretary of the Air Force for "... exceptional service as Director, Airlift and Trainer Engines System Program Office, and Director, Strategic Engines System Program Office, Deputy for Propulsion, Aeronautical Systems Division, Air Force Systems Command, Wright-Patterson Air Force Base, Ohio, from January 1984 to April



Photo by NADC Photo Lab

Dr. Donald McErlean (left) receives Exceptional Civilian Service Medal from Mr. M. E. (Gene) Bryant of Wright Patterson Air Force Base.

Command Corner



CAPT Curtis J. Winters
Center Commander



Guy C. Dilworth, Jr.
Technical Director

To all hands:

Subject: Budget Reductions

1. Our nation is faced with a growing budget deficit which threatens our economic system, the value of currency and our future standard of living. In an effort to reduce this deficit, the federal budget is being reduced in many areas including defense spending.

2. The results of these budget reduction actions are beginning to impact both military and civilian personnel at NAVAIRDEVCCEN. Foremost among your concerns and mine is the opportunity for promotion. As many of you know, starting in FY-87 the Navy began controlling civilian personnel resources by a system known as Managing to Pay (MTP). Under this system, installations such as NAVAIRDEVCCEN are allocated a fixed amount of dollars to pay civilian salaries, overtime costs, retirement payments and performance awards.

3. We are now faced with an MTP budget allocation that is less than our projected requirements. In other words, unless we make a correction to our plan, we will have a deficit. Unfortunately, we are not allowed the same latitude to incur a deficit that we have accepted on a national level.

4. It is my intention to bring our budget within our allocated MTP numbers with the least disruption possible, but even with good intentions there will be an impact on many of us. I have directed that we remain in a restricted hiring mode, filling only critical, one-of-a-kind positions. Additionally, we must continue to

reduce our overtime expenditures. Even with these measures, our calculations project a deficit. To achieve further savings we must delay promotions or be faced with even more severe restrictions at the end of the year. As always, promotions will be based on merit, and eligibility for promotion does not assure promotion.

5. Although not under my direct control, it should be noted that delayed promotions are also being experienced by Naval Officers. As zones for promotions are reduced, time in rank will increase and we have already seen a delay between selection and promotion at many levels. Promotion of enlisted personnel has not been affected by budget reductions at this time.

6. It is clear that deficit reduction cannot be accomplished by any one action either on a national level or here at NAVAIRDEVCCEN. We will achieve our goal only through a combination of many measures. I ask for your continued support by being more efficient and helping to find ways by which we can reduce our overall costs. For my part, I will ensure that we give fair consideration to promotions in all departments.

C. J. Winters
C. J. WINTERS
Commander

Guy C. Dilworth, Jr.
GUY C. DILWORTH
Technical Director

Promotions

Barbara Baum, Joseph Bunting, Brian Concannon, Ronald Conley, Carol Douris, Frank Drummond, Jr., Mark Engle, Mark Gindele, Robert Ginn, Dorothy Harner, Herbert Heffner, Kimberly Justus, Howard

Knorr, Constance Lapsansky, Janet Martinell, Richard Meyers, James Orr, Robert Preedy, Sreekanth Rajan, Vicky Schwartz, Jon Slinger, Robert Williams, Richard Yeager.



Photo by NADC Photo Lab

RADM FLAGG GETS THE BIG PICTURE

Rear Admiral Wilson Flagg, USNR, Assistant Chief of Staff, Readiness and Training for the Commander, Naval Air Atlantic visited the Center early in February for a comprehensive overview of the Center. CDR Milton Henke (right) points out NADC deployment locations on the map.

Civilian Pay Schedule Annual Salaries for 1988

STEPS	1	2	3	4	5	6	7	8	9	10
GS-1	\$ 9,811	\$10,139	\$10,465	\$10,791	\$11,117	\$11,309	\$11,631	\$11,955	\$11,970	\$12,275
GS-2	11,032	11,294	11,659	11,970	12,103	12,459	12,815	13,171	13,527	13,883
GS-3	12,038	12,439	12,840	13,241	13,642	14,043	14,444	14,845	15,246	15,647
GS-4	13,513	13,963	14,413	14,863	15,313	15,763	16,213	16,663	17,113	17,563
GS-5	15,118	15,622	16,126	16,630	17,134	17,638	18,142	18,646	19,150	19,654
GS-6	16,851	17,413	17,975	18,537	19,099	19,661	20,223	20,785	21,347	21,909
GS-7	18,726	19,350	19,974	20,598	21,222	21,846	22,470	23,094	23,718	24,342
GS-8	20,739	21,430	22,121	22,812	23,503	24,194	24,885	25,576	26,267	26,958
GS-9	22,907	23,671	24,435	25,199	25,963	26,727	27,491	28,255	29,019	29,783
GS-10	25,226	26,067	26,908	27,749	28,590	29,431	30,272	31,113	31,954	32,795
GS-11	27,716	28,640	29,564	30,488	31,412	32,336	33,260	34,184	35,108	36,032
GS-12	33,218	34,325	35,432	36,539	37,646	38,753	39,860	40,967	42,074	43,181
GS-13	39,501	40,818	42,135	43,452	44,769	46,086	47,403	48,720	50,037	51,354
GS-14	46,679	48,235	49,791	51,347	52,903	54,459	56,015	57,571	59,127	60,683
GS-15	54,907	56,737	58,567	60,397	62,227	64,057	65,887	67,717	69,547	71,377
GS-16	64,397	66,544	68,691	70,838	72,500	73,660*	75,765*	77,870*	79,975*	
GS-17	73,958*	76,423*	78,888*	81,353*	83,818*					
GS-18	86,682*									

*Federal workers who make more than \$72,500 receive no increase as a result of congressional action.

— MARCH —
Women's History Month
National Nutrition Month

Reflector

NAVAL AIR DEVELOPMENT CENTER, WARMINSTER, PA.

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Hybrid Microelectronics Useful Centerwide

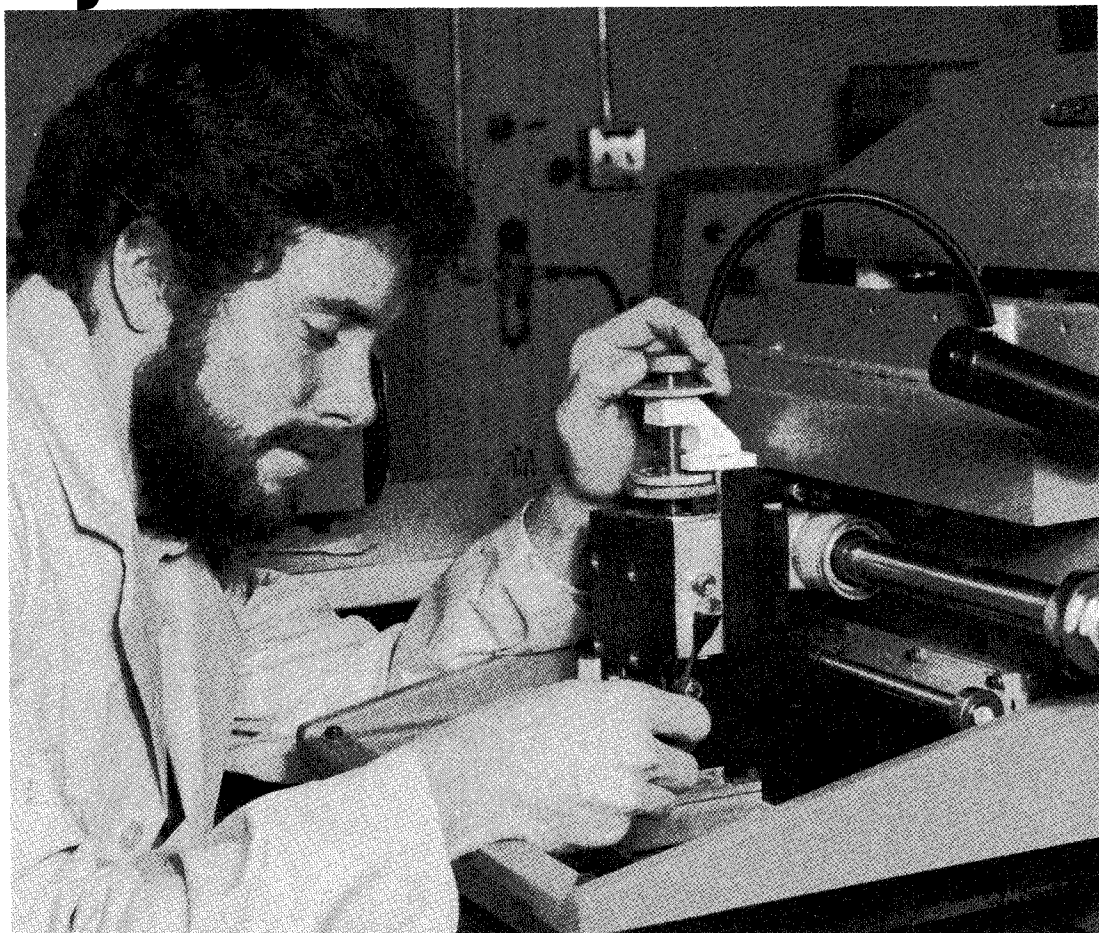


Photo by NADC Photo Lab

Paul Drexler, RF microelectronic engineer, applies conductive material onto thick film screen printer for prototype run of a hybrid microwave amplified circuit.



Photo by NADC Photo Lab

Larry Scott, student trainee in the lab, adjusts CO₂ laser fixture prior to scribing thick film alumina substrated.

Continued from Page 1

density, more reliability, or the capability to operate at higher frequencies, resistors defined with thin film technology are more precise and suited for the job." Thin Film circuitry employs a process called sputtering. Misoni explained, "You begin with a ceramic material called alumina or aluminum oxide which is nearly as hard as diamond. The alumina for thin film is usually the same as for thick film, only a higher purity (99% vs. 96%). Because of its physical and electrical properties, alumina allows the circuit to be made significantly smaller."

The sputtering process takes atoms of whatever material is being used or deposits thin films of material (usually measured in angstroms, $1\text{A} = 1 \times 10^{-10}$ meters) sputters it onto the alumina substrate. A metal layer such as nichrome is used as a resistor layer, then a layer of gold, as a conductor. "We use Noble metals (as these are called) for conductors", said Misoni, "because of their superior bondability and performance."

After each layer of metal, the miniature circuit board is coated with a chemical solution called photoresist and exposed to ultra-violet light through a photographically defined pattern. "Then," said Misoni, "we etch away any unwanted metal, creating a precisely defined circuit consisting of tiny conductor traces and resistors. The assembly of the circuit board is completed using tiny wires, one-third the diameter of human hair, to make electrical connection to various active components that are epoxy attached to the circuit board."

The entire Thin Film process must be conducted under strict clean room conditions because of the critical nature of the patterns being defined.

"One of our most recent accomplishments using HML," said Elliot Ressler, nationally recognized for his miniaturized RF circuitry applications and also of the CT division, "was enabling the AN/ARC-182 receiver to keep its emergency channel capability. Because of size constraints, it was suggested the emergency channel be eliminated from the receiver's design update. To retain the emergency feature, we designed, built, and tested integrated circuitry using surface acoustic filtering and thin film technology. The resulting two-channel emergency receiver was four times smaller and will be incorporated into the next generation AN/ARC-182."

Current projects of the Hybrid Microelectronics Lab research include miniature relay systems with electronic counter-countermeasure capability, low cost sonobuoy transmitters and the development of a complete receiver which incorporates two monolithic chips resulting in a substantial size reduction.

According to laboratory personnel thin film circuitry is not intended to replace thick film, rather, both are used simultaneously in a host of applications. Ressler stressed this diversity, "Navigation, communications, radar, electronic warfare, fiber optics, acoustic and non-acoustic sensors are just the tip of the iceberg."

"We are a generic R&D lab," he said. "We are involved in technology before it is incorporated in a system. The lab's capabilities can be applied to many different programs around the Center and we encourage those who have a need or interest to come in, get acquainted with the lab and find out what it can do for them."

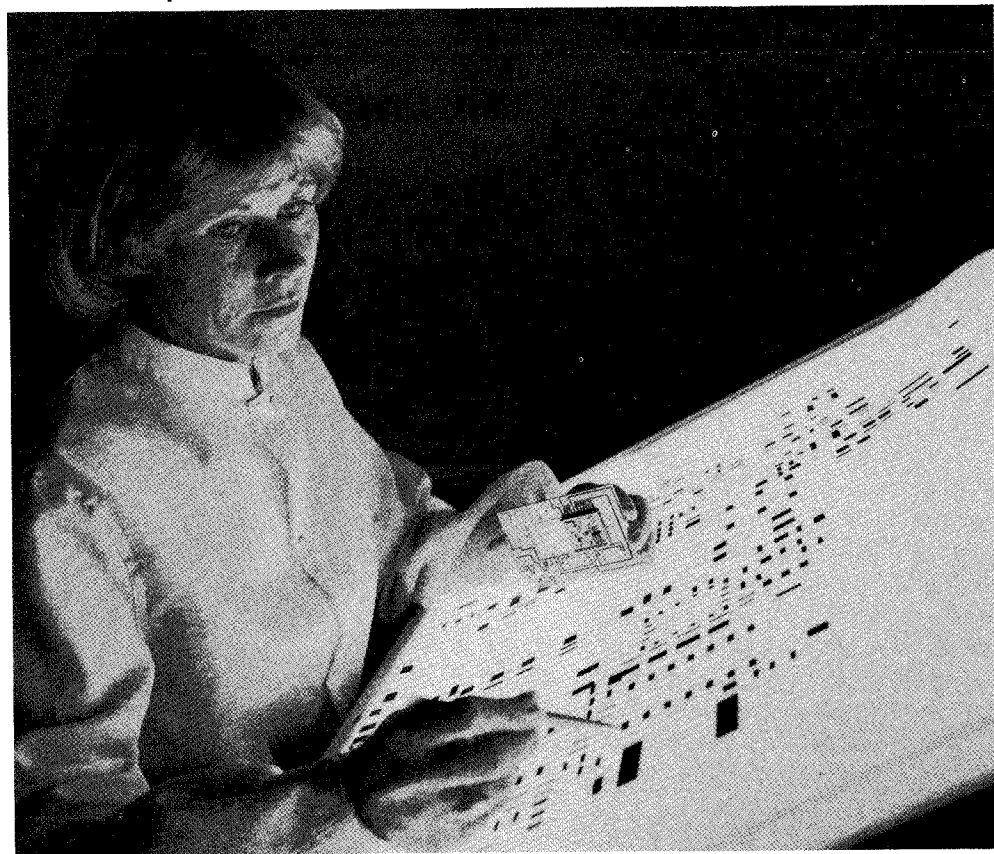


Photo by NADC Photo Lab

Pat Foley, lab technician, inspects micro-circuit layout prior to photo reduction.

Commander Salutes

Marlene Grubb, Lynn Scott (Code 03): For assistance during the Aviation Supply Office's conversion to the Navy Civilian Personnel Data System.

Dr. James Whinnery (Code 60): For an enlightening presentation to the Biology majors and faculty of the Air Force Academy.

Stanley Dunn (Code 10): For significant contributions support of the Naval Air Systems Command Site Survey in Pakistan.

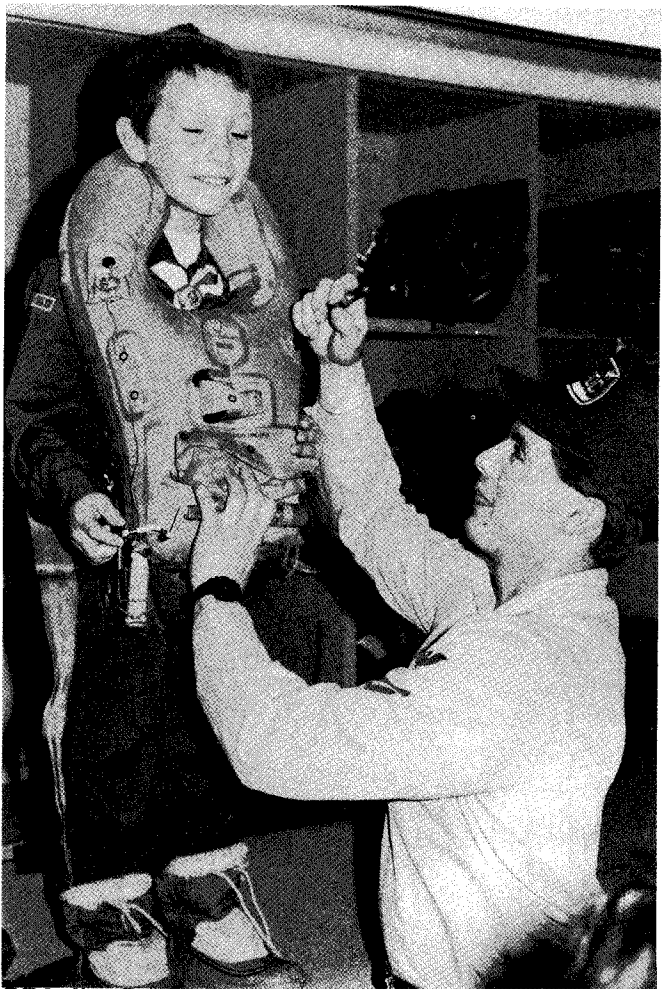
Jeanne Marie Kita (Code 20): For outstanding performance contributing to the success of the Naval Surface Weapons Center Arctic Warfare Seminar War Game.

Continued on Page 8

Paraloft fills a tall order for kids

Photos by JO2 Todd Lufkin

The Paraloft is part of the Aircraft Maintenance Department and is located in Building 4, Hangar Bay 3, second deck. In addition to their many duties, the personnel of the Paraloft take time out of their busy schedules to provide informational tours to local scouting groups.



PR2 Jim Daggars shows how to inflate a life vest to one of the members of Churchville's Cub Scout Pack 240.



PRAN Sheryl Tennant conducts planned maintenance system (PMS) on one of the Paraloft's many helmets.



PR2 Jim Daggars (left) and PR2 Mark Spencer demonstrate the integrated torso harness.



PR2 Jerry Pearson works intently on ensuring that the Paraloft's life rafts are watertight and stowed with the proper gear.

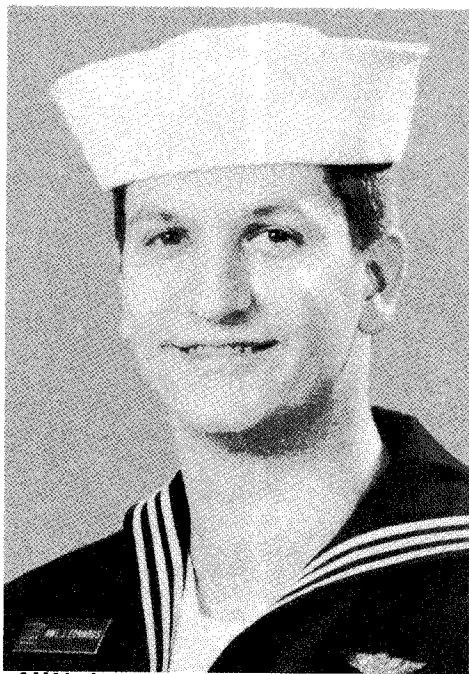


PR1 William Lamb (standing), PR2 Mark Spencer (left) and PR3 Terry Johnson demonstrate life raft survival equipment.



PR2 Jim Daggars gives hands-on exposure of flight helmets to cub scouts. The visors are either clear or tinted depending on outside conditions.

Sailor and Blue Jacket of the quarter Named



AW1 James Edwards

Sailor of the Quarter



AMS3 Bruno Rocuba

Blue Jacket of the Quarter

If the SOC fits

By Robert Janes

A Standards of Conduct (SOC) topic which comes up frequently concerns the activities of retired Regular officers. Many people are confused about just what retired Regular officers are legally permitted to do. In great part, the post-employment rules applicable to such officers are identical to those which apply to former civil service or servants employees. However, one special restriction which applies solely to retired officers. That restriction involves "selling".

There are two statutes prohibiting retired Regular officers from selling to the government - 18 U.S.C. § 81, a criminal statute which until recently placed a lifetime ban on selling anything to one's former service, and 37 U.S.C § 801(c), a civil statute which imposes a three year prohibition on selling supplies to DoD. The term "selling" has never been adequately defined under the criminal statute, so a great deal of uncertainty remains as to what activities constitute selling in violation of that law. The term has, however, been very broadly defined under the civil statute as:

- Signing a bid, proposal or contract,
- Negotiating a contract;

- Contacting a government employee for the purpose of obtaining or negotiating contracts; negotiating or discussing changes in specifications, price, cost allowances or other terms of a contract; or settling disputes concerning performance of a contract;
- Any other liaison activity with a view toward the ultimate consummation of a sale, although the actual contract is subsequently negotiated by another person.

It is Navy policy to treat the definition of "selling" under the civil statute as being applicable to the criminal statute as well. It is important for all of us to be aware of this, for the Navy's SOC instruction prohibits current Navy employees from knowingly dealing with former Navy personnel who are violating the law.

In December, Congress made two key changes to the criminal statute. First, it reduced the duration of the selling ban from a lifetime restriction to two years. Second, it extended the ban to retired Reserve officers in addition to retired Regular officers. There were no changes made to the civil statute, which remains applicable solely to retired Regular officers, for a three year period.

Mixed Bowling News

By Tom Reiter

Congratulations to the winners of the first half. Al Knobloch's Goofers have regained their dominance and took the B Division without worrying on knockdown night. Just in case they would have needed it, Wes Gleason rolled a 618 series against last year's league champs the Magic Markers. Al's rock steady lineup includes Leo Markushewski, Eddie Fields, Al, Wes, and his two 60 minute, never miss a night, ladies, Ann Hoyt and Lorraine Reidinger. The A Division saw a last night battle between Helene Goldstein's 11th Frame and Bob Geyer's Alley Cats. Needing at least two wins, The Alley Cat's Gene Toner came through with a 618 series to help his team to a 3-1 championship victory. Besides Gene and Bob, the winners

include Jack Eyth, Kevin Ryan, Marguerite Hoefling, Kathy Barnes, Lorraine Koch, and Carolyn Richards.

Johnny (WHO CARES) Bowes has issued a second half warning. Look out for this sleeping giant. He has purged his lineup, put some people on injured reserve, scanned the waiver wires, signed free agents, brought out some shock troops, and says that he is back in the hunt. Good luck John, Ted Kopp and Cliff Tierney have gotta help.

Thunderbird Street Lanes is awarding bowling towels as achievement awards this season for high games of 225 for men and 180 for women. Thirty-five towels were awarded in the first half; congratulations to all the people who'll have dry hands for the rest of the season.

Sailor of the Quarter

By JO2 Todd Lufkin

"I was happy to receive the honor" stated Aviation Antisubmarine Warfare Operator First Class Petty Officer (AW1) James Edwards, "it's a stepping stone I need for my Navy career." That stepping stone is his selection as NADC's Sailor of the Quarter (SOQ) for the fourth quarter of 1987. Edwards is the Center's VP Fleet Software Support Project Petty Officer.

The 25-year-old SOQ has been on Center for 2 1/2 of his 8 years in the Navy. "I like the area," he said, "it's some of the most beautiful country I've seen in America." Prior to being assigned at NADC, Edwards was stationed at VP-46, Moffett Field, Calif.

A native of St. Louis, Mo., Edwards joined the Navy because he wanted to fly. "I became an AW because it was a rate the recruiter could guarantee as a flying billet and it sounded like fun."

In his free time this SOQ swims and works out and would like to do so every day, if he could. He is also a sophomore at Bucks County Community College, majoring in engineering.

Edwards is enjoying his tour of duty at NADC, and calls it the best shore duty billet around. "We've got a great command and good sailors," he explained. He observed that the Navy is trying to do a lot with less money and people. "We need to make the best of the situation," he said, "this is a problem facing the entire nation." He urges his fellow sailors to maintain a positive attitude about their work center and fellow shipmates.

Edwards has recently been accepted into the Navy's Enlisted Commissioning Program. He starts Officer Candidate School June 6 and hopes to attend Villanova University full-time in the fall. "I plan to get a chemical engineering degree and give the Navy at least 20 years," he concluded.

The SOQ met wife Cheryl on Center. They married last June and live in North Wales.

Blue Jacket of the Quarter

By JO2 Todd Lufkin

Aviation Structural Mechanic Third Class (AMS3) Bruno Rocuba has been named Blue Jacket of the Quarter (BJQ) for the fourth quarter of 1987.

Rocuba was pleasantly surprised that he made BJQ. "I didn't think I'd been here that long (10 months)" he explained, "it definitely is an honor."

The 22-year-old BJQ is a native of the Scranton area and has been in the Navy just over four years. Rocuba joined the Navy to travel and saw some of the world while he was with HM-16, based in Norfolk, Va. He became an AMS because it was a challenge — "I wanted to see if I could do it."

In his off-duty time, Rocuba plays pool and is a member of NADC's military softball team.

The advice he gives his fellow shipmates is that they work hard and do their best in any endeavor they undertake.

Rocuba's future goals are to "make rate and make money — not necessarily in that order."



Photo by JO2 Todd Lufkin

FOOD SERVICE PERSONNEL EXCEL

Galley personnel Tom Riley, contractor, and MS2 Nick Wandishin, watch captain, are awarded first quarter Food Service Achiever Awards by CAPT Curtis Winters during a breakfast ceremony in the Galley, part of the Supply Division of the Engineering Support Group. Accepting the award for Riley is Cheryl Rothrock (left).

Women's history — a new perspective

By Robin Halperin

Women's history provides a new perspective of the past and enables us to face the future with a higher hope and anticipation. This is the reasoning behind the 1988 theme for Women's History Month (WHM): "Reclaiming the Past, Rewriting the Future."

NADC's Federal Women's Program (FWP) invites all employees to recognize the importance of Women's History. Throughout March there will be seminars, films, and trivia questions in The Log.

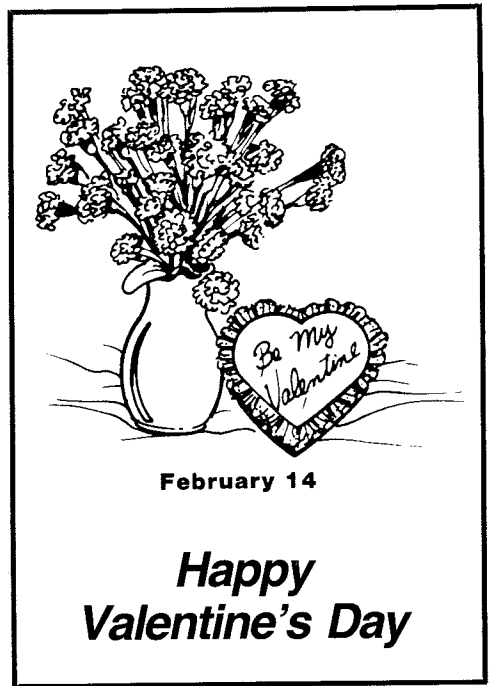
Just as traditional history focuses on

political, military and economic leaders and achievements, women's history celebrates past heroines and their impact on the lives of all women, men and children. Extensive research is underway and women's previously unknown or unrecognized contributions toward shaping our nation, our lives, and our culture have been brought to light. To handle the growing interest in this subject, the National History Project, a non-profit educational institution, was created to help provide information. Many colleges and universities now offer

degree programs in Women's Studies.

The first women's history week was celebrated in California in 1977. In 1979, the first Joint Congressional Resolution for National Women's History Week was sponsored by Senator Orrin Hatch and Representative Barbara Mikulski. The passage of Public Law 100-9 in 1987 officially establishes March as National Women's History Month.

If you are interested in contributing to the professional development of women, or joining the FWP, call Robin Halperin, extension 1366.



Rape: Don't be a victim

By Evelyn D. Harris

American Forces Information Service

The audience filled the Pentagon conference room and listened to the speaker discuss such defensive tactics as biting, eye gouging and blood-curdling screams.

The enemy these military and DoD civilian women were preparing to face does not wear the uniform of an unfriendly foreign power. The enemy in this case is the rapist.

According to a community education specialist with the city of Alexandria, Va., 90 percent of rapes are committed by an offender who is a member of the same race as his victim. More rapes occur in homes than in any other place. And experts believe that more than half the rape victims are at least acquainted with their assailants.

That is not to say that you can't be raped by a total stranger in a dark alley or an office building elevator. And although rape can often be prevented, that's not always the case. As Schell

said, "Never suggest to a rape survivor that she should have done 'x,' 'y' or 'z.' If she survived, she did the right thing."

Last year, according to the Justice Department, there were 84,000 attempted rapes, 48,000 completed rapes. That means a large number of women successfully fought off assailants. Although there is no guarantee that you can always protect yourself in every situation, you stand a better chance if you're prepared.

Here are some rape and crime prevention tips from experts:

- Rape experts classify it as a crime of violence, not sex. Anyone can be raped: you, your grandmother, or a child. But the most likely victim is the one who looks the most vulnerable, not necessarily the most attractive.
- Walk confidently, head up, shoulders back—look like you know where you're going. Be aware of your surroundings. The same grooming and bearing that earn you compliments as a "sharp troop" or a woman destined for success will discourage most rapists.

• Avoid alleys and dark, deserted areas. Walk close to the curb whenever possible—avoid walking right next to alleys, bushes or hidden doorways.

• If you're going to use a protective device, use a whistle or air horn. Fill an empty squeeze bottle, such as a plastic lemon, with ammonia. If you practice (using water) you can squirt up to 20 feet. This device should blind the rapist long enough for you to escape. Carry whichever device you choose: It's worthless in the bottom of your purse. Both experts discourage carrying Mace: it can be turned against you, and it often doesn't work.

• When driving, keep your doors locked and your windows rolled up high enough so no one can reach in. Keep your purse on the floor, not the car seat. If someone suspicious is following you, find another occupied car and "bump" it. This should discourage the potential attacker.

• Keep the doors and windows of your home locked.

• Be sensible in dealing with

acquaintances. Often, acquaintance rape can be foiled by making a really loud noise and doing something definite—like delivering a hard slap. According to an expert, many women in "date rape" situations report that they didn't know what was happening until it was too late—and that they were afraid to hurt or even embarrass the rapist. Afterwards, these women have difficulty trusting their own judgment.

• If you are raped, go to a hospital and get a rape exam. Don't bathe or even change clothes before you go to the hospital—you don't want to destroy the evidence.

• Finally, get counseling whether you think you need it or not. Even the most emotionally strong need counseling to successfully recover from rape. Some military installations and most communities have counselors trained to help you—use them.

March is national nutrition month

This year's theme is: "Choose Good Nutrition for Today and Tomorrow." Armed services nutrition experts are encouraging local installations to emphasize exercise as equally important to fitness as diet. They also recommend providing even more information on nutrition including suggestions like: If your child keeps begging you to buy junk food, try reading the ingredients list to him. It may prompt him to ask for a carrot, or present unbuttered popcorn with shakers of no-salt seasonings. Once considered an unhealthy food, unbuttered, unsalted popcorn is now promoted as a healthful snack.

At the Center, Anchorage Cafeteria Manager Jose Ferrer, points out that unless a food is advertised as having a sauce, gravy, or butter dressing, no added fat has been used in its cooking. Meats and veggies are either baked, boiled, broiled or steamed. Plain vegetables are cooked without salt, and the tuna was packed in water.

In response to findings relating excessive fat and salt consumption to heart disease and other health problems, the military is aiming to significantly reduce salt and limit fat in the diet to 35 percent of total calories.

How Much Is Too Much?

Most nutrition authorities recommend that the U.S. population as a whole reduce daily consumption of fat. On the average, Americans eat about 40 percent of their total calories as fat. Many authorities have suggested it is best to limit fat to no more than 30 to 35 percent of total calories. Some authorities suggest limiting saturated fatty acids to about a third of total fat.

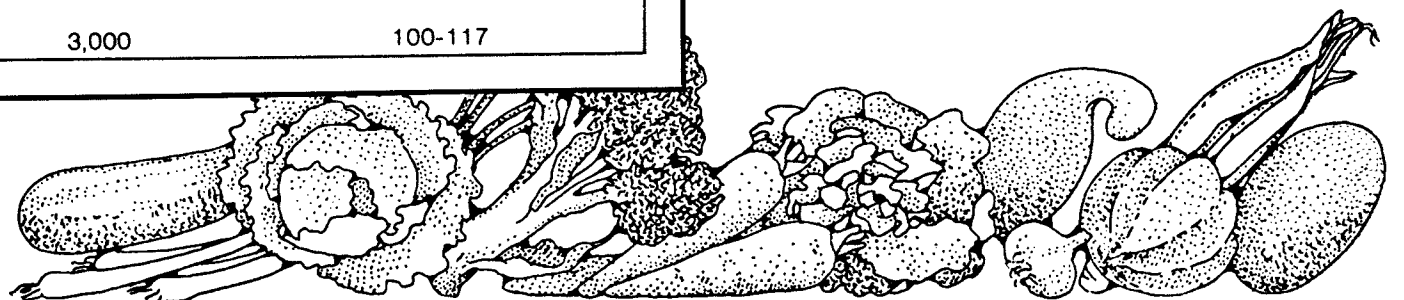
If you know how many calories are generally in your diet, look at the chart to the right for amounts of fat that equal 30 to 35 percent of calories. If you're not sure of your typical caloric intake, here's a rough guide: 2,000 calories is the average suggested for women age 23 to 50 and 2,700 calories is the average for men. Whether these levels are right for you depends on your age, body size, and level of activity. If, for example, you eat 2,000 calories a day, 67 to 78 grams of fat represent 30 to 35 percent of your total calories.

In a diet with daily calories of—	The grams of fat shown provide 30% to 35% of calories (grams)
1,500	50-58
2,000	67-78
2,500	83-97
3,000	100-117

10 top low-calorie, high-nutrient foods*

Food and portion size	Nutrients provided
Asparagus, 4 fresh spears	Vitamins A, B, B ₆ , B ₁₂ , and C; folic acid; magnesium; potassium
Broccoli, 1/2 cup fresh	Vitamins A, B, B ₆ , B ₁₂ , and C; folic acid; calcium; phosphorus; magnesium; iron; zinc; potassium
Brussels sprouts, 1/2 cup fresh	Vitamins B, B ₆ , and C; niacin; folic acid; phosphorus; magnesium; iron; potassium
Cantaloupe, 1/4 melon	Vitamins A, B, B ₆ , B ₁₂ , and C; niacin; phosphorus; magnesium; iron; sodium; potassium
Clams, 3 ounces canned	Vitamins B, B ₆ , B ₁₂ , and C; niacin; calcium; phosphorus; iron; zinc; sodium; potassium
Pepper, 1 medium	Vitamins A, B, and C; magnesium; iron; phosphorus
Sauerkraut, 1/2 cup	Vitamins B, and C; calcium; iron; sodium; potassium
Spinach, 1/2 cup cooked	Vitamins A, B, B ₆ , and C; folic acid; calcium; magnesium; iron; potassium
Tomato, 1 fresh medium	Vitamins A, B, and C; niacin; magnesium; iron; potassium
Wheat germ, 1 tablespoon	Vitamins B, and B ₆ ; folic acid; phosphorus; magnesium; iron; zinc

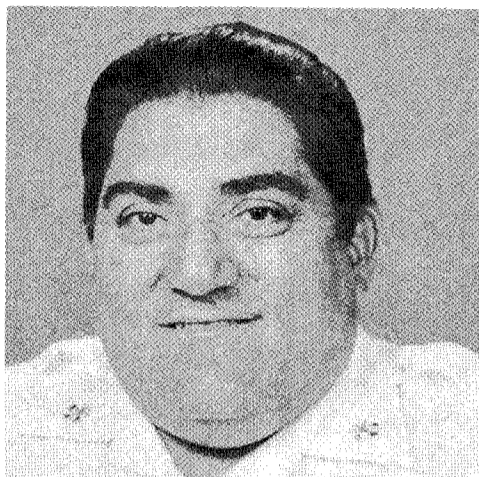
*45 calories or less per serving



VIEWPOINT

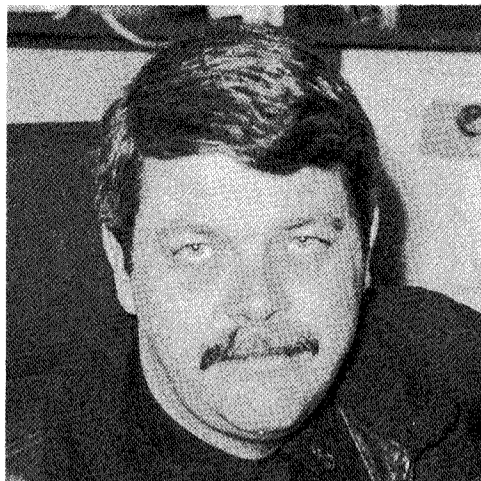
Question: How do you feel about the possibility of mandatory polygraph testing?

Photos by: JO2 Todd Lufkin
Prepared by: Mary Ann Brett



Vince Crusco

"In general, polygraph testing is inaccurate, and therefore, non-conclusive."



Joyce Shields

"Only if it could be proven nervousness doesn't affect the results of the test."



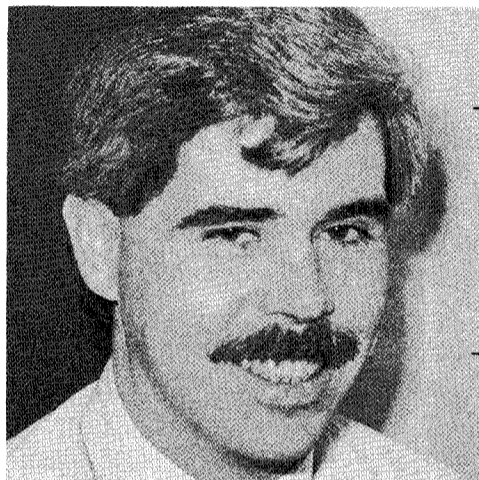
ATCS John Allen

"There are too many questions about the conclusiveness of polygraph tests to use the results as the only criteria for judging individuals."



Harriet Feder

"For valid reasons such as security on a military center, I am in favor of mandatory polygraph testing. It shouldn't be done for trivial matters, only for extremely top priority."



Christopher Kirk

"I have no problem with it for people with clearances. I hope the people using it realize it's not foolproof, and it doesn't hurt someone's career."

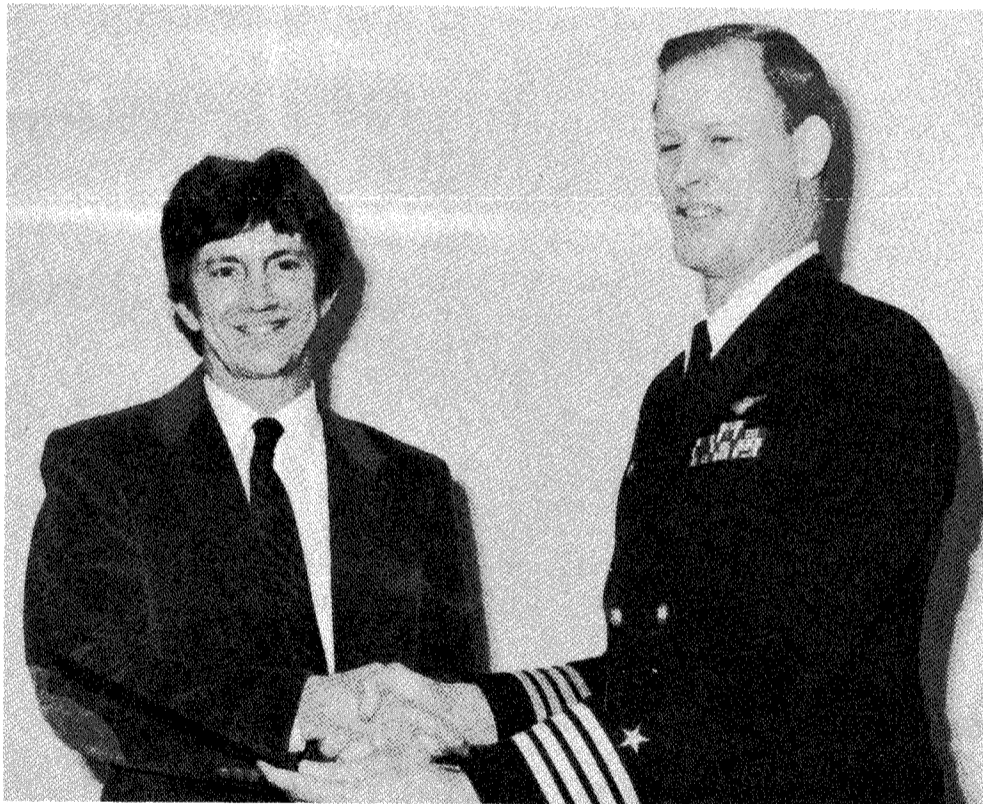


Photo by NADC Photo Lab

YOUNG RE-RECEIVES MANAGEMENT AWARD

NADC Civilian Personnel Officer Ronald P. Young recently received the 1987 Board of Governors Award for excellence from the Office of Civilian Personnel Management for overall superior leadership, professional competence and capacity to innovate as reported in the December REFLECTOR. The award ceremony was recreated when Center Commander CAPT. Curtis Winters presented Young with the award.

Welfare and Rec takes a cruise

W & R CRUISE—Nov. 27 to Dec. 4, 1988—Cruise from San Juan, Puerto Rico to the islands of St. Thomas (U.S. Virgin Islands), St. Maarten, Barbados and Martinique. Sail on the Carnival line cruise ship "Festivale." Enjoy 8 meals and snacks daily, 3 pools, nightly entertainment and much more. Cost is \$1,050 per person. This includes airfare, port tax and transfers to/from San Juan International airport. A deposit of \$25 is due by March 7th. For further information or reservations contact Margaret Vigelis in the Public Affairs Office extension 3067.



Al, the Cook.

WE WANT YOU!

By Dave Candelori

Why go off-Center to hold retirement luncheons and group events?! The "Crew's Rest" club, right here, is available for luncheons and group events — and we want your business.

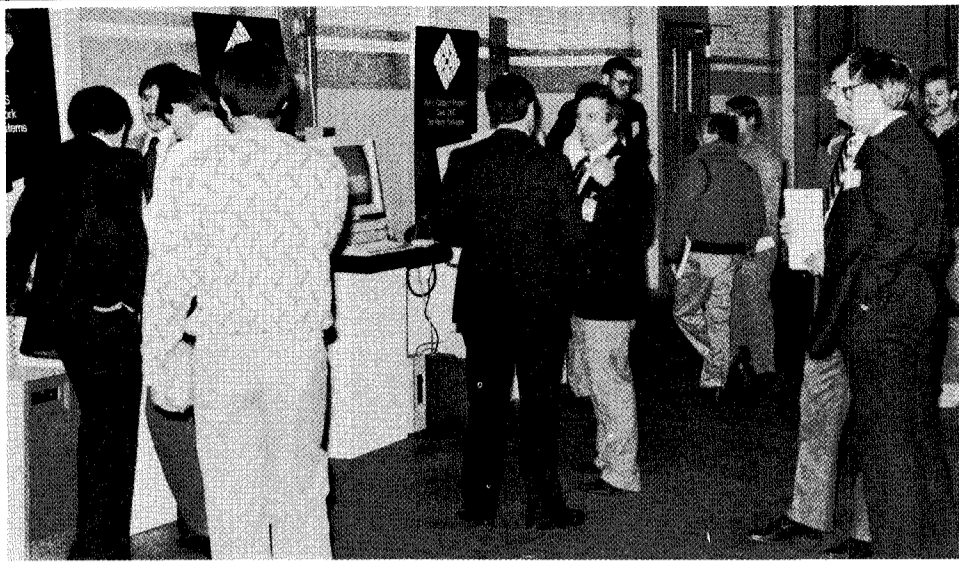
The club has been redecorated and displays a most pleasant atmosphere. Old stale managers were replaced with new fresh personnel. There is a new attitude from the bartender all the way through top level management.

We can coordinate any event you would like to host. Our cook Al (shown above) can prepare anything to your taste. Just call the club extension 7651, and ask for Dave. Let's have that party.

McErlean receives Air Force Award

Continued from Page 1

1987. Dr. McErlean provided vital leadership and superior managerial ability for the development, production, deployment and support of modern engines for the United States Air Force KC-135R, F-15, F-16, B-1B, and the Advanced Cruise Missile weapon systems. These engines were responsible for substantial increases in the mission capability of these vital weapons systems. His outstanding accomplishments and dedication reflect highest credit upon himself and the United States Air Force."



Photos by JO2 Todd Lufkin

SMALL BUSINESS DEMO HELD—

The U.S. Small Business Administration Breakout Procurement Center Representative, in cooperation with NADC, recently held a small business demonstration in Hangar No. 1. All employees were invited to see the latest hardware and software for use with the new NADC workstations.

Sylvest Management Systems, a Small Business distributor, brought to NADC technical representatives and equipment/software from: Sun Microsystems, Inc.; Cadre Technologies Inc.; General Digital Corporation; Sky Computers, Inc.; and Valid Logic Systems. Many NADC employees were able to receive new hardware and software demonstrations.

For more information, contact Vinny Rice, extension 1433.



Photo by NADC Photo Lab

URBAN LEAGUE IN THE SUBURBS — Robert Sorrell (second from left) of the Philadelphia Urban League speaks with NADC employees after his presentation entitled "We the Black People Present and Future." Sorrell visited the Center early in February to help kick off Black History Awareness Month.

'Toastmasters' not just for scientists and engineers

By Arthur Horbach

NADC Toastmasters consists of people who are interested in presenting themselves in the best possible way. Toastmasters can help you interview for a new position; prepare those KSA's in the NADC vacancy announcements; and argue your case when differences of opinion exist.

Although many of our members are scientists and engineers (S & E's) who are trying to improve their ability to make technical presentations, NADC Toastmasters is *not* just for S & E's. It is for anyone interested in improving public speaking skills, private speaking skills, or organizing thoughts. These occasions arise no matter what your job.

Recently, NADC Toastmasters provided guidance to the EEO Office in successfully conducting a panel discussion.

One International President of Toastmasters came from the Navy community — Helen Blanchard of the Naval Ocean Systems Center in San Diego — who is not a scientist or engineer. She credits part of her personal career achievements in administration to her Toastmasters experience.

You, too, can benefit from Toastmasters; whether in your work at NADC, your involvement in social/fraternal organizations, presenting yourself privately as in a job interview, or in special situations such as serving on a jury, or when the ability to present your ideas is not just a luxury but a moral obligation.

The group meets on the second and fourth Tuesday of each month at 1145. The meetings end no later than 1300 and usually take place in the Code 70 Conference Room unless otherwise announced.

If you are interested in joining, call Art Horbach, extension 1485 or Gordon Gerstenkorn, extension 7120.



Photo by NADC Photo Lab

ENGINEERING SUPPORT GROUP SAVES THE DAY — Public Works and Technical Services personnel pose with NASA astronaut after they worked through the night to fix the cold water environmental chamber compressor which caused cold water testing of NASA's shuttle suit to stop abruptly. Pictured are Bill McKenna, astronaut Dr. James Bagian, Walter Soroka, Bill Hogarth, and Matthew Sharkey.

Commander Salutes

Steve Russo, Jasper Caro, Maj. Leif. E. Wadelius, CF (Code 10): For significant contributions in support of the Naval Air Systems Command 14B53 Acoustic Part Task Trainer Program.

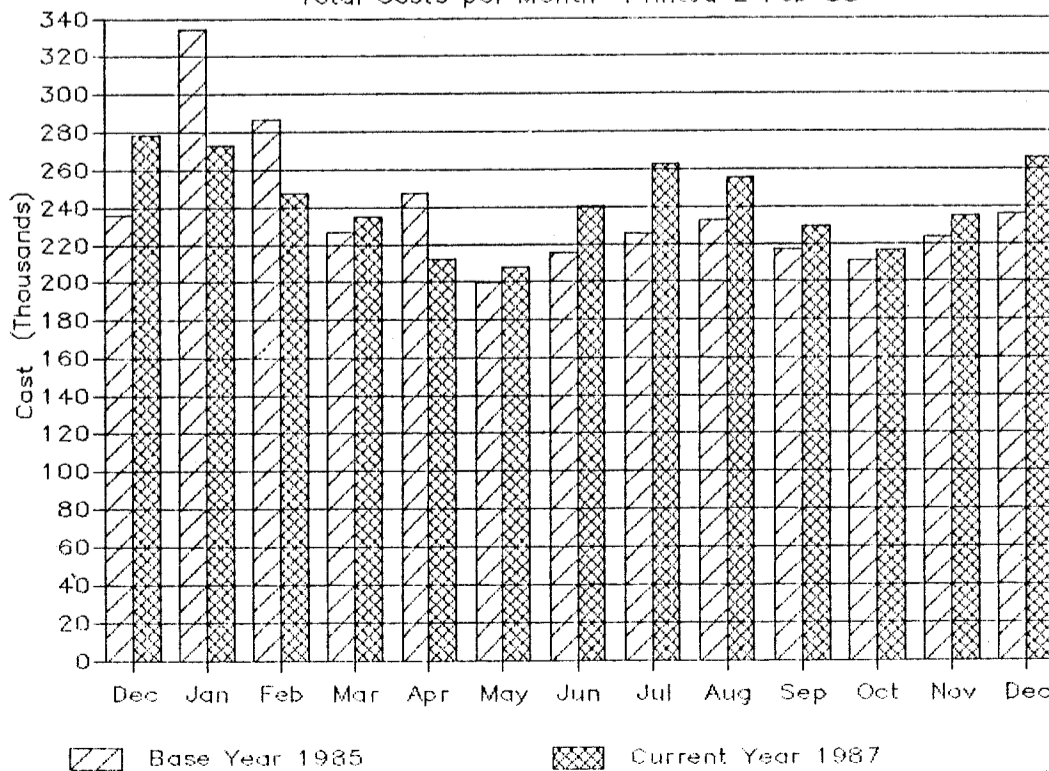
Michael Saitta (Code 30): For participation in preparing Force-Level Test Facilities Review.

Benson Polin (Code 20): For presenting a brief to the Naval Reserve Unit on Kalman filter theory.

Be a 'watt watcher' not a 'watt waster'

Energy Usage 1987

Total Costs per Month Printed 2 Feb 88



Energy Savers

Use Appliances Wisely

- Don't leave your appliances running when they're not in use. It's a total waste of energy. Remember to turn off your radio, TV, or record player when you leave the room.

- Use appliances wisely; use the one that takes the least amount of energy for the job. For example: toasting bread in the oven uses three times more energy than toasting it in a toaster.

- Don't use energy-consuming special features on your appliances if you have an alternative. For example, don't use the "instant-on" feature of your TV set. "Instant-on" sets, especially the tube types, use energy even when the screen is dark. Use the "vacation switch," if you have one, to eliminate this waste; plug the set into an outlet that is controlled by a wall switch; or have your TV service man install an additional on-off switch on the set itself or in the cord to the wall outlet.



NADC Reflector

Volume 33 Number 3

NAVAL AIR DEVELOPMENT CENTER, WARMINSTER PA.

March 1988

In This Issue:

Barnaby Award
Ph.D. for LCDR
DNL visits NADC
FOD Layout
NASA at NADC

NADC designs cockpit for the 21st century

By Mary Ann Brett

With each new invention, it seems the human imagination and its resulting technological feats are infinite. For example, current tactical aircraft are able to fly several times the speed of sound and able to continually process more information in a variety of areas. In fact, an aircraft's performance is currently limited by human capabilities and antiquated crew station design. Aircraft technology and aircrew workload have grown but crew stations and human physical capabilities have changed very little. We have literally built aircraft systems too difficult for a pilot to operate.

Recognized as a growing problem by the Tri-Service Joint Directors of Laboratories Panel on Cockpit Automation, this situation has prompted NADC to design an advanced technology crew station, the Advanced Technology Cockpit (ATC). Completely operable by the pilot, the ATC is planned for use in the Navy's second generation fighter and attack aircraft by about the year 2005.

Staffed by people from each technology area on Center, the ATC design team and program are managed through the Air Vehicle and Crew Systems Technology Directorate by Dr. Norman Warner who holds a Ph.D. in Human Factors. "This team," said Warner, "can think beyond traditional approaches and ask 'what if' questions." He said, "We need to consider man as a critical element in the design process. We need to design the entire system considering a pilot's limitations so his capabilities can be used to the fullest."

To do this, the design team is using a multi-discipline, systems approach which focuses the crew station design around the human by integrating, from the beginning all the relevant technologies including: threats/mission requirements, laser/protection,



Photo by NADC Photo Lab

Over the shoulder view of one version of the Advanced Technology Cockpit mock-up currently in development.

sensors, escape/recovery, life support, aerodynamics, environmental protection, software, computers, controls/displays, and human factors. Warner said, "Design-wise, this approach requires constant communication between technical experts and significantly more planning than the traditional design approach which allows one or two technologies to drive the design of the cockpit.

Now in the third of their four-phase program, the design team has defined requirements for the ATC by analyzing all foreseeable threats and has developed various concepts for integrating the technologies involved. The fourth phase will produce a functional design guideline — a specification including lessons learned, on how to design the optimal integrated cockpit.

The team is presently designing an

ATC prototype to be completed in 1991 for testing on the Center's Dynamic Flight Simulator. This prototype is used as a design aid and illustrates the relevant integration concepts. Some examples of these concepts include a reclining seat to improve the pilot's G-tolerance, flight controls and multi-function touch displays, replacing many dials and independent switches, were repositioned into the

(Continued on page 3)



Photo by NADC Photo Lab

NADC's Advanced Technology design team members: (l to r) John Nagurny, Norman Warner, Sam DelSerro, Doug Dawson, John Quartuccio, Peter Ayoub, Tom Zenobi, Chi Tung, Carl Schmiedekamp, Joan Marano-Gayco, Dave Naber, Phyllis Morway, Gloria Chisum, Ron Believeall, Stephanie Riddle, Joe Notaro, Bruce Waeber, Jim Brindle, Dave Rose. (Not pictured) George Kydd, Greg Reh, Sam Greenhalgh, Ed Deska, Jim McNamara, Phil Whitley, Nick Hodorovich.

DeLuccia receives 13th Barnaby award

By Mary Ann Brett

Dr. John DeLuccia of the Aerospace Materials Division of the Air Vehicle and Crew Systems Technology Directorate recently received the 13th annual Ralph S. Barnaby Award.

During a luncheon ceremony sponsored by the Naval Civilian Managers Association, DeLuccia was touted as "a particularly effective manager who encourages and challenges personnel in his division to seek out and solve the most difficult problems which will confront Naval Air platforms in the future."

"Surprised, pleased and honored" were among DeLuccia's feelings upon receiving the award. "It's nice to be appreciated as a manager as well as a technologist," he said. DeLuccia attributes his managerial success to

the philosophy of "management by walking around" which he interprets as "putting my nose prominently into my employees' business."

DeLuccia joins the ranks of such previous Barnaby award recipients as Dr. Gloria Chisum, Jerry Guarini, and Ronald Young.

Award namesake, CAPT Barnaby, served as NADC's first Center Commander. After retiring from the Navy, Barnaby served on the staff of the Franklin Institute until his death in 1986. Established on April 24, 1975, the Barnaby Award formally recognizes the outstanding contribution and distinguished service by an individual to the Center and the Navy at large. The award stresses the administrative and managerial aspects of the contribution.

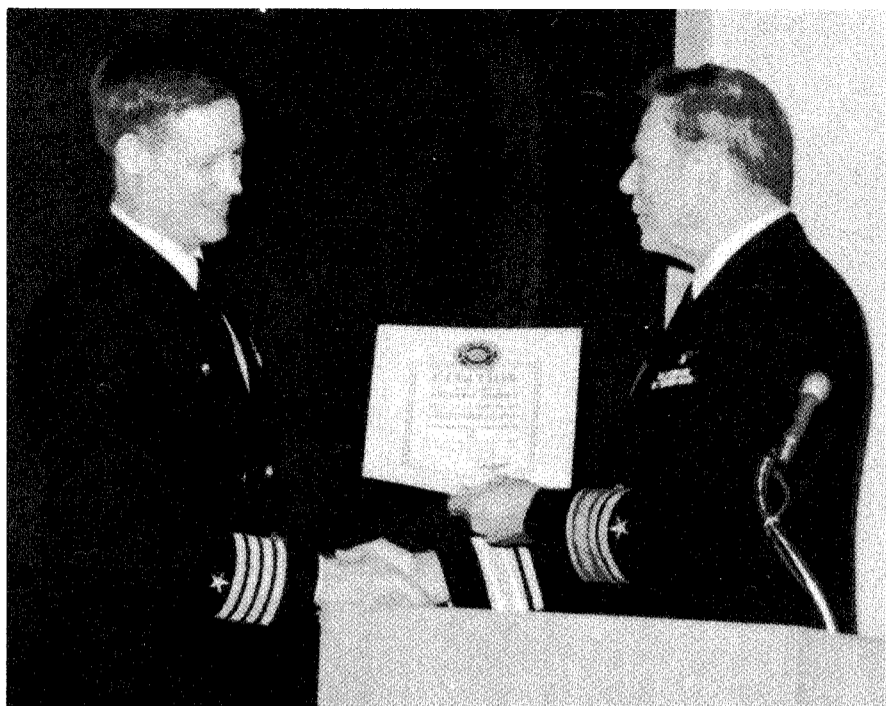


Photo by NADC Lab

AVIATION SAFETY AWARD FOR NADC —
Rear Admiral William J. Finneran, Deputy Commander of the Naval Air Systems Command presented Center Commander CAPT Curtis Winters with the 1987 Aviation Safety Award. This is the 13th consecutive year of accident-free flying at NADC. ADM Finneran addressed military aviation and maintenance and civilian safety personnel in the Center Auditorium.



Photo by NADC Photo Lab

CAPT Curtis J. Winters presents Barnaby Award plaque to Dr. John DeLuccia during luncheon ceremony.

Ball replaces SECNAV Webb

By JO2 Todd Lufkin

Citing his displeasure over Navy Department budgetary cuts and policy matters mandated by the Department of Defense, James H. Webb, Jr., resigned as the Secretary of the Navy. Webb had served in that position since April 10, 1987 and plans to return to writing.

President Ronald Reagan has nominated William L. Ball, III to be Webb's successor as SECNAV.

Ball, a native of Spartanburg, S.C., received his Bachelor's in Industrial Management from Georgia Tech in 1969. Upon graduation, he was commissioned an officer in the regular Navy and served three years on the USS SELLERS (DDG-11) and three years in Washington, D.C. at the Navy Department.

Between 1975 and 1985, Ball served as a staff assistant under Senator Herman Talmadge of Georgia and later Senator John Tower of Texas.

In 1985, Ball was appointed Assistant Secretary of State for Legislative and Intergovernmental Affairs. In 1986, he assumed the position of Assistant to the President for Legislative Affairs.

The 39-year-old Ball is married to the former Patricia Adkins of Memphis, TN. They have two daughters.

Spring: March 20
Passover: April 2
Easter: April 3



If the SOC Fits

By Robert Janes

Not long ago, one of our SES members called to get my advice on a Standards of Conduct (SOC) question. An old friend of his now employed by a major defense contractor had invited him to attend a major sporting event in his company's box. The company is a prominent one, with whom the NADC employee had a lot of business. Since the company was paying for this, it would have been an improper gratuity for the NADC employee to accept a free ticket to this game. He recognized this, and was prepared to pay the \$40 face value for the ticket. He still had some reservations, however, and before going, and taking a chance of being seen in the company's box on nationwide TV, he wanted to get a legal opinion as to whether it would be appropriate for him to do so.

This was a tough question, and I ended up discussing it with the Navy's primary SOC attorney, who in turn spoke to the DoD SOC lawyers about it.

One issue we considered was whether \$40 was really an adequate price for the ticket, and each of us, the SES member included, had a suspicion that the intrinsic value of the ticket was much greater than its stated price. Even assuming the \$40 was a fair price, we concluded it would still be inappropriate for him to attend the game. For one, he would have been taking advantage of something not available to the general public, and thus it was arguably a gratuity no matter what amount he paid for the ticket. A more important consideration, though, was the gentleman's stature. Because of his high grade and influential position, the general consensus was that it would be especially inappropriate for him to attend. As is often the case with the SOC, this decision was based on the appearance his attendance would create. It just would not have looked good, particularly to competitors of the company involved.



Reflector

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Commander, NADC CAPT Curtis J. Winters
Technical Director Guy C. Dilworth, Jr.
Public Affairs Officer and Editor James S. Kingston
Associate Editor Mary Ann Brett
Assistant Editor JO2 Todd Lufkin

LCDR Eyraud earns Ph.D. in Psychology



Photo by NADC Photo Lab

"Doctor" Micheline Eyraud receives congratulations from Center Commander CAPT Curtis J. Winters for her scholastic accomplishment.

By JO2 Todd Lufkin

She modestly views herself as "just an officer with a doctorate." However, she becomes the fifth female and the seventh officer at the Naval Air Development Center to achieve a doctorate. She is LCDR Micheline Eyraud of the Human Factors Technology Development Branch of the Air Vehicle and Crew Systems Technology Department.

Eyraud, who has been in the Navy since 1977, said "My father was a civilian employee for the Navy for 20 years. Although I don't have 'gray paint' in my blood, I was drawn to the service because the work sounded interesting."

A native of San Francisco, Eyraud received her Bachelor's in Psychology from the University of San Francisco in 1974, and then her Master's in Psychology from California State University, Fullerton in 1978. "I have always been interested in people's behavior, which is why I chose to major in that particular field," she explained. In 1982, she received a second Master's from Troy State University in management — "this was in response to working in the Navy. I wanted to attain the necessary managerial skills."

From 1984 to 1986, Eyraud worked full-time on her doctorate. "It was all pretty difficult," she explained, "especially at the beginning when you look at everything that's ahead of you. But you just have to tell yourself 'take one thing at a time and do it.'"

Her philosophy is to work as hard as you can—the more education you get, the better you can perform your job.

On Veteran's Day, 1987 she successfully defended her dissertation, entitled "The Implications of Varying Levels of Task Automation on the Workload." "There was a disbelief that I'd actually gotten this far and had done what I set out to do," Eyraud stated, "it was a relief to be finished."

"After I finally finished, it was a big let-down," she stated, "coupled with a sense of pride and accomplishment."

For now, LCDR Eyraud is taking a breather in her educational pursuit and has settled back into her daily routine at NADC where she is the Human Factors Engineering Program Manager responsible for managing exploratory and advanced development research efforts. But her eyes light up at the prospect of perhaps attending law school.

Director of Navy Labs "meets the challenge"



Photo by NADC Photo Lab

DNL Jerry Reed (right) receives hands-on Advanced Fluidic Flight Control Program/T2 brief from program manager David Keyser.

Director of Navy Laboratories Jerry L. Reed recently paid his first visit to NADC. Reed was officially welcomed during a breakfast meeting attended by most senior managers at the Center.

There he entertained audience questions and made clear that his goal for Navy R&D labs as well as himself is to "meet the challenges" of maintaining

technical excellence in these austere budget times.

During Reed's two-day visit, he received an indepth overview of Center operations, tours, and technical briefings including anti-submarine warfare, acoustic concepts, radars, TACAIR initiatives, fiber optics, helmet-mounted displays and battleforce programs.

ATC designed at NADC

(Continued from page 1)

arm rests for easy access. Helmet-mounted displays and a voice recognition/synthesis system to provide capabilities such as off boresight (greater than 20 degrees) targeting were also used. This prototype will also serve other Center aircraft programs as a testbed for crew station integration.

Warner explained that enclosing the

cockpit in a capsule was considered the best of various approaches to handle all the threats foreseeable in the year 2005. The capsule, with its light weight integrated life support system, will provide environmental protection as well as allowing the pilot to divest himself of some of his life support equipment and increasing his chances of surviving in combat. Protection from lasers is provided by a combination helmet visor and canopy. An integrated computer/sensor/display suite enables the pilot to receive timely pictorial information. Warner noted the team's initial analyses showed the capsule imposing a modest weight penalty, more than compensated for in advantages.

Aspects of the capsule's integration into an aircraft, such as propulsion to sever the capsule from the aircraft and a parachute for capsule recovery are being designed by the Naval Weapons Center. The actual severance system is being designed by the Naval Ordnance Station.

Warner, who has worked at the Center for eight years, acknowledged that change from tradition is always difficult; but, faster and more complicated systems are not effective if the pilot is unable to operate them.

Sailor Of The Year Named "Person Of The Day"

If making NADC Sailor of the Year for 1987 wasn't enough of an honor, AW1 Richard Hooper was recently selected as Doylestown-based radio station WBUX "Person of the Day." Center Commander CAPT Curtis J. Winters and WBUX representative present Hooper with a plaque and gift certificate good for a lobster dinner for two at a Seafood Shanty restaurant.

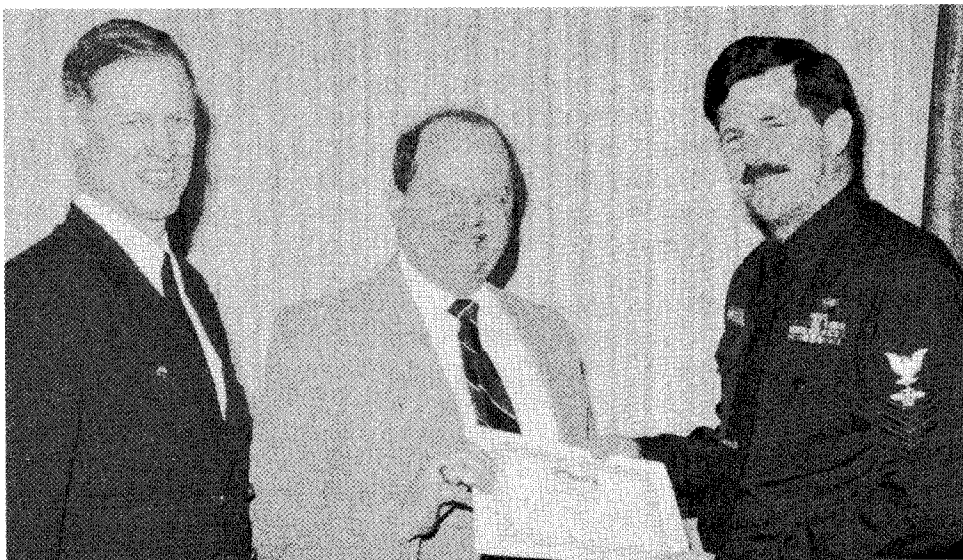


Photo by NADC Lab

FOD...

By the dawn's early light

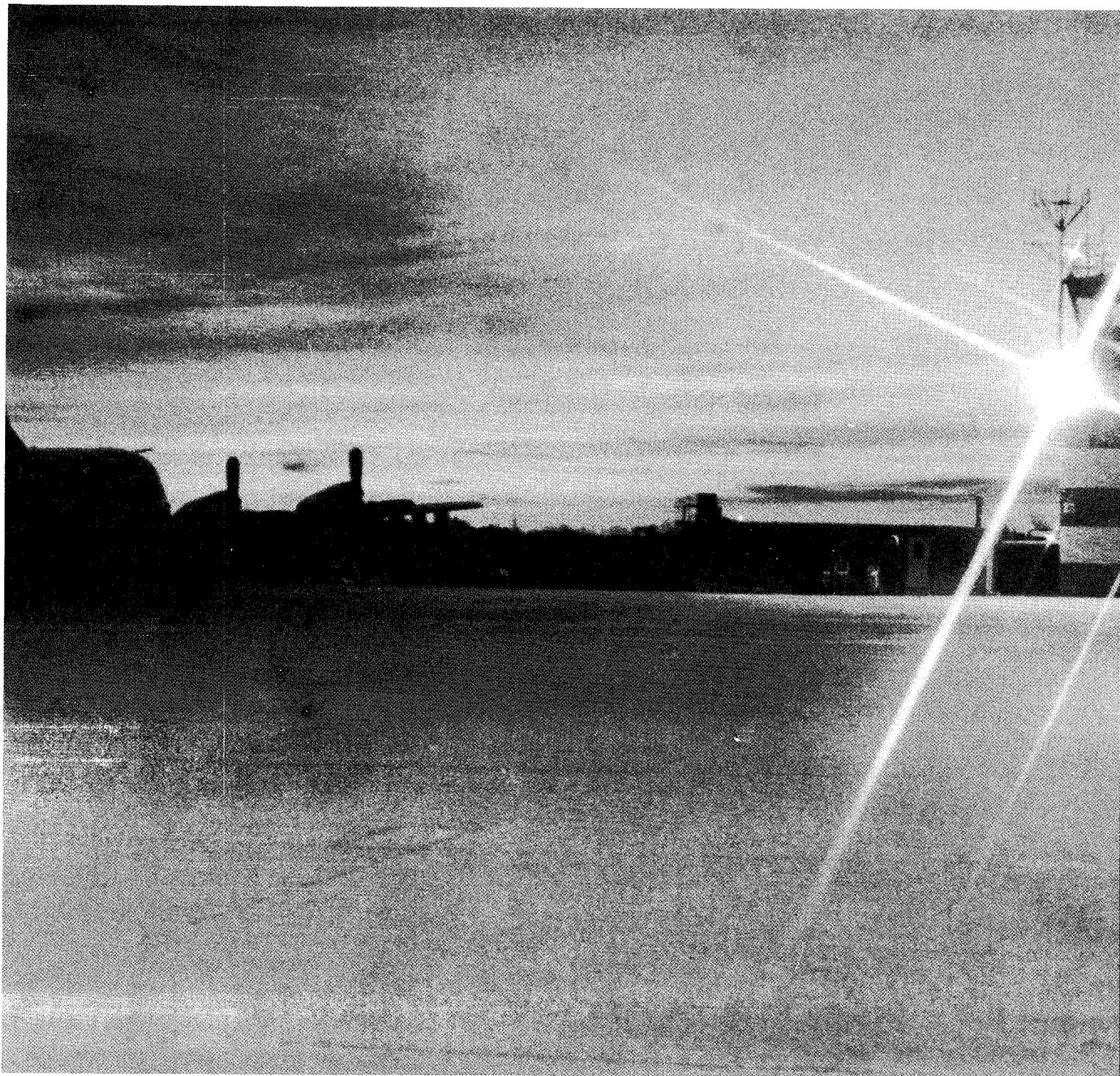
By Jim Kingston

Every morning, at daybreak, sailors from the Center's Aircraft Department line up and walk the entire length of the airfield picking up every foreign object they find.

The function is known as a FOD Walkdown. FOD is an acronym for Foreign Object Damage and the purpose is to be certain that the area is free of loose bits of debris, stones, bottle caps, paper...anything that could be caught up in jet intakes or blown about by propwash and cause damage to aircraft or injury to personnel.

Usually these sailors go about performing this important mission with no fanfare and little recognition other than knowing they have made their area safer for all.

Recently, however, Clarence Watson of the NADC photo lab was there by the dawn's early light and captured the FOD Walkdown crew on film.

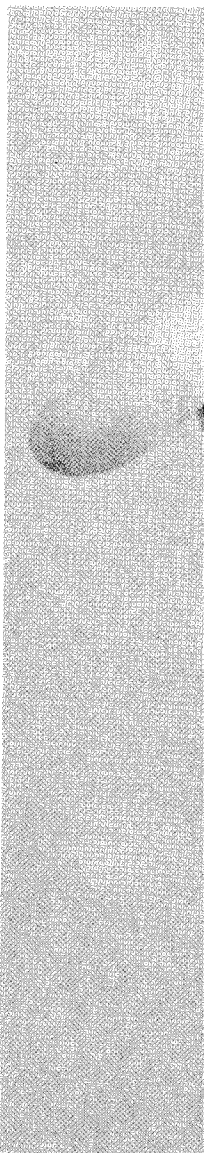


Tower lights making a star pattern, a P-3 little more than a shadow greet the FOD Walkdown crew this morning.

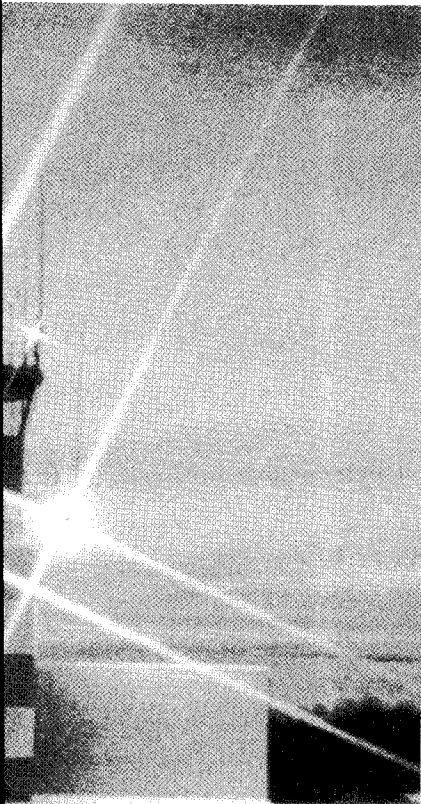


With scarcely enough light by which to see, the FOD Walkdown sailors are silhouetted against the breaking dawn.

Photos by Clarence Watson, NADC Photo Lab



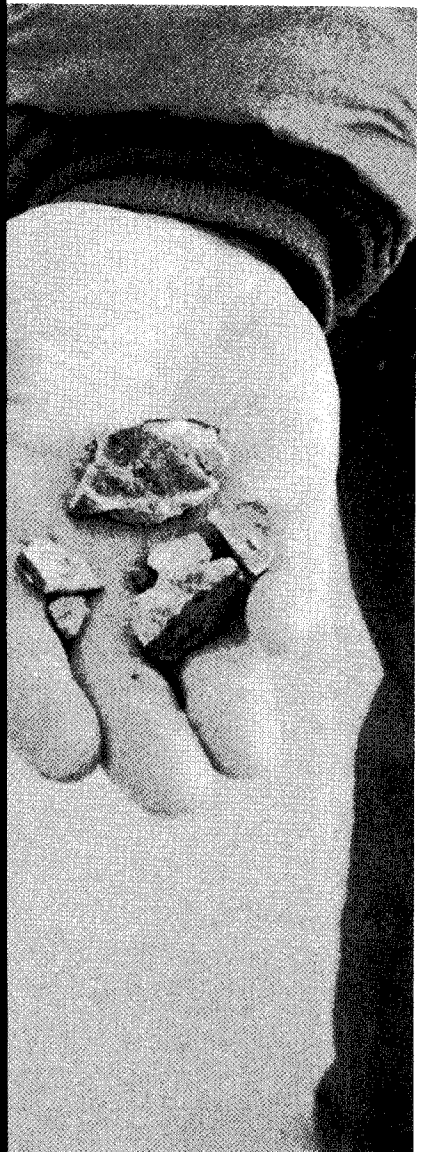
The payoff: a ha



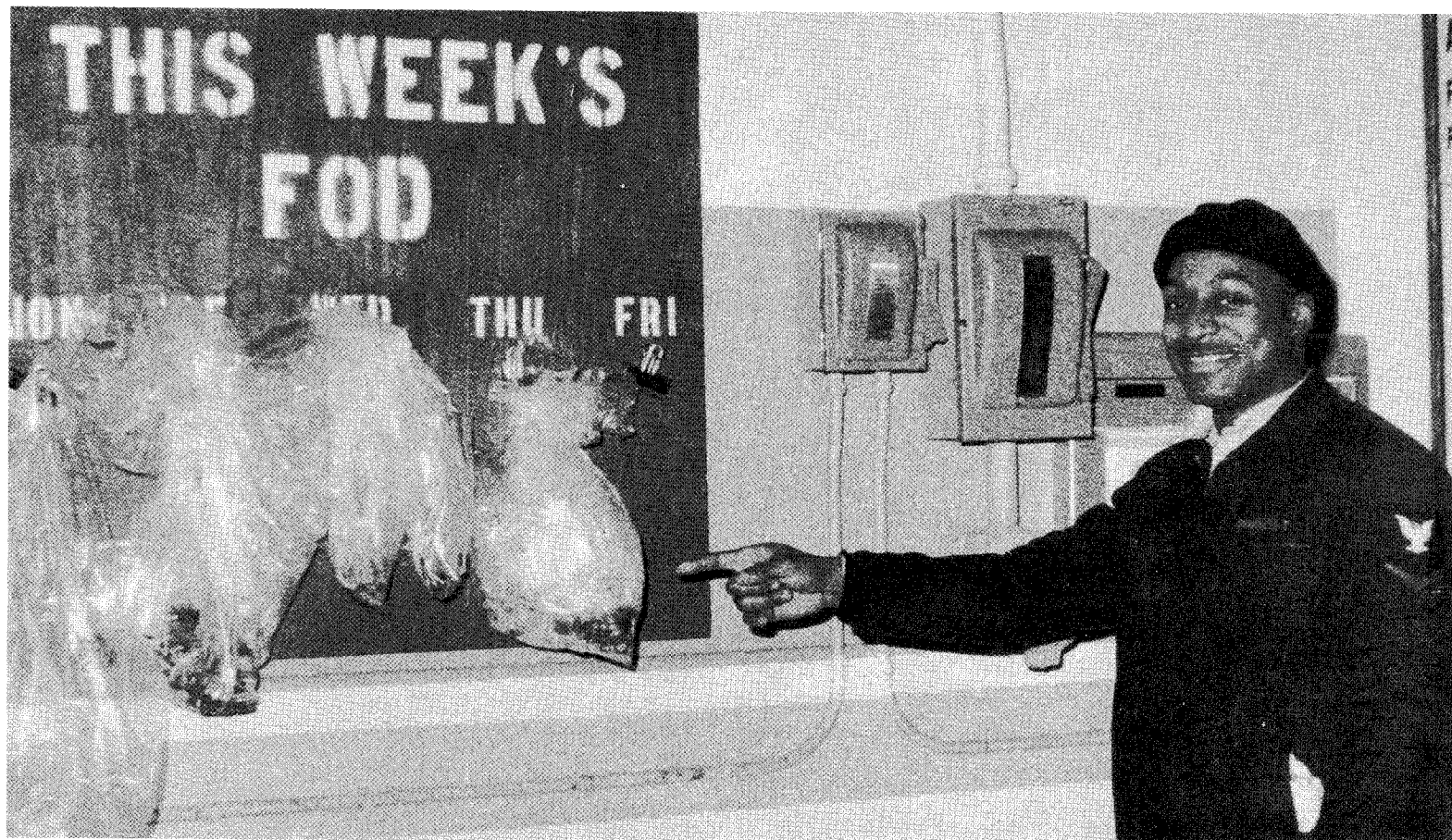
As the sun breaks the horizon, the sailors cast long shadows and some bend down to pick up debris.



Under and around parked aircraft, the FOD crew scours ever inch of the area.



of stones.



Like some strange Christmas stocking, each day's FOD collection bag is hung with care as AE3 Tyrone L. Shamwell points out.

Registration is Vital

Public Works = Professional Jobs

By Mary Ann Brett

In addition to the skilled tradespeople working in the diverse Engineering Support Group, a wealth of registered architects and engineers (A/E) in the Public Works and Construction Contracts offices affords the Center the benefits of professional A&E services. "Without this level of expertise," said Public Works Officer LCDR Earl Smith, "the Naval Facilities Engineering Command (NAVFAC) would never allow us to locally execute the more than sixty design and engineering services contracts we do each year."

He explained that as varied as the list of modern technological achievements is, nearly all have a common ground — they were either designed or put into use by engineers. Engineers provide the products and processes which make life easier and are responsible for their reliability. "This responsibility," Smith said, "makes Professional Engineer (PE) registration vital to our profession."

He commented that in the late 1800's, when America and Europe entered the technical era, professionals found it necessary to further their education and training to keep pace with the tremendous technological advances. Professional associations began to emerge, prescribing certain knowledge, experience and codes of conduct. Not long after, these societies adopted

registration processes to identify their members.

Originally intended to protect the public from shoddy and dangerous workmanship, registration objectives now address public health, safety and welfare. "PE registration signifies professionalism," emphasized Smith, "people can be assured the registered professional has met high education and experience standards."

Smith described registration as a

rigorous four-step process: first, an approved four-year engineering program; second, the Engineer-in-Training (EIT) exam dealing with basic engineering concepts. After passing this exam, the applicant enters an internship, when he or she must complete an additional four years of experience approved by the state board. Finally, the Principles and Practice of Engineering Exam must be passed. If so, the applicant is state board approved

and must agree to a code of conduct enforceable by law.

"Only those properly registered can use the title 'professional engineer,'" said Smith. "Anyone else publicly identifying himself as such violates the law. I'm proud to say that nearly 20 of our employees have attained this professional status."

(Editor's Note: LCDR Earl Smith contributed information for this article.)



The professional staff of the Public Works Division proudly display registration certificates on their wall of excellence! Pictured left to right with credentials and state of registration: LCDR Earl L. Smith, Jr. PE, CA; Tom Ames, PE, PA; Bill Hodgkiss, RLS, PA; Tony Murawski, PE, PA; Nelson Bruce, RA, PA; Carlo Allodoli, EIT, PA; John Kelly, EIT, PA; Martin McNamara, PE, PA; LT George Papaioanou, PE, PA; Dick Childers, PE, PA; Chuck More, PE, PA; Steve Barrell, PE, PA; Dave Rohrer, PE, CA; LCDR Dennis Hess, PE, MN; LT Mike Redman, PE, MD. (Not shown) Vince Martucci, PE, PA; Steve Lyman, EIT, PA; Mike Blank, PE, DC, Wisconsin; Joe Clay, PE, PA.

Commander Salutes

Ken Clegg, Chairman (Code 80), Carol Beckett, (Code 01), Philip Horne (Code 02), Kathleen McPeak (Code 03), Robert Angiolillo, Kimberly Fields (Code 04), Harold Wyzanski, Lewis Wertley (Code 05), Sharon Bruno (Code 09), Dorothy Grygiel (Code 10), James Davis (Code 20), Velia Nicolai (Code 30), Fredrick Weist (Code 40), Jean Drelick, Florence Grochowski (Code 50), Bernard Dupee, Susan Letcher (Code 60), Robert Piras (Code 70), Andrew Schwartz, Ann Kaercher, Thomas Ames, Thomas Reiter (Code 80), ATCS Wayne Slagle, Lt. M. McLaughlin (Code 90): For cooperation and tireless efforts displayed during the 1988 Combined Federal Campaign causing it to be a success.

LCDR Timothy Singer (Code 60): For enthusiastic briefings and demos to the Crew Systems Division of the Naval Air Systems Command.

LCDR Timothy Singer (Code 60): For outstanding presentation during Patrol Squadron 66 Safety Standdown.

Richard Sheklin, Ronald McDonagh, Joseph Sabatini, Paul Terpeluk, Jack Wilcox, Ferdinand Bonigut (Code 10): For outstanding efforts in producing the Naval Air Systems Command's First Computer Resources Life Cycle Management plan in conjunction with the CV Helo Program.

W. Herbert Heffner (Code 20), Kenneth Foulke (Code 50): For briefing to the Naval Intelligence Support Center on Radar Cross Section Reduction/Analysis.

Richard Coughlan, Charles Pizzichello, Edward Cotilla, William Graff (Code 50), David Hammond (Code 10), Thomas Karr, Mark Drager (Code 80): For valuable support during preparation of the Expendable Reliable Acoustic Path Sonobuoy Program certification plan.

LCDR Peter Letarte (Code 60): For a successful presentation on Aerospace Trauma to Warminster General Hospital.

Bill Angermann (Code 20): For technical expertise provided to the Navy Standard Tow Target System Program.

Charles Hegedus, Dr. John DeLuccia (Code 60): For assistance provided the NAESU Detachment, Cecil Field, during the Corrosion/Maintenance Technology Workshop.

Morton Metersky, CDR John Tobia (Code 30), Kathleen Gause (Code 03), LCDR Timothy Singer (Code 60): For dedication and professionalism in supporting the Battle Force Systems Department "Fighting Prejudice through Education" program.

Promotions

Claire Bayer, Reynolds Brooks, William Christy, Richard Dalrymple, Guy Fenerty, Kathleen Gause, Nancy Holden, Ann Kaercher, Susan Letcher, Paul Lipacis, Carol Majer, Philip Morrissey, Robert Pullen, Donald Rothrock, Keith Wills, Craig Wood.

Security Reminder

A pass or badge must be worn/displayed on the upper part of the body by all persons on board the Center. Every employee should challenge any person who is not displaying identification.

Mixed Bowling News

By Tom Reiter

We're midway into the second half and most teams in both divisions are still within striking distance. One surprise is the early emergence of **Carla Mackey's** Bullshooters. They've snuck into a first place tie with some strong bowling by **Steve Spadafora** (232/554) and **Eileen Cunnane** (192/476). Other highlights include a pair of 246 games, first by **Bonnie Leidy**, then by **Lorrie Dunn**; **Anke Illmer's** 603 series and 175 average (the girls are sizzling), **Mark Lind's** 259, **Rick Yeager's** 258, **Jeff Irvin's** 251, and **Mike Lizbinski's** 250. We'll all miss **Lorrie Dunn**, who along with her smiling face, was one of our toughest bowlers. Lorrie was

transferred to Washington and on her last league night, in between cakes, snacks, pepperoni, pickles, and assorted beverages, still managed to roll a 585 series including her 246 in the last game.

Our banquet plans are starting to take shape. We'll party this year on the 17th of June at Blair Mill Inn. I'm sure the vice-president, **Jack Eyth**, will come up with some surprises. The music should be exciting, we've contracted with Sound Decisions who are well known for putting on a great night of lights, games, and a rocking sound system. All bowlers and their guests should get ready and keep their third Friday night in June open for action.

Welfare and Rec —TRIPS—

Saturday, 16 April 1988

Enjoy shopping at the Vanity Fair Outlets, Reading, PA. Then relax over dinner at the Hitching Post Restaurant. Cost of trip, including dinner, is \$24 per person. Leave NADC 8:00 AM - return NADC 7:30 PM.

Saturday, 18 June 1988

We're off to Washington, DC. We'll see the U.S. Capitol Building, the National Geographic Explorers Hall, the Curtis-Lee House, Arlington National Cemetery, then dinner at the Horn and Horn Restaurant. Cost of trip, including dinner, is \$28 per person. Leave NADC 8:00 AM - return NADC 11:00 PM

Call Margaret Vigelis, 441-3067 for reservations and information. All seats on a first come basis.

NASA shuttles to NADC for cold water test

By JO2 Todd Lufkin

The Naval Air Development Center is working with the National Aeronautics and Space Administration (NASA) to improve safety devices on future shuttle flights.

One such device being tested at NADC by the Environmental Physiological Laboratory, Environmental Effects Branch of the Air Vehicle and Crew Systems Technology Department is a flight suit designed to provide protection against cold and heat. The suit is intended to be worn by astronauts during lift-off and landing.

According to Jonathan Kaufman, head of the NADC team, one of NASA's medical directors contacted the Center in September, 1986 with questions about an NADC report on the evaluation of a Navy exposure suit. NASA at this time was in the process of developing a new integrated flight suit, providing altitude and thermal protection for the space shuttle crews. A protective garment had earlier been worn during the initial space shuttle launches but with time was phased out.

NASA was informed that NADC's environmental chambers were able to test any new garment for hot and cold thermal capabilities, while the cold water test facility could simulate wind, spray and waves.

In March 1987, Dr. Jim Bagian, an astronaut from Philadelphia, asked for more information on the Center's facility. As a result, NASA asked NADC to develop tests that would examine heat stress and cold water immersion protection.

The heat stress testing began in August, 1987. The subjects wore the suit in an 81° F. temperature for as long as eight hours at a time to simulate the pre-launch cabin environment. Kaufman stated space agency personnel "liked what they saw" when results concluded "there would be no excessive thermal load on the crew."

In January of this year the suit began cold water immersion testing. These

tests attempt to simulate realistic survival scenarios where an emergency arises and the crew is separated from the shuttle and exposed to cold water.

Cold water immersion test subjects, including Bagian, have been asked to endure up to 6 hours of immersion in the water and 24 hours in a raft. Conditions within the chamber are 40° F. water temperature and 42° F. air temperature.

Kaufman concluded these tests should be completed this spring and the garment will be certified for use on shuttle flights later this year.

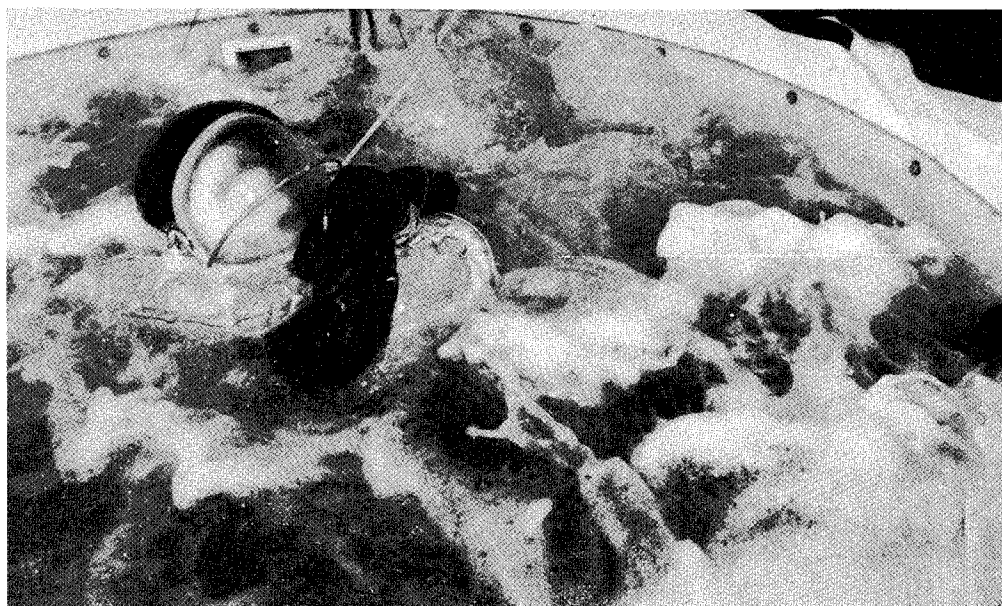
The cold water test chamber is 12' x 12' x 10' and is capable of temperature extremes of -60°F to +160°F.

Kaufman is a graduate of Drexel University with his Master's in biomedical engineering and is currently a Ph.D. candidate at the University of Pennsylvania. Other members of his NADC test team are Kathy Dejneka, electronic engineer and Walter Soroka, electronic technician, with assistance from the Biomedical Support Branch Code 6025.

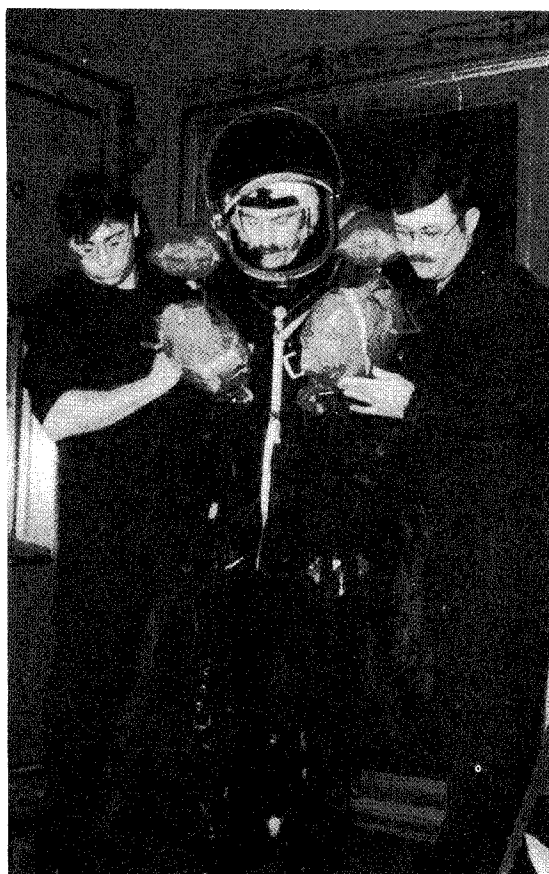


Jonathan Kaufman gives last minute instructions as Dr. Bagian enters the cold water.

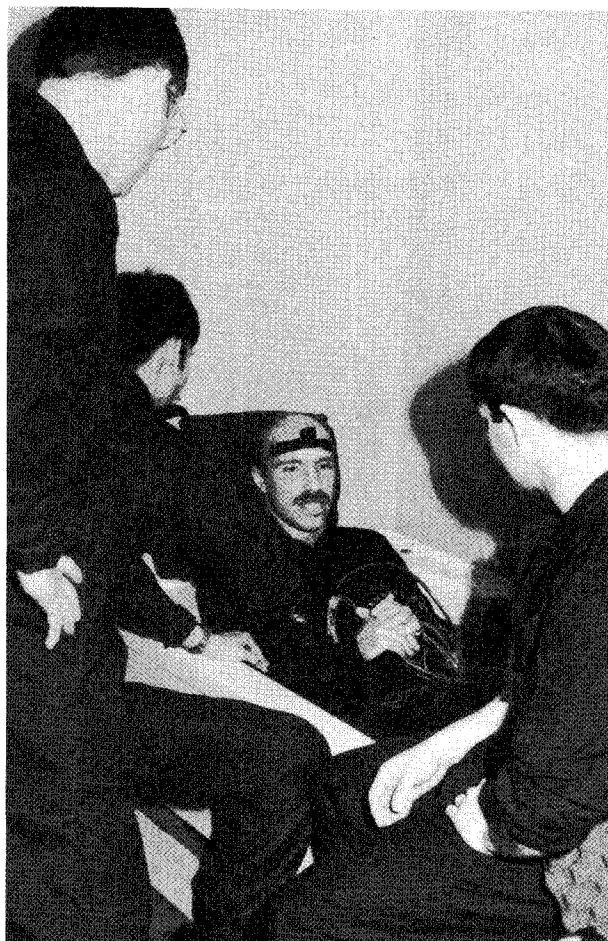
Photos by Clarence Watson and James Moore



At the height of the storm — Dr. Bagian in the cold water tank.



HM3 Elvin Santiago and PRC Michael Patterson aid Dr. Bagian as he exits the chamber at the end of a test.



HM2 Mark Butler, PRC Michael Patterson and HM3 Somchai Williams discuss the test with Dr. Bagian during the rewarming.



Prior to a run, Katherine Dejneka, Jonathan Kaufman and LCDR Peter Letarte take a break with Dr. Bagian.

Food Services Board serves dual role

By Mary Ann Brett

The Center's Food Services Board (FSB) issues and administers the contract which provides employees with nutritious and economical food service. FSB responsibilities include developing policies to ensure the best possible service and acting as liaison between Center personnel and Service America, the present food service contractor.

The Board meets twice a month to discuss various topics such as special meal offerings and physical conditions in both the cafeteria and dining room.

Board membership is voluntary and approved by the Center Commander. Names/phone numbers of members are posted at the entrance to the Anchorage for your information.

Bon appetit!



Photo by NADC Photo Lab

Current Food Service Board members Robert Clegg, Dottie Kirkpatrick, Frank Drummond, Alexis DeLeon, Chairman Aris Pasles, Marcia Weisberg, Richard Lipperini and Don Morway gathered beneath newly-mounted Anchorage sign.

Bicycling: fun way to fitness

By Evelyn D. Harris

Most people can remember the thrill they felt as children when they first learned to ride a two-wheeler — and the fun of being able to get from here to there fast. For adults, bicycling is still a fun way to get from here to there.

Bicycling is also great aerobic exercise. However, there are a few things to consider first that will increase enjoyment of the sport and prevent unnecessary injury.

Most important: Invest in a good bicycle. You don't need a really expensive racing model, but you also don't want a cheap one that's going to fall apart or otherwise spoil your fun. Make sure the bike fits properly. One way to check that is to straddle the bike with your feet flat on the ground. There should be one or two inches clearance between your groin and the top tube. If you don't know much about bikes, go shopping with a friend who does or go to a trustworthy dealer.

After you've got a good bike, here are some tips from experts:

- Wear a hard-shelled helmet. Every year, there are from 900 to 1,100 bicycle fatalities — 75 percent of which involve head injuries.
- You'll be more comfortable in the right clothing. Bicycle shorts have padding in the seat and are cut to reduce chafing on the thighs. People who ride long distances also wear gloves.
- Toe clips and straps will greatly increase your efficiency.
- Ride with a friend whose pace is compatible with yours.
- Don't try to ride in a high gear when you first start out. Start in a low enough gear so you can pedal comfortably. As you get stronger, you can go into higher gears.
- If you have not cycled in a while, try riding every other day. Set aside a regular time to ride but vary your route. Try to avoid routes with high traffic

volume.

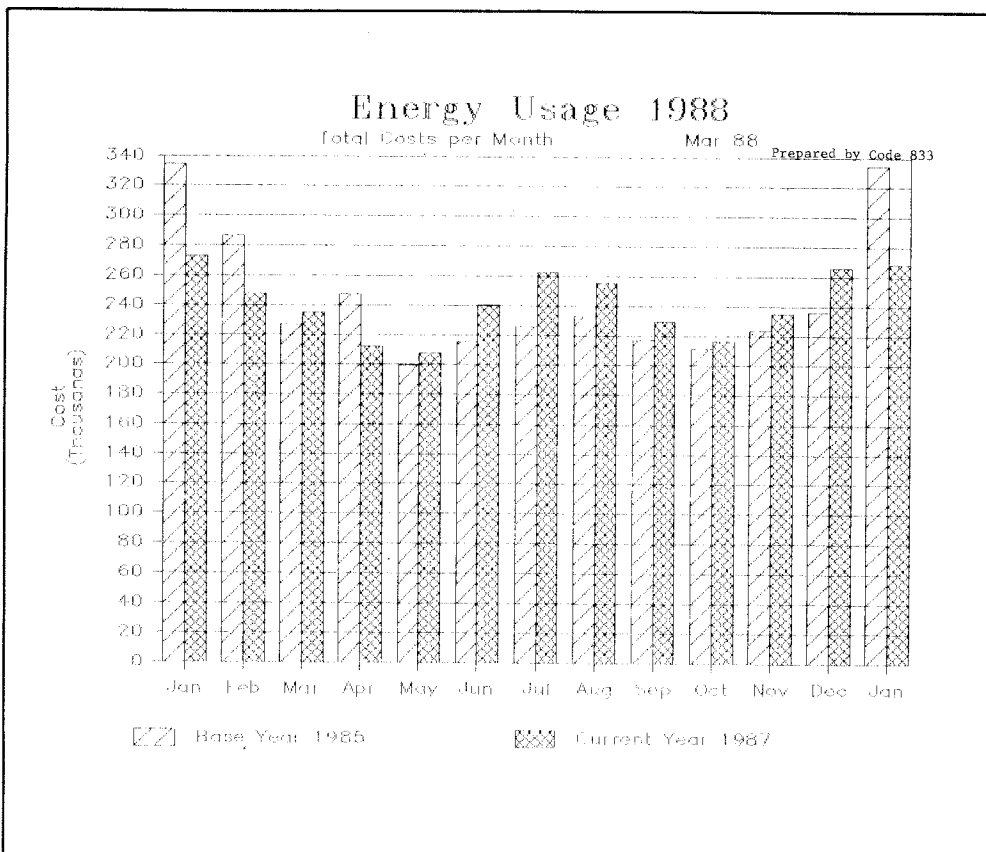
- Don't try to lean too far over. Prolonged riding in a racing crouch can tire you out and cause back strain. Ride at an angle that's comfortable. Raise the handlebars if they force you to lean forward.
- Stay relaxed while you ride. Don't grab the handlebars in a death grip, and keep the upper body relaxed to avoid fatigue.
- Learn hand signals and obey traffic laws.
- An easy way to determine whether you're getting a good aerobic workout is this: Pedal hard enough to work up a sweat, but not so hard that you become short of breath. A more scientific method is to take your pulse. Press your neck artery for six seconds and multiply the number you get by 10. To get your maximum pulse rate, subtract your age from 220. Shoot for 75 to 80 percent of your maximum pulse rate when you ride.

W&R GOLF-1988

This year, W and R Golf outings begin on Tuesday, April 12th at Montgomeryville Golf Course. Entry fee is \$2 per outing, per person payable to any W and R Committeeperson prior to play.

Watch for more details and the complete '88 golf outing schedule in the April REFLECTOR.

For more information call Rob Muller or Pete Brown, extensions 3932/2170.



Energy Saving Tips

By Michael Blank

Winter weather is not over yet, and neither are the problems it brings — the fat gas and electric bills, the water meter breakdowns, the pipes in uninsulated areas freezing over — the list goes on. Here are some tips on how to conquer cold weather problems:

City and suburban companies install, operate, and maintain, your water meter. But you, the customer, are responsible for protecting the meter from damage, including frost. Costs for repairing such damages range from \$40 to \$65. Many times water meters are in areas like garages, crawl spaces, and basements susceptible to freezing. You can minimize the problem by keeping all doors and windows closed and in

proper working order so the cold outside air will not reach the meter. Insulation may be used to protect the meter and surrounding piping.

If your meter is located outside in a meter pit, make sure the pit has been installed properly and the lid fits securely. Some special pits, called frost boxes, are equipped with an inner lid. It provides additional protection for the meter, so make sure the lid is in place. Taking quick inspections before the cold weather sets in can help you avoid costly repairs.

One more tip: Every month from the time you start your furnace until spring thaw, you should change the furnace filter on a regular basis to ensure the heated air is fresh and clean and the furnace is operating smoothly.

Be a "watt watcher" not a "watt waster"



Varma completes exec training
Schimsky means business
Winters volunteers; will you?
Post graduate study winners
Bowling/Golf

Center develops second generation ITDA



Photo by NADC Photo Lab

Members of the ITDA Development Team seated around the table (left to right) include: Carmel Owens, Elliott Sidewater, Kathy Stempeck, Pat Beach, Walt Leyland, Dorothy Gramlich and Gale Pollock and standing (left to right) include: Frank Hollenbach, Brendan Beary, Ken Sell, Bev Lazarus and Elaine Picard.

By Mary Ann Brett

"Tactical decision aids are a vital necessity for the Fleet", said Walter Leyland. "And we, at NADC, have just installed an improved, second generation ITDA package for evaluation into three Atlantic Carrier Groups." Leyland is Program Manager for Integrated Tactical Decision Aids (ITDA) in the Command, Control and Planning Systems Program Office of the Battle Force Systems Department (BFSD).

NADC is the Central Development Agency for system-engineered tactical software implemented on a desk-top computer for the Navy. The Center's ITDA package was designed to save time and optimize the use of battle force assets. It is future-time command and control aid allowing a battle force commander to plan ahead and screen against potential air, surface and subsurface threats by means of a data

link to the Joint Operations Tactical Systems (JOTS). JOTS send real-time pictures to the ITDA and allows the operator to ask 'what if' questions. ITDA also includes data bases providing information on acoustic and atmospheric environmental conditions, and identifies sensor and weapon capabilities of hostile and friendly ships. ITDA is devoted to all warfare areas—antisubmarine, anti-air, anti-surface and electronic warfare. Because of this widespread application, it is invaluable to the composite warfare command officer in determining his best posture, that is, either his best defensive posture against attack or his best offensive posture should he have to do force projection.

The original ITDA package was issued to the Fleet in February 1987 for test and evaluation during the spring

(Continued on page 6)

Command Flight Path displayed at Center

By Mary Ann Brett

Imagine this: While driving through an unfamiliar area on a dark and misty night you make a wrong turn and end up lost. Nothing is familiar or matches the directions you were provided. However, within seconds, as the Department of Transportation (DoT) realized your navigational error, it immediately comes to your rescue by building a new road directly to your destination. Sound far fetched? Perhaps for the DoT, but not for Naval aviation, NADC, and Command Flight Path Display (CFPD) engineer Steve Filarsky.

Filarsky manages the CFPD program in the Human Factors and

Protective Systems Division of the Air Vehicle and Crew Systems Technology Department. He described the display as a raster (TV picture-like) graphics-generated, color representation of the path an airplane or helicopter should take to reach its destination.

The raster graphic generator is under computer control. The computer has received data from on-board aircraft

sensors concerning aircraft position, orientation and velocity. The computer integrates this data with information stored in the computer relative to the planned mission and directs the raster graphic generator to build a picture showing the relationship of the aircraft to the computer-generated cues.

The picture displays not only the airway itself with ground texture indicators, but a small airplane

represents the command aircraft on which the pilot flies formation. This command aircraft provides the pilot with cues regarding speed—speed brakes flash when going too fast or after burners flash when going too slow, and acts as a visual checklist (i.e. tail hook and wheels drop and flaps extend) when entering the final approach phase to a landing. The final approach ends at the

(Continued on page 7)



Steven Filarsky
Command Flight Path Engineer

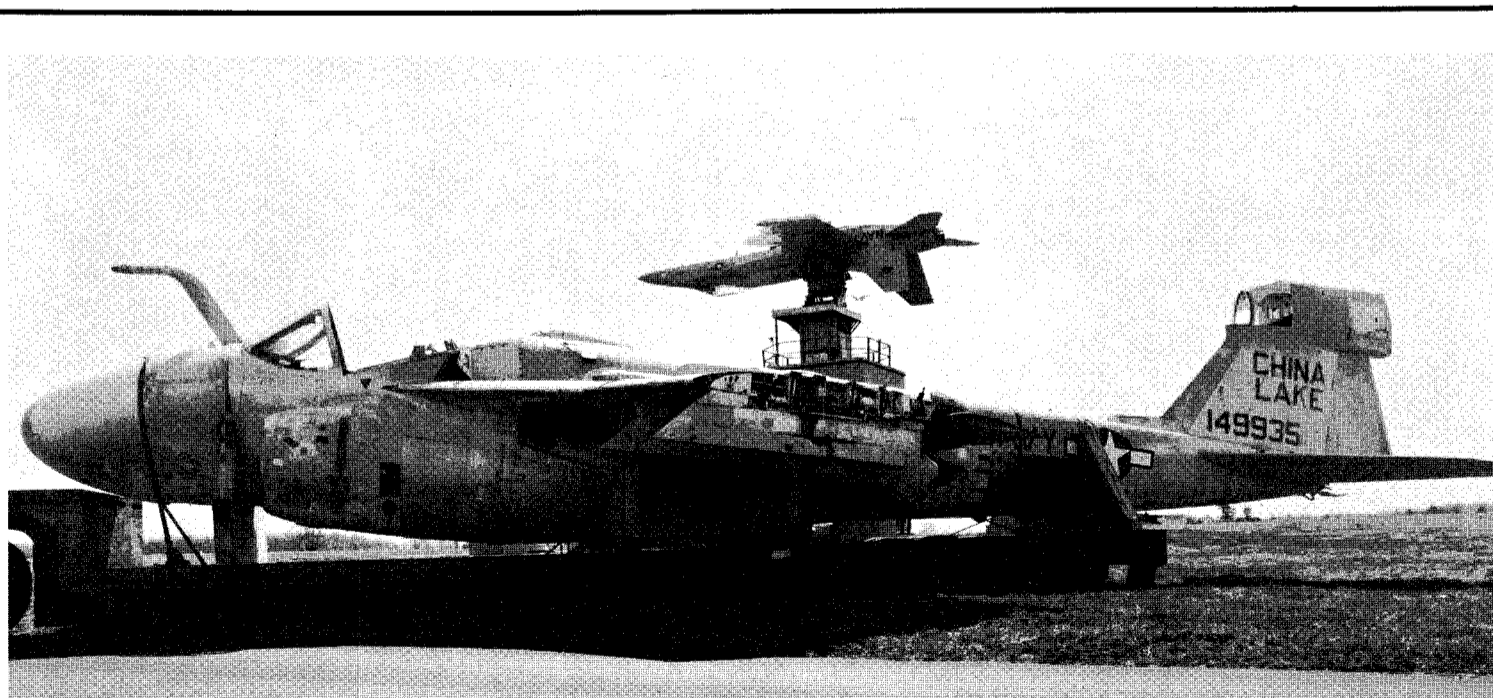


Photo by Robert Goodyear

"Intruder" delivered to antenna test range

By Jim Kingston

A Navy A-6 "Intruder" attack aircraft recently arrived at the Naval Air Development Center from the Naval Air Station, Lakehurst, NJ. However, it didn't fly in. Lacking an engine, it arrived on a flatbed trailer truck creating a head-turning sight as

it moved down I-95 and over Street Road in Lower Bucks County to NADC.

The airframe will be prepared for installation atop the Center's antenna test range building and will join a growing list of other test airframes including the Navy's newest fighter/attack aircraft...the F/A-18.

This A-6 is officially designated an EA-6A which identifies it as an Electronic counter Measure (ECM) equipped aircraft and it is part of the Navy's current aircraft inventory and is in active service throughout the Navy's air arm.

Letter to the Editor

LETTER TO THE EDITOR

Wow! Two pages devoted to sailors picking up stones—what a newsworthy item . . .

Unsigned

Normally, we would neither print nor reply to unsigned correspondence to the editor. I don't call the comment of FOD Walkdown a 'letter' since it was simply typed on a piece of 3 x 5 paper. Obviously, the sender was so bent on anonymity that even an unused interoffice envelope was used to avoid any detection of the source. Wow! Such courage of conviction.

So, dear anonymous, we are truly overwhelmed with how completely you missed the whole message of the FOD Walkdown photo layout. The REFLECTOR is not a newspaper in the strict sense . . . we don't deal in hot news. We're an employee house organ and deal only in matters pertaining to the Center and its employees . . . including you, since you became newsworthy.

True: there's nothing glamorous, noteworthy, newsworthy, exciting, or fun about picking up stones from the ramp area, but let one of those stones get sucked up into a jet engine or get propelled by 'prop wash' and serious, costly damage could result, or worse . . . a life could be lost.

According to CDR Tim Cudia, Aircraft Maintenance Officer, the Navy experiences millions of dollars in foreign object damage (FOD) to engines every year. As he puts it, "If a jet engine eats a rock, it's dead." NADC has had no such damage to its aircraft.

We felt this daily, dull routine rated a little recognition and, since there was no great newsworthy story to write, it would be best said in pictures.

Editor,

I want to extend an open Letter of Appreciation to the EEO Office, the Black History Awareness Committee, etc., for the outstanding job they did during the "Black History Awareness Month."

I had the privilege of attending each program and I left with a new sense of respect and human dignity. I am still enchanted by the many splended programs, especially the Simon Gratz High School Choir. These young people are so accomplished and cultured in musical skills.

Although Black History became marketable in the last decade, my experience and interest began much earlier. The month of February was wonderfully reminiscent of my childhood ("Much have been given to me and much is expected of me") and for that I say, "Thanks."

Jane E. Anderson

If the SOC Fits

By Robert Janes

An area of the Standards of Conduct (SOC) which is often of interest in the spring and fall as election time approaches, is the Hatch Act, which restricts the political activities of federal employees. There have been some proposals in recent years to modify the Act so to relax its rules and permit federal employees to engage in a greater of off-the-job political activities. None of those proposed changes has yet been passed, so the traditional Hatch Act rules remain in effect. I urge any of you with questions about the Act to contact the Office of Counsel for advice and guidance. We have a lot of Hatch Act information in our office, and on those questions that we cannot answer ourselves, we can join you in placing a conference call to the Office of the Special Counsel in Washington, DC, where there is an attorney assigned full-time to offer advice on Hatch Act problems.

Some of the Hatch Act questions we have had in our office in the last year or two are:

1. May I run as a candidate for a local school board? This is a non-paid position, for which I would cross-file in both the Republican and Democratic parties.

No, you may not. You are not permitted to run for office, even if cross-filing, in a partisan election.

2. May I run for office as an Independent candidate?

You may not if it is a partisan election, i.e., an election in which one or more of the candidates is aligned with a major political party. A federal employee may run for office in an election only if it is a non-partisan one.

3. My wife is running for Tax Collector in a partisan election. Is this permitted?

Yes. The Hatch Act does not extend to spouses or other family members of

(Continued on page 8)

NADC goes to the Fair . . .

—Small Business Procurement Fair, that is

By Mary Ann Brett

NADC's Small and Disadvantaged Business Office (SADBO) was instrumental in coordinating the recent Second Annual Delaware Valley Regional Procurement Fair. Along with the Center, nearly 700 businesses interacted and became more familiar with the government's contracting system.

John Scott, head of the SADBO, said, "Successful small businesses

eventually become large, so we're constantly searching for new small and small disadvantaged businesses to fill our contracting needs. Advertising and Requests for Proposals aren't enough, we have to make ourselves available through exchanges like this."

Scott explained that any contract for more than \$5000 not awarded to a small business must have an approved small business subcontracting plan before the contract can be awarded.



Photo by Clarence Watson

RADM REIDER READS NADC — VP Program Engineer Franz Bohn briefs RADM Albert Reider about one of the facility's many acoustic processors. Reiger, Philadelphia Naval Base Commander, visited the Center in March. The Admiral was briefed by CAPT Curtis Winters, Center Commander; Richard Mitchell and CDR Roger Hill and toured the P-3 Lab and Centrifuge before departing for NAS Willow Grove.

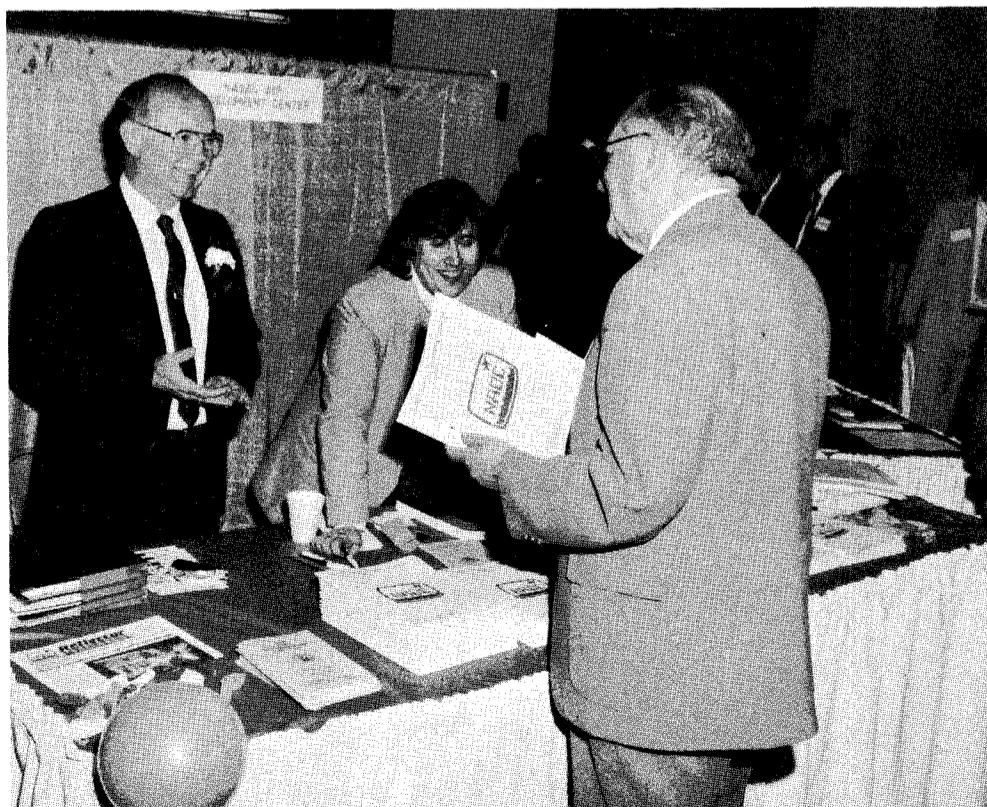


Photo by James Moore

John Scott and Diane Heal of NADC's Small Business Office interact with approximately 700 compaines during the Delaware Valley Second Annual Procurement Fair.



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Commander, NADC Technical Director Public Affairs Officer and Editor Associate Editor Assistant Editor	CAPT Curtis J. Winters Guy C. Dilworth, Jr. James S. Kingston Mary Ann Brett JO2 Todd Lufkin
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Varma completes executive training

By Mary Ann Brett

"I can do anything!" said Dr. Asha Varma demonstrating the attitude gained by her and her fellow participants in the "Women's Executive Leadership Program" (WELP) which she recently completed. "The entire experience was like a dream," she said, describing her selection and one year training which, she observed, passed so quickly. Varma is a Physical Scientist and currently Assistant to the Technology Base Manager, Code 01B.

The WELP is designed to prepare talented, professional women in the federal environment for management, an area lacking in adequate female representation. It provides training and developmental experiences to parallel the abilities and characteristics of a supervisor.

Participants are exposed to a broad overview of careers and get the opportunity to closely observe managers as role models.

By a Special Act of Congress, the Office of Personnel Management was asked to create a program for federal women. "The program was actually charted by a young minority woman," said Varma. WELP is a modified version of a two-year Senior Executive Service training course. Because of the tremendous interest in the course, applicants are now limited to a current grade level of GS-11 or -12 at the time of application.

The program consists of 25 days formal classroom training conducted by the Office of Personnel Management plus rotational, self-development assignments. "The way you complete these assignments and the network of

people with whom you choose to work is left up to you," said Varma.

As one of her assignments, Varma chose to work with Associate Technical Director Robert Becker for thirty days. "It was a valuable experience," she said. "I was Becker's shadow; I attended all of his meetings and provided a third person perspective of what transpired because an outside observer often has a very different interpretation of what's happening."

"No training ever promises a promotion," said Varma, "and this is no exception. But," she added, "statistics show a 95% success rate!" Indeed, that high a percentage of women who participate in this program have eventually realized a one-to-two grade promotion and did get absorbed into their organizations as managers and supervisors.

Varma strongly encourages interested, eligible women to apply for the Women's Executive Leadership Program. "If nothing else," Varma explained, "the visibility you acquire and the amount of confidence it inspires gives you a personal

advantage. The members of my class changed before my eyes, within just a few months," She described her class as growing more mature and self-confident in everything from their style of dress to their manner of speaking.

Formerly Supervisor of Analytical Laboratories at the University of Pennsylvania, Varma has worked at NADC for five years. She is an accomplished technologist with an extensive list of credentials and more than forty publications to her credit including a "Handbook in Chemistry," an all-time best seller.

Varma was assigned to Code 01B upon completion of the program. Extremely thankful for her management's full support, encouragement and enthusiasm during her training, she hesitates to speculate about the future. "I do not make plans insofar as my personal future is concerned," she said. "I just blend in with events as time goes by, look forward to future challenges and get restless when they are too few."



Photo by JO2 Todd Lufkin

Dr. Asha Varma displays two OPM certificates — one received upon completion of her executive training; the other for outstanding leadership, commitment and support to the program.

Varma chairs Federal Womens' Committee

By Mary Ann Brett

Dr. Asha Varma was recently named Federal Women's Program (FWP) Committee Chairperson. "I have seen the committee do an excellent job," she said. "and my aim is to keep it alive."

As a participant and observer of the FWP Committee activities for the last four years and past president of the "Federally Employed Women" group, Varma sees the lack of male participation in female programs as a major stumbling block. "I respect those men who attend most of our functions, but they are very few," she stated. "I'm

aware that many men get teased about attending our programs and, at times, women feel more comfortable without them. "But," she added, "I think we both can gain by the presence of men at women's meetings. After all," she concluded, "they are involved in so many of the issues we discuss."

Varma intends to contact the committee's former presidents for the benefit of their experience and ask all volunteers for their help and support. "The committee's work looked like so much fun," said Varma, "I just want to have fun with them."

Schimsky drives hard bargain in software

By Mary Ann Brett

"Delays and failures in software have literally cost us millions!" emphasized David Schimsky describing the driving force behind NADC's first software briefing to industry. Schimsky who is Head of the Systems and Software Technology Department (SSTD), addressed more than 60 companies interested in knowing more about the Center's software requirements.

"We're trying to raise the level of response," said Schimsky, "And, it will take the best management techniques and sound engineering practices." Speaking with 26 years of experience in the software arena here at the Center, Schimsky explained that software developments have been historically and generally below potential, not just for NADC, but throughout the software community.

To help resolve this problem, his briefing addressed software engineering environments, software productivity, development practices, new techniques and the Center's software goals and visions. One major item covered was "contractor assessment methodology," a process developed by the Software Engineering

Institute (SEI). Schimsky feels for the first time the SEI has constructed a "step-by-step road map" on how to better develop software. The Center has adopted this process and is testing it for SEI by applying it to recent and upcoming contracts.

Schimsky explained the process assesses the contractor's software

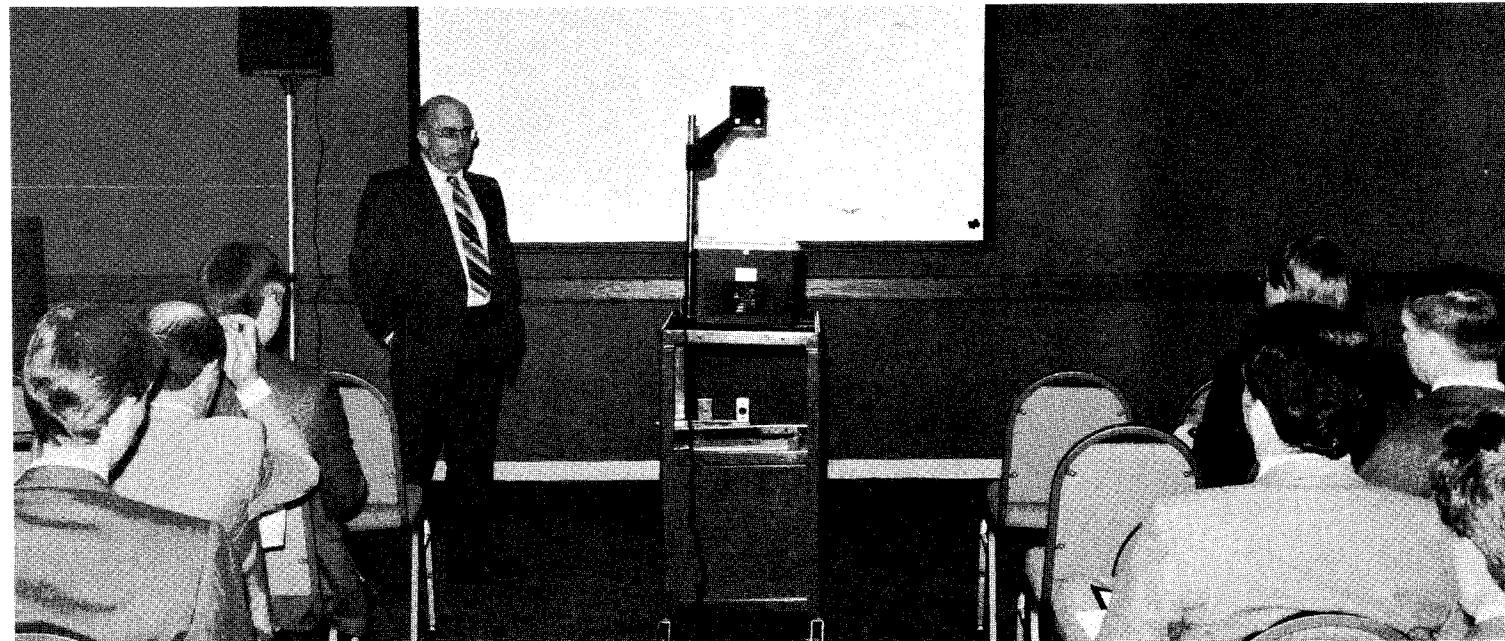
development enabling us to score higher technical evaluations for those companies which would most lower the risk of failure. "We hope to convince contractors it's in their own best interests to improve," he said.

"Becoming more competitive and doing a better job up front would increase their chances of winning a

contract," he added, pointing out that SSTD contracts nearly \$35 million a year for software.

"The Center has internal goals and objectives," explained Schimsky, "and very strong feelings on the best way to proceed in the business of developing software. If contractors aren't aware of

(Continued on page 6)



David Schimsky speaks to potential software contractors at the Holiday Inn, Trevose.

Photo by JO2 Todd Lufkin

This could be you!

Winters volunteers for centrifuge run

By Mary Ann Brett

Who said, "Never volunteer"? It wasn't Center Commander CAPT Curtis Winters. He recently volunteered and participated in his first familiarization ride in the Centrifuge.

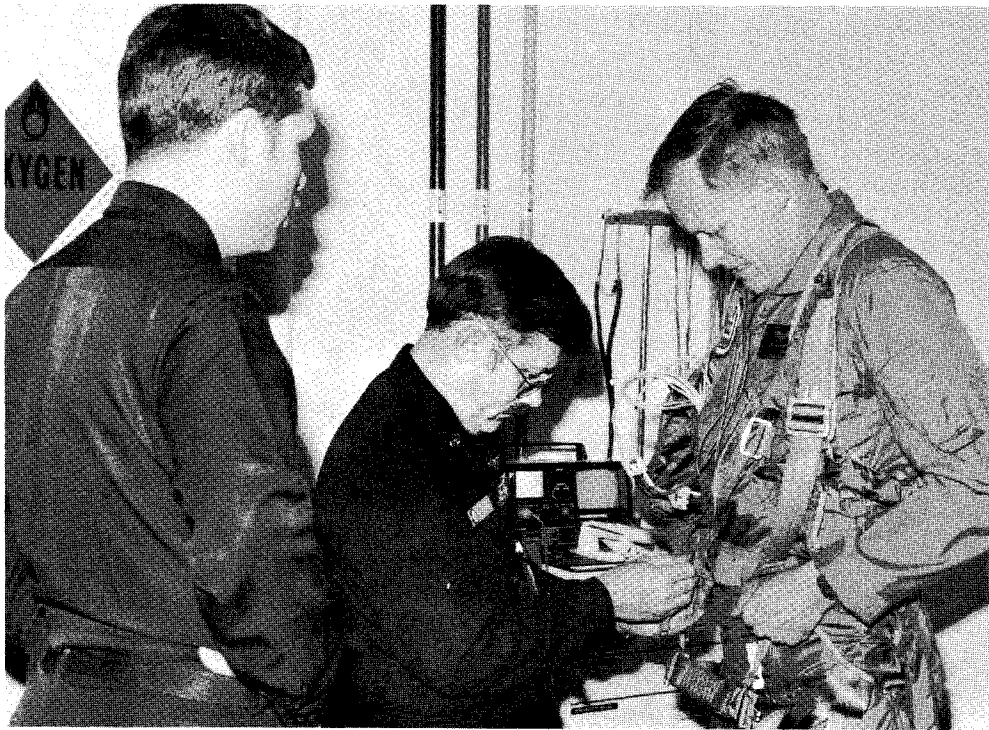
It is this adventuresome attitude that Biomedical Support Branch (BSB) members hope will spur other NADC personnel to volunteer as test subjects.

The familiarization ride is designed to expose potential test subjects to the

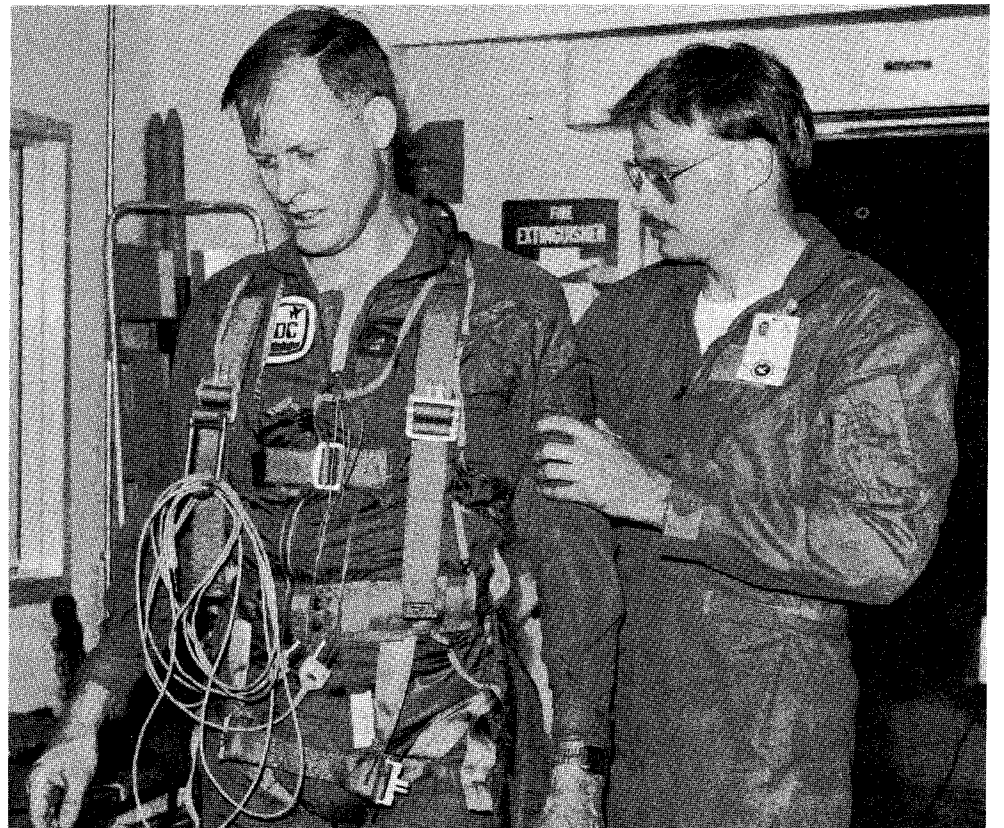
unique acceleration environment experienced prior to their participation in actual research programs. Prior to the ride, any subject must undergo a complete Navy Flight Physical. Once the subject has passed the medical requirements and completed the first ride, he or she decides whether to participate further. If so, he or she will

receive a more comprehensive physical and are then eligible to participate in reasearch programs in the Centrifuge as well as with the ejection tower and cold water chamber.

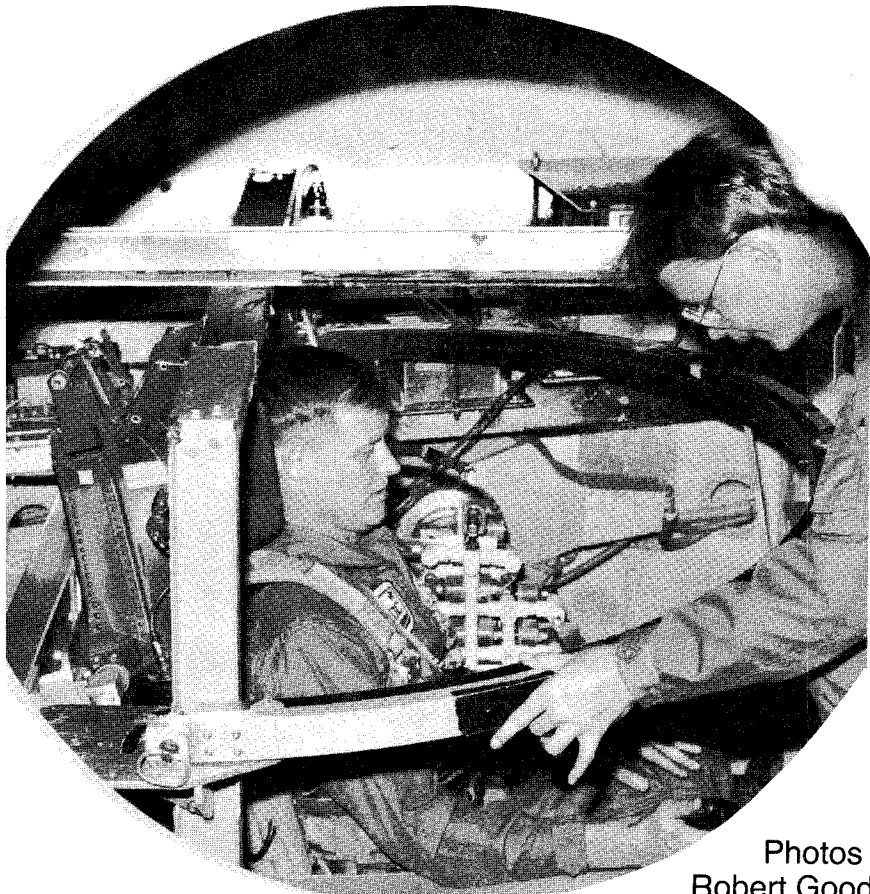
If you are interested in becoming a subject, contact the BSB on extension 1372.



Dr. Peter Letarte discusses the test run with CAPT Winters as PRC Michael Patterson fits the torso harness and G suit.



Assisted by HM3 Luke Maxwell, a slightly disheveled CAPT Winters exits the Centrifuge.



Photos by Robert Goodyear

Seated in the gondola, CAPT Winters completes pre-run procedures and equipment brief with Petty Officer Maxwell.



CAPT Winters discusses his experience during the post-run debrief with Dr. Brian Bennett.

PROFILE—Murray returns for second hitch

By J02 Todd Lufkin

In May 1983, Captain James Anderson was Center Commander, Captain James Sheehan Chief Staff Officer and Dino Mancinelli head of the Air Vehicle and Crew Systems Technology Department (Code 60). Duane Murray was a Hospitalman Corpsman First Class and leaving NADC after a five year tour.

In January 1988, Captain Curtis Winters is Center Commander, Captain Fred Wright is Chief Staff Officer and Doctor Donald McErlean is the head of Code 60. Duane Murray returns to NADC as a Hospitalman Corpsman Chief.

"With my specialty as an aviation physiology technician, there are only eight duty stations I can go to, seven of those being training commands," explained Murray dressed in a flight suit, "plus I had fond memories of my first tour of duty at NADC."

The 33-year-old Murray is impressed with Code 60's "significantly increased professionalism" and sees the centrifuge's capabilities as having so greatly expanded it is now designated as the Dynamic Flight Simulator (DFS).

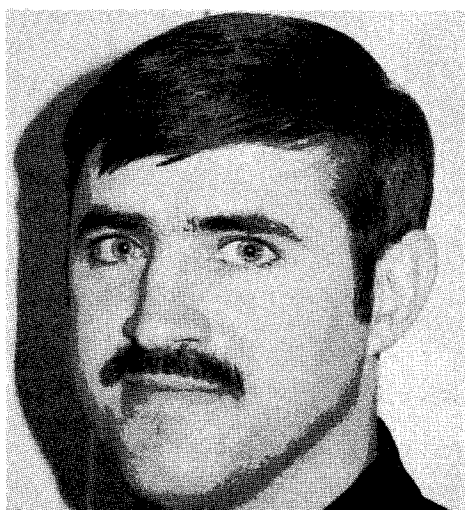
He also feels the Center is "a lot busier and more active than it was five years ago" and points out that

Warminster and Bucks County have shown "incredible growth since I left in 1983."

As senior corpsman in Code 60, Murray sees his biggest challenge as providing leadership and training for the junior corpsmen. "We don't deal with patients per se and it is very important to keep training current," he explained, "we can't forget we're in the Navy."

This native of Estherville, Iowa, felt no qualms in returning to the command as a chief petty officer. "Haven't you ever been somewhere and thought 'now

(Continued on page 5)



HMC Duane Murray

Post Graduate Study awardees named

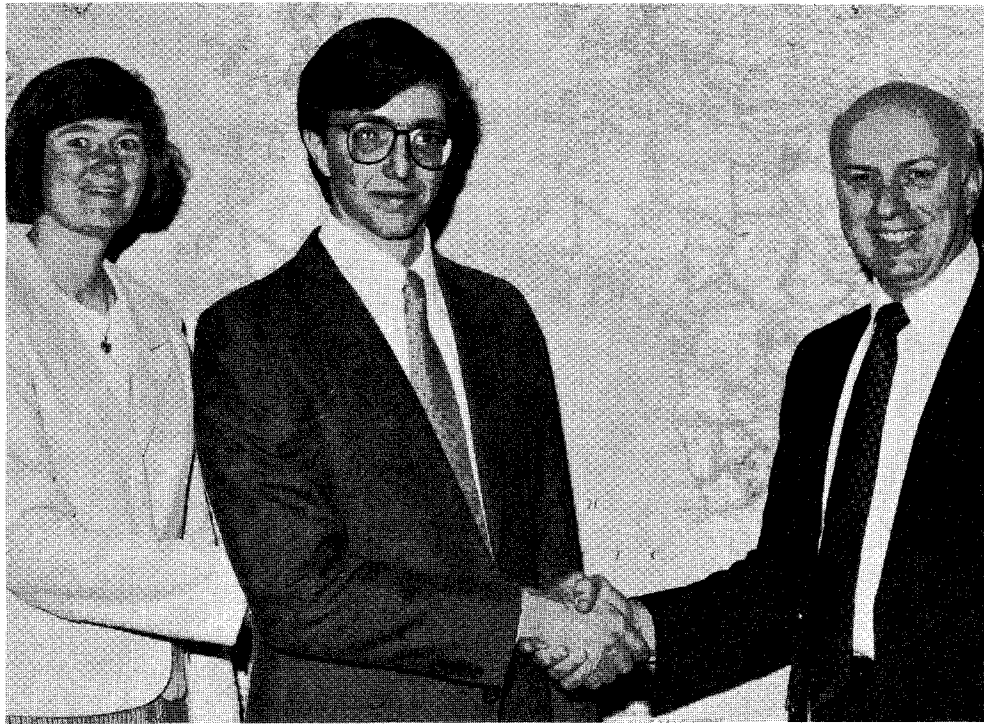


Photo by Clarence Watson

Nancy Harned, William Jemison with Thomas Castaldi, Head of the Mission and Avionics Technology Department.



Photo by Jon Jones

Renae Contarino, Dr. Don McErlean, Head of the Air Vehicle and Crew Systems Technology Department, John Boodey and Judy Koper.

PROFILE—Murray returns

(Continued from page 4)

if I were in charge?" Well I got that opportunity to fulfill one of my dreams. As a Chief, I'm now in a position to enact change and make an impact." He is amused when people pass him in the hallways and look at him with the expression of "don't I know you from somewhere?" only to find out they do.

Murray joined the Navy because he decided there has to be more to see in the world than just the Midwest. "I was looking for something different and so I talked with the recruiter. I had worked for a local ambulance company, so I has been exposed to medicine," he stated, "being a Corpsman sounded interesting and so I joined for four years to see what it would be like. I enjoyed it then and still do 15 years later."

In his career Murray has been stationed at Great Lakes for Boot Camp and Corps School; Naval Hospital, Corpus Christi; Lakehust; Pensacola; Brooks Air Force Base. San Antonio; NADC; USS CONNOLLY (DD 979); Naval Hospital, Corpus Christi; and NADC.

While he was on the CONNOLLY, Murray served 18 months as the

Command Career Counselor. When he transferred to Corpus Christi Murray was "offered" the job again. "It was very rewarding to work with juniors in developing a career path for them," he stated.

However, Chief Murray isn't the only one in his family associated with medicine. His wife of 13 years, Jeannie, is a registered nurse and worked at Warminster General Hospital when they were here the first time. So far none of their children (Jerry, 10; Jason, 8; Todd, 5; and Ryan, 5 months) show any inclination towards the field. However, he states that "Jerry is very interested in aviation, and would like to be a pilot."

Murray's plans for the future are set. "I want to finish my BS in Physiology (he lacks seven credit hours), update Code 6025's medical inventory and develop a more comprehensive divisional training program," he stated.

No sooner were these words uttered, then Chief Murray was beckoned to another DFS drill and became the embodiment of the Navy's slogan of 'pride and professionalism.'

By Edward Calvello and Mary Ann Brett

The Center will be sponsoring nine employees for the 1988-89 Graduate Study Award Program (GSAP).

The GSAP provides an opportunity for competitively selected Center employees to acquire critical, urgently required state-of-the-art knowledges and skills in areas essential to accomplishment of the Center's mission.

This academic year's selectees are John Boodey, Ranae Contarino, Peter Carroll, Glenn Fala, Nancy Harned, William Jemison, Christopher Kirk, Judith Koper, and Carmel Owens.

Kirk is a management analyst in the Financial Management and Planning Department and will study financial and business planning at Temple University. Kirk has also applied for the Secretary of the Navy Career Fellowship Program in Financial Management and is awaiting status of his application.

Boodey, Contarino, and Koper work in the Air Vehicle and Crew Systems Technology Department. Boodey, a materials engineer will study materials science and engineering at Lehigh University. Contarino, an

electronics engineer (EE), will study biomedical engineering and science, emphasizing flight physiology, at Drexel University; Koper, an aerospace engineer, will undertake flight controls systems at Purdue University.

Carroll, Fala and Owens work in the Systems and Software Technology Department. Carroll, an EE will study systems design and computer engineering at Lehigh. Fala, also an EE, will pursue computer and information science concentrating on artificial intelligence, at the University of Massachusetts.

Harned and Jemison, EE's in the Mission and Avionics Technology Department, will study acoustics and sonar signal processing at Pennsylvania State University and electrical engineering at Drexel, respectively.

Normally, selectees are sponsored for up to one academic year of fulltime graduate level training with related authorized academic expenses paid, while receiving their full salary. Applicants must be permanent full-time employees and submit to a comprehensive application review/selection process.

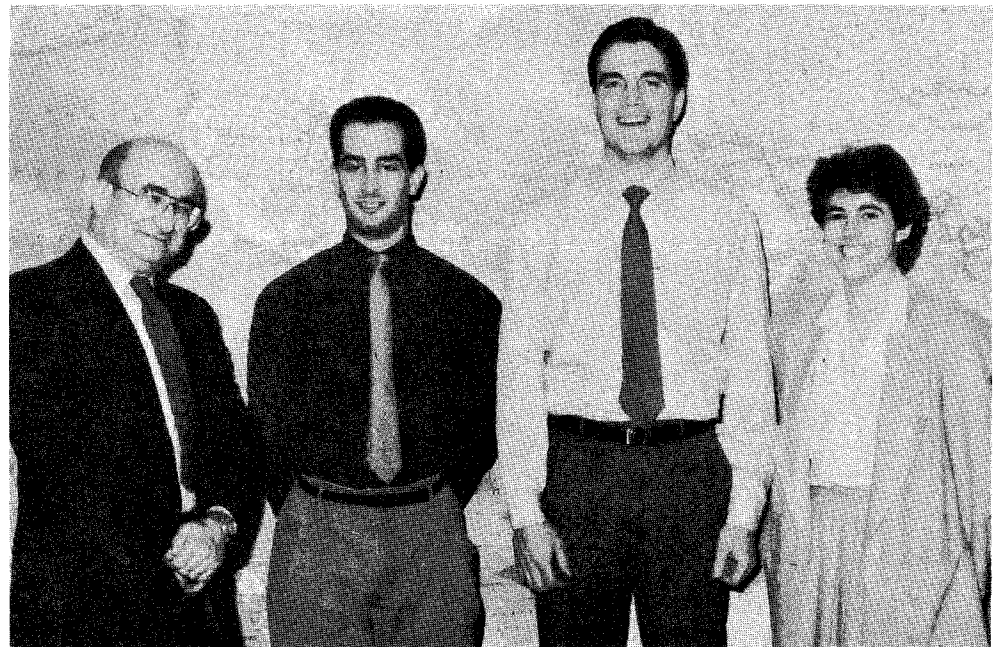


Photo by Clarence Watson

David Schimsky, Head of the Systems and Software Technology Department with Glenn Fala, Peter Carroll and Carmel Owens.

Commander Salutes

LT Edward Spina (Code 096), LCDR Neal Hesser (Code 30), LCDR Brian Gritte, AW1 Chris Rainwater, ATC Richard Sikorsky, AW1 Kenneth Carrigan (Code 10), LT Melvin Mason, AD1 Richard Rock, AE3 Anthony Tallie, AX3 John Bates, AD2 Gregory Duncans, AT2 James Nuyen, AO1 Paul Fries, AMH1 Robert Fordham, LCDR Walter Neboshynsky, AT2 Robert Richard, AMS2 Renaul Johnson, ATC Thomas Mathey, AO1 Antonio Lieggi, AD1 Ronald Whisonant, Daniel Probert (Code 90), CDR Richard Feierabend, Peter Bruno, John Albert, Leon Robinson, John Iannuzzi, Jaime Pupek, Janice Rudy, Scott Natter, Michael Wilson, Patricia Aspinall, Dr. Bruce Steinberg, Joseph Klicka, David Volak, John Samaras, Regina Luce, Eduardo Danganan, Rockne Anderson, Arthur Horbach, Gabriel Potocsky, Paul Haas, Michelle Grob, Sandra Oehmke, John

Gambale, Robert Gindhart, Thomas Gabrielson (Code 50): For outstanding support to the BROADBAND 87 Sea Test.

Alan Kaniss, Otis Johnson, Henry McCloskey, Michael Bell, Stephen Jerdan, John Vinck (Code 05): For outstanding support of Automatic Data Processing operations at NADC and the Naval Surface Weapons Center.

Thomas Hess (Code 60): For professionalism, outstanding ability, and dedication to the Joint Technical Coordinating Groups on Aircraft Survivability.

LCDR B. Gritte, LT R. Brennan (Code 10), LT R. Erickson, Dr. J. Sheehy (Code 60): For thorough briefings to the Canadian Director, Maritime Aviation.

Carl Reitz (Code 20): For performance in support of the Source Selection Evaluation Board and the Source Selection Advisory Council for the Remotely Piloted Vehicle Program.



Commander's Safety Award Presented to



SAFETY AWARDS 1987

Commanders Awards—Financial Management & Planning Department 3 yrs. Civilian Personnel Department (2), Antisubmarine Warfare Systems Department (1), Tactical Air Systems Department (1).

Group Awards—TSD Electrical Shop, TSD Machine Shop #1, Quality Assurance, Aircraft Division, Power Plants Branch, Airframes Branch, Aviation Life Support Systems Branch, Egress/Environmental Systems Branch, Electronics Branch, Electric Branch, Ordnance Branch, Plane Handler Branch, Aviation Armament Division, Line Division, PW Rigging Branch, PW Service Branch, PW Transportation Division, Structural & Aircraft Fire Division, Ship Stores Branch, Fuel & Liquid Gases Branch, Storage Branch, Food Services Division, Aviation Support Division.

Supervisor's Awards—Vincent A. Morelli (6), yrs. Dominic E. Zaccaria (2), Thomas J. Morrison (1), Edward T. Engle (7), John R. Hannon (3), Earle L. Largent (8), Edward W. Linke (7), Cron P. Eckman (2), Donald H. Meadows

(1), Charles E. Mayers (2), William J. Adams (7), Alfred W. Keiss (4), Carlos A. Sanchez (3), James D. Myers (3), Michael B. Gindele (2), AMCS Stanley Shelton (2), AMHC Alan Shepard (1), AME2 Brian Higgins (2), ATCS Wayne Slagle (1), AXC Ira Sparkman (1), AOC William Swilley (1), AD1 Edward Whalen (2), AKC Horatio Mercado (1), MSC Blas Ibasco (1).

Material Handling and Construction Equipment Operator's Awards—Dale R. Jackson 20 yrs., Lister Ransom (17), William J. Walto, Jr. (14), Junious Newman (11), Charlie F. Belcher (3), Nick Markwald (3), Casper A. Pepe (3), Thomas J. King (2), John J. McGee, Jr. (14), Kenneth R. Danser, Sr. (14), T. William Singleton (12), Lloyd Pinkett, Jr. (9), Edward J. Hill (6), Paul Newborn (3), Sherry M. Forbes (2), Thomas E. Munyan (1), Eladio Colon (13).

Safe Driving Awards—Thomas R. Ryan 16 yrs., Calvin Harvey, Jr. (9), Paul E. Cronin (6), Arnold Gibson (5), Kinzel R. Edwards (4), Eugene E. Byers, Jr. (3), John Scott (3), Stephen G. Fisher (2), Joseph K. Perkins (2), Michael W. Hartman (1).

in recognition of their excellent record achieved in performing their duties without a lost-time mishap during the twelve consecutive month period.

NADC is largest blood donor in Lower Bucks

NADC personnel are Lower Bucks County's biggest blood donors! The blood drive's fiscal year ends June 30. So far this fiscal year NADC has contributed 813 pints; 279 of those were donated during the March 88 drive.

Code 00: Winters, C.; Code 01: Driscoll, J.; Martin, M.; Code 02: Dougherty, S.; Fisher, S.; Flumara, S.; Kotary, C.; O'Neill, M.; Penge, M.; Roberts, R.; Rudolph, M.; Simon, C.; Van Luvane, M.; White, J.; Code 03: Brownlee, R.; Decicco, M.; Devlin, M.; Higgins, M.; Keenan, G.; Pomrunk, R.; Savage, L.; Skillens, B.; Code 04: Deleew, R.; Fields, K.; Fisher, A.; Fisher, M.; Fletcher, A.; Martinez, M.; Olmedo, V.; Pessano, J.; Sinnamon, E.; Vigelis, M.; Code 05: Dudley, M.; Lucas, E.; Malecki, M.; Oliver, J.; Worobe, E.; Code 06: Hendricks, R.; Pfeil, D.; Rice, V.; Code 09: Jones, R.; Sangmeister, E.; Code 10: Abramson, F.; Baker, D.; Benn, P.; Bowes, J.; Brookes, R.; Foerst, L.; Freeman, J.; Justus, K.; Lange, G.; Lubanski, R.; Torok, G.; Vanfossen, M.; Vollrath, L.; Wentz, W.; Williams, D.; Williams, F.; Code 20: Ackerman, R.; Colombo, J.; Furmanski, D.; Schwartz, R.; Spector, A.; Code 30: Ballew, N.; Bryant, J.; Bumgardner, P.; Khawaja, S.; Moffitt, E.; Mutschler, D.; Nicolai, V.; Rhodeside, G.; Sawyer, D.; Sztubinski, D.; Yannuzzi, E.; Code 40: Bradley, W.; Gutzler, A.; Hasselbusch, W.; Heller, K.; Kile, M.; Klopfer, W.; Miller, F.; Nicolo, S.; Pessognelli, J.; Reis, N.; Schoppe, W.; Schweizer, C.; Scott, L.; Smith, L.; Tobin, M.; Weathers, S.; Code 50: Aspinall, P.; Bazow, S.; Beach, E.; Beans, E.; Campana, J.; Carroll, A.; Cloak, S.; Dedominicis, T.; Everett, W.; Faller, K.; Harris, J.; Hontz, R.; Irvin, J.; Keiser, D.; Levin, S.; Lipacis, M.; Lipski, W.; Matura, M.; Millier, D.; Moser, P.; Mulholland, F.; Plonski, F.; Rankin, M.; Rineer, F.; Roach, L.; Rosa, R.; Schuch, D.; Sniscak, J.; Tepper, J.; Termine, F.; Thompson, C.; Toner, J.; Vendetti, A.; Ulrich, P.; Wagner, M.; Waynick, A.; Wilks, J.; Yoshida, A.; Code 60: Agmew, D.; Alper, J.; Bebey, J.; Becker, W.; Bethke, J.; Biggs, L.; Bullard, K.; Burch, M.; Cannon, M.; Carper, N.; Cohen, D.; Crea, F.; Darrigo, D.; DiGirolamo, R.; Donnellan, M.; Dugan, C.; Emery, R.; Fazenbaker, D.; Foley, T.; Frost, H.; Gaetano, A.; Garber, R.; Greenhalgh, S.; Henderson, J.; Hess, T.; High, J.; Holmes, P.; Hughes, T.; Illmer, K.; Jacobs, L.; Kaufman, J.; Kelly, K.; Keyer, D.; Kuster, F.; Letcher, S.; Lu, L.; Mawhinney, W.; McEntire, B.; McGinley, K.; McGlynn, E.; Mergner, K.; Miller, C.; Moroney, W.; Mott, G.; Nosel, E.; Notaro, J.; Nuyen, V.; Poli, M.; Preissner, E.; Pulley, D.; Quartuccio, J.; Routzahn, R.; Ruzansky, M.; Shaffer, I.; Shender, B.; Springer, T.; Strizak, M.; Ta, L.; Thomas, M.; Turzanski, R.; Ward, W.; Weller, G.; Werczynski, G.; Werner, W.; White, E.; Whitman, G.; Wills, K.; Code 70: Aquila, R.; Azarewics, J.; Bendzlowicz, R.; Bleiler, D.; Bunting, J.; Carroll, P.; Cavender, B.; Clay, J.; Daulerio, M.; Dupont, A.; Engle, M.; Glemser, R.; Halko, C.; Hall, S.; Holloway, S.; Huber, L.; Johnson, R.; Juscak, M.; Kellersurman, H.; Lamb, J.; McEntire, K.; McGuire, M.; McHugh, T.; Meer, M.; Michalski, T.; Montrey, K.; Moroney, G.; Murnin, H.; Neubrough, P.; Nuss, W.; Piras, R.; Preston, C.; Rachiele, J.; Reich, L.; Robinson, J.; Robinson, S.; Santini, J.; Schmiedekamp, C.; Shaner, S.; Spiecker, J.; Stallworth, K.; Steinley, M.; Steinley, S.; Sterchak, S.; Stowall, F.; Strobel, D.; Supp, J.; Sutton, D.; Tessitore, T.; Whiteman, D.; Zwissler, R.; Code 81: Armstrong, J.; Berg, M.; Boyle, G.; Burian, C.; Devalle, J.; Gould, T.; Kiefer, R.; Koch, J.; Miller, L.; Moore, R.; O'Neill, M.; Rogalski, M.; Towarnicki, J.; Wiggs, W.; Williams, L.; Code 83: Anthony, R.; Broomer, L.; Brown, N.; George, B.; Harless, C.; McClintic, J.; McFetridge, R.; McKenna, W.; Mosakowski, A.; Peurifoy, V.; Quinn, K.; Soto, G.; Varner, D.; Zuccarelli, F.; Code 84: Ashley, C.; Collins, R.; Ganter, W.; Lipinski, M.; McKay, S.; Mitchell, N.; Nissley, N.; Palaia, M.; Pauly, D.; Reed, R.; Ridpath, S.; Singleton, T.; Code 90: Myers, W.; Code 91: Byers, E.; Gibson, A.; Hartman, M.; Keiss, A.; Perkins, J.; Code 92: Fennell, T.; Kowalewski, H.; Rickmers, B.; Shelton, S.; Contractors: Amber, C.; Beatty, E.; Callahan, M.; Coco, A.; Curtis, D.; Dennis, B.; Disebastiano, A.; Falvey, M.; Fossile, D.; Gula, J.; Hild, G.; Kasper, E.; Kearney, J.; Kichula, L.; McTague, B.; McTague, J.; Pires, W.; Price, J.; Ritaldato, D.; Sanders, J.; Stump, T.

Schimsky... Business

(Continued from page 3)

our thrusts and initiatives," he added, "how can we expect them to respond to our proposals in a way that would help us achieve these goals. This briefing was a formal, concerted effort to let them know."

"Audience reaction indicated the briefing was very well received," Schimsky said. "We'll see indications of success within the next three to six months when we begin to get responses to two or three of our larger contracts now in process."

The SSTD is responsible for the development of all the major software products in support on the Center's mission. "It's interesting," said Schimsky, "it's this very same organization of responsibilities which

allowed us to conduct the briefing. Because the Center has elevated the business of software to the department level, we are able to control, specify, and guide all of the major software developments from one central management structure. That allowed us to conduct the briefing representing the entire Center and not just one project."

Schimsky feels NADC software/industry briefings will be scheduled every year addressing new areas and providing updates on progress in old areas. "NADC's software image is shaped in large part by our contractors," concluded Schimsky. "For us to do better and project a strong software capability, requires them to do better, too."

ITDA—2nd generation

(Continued from page 1)

and summer. With the help of the BFS systems engineers and the Systems and Software Technology Department, Fleet comments and recommendations for improvement were investigated and incorporated into the new iteration.

"As a result," said Leyland, "this second generation ITDA is more user friendly and better documented." He explained, "We've added screen prompts and highlighted special function keys, simplified the egress path when going from one function to another, refined the graphics and better illustrated the user guides."

"One facet of the package users especially like is the electronic warfare module." Leyland said. "The module provides information of the potential block out or 'masking' or land-based or airborne radars by mountains or other

land masses and allows us to use that information to our best tactical advantage." In addition, if and when a battlegroup is exposed to reconnaissance or surveillance satellites, it gives the time of actual exposure. "That's important", explained Leyland, "because of the need to maintain covertness. If we know when our presence has been detected, we can react to minimize the effects."

The ITDA package has grown from nearly 300,000 to 6000,000 lines of code including data bases. It uses the HP-UNIX operating system with algorithms coded in either "C" or Fortran languages with hopes of going to Ada in FY89.

"By May ('88), said Leyland, "we expect a thorough, comprehensive evaluation from the Atlantic and Pacific Fleet. But, early indications are it will be favorable."



Photo by NADC Photo Lab

SURVIVOR CREDITS NADC — As reported in the December REFLECTOR, 2 Navy aircrewmembers credited the NADC-developed Helicopter Emergency Egress Device (HEEDS) for their survival of an A-46 helicopter crash in the western Pacific. One of the survivors recently visited the Center to personally thank and brief the HEED's development team.

Front row: George Gillespie, LT G. LaFave (surviving pilot), John Harding, Helen Hummel; Second row: Jocelyn Alston, Brandon Johnson, Maureen Reynolds, John Tye, William Justice; Third row: Stuart Hall and Frank Ciesielski (contractors), Robert Moy, Don Pisechko, Forrest Miller (contractors); Top row: Jeffrey Lewis, Paul Donaker, Adelaide Thompson, William Sadak, and Stan Cardwell. (Not pictured) William Zorkowski, Doug Dawson, Rod Purcell and Richard Hall.

Leave—more than one way to take off

By Jim Kingston

When we talk of leave, we invariably think in terms of 'annual leave' or 'sick leave' and whether or not we have leave accrued. That's about it. In reality, there's a lot more to the leave than just annual or sick. There's leave without pay (LWOP), maternity leave, court leave (not for playing tennis), military leave, on-the-job injury leave, as well as excused absence and absence without leave (AWOL).

The principle purpose of annual leave is to allow us to take a vacation or to use when we have personal business or emergencies that can only be handled during normal work hours. Depending on your length of service you accrue

either four, six, or eight hours annual leave each pay period up to a maximum of 240 hours. Year to year carry over of more than that may put you in a 'use-or-lose' category. Annual leave is requested through and approved by your first-line supervisor and is granted and taken in increments of one hour. In general, routine annual leave is fairly uncomplicated.

Sick leave is the second most frequently used means of approved time off with pay. Everyone accrues sick leave at the same rate of four hours per pay period and there is no limit on the number of hours that can be accrued and carried over from year to year. Its

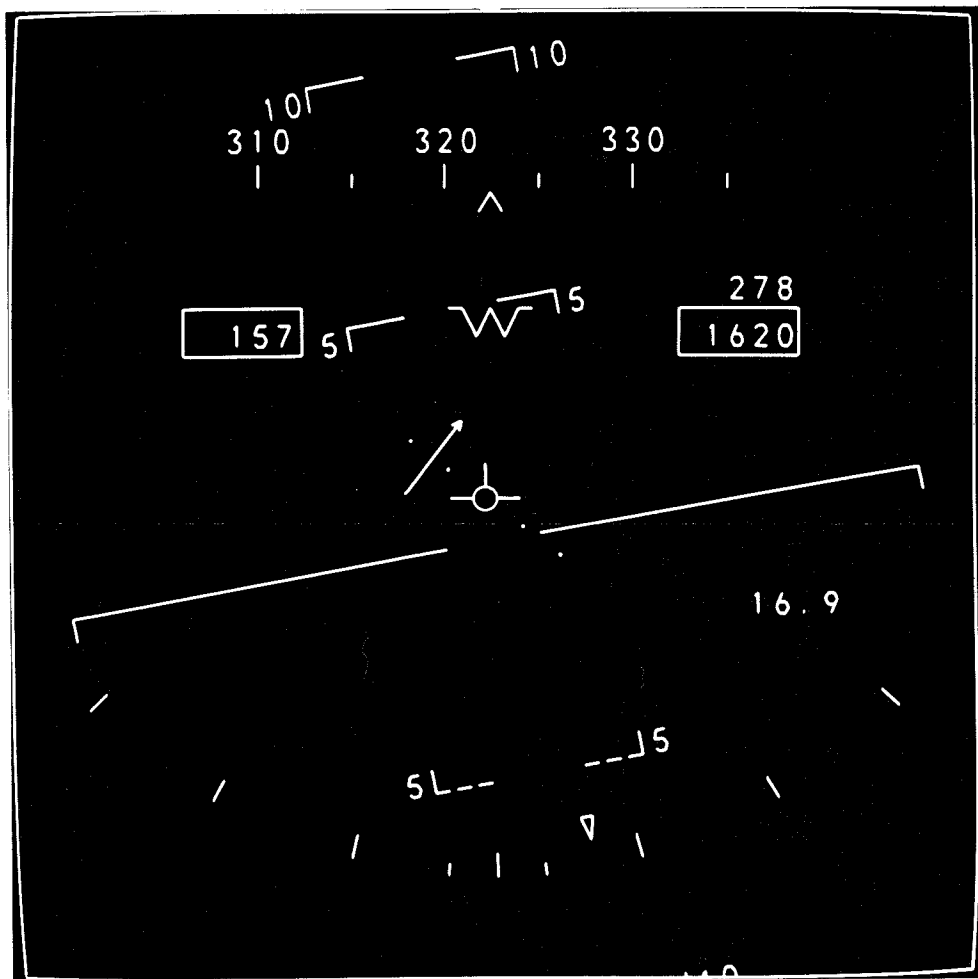
primary function is to provide for absence from work in case of illness, injury, or to receive medical care. Used wisely and properly, sick leave can serve you well (no pun intended). However, this form of leave has traditionally been the subject of abuse. An astute supervisor whose employee has a history of being sick on Fridays and/or Mondays may, justifiably, suspect sick leave abuse and require medical certification from such an employee. This practice ultimately hurts the employees himself.

A lesser known — and lesser used — leave form is leave without pay or LWOP. It is particularly well suited to

those who have exhausted their annual leave or sick leave and still need additional time off. For example, you may wish to take an extended family vacation or a 30-day ocean cruise. However, having no accrued leave is not a prerequisite for seeking or using LWOP. Employees with annual and/or sick leave on the books can and may be granted LWOP although any earned compensatory (comp) time must be used first. It's important to note that unlike other forms of leave LWOP is not a right, but an alternative subject to supervisory approval.

(Continued on page 8)

Command Flight Path displayed at NADC



Conventional aircraft display with digital and analogue readouts.

(Continued from page 1)

end of the runway or aircraft carrier.

Through the years aircraft cockpits have dramatically increased in complexity and have become increasingly difficult for the pilot to integrate. Each bit of digital or analogue information must be integrated into a mental photograph in the pilot's imagination. The CFPD would virtually eliminate this particular effort.

"At preflight," said Filarsky, "the pilot would feed to the computer the information on his task, destination, and expected scenarios for the day. The computer then generated the path complete with latitude, longitude, altitude, speed, target, and topographics—all pictorially."

"If the pilot should deviate accidentally," Filarsky commented, "a new path puts him back on course. If it's intentional, the pilot just tells the computer where he wants to go and it will reconstruct the path to accommodate his request and then return him to the original course at completion."

The Command Flight Path Display has been flight tested on a Total Inflight Simulator (TIFS, an airplane which operates much like a car equipped for driver training), on an F-14 aircraft, in a helicopter simulator and is now being installed in NADC Crew Station Evaluation Facility. The display concept will soon be installed in the Dynamic Flight Simulator and in a NCH-53A helicopter.

Initial pilot reactions indicate the CFPD increases their effectiveness and efficiency. One of these pilots is LCDR Timothy Sestak, a helicopter pilot and Head of the Vertical Flight Program Office in the Anti-Submarine Warfare Systems Department. Sestak said, "It's definitely tomorrow's way of flying. Instead of having to integrate the information as it is now presented," he explained, "the pilot has only to differentiate—a much quicker and easier task."

Leisure travel office opens

By Jim Kingston

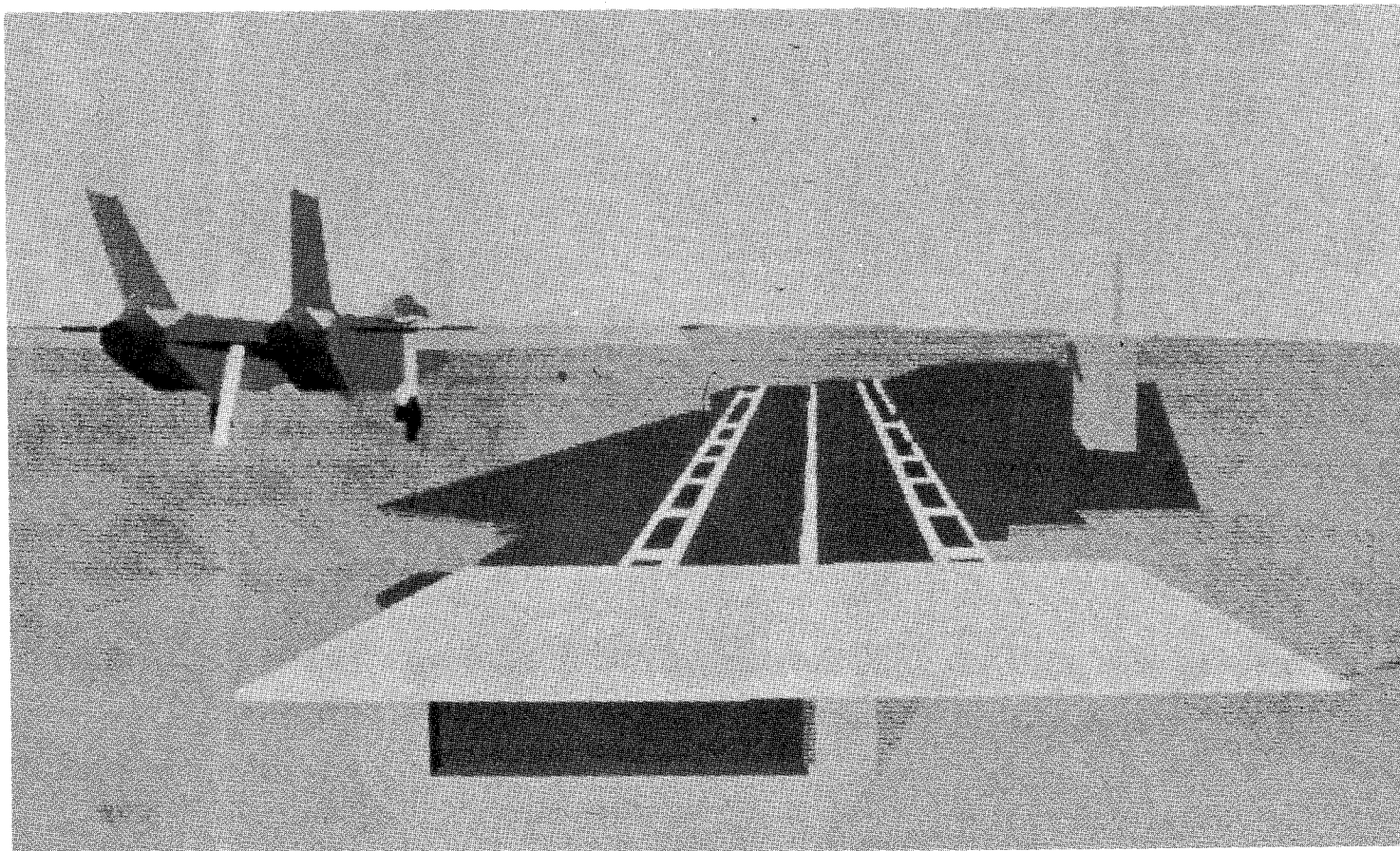
The Scheduled Airlines Travel Office (SATO) is now officially in business. Located in Building #3, first floor, opposite the official travel office, the SATO facility will be a full-service travel agency serving all the leisure time needs of NADC personnel.

The office will book reservations and issue tickets on all airlines, AMTRAK, Greyhound, and rental cars, as well as arranging vacation tours and cruises.

Cash, personal checks, and most major credit cards, such as American Express, VISA, and Master Card, will be accepted for payment.

Denise Kent manages the office which will be open Monday to Friday, 0800 to 1600. Kent has more than 9 year's experience in the travel business and has been associated with Talmage Tours, Liberty Travel, and Wings Airways. She can be reached on extension 2729 or from off Center at 956-0744.

In addition to our having on-Center travel services and good, group-rate tours and travel packages, NADC's Military Welfare & Recreation will benefit directly from use of the SATO's services.



Raster graphics-generated representation of the path an airplane or helicopter should fly to reach its destination.

Bowling League News

By Tom Reiter

The votes are in. Next season's league officers have been elected. By popular vote, our new President will be **Wes Gleason**. I'm sure it was just a coincidence that on the final night of voting, he dragged in and set-up behind his lanes, a keg and mugs for free refreshments. He said it was left over from his St. Patrick's party—good move Wes. **Carla Mackey** becomes our Vice-President. At last year's banquet, Carla was awarded the President's trophy for her spirit and sportsmanship; she's a credit to our league and an excellent choice. **Tom Reiter**, our President for past four seasons, ran and was elected for the vacant Treasurer position. The new **Donna Morgan** will be our Secretary. Donna knows her stuff and is looking forward to coping with the temperamental computer program that Sue Casagrand and Steve Jerdan have so masterfully pampered on their lunch breaks over the past two seasons. Executive Board members elected were **John Bowes** (Who Cares), **Lois Savage** (She Cares), and **Rick Yeager** (He Cares). Congratulations to all, it looks like we again have a strong administration.

Wednesday, March 30th marked an explosive night for us with 200 games galore. The second game between Les Champignon and Who Cares ended with a 1102-1101 one pin victory for **John Bowes'** fat cat lineup. Johnny stayed home and sent out **Steve Fleischut 265/622**, **Cliff Tierney 199/518**, and **Steve Metcalf 211/512**, supported by **Barb Fleischut** and **Stephanie Shelmet**. Les Champignon's, with their killer husband and wife combo of **Klaus 245/612**, and **Anke 202/553**, **Illmer**, pushed them to the limit (one lousy pin) for one of the highest scoring matches this league has seen in several years. Besides Steve, Klaus, and Anke's games, the night included **Wes Gleason's 233/210/230/673** series, **Hank Lystad's 258/244/661**, **Jack Baron's 236/580**, and **Linda Stickney's 214/563**.

Thunderbird Street Lanes has been awarding bowling towels for games above 225 for men and 180 for women. Winners to date are:

Steve Fleischut
Mark Lind
Rick Yeager
John Vincent
Jeff Irvin
Mike Lizbinski
Wes Gleason
Leo Markushewski
Jim Michell
Mike D'Aulerio
Kevin Ryan
Ernie Wykes
Chuck Halko
Ed Reidinger
Jack Eyth
Steve Spadafora

Gene Toner
Jim Campana
Klaus Illmer
Mike Dent
Hank Lystad
Scott Kee
Jack Baron
Bonnie Liedy
Lorrie Dunn
Anke Illmer
Linda Stickney
Elaine Granieri
Denise Beck
Pat Tease
Lorraine Reidinger
Caroline Tierney

Franny McKee
Carla Crist
Donna Morgan
Mary Feeley
Lorraine Kittner
Eileen Cunnane
Lynn Fratrick
Kathy Barnes
Maria Cusanelli
Andrea Sicher
Nelda McMillian
Sharon Robinson
Marguerite Hoefling
Teresa Wells
Joanne Coughlan
Beverly Lazarus
Miriam Lentz

FAMILY DAY OPEN HOUSE

Naval Air Development Center
Saturday, May 21st, 1988
10:00 AM — 2:00 PM

NADC military, civilian and contract employees with their families are invited to visit worksites and laboratories at the Center.

More than 25 exhibits, displays, videos and demonstrations will be featured to entertain adults and children. Food and drink will be available in the Anchorage Cafeteria and the Crew's Rest Club.

Watch for more details in the LOG, on Center TV monitors and in the special edition of the next REFLECTOR.

Security Reminder

Documents containing distribution statements B, C, D, E, F, X, Privacy Act or proprietary information must be destroyed in a manner preventing

disclosure of contents or reconstruction of the documents.

THEY MUST NOT BE DISCARDED AS TRASH.

Improved W & R golf outings for 1988



This year, the W&R golf outings schedule and format will be expanded and improved to accommodate the growing numbers of NADC golfers. A total of seven monthly outings are planned. The format for each outing will include prizes for both low gross and low net scores. All outings will feature closest-to-the-pin on all par three's, and a longest drive hole. A cumulative individual season competition, as well as optional team better-ball competition will also be featured. The season will end with a scramble tournament at the new Warminster Golf Course.

Entry fee (to cover prizes) is \$2.00

per outing, per person, payable to any W&R Committeeperson prior to play. For further information contact any of the following: Rob Muller, x3932; Ken Miller, x1834; Leon Domzalski, x3254; Frank Sheedy, 675-6753; Bob Lehman, x1669; Curt Swatchick, x2589; Pete Brown, x7060; John Sniscak, x2482; or Dennis Cantley, 674-0200.

The tentative schedule remaining for '88 is as follows: 3 May, Twining Valley; 7 June, Twin Lakes; 14 July, Center Square; 9 August, Upper Perkiomen; 13 September, Limekiln; 4 October, Warminster. Outing details will be posted on a new W&R Golf Bulletin Board scheduled to be ready by April 1st.

LEAVE — more than one way

(Continued from page 7)

Military leave is used by those who are members of reserve components of the armed forces which includes Army and Air National Guard. Drilling reservists are required to perform two week's active duty each year and military leave permits them to do so

without a loss of pay. The limit on military leave is 15 calendar days each year and includes the non-working days falling within the training period. Normally, that's the week-end in the middle of the two-weeks. Reservists called up for additional duty beyond the 15-day period, have to use either annual leave of LWOP.

For the definitive answer to all your leave questions, check with Civilian Personnel or NAVAIRDEVCEININST 12630.IJ.

If the SOC Fits

(Continued from page 2)

federal employees, although federal employees must be wary of just what they do on behalf of their spouses. We are not permitted to engage in active campaigning for partisan candidates, and can do no more on behalf of a spouse than we could for any other candidate.

4. May I, a registered Democrat, fill out the term of a recent resignee as township supervisor? The Board of Supervisors is asking for interested people to submit their names, after which it would conduct interviews and then select someone for the position.

Yes, you may. The key here is that you are not running for election, but being appointed by the township board.

5. I would like to display a sign in my yard on behalf of a political candidate. May I?

Federal regulations provide that it is proper to wear or display political badges, buttons, or stickers, but are silent concerning the use of political signs. The Office of the Special Counsel has advised that such a display is permissible so long as it is a small yard sign, freely distributed by campaign headquarters.

Promotions

Richard Cline, Gary Delsarro, Thomas Donnellan, Richard Eppright, Linda Fomalont, Margaret Furlong, Elaine Granieri, Arthur Gutzler, Kathleen Hanling, Marybeth Kenny, Daniel Mathews, Richard McNeil, Evan Nosel, Mark Salamon, Daniel Schmidt, Robert Smiler, Vicky Speakman, James Toll, Frank Wenograd, Steven Woods, Angelo Zuino.

Worth Repeating

"The world is moving so fast these days that the man who says it can't be done is generally interrupted by someone doing it."

— Elbert Hubbard,
editor, publisher

Computational Fluid Dynamics

A flowing force in airframe design at NADC

By Mary Ann Brett

The Aerodynamics and Aircraft Performance (AAP) Branch in the Air Vehicle and Crew Systems Technology Directorate is currently applying state-of-the-art Computational Fluid Dynamics (CFD) with advanced computer programs solving "Euler" and "Navier Stokes" equations, in designing more efficient and safer Naval aircraft.

Campbell Henderson, who has headed the Branch for three years, defines CFD as "the computer solution of the equations governing fluid motion." At NADC, the fluid is air and the motion is its action on aircraft surfaces. Henderson said CFD is used by the Center mostly in the early conceptual and preliminary airframe design stages. Ultimately, CFD determines and analytically presents a visual representation of the air stream flow over the entire surface of the aircraft, illustrating airflow separations or departures from the frame. "Obtaining this information once necessitated extensive and

Continued on Page 3



Photo by Robert Goodyear

The Computational Fluid Dynamics Team: Campbell Henderson, Dr. Richard Llorens, Samuel Greenhalgh, David Findlay (standing), Dr. Douglas Hall, Dr. Edward Feinberg and Dr. Wei Tseng.

Big effort in small business gets Navy award

By Mary Ann Brett

The Center's Small Business Office, headed by John Scott, recently received the Secretary of the Navy Small and Disadvantaged Business Omnibus Award. This prestigious, Navy-wide award was presented to Scott by the Director, Contract and Business Management, Office of the Assistant Secretary of the Navy (Shipbuilding and Logistics) E. Grey Cammack during a breakfast ceremony in Mobile, Alabama. Additionally, selection for

the omnibus Award puts NADC in contention for the Department of Defense Small Business Award.

Last fiscal year, NADC exceeded its goal of 35% by awarding 52% of its total direct purchasing dollars to small business. More than \$100 million went to small business contracts and for the first time the Center awarded more dollars to small businesses than to large ones.

Continued on Page 2



Foreground: NADC's John Scott, Dep. for Small Business (SB), Center Commander CAPT Curtis Winters, and Diane Heal, SB Specialist display Omnibus Award. Background: Don Hathaway and Ray Quinn, Directors for Small and Disadvantaged Business Utilization for SECNAV and NAVSUP, respectively, Ernest Cammack, Dir, Contracts and Business Mgmt. OASN and CDR Wayne Vanderslice, NADC's Supply Officer.

The Naval Air Development Center

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(See page 7-8 for details)

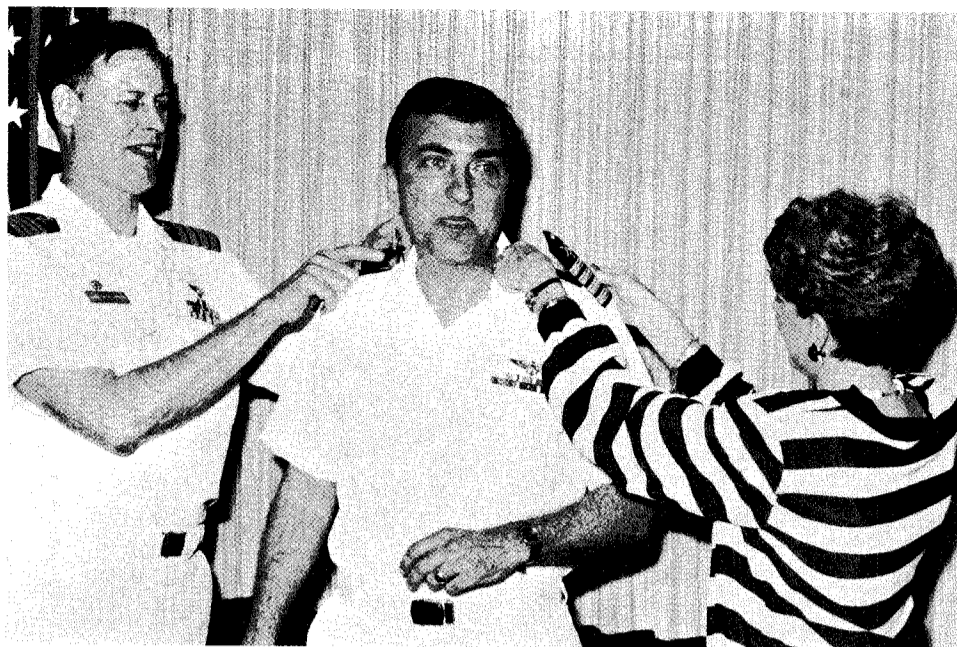


Photo by NADC Photo Lab

Newly promoted CAPT Wayne Savage (left) sports comical expression as Center Commander CAPT Curt Winters and Mrs. Jane Savage help with the 4-stripe shoulder boards.

Damage detector developed

By JO2 Todd Lufkin

NADC is currently testing a low cost, lightweight device for field inspection of impact damage and resulting flaws in aluminum honeycomb sandwich and laminated composite materials used in naval aircraft. These inspections assure that composite structures provide the same level or structural reliability as comparable metal structures. The device is the Shadow Moire Out-of-Plane Interferometric (SMOOPI) Damage Detector.

The detector consists of a lightweight battery power source, a 4-inch x 5-inch moire screen and a pistol grip and is capable of detecting surface anomalies of .0001 inch. It has several advantages over existing inspection techniques. It is a fast, simple, accurate, portable, inexpensive device that can be used in the field by personnel with minimal training and eliminates the tedious scanning procedures required to inspect large structures.

A variety of methods already exist to detect internal damage. Ultrasonics and x-rays are most common. Other methods showing varying degrees of applicability include thermographics, laser holography, acoustic emission monitoring and simple hammer tapings. However these methods tend to be laborious and unreliable in the field where results are affected by temperature, humidity and vibration.

Dr. Shih L. Huang, Arthur Scotese, Armando Gaetano and engineering co-op student Glenn Werczynski of the Aero Structures Division of the Air Vehicle and Crew Systems Technology Department created the detector as part of the Center's Independent Exploratory Development effort. Scotese explained that SMOOPI works on the interference fringes created by the superposition of two grids (a master grid and a specimen grid) or the shadow moire technique.

"Moire is the term used to describe a wavy pattern," he explained. These shadows are distorted by the out-of-plane elevation or depth of the surface. When viewed with SMOOPI, moire fringes are created which represent the topology of the specimen's surface (similar to a contour map). A damaged area can be quickly identified; then ultrasonics can be used at selected locations to further define the nature of the damage.

SMOOPI was recently demonstrated at the Naval Air Systems Command in Washington, D.C. and was favorably received. Field evaluations are being planned at various naval depots on the F-14, AV-8B and F-18 aircraft.

Scotese received his BS in mechanical engineering from the Pennsylvania Military College (now Widener University) and his MA in engineering science from Penn State.



Photo by NADC Photo Lab

Glenn Werczynski with SMOOPI Damage Detector

Verona passes bar exam

By JO2 Todd Lufkin

The Naval Air Development Center's Susan Verona recently passed the Patent Bar examination.



Photo by JO2 Todd Lufkin

Susan Verona

To be a patent attorney you must have an engineering or science degree and a law degree. Verona has both, receiving her bachelor's in metallurgical engineering from Lafayette and her law degree from Villanova.

Verona has been on Center for 2½ years and came specifically to practice patent law. She explains that her job is to get patents for the inventions developed at NADC to protect the Navy's interest.

Her plans for the future are uncertain since it is early in her patent career. "I'm interested in getting more skill in writing patents," she explained, "it takes a long time to become proficient."

Navy Relief '88 in swing

In commemoration of the Battles of the Coral Sea and Midway, Navy Relief Society will conduct its annual Fund Raising Campaign from May 4 through June 6. CDR John Shelby, Head of the Engineering Support Group, will be the 1988 Navy Relief Campaign Chairman for the Center.

The Navy Relief Society has been a principal source of emergency assistance to members of the Navy and Marine Corps as well as their dependents and survivors since 1904 and is supported entirely by voluntary

contributions from members of the Naval Service and their civilian friends.

Numerous fund-raising activities will be held in support of the campaign. The NADC Chief Petty Officer Association will be steam cleaning car engines at the Hobby Shop every Thursday from 21 April-2 June between the hours of 1100-1300 for the low cost of \$5.00 per car. Check *The Log* and TV monitors for additional activities. SUPPORT A WORTHY CAUSE.

Small business award

(continued from page 1)

Nearly \$1.2 million was awarded to women-owned firms and more than \$17 million went to disadvantaged firms. The Center's small business R & D awards were the highest among the Space and Naval Warfare Systems Command laboratories.

NADC is the only Department of Defense research and development activity in Pennsylvania. The Small

Business Office, together with the Technology Transfer Office, continues to provide business/technical assistance to the Pennsylvania business community. These offices also interface with the Pennsylvania Ben Franklin Partnership to promote economic growth and develop high tech businesses.

According to Scott, his office will continue to identify defense high-tech opportunities for small business firms.

Security Reminder

Secret Material must be entered in the Center's control system at the time of origination or receipt on Center. Working papers must be dated when created, marked on each page with the highest classification of information they contain. When working papers are

to be retained more than 90 days, filed permanently, or released outside the command all accounting, control and marking requirements prescribed for a finished document are mandatory. Refer to Paragraph 0807, NAV-AIRDEVENINST 5510.13C.



Reflector

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Sailor and Blue Jacket of the quarter named

By JO2 Todd Lufkin

The Naval Air Development Center's Sailor of the Quarter (SOQ) for the first quarter of 1988 is AW2 Paul Benn. This is his second time as SOQ, which is a first at NADC. The 27-year-old sailor has been in the Navy for eight years and has been on Center for two years.

Benn was shocked to learn that he had been named SOQ for a second time. "I was surprised to be nominated and really didn't think that I would make it again," he stated. "Being nominated makes my chain of command look good," explained Benn, "they are supporting me and it's only fair that I support them and do the best I can to win."

A native of Boise, Idaho, he has been stationed on the USS CORAL SEA (CV 43); various training commands; Patrol Wing One in Kadena, Japan; VP-19 in Moffett Field, Calif., then NADC.

Since being SOQ before, Benn now works in Vertical Flight, having moved from Schedules, and is attending Montgomery County Community College at Blue Bell, where he is a sophomore majoring in business.

He recommends that a person make a plan and stick to it; whether it be short or long term. Benn's short-term goal is two-fold: to make rate and get his degree. His long-term goal is to be an entrepreneur. "I would like to set up a store that sells video tapes or CDs," he

explained, "but that's only after I put in my time with the Navy and achieve what I can."

HM3 Elvin Santiago was recently named the Naval Air Development Center's Blue Jacket of the Quarter (BJQ) for the first quarter of 1988. Santiago has been on Center for a year-and-a-half and in the Navy nearly seven years.

"I was pleasantly surprised when I heard of my selection because I really didn't expect it," he stated, "I was straightforward with my answers and told the board my feelings—not what they may have wanted to hear."

Santiago explained that he originally joined the Navy to travel and to pursue his education. "I've travelled extensively in the Mediterranean and am close to attaining my Associate Degree." He became a hospital corpsman because "it sounded like a good environment to do a lot of practical learning." The BJQ also stressed that medicine is so open with many options and is people-oriented.

In his career, the 25-year-old Santiago has been stationed at Orlando, FL, for boot camp; San Diego, CA, for corps school; Beaufort, SC; Aviation Medical School, Pensacola, FL; VAW-121, Norfolk, VA; the USS DWIGHT D. EISENHOWER (CVN-69), Sewell's Point Clinic, Norfolk, VA and then NADC, where he

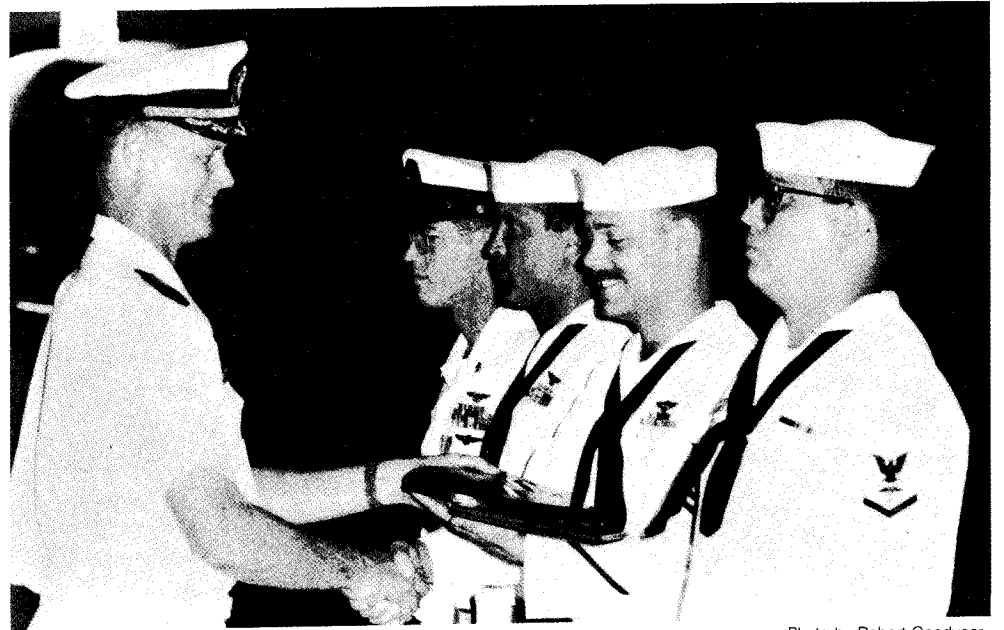


Photo by Robert Goodyear

Center Commander CAPT Curtis Winters presents SOQ plaque to AW2 Paul Benn; Blue Jacket of the Quarter, HM3 Elvin Santiago at far right.

works at the Biomedical Support Branch of the Air Vehicle and Crew Systems Technology Department.

A native of the Bronx, NY, the BJQ explained that he is "basically a city person, but the area is a rich environment for raising a family." He and his wife Jacqueline have two children, Adrian, 3, and Anthony, 2. Any spare time finds Santiago playing basketball or racquetball. But his primary interest is spending time with his sons, "It's important for the boys to have a full-time mother and father now

that they are in their impressionable years."

Santiago advises his fellow shipmates to do their jobs and do them right the first time, "That way you can take pride in your work and won't have the feeling someone's looking over your shoulder or out to get you."

This BJQ plans on making a career in the Navy and hopes to go to Aviation Physiology school in Pensacola, FL. "I'd like to retire to Puerto Rico," he stated, having lived there for four years with his father. "However, he added, Florida wouldn't be bad either."

Computational fluid dynamics at NADC

(continued from page 1)

expensive wind tunnel testing," said Henderson. "CFD is now sufficiently complementary to wind tunnel testing, that time in the tunnel is significantly reduced resulting in a sizeable cost savings."

"Design takes various levels," said Henderson. "in conceptual design we need to know the aircraft's mission and approximate payload. Experience gives us some preconceived knowledge of the best general configuration but not the details. We vary all the important parameters and analyze each alternative, finally arriving at the optimum solution."

Henderson explained the theory behind CFD. "When you design a

wing," he said, "you have to know the aerodynamic loads imposed on that wing and how they are distributed." The equations governing fluid dynamics obey the laws of conservation of energy, momentum and mass. The solution of these equations determines the forces and moments (moments = forces \times distance) for a given object flying through the air.

By developing a computer geometry model for a specific aircraft shape, flow solutions can be obtained, in turn providing values such as pressure, velocity, and density. Integrated over the entire surface, this information yields values of aircraft lift, drag, and pitching moments. Equipped with these values, Henderson's team can

determine what control deflections are needed for steady or maneuverable flight. We're aiming to minimize drag, go farther with a given engine, reduce fuel consumption and, generally, increase efficiency and safety.

The AAP Branch is currently applying CFD to several analysis projects. The first is a high-performance, thick airfoil for housing surveillance equipment in the wing of the High Altitude Long Endurance (HALE) remotely piloted vehicle. Henderson explained the thicker the wing the more difficult it is to maintain good aerodynamic performance. To accommodate the requirement for long endurance, the wing span needs to be very large compared to the chord. In fighter aircraft this would be prohibitive because of the need for maneuverability.

On the X-31A, a highly maneuverable experimental aircraft, Henderson's group is to determine the flow properties entering the engine inlet and through the engine duct. On the tilt-rotor V-22 "Osprey" aircraft, the download imposed during the low speed transition region was calculated. Henderson added that a program using CFD is scheduled to develop advanced rotor technology for the next generation of tilt rotor aircraft. Studies will address improving the rotor (more thrust per horsepower), the wing, and predicting air flow behind the rotor including how and when the flow impinges on the horizontal tail and body.

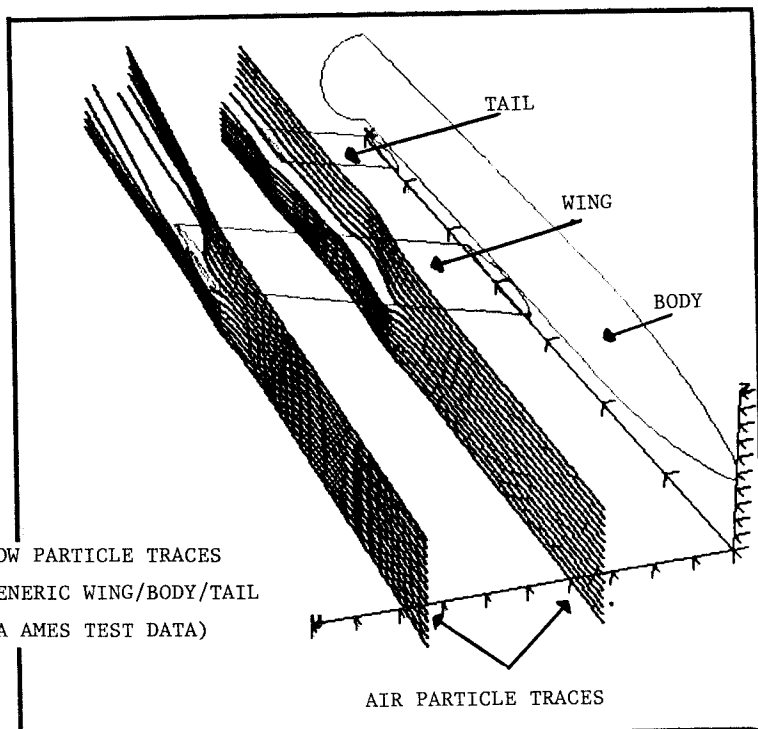
Henderson also noted there is on-going research to develop better analytical methods for certain flow

characteristics on the highly swept delta wings as well as the optimum placement of submerged missile and weapons stores. He explained modern airplanes are aiming to submerge weapons into the cavity(s) of the airframe so less drag penalty is suffered. However, when the cavity is opened to release the store, a turbulent air flow enters the cavity. "We need to analyze that flow," said Henderson and compensate for its effects to ensure the weapon doesn't hit the aircraft."

To accomplish these varied tasks, Henderson's group has used several CFD computer programs. These programs have grown in complexity from "PANAIR," which addresses the subsonic and supersonic air flow ranges but not the effects of viscosity, to "VS-AERO," subsonic only but does address viscosity, to "TEAM," subsonic, transonic and supersonic plus the more complete Euler governing equation of motion, and finally, the "Navier Stokes" program which encompasses all the previous regimes.

Although computational fluid dynamics is not a new science in terms of theory, according to Henderson, its evolution has been limited to computer capacities because of its extreme complexity. Only recently has CFD been fully processed by modern super-computers and made practical for use. "Problems which once took months to solve," Henderson said, "are now being addressed in a matter of hours and with increased accuracy."

Henderson has worked at NADC for eleven years. He has a Bachelor of Science from Princeton University in Mechanical Engineering and the equivalent of a Master's degree in Aeronautical Engineering.



Produced with NASA Ames plot 3D software on the NADC Asset Lab Iris 4D turbo graphics workstation.

Fire department ablaze with responses on and off Center

By Mary Ann Brett

The NADC Fire Department, organizationally located in the Air Operations Division, received an "outstanding" rating during a recent inspection by the Northern Division Fire Marshal. The inspection, conducted every 18 months, addressed areas such as maintenance of equipment, the fire prevention techniques program, training proficiency, administrative record keeping and command support.

Among the equipment evaluated was the new Hazardous Material (HAZMAT) trailer and command post which was so well accepted it is being considered as a model for the Navy.

In addition to their responsibilities at the Center, The Fire Department participates in mutual aid agreements with several of the neighboring townships and boroughs. These are more than nominal agreements as NADC fire fighters responded to 8 ambulance calls and 42 structural fire calls within the last six months.

NADC's Fire Department also holds community programs illustrating treatment of hazardous materials, breathing apparatus, flammable/combustible liquids as well as college programs demonstrating aircraft crash and fire rescue techniques.



Fire Department's New Hazardous Material (HAZMAT) trailer and command post demonstration at the Center.



Fire Department responds to a 2-car collision in Shenandoah Woods housing area.



Mutual Aid takes NADC fire fighters to a residence in Northampton.



A blazing retail store fire in Warminster requires NADC's assistance.



Fire Department trains military and civilian personnel on proper Hazardous Material handling procedures.

First Crew Systems S & E awardees named

By Mary Ann Brett

The Air Vehicle and Crew Systems Technology Department recently established and announced their first (to be annual) scientific and engineering awards for outstanding accomplishment. The winners were Dr. James Sheehy, Edwin Rosenzweig and Dr. Thomas Donnellan.

"Effects of Glare"

Sheehy, an Engineering Research Psychologist who has worked at the Center for three years, was commended for his innovative research on the effects of glare on human visual performance.

According to Sheehy, until recently all laser eye protection (LEP) programs were driven by damage criteria. Damage criteria is the amount of energy required to enter the cornea and cause minimum permanent damage to the eye. In contrast, Sheehy created a data base concentrating on temporary visual performance rather than permanent damage. His research has emphasized and quantified the effectiveness of low level glare in disrupting visual performance. "In fact," said Sheehy, "our data demonstrates low-level glare has the same impact on mission success as permanent eye damage. Glare is a relatively inexpensive weapon and its use has emphasized the urgent need to provide pilots with effective countermeasures." Possible applications, especially by low technology warring powers in third world environments are obvious.

Sheehy has a Master of Science degree in Human Factors Engineering from Rennselaer Polytechnic Institute and a Ph.D. in Visual Psychophysics from Penn State University. His



Photo by NADC Photo Lab

Dr. Donald McErlean (left) presents S&E award to Dr. James Sheehy.

research is being used by the Navy, as well as other services, and has helped establish NADC as one of the prominent authorities for both LEP and the biological effects of coherent glare.

"Composite Repair"

Rosenzweig, an Aerospace Engineer, and **Donnellan**, a Materials Engineer, were recognized for developing a non-autoclave/staging process technique to support more rapid repair of composite materials. Their development has become the basis for all new bonded field and depot level repair concepts used by the Navy.

Until recently, repair techniques for the advanced composite materials in growing use on Navy aircraft were impractical, if not impossible to implement in the real world battle environment. Rosenzweig and

Donnellan recognized that easier, quicker, less costly, and more reliable repair processes were required to support these materials, as well as the needs of the maintenance community.

These engineers developed a pre-staging technique to make repair materials latent. They then integrated their technique with another innovative process called non-autoclave curing. Although previous repair processes required special freezer facilities, when jointly applied, these new processes enabled room-temperature storable patches and laminates to be prefabricated from commercially available 'prepreg' materials. "Prepreg," explained Rosenzweig, is industry's adaptation of the word preimpregnated. In this case, fibers on which resins have been preimpregnated."

In addition to the improvements listed above, this repair procedure reduced training requirements, repair times and costs and the need for costly and damage prone component removal and disassembly. It also minimized the need for autoclaves and dramatically improved the quality of field repair inspections.

Rosenzweig has worked at the Center for 16 years. He has a Bachelor's degree in Aerospace Engineering from Penn State University and a Master's degree from Drexel University in Mechanical Engineering.

Donnellan began working at NADC in 1977 as a co-op student with Drexel University. He received his Bachelor's degree in Materials Engineering there and subsequently a Master's and Doctor of Science degree in Materials Science from the Massachusetts Institute of Technology.

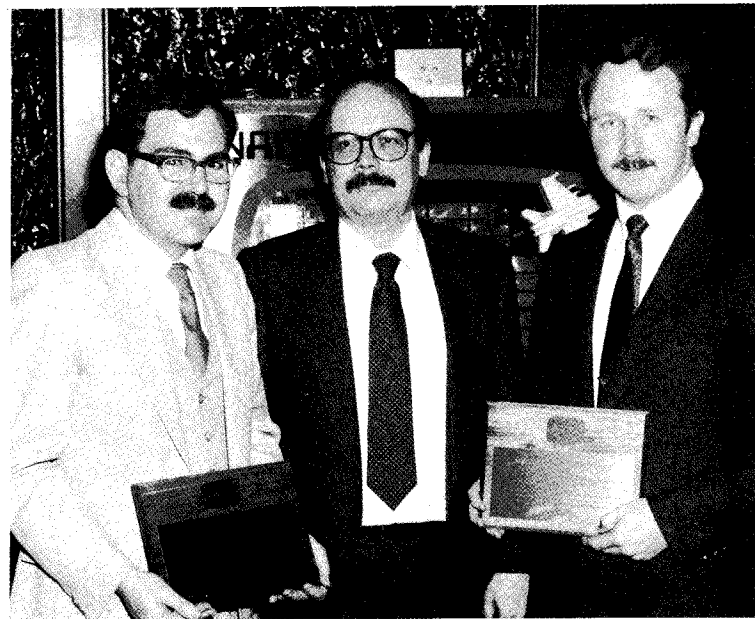


Photo by NADC Photo Lab

Award winner Edwin Rosenzweig, selection committee member Dr. William Scott and award winner Thomas Donnellan.

If the SOC Fits

By Robert Janes

SECNAVINST 5370.2H, entitled "Standards of Conduct and Government Ethics," is the primary Navy instruction in the area of the Standards of Conduct (SOC). This instruction is available in General Files (extension 2763) and should be consulted for guidance on any SOC questions. The Office of Counsel (Code 095) is likewise available to provide advice and guidance on these matters, and I urge any of you with SOC questions to call our office on extension 3000.

One of the enclosures to the SOC instruction, entitled the "Bedrock Standards of Conduct," provides a concise summary of the entire instruction. Those bedrock standards of conduct are:

1. Avoid any action, whether or not specifically prohibited, which might result in or reasonably be expected to create the appearance of:

- Using public office for private gain,
- Giving preferential treatment to any person or entity,
- Impeding Government efficiency or economy,
- Losing complete independence or impartiality,
- Making a Government decision outside official channels,

- Adversely affecting the confidence of the public in the integrity of the Government.

2. Do not engage in any activity, or acquire or retain any financial interest, which results in a conflict between your private interest and the public interest of the United States related to your duties.

3. Do not engage in any activity that might result in or reasonably be expected to create the appearance of a conflict of interest.

4. Do not accept gratuities from defense contractors.

5. Do not use any official position to influence any person to provide any private benefit.

6. Do not use inside information to further a private gain.

7. Do not use your rank, title, or position for commercial purposes.

8. Avoid outside employment or activity that is incompatible with your duties or that may bring discredit to the Navy.

9. Never take or use Government property or services for other than officially approved purposes.

10. With limited exceptions described in the instruction, do not give gifts to your superiors or accept them from your subordinates.

11. Conduct no official business with persons whose participation in the transaction would be in violation of law.

12. Seek ways to promote efficiency and economy in Government operation and public confidence in its integrity.

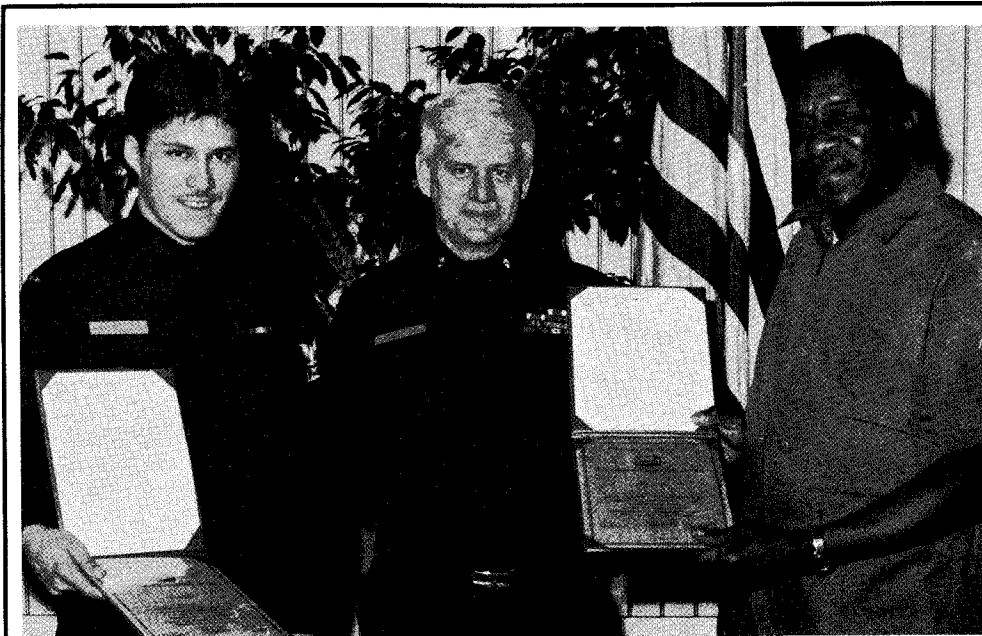


Photo by Clarence Watkins

First quarter Galley awards presented

Galley personnel MS2 David Pauley, records keeper, and Tom Fullard, contractor, are awarded first quarter Food Service Achiever Awards by CDR John Shelby, Head of the Engineering Support Group, during a recent breakfast ceremony at the Galley.

Great softball expectations for 1988

By Mark Lilly

Well, it's springtime again at the Naval Air Development Center. A time for that annual rite of the warm season known as softball. A number of changes have been made over this past winter. One of them is that the byline for these articles has changed. My predecessor has since departed the Center leaving what has been conveyed to me as a gaping vacancy in the *Reflector's* Sports Department. Since I wrote the articles for the NADC Football League last Fall. I was selected by the Sports Department Editor to fill that void—and I probably will, pending renegotiation of my contract.

I'd like to discuss some of the changes in the league's structure, organization and rules that were made since the last game of 1987 was played. First of all, League Commissioner Jim Kearney made one of the more controversial moves of the off-season by establishing a 6-member ruling party that has been titled The Board of Directors. The Board makes all rule changes, makes modifications to operating procedures, and makes final decisions concerning any changes to the league's by-laws. The Board is comprised of some of the stronger personalities in the League. They are: Jim Kearney, CEO, Fred Kuster, Tom Weiss, Bill Vaughan, John Bowes, and Joe Spiecker.

One of the first actions attempted by the Board of Director's was to split 1987's twenty team league into an A and B division—with the A division composed of the top ten finishing teams of 1987 and the B division comprised of the bottom ten. However, this idea was shelved after the rest of the league

protested vehemently and the league's team count fell to 18. The league then reverted back to one division where each team gets to play all other teams in the league once, regardless of the quality of the opposing team.

Two other changes made during the off-season were to outlaw drinking and to keep the umpiring responsibilities entirely in-house. Another change from last year was the decision to use league members to umpire the games, instead of contracting out to an umpire's league. This should help the league to have more control over the umpire's attendance since there were so many no-shows in 1987.

The league lost three teams when Pacer, the Devils and the Dawgs disbanded before the 1988 season. However, the league added the Intimidators giving a net loss of two teams over the number comprising the league in 1987.

Now, I would like to talk a little about some expectations for the 1988 season and some of the events which occurred during the first two weeks. Some of the teams who figure to finish prominently in the 1988 season are the Falloon, Misfits, Bandits and 8th Inning.

The Falloon are led by fireballer Greg Heydet and a power-house lineup that includes the likes of Weiss, Mike Bubb and Glenn Willis who manhandle some of the biggest bats in the league. The Misfits have a reliable pitching staff and a couple of the better softball players on Center in Jeff Price and Steve Hynes. The Bandits picked up 1987 All-Star pitcher Rick Brodeen from the now-defunct Pacer team. The addition of Brodeen, coupled with one of

the more prolific offenses in the league should keep them in contention for the title this year. The 8th Inning should finish in the top four this year behind one of the better pitchers in the league and an offensive lineup that contains 6 or 7 guys who can put the ball out of the park in any given at-bat. Note: The 8th Inning team manager has asked me not to mention any of his teammates names because personal acclamations violated his team concept doctrine.

Probably the biggest surprise of this young season has been the fast start of the Renegades softball team. After making an unbelievably quick withdrawal recovery, the Renegades started out of the gate red hot, posting a

3-0 record, beating traditionally strong teams like the 8th Inning and the Druids and then beating the Intimidators who will probably make the playoffs behind the highly touted pitching of Ken Beebe. The fast start can be attributed to some key off season acquisitions by manager Steve Spadafora and the strong play of athletes like Scott Lassen, Bill Brower, and Scott Hollyway.

The remaining four playoff spots will be filled by members from the following group: the Nightriders, CSC, Bearcats, Druids, and the Rebels. As for the remaining seven teams, you guys have everything to gain by proving me wrong.

Golfers swing in the wind

Blustery 20 knot winds, temperatures in the 50's, and lightning-fast greens kept all but a few of NADC's golf nuts from defeating Montgomeryville Golf Course on Tuesday, April 12th. "It was worse than Augusta!" moaned Fred Kuster, as he tearfully fired down a post-round suds in the clubhouse. Out of 54 players, only four were able to post net scores below par 70.

Low net went to Ted Calkins, with a blistering 65; 2nd, 3rd (tie) and 4th low nets were earned by Bill Mulley, Jr. (68); Tony Madera (69) and Tom Karr (69); and Roger Jenkins (71). Pete

Brown captured low gross with an 82, while three players tied for 2nd low gross with 85's (Scott Perry, Fred Grau, and Frank Sheedy).

In the new better-ball competition, Tom Karr and Mark Drager won first with a net 59. Second place went to Tony Madera and Joe McCandless (61), and 3rd to Rudy Virga and Bob McAvoy (64).

Longest drive went to Tom McGovern (318 yards) and closest-to-the-pins were earned by Walt Blizzard (#5, 33ft); Leon Domzalski (#7, 3ft, 5in); Walt Green (#11, 10ft, 1in); and Scott Perry (#17, 6ft).

Welfare and Rec trip news

June 18 Bus Trip Washington, DC (U.S. Capital Bldg., National Geographic Explorers Hall, Custis-Lee House, Arlington Cemetery, guided tour of monuments, dinner). \$28.

Aug. 13 Baltimore, MD (Lunch Cruise, Free time to enjoy the inner harbour). \$32.

For more information/reservations call Margaret Vigelis, X3067.

Mixed Bowling News

By Tom Reiter

With only one night remaining in our season, (by the time you read this it'll be over), the A Division looks clinched with **Les Smith's** Neiners (43-21) holding a four game lead over **Helene Goldstein's** Eleventh Frame (39-25); but you never know, an Eleventh Frame sweep would cause a tie breaking rolloff. In the B Division, **Lorraine Kittner's** Nine Pins (38-26) are two games up on **Rich Eppright's** White Winos (36-28). **Dave Whitenack's** Destroyers (35-29) could sneak in if all the pins fall right. Whoever wins their Division will meet the challenge of our first half winners, the Alley Cats (**Bob Geyer**) and the Goofers (**Al Knobloch**). If there are no Divisional ties, we'll have our four team, League Championship rolloff on the 18'th of May. The annual awards banquet will be held at the Blair Mill Inn, June 17'th.

As all parents of Little Leaguers know, the bench IS important. I'd like to acknowledge supporting bowlers who haven't received any ink and deserve a mention this season. The number is their season's high score not their weight.

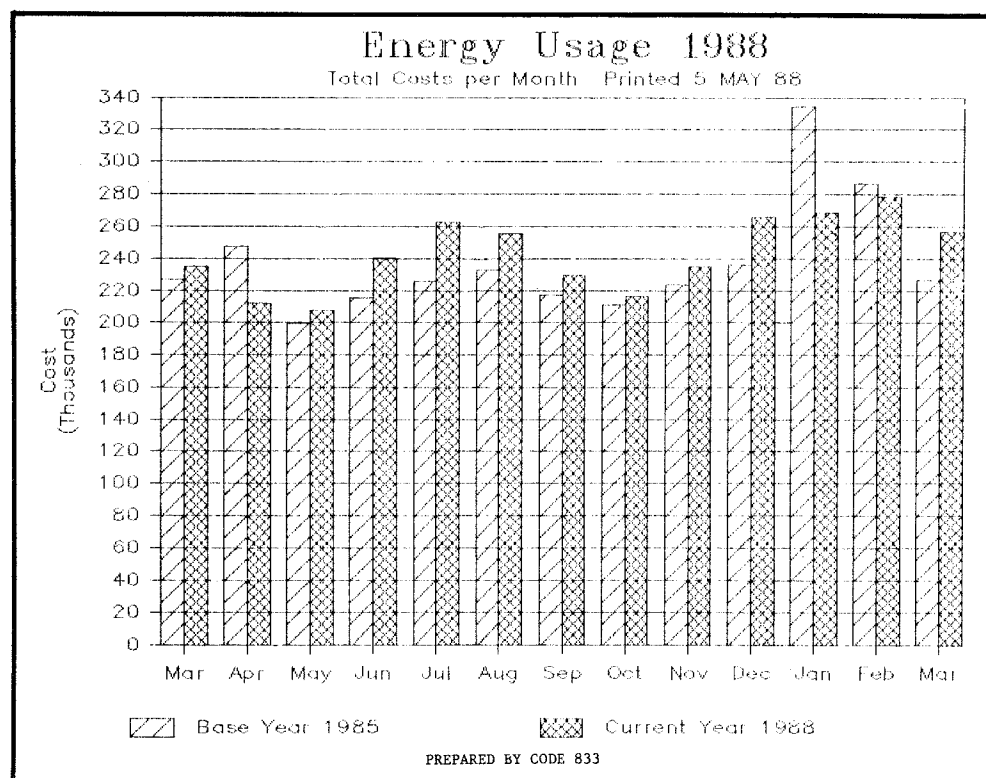
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Stephanie Shelmet 167
Harold Wyzansky 202
Audrey Dinkins 176
Miriam Lentz 192
Mack Cox 192
Earl Bair 203
Vicky Schwartz 165
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VIEWPOINT

Question: What NADC site are you most interested in showing your family?



"My family would like to see the computers and the airplanes, those are the fun things according to my children."

Karl Geist



"My son would be interested in seeing the model aircraft flights. Even though he is only two, he is fascinated with flying objects- especially airplanes and helicopters. 'Plane' is one of the most used words in his vocabulary."

Adrienne Harrington

Prepared by Margaret Vigelis.

Photos by JO2 Todd Lufkin.

"I would like my visitors to tour the VP software lab, the hangar area and flight line, a static display of P-3C aircraft and possibly the control tower."

LCDR Rich Flanigan



"I will take my family to visit the CV-ASW lab because it closely simulates the ASW module located aboard aircraft carriers. I have often tried to explain the lab and I feel they would appreciate seeing it."

Marie Coyle



Use knowledge to unlearn prejudice

By Jo2 Todd Lufkin

"An illogical, irrational and erroneous set of concepts about groups, which are then applied to individuals," is how Morton Metersky of the Systems Engineering Division of the Battle Force Systems Directorate (BFSD) defines prejudice.

"Prejudice is learned and so, perhaps it can be unlearned," he explained. Taking this assumption further, Metersky met with Cathy Hanling of the Systems Requirements Branch of BFSD and together they came up with the "Prejudice Reduction through

Knowledge" program. This program, with the support of the Anti-Defamation League's "A World of Difference," has offered films, workshops and a monthly information bulletin called "Know Your Neighbor." The idea was favorably received and strongly supported by Department Head Edward Yannuzzi and put into effect at the beginning of the fiscal year.

Each month the information bulletin covers a different theme the Indian sub-continent, Black Americans, Jews, Christians, etc. and is distributed to members of BFSD. Future newsletters

will examine China, and the impaired.

"I believe that if we disseminate knowledge about culture and religion, then maybe, just maybe, we can attack the foundations of prejudice," explained Metersky, "If only one person is affected, then we will have succeeded."

As part of the program, an April workshop entitled "Prejudice Reduction" was held in the auditorium. Approximately 20-30 BFSD employees attended. "This was an attempt to bring prejudice into public view and hopefully reduce it," he stated.

June 22, the BFSD EEO committee,

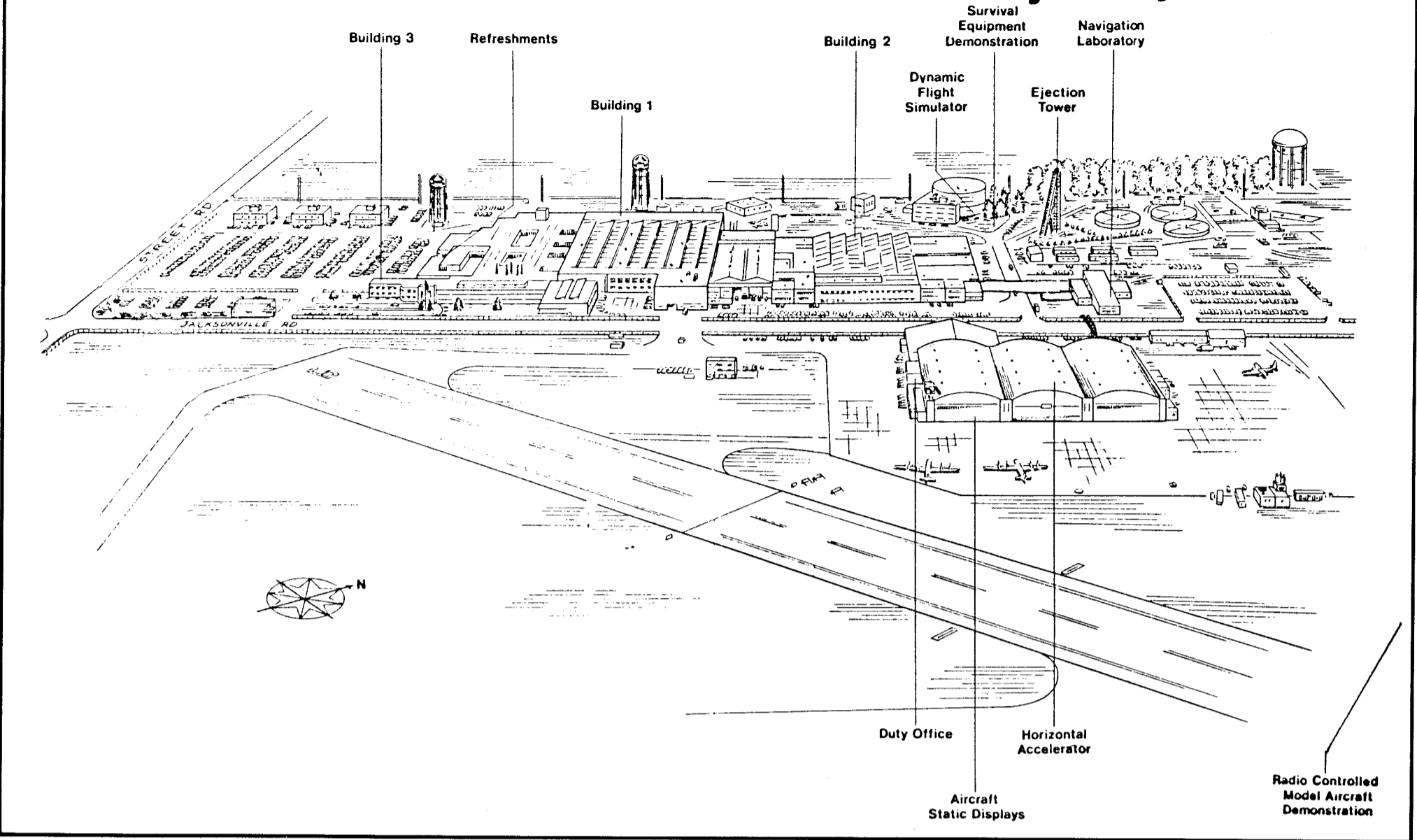
in conjunction with the EEO office, will sponsor a multi-denominational clergy panel who will discuss the topic "Addressing Prejudice from the Pulpit." The moderator will be Dr. Franklin Littell, Noted Christian and member of the U.S. Holocaust Commission.

"Imagine if the program were Center-wide," Metersky stated, "we could constantly expose people to information about religion, culture, etc. and maybe they would start to question their prejudicial attitudes. We need to attack the foundations of prejudism and not just show the results of its practice."

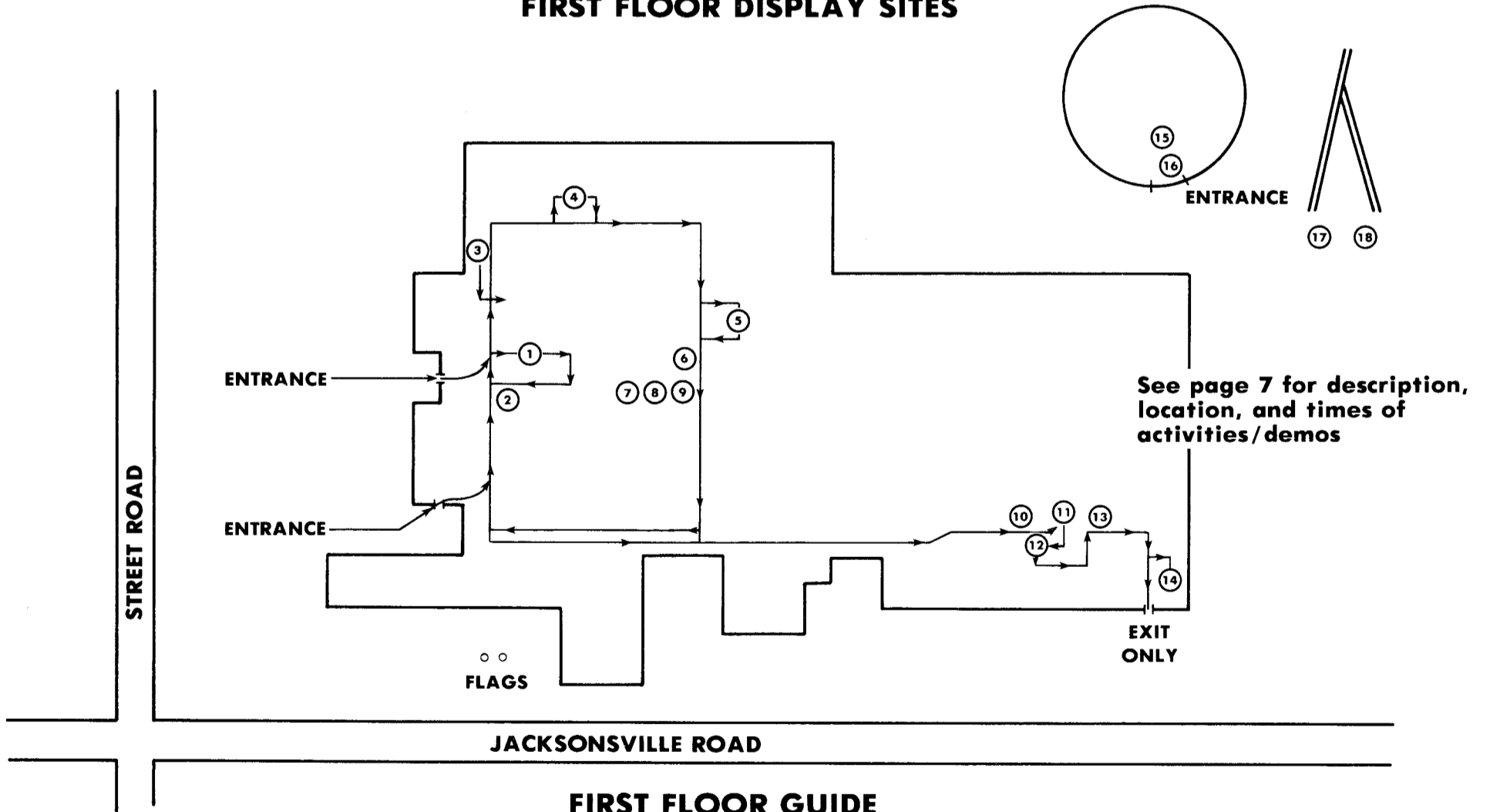
Family Day Attractions

Display/Exhibit	Location	Display/Exhibit	Location	Display/Exhibit	Location
Helicopter video AIL Lab walk through VS Lab tour & video presentation (every 30 minutes from 1000) video: "Simulated S-3 ASW Mission"	Seahawk Room	Scorsby Laboratory "Suitcase gyro" demo	Bldg 1-1 H-6	NAV/COMM Theater (movie on current projects)	Bldg 125 Conf Rm 27
VP Laboratory—Walk through of VP Lab where software for P-3 ASW a/c is developed and tested	Bldg 1, S-17	Acoustic Tank Sonobuoy dem-every 10 minutes, 1000	Bldg 3, F13, V-33	Talking computer	Bldg 125 Conf Rm 27
TACAIR Office—Video program—"No Points for Second Place" (The REAL Top Gun)-1 hr. run every hour from 1000, (F-14 development and its capabilities), static display of BQW-74C aerial target used for test & develop of audio-air weapons systems used for fleet training	Bldg 1, P-5	Magnetic Media Lab Display and tour	Bldg 1, H-19	Gyroscope demo	Bldg 125 Conf Rm 27
Basic Laboratory—Communication Load Module Demo-20 min. video war game every half-hour, 1000	Bldg 1, Col T-10	Danny Ross Lab Acoustic signal processing & display tech	Bldg 1, I-20	Ship's motion Simulator	Bldg 1, N-22
Inertial Guidance Facility Display & presentation	Bldg 1 1 J-23	Noise demo	Bldg 2, 2L19	TACAIR Systems Development Facility (TSDF) real-time simulator display continuous	Bldg 3, Fl 2, J1-35
Cafeteria will be open for fast food-1000-1400	Bldg 108	Centrifuge Every 20 min between 1000-1400	Bldg 70	Sun Workstation graphic applications demo or Marine Corps Digital Comm Terminals continuous	
Club will feature a buffet and DJ-1000-1400		Ejection Tower, Flare 1100 & 1300 weather permitting	Outside Bldg 70	Presentations at 1015, 1115, 1215 & 1315	
Choral group will perform in the auditorium-1300-1400		Gun Demo, Life Raft inflation (one after the other)	Outside Bldg 70	Systems Tech Group Facility Bldg 1, Fl 2, K-19	Bldg 1, Fl 2, K-19
		Static displays	Bldg 70-lobby	Computer game on big screen TV	Auditorium
		Three 8-min videos shown continuously.	Bldg 70-auditorium	See yourself on TV	TV Studio
		Attendance certificate	Bldg 125 Central Hall	A-7 & T-2 sight display, helicopter & P-3 open	Apron-Hanger Bay 1, Bldg 4

When, What and Where: NADC Family Day 1988



FIRST FLOOR DISPLAY SITES



FIRST FLOOR GUIDE

- | | | |
|---|---------------------------------|---------------------------------------|
| 1 Vertical Flight Office | 7 BASIC Laboratory | 13 Crew Station Evaluation Facility |
| 2 Welfare & Recreation Store - Hats, T-shirts, etc. | 8 Danny Rosso Laboratory | 14 Sonar Tank Test Facility |
| 3 Tactical Aircraft Project Facility | 9 Magnetic Media Laboratory | 15 Life Raft and Signal Flare Display |
| 4 P-3 Aircraft VP Program Facility | 10 Aero Materials Display | 16 Life Support Equipment Display |
| 5 Structural Test/Aircraft Composites | 11 Movie on NADC (large screen) | 17 Dynamic Flight Simulator |
| 6 S-3 Aircraft VS Program Facility | 12 TV Studio | 18 Ejection Seat Tower |



Future scientists visit
P-3 CHEX
Family Day photos
1st place for bowlers
Tiger Team report

Attuned to radar research

HARPSS award music to NADC ears

By Mary Ann Brett

"They said it couldn't be done," smiled Dr. John Smith of the Mission Avionics Technology Department. But, because Smith proved it could be done, NADC, and in particular Smith, were honored recently at the Office of Naval Technology (ONT) for the Exploratory Department Top Accomplishment Award for fiscal year 1987. NADC's accomplishment provided a major advance in the development of a lightweight radar called High Altitude Remote Platform Surveillance Systems or HARPSS.

According to Smith, who has worked at NADC and in the radar area for 24 years, HARPSS is the first United States active element AEW radar. Using electronic scanning, graphite composites, solid state modules, and eliminating the need for a rotodome,

Smith and his team actually extended existing radar range capability while cutting its weight by a factor of 10.

While primarily envisioned for use on high altitude remotely piloted vehicles, Smith said, "HARPSS" light-weight technology could also be used on airships and helicopters."

HARPSS' selection for the ONT award gained not only recognition for the program but also earned \$100,000 for next year's Independent Exploratory Development Program at the Center explained Smith. He added, "It is always nice to work on hardware," said Smith of his team's general consensus of the 5-year HARPSS program. "We designed, developed, partially fabricated, and rooftop tested the system here at

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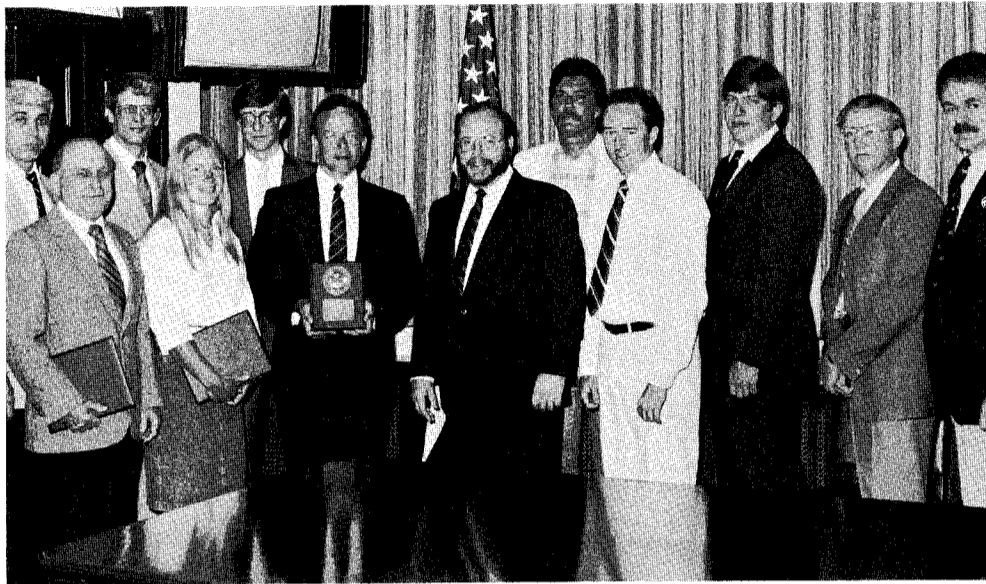


Photo by NADC Photo Lab

The Center's HARPSS Team: Stinson Swyers, Robert Starry, William Gelatka, Elisabeth Decker, William Jemison, Dr. John Smith, Office of Naval Technology's Dr. Philip Selwyn, Francis Biddick, George Logue, Wayne Everett, Edward Paulsworth, Dr. James Duke, (not pictured) Nicholas Mangino, Harold Penn, and Michael Schneckner.

Hero's award presented to Navy pilot Koshiol

By JO2 Todd Lufkin

The Naval Air Development Center has one of the few genuine Naval Aviation heroes in the person of LT Kevin L. Koshiol. A recipient of the prestigious Aviator's Valor Award, his citation began "... for conspicuous valor in aerial flight on January 3, 1987 as a P-3 Patrol Plane Commander with Patrol Squadron SIX (Barbers Point, Hawaii)."

Koshiol guided his crippled plane to a perfect two-engine, centerline

touchdown after a 4½ hour ordeal in which the aircraft experienced a propeller overspeed and engine fires.

"There was never a question in my mind that we wouldn't land," he stated, "this is a result of training where you tend to look at plans for the worst scenario. In your mind you already practiced how you will act." However, he explained, the situation he experienced was one nobody could have conceived, let alone practiced for.

continued on page 7



Photo by Drew Schmith

POW's REMEMBERED

— during the daily morning flag-raising ceremony on May 27 attended by NADC civilian, military and Armed Forces Reserves in their military uniforms.

TO ALL HANDS:

"On July 4th, Americans everywhere gather to celebrate the birth of our Nation. We commemorate the achievements of the Founding Fathers who built the Republic; we reaffirm our dedication to liberty; and we pause in pride and gratitude to remember the men and women associated with our Armed Forces.

The United States remains free today, thanks to you. Like the Continental militiamen and the millions of Americans who have served this country throughout its history, you have accepted a vow to guard the beacon of liberty.

As Center Commander, I am proud to extend a special salute to all of you who serve our country in many capacities — both civilian and military. Your commitment to our country's defense means we will always have cause to celebrate freedom, not only on the Fourth of July, but every day of the year."

CAPT C. J. WINTERS
Center Commander

July Fourth Message From the SecDef

As the American people prepare to celebrate 212 years of uninterrupted freedom on this July 4th, I am very proud to salute you—the men and women of the Army, Navy, Air Force, Marine Corps, and Coast Guard. It is through your dedication to duty and country that the hard-won independence our forefathers struggled so valiantly to obtain has endured.

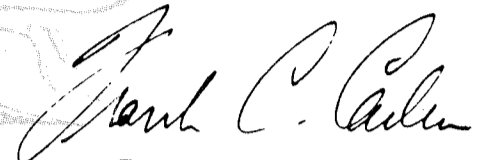
Americans across this great nation are also proud. They will celebrate in hundreds of cities, towns, and rural communities, march in parades, and light up the skies to honor this great day in American history.

This day continues to symbolize our freedom to all the oppressed nations of the world. It is a day the men and women of the Armed Forces who serve so diligently around the world send an important message: The United States is a country of free people

and will protect that freedom at all costs.

That which is valuable does not always come easily. Over the course of history, Americans have always heeded the call—and many have died—to protect a nation that stands for liberty and justice for all.

I am proud to serve with the men and women of the Defense team. You are valiant guardians of freedom and worthy successors to the preceding generations of Americans who gave reality to the reasons we celebrate our Declaration of Independence.



Frank C. Carlucci
Secretary of Defense

Uncle Sam wants you!

The Naval Reserve is looking for young professionals to work on technically and managerially challenging projects as Naval Officers in support of the Air Systems Command Program. The program's mission is to provide qualified Selected Reserve personnel to fill the immediate needs of the Naval Air Systems Command for additional military manpower in the event of mobilization due to national emergency or other contingencies.

Opportunities are currently available to enter this program via direct commission in the Restricted Line of the Naval Reserve in the grade of Ensign. The direct appointments are for inactive duty as a Reserve Aeronautical Engineering Duty Officer (AEDO; 1515 designator) or a Reserve Aviation Maintenance Duty Officer (AMDO; 1525 designator).

This program is open to:
— civilians, male or female, between ages of 19 to 35;
— enlisted personnel of the inactive Naval Reserve; and
— enlisted personnel in the reserve components of other Armed Forces on inactive duty, provided appropriate contingent release is authorized.

AEDO applicants should have at least a bachelor's degree in the field of Engineering, Physical Sciences or Computer Science, and must meet the physical requirements established by the Naval Medical Command. Business or Management degrees are acceptable for AMDO's. AMDO's should also have two years Active or Reserve enlisted

aviation experience. Applicants eligible for appointment into a higher grade because of prior commissioned service will be evaluated for such on the basis of education or experience and skills related to aeronautical engineering (for AEDO's) or aviation maintenance and logistics (for AMDO's).

Each officer is assigned a Selected Reserve Mobilization billet appropriate for his/her grade, designator, military and civilian experience, and educational background. Appointees serve two years as a drilling Selected Reserve and have an eight year total commitment. Training is accomplished through monthly weekend drills, annual 2-week active duty for training (time and place typically at the officer's choice) and maintenance of civilian professional skills. Emphasis is placed on engineering project activities which enhance mobilization readiness.

For additional information contact:

John G. Shannon, LCDR, USNR-R
NR-NADC 0193 Command Liaison Officer

(215) 441-2441 (B)
(215) 343-7135 (H)

or

Commander, Naval Air Systems
Command
Reserve Management Office
Code: AIR-09P4
Washington, D.C. 20361
(202) 692-7960

Welfare & Rec trip news

Aug. 13 Baltimore, MD (Lunch Cruise, Free time to enjoy the inner harbour). \$32.

Sept. 10 PA Dutch Country (Amish Homestead, ride on the Strasburg Steam R.R., guided sightseeing tour of area, lunch). \$30.

Nov. 26 Hershey, PA (Hershey Chocolate World, Hershey Museum-Puppet Arcade, Hershey Park Christmas Candy Lane sparkling with over 100,000 lights, Dinner). \$34.

For more information/reservations call Margaret Vigelis, X3067.

Planned your vacation yet?

To help with all of your personal travel arrangements, call Ellen at SATO Travel, ext. 2729, Mon. thru Fri., 8 AM to 4 PM.



Photo by Jim Kingston

FUTURE SCIENTISTS VISIT NADC — Twenty-seven Delaware Valley Science Fair winners, their parents and teachers visited the Center during the first part of May. The group was welcomed aboard by the Center Commander, CAPT Curtis Winters, and then they visited the Oceanography Flatbed Plotter, Dynamic Flight Simulator, ASW Module and the George Tsparas Lab.

Security Reminder

Exterior doors, other than those that are primary entry/exit points will not be left open/unlocked and unattended.

Office and lab doors must be locked during the day when left unattended and at the end of each workday.



Reflector

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June 1988

NAVAL AIR DEVELOPMENT CENTER, WARMINSTER, PA

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Commander, NADC	CAPT Curtis J. Winters
Technical Director	Guy C. Dilworth, Jr.
Public Affairs Officer	James S. Kingston
Editor	Mary Ann Brett
Assistant Editor	JO2 Todd Lufkin

CHEX — A vast improvement in ASW



Photo by NADC Photo Lab

At one of NADC's P-3C aircraft, NADC's Antisubmarine Warfare Systems Department (ASWSD) head CAPT Wayne Savage, Center Commander CAPT Curtis Winters, Associate Technical Director for ASW Richard Mitchell gather with CHEX team: AW2 Rocky Morris, AX1 Doug Kallman, Jim Stempeck, George

Voss, Bill Bailey, SQN LDR John Coote, LCDR John Bramer, Tom Weaver, Franz Bohn, Howard Shectman, Bob Dolceamore, Helen Keller-Surman, John Kichula, Ron Guignard, Tom Keegan, John Freeman, Maryanne Haiduck, Barry Knouse, Bill Holcomb and Bob Polanezcky. Polanezcky. Pilot is Kevin Sheldon.

By Mary Ann Brett

To many of us CHEX may sound like a brand of breakfast food, but according to project manager Tom Weaver, CHEX is one of the most labor-intensive projects undertaken at NADC since the Center's first involvement with the P-3 aircraft in 1965.

In development since 1984, CHEX is the first major upgrade to the P-3C Update III aircraft's acoustic subsystem. The CHEX package is currently under technical evaluation at the Naval Air Test Center, Patuxent River, Maryland and will begin operational evaluation in this summer. "If all goes well," said Weaver, "CHEX will be delivered for use in the Fleet by the end of the year."

Short for *channel expansion*, CHEX will provide increased antisubmarine warfare (ASW) capabilities by doubling the number of available sonobuoy channels from 16 to 32. Weaver explained this is accomplished by the Dual Advanced Sonobuoy Communication Link, a 99-channel computer-controlled receiver. He said, "the threat is definitely getting quieter, so we need to put our sonobuoys closer together. When placed closer together, more are needed to cover a given area and hence the

need for more communication channels."

Other improvements include the Commandable Manual Entry Panel which simplifies the system control task by introducing menu-driven, touch-sensitive plasma panels instead of hundreds of mechanical switches.

The heart of the CHEX package is the Air Common Acoustic Processing (ACAP) software usable by the P-3C, S-3B, and, potentially, the LAMPS ASW aircraft. ACAP provides the signal processing around which the CHEX improvements and future improvements can be incorporated.

Weaver, who has worked in the P-3 area of the Antisubmarine Warfare Systems Department for 12 of his 25 years on Center, emphasized the phenomenal amount of work required to develop CHEX. "Because of CHEX high priority and time critical nature," he said, "a team of approximately 20 Center employees and more than 100 contractors worked 24 hours a day, 6 days a week and sometimes on Sunday, many times without compensation, and to the partial exclusion of other projects which use the same P-3 facilities."

He noted that in some areas 'more input (people) equals more output' but not the case with CHEX. "Few people

are familiar enough with the system and its complex technical characteristics and concepts to be truly effective in making changes or additions to the baseline," Weaver explained. "No one person," he commented, "fully understands the entire CHEX system. Each person is somewhat of a specialist in a certain area which made communication between workers a vital part of the process."

Weaver added that NADC's role in the CHEX project required very little procurement of or modification of hardware. "People make it work," he said. "The software development and systems testing is very labor intensive. It was less a scientific process than a people process." Weaver explained that

since CHEX is not a repetitive task, human intellect, creativity, adherence to discipline and hard work were the driving forces that satisfied this enormous effort.

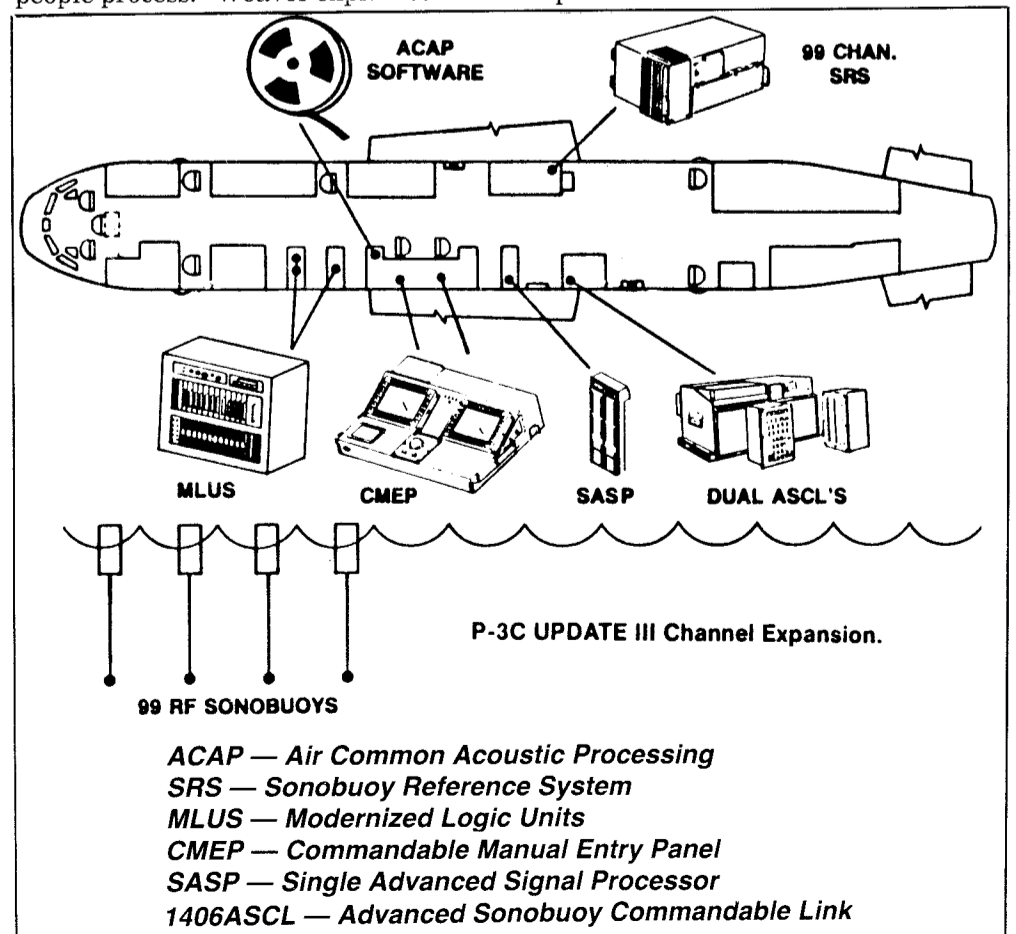
A number of additional items might have been incorporated into the CHEX package given the time and money. However, said Weaver, they've been held off to a follow-on program called Post CHEX which is already underway and will be completed in three years (1991).

CHEX is currently in the Fleet for training purposes and in use by the U.S. Naval Reserve. According to Weaver, NADC's efforts on the CHEX program will have the direct result of vastly improving the Navy's ASW capabilities.

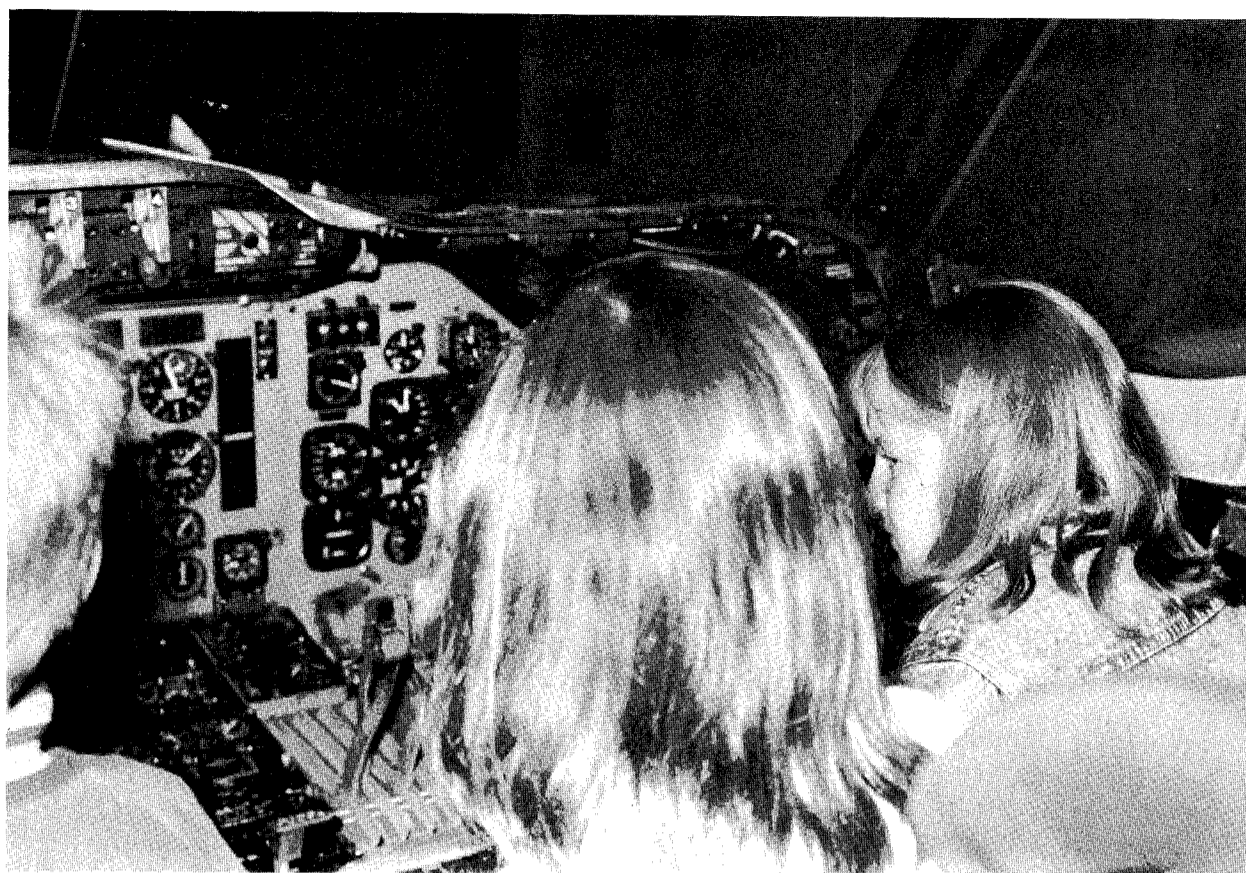
Promotions

William Adams, Richard Aldrete, Randall Allen, Phu An, Rose Aquila, Robert Barber, Robert Birrane, Matthew Brems, Elmer Caison, James Campanile, Edward Coleman, John Custy, Mary Devlin, Stuart Farber, William Heil, Brian Hester, Margaret Higgins, David Hunt, Elke Jack, Steven Kern, Peter Konopelski, Jeffrey Lamb, Jamie Latimer, Laura Lirot,

Saroja Mahadevan, Paul Mehrkam, Paul Meserole, Christina Miksis, Kathryn Minder, Timothy Naugle, John Passfeld, James Pessognelli, Elaine Picard, Paul Prichard, Jaime Pupek, Gloria Puzio, Glenn Rhodside, Renee Roberts, Helen Savord, Susan Smith, Janet Suchockas, Gary Thomas, Christopher Thompson, Sung Vo.



Fascinated faces filled



Future pilots in the P-3C aircraft cockpit?

A tremendous turnout, estimated at nearly 1,500 people, characterized Family Day Open House at NADC. A concerted effort by volunteers and the participation of our employees, contractors and their families ensured the event was a resounding success.

Good comments and smiling, the day as visitors viewed more than twenty displays and exhibits.

Especially popular were the Dynamic Flight Simulator (Centrifuge), Ejection Tower, and, of course, the P-3 and helicopter which were open for tour to young and old alike.

Photos by James Kingston and JO2 Todd Lufkin



Do-it-yourself computer-generated Family Day attendance certificates were a memento of the day.



Wide eyes capture the whirling centrifuge which fascinated young and old alike.



Families lined up continuously throughout the day to board the P-3C aircraft and CH-53 helicopter.

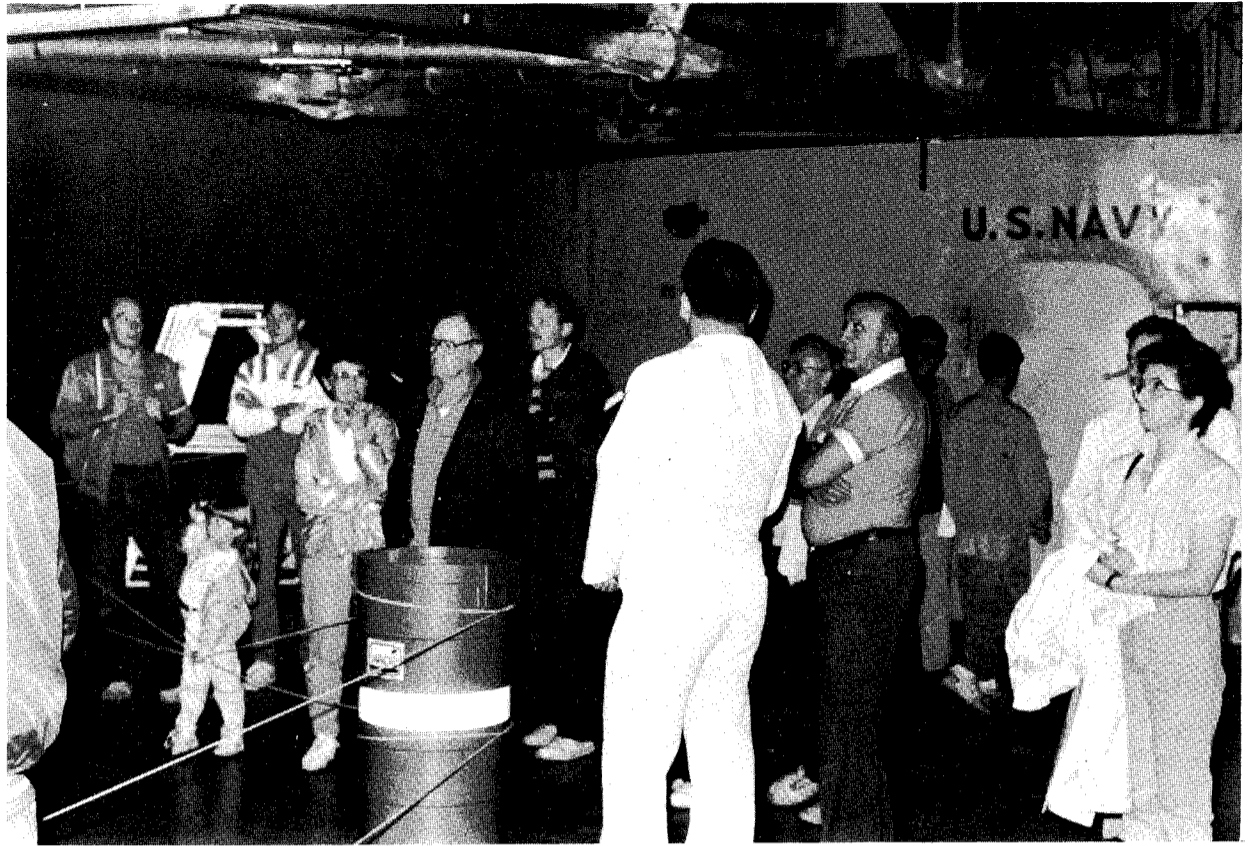
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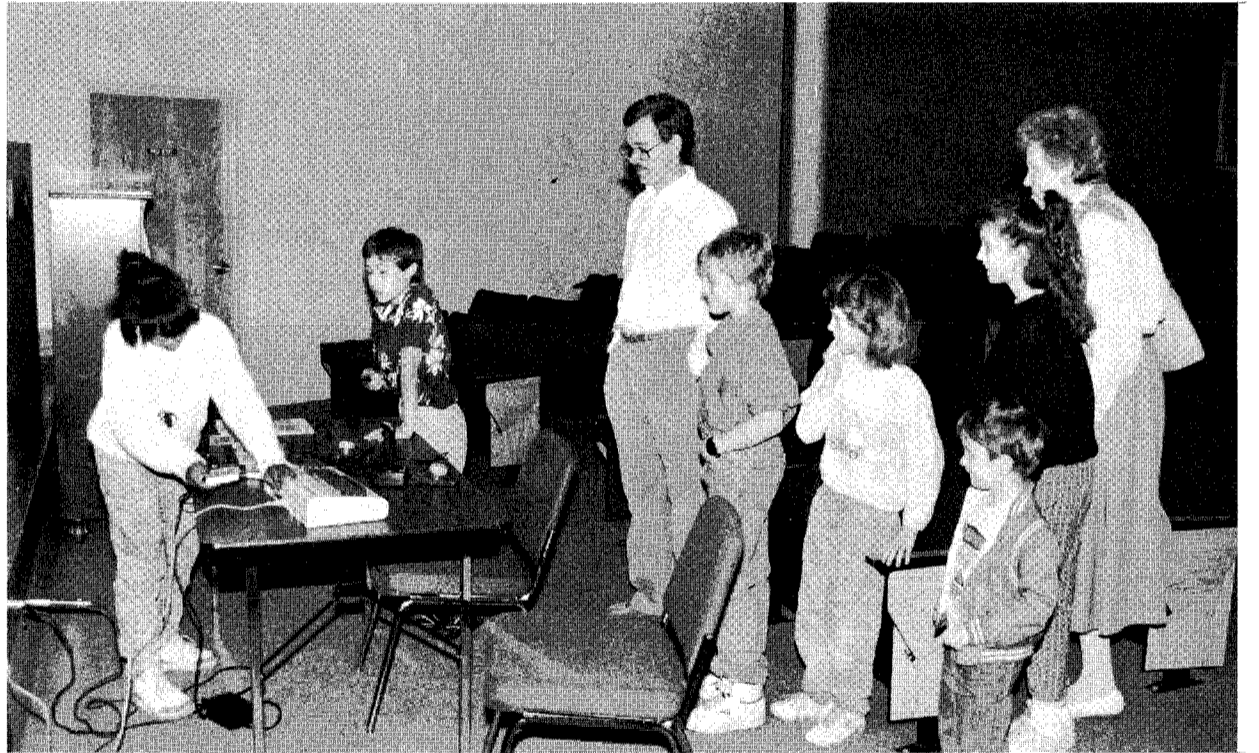
Family Day at NADC



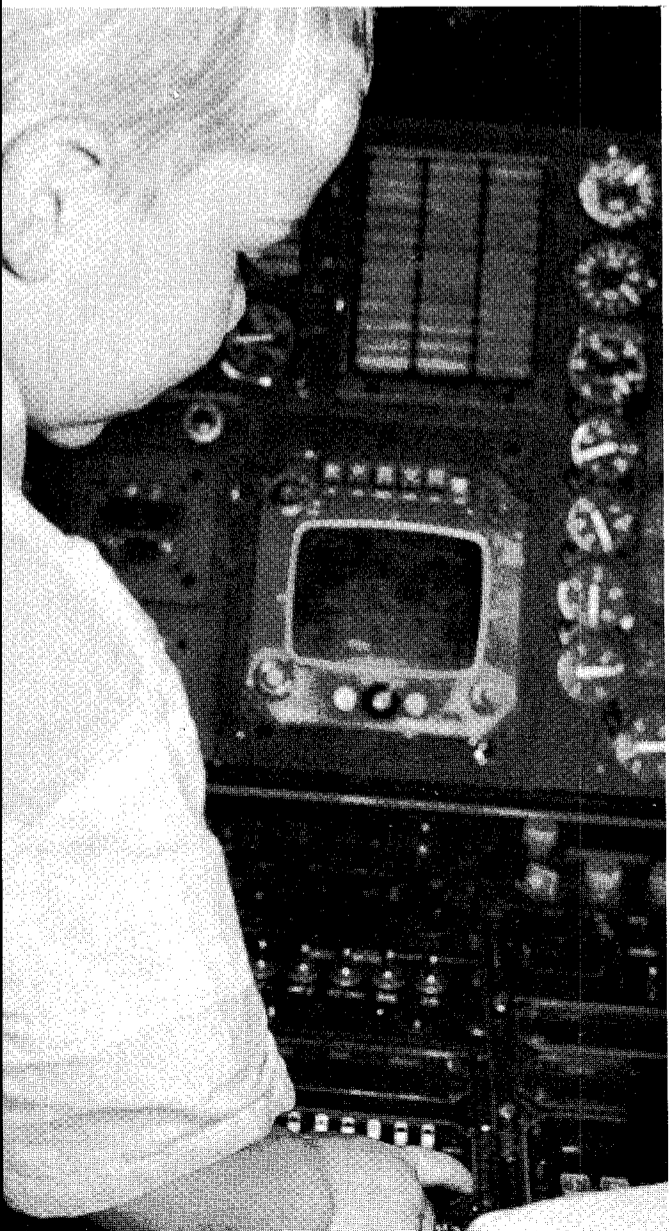
al gear, and ejection seat, seem to fit these young
iasts.



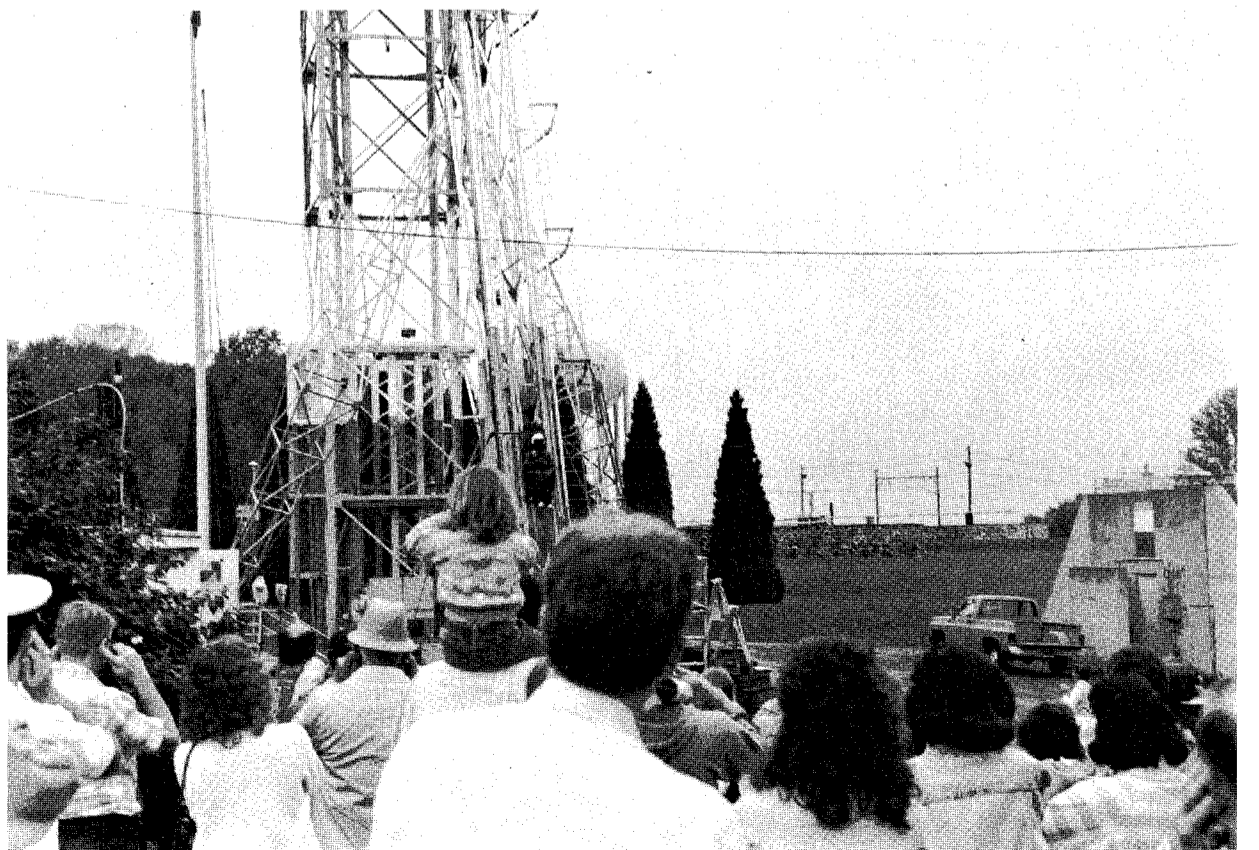
Centrifuge/Dynamic Flight Simulator capabilities are explained as the crowd awaits a dynamic
illustration.



Computer games on the large screen in the Auditorium entertained young aficionados.



buttons than Dad's car!"



"Hold your ears," was the instruction given at the Ejection Tower in anticipation of the blast.

Military Bowlers bring home the trophy



Photo by Robert Goodyear

NADC's winning bowling team: ATC Paul Buckler, AMHC Alan Shepard, ACC Jan Becknell, AXC Robert Smith and LCDR Michael Dent

By JO2 Todd Lufkin

An NADC all-military team took top honors at the Mid-Atlantic Navy Regionals held at Naval Base Philadelphia in mid-May.

Twelve teams from New York, New Jersey and Pennsylvania commands participated in the three day event, bowling six games a day.

Representing NADC were AXC Robert Smith, ATC Paul Buckler, AMHC Alan Shepard and LCDR Mike Dent. This team won with more than 350 pins. "The competition was tough," stated Buckler, "but, we were tougher."

Softball's Misfits and Granfalloon undefeated

By Mark Lilly

Well, Mother Nature 'fifteen run' ruled the NADC Softball League during May. Most teams in the league were rained out for two to five games during the month. Nevertheless, I give you the standings as of June 2 even though they are not quite as indicative of the state-of-the-league as they would be without washouts.

As you can see, only the Misfits and Granfalloon remain undefeated as of this article. The Misfits have been playing good ball behind, arguably, the best defensive outfield in the league. These guys refer to themselves as the Smurfs and Gargemayle which, of course, is in reference to their cap sizes. The Smurfs are Matty Brown, Mike Jeronis, and Chuck Lagrossa. The

identity of Gargemayle should be apparent to anyone who knows the Misfits. The Misfits have also been bolstered by the fine pitching tandem of Al Dick and Joel Wexler who should take them far in the playoffs. The Falloon have won all their games but have not been blowing teams out, which is their normal modus operandi. Even so, they are winning behind the

heart of the team, Steve Fleischut, and the dangerous bats of Ed Swiski, Gary Marinelli and Greg Heydet.

Next, we have a bunch of teams grouped with one loss. The Nightriders lead the pack with five wins and are led by power hitters Mike Greco and Dean Kimelheim. The 8th Inning continues to play well enough to win. Glenn

continued on page 8

Mixed League Bowling rollofs held

By Tom Reiter

Congratulations to the Alley Cats, this year's Mixed League Champions . . . Our league rollofs saw **Bob Geyer's** team come out smoking and run away from the Nine Pins, Goofers, and the Neiners. Striking with captain Bob's 200 game, **Kevin Ryan's** 212, and **Jack Eyth's** 210/550 series, the Alley Cats breezed to a surprising 146 pin victory by rolling a 2999 three game series. **Patty Aspinall** gave them a strong lead off position and **Gene Toner, Kathy Barnes,** and **Marguerite Hoefling** provided the balanced attack that won it all. Second place went to **Lorraine Kittner's** Nine Pins (2853). Helped by **Linda Stickney's** 197/507 series, they proved what a difference a year can make. Unlike their rolloff opponents, this was the first year that the Nine Pins reached post season play. **Les Smith's** Neiners (2793), had a solid year finishing strongly by winning the second half with 45 wins and 23 losses. **Mark Lind** scored the rolloff's high series with 571 three game total. The Goofers (2783), with captain **Al Knobloch's** 546 series, were their usual steady, playoff selves but this was the year of the Alley Cat.

The following bowlers received awards at our annual Mixed League banquet:

League Champions — ALLEY CATS

Bob Geyer — Captain
Jack Eyth
Kevin Ryan
Gene Toner
Patty Aspinall
Janet Geyer
Marguerite Hoefling

Kathy Barnes
Lorraine Koch
Carolyn Richards

Division A Champions — NEINERS

Lester Smith — Captain
Earl Bair
John Vincent
Mark Lind
Jean Canton
Nelda McMillian

Division B Champions — GOOFERS

Al Knobloch — Captain
Leo Markushewski
Ed Fields
Wes Gleason
Lorraine Reidinger
Anne Hoyt

Division B Champions — NINE PINS

Lorraine Kittner — Captain
Bob Kittner
Jim Campana
Bob Ackerman
Rich Stickney
Linda Stickney
Dottie Hall

HIGH AVERAGE

Mike Dent	182
Anke Illmer	179
Wes Gleason	189
Linda Stickney	163

HIGH SERIES

Ernie Wykes	637
Elaine Granieri	582
Rick Yeager	629
Lorraine Dunn	585

HIGH SERIES WITH HANDICAP

Chuck Halko	712
Miriam Lentz	671
Jeff Irwin	724
Lorraine Kittner	703

HIGH SINGLE

Mark Lind	259
Bonnie Leidy	246
Leo Markushewski	246
Lorraine Reidinger	222

HIGH SINGLE WITH HANDICAP

Mike Lizbinski	280
----------------	-----

Donna Morgan	258
Jim Michell	269
Pat Tease	289

MOST IMPROVED AVERAGE

Tom Reiter	+15
Jim Michell	+14
Lorrie Dunn	+14
Anne McNamara	+22

NCMA golf tourney attracts competitive field

By Jack Eyth

The Naval Civilian Managers Association (NCMA) held its first ever golf tournament at the Horsham Valley Golf Club on 12 May. The tournament, which I organized and directed, used a "Best Ball" or "Scramble" format in order to appeal to "duffer-quality" athletes. Word spread quickly, however, when a powerhouse team made up of Scott Fowler, Scott Perry, Pete Brown and Frank Sheedy entered the tournament. In order to provide a challenge, Rob Muller put together his own "ringer" team of Curt Swatchick, Brian Harvey and Ken Miller.

The weather cooperated perfectly with the event. After ten days of rain, the day of the tournament was a balmy 75 degrees with clear skies. Following a generous cold buffet luncheon at the golf course, the field of thirty-one took to the tees. As the teams entered the clubhouse after eighteen holes, the Fowler- Perry- Brown- Sheedy

foursome set a blistering pace of a 9 under par 57. Two foursomes later, the Muller- Swatchick- Harvey- Miller team came in at 11 under 55 and won the event. The closest- to- the- pin award went to Fred Delarso and the longest-drive award went to Bill Hines.

The order of finish for all teams was:

Muller-Swatchick- Harvey-Miller	-11	55
Fowler-Perry- Brown-Sheedy	-9	57
Boscola-Zarkowski- Miller-Hines	-6	60
Truitt-Cabe- Hovelling	-4	62
Drummond-Carr- Drager-Eyth	0	66
Finnegan-Morris- Stenach-Bancroft	+1	67
Link-Smith- Delarso-Caffrey	+1	67
McAvoy-Virga- Cowles-Kuster	+2	68

EEO is for everyone

Tiger Team wants innovative strategies

By Kathleen Gause

Quality of Life ... Teamwork ... Innovation ... Communication ... Attention to Details ... Equal Opportunity. These elements are the framework upon which the Commander of the Naval Air Development Center operates and expects all employees to operate. These elements are even more important to strive for during times of downsizing. We must comply with, support, and enforce the rules and regulations of our superiors. Yet, there is still adequate flexibility to be innovative within existing rules and regulations. We must be open minded, imaginative, and quick to see the potential of new concepts and ideas. We must continually search for more productive ways of doing things as well as for ways to elevate the morale of our employees.

In February 1988, the Commander tasked EEO Program Manager

Kathleen Gause to lead an ad hoc working group for the purpose of formulating and proposing innovative strategies to enhance productivity, efficiency, and morale and to mitigate our MTP problems. Three teams were created and have met periodically in the past few months in response to the Captain's charter. Coined 'Tiger Teams', the members involved were enthusiastic and sincere towards meeting their objectives, and represented a cross section of occupations and departments. Many members queried their co-workers for input, and one department even set up a team of junior S&E's for focused input. Across the board, it has been an excellent means to get an accurate and immediate pulse of Center employees. Many feasible ideas have surfaced. The ideas were not always what management wanted to hear, but management listened.

The teams presented more than forty proposals to CAPT C. J. Winters in April and Gause summarized the status of the proposals to the CMG in May. Cognizant action codes were required to respond to proposals earlier this month. CAPT Winters plans to personally respond to team members by mid-June concerning the status of the action items.

Proposals from the Tiger teams vary from minor to controversial. Among proposals being considered are: having The Log and Reflector available in newsstands by the Cafeteria; offering prepaid job-related tuition; encouraging use of part time; publicizing that the accrual of more than 80 hours comp time is allowable (with approval); delegating approval of LWOP for less than 30 days to one's immediate supervisor; banning smoking in restrooms; automatic

distribution of annual personalized retirement information; centralized telephone message system; start time of core hours extended to 9:00 am; and the pilot adoption of a voluntary compressed work schedule similar to SPAWARS and NAVAIR (i.e., a full-time employee could work 80 work hours per pay period in less than 10 workdays, with 75% of the workforce present at any one time). Consistent with the current federal environment, the bottom line is not to hire more people but to investigate better ways for the Center to do business.

If any employee would like to comment on the above suggestions, call Gause, extension 3061/2, or implementation team members D. Grygiel, extension 1042, Jack Hirsh, extension 1472, or John Markow, extension 1026.

Koshiol gets pilot's award

continued from page 1

The 30-year-old native of St. Paul, Minnesota, has been in the Navy for six years and doesn't feel he did anything extraordinary — "I just did my job - to land that plane. To me, that landing was no different from all the others."

The seriousness of the situation didn't sink in until after he landed and was walking away. "Out of curiosity, I turned and saw the aircraft was on fire," he explained, "and then I thought to myself 'Oh my God...'"

The hoopla died down and Koshiol transferred to NADC last January, where he works in the Aircraft Maintenance Department and is the Aviation/Armament Division Officer.

A few weeks ago he was notified he was to be one of the guests of honor at a dinner at Fort Hamilton, Brooklyn, New York, where he would be presented the Aviator's Valor Award by The Wing Slip of Aviators, American Legion Post No. 743. "I was very surprised," he stated, "but at the same time very honored to be associated with the other two recipients."

The Aviator's Valor Award dates back more than thirty years. The first recipient of the then Air Hero Award was General "Hap" Arnold. In 1970 it was changed so that the award would be presented annually to each branch of the armed services. The award consists of a gold medal presented to one member or crew from the Departments of the Army, Air Force and Navy. Each department has its



LT Kevin Kohshiol

own regulation authorizing participation and acceptance of the award.

Koshiol's citation concludes: "His conspicuous courage and airmanship under the constant threat of the aircraft departing controlled flight epitomized the ideals of the aviator's valor award and set the standard for military aviation in the years to come. LT Koshiol's leadership, airmanship, courage, and devotion to duty reflected great credit upon himself and were in keeping with the highest traditions of the United States Naval Service."

with a commemorative plaque and certificate of commendation.

Subsequently, Dr. Selwyn visited NADC to make a personal presentation to Smith and other members of the HARPSS team.

Selwyn credited NADC's HARPSS radar as a good example of a significant achievement, useful to the Navy, accomplished on time, at relatively low cost and within budget.

How to stop sexual harassment

It is NADC policy that all employees work in an environment free from sexual harassment. Although sexual harassment is often considered a women's issue, both men and women may be victimized. Our policy applies to any situation which may be construed as work related, including travel and the actions of contractors. Center employees who violate this policy are subject to disciplinary action. Sexual harassment is defined as: 1) influencing or threatening the career, pay or job of another person in exchange for sexual favors; or 2) deliberate or repeated offensive comments, gestures or physical contact of a sexual nature in a work or work related environment which are considered intimidating or hostile.

The most obvious forms of sexual harassment include: touching, grabbing, pinching, making gestures of a sexual nature, and displaying pictures, magazines, books or other material with sexual overtones. The most aggressive form is basing employment decisions on sexual

behavior.

In the event you are sexually harassed, there are several steps you should pursue. These include: 1) Make it clear to the offender that his/her comments or gestures are unwelcome. **DO NOT IGNORE THE PROBLEM.** Inaction usually makes the situation worse. 2) Make a record of pertinent facts including the date, time, place, circumstances and any witnesses to the event.

3) Report the incident immediately, either to your direct supervisor, or if this is not possible, to Kathleen Gause, Deputy EEO Officer, Robin Halperin, Federal Women's Program Manager on extension 3061, or to any EEO Counselor (pictures are posted on all official bulletin boards).

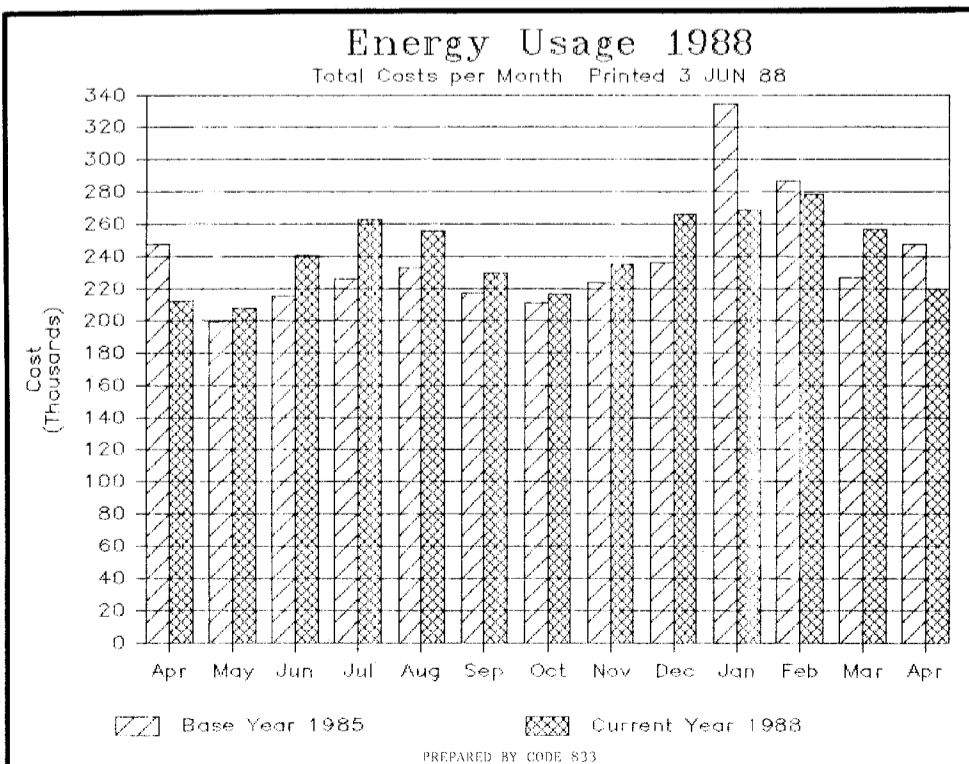
Remember, sexual harassment is not a *personal* problem. It is an issue of power and it decreases productivity and morale. It is up to each Center employee to ensure that our work environment is free from sexual harassment.

HARPSS Award for NADC

Continued from Page 1

NADC," he explained.

The first of two presentation ceremonies was held at the Applied Physics Laboratory of the John Hopkins University. RADM J. R. Wilson, Chief of Naval Research, and Dr. Philip A. Selwyn, Director of ONT, presented NADC's Technical Director, Guy Dilworth, and Center Commander, CAPT Curtis Winters,



Be a 'watt watcher' and not a 'watt waster'.

FRY now; PAY later

By Evelyn D. Harris

American Forces Information Service

Planning to catch some rays this weekend? Go ahead — but be careful.

More than 90 percent of the 450,000 new cases of skin cancer that will be diagnosed this year will develop in parts of the body directly exposed to the sun. Skin cancer is the most common form of cancer, and the number of cases increases every year.

Fortunately, most new cases are either squamous cell or basal cell cancer. These cancers are easy to treat if caught early, often with a simple outpatient procedure similar to having a wart removed.

But a third kind of cancer, melanoma, is potentially fatal. About 22,000 new cases of melanoma are reported every year, resulting in as many as 5,500 deaths. The rate of melanoma cases is almost three times what it was 10 years ago. The disease is also affecting a younger age group than before.

Perhaps the growing number of skin cancer cases does have something to do with the depletion of the ozone layer, as some scientists believe. But it could also be attributed to the fact that

tanning has become fashionable in this century. Before, ladies took care to avoid so much as a freckle.

Fair-skinned people, particularly blondes and redheads, are at more risk for skin cancer than others. They lack sufficient melanin, a pigment substance that filters out the sun's rays. People who work outdoors and those who live in sunny latitudes are also more at risk. However, no one, no matter how dark their skin, is immune.

Since overexposure to the sun is the main cause of basal and squamous cell cancer and is believed to be the cause of melanoma, skin protection is important.

In addition to protection against cancer, career protection can be an incentive to respect the sun. Military members are subject to disciplinary action for reporting to duty with an incapacitating sunburn. According to a dermatologist at Walter Reed Army Medical Center, Washington, D.C., some early research to develop modern sunscreens was sponsored by the military.

Here are some tips for saving your skin:

- If you feel you must get a tan, do so gradually, giving yourself a little more

exposure every day. This allows your skin to thicken, providing more protection.

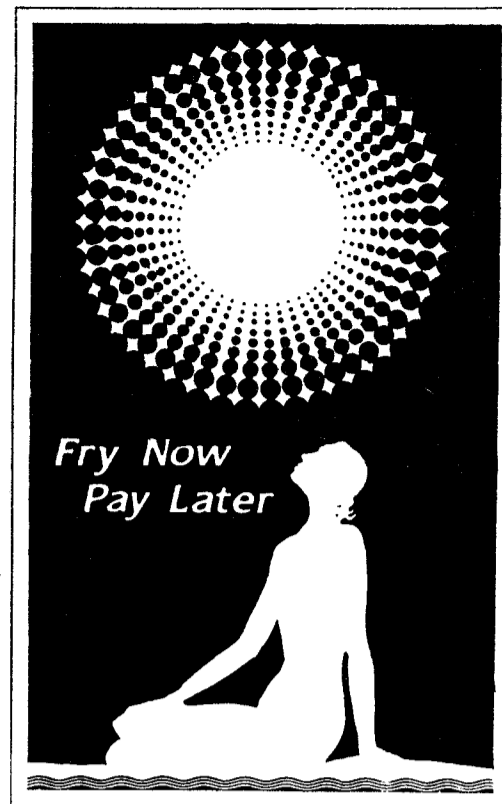
- If possible, avoid, or limit yourself to 15 minutes exposure during the hours of 10 a.m. and 3 p.m. Ultraviolet rays are strongest during those hours.

- Use a sunscreen. Para-amino-benzoic-acid — PABA — is the most common effective ingredient in sunscreens, but a few people are allergic to it. Use sunscreens containing cinnamate if you're allergic to PABA. Both sunscreens are available in popular brands. Most of these products carry a number indicating the degree of protection they afford. The higher the number, the more the protection. Fair-skinned people and very young children should use No. 15. Lifeguards and others who are out in the strong sun a lot should use an opaque sunscreen on their noses and lips.

- Be extremely careful about using tanning salons. Researchers aren't yet sure, but they believe repeated use of the salons may also lead to skin cancer.

- Be careful, even if it's cloudy — ultraviolet rays can get through clouds.

- Certain drugs, such as tetracycline,



can make your skin more susceptible to burns.

Finally, get to know your skin and your own pattern of moles, freckles and beauty marks. Once a month, after your shower, give yourself a onceover. If you spot any change in the size, color, texture or shape of your marks, see a doctor.

Softballs Misfits and Granfalloon undefeated

continued from page 6

Rhodeside and Scott Fowler are capable of making the spectacular play and Joe Klicka and Rich Mohoci add the offensive spark. The Bandits will do well this year behind a strong defense and a powerful offense led by prototype No. 2 hitter Stan Zajdel, Rick Sames, and their behemoth catcher Mark Dungan. The Rumlbers are opening some eyes and it's not just those brightly colored Hawaiian shirts. They beat CSC and the Druids who both made the playoffs last year. They've been helped by the solid play of left fielder Phil Richardson and the power hitting of Harry Frost and Eric Preissner who, legend has it, hit three home runs in one game last year. The Renegades also continue to play well. "Scrappy" Don Scott, late blooming star Frank Marshall, the indomitable John Greiner, and pitchers Keith Rizkowski and Jack Eyth have contributed much to their early season success.

The Bearcats started out of the gate a little slow. They lost to the Animals and were fifteen runned by the Misfits. However, they have a strong tradition and should make the playoffs behind pitcher Skip Reed and hitters like Tom McGovern, Adrian Hribar and Mark Thomas.

Orange Crush has put together a good team this season. They jumped off

to a 4-1 start before losing their last two contests to the Renegades and the Guzzlers. They've been aided by the play of one of the fastest big men in the league in the person of Jim Buggy and capable performances by third baseman John Whalon.

The Intimidators have pitching ace Ken Beebe but a suspect supporting cast. However, if they come together they could be tough. The Guzzlers are playing respectable ball. They tried to shoal up their defense by acquiring talented rookie Bob Reichert and George Reichl from the now defunct Devils team. They also have veterans John Bowes and Jim Eck who are trying to re-instill the lost Guzzler Magic.

The Druids are probably the single biggest surprise so far this season. In the past they have relied on singles hitters complementing each other for big innings. However, this season they can't seem to find their offense — even though they have Phil Winiarczyk. The Animals haven't been playing poorly but seem to constantly get victimized in the late innings. Mike Bien is the best athlete on the team but needs more help from his teammates. The Rebels, who were tough last year, have been struggling behind the plate as of late. Pitcher Steve Natishin can keep them in games but Craig Volker, Pat

Ford, and Jim Palmer must provide the offense. The Phantoms picked up a number of players from the old Pacer team such as Tom Risbon and Mike Stevens but can't seem to pick up that team's winning ways.

As of this writing, the Herassers and Dynatigers were still looking for their first victories. It just goes to show you how tough it is to win in your sophomore season. The Dynatigers do have some good players in Randy Krasnansky and Tom Bailey while the Herassers have Tim Foley, around whom they are trying to build the

franchise.

One change from the 1987 season I forgot to mention last month was the early/late game format adopted this year. This will help in shortening the season and in making up rainouts. Additionally, it will give NADC Softball League fans double the enjoyment at the same price. Tickets are a bargain at \$8.00 for high bleacher seats, \$10.00 for low bleacher seats, and \$15.00 to sit on the bench next to your favorite player (just kidding!!!). Contact your NADC Softball League ticket agent today.

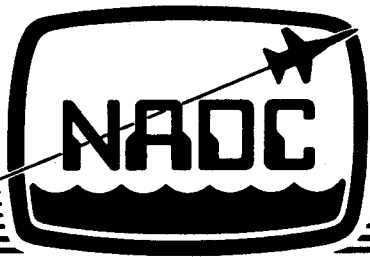
TEAM	W	L	RUNS FOR	RUNS AG	PCT	GAMES BACK
Misfits	5	0	78	14	1.000	0.0
Granfalloon	5	0	60	18	1.000	0.0
Nightriders	5	1	75	44	0.833	0.5
8th Inning	5	1	55	25	0.833	0.5
Bandits	4	1	60	23	0.800	1.0
Renegades	7	2	95	56	0.778	0.0
Rumlbers	3	1	43	42	0.750	1.5
Bearcats	3	2	48	53	0.600	2.0
Orange Crush	4	3	68	68	0.571	2.0
Intimidators	3	3	33	41	0.500	2.5
Guzzlers	4	4	76	89	0.500	2.5
CSC	3	5	78	73	0.375	3.5
Druids	1	5	26	45	0.167	4.5
Animals	1	5	44	75	0.167	4.5
Rebels	1	5	27	62	0.167	4.5
Phantoms	1	6	49	110	0.143	5.0
Herassers	0	5	23	67	0.000	5.0
Dynatigers	0	6	32	65	0.000	5.5



The 8th Inning's 1987 All-Star second baseman Fred Kuster and rightfielder Bob Seltzer await John Bechtel's next pitch.



The Guzzler's Bob Casagrand legs out infield grounder as the Nightrider's John Cerkan fields the throw. (Greg Askew observes from the shortstop position and Dave Taurus is the first base coach.)



- Carlucci on 'excellence'
- Fellowship for Kirk
- Engineer helps infant
- Night Check photostory
- Women's Day

DeChico gets Navy's best 1988 IED award

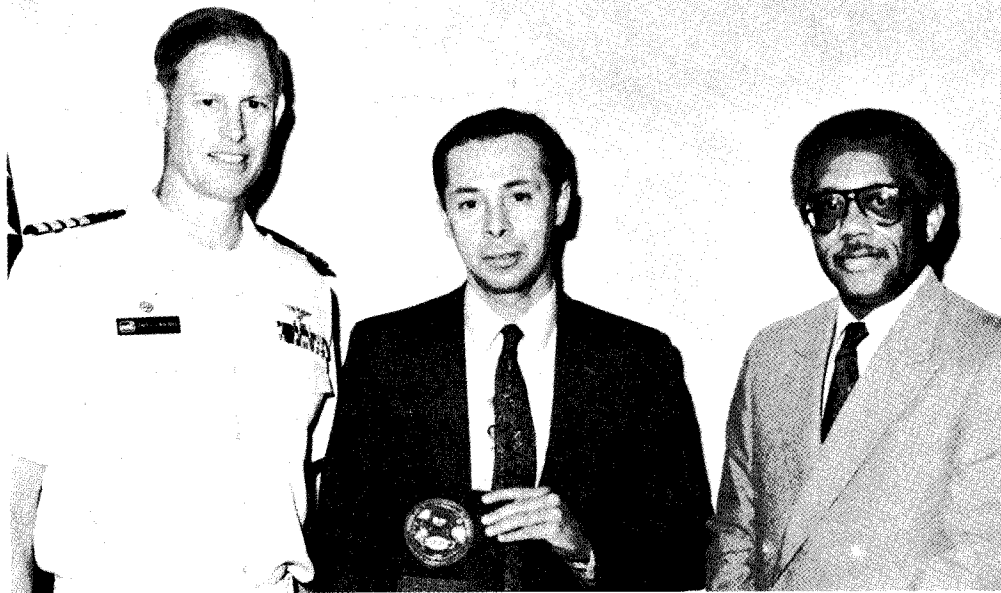


Photo by NADC Photo Lab

Center Commander CAPT Curtis Winters, Robert DeChico, and Technical Director Guy Dilworth display DeChico's "Best Navy IED Award" during an in-house ceremony.

by Mary Ann Brett

Robert DeChico, of the Acoustics Development Division, Mission Avionics Technology Department, recently received the Navy's first Independent Research/Independent Exploratory Development (IR/IED) Symposium award for "Best Navy IED Program" for 1988. DeChico's presentation described his work in developing and demonstrating a piezoelectric polymer dipole hydrophone. This project was previously recognized as NADC's best IED effort for 1987. DeChico received a \$5,000 award and an increase of \$50,000 in NADC's FY-89 IED budget.

According to DeChico, the polymer hydrophone offers the potential of being inexpensive and can be packaged in small volume. Most importantly, it is much less susceptible to flow noise in the low frequency region than are the present pressure gradient hydrophones. The thick film hydrostatic mode hydrophone is conducive to uniform sensitivity matching which is the key to dipole performance and promises a 15 to 30 db reduction in flow noise compared to DIFAR hydrophones.

The IR/IED Symposium held at the
Continued on Page 8

P-3 acoustic trainer ready for CHEX software

by Mary Ann Brett

"NADC's SAT trainer is the first in recent Naval history to precede the operational capability for which it is intended — the P-3C Update III CHEX (channel expansion) acoustic capability currently being installed in the Fleet (see June 88 REFLECTOR)," said Major Leif Wadelius, Canadian Forces exchange officer. Wadelius, a Maritime Air Navigator, is assigned to the Antisubmarine Warfare Systems Department (ASWD) as the Single Advanced Signal Processor Acoustic Trainer, or SAT, project officer.

The trainer consists of an entire acoustic sensor suite from a P-3C Update III aircraft, and was developed to provide low cost functional acoustic operator training based on a modular design. A tactical coordinator's (TACCO) station was added to the original design to allow coordination and interface training between acoustic operators and the TACCO. Wadelius explained that by means of a complex acoustic simulation software program and acoustic generation system hardware, both designed and
Continued on Page 8

NADC self-priming topcoat awaits patent

by Jim Kingston and Mary Ann Brett

The Aerospace Materials Division of the Air Vehicle and Crew Systems Technology Department, with the help of NADC's Patent Counsel, has submitted a patent application for its newly developed self-priming topcoat. This specially formulated corrosion preventive organic coating provides the same or better protection with a single coat as does the present two-coat method.

Estimated to save at least \$1.3 million in manpower, material, and painting time, this new single coating has tremendous environmental implications as it contains NO

chromates or leads (toxic substances) and has reduced volatile organic compounds (solvents) released into the atmosphere. Also, aircraft downtime will be reduced and some weight reduction may be realized.

Continued on Page 8

SECDEF praises defense workers

by Jim Garamone

Defense Secretary Frank C. Carlucci praised federal workers and said they were involved with "cosmic issues" during Public Service Recognition Week at the Pentagon.

Carlucci used the occasion to thank Defense Department civilian employees for their work. "I know that you put in many long hours of selfless service," he said. "Many times, the nation doesn't appreciate your efforts or politicians kick you and abuse you. But you have one thing that enables you to hold your heads high: You are serving your fellow man and your nation's needs."

Carlucci said that, as the man responsible to the citizens of America for the Defense Department, he has seen how hard its employees work and the results, its employees produce. "We have here in the Pentagon as fine a group of workers as you'll find in the world," he said.

Carlucci stressed the sense of mission of defense employees and spoke of the importance of the issues confronting federal workers. He said that in the private sector, the material rewards are greater, but only in a job with the Defense Department would workers be confronted with such importance day to day.

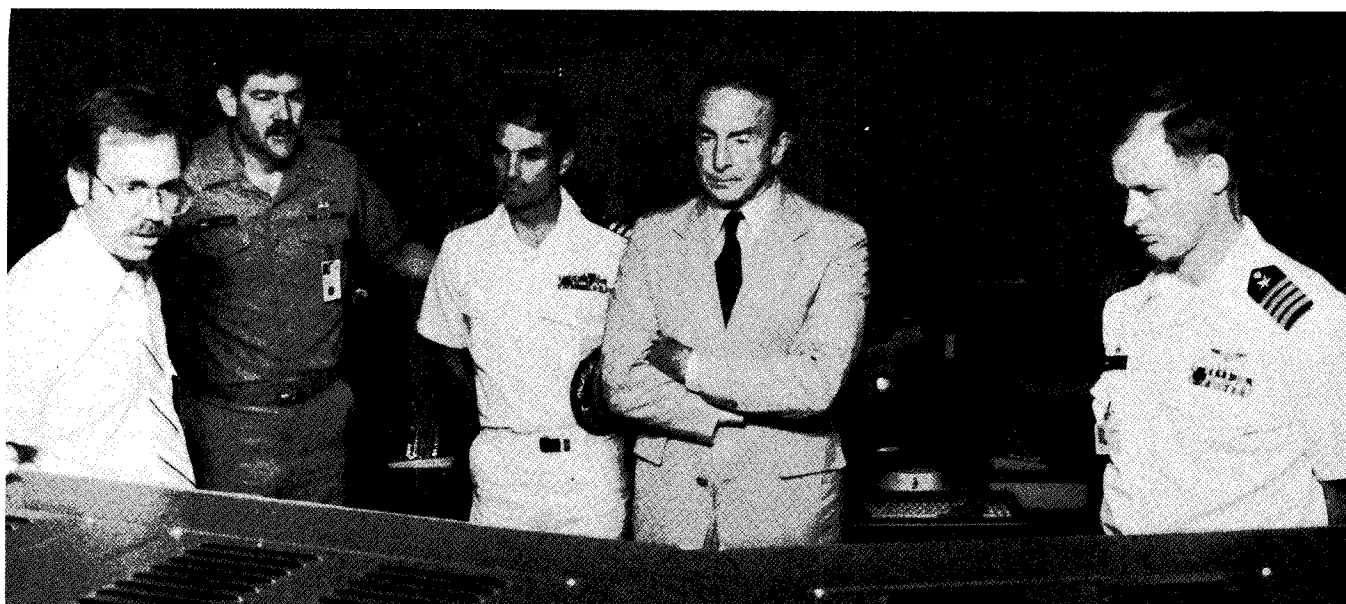


Photo by NADC Photo Lab

ASSISTANT SECNAV FOR RESEARCH VISITS — Mid-June, NADC was visited by Thomas F. Faught, Jr., Assistant Secretary of the Navy (Research, Engrg & Systems). Faught was briefed and toured ASW, Mission Avionics, Air Vehicle and Crew Systems, Communications and Navigation, and Aircraft System Integration. L to r: Charles Booth, LCDR Timothy Sestack, CDR E. Pope, ASN Faught and Center Commander CAPT Curtis Winters watch a demonstration of the LAMPS MKIII Avionics Integration Lab capabilities.

Carlucci says: "Excellence is critical"

In a recent memo addressing the "DoD Posture on Quality," Secretary of Defense Frank Carlucci, emphasized the need for quality, if not excellence. He said,

"It is critical at this time that the Department of Defense (DoD), its contractors, and their vendors focus on quality as the vehicle for achieving higher levels of performance. The DoD budget leaves no room for solving problems that flow from poor quality. Quality is synonymous with excellence. It cannot be achieved by slogans and exhortation alone, but by planning for the right things and setting in place a continuous quality improvement process."

"Total Quality Management (TQM) is a concept that demands top management leadership and continuous involvement in the process activities. The successful TQM operation is characterized by an organization of quality trained and

motivated employees, working in an environment where managers encourage creativity, initiative, and trust, and where each individual's contributions are actively sought to upgrade quality. Secretary Weinberger's memorandum of February 2, 1987, asked you to create teams of line managers at all levels to remove organizational and procedural impediments to productivity and quality. These productivity and quality teams should play an important role in the DoD TQM process . . ."

"As we move forward with implementation of the TQM process DoD wide, we will strengthen ourselves internally to make us better partners in our relationships with industry, the Congress, and the public. I am convinced that as the quality-first concept inherent in TQM is shown to benefit the defense sector, it will seed a renaissance of quality throughout the United States . . ."

DoD POSTURE ON QUALITY

- Quality is absolutely vital to our defense, and requires a commitment to continuous improvement by all DoD personnel.
- A quality and productivity oriented Defense Industry with its underlying industrial base is the key to our ability to maintain a superior level of readiness.
- Sustained DoD wide emphasis and concern with respect to high quality and productivity must be an integral part of our daily activities.
- Quality improvement is a key to productivity improvement and must be pursued with the necessary resources to produce tangible benefits.
- Technology, being one of our greatest assets, must be widely used to improve continuously the quality of defense systems, equipments and services.
- Emphasis must change from relying on inspection, to designing and building quality into the process and product.
- Quality must be a key element of competition.
- Acquisition strategies must include requirements for continuous improvement of quality and reduced ownership costs.
- Managers and personnel at all levels must take responsibility for the quality of their efforts.
- Competent, dedicated employees make the greatest contributions to quality and productivity. They must be recognized and rewarded accordingly.
- Quality concepts must be ingrained throughout every organization with the proper training at each level, starting with top management.
- Principles of quality improvement must involve all personnel and products, including the generation of products in paper and data form.

Stand up and be counted

According to the Space and Naval Warfare Systems Command, noted author and military historian Eric Hammel is presently collecting detailed, first-hand accounts of military actions by Navy people associated with the 1968 Tet Offensive for a book on the subject. Anyone who

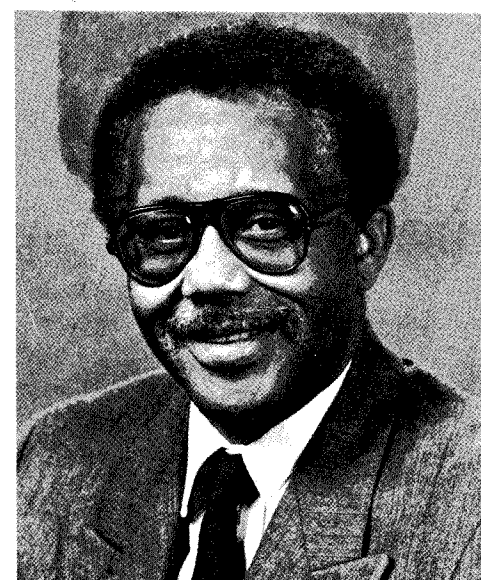
was in Vietnam between January 29 and April 1, 1968, and who is interested in providing his or her accounts, should contact the author:

Eric Hammel
1149 Grand Teton Drive
Pacifica, CA 94044

Command Corner



Captain Curtis J. Winters
Center Commander



Guy C. Dilworth, Jr.
Technical Director

To all hands:

The health of employees has become an issue of growing concern as the human and economic costs of occupationally related health problems become increasingly clear. At the forefront of current interest is the increasing legal and social pressure to restrict smoking. In Victorian times women were warned they would become sterile if they lit up. In my youth, teenagers were warned smoking would stunt their growth. It was not until the 1964 Surgeon General's report linking cigarettes to cancer that the public took notice of the scientific evidence mounting against the effects of smoking. Warning labels were required on cigarette packages in 1965, and in 1973 advertisements were banned from radio and television. Recently, New York instituted the Clean Indoor Air Act, the FAA banned smoking on all flights under two hours, and a few years ago Fidel Castro received a medal from the World Health Organization for his quitting cigars. As an illustration of the calculated risk taken by smokers, life insurance companies now offer reduced premiums for non-smokers.

The most important recent event in the history of smoking was Surgeon General C. Everett Koop's 1986 report on the effects of passive, or involuntary, smoking. At the same time the National Academy of Sciences released a study that found non-smoking spouses of smokers face a 25% greater risk of contracting lung cancer than do spouses of non-smokers. It is


chiefly because of these two reports that we can no longer rationally or logically ignore the dangers of smoking and the hazards to non-smokers who breathe the common air.

Even in the light of clear and present danger, I realize there are many who do not want to stop smoking or cannot. The Surgeon General's most recent report details the nature and seriousness of nicotine addiction.

It was with the previous thoughts in mind that I recently signed NAVAIRDEVCON Instruction 5100.34A concerning smoking. As a general concept, smoking should not occur in a confined space where a non-smoker is forced to inhale smoke produced by someone else. The difficulty, of course, is that smokers are not always aware of the extent to which their smoke is detectable or offensive. The recent instruction outlines a policy intended to protect non-smokers, to encourage and assist others to quit smoking and to retain the right to smoke for those who choose to, if they are not endangering others.

C. J. Winters
C. J. WINTERS
Commander

Guy C. Dilworth, Jr.
GUY C. DILWORTH
Technical Director



Reflector

NAVAL AIR DEVELOPMENT CENTER, WARMINSTER, PA

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Commander, NADC	CAPT Curtis J. Winters
Technical Director	Guy C. Dilworth, Jr.
Public Affairs Officer	James S. Kingston
Editor	Mary Ann Brett
Assistant Editor	JO2 Todd Lufkin

SECNAV financial fellowship for Kirk

by Mary Ann Brett

Christopher J. Kirk of the Financial Management and Planning Department, has been selected for the Secretary of the Navy Career Fellowship for graduate study in Financial Management at Temple University for the 1988-89 academic year.

"It's a great opportunity," said Kirk of his upcoming year of concentrated academic pursuits in Finance, Accounting, and Management. "It's a chance to improve my personal efficiency as well as the operational efficiency of the Center."

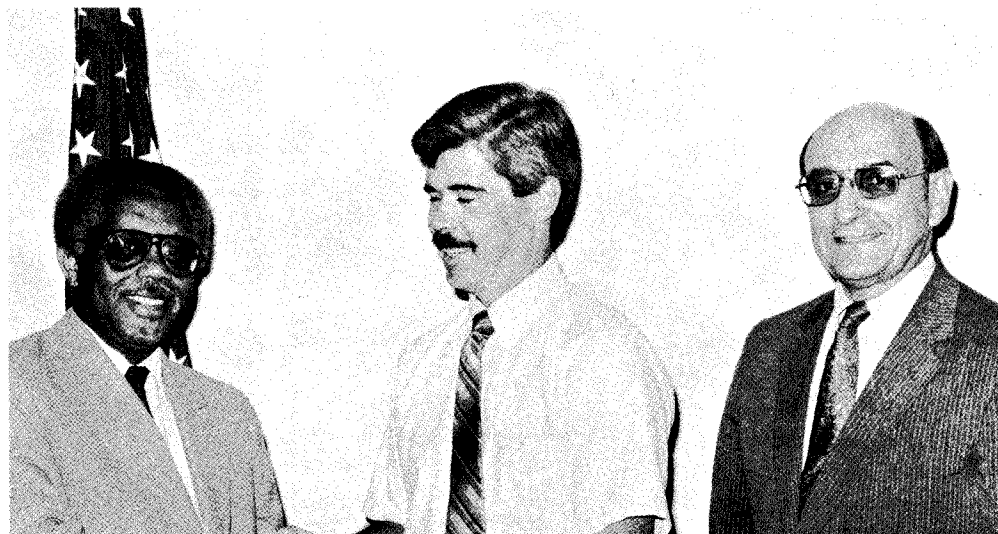
In his present position as Acting Head of the Planning Division, Kirk is

responsible for all NADC work unit planning in addition to the bid and proposal program, asset capabilities, and Centerwide support.

An employee at the Center for eleven years, Kirk has a bachelor's degree in Psychology from LaSalle University, and has completed 42 credits of graduate study.

Kirk emphasized the wealth of training opportunities available through NADC and encourages his and other Center employees to participate.

Editor's note: For additional information on training opportunities, call the Employee Development Division, extension 3076.



Photos by JO2 Todd Lufkin

Christopher Kirk (center) receives congratulations from Technical Director Guy Dilworth and Comptroller Thomas Shopple on receiving the SECNAV Fellowship.



Photo by NADC Photo Lab

U.S. Space Command talks GPS at NADC

Vice Admiral William E. Ramsey, Deputy Commander-in-Chief, U.S. Space Command, visited Center during the end of June. His visit included a brief on the Global Positioning System (GPS) Program by George Lowenstein, the GPS Director. As the first director of Navy Space Systems, Ramsey was actively involved in the engineering development phase of the GPS Program and has maintained an interest in the program.

Ejection seat technology benefits handicapped infant

by JO2 Todd Lufkin

In this era of "me first," many people don't even know their neighbors; let alone help them. But John Esposito of the In-Flight Safety and Survival System Branch of the Air Vehicle and Crew Systems Technology Department and Holland, PA resident is not one of them.

His neighbor's infant daughter was born with dislocated hip joints and recently underwent surgery. The three-month old child was placed in a body cast and her parents required to take her back and forth to doctors. Conventional car seats wouldn't accommodate the child with her cast, and it was awkward to carry her. The child's parents resorted to lying her on her back on the back seat of the car — a process that was neither safe nor comfortable for the little girl.

In conversation Esposito mentioned his work involved the development of ejection seats and biomedical support (In Flight Safety and Survival System Branch of the Air Vehicle and Crew Systems Technology Department). He volunteered and "gladly took on the task" of designing a special, one-of-a-kind seat for the child.

He contacted Jerry Bortman of the Technology Transfer Office and discussed his idea. Bortman's office "was very supportive and cooperated 100%," explained Esposito.

Esposito, together with co-worker Rod Pursell, came up with a cardboard

prototype in about a week-and-a-half. "It was tricky to develop, because of the child's condition, it was a one-shot deal," he said, "I couldn't keep going back and forth fitting the seat with the child. The initial measurements had to do, and I relied on my knowledge of harnesses."

The child had to be kept in a prone position because of the body cast — no part of her body could bend. She was secured to the seat with waist and shoulder straps.

The Technology Transfer Office put Esposito in touch with James McLeod of Center's sheet metal shop. Within a week a final product was fabricated. "McLeod told me it felt good to help a child; that it was a rewarding task," said Esposito, "and that, in turn, made me feel good."

What makes this undertaking even more satisfying is that everyone who worked on the car seat did so on a voluntary basis and during their own time.

Esposito delivered, installed and fitted the car seat to his neighbor's car. "I explained to them that some of the crash-worthiness was compromised in favor of the child's comfort," Esposito said, "therefore the seat shouldn't be used on a day-to-day basis, but only for trips to the doctor."

"The car seat does the job that it's suppose to do," he said proudly. "Hopefully she'll only have to wear the body cast six to nine more months and

then won't need the car seat."

Esposito has worked at NADC for 25 years. He received his BS in mechanical engineering from Widener

University (formerly Pennsylvania Military College) and did graduate work at Drexel University in biomedical engineering.

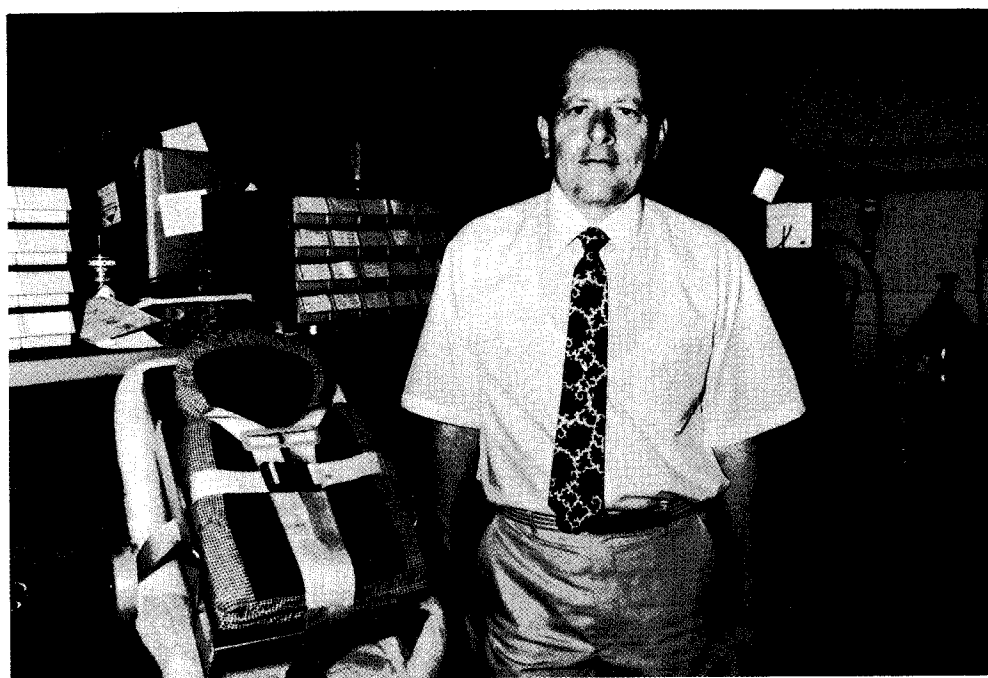


Photo by Cathy Burian

John Esposito displays the car seat he modified for a neighbor's infant.

Security reminder

FOREIGN CONTACTS

Any form of contact, intentional or otherwise, with any citizen of a Communist controlled country or country currently hostile to the United

States, must be reported to the Security Officer, Code 044, on extension 2298.

Night Check

by Jim Kingston

It's 2115 (9:15 p.m.) and all of NADC is quiet and dark. Well, not quite all. There are a couple of pockets of activity even at this late hour.

For those driving past the Center on Jacksonville Road, one of those activity areas stands out by the shafts of bright light filtering through openings and cracks at Hangar Bay #1 in Building #4.

Inside as many as 45 people — half military, half civilian — are hard at work doing major aircraft maintenance and painting.

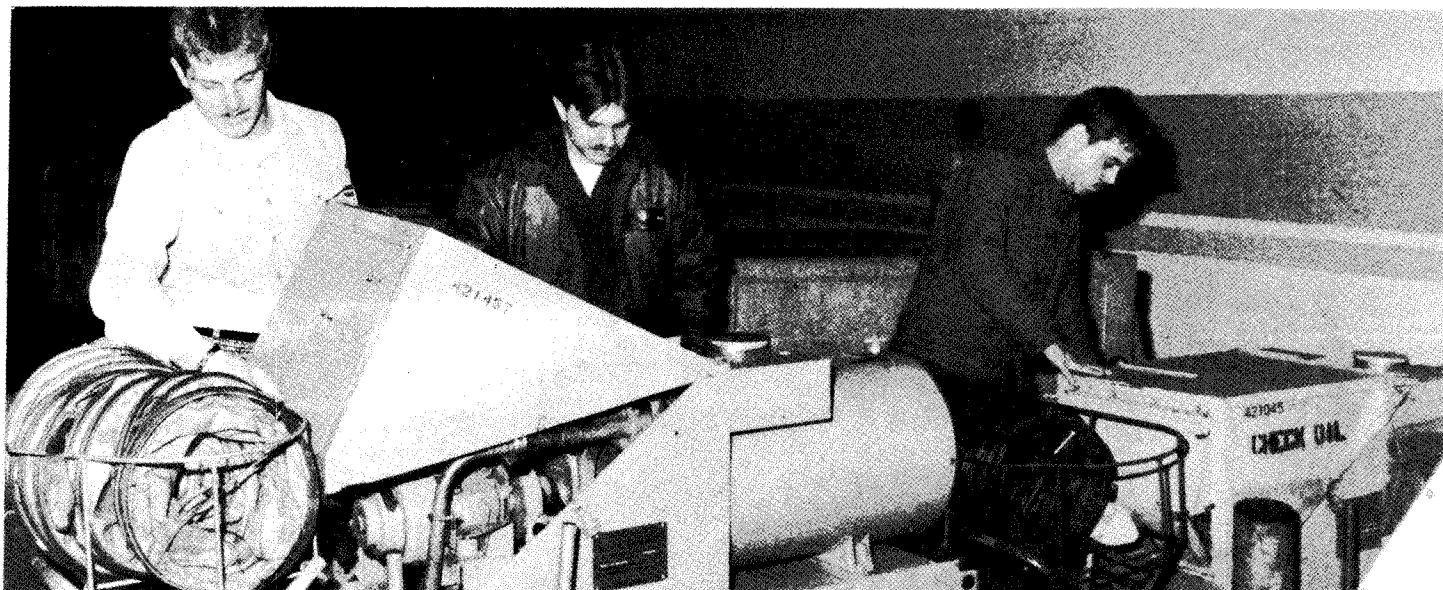
The Night Check crew, headed by ATC Tom Mathey, form the backbone of the Aircraft Maintenance Department and perform their work uninterrupted by flying time as are their daytime counterparts. Therefore, they can do more in-depth maintenance and repair.

Unseen by most NADC employees, these low-profile workers are doing their thing while most of the rest of us are fast asleep.

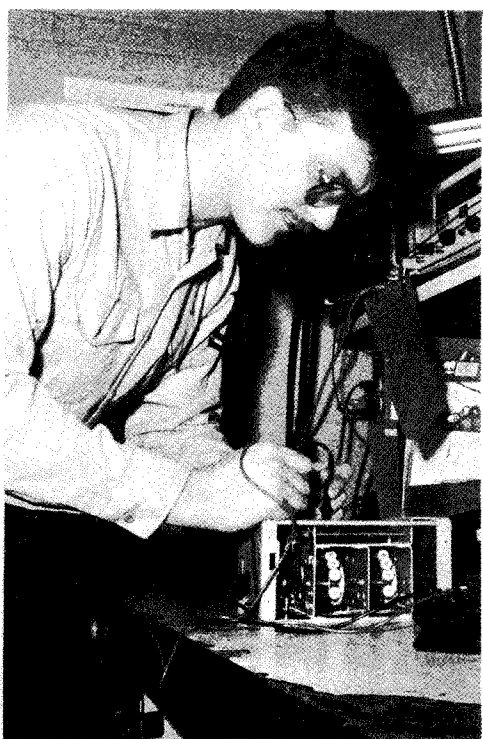
The photos here tell their story.



Tell-tale lights and a few cars serve as the only clues to



Night Check crew members AME2 David Blood, AM2 Mike Garver, and AD3 Phil Fidalgo work on a heater and a generator.



AX2 Ron Maki works with the Fluke meter.

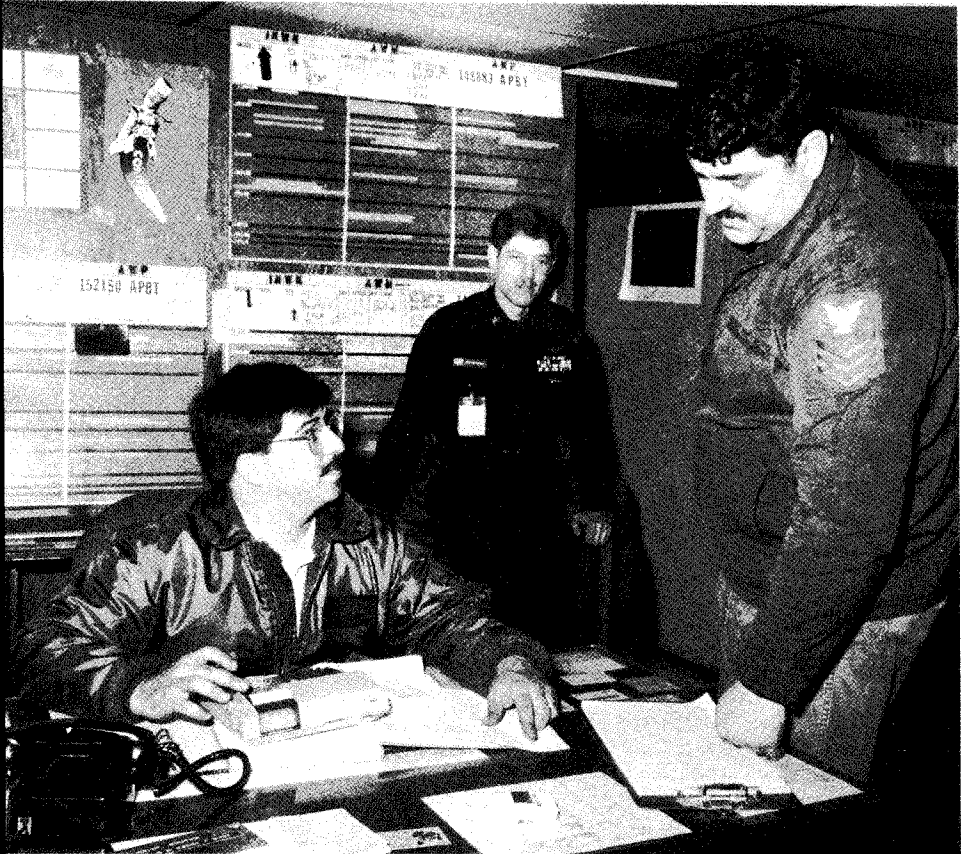


AMH1 Lonniell Bolton operates the computer.

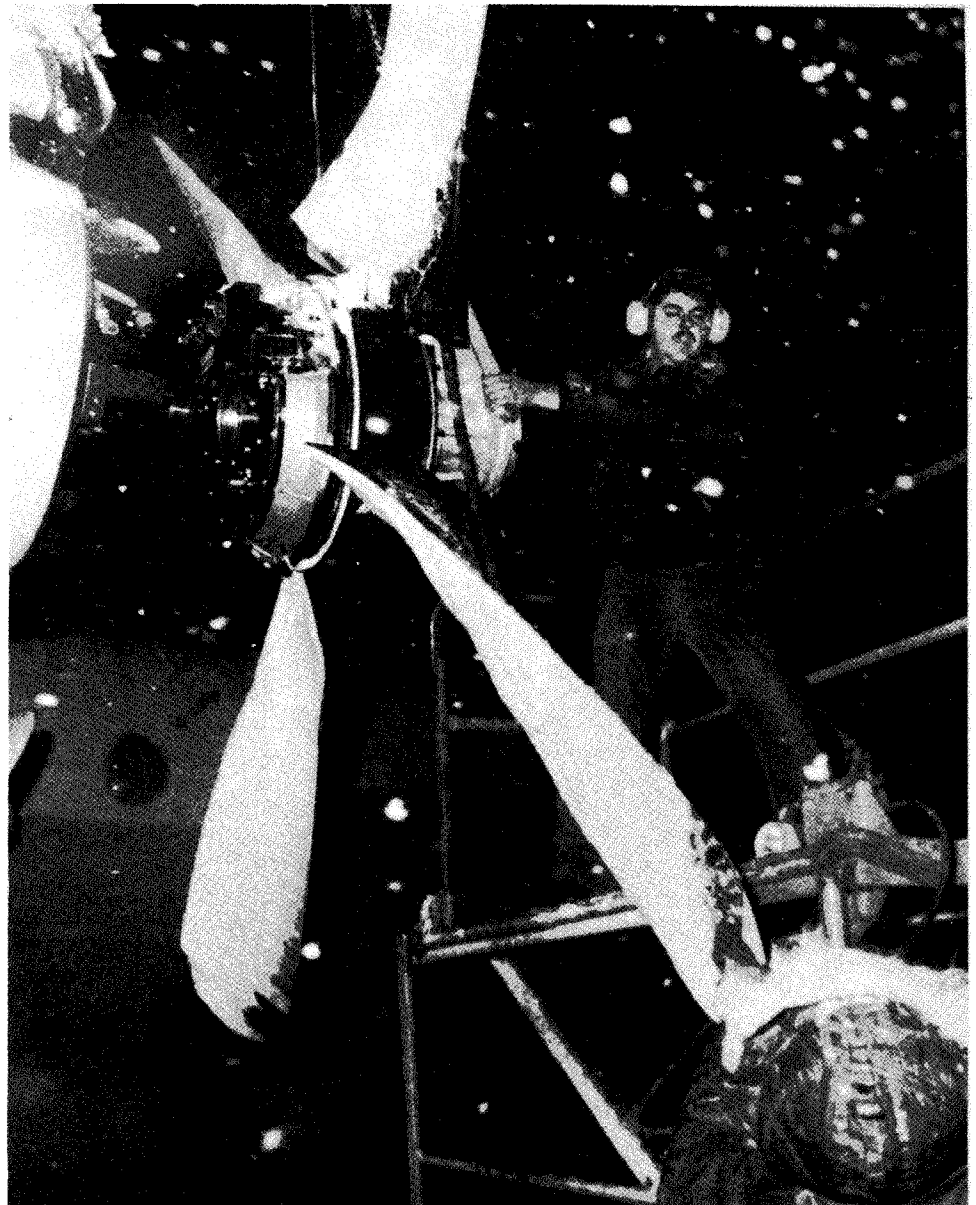
Photo by Clarence Watson
NADC Photo Lab



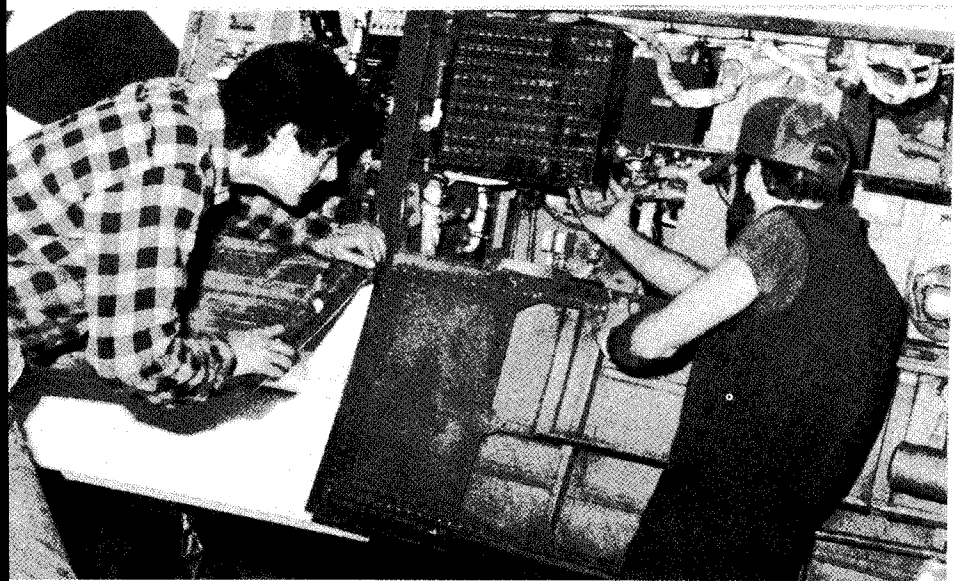
Workers-by that the Center's Night Check crew is hard at work here in Hangar Bay #1 of Building #4.



AE1 Todd Adams and AD1 Charley Komindo discuss maintenance problems as ATC Tom Mathey observes.



AD1 Charley Komindo wrestles with snow-coated P-3 prop as parka-hooded AD3 Alex Bauzon assists.



"Zak" Drazek and Mike Lindsey delve deeply into an A-7's avionics bay.

Clergy panel addresses prejudice

"We, who are blessed to live in this country with all of its problems and all of its conflicts, often lose sight of the privilege which is ours; which depends upon our maintaining civility and toleration and loyalty to the Constitution of the United States and the Bill of Rights." These are the thought-provoking words of Dr. Franklin Littell as he addressed Center personnel on June 22. Dr. Littell was the moderator of a multi-denominational clergy panel sponsored by the EEO office. The panel discussed the topic "Addressing Prejudice from the Pulpit."

Dr. Littell, a world-reknown Christian theologian, a Presidential appointee to the U.S. Holocaust Memorial Council, and an appointee by the Israeli Cabinet to the International Council of Yad Vashem was joined by Rev. Dr. Lafayette F. Gooding, Zion Hill Church of God in Christ,

Germantown; Rabbi Ronald W. Kaplan, Associate Rabbi, Old York Road Temple Beth Am, Abington; Rev. Dr. Robert H. Linders, Pastor, St. Paul's Lutheran Church, Doylestown; Rev. Michael C. Picard, Executive Director, Archbishop's Commission on Human Relations and Urban Ministry, Philadelphia Archdiocese; and Rev. Beverly A. Zink, Associate Pastor, Neshaminy-Warwick Presbyterian Church, Hartsville.

Members of the panel appeared to be all on the same wavelength confirming each others assessment that prejudice is learned, is a judging before one has examined all the evidence, is a mimicing of environment and is born out of ignorance and the need to have power over others. Prejudice closes our minds.

Rev. Zink posed this question, "Prejudice closes our minds to many good possibilities . . . how many

scientific, medical, and social advances have been thwarted because of peoples' prejudices?!"

She later reiterated this type of concern by stating that "Prejudice affects those who are the targets of our prejudices by depriving them of human dignity and the freedom to use and develop their God-given abilities. Prejudice also works against those who hold prejudices by depriving them of

the many good things others have to teach and give."

The panel praised the efforts of NADC and the role of the Armed Forces in maintaining peace. Their message was clear and unanimous in encouraging continued Center-wide attention to prejudice reduction. Rev. Zink said in summary, "I hope you will see this dialogue not as an ending but as a beginning."

Women's Equality Day — Speaker and luncheon set

Friday, August 26, 1988 is Women's Equality Day — it is a day set aside to reflect upon the strides which women have made in the workforce in the last twenty years. It is also a time to recognize that there are still barriers to true equal employment. At the Naval Air Development Center, it is our responsibility to continually monitor past and ensure future achievements for women pursuing a career in the federal service.

Addressing this topic is Ms. Ruth Lawhorn, Director of the Office of Civilian Personnel Management (OCPM), Northeast Region, as the keynote speaker at the annual Women's Equality Day Luncheon sponsored by the Federal Women's Program Committee. The Woman of the Year Award will also be presented at this luncheon.

A graduate from the University of North Carolina, with a B.A. degree in sociology, Ms. Lawhorn began her federal career in 1968 as a procure-

ment agent trainee at the Naval Supply Center (NSC) in Norfolk, VA. In 1973, she switched career fields to Equal Employment Opportunity. Her first policy level position was in 1975 as a Command Federal Women's Program Manager (FWPM) for the Naval Supply Systems Command. She was subsequently a member of the supervisory staff in the EEO policy division at the Chief of Naval Operations. For a brief period in 1986, Ms. Lawhorn headed the EEO and Affirmative Action Division at OCPM in Arlington, VA. Until she assumed her current duties as Director of the Northeast Region in April 1988, Ms. Lawhorn served as Director, Civilian Personnel/Equal Employment Opportunity (CIVPERS/EEO), Career Program Division at OCPM in Arlington.

For further information concerning the Women's Equality Day Luncheon on August 26th at the NADC Dining Room, please contact the EEO office on extension 1366 or 3061.

Blood donors pour out

NADC personnel and contractors once again generously gave blood during the recent drive. Donors are:

Code 01: Moran, M.; Driscoll, J.; Code 02: Bortman, J.; Cocchimiglio, J.; Dougherty, S.; Fisher, S.; Kotary, C.; O'Neill, M.; Penge, M.; Roberts, R.; Rudolph, M.; Vollrath, L.; White, J.; Code 03: Banionis, C.; Benner, J.; Brownlee, R.; Craig, E.; Devlin, M.; Higgins, M.; Keenan, G.; Pomrunk, R.; Savage, L.; Code 04: Deleeuw, R.; Lipinski, M.; Martinez, M.; Olmedo, V.; Pessano, J.; Sinamon, E.; Code 05: Finkelman, R.; Kaniss, A.; Kennedy, J.; Malecki, M.; Oliver, J.; Reines, A.; Smith, R.; Worobe, E.; Code 06: Hendricks, R.; Redman, M.; Rice, V.; Williams, M.; Code 09: Janes, R.; Masington, M.; Code 10: Baker, D.; Bellis, D.; Bowes, J.; Bramer, J.; Bramer, S.; Brookes, R.; Colombo, J.; Eddowes, S.; Farber, S.; Foerst, L.; Freeman, J.; Huber, Jr., E.; Hungerford, R.; Lubanski, R.; McHugh, B.; Morris, D.; Oakley, R.; Panetta, D.; Promish, D.; Torok, G.; Torjak, M.; Turner, E.; Vanfossen, M.; Wentz, W.; Williams, F.; Willis, M.; Code 20: Ackerman, R.; Gombos, E.; Hall, R.; Jencks, C.; Mackey, C.; Plumley, C.; Reed, E.; Reitz, C.; Schwartz, R.; Spector, A.; Code 30: Bryant, J.; Bumgardner, P.; Dayton, K.; Kasper, E.; McFadden, J.; Moffitt, E.; Morris, E.; Mutschler, D.; Sztubinski, D.; Yannuzzi, E.; Code 40: Bradley, W.; Buggy, J.; DiCristofaro, V.; Heller, K.; Kee, D.; Klopfer, W.; Mascho, J.; Murphy, T.; Olson, C.; Reis, N.; Schweizer, C.; Scott, L.; Tafel, R.; Zane, W.; Code 50: Aspinall, P.; Bazow, S.; Beach, E.; Billman, R.; Campana, J.; Campana, S.; Concannon, B.; Everett, W.; Faller, K.; Gilligo, T.; Harris, J.A.; Harris, J.L.; Harvan, M.; Hontz, R.; Keiser, D.; Koper, H.; Marshall, J.; Miller, D.; Moser, P.; Moyer, D.; Mulholland, F.; Natter, S.; Oakley, J.; Rankin, M.; Roach, L.; Tepper, J.; Termine, F.; Vendetti, A.; Wagner, M.; Walker, M.; Wilks, J.; Wolf, M.; Waynick, A.; Yoshida, A.; Code 60: Agnew, D.; Alexander, R.; Booz, J.; Bullard, K.; Cannon, M.; Connors, J.; Dalrymple, R.; Darrigo, D.; Deesing, E.; Donnellan, M.; Emery, R.; Eng, A.; Finegan, M.; Gaetano, A.; Garber, R.; Gluz, G.; Hay, R.; Hallman, R.; Henderson, J.; High, J.; Hynes, M.; Jacobs, L.; Kaufman, J.; Kelly, K.; Keyser, D.; Kircher, T.; Kuster, F.; Lilly, M.; Lin, W.; Lu, L.; Mawhinney, W.; McGinley, K.; Miller, C.; Nardone, M.; Notaro, J.; Poli, M.; Preissner, E.; Reilly, J.; Sands, R.; Shaffer, I.; Strizak, M.; Thomas, M.; Thompson, J.; Wells, D.; Wild, J.; Code 70: Azarewicz, J.; Bendzlowicz, R.; Bunting, J.; Carroll, P.; Cavender, B.; Daulerio, M.; Engle, M.; Halko, C.; Hall, S.; Hernandez, N.; Holloway, C.; Jackson, C.; Keller-Surman, H.; Lazarus, B.; Lenhart, L.; Mansfield, J.; Martinell, J.; McEntire, K.; McGuire, M.; Meth, A.; Michalski, T.; Murnin, H.; Newbrough, P.; Piras, R.; Robinson, J.; Robinson, S.; Rochiele, J.; Santini, J.; Steinley, M.; Stowell, F.; Zwissler, R.; Code 80: Clay, J.; Kaufman, P.; Parsons, K.; Code 81: Armstrong, J.; Boyle, G.; Burian, C.; Doncevic, M.; Dwornik, J.; Grant, P.; Henesey, W.; Hunn, G.; Koch, J.; Miller, L.; Moore, R.; O'Neill, M.; Rossi, G.; Rothermel, E.; Stasen, D.; Williams, L.; Code 83: Anthony, R.; Broomer, L.; Brown, W.; Floyd, J.; McFetridge, R.; McKenna, W.; McKeown, J.; Moskowitz, S.; Quinn, K.; Rassier, W.; Rohrer, D.; Tarlecki, F.; Urban, R.; Varner, D.; Code 84: Ashley, C.; Collins, R.; Gardner, T.; McKay, S.; Nissley, N.; Palaia, M.; Reed, R.; Schupfel, S.; Singleton, T.; Valdivieso, M.; Code 91: Byers, E.; Gindhart, M.; Haggerty, K.; Hartman, M.; Harvey, C.; Keiss, A.; Perkins, J.; Schecter, P.; Showmaker, M.; Tolle, J.; Valesky, R.; Code 92: Baxter, A.; Countz, D.; Crosson, R.; Dinardo, D.; Kowalewsky, H.; Mitchell, F.; Rickmers, B.; Sicher, L.; Contractors: Curtis, D.; Dennis, B.; Fazenbaker, D.; Finegan, J.; Gorman, A.; Haney, E.; Hell, G.; Kearney, J.; March, L.; Mayer, G.; McMichael, T.; McTague, B.; McTague, J.; Melby, R.; Moyer, C.; Mumford, B.; Ritaldato, D.; Russell, H.; Shelton, S.; Wadelius, C.

If the SOC Fits

by Robert Janes

One axiom of the Navy's Standards of Conduct (SOC) is that we Navy employees must maintain an arm's length relationship with the contractors with whom we deal. We are cautioned to maintain strict impartiality in our relationships with Defense contractors, and to avoid doing anything that may create an appearance of preferential treatment being given or owed to a contractor.

This concept is directed not only at obvious instances of impropriety, such as providing inside information to favored contractors, but extends as well to things which might seem rather innocent. For example, we have had some recent instances where NADC employees have asked favors of contractors. Quite obviously, if an employee requests a monetary gift for his own personal benefit, this is a serious breach of the SOC. But it can likewise create a problem when the favor requested is in the government's interest. One example concerns the hiring of personnel. We have seen cases where NADC employees have asked contractors to hire particular individuals, not because the individual was a relative or close friend, but because he was perceived as offering a specialized talent or experience. This has occurred with former NADC

employees, as well as with individuals who for some reason were not currently eligible to be picked up as NADC employees.

Another source of favors involves the work performed under contracts. It is essential that a contractor adhere to the contractual Statement of Work in the work it performs, yet we have seen instances where, normally in an effort to expedite performance, one of our employees has asked a contractor to furnish some effort completely outside the scope of the contract. Worse yet, contractors have been asked to take on work for the sole purpose of serving as a conduit to some subcontractor, who would then perform the effort in its entirety.

Notwithstanding what may be the perfectly good intentions of the government employee involved, asking favors of contractors violates the SOC. It is not fair to the contractor, who is in a rather vulnerable position and might feel it cannot say no. In addition, it creates the appearance that some reciprocal favor may be bestowed upon that contractor in the future in return for its having done a favor for us. The government is certainly entitled to exercise all its rights under contract, but it is improper to ask contractors for things to which it is not contractually committed.



Bandits take season title for second year

by Mark Lilly

The Bandits tallied a 15-2 record to win the top seed in the 1988 playoffs. They ended the season with their only losses coming at the hands of the Misfits and the Druids. A glance at the standings reveals that they finished among the league's best in team offensive and defensive categories. They have gotten offensive production throughout the lineup but their big gun has been Stan Zajdel, who hammered 6 home runs during the third week in June. The defense has been as stingy as the offense has been productive. The infield, led by shortstop Rick Sames, makes few errors and the outfield consisting of Zajdel, Mike Elser, Chris Malitsky, and Pete Carroll is probably the fastest unit in the league.

The Misfits (14-3) finished in second place, also for the second straight year. The Misfits rather gaudy record is even more impressive when you consider that they lost both ends of a doubleheader on a bad night in early June (the first to the Druids and the second to the Nightriders). The Misfits finished tops in the league in runs scored, due to production throughout the lineup and a very tough top-of-the-order. Matty Brown has always been one of the league's best leadoff hitters and Number 2 hitter Steve Heinz is tough in the clutch. At this level, Number 3 Jeff Price is as close as you can come to Reggie Jackson, in both performance and demeanor. Additionally, the line drive-hitting machine, Gary Morlock, has had a good year.

The 8th Inning finished the regular season in third place, their best regular season finished in years. Could it be that they are starting to take this game seriously? Nah! They showed up with only eight guys to play the Granfalloon. However, they won the game 10-6. Fielding a large number of home run hitters and a strong defense has always been their strong suit. Pitching ace Bob Larr is hard to beat, particularly when he is on. Joe Bebey is a topnotch center fielder and utility

man John Santini has the legs of an eighteen year old.

The Falloon, at 13-4, are having one of their toughest regular seasons in years. They have not dominated the league this year as they've done in seasons past. Usually, you can count on them to fifteen-run 5 or 6 of the weaker teams in the league. This year, they have struggled just to win. However, they do have a reputation of being extremely tough in the play-offs and this year should be no exception. Falloon manager Tom Weiss is a proven winner who surrounds himself with much talent. Dave Jenkins is a good ball player, Mark James can knock the stuffing out of the ball, and veteran pitcher Steve Torok is one of the top-pitchers in the league.

The Renegades finished the regular season at 12-5 which is surprising considering that they do not have an overpowering pitcher. Their offense can be potent, since they finished third in runs scored. Scott Lassen, Bill Brower, Scott Holloway and Frank Marshall are at the heart of most rallies and the defense is very competent. Steve Bazow covers much of left field, particularly when he is standing there. Center fielder Jeff Lytle can be spectacular, and Brower has one of the strongest arms in the league.

The Bearcats took the last non-Wild Card Playoff berth by beating the Rebels on the last day of the regular season. This team can be extremely tough, or average, depending on who shows up for them. Chris Packer, Tom McGovern and Age Hribar are all capable of having multiple home run games and Scott Van Zant can also light up the scoreboard.

The Nightriders and Rebels took seventh and eighth place, respectively. The Nightriders started out the season real strong but reached their zenith on June 6 when they won both ends of a doubleheader — beating the Misfits and the Renegades to reach a 9-2 mark. However, since then, they've lost 5 of their last 6. To win in the playoffs, they must return to their early season form

by playing strong defense and getting offensive contributions from Wes Gleason and John Cerkan. The Rebels took the second Wild Card playoff berth. They started out at 1-5 and then won 8 of their last 11. They just missed taking sixth place when they lost to the Bearcats 5-4 on the last day of the season. Much of their late season heroics can be attributed to a tough defense and a revitalized offense. They've had big offensive contributions from Frank Hollenbach and Craig Volker and Rich Piscicella has done a commendable job at third base.

The last two Wild Card spots were filled by the Intimidators and the Rumlbers. The Intimidators have done well considering that this was their

first year in the league. They've beaten the Nightriders and the Guzzlers and have the capability of putting some runs on the board. Matt Sharkey and Mike Devlin are two of the better hitters on the team. The Rumlbers took the tenth playoff spot the hard way. Coming into the last game of the season, they needed either the Guzzlers to lose to the Herrassers or the Intimidators to lose to the Animals — and they had to beat the 8th Inning. Well, believe it or not, the Guzzlers lost and the Rumlbers beat the 8th Inning 5-4 in 9 innings. This team has shown what a good farm system can do for you. Three of the better players on the team are co-ops. The left side of the

Continued on Page 8

Bikers race for fun and fitness

On June 9, the first inter-departmental bicycle relay race was held on NADC's main runway. Competition included teams of two women and two men bicycling a total of four miles. The first team to cross the finish line hailed from code 50, with the code 05 team finishing close behind.

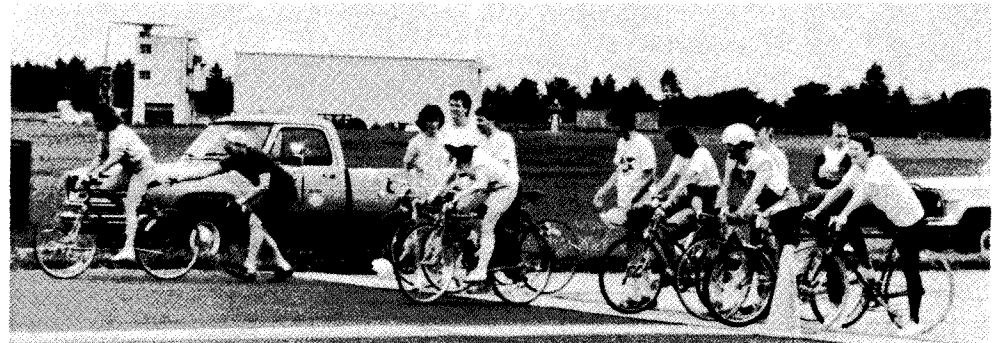


Photo by Robert Goodyear

"On your mark, get set, go!" and with that the race began.



Photo by Robert Goodyear

One of the competing teams was from the Computer Department: (left to right) John Greiner, Anne McNamara, Pat Insley and Lew Wertley.

TEAM	W	L	RUNS FOR	RUNS AG	PCT	GAMES BACK
1 Bandits	15	2	244	76	0.882	0.0
2 Misfits	14	3	232	92	0.824	1.0
3 8th Inning	13	4	179	100	0.765	2.0
4 Granfalloon	13	4	162	62	0.765	2.0
5 Renegades	12	5	199	136	0.706	3.0
6 Bearcats	10	7	155	155	0.588	5.0
7 Nightriders	10	7	185	154	0.588	5.0
8 Rebels	9	8	153	153	0.529	6.0
9 Intimidators	9	8	116	113	0.529	6.0
10 Rumlbers	9	8	160	155	0.529	6.0
Druids	8	9	134	137	0.471	7.0
Guzzlers	8	9	150	205	0.471	7.0
Orange Crush	6	10	136	155	0.375	8.5
CSC	6	11	162	181	0.353	9.0
Herassers	4	13	98	197	0.235	11.0
Animals	4	13	127	193	0.235	11.0
Phantoms	2	15	108	284	0.118	13.0
Dynatigers	0	16	71	223	0.000	14.5

Welfare and Rec trip news

10 Sept-0800-1900-Amish Tour—Delight in the beautiful Fall foliage as your professional Amish tour guide points out the sights; visit the Amish Homestead and Farmlands; lunch at the Devine Carousel; followed by a

scenic ride on the Strasburg steam powered train. All for \$30.—Deposit of \$10. per person required, balance due by 10 August. For information/Reservations call Margaret Vigelis, x 3067.

Self-priming topcoat awaits patent



F-14 "Tomcat" fighter aircraft displayed with self-priming paint.

Continued from Page 1

According to the development team — materials engineer Charles Hegedus, and technicians William Green and Donald Hirst, this coating "... could revolutionize the way aircraft are painted." Hegedus said, "an aircraft carrier is the most corrosive natural environment known and an aircraft's coating is the primary barrier to corrosion ... to protecting the airframe."

"Of course," noted Hegedus, "this new self-priming topcoat meets or exceeds all the critical performance requirements of the current Navy aircraft paint system which is a two-coat method consisting of an epoxy primer and a polyurethane topcoat."

One of the early challenges met by the team was the development of a

statistical formulation design method to obtain promising formulations quickly. "This was necessary," said Hegedus, "because there were so many variables that affect the properties and so many properties." Using the statistical method, the team was able to predict potentially good formulations, prepare samples, evaluate them, and select the best.

The final product was tested in the laboratory then samples exposed to an aircraft carrier environment aboard ship for about nine months. Good test results convinced the team a field test was warranted and the F-14 "Tomcat" fighter aircraft was selected.

Early evaluations indicate the topcoat is performing even better than predicted. Field tests using the new topcoat on H-3 Navy helicopters are currently underway.

Acoustic trainer ready

Continued from Page 1

developed at NADC, the trainer can realistically simulate and control aircraft movement, multiple targets and ocean environments. Pre-recorded tapes of biologic noises can be mixed with the simulated acoustic signals to provide a fully dynamic training capability.

"It's much more economical to train crewmembers on the ground," said Wadelius, "with the additional advantage that the instructor can also freeze the tactical situation, point out problems and special circumstances and direct the training level to the student's capabilities."

In addition to developing and building two SAT prototypes", said Jasper Caro, ASWD Systems Engineering Leader, "NADC also

supplied a complete package of production engineering drawings and specifications to the Naval Training Systems Center, who will let contracts for additional trainers. The two prototypes are currently operating at NAS Jacksonville, FL and Moffett Field, CA. A third trainer is currently planned for NAS Willow Grove, PA.

Caro, an engineer at the Center for 27 years added, "SAT will provide initial, transition and refresher training to every P-3 Update III acoustic operator, and will help achieve and maintain combat readiness at greatly reduced cost."

The modular design allowed earlier stages of the trainer to be used effectively while improvements and further development were ongoing towards the final product.



Photo by Cathy Burian

SAT development team: Jasper Caro, Steve Russo, Darren Fields, Chris Miller, Ranae Davis, Dan Aaron, Major Lief-Erik Wadelius, Dave Miller, Bob Andriszak, (not pictured-Dave Williams) display SAT specifications developed at NADC.

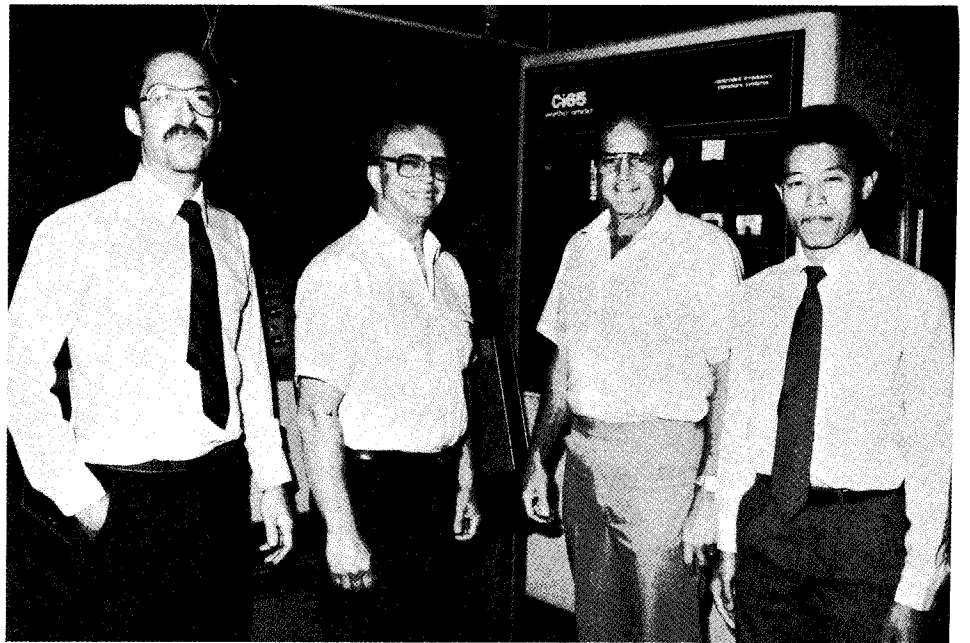


Photo by Clarence Watson

Charles Hegedus, William Green, Donald Hirst and Tony Eng developed the self-priming paint.

DeChico: Best Navy IED

Continued from Page 1

Johns Hopkins University Applied Physics Laboratory in late June provided a forum for the Navy's leading IR/IED investigators to present results of their FY87/88 investigations. Ten Navy R&D labs participated with nearly one hundred oral and poster presentations. Additionally, each laboratory nominated its best IR and best IED paper for an overall award to be presented by representatives of the Offices of Naval Research and Naval Technology.

NADC's participation included thirteen presentations in the three categories of Oral, Poster, and Transition Poster. Among the oral presenters were Dr. J. Sheehy on "Dazzling Glare and Visual Performance", Dr. L. Bobb on "Optical Fiber Thermal Conduction Studies", Dr. V. Agarwala on "Insitu Electrochemical Mechanisms", (which received a certificate as NADC's best IR paper nomination), Dr. L. Buckley on "Conductive Polymers", C. Heithecker on "Plan Recognition for Airborne Tactical", and DeChico. Poster presentations were provided by A. Passamante on "Nonlinear/Chaotic Analysis of Acoustic", L. Gause on "Braided Composite Structures", Dr. W. Scott on "NDE of Metal and Ceramic Matrix Composites", Dr. V.

Contarino on "MM Wave Modulation", and R. Simms on "Tunable Solid State Lasers". Transition posters were provided by Dr. V. Agarwala on "Multipurpose Corrosion Inhibitors for Aerospace Alloys in Naval Environments", and D. Keyser on "The Semiempirical Development of a Fluid Dynamic Linear Accelerometer". These transition posters are currently on display at the Pentagon.

During an in-house ceremony at a Center Management Group meeting, Technical Director Guy Dilworth commented on the NADC/DeChico award presented by ONR's Rear Admiral Wilson and ONT's Dr. Selwyn. Dilworth said, "this most recent award is a very distinguished one in that Bob's (DeChico) work was selected from among all Navy IED projects and his paper was chosen from a group of 40 that were submitted by a very prestigious group of scientists."

"Bob has been at NADC for 29 years and has a long career of successful development work in the area of underwater sensors and transducers. In that time he has made many contributions to a variety of sonobuoy programs. Bob's outstanding work is a fine example of NADC's talented scientists and engineers and I would like you to join me in congratulating him."

Bandits take season title for second year

Continued from Page 7

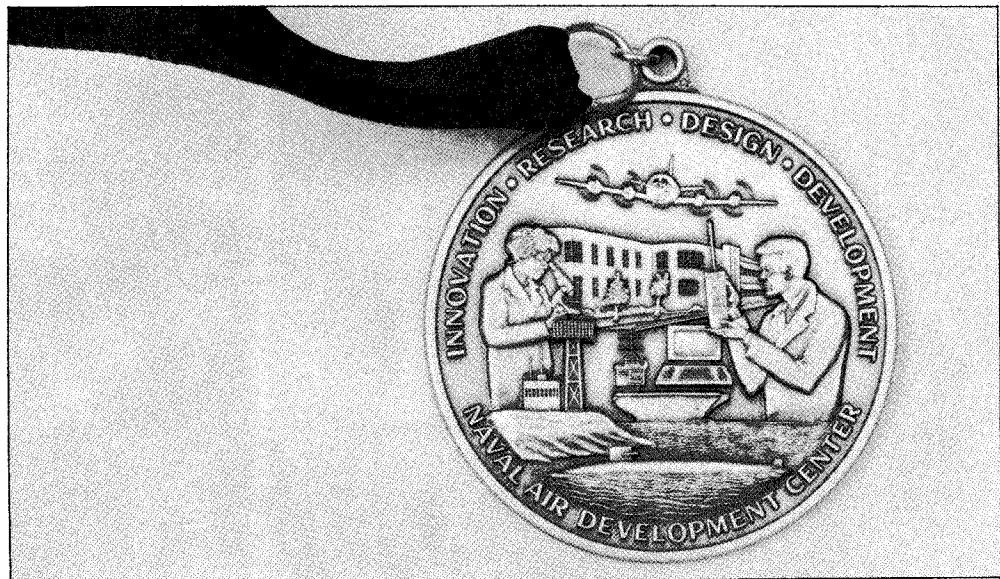
infield is ably manned by short stop Joe Empert and the third baseman is Kevin Stayer. Additionally, outfielder Mike Harvin provides power in the middle of the line-up. The Rumlbers have also been greatly aided by Bill Angermann, one of the best score keepers in the league. Believe me, I've seen this guy work. He rarely strays when he gets a chance to fill in those little diamonds.

The Guzzlers, Druids, Orange Crush and CSC all fielded respectable teams this season. If the ball would have bounced their way a little more often or

the right guys would have showed up for the right games, these teams might have made the playoffs. Special kudos go to the Druids for prevailing over 3 of the toughest teams in the league. They beat the Bandits, the Misfits, and the Granfalloon in the second half of the season.

The Herassers, Animals, Phantoms, and Dynatigers have all improved over last year. The Herassers and the Animals doubled their win production over the previous year while the Phantoms and the Dynatigers stayed in more of their games. Overall, the league is more competitive this year than last season.

Center establishes 'Fellow Award'; six named



Fellow Award Medal; actual size 2 1/4" diameter.

Photo by James Moore

by Jim Kingston

In NADC's 44-year history, a great many people have contributed immeasurably to the Center's success. Among them are a special few with outstanding scientific, engineering, and technical accomplishments. Recently, a decision was made to formally recognize those whose distinguished achievements have brought fame and honor to themselves, NADC, and the Navy. Thus, was born the Naval Air Development Center Fellow Award.

The NAVAIRDEVCON Fellow Award is given for outstanding achievement in science, technology, engineering, technical leadership, and technical support. The achievement must be evidenced by significant contributions to this Center, the Navy, The United States, or another nation. All contributions must be related to the Center's mission.

The criteria are strict:

Recognition by organizations external to the Center of the
Continued on page 4

Jet reconnaissance capability tested

by Robert Swierczynski

NADC is conducting a proof of concept program to demonstrate a new reconnaissance (RECCE) capability for the U.S. Marine Corps AV-8B "Harrier" aircraft. The program will investigate and validate the concept of providing forward-based responsive reconnaissance to the Ground Commander using the vertical take-off AV-8B to perform tactical air reconnaissance missions.

The Center has developed the Expeditionary Tactical Air Reconnaissance System (ETARS) consisting of an infrared line scanner (down-looking, low-attitude, high-speed, day/night sensor), a video

recorder (for ground station playback), and a data annotation system (for latitude, longitude, time and airspeed) installed in a pod to be carried on the centerline of the AV-8B.

Very minimal changes are required to the aircraft. The electronic countermeasures panel controls the pod while data is obtained from the avionics multiplex data bus of the aircraft. When installed on the Harrier, ETARS will provide day/night clear weather reconnaissance capability throughout the aircraft's flight envelope.

According to the program sponsor, the proof of concept demonstration program was initiated to determine the
Continued on page 8

Math model P-R-A-I-S-E-D

The Systems and Software Technology Department has developed the Parametric Reliability, Availability, Integrated System Evaluator (PRAISE), a generalized user friendly, microcomputer-based math model with graphics capability allowing the user to perform reliability/availability evaluations and design trade-off analyses for highly complex redundant systems. The calculations of reliability, maintainability, and availability (RMA) for highly redundant systems require the solution of complex

equations and/or sets of equations. Also personnel performing these calculations must be extremely knowledgeable in RMA concepts to select the appropriate equations for the calculation needed. Typically, these equations must be derived/researched whenever needed. This generalized P-based math model permits the performance of these calculations quickly and accurately by personnel not highly experienced in complex R&M methodologies.

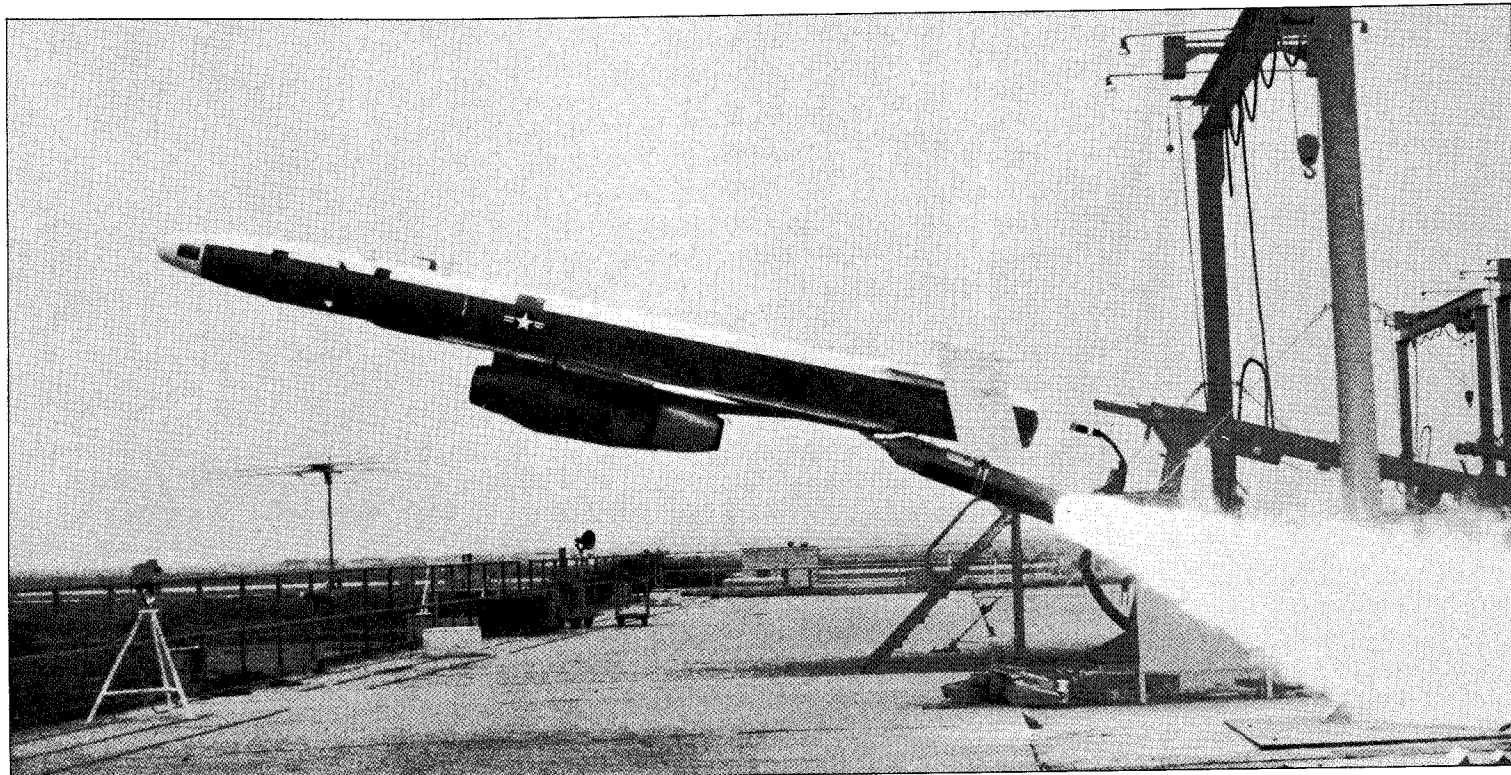
TACAIR target tested

Aerial Target Program centered at NADC

by John Metzger and John Wood

The Center's newest unmanned high-subsonic aerial target system, the BQM-126A, is currently being tested. Designed to achieve 95% of the performance capability at 50% of the cost of the present BQM-34 "Firebee" series, the BQM-126A can be air or surface launched and recovered at sea or on land. When fully operational, it will be used at nine Navy test sites in the Northern hemisphere.

Increasing numbers of target operations over the past 15 years, rising procurement costs and some operational limitations created a need for a new aerial target system. In the late 1970's the Center conducted a concept study for this low cost replacement. As the Navy's cognizant field activity for the development of these systems, the Center's role involves "cradle-to-grave" engineering support including: identifying
Continued on page 8

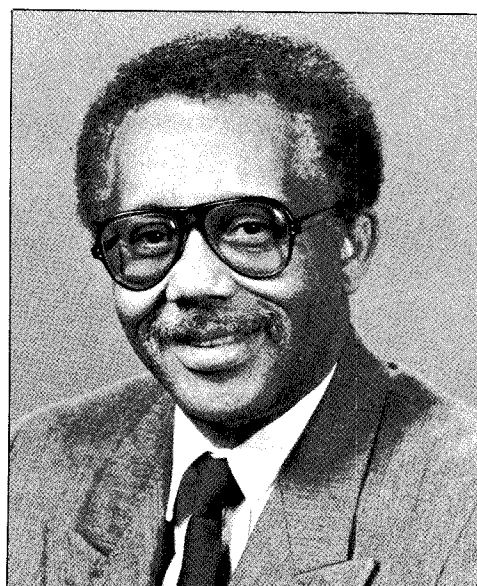


The BQM-126A aerial target is 19.2 feet long and 1.25 feet in diameter, with a 10-foot swept wing. Its turn vertical stabilizer with turbojet pod are mounted under the fuselage.

Command Corner



Captain Curtis J. Winters
Center Commander



Guy C. Dilworth, Jr.
Technical Director

To all hands:

The Center recently received the highest possible rating at the end of a four-day inspection by the Navy Occupational Safety and Health Inspection Program (NOSHIP) Oversight Inspection Unit from Norfolk, VA.

A comprehensive review was conducted of programs such as safety and health training, respiratory

protection, hearing conservation, gas-free engineering, workplace inspections and medical surveillance.

A sincere thank you and job well done to the Command Safety Office staff and all those who contributed to this successful inspection.

Curtis J. Winters
Guy C. Dilworth

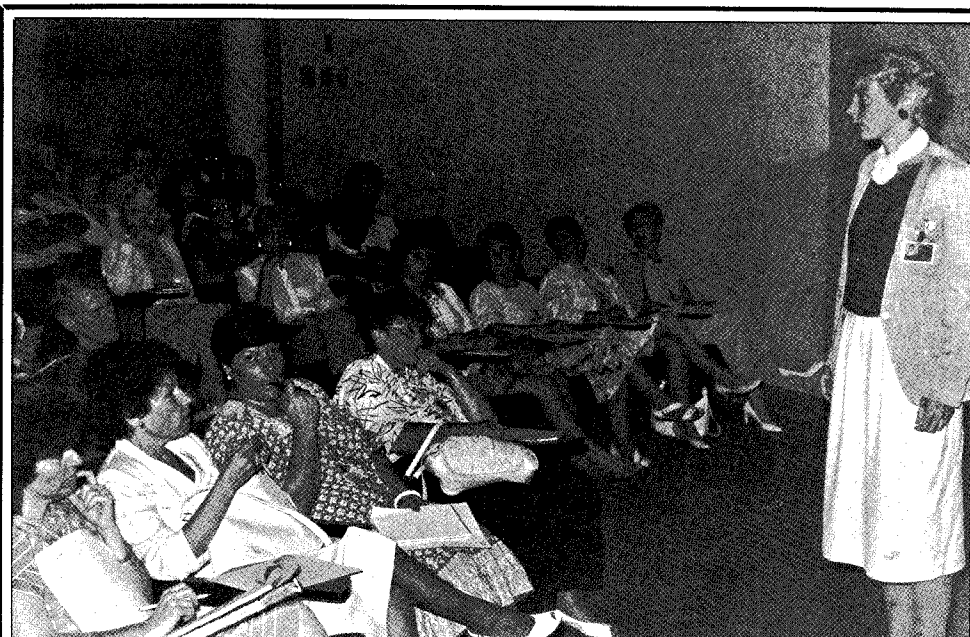


Photo by JO2 Todd Lufkin

COMPUTER USERS GET FRIENDLY WITH CENTER OFFICE AUTOMATION SYSTEM (COAS) — *Pat Insley of the Computer Department explains and offers pointers of the COAS workstation capabilities and enhancements to a full house in the auditorium. The first meeting took place in mid-July, with the participants learning practical skills which will improve their on-the-job performance. Future meetings will be held monthly, normally the first Thursday of the month. All meetings will be advertised in "The Log" and on electronic mail.*

If the SOC Fits

by Robert Janes

Part of the Navy's Standards of Conduct (SOC) deals with the benefits employees are entitled to as a result of official government travel, i.e., frequent flyer coupons and other bonuses and promotional items involved with government travel. The general rules on this subject have been set forth in a number of decisions by the General Accounting Office, or GAO, and outlined in previous *Reflector* articles.

In a recent decision, GAO reemphasized one of those basic rules and clarified another. The case involved five employees of the Agency for International Development who earned airline frequent flyer coupons as a result of government travel, and then used those coupons to obtain free airline tickets for personal travel. GAO noted that this was clearly forbidden by prior decisions, and found the employees liable for the full value of the tickets. This decision seemed particularly harsh since at least two of the employees had checked with

agency counsel beforehand and been told this was permissible.

In the decision, GAO took the opportunity to clarify one area of uncertainty in its prior decisions concerning airline promotional benefits, that is the use of mileage credits earned on official travel for accommodation upgrades — typically from economy class to either business class or first class tickets. GAO held that "the rule prohibiting government employees from converting airline promotional items earned on official travel to their personal use also applies when an accommodation upgrade is obtained in exchange for bonus mileage credits." In other words, employees must account for all mileage credits and may not exchange them for an accommodation upgrade, even though that upgrade is on government travel. GAO left open the possibility of a revision in the regulations which would permit the acceptance of these ticket upgrades, but at present any such upgrade is impermissible.

SECDEF Statement on Standards of Conduct Requirements

The Department of Defense has numerous regulations and memoranda specifying standards of conduct for acquisition personnel and particularly those personnel engaged in the procurement process. Federal law prohibits officers or employees of the government from disclosing confidential information received from contractors. The Federal Acquisition Regulation describes the types of information that should be furnished to potential contractors and the stage of the procurement process when it is appropriate to furnish such information. Department of Defense Directives amplify in some detail the requirement that departmental personnel must not use governmental information for private gain. Periodic memoranda emphasize particular points such as my memorandum dated Jan. 4, 1982, on the avoidance of *ex parte* audiences to prospective contractors prior to contract award and former Secretary Weinberger's memorandum of July 6, 1987, on avoiding external pressures to depart from proper acquisition procedures.

All our regulations and directives are useless if they are not read, understood, and applied with good judgment by our personnel. Recent stories in the media concerning the Department of Defense acquisition procedures make this point clear. It is too early to draw conclusions regarding defects in the acquisition process. It is not too early to conclude that we must increase our efforts to keep departmental personnel aware of our rules and understand what is expected of all personnel in the acquisition process.

I ask that you undertake a program within your respective organizations to ensure that all personnel are familiar with and understand these rules.

Frank C. Carlucci
Secretary of Defense

Security reminder

All requests for reproduction of classified material will be approved by the Security Department Code 0441. A Reprographic Request, NPPBSO NADC-5604/1 will accompany each request. the request will then be taken to Navy Publication and Printing Service Branch Office Code 90 for reproduction. USE OF ALL OTHER DUPLICATING EQUIPMENT FOR REPRODUCING CLASSIFIED MATERIAL IS PROHIBITED.

Welfare & Rec trip news

18 October Bus Trip to Vanity Fair Factory Outlets, Reading, PA . Shop your heart out, or wallet, as the case may be . . . clothing, shoes, tools,

jewelry, housewares, etc. . . . all in one location. Leave NADC 9 A.M., Return 4 P.M. Cost \$12.00

Planned your vacation yet?

To help with all of your personal travel arrangements, call SATO Travel, ext. 2729, Mon. thru Fri., 8 AM to 4 PM.



Reflector

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NAVAL AIR DEVELOPMENT CENTER, WARMINSTER, PA

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Commander, NADC CAPT Curtis J. Winters
Technical Director Guy C. Dilworth, Jr.
Public Affairs Officer James S. Kingston
Editor Mary Ann Brett
Assistant Editor JO2 Todd Lufkin

September Blood donations targeted at 350

by Jim Kingston

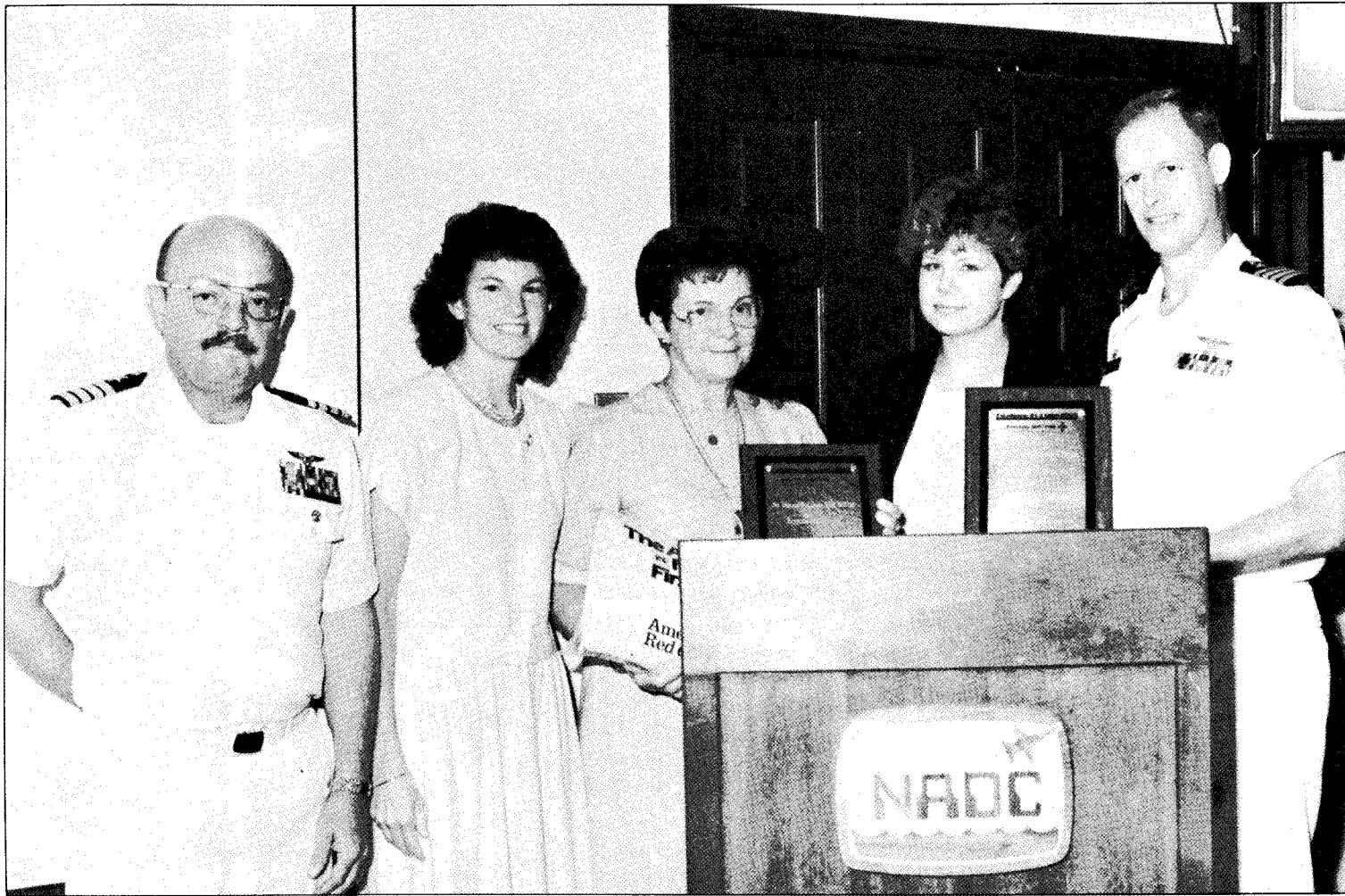


Photo by Robert Goodyear

CAPT Fred Wright, Cynthia Overton, Red Cross representative Joan Miller, Nancy Bernhardt and CAPT Curtis Winters help kick-off the latest Red Cross blood donor drive. Miller was singled out for her role in heading up NADC's blood drive program.

At a kick-off meeting of Center blood donor recruiters, a target of 350 pints was announced as the goal for the next campaign to take place here 7 and 8 September from 0800 to 1600. This drive will be different in that all donors will be given scheduled appointments.

NADC continues to be the leading source of blood donors in Lower Bucks County. Center employees contributed nearly 1200 pints during the Red Cross' fiscal year just ended 30 June.

Red Cross Representative, Nancy Bernhardt, told the Center recruiters that many people do not donate blood because they don't think their blood is needed. Others fail to give because of unfounded fears or simply find it inconvenient.

CAPT Fred Wright, Chief Staff Officer, noted that the blood donor program has the full support and commitment of the Center's management. He expressed confidence that NADC's personnel would again meet or exceed the donor goals.

The meeting also served as an occasion for the Red Cross to honor the Center for its significant contributions of blood and to single out Joan Miller (Code 0314) for her leadership of the Center's program.

Rock named Center's Sailor of the Quarter

by JO2 Todd Lufkin

The Center's Sailor of the Quarter (SOQ) for the second quarter of 1988 is AD1 Richard G. Rock. The 14 year veteran has been here for almost three years.

Rock was proud of being nominated for SOQ and pleasantly surprised at being named. "There were seven other nominees," he explained, "all were quality people worthy of selection. I'm honored to have been included."

He joined the Navy because he was "interested in aviation and because the Navy had the best schools of all the armed forces." He became an aviation machinist's mate because he enjoys

working on engines and thought he'd "like to give jets a try."

The 32-year-old native of Phoenix, AZ, has been stationed at San Diego for boot camp; VS-31 in Cecil Field, FL; VS-41 in North Island, CA; VP-1 in Barber's Point, HI and now NADC.

This SOQ is the Operation Department's Flight Schedules Petty Officer. "As a P-3 flight engineer, I assist in writing the daily flight schedule," he said, "and also keep track of the daily flight time for pilots and air

crew." He is enjoying his tour of duty at NADC — "it is unique in my naval career to be working hand-in-hand with civilians; I've never been with a better group of people, both military and civilian."

Rock recommends a person "maintain a positive attitude and it helps if you enjoy what you're doing." He adds that a sailor should take pride in himself and in the Navy.

In his free time he is the vice president of NADC's First Class

Association and also enjoys working with his home computer and playing contemporary folk music on his guitar.

His plans for the future include completing his degree at Bucks County Community College. Upon retiring from the Navy he hopes to find a job involving flight.

Rock; his wife Judith, who is expecting their third child the first of the year; and their two children; Richard and Amber, live in Warminster.

Hispanic Heritage Week set; Nun to speak

The annual commemorative observance of National Hispanic Heritage Week will be from September 11 through 17. An itinerary of events will be published in the Log and on TV monitors. On Tuesday, September 13, 1988 at 1100 in the Center auditorium Sister Mary Consuela, I.H.M. will speak on "The Hispanic Presence in the Delaware Valley."

Sister is currently Director of the Immaculata-Marywood Bicultural/Bilingual Studies Master's Program at Immaculata College. She is an honors graduate of the University of Pennsylvania where she specialized in Latin American History. Her work took her to Peru, Chile, Argentina, Brazil, and Uruguay. Sister has studied in Puerto Rico and Mexico to find out the actual situations from which the migrants come to the mainland/USA. She is a member on the Governor's Council on Hispanic Affairs and of the Chester County Council on Hispanic Affairs.

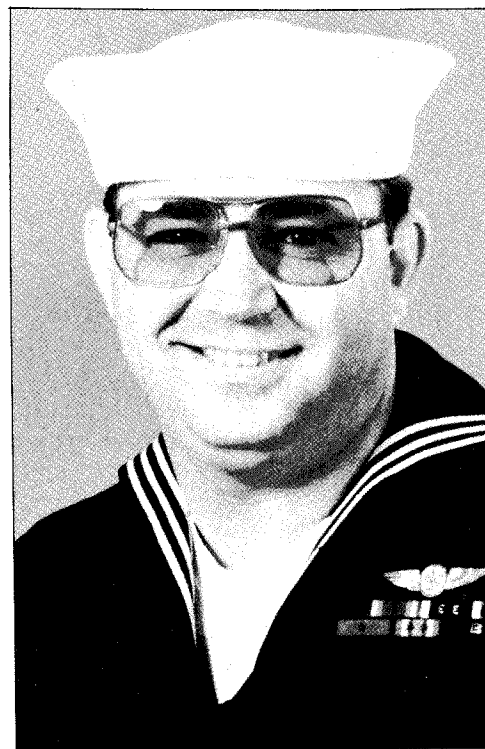
Earlier this year, an NADC Hispanic

Program Committee was formally established to help meet the Department of the Navy and Center Equal Employment Opportunity goal of increasing the representation of Hispanics in our work force. The committee's primary goal is to generate awareness and interest in the program through communication and action.

Rosa Cerankowski, committee chairperson, also oversees four subcommittees: mentors, recruitment, community outreach and public relations. Mentors is headed by Lusi Dunbar. Dunbar and her team of Hispanic volunteers welcome new Hispanic employees to the Center and surrounding area. Recruitment is conducted chiefly by Carlos Falcon, who recruits Hispanic scientists and engineers from primarily Hispanic universities within the United States. Community outreach is coordinated by Lois Savage, who visits local schools and community organizations introducing NADC as a prospective

employer for Hispanic young adults. Hispanic Heritage Week and public relations are managed by Cerankowski who arranges speakers, displays, and programs.

(Information for this article contributed by Rosa Cerankowski.)



**AD1 Richard G. Rock
Sailor of the Quarter**



Sister Mary Consuela, IHM

Center establishes 'Fellow Award'

continued from page 1

individual's accomplishment, such as awards by the Navy, DoD, the President, professional societies, and other prestigious organizations.

Basic or breakthrough developments which contribute to the larger goal of the Navy evidenced by development models, technical publications, or patents.

Outstanding technical leadership in system or team efforts resulting in Navy technology systems or major subsystems.

Outstanding technical management leadership internal to the Center evidenced by significance and breadth of the achievements of the department, division, or group.

Significant technical contributions at the Center as well as accomplishments prior to NADC are considered.

Normally, the Fellow Award will be granted at or following the conclusion of an NADC career, or posthumously.

On the basis of these criteria, six outstanding individuals were chosen as recipients of the first "Fellow Awards". Those being honored are Charles Bartberger, Louis S. Guarino, Sr., Dr. Harry Krutter, Russell Mason, Dr. B. David Polis, and Dr. Harald von Beckh.

Charles Bartberger is being honored for his work in underwater acoustic propagation modeling. Nationally recognized as a pioneer and expert in this field, Bartberger, was responsible for major contributions to the success of the Navy's ASW program.

Louis Guarino is receiving the award posthumously for his pioneering role in the field of avionics. He held 16 patents covering areas from aircraft flight

instruments to helicopter autopilot systems.

Dr. Krutter, a former technical director, lead the development of the first airborne early warning aircraft system (the CADILLAC Project). He has received national recognition and honors, published numerous scientific articles, and holds two patents.

Russell Mason served as the director of the ASW laboratory and later as associate technical director for ASW and acting technical director. During the war years of 1941 to 1946, Mason conceived and developed the first airborne expendable sonobuoys. He also conducted the first airborne towed sonar tests from blimps.

Dr. David Polis is also being honored posthumously. His work in brain sensitivity to oxygen deprivation and his interest and concern with brain survival and function brought him great honor and acclaim. The list of co-authored scholarly and scientific articles is extensive and he held four patents.

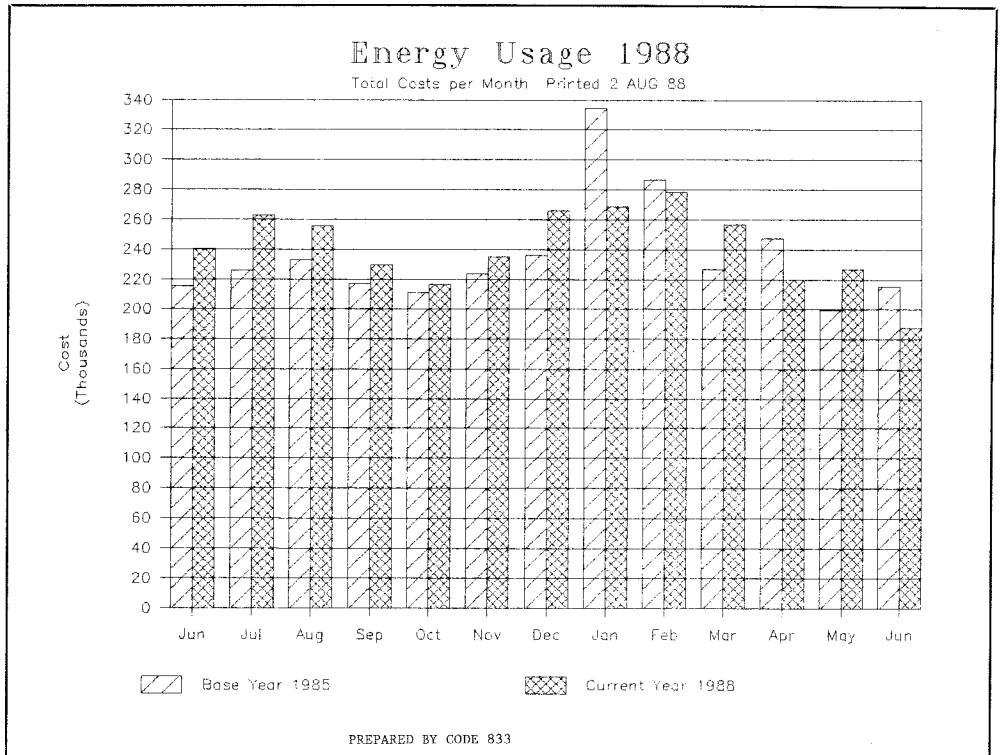
Dr. von Beckh is being honored for his internationally acclaimed work as a pioneer in aviation medicine. He was among the world's first medical researchers to recognize and address the effects of G-forces on pilots. His works have been published in eight languages and he holds three patents. Dr. von Beckh has received both national and international awards.

The Fellow Award consists of a specially designed medal together with a certificate designating the individual as a Fellow of the Naval Air Development Center. In addition, a trophy bearing the names of the recipients will be on permanent display

in the main lobby and their photos will grace the walls of the Center Auditorium.

The honorees will be feted at a gala awards dinner to be held October 7th at the Blair Mill Inn. Keynote speaker for the event will be Dr. Jerome Karle,

1985 Nobel laureate from the Naval Research Laboratory. Center employees wishing to attend the \$20 per person dinner, may contact the Employee Relations Division at extension 3079.



SAVING ENERGY IS EVERYONE'S BUSINESS AT NADC. DON'T WASTE IT!!!

The cost of energy in the last ten years has made all of us aware of the economical importance of energy. We can no longer use energy any other way but wisely. Energy sources used at NADC consist of electricity, natural gas, and fuel oil. The figures show the total energy usage for 1988. A 1% reduction in total NADC energy consumption for one month only is enough for 24 months of heating, cooling and cooking for one residential home with three bedrooms.

Successful Navy Relief campaign ends

The FY-88 Navy Relief Fund Drive netted more than \$9,000 for the Navy Relief Society. The contributions break down as follows: \$3,558 from military allotments, \$5,000 from fund raisers, and \$450 from other contributions.

Fund raisers included the CPO steam cleaning, P01 bowling marathon, P02 car wash, hoagie sales and generous contributions from civilian employees at NADC. The Corvette Club also expressed their appreciation for the use of the airfield for their auto show through a very generous contribution.

Still more to come: The first annual Navy Relief Drive Single Pitch Softball Tournament is on for 24-25 August 1988. Proceeds will be contributed to the FY-89 Navy Relief Fund Drive.

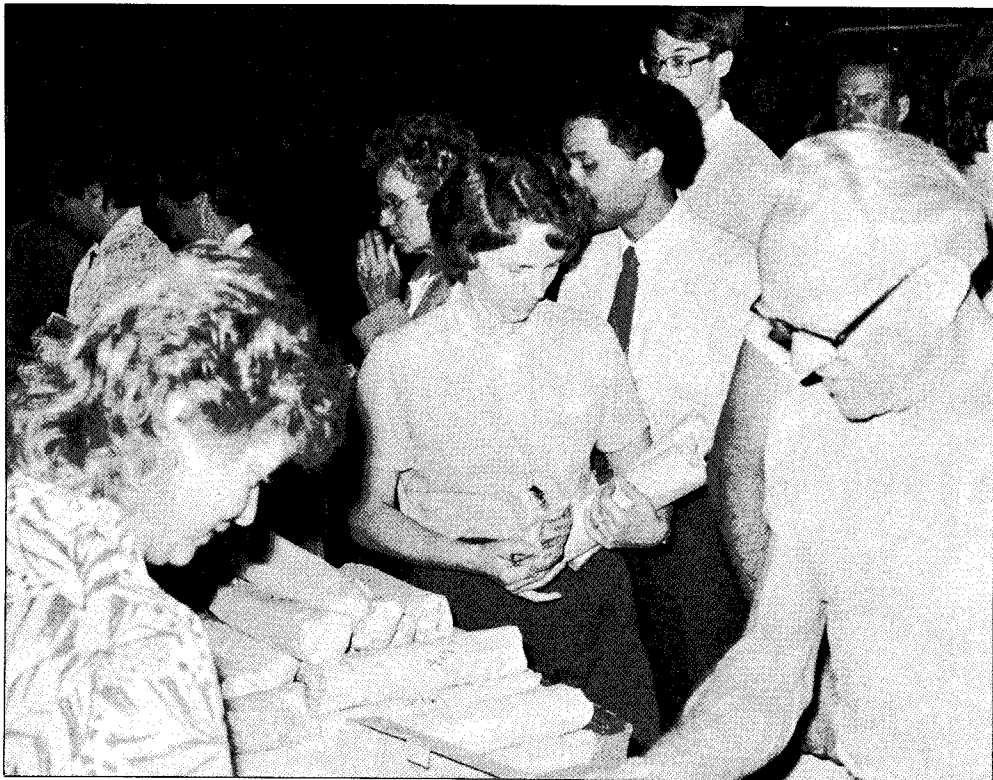


Photo by JO2 Todd Lufkin

Hundreds of hoagies were sold as one of the many money-making projects undertaken in the name of Navy Relief.

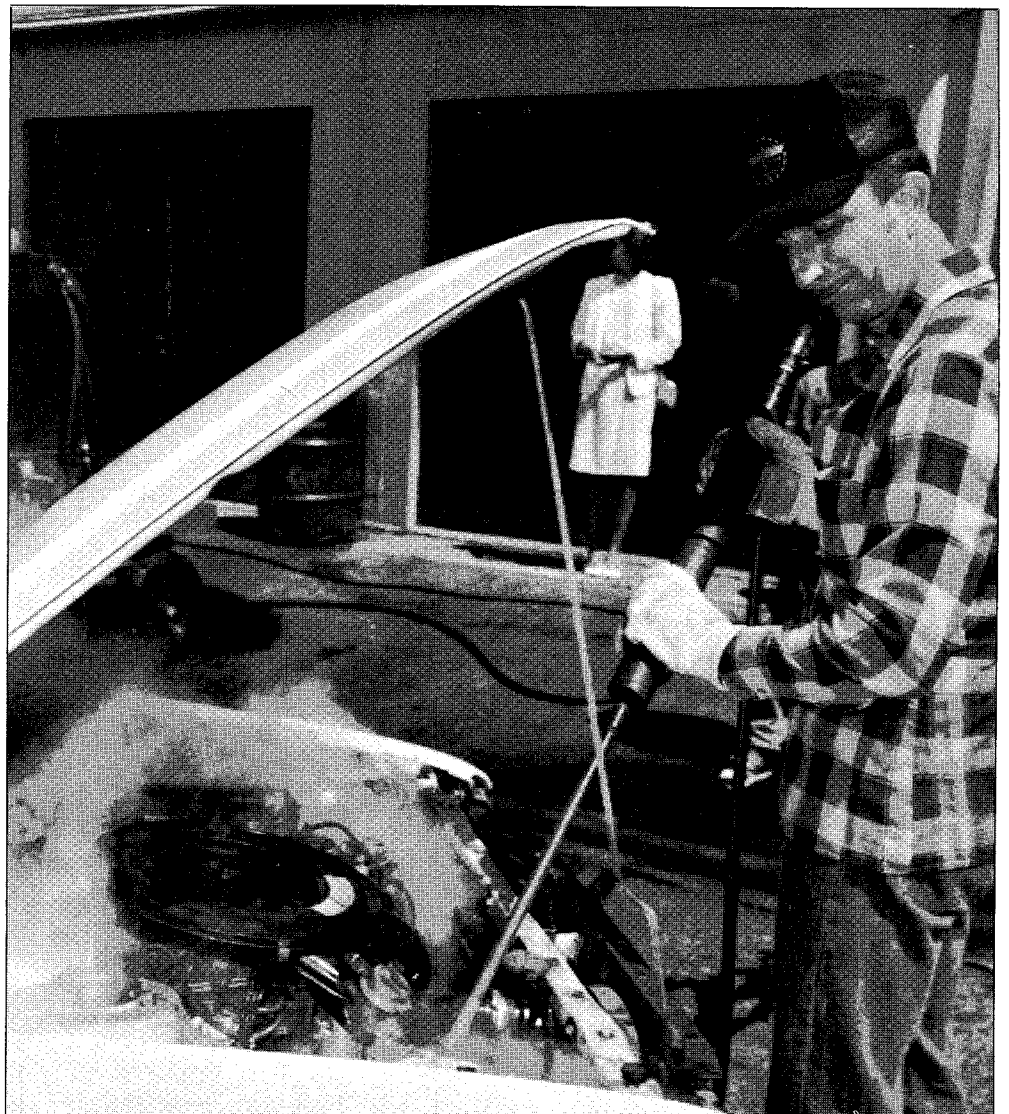


Photo by JO2 Todd Lufkin

Chief Robert Smith and one of many engines the CPOs steam-cleaned during the FY-88 Navy Relief Fund Drive.

Graduate Fellow sees 'real world' at NADC

by Mary Ann Brett

"It's a great opportunity and good experience, too!" said Paul Voois of the office of Naval Research (ONR) Graduate Fellowship program and his summer stay at NADC.

Voois is a June '88 Electrical Engineering graduate from Pennsylvania State University and is planning to attend Stanford University in September. A native of West Chester, he chose NADC as his first work assignment under the fellowship

program and will pursue studies in signal processing.

The ONR Graduate Fellowship Program is designed to increase the supply of United States citizens trained in science and engineering disciplines critical to the Navy. ONR awards approximately 50 new fellowships per year to recent outstanding graduates to support study and research leading to doctoral degrees in specified disciplines. Specialties within these disciplines, which are of particular relevance to naval technology goals are announced annually and preference is given to those intending to pursue graduate study in one of those specialties.

On arriving at the Center, Voois was assigned to Dr. Robert Williams, of the Signal Processing/Computer Systems Technology Division where he worked on applying symbolic math with computer algebra to signal processing. Williams explained that with this new technique, instead of manipulating numbers, one manipulates algebraic entities and that signal processing might be a good area to benefit from this technique.

During his assignment at the Center, Voois became familiar with several symbolic math computer packages. He learned how to

manipulate and apply them to signal processing and how to understand the feedback. Voois has made several presentations on his findings and is helping with other NADC engineers and scientists familiarize themselves with the programs. According to Williams, Voois found some remarkable results that might never have been found using traditional numeric approaches. "These results are quite astonishing," said Williams, "some of the numerical properties were totally unexpected to many of us."

Williams and Voois agree signal processing is one of the most demanding skills in the engineering discipline and mastering advanced tools such as symbolic math software will be a great help.

Voois said his time at NADC was an "... introduction to the real world" and has broadened his views. "The opportunity to make personal contact with experts throughout the Navy and industry and the exposure it provided was extremely beneficial and satisfying," he said.

Voois has yet to determine where he will work next summer. Williams will assist Voois in contacting research specialists at other Navy laboratories to choose the site and subject of his next assignment.

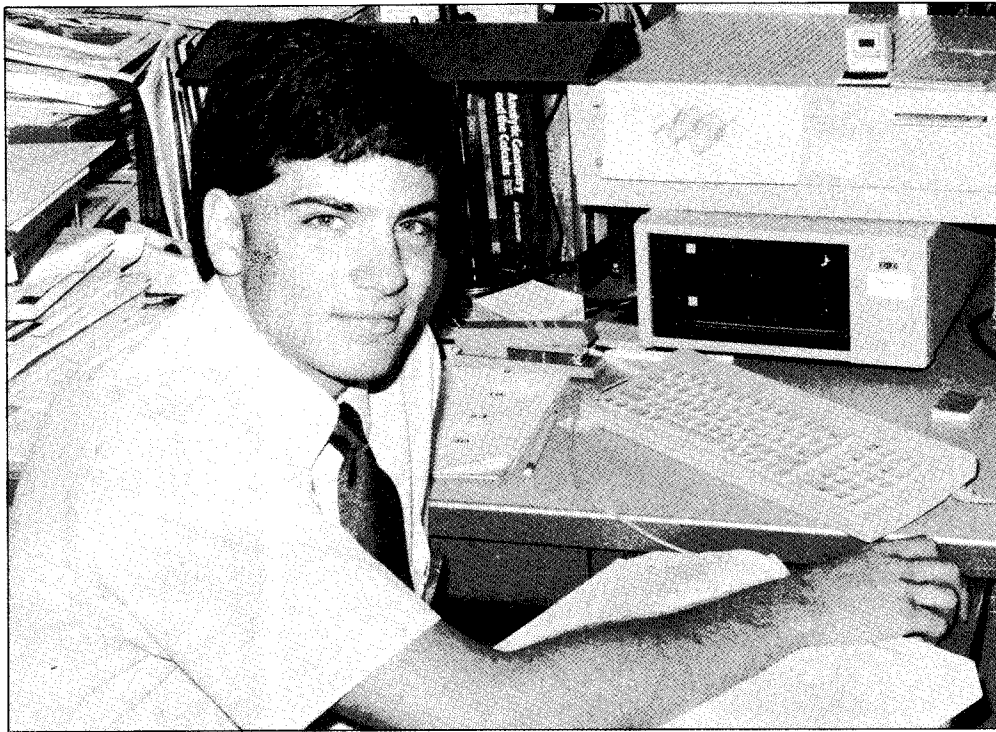


Photo by JO2 Todd Lufkin

Graduate Fellow Paul Voois works on applying symbolic math with computer algebra to signal processing.

For military recreation intern, work is a Joy

by JO2 Todd Lufkin

Standing just shy of six feet tall, Joy James, a summer intern with Recreation Services, said of her height, "It makes me look older, like a person of authority, and more forceful than I really am."

It was certainly an advantage when she was leading a group of young Americans bicycling through West Germany or exploring East Berlin, one of the Cold War epicenters.

Listening to Joy James speak, one would not suspect she was from the South — that is, until an occasional "y'all" slips out. But she is from the Atlanta, Georgia suburb of Stone Mountain, and is about to graduate from the University of Georgia, where she majors in Recreation. She chose the recreational field because she "enjoys being outdoors, working with and

helping people in their leisure time," and quickly adds as an afterthought, "I don't want to be cooped up in an office for the rest of my life."

James is determined to cast her lot with military recreation. "The armed forces provide for the recreational needs of their people, who definitely need that outlet," she explained, "There is also the prospect of overseas travel."

How did this daughter of the South wind up at NADC? "Patsy Schaefer, of Recreation Services and head of Youth Activities is also a graduate of the University of Georgia," James explained, "my advisor knew Patsy and of my desire to work in the military recreation area." So a phone call to Schaefer was all it took to get James to venture to Pennsylvania.

Her job is to observe first hand Schaefer's job of budgetary handling, programming and obtaining facilities

— "she has the reputation of being 'top notch' in the field," explained James. This 22-year-old intern also has to single-handedly organize, plan and lead events from start to finish — a luau at the outdoor pool, canoeing on Lake Nockamixon, or tubing down the Delaware River.

James will be at the Center until the end of August, when her internship ends and she graduates. Until then she is enjoying NADC — "The people genuinely care about a person," she explained, "I fit in faster than I had expected." Seeing as much of the surrounding area as time allows, James is visiting Pennsylvania Dutch country, Philadelphia, Reading and New Hope. Future outings may take her to the "Big Apple" or Washington, D.C.

Her near term goal is to get a job upon graduation. Long range, she hopes to one day run her own

recreation outfitting business. "I want to provide the opportunity and equipment to people of all ages to get out and enjoy themselves." Being outgoing and a "people" person, Joy James should be successful, "top notch," in any field of endeavor.



Photo by JO2 Todd Lufkin

Joy James recreation intern at work in MWR office.



Photo by JO2 Todd Lufkin

NADC OPENS NEW YOUTH CENTER —

CAPT Curtis J. Winters, NADC Center Commander, and James R. Shapard III, Commanding Officer of Willow Grove, cut a ribbon and officially opened the Youth Center located at Shenandoah Woods, base housing. Also shown are: (L to R) Emad Anpoan, Program Coordinator; CAPT Shapard; Patsy Schaefer, Recreation Services Director; JoAnn West, Youth Activity Director; Ron Brewer, MWR Director; CAPT Winters, Lisa Gohn, Summer Day Camp Coordinator; and Nancy Grayson, Youth Attendant.

Sick leave credited toward retirement

by Jim Garamone
American Forces Information Service

Sick leave is an insurance policy for most federal workers, but it can also be money in the pocket for many nearing retirement.

It accumulates at a rate of four hours per pay period. Unlike annual leave — which workers must use or lose — sick leave accumulates as long as a person works for the government.

When people retire, they do not get reimbursed for sick leave hours; however, they may be credited with those hours as part of total federal service for retirement purposes.

The arithmetic runs as follows:

Under the Civil Service Retirement System, 2,087 hours of sick leave make up a year and 174 hours make up a month. Thus, accumulating a year's worth of sick leave requires just over

20 years of federal service, six months' worth of sick leave takes 10 years, and so on.

To take an example: A person who retires after 30 years of federal service and has 2,435 hours of accumulated sick leave would actually retire with 31 years and two months of total federal time.

Sick leave itself, however, cannot be used to qualify for retirement. That is, a person with 24 years of federal service cannot add a year of accumulated sick leave and thus be eligible for retirement with 25 years of service.

This raises the question about whether an employee benefits from accumulating sick leave.

A recent General Accounting Office report noted that federal workers now take more sick leave in the years before retirement than at any other time in

their careers.

Personnel officials claim employees would be in better financial shape if sick leave added to their time in service. "The payoff for adding the sick leave to retirement lasts as long as you receive a retirement check," said an official.

However, federal workers under the new Federal Employees Retirement System plan cannot accumulate sick leave for retirement purposes. This includes employees who chose to leave the Civil Service Retirement System for the new plan as well as new employees since 1984, who are automatically enrolled in the new system.

Those who transferred to the Federal Employees Retirement System had their sick leave frozen for retirement

purposes. "If employees end up with fewer hours than they had when they transferred, then that is what they get. If they save more hours, they still only get the number they transferred with," an official said.

Thus, persons who transfer from the Civil Service Retirement System to the Federal Employees Retirement System with 1,000 hours of sick leave receive 1,000 hours of credit (about six months) when retirement comes around. However, if they end up with 700 hours at retirement time, that's all they get credit for. If they stay and continue to accumulate sick leave, they still get credit only for the 1,000 hours.

Sick leave is an insurance policy for most federal workers, but it can also be money in the pocket for many nearing retirement.

Translating Sick Leave Into Retirement Credit

DAYS	MONTHS											
	0 and up	1 and up	2 and up	3 and up	4 and up	5 and up	6 and up	7 and up	8 and up	9 and up	10 and up	11 and up
0	0	174	348	522	696	870	1044	1217	1391	1565	1739	1913
1	6	180	354	528	701	875	1049	1223	1397	1571	1745	1919
2	12	186	359	533	707	881	1055	1229	1403	1577	1751	1925
3	17	191	365	539	713	887	1061	1235	1409	1583	1757	1930
4	23	197	371	545	719	893	1067	1241	1415	1589	1763	1936
5	29	203	377	551	725	899	1072	1246	1420	1594	1768	1942
6	35	209	383	557	730	904	1078	1252	1426	1600	1774	1948
7	41	214	388	562	736	910	1084	1258	1432	1606	1780	1954
8	46	220	394	568	742	916	1090	1264	1438	1612	1786	1959
9	52	226	400	574	748	922	1096	1270	1444	1617	1791	1965
10	58	232	406	580	754	928	1101	1275	1449	1623	1797	1971
11	64	238	412	586	759	933	1107	1281	1455	1629	1803	1977
12	70	243	417	591	765	939	1113	1287	1461	1635	1809	1983
13	75	249	423	597	771	945	1119	1293	1467	1641	1815	1988
14	81	255	429	603	777	951	1125	1299	1472	1646	1820	1994
15	87	261	435	609	783	957	1130	1304	1478	1652	1826	2000
16	93	267	441	615	788	962	1136	1310	1484	1658	1832	2006
17	99	272	446	620	794	968	1142	1316	1490	1664	1838	2012
18	104	278	452	626	800	974	1148	1322	1496	1670	1844	2017
19	110	284	458	632	806	980	1154	1328	1501	1675	1849	2023
20	116	290	464	638	812	986	1159	1333	1507	1681	1855	2029
21	122	296	470	643	817	991	1165	1339	1513	1687	1861	2035
22	128	301	475	649	823	997	1171	1345	1519	1693	1867	2041
23	133	307	481	655	829	1003	1177	1351	1525	1699	1873	2046
24	139	313	487	661	835	1009	1183	1357	1530	1704	1878	2052
25	145	319	493	667	841	1015	1189	1362	1536	1710	1884	2058
26	151	325	499	672	846	1020	1194	1368	1542	1716	1890	2064
27	157	330	504	678	852	1026	1200	1374	1548	1722	1896	2070
28	162	336	510	684	858	1032	1206	1380	1554	1728	1901	2075
29	168	342	516	690	864	1038	1212	1386	1559	1733	1907	2081

To use this chart: Take your hours of sick leave and find the closest number. Look at the top of the chart for the number of months it will add to retirement and look at the column at the left for the number of days.

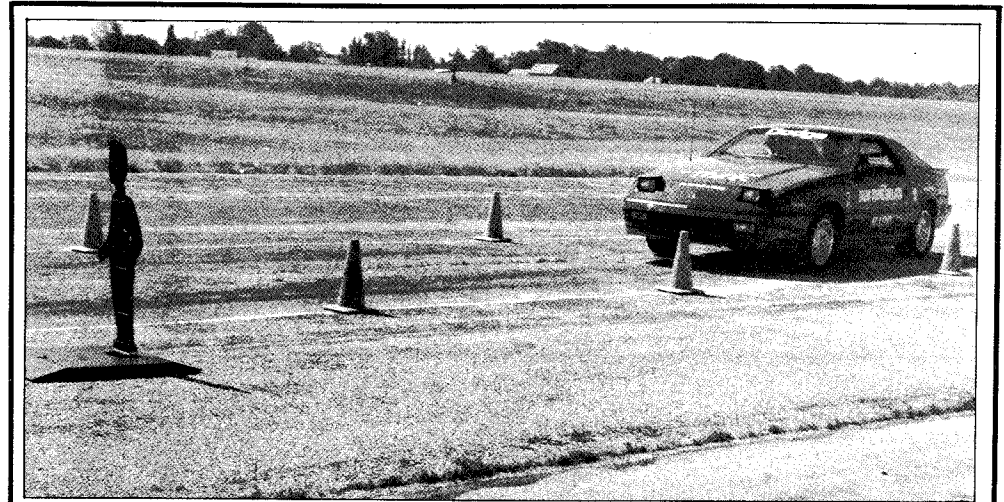


Photo by James Kingston

... MADD, MADD WORLD — Mothers Against Drunk Drivers (MADD) sponsored on Center a Dodge Daytona Shelby Z automobile, programmed to act as though it were drunk. The "drunken" car demonstrated the reduced driving abilities of an alcohol-impaired individual. The one-day Philadelphia-event was part of a nationwide, 20-city summer tour.

Commander Salutes

Major Blaine Feltmate (Code 09): For an informative presentation to Boy Scout Troop 121.

Aaron Burstein (Code 20): For outstanding performance on the Advanced Air-to-Air Missile Program.

A. Thomas Weaver, Robert Dolceamore, John Heap, John Kichula, Donald Spry, Robert Minder, Barry Knouse, Helen Keller-Surman, Ralph Collins, Edwin Salada, Lawrence Bolmarcich, AX1 Douglas Kallman, Dominick Siano, Paul Scherer, William Myers, John Bramer, AW2 Minor Morris, LTJG Robert Toth, AD1 Richard Rock: For intensive efforts toward delivering the P-3C aircraft Channel Expansion Program for formal U.S. Navy test and evaluation.

Robert Muller (Code 60): For initiative in implementing the procedures necessary to secure the needed parts for the A/P 22P-9 (V) CB program.

Marlene Grubb, Lynn Scott (Code 03): For assistance to the Philadelphia Region's Personnel Office during their conversion to the Air Force's Automated Personnel Data System.

Sherry Kabin (Code 03): For assistance in developing the Space and Naval Warfare Systems Command

submission to the Navy-wide Position Description Writer project.

LT Erickson (Code 60): For outstanding effort in organizing and presenting a brief on current Laser technology to the Commanding Officers, Naval Air Station Willow Grove, et al.

Faye Brown (Code 02), **Rebecca Gray** (Code 04), **Sidney Williams** (Code 10), **John Hester** (Code 20), **Desiree Beverly** (Code 30), **Jeanie McCain, Shirely Jones, Sharon Robinson, Ruth Pickering** (Code 70), **Teri Hackett** (Code 80): For commitment to and participation in the Center's Black History Awareness Month celebration.

Major Leif-Erik Wadelius, CF (Code 10): For outstanding representation of NADC and demonstration for the Single Advanced Signal Processor Acoustic Trainer to Canada National Defense Headquarters personnel.

LCDR B. Gritte, AW1 K. Carrigan (Code 10): **LT M. Christiansen, AEC M. Grant, W. Myers** (Code 90): For initiative and enthusiasm during the Naval Air Propulsion Center's Infrared Signature Evaluation at NADC.

Karl Geist, Squadron Leader John Coote, RAF (Code 10): For dedication

and outstanding support to the Naval Air Systems Command Avionics and Computer Resources Division.

AC3 Douglas Champagne, AC1 Daniel O'Neil: (Code 90) For providing essential assistance to the NAS Willow Grove control tower and radar operational facility during an emergency.

Mary Baron (Code 84): For academic excellence during the Management of Defense Acquisition Contracts Course (Advanced).

Dr. Gloria Chisum, LCDR Ron Smith, LT Rick Erickson, Phyllis Morway, Dr. James Sheehy (Code 60): For outstanding efforts in establishing the "Lasers in Military Operations: Technical Data Indoctrination Package" for the Naval Air Systems Command.

David Harrison (Code 50): For outstanding performance in support of the BROADBAND-87 Sea Test.

Jonathan Harding, Donald Pisechko, Victoria Mathews, Suzanne Reep, John Tye (Code 20): For outstanding assistance and cooperation to the Aviation Supply Office, Aviation Life Support Systems units.

Donald Dobbins, Emil Rongione, James Mosley, Maureen Hanna, Vincent Pagliacetti, Gordon Goodman, Alexander Stevenson, James Shields, Debra Rubin, CT01 Robert DeLeeow, Charles Marvasso, Robert Angiolillo (Code 043): For performing in an outstanding manner, far exceeding requirements.

MAJ Barry Hansen (Code 09): For coordinating the visit of the aviation officers of the Amphibious Warfare School.

Charles Mayers, Alfred Keiss, Joseph Perkins, Claude Mobley, Glenn Watson, Michael Goldberg, Arnold Gibson, Eugene Byers, Michael Hartman, Tommy Hunter, David Burns, Jeffrey Tarman, Kurt Braejnle, Jeffery Tolle, Harry McNickle, Wesley Maughans, Richard Gerhard, Herbert Schoell (Code 90): For professional response to an emergency situation preceding any damage to the Central Computer System.

MAJ Blaine Feltmate CF: For outstanding efforts in arranging the visit and information exchange between personnel of the Canadian National Defense Headquarters and Center officials.



Falloon takes softball championship

by Mark Lilly

The Granfalloon won the 1988 NADC Softball League Championship by beating the Misfits 3 games to 1 in a hard fought series. The Falloon has now won 3 straight titles and 6 of the last 10 — with 4 of the championships coming with Tom Weiss as manager. This league dominance is analagous and parallel to the Los Angeles Lakers' dominance of the NBA in the 1980's.

The other late breaking newflash is that, at this time next year, there is sure to be a new champion. Weiss has announced his retirement and the breakup of the Granfalloon — as we know it now. Weiss, citing family and career priorities, will be joined in retirement by pitcher Greg Heydet. They were the biggest reasons for the Falloon's unparalleled success. With the Falloon's departure from Center competition, the yardstick by which other teams measured their success will fade into the annals of NADC sports history.

Getting back to the playoffs, the bracket showing each series and the eventual champion, Granfalloon, can be seen below.

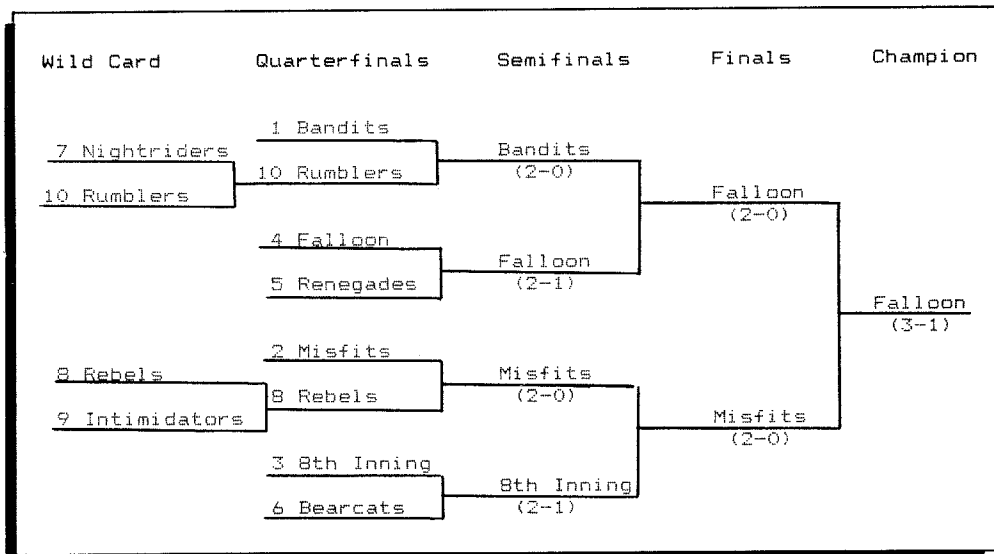
In the Wild Card round, the Rumlbers beat the Nightriders handily 24-8 to advance to the quarterfinals and the Rebels outlasted the Intimidators 6-5.

The quarterfinals produced no surprises even though the Bearcats and the Renegades won the initial games of those series. However, the 8th Inning and the Granfalloon swept the last 2 games to advance to the semis. The Bandits and the Misfits both easily advanced to the semifinals round by sweeping the Rumlbers and the Rebels,

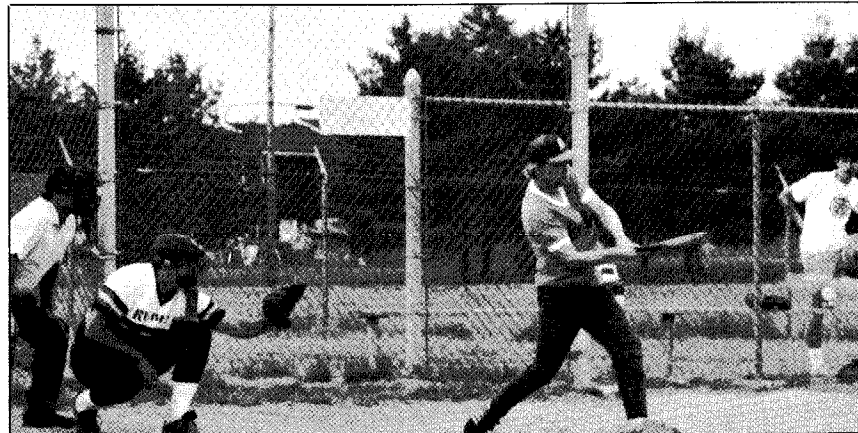
respectively.

As expected, the top 4 finishing teams in the regular season were represented in the semifinals. The matchups had the Bandits facing the Granfalloon and the Misfits against the 8th Inning. The number 1 seeded Bandits figured to be favorites against a seemingly slumping Granfalloon team. However, the Falloon showed their mettle. In the first game, Heydet threw a 7 hitter, striking out 6 on the way to an 8-4 victory. The second game turned out to be a 15-4 rout by the Falloon. Weiss knocked in 7 runs with 3 homers while Steve Fleischut (3 for 4) and Mike Warren (4 for 4) scored 3 runs apiece. Rick Sames and Mark Dungan each hit homers for the Bandits but those runs proved to be too little too late. The other semifinal contest was a little more exciting even though the Misfits swept the 8th Inning in 2 straight. The Misfits won the first game 12-7 behind a heavy hitting top of the order. Steve Hynes (3 for 4) scored 2 runs and hit in 2 more while Mickey Rudock added 4 RBIs with a home run and a single to key the victory. The second game, won by the Misfits 2-0, turned out to be a pitcher's duel between Joel Wexler and Bobby Larr. Wexler allowed only 4 hits in earning the shutout while Larr gave up just 3 hits himself. Jeff Price's first inning triple scored Hynes which turned out to be the deciding run.

The championship series proved to be the strongest possible championship matchup. The Falloon rolled to an easy 12-3 victory in the first game behind the all-around outstanding play of Heydet. He struck out 7 and allowed only 8 hits while going 3-4 at the plate. The Falloon won a squeaker in the second game 3-2. Wexler pitched an



The Bandist' Rick Sames safely slides under the tag applied by Rumlbers' third baseman Mike Falco as Kevin Stayer backs up the throw.



The Bearcats' Scott Van Sant slams an RBI single against the Rebels in the last game of the season. Wayne Everett is catching for the Rebels and Buzz Cerino is the umpire.

Twilight golf league mid-season update

by "Crush" Perry

THWAK! You don't need a calendar to tell we're in the middle of the NADC Twilight Golf League season. Professional attire has given way to loud sans-a-belt slacks and golf shirts. You may have noticed some people have pearly-white left hands in stark contrast to their normal summer tan. As August passes, it's time for an update on the legion of linksmen that do battle each week on emerald fields with lady-luck (and a little sand) in tow.

Has it really been sixteen weeks since this year's battle on the bermuda began? Twenty hopeful teams left the gates in April, vying for those top ten positions, thus gaining invitation to participate in the late-summer classic. The playoffs. Quarter-final, Semi-final, Divisional-final and the Championship. The pressure will build through August straight through to the championship. Psyche's have been crushed during this period. A little spasm in the right-forearm could leave a 5 foot putt for bogey when you had a

2-footer for par. The standings through the end of July are:

White Division		
	W	L
Haphazards	91.5	68.5
Night Clubbers	91	69
Hobbits	90.5	69.5
Foreplayers	85	75
Swingers	77	83
Divots	73.5	86.5
Hackers	73	87
Stokers	72	88
Clubhouse Blues	71	89
Greenies	66.5	93.5

Red Division		
	W	L
Mulligans	94	66
Double Eagles	93	67
Brassies	83.5	76.5
19th Hole	83.5	76.5
Duffers	82	78
Chippers	80.5	79.5
Sand Fleas	80	80
Limp Putters	77.5	82.5
Rusty Irons	76.5	83.5
Teetoters	59.5	100.5

In the Red Division, a tight race to the wire is shaping up between the

upstart Mulligans and the perennial power house, the Double Eagles. During July, while most of the division floundered, the Eagles took 16.5 out of 30. Not spectacular, but better than their rivals. Curt "Crush" Swatchik led the way with two sparkling sub-40 rounds. The White Division has been sporting a three-way race. The once-mighty (now mortal) Haphazards, Hobbits and Night Clubbers are locked in a 'pitched' battle for the top spot. The Haphazards had a sparkling 19-11 slate for the month, but still couldn't shake the Hobbits. The Haphazards were once one of the "locks" led by the crafty veteran Capt. B. McAvoy, yet in recent years they have been under achievers. Unless they get it together, they'll exit the playoffs early, if they make it at all.

The Swami picks the Double Eagles, Mulligans, 19th Hole, Chippers and Sand Fleas to make the playoffs in the Red Division. The Duffers should make it, but they tend to pull the old 'el-foldo' during the stretch run, thereby messing up their Karma. The Night Clubbers, Hobbits, Foreplayers and Haphazards should also survive. As far

as the finals go, look for the Double Eagles and the Brassies from the Red, and the Swingers and the Haphazards (if the bench is empty) form the White Division.

Awards for the Month:

Sandbagger of the Month (net)

- 1) Kevin McGinley (Limp Putters) — 19
- 2) Lou Volrath (Haphazards) — 25
- 3) Dave Smith (Mulligans) — 26
- 4) Pete Zombori (Hobbits) — 27
- 5T) Wil Roessler (Swingers) — 29
- 5T) Ron Williams (19th Hole) — 29

Bobby Jones Award (gross)

- 1) Bob Parsons (Foreplayers) — 35
- 2T) Curt Swatchik (D. Eagles) — 37
- 2T) Steve Cloak (Hobbits) — 37
- 4T) Frank Sheady (Stokers) — 38
- 4T) Gerry Pickering (R. Irons) — 39

Slow play thought of the month:

"Don't line up your putt until its your turn to play, then be especially careful, mucho \$ is riding on it."

Happy ironmongering! See you next month.

Laboratory acoustic simulator developed

by Marc Dilemma

Modern multi-beam sonar systems using hydrophone arrays and complex state-of-the-art digital signal processing techniques need new testing methods which do not require the shipboard installation of final production models and costly at-sea testing. These new methods must allow the system designers not only to completely test and verify sonar system signal processing algorithms and system development as well as electrically replacing the entire transmitter system, ocean medium and receiving hydrophone array but also to provide a signal containing all the information to accurately define a real ocean bottom. With these tools, the designers could deliver a system with a very high probability of success.

The Multi-Channel Acoustic Simulator (MCAS), developed in the Precision Navigation Systems Development Division of the Communication Navigation Technology Department, satisfies these needs. MCAS is a stand-alone system

designed to be interfaced with the Sonar Array Sounding System (SASS) for development and diagnostic purposes. The SASS is a multi-beam sonar system with a receiving array containing 144 hydrophones. The MCAS system electrically replaces the 144 hydrophones and injects the proper signals containing amplitude and phase information describing a slice of the ocean bottom. The receiving system generates the ping command and the MCAS performs all the functions of the transmitter, ocean medium and receiving hydrophone array. This arrangement enables the entire sonar system signal processing algorithms and hardware to be tested in a laboratory. No special software modifications are required and the sonar system thinks it is pinging and processing real echoes.

The stand-alone MCAS can generate only a single bottom echo. This design was primarily for diagnostic purposes after shipboard installation. With the addition of an external computer, the MCAS can provide dynamic bottom data, changing in real time, to a SASS

installed in a laboratory. With the changes, the MCAS provides a complete development system allowing system designers to exercise the sonar system hardware and software algorithms to validate and improve their performance.

To date, a prototype MCAS has been

evaluated and tested in the laboratory and at sea with a SASS receiver. Production units have been delivered and are presently undergoing test. An invention disclosure was issued and the Multi-Channel Acoustic Simulator has been selected for patent application.

Aerial target tested

continued from page 1

requirements, performing concept formulation studies, and participating in all phases of the target procurement and operational cycle.

Subscale aerial targets simulate aerial threats. They are used to support anti-air weapon systems test and evaluation and Fleet training operations including surface-to-air gunnery, anti-air missile, surface-to-air missile and anti-ship missile defense. Threat simulation is accomplished through performance and augmentation.

The target's performance capability includes speeds of 550 KTAS (knots true air speed) at 20 ft altitude to Mach 0.9 at 40,000 ft altitude. The target can sustain 5G turns and instantaneous 7G turns at 15,000 ft altitude, and can dive at angles up to 50 degrees. Also, a low altitude control system, a preprogrammed function initiated at high altitudes, can command the target to dive and flare out to near sea level altitudes. A pop-up maneuver can be accomplished anywhere below 2,500 feet to simulate the final approach of an anti-ship cruise missile or low flying aircraft threat.

Augmentation can enhance the infrared signature and radar cross section or jam inbound missile radars through kits installed in the payload compartment and controlled by the digital avionics processor or through the command control transponders. By changing the settings or the mix, the subscale target provides the required threat simulation.

The BQM-126A flight control system

consists of the digital avionics processor, navigation and target status instruments, and a command control transponder. A three-axis control system provides aerodynamic control through the use of ailerons, elevators and rudders. A magnetometer provides heading control when ground control is not available. Also, the BQM-126A can navigate relative to a TACAN station to simulate a threat homing on a target or be preprogrammed for autonomous navigation with up to 10 waypoints.

Its fuselage is an aluminum monocoque structure with wings and horizontal stabilizers constructed of graphite epoxy composite skin over an aluminum honeycomb core with fiberglass leading and trailing edges.

The fuel tank is a strongback structure able to withstand the high loads encountered during catapult takeoffs, and arrested landings while captive on F/A-18 and A-6 tactical aircraft.

The target employs a two-stage (drogue and main parachute) recovery system. At any point in the flight envelope, the recovery sequence can be initiated by the controller or by the preprogrammed flight controlled sequence. Emergency recovery is automatically initiated during a target system failure.

With the flexibility designed into this new target through its modularized payload configurations and air/surface launch capability the BQM-126A aerial target system will be a major asset for future fleet training and weapon systems test and evaluation.

Jet reconnaissance

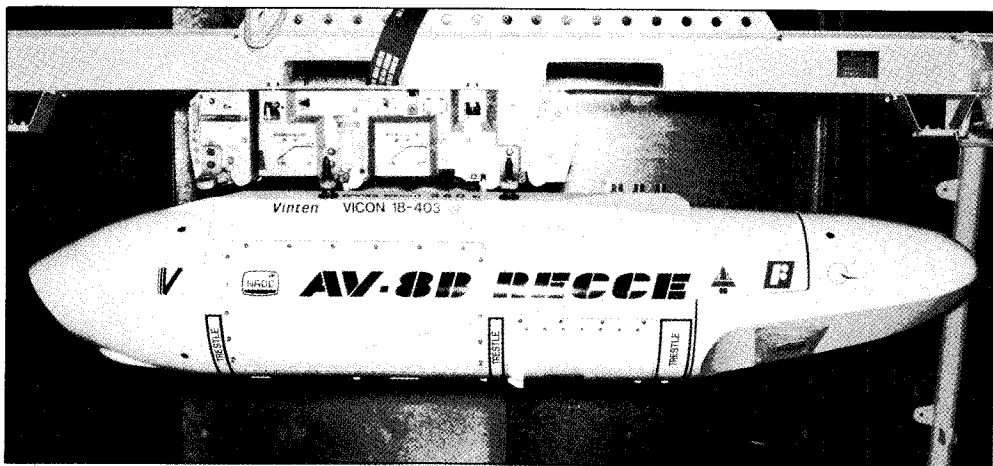
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operational capability of organic reconnaissance assets at the squadron level. This capability would provide tactical intelligence in the form of imagery to the Landing Force and Battle Group Commander.

The medium and large Marine Air-Ground Task Forces have RECCE capability in the F/A-18D fighter/attack aircraft which provides a complete all-weather, real-time imagery system, but the smaller Marine Expeditionary Units (MEU) do not deploy with the F/A-18D. The ETARS, in concert with the AV-8B

Night Attack Program, will provide the MEU with organic, highly mobile air reconnaissance 24 hours a day. The mobility requirements of the AV-8B squadrons coupled with the austerity of their operational sites and the lack of logistics to support film processing equipment, suggested the need for a real time video system.

System integration is currently being performed at NADC, with flight testing at the Naval Weapons Center to be completed by August 1988. The program will also identify any technical risks that must be addressed in future development.



Expeditionary Tactical Air Reconnaissance System (ETARS)

Technical Highlights

Center personnel successfully completed at-sea testing of the prototype MILSPEC GPS receiver integrated with the Navigation Subsystem aboard the USNS HESS for the Oceanographic Survey Program.

The Ship and Submarine Navigation Air Sensor Development Division has installed navigation reference and data collection equipment on six Naval ships. These combatants and amphibious ships will assume the role of cooperative mobile targets in this,

the fifth assessment of the Navy's ability to conduct over-the-horizon warfare. From the data collected, NADC will reconstruct "ground truth" ships' tracks for the operational analysis of this warfare area evaluation.

A prototype detector array for the long wavelength system was delivered to NADC as is now being characterized in the Infrared Detector Evaluation Facility of the Electro-optics Development Division.

Softball championship

continued from page 7

excellent game, giving up only 7 hits but the Misfits offense didn't support the effort. Ed Swiski provided the winning run with a sacrifice fly in the 3rd inning to seal the victory for the Falloon. The Granfalloon's offense went into hiding in the third game as Jim Kearney's Misfits shut them out 7-0. Winning pitcher Al Dick threw a 3 hitter and Price provided all the offense needed with his first inning, 2 run homer. The Falloon took the championship by winning the fourth game of the series 8-7, in a game that saw the lead change or become tied 4 times. Fleischut walked 3 times and scored 2 runs while Weiss added a 2-run round tripper. Wexler and Gary Morlock each added 2 RBIs to help the Misfits' cause. However, the killing blow was delivered by Mr. Money, Mike Bubb, who hit in Buzz Cerino from first base with a double in the bottom of the seventh. Thus, the Falloon won the series 3-1.

Playoff MVP honors were awarded to Weiss who recorded 3 game-winning

RBIs, scored 10 runs, hit 5 homers, and added 16 RBIs during the Falloon's nine playoff games.

The numbers above indicate how valuable Weiss was not only to his team, but also to the league, both from a leadership standpoint and for his contributions of time over the years. Two other compliments come immediately to mind. First of all, the man knew how to win, both as a manager and a player. Secondly, he was a gentleman. Thus, after he beat the pants off you, you almost felt obligated to thank him. He will be missed.

I would now like to take this opportunity to acknowledge all those individuals who were responsible for keeping things running smoothly behind the scenes this season. Thanks to the Board of Directors for managing the league, Weiss for making the schedule, Kearney for managing the umpires, Jack Eyth for managing the money, Bob Kennedy and Jim Raichele for updating the standings and any others I might have forgotten.



Volume 33 Number 9

NAVAL AIR DEVELOPMENT CENTER, WARMINSTER, PA.

September 1988

In This Issue:

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- Warfare Systems Photos
- EEO Awards
- Blue Jacket of the Qtr
- NSTEPer Returns
- Football Favorites

Krumboltz named 'Meritorious Civilian'

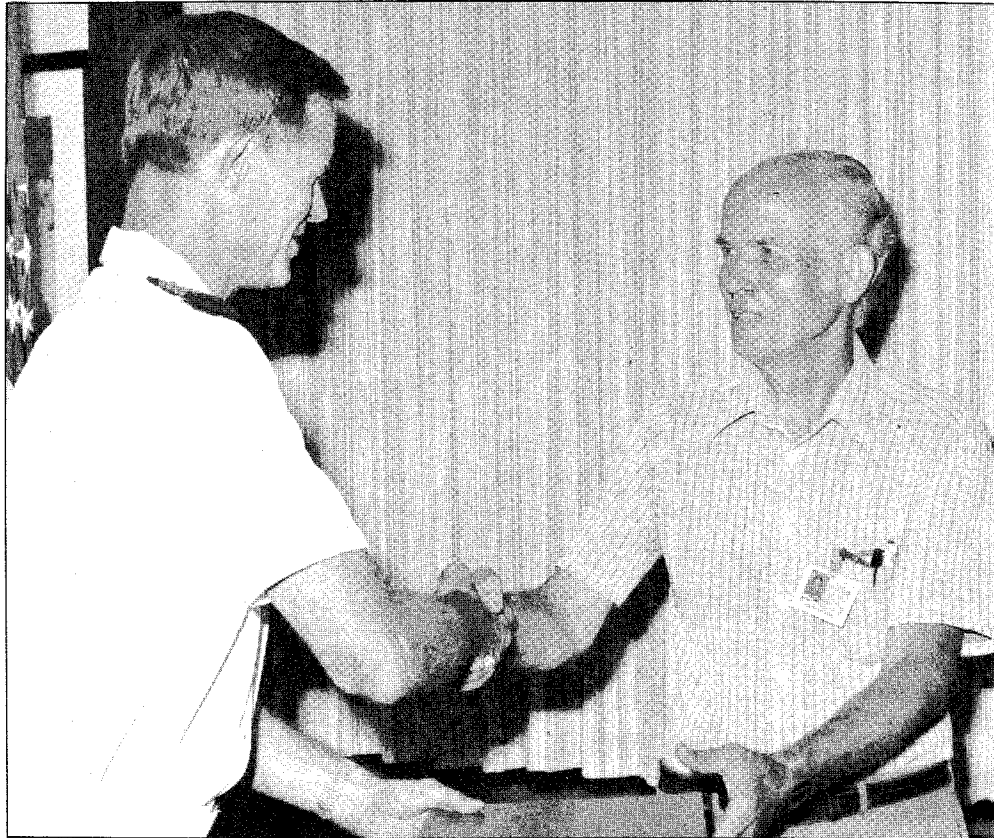


photo by NADC Photo Lab

Howard Krumboltz (left) receives the Navy Meritorious Civilian Service Award and congrat...

By Mary Ann Brett

"... Superior motivation, initiative, flexibility, conscientiousness and leadership," were some of the words used to describe Howard D. Krumboltz who recently received the Navy Meritorious Civilian Service Award.

Krumboltz, a senior electronics engineer in the Laser/Magnetics Systems Branch in the Mission Avionics Technology Department is credited with outstanding technical contributions on Naval airborne laser and microwave surveillance system developments. Included among these are: Laser Detection of Hydrodynamic Phenomena, Submarine Laser Communications, the Hydrodynamic Airborne Laser Sounder, the Optical Ranging and Detection System and the Optical Ranging IFF and Communications Program. One of his

most recent accomplishments is the design, development and production of the air-dropped expendable Krumboltz meter called the "K" meter for measuring ocean water clarity.

A Center employee for more than 37 years, Krumboltz retired in 1983 and then returned to NADC as a two-day-a-week rehired annuitant. Due to an increase of in-house development projects, for which he is largely credited, Krumboltz reports to work five days a week but refuses to accept more than two days' pay.

According to Thomas Castaldi, Head of MATD, "There is no doubt Krumboltz' technical and professional contributions to NADC are noteworthy and deserve an award, but more importantly, perhaps, is the example he sets for his coworkers. He is the epitome of the dedicated employee and is an inspiration to all of us."

Fiber optic gyros explored

NADC is conducting an exploratory development program to demonstrate the feasibility of fiber optic gyro (FOG) technology to meet shipboard gyrocompass systems and aircraft attitude and heading reference systems requirements.

In order to achieve significant sensor performance improvement and cost savings, Navy inertial sensor research and development efforts must focus on the exploitation of new technologies.

The Center's efforts include developing a brassboard gyro utilizing

a single multi-function integrated optics chip to demonstrate feasibility of gyro design for the dynamic range and medium accuracy performance capability required by gyrocompass and attitude and heading reference applications.

Also, conducting in-house laboratory verification and assessment of contract gyro performance and identifying sensor technology deficiencies and promoting industry development tasks to enhance fiber optic gyro performance.

Warfare Systems Analysis focuses on the future

By Mary Ann Brett

The code has remained the same but the new Warfare Systems Analysis Department (WSAD), headed by Otto Kessler, bears little other resemblance to the former Code 30 Battle Force Systems Department led by the now retired Edward Yannuzzi.

Kessler explained the purpose of the new WSAD as focusing the Center's analysis capability. "Where previously this capability was distributed across several departments," he said, "we've now drawn all the Center's key analysts into one organization.

"From an analysis standpoint," said Kessler, "the Center needed a broader, more organized basis for defining and prioritizing Navy air, research and development needs." He continued, "Within the larger context of Navy warfighting requirements, we need to provide objective analyses to define the roles of force elements and their relationship to each other in order to drive out future needs".

Kessler explained the strength of the department will lie in having the broad scope to conduct comprehensive force level system effectiveness studies and

Continued on page 3

Congress approves January 1 pay raise for gov't workers

According to the Navy News Service, all military and civilian government workers are nearly assured of getting a 4.1 percent pay raise January 1, 1989.

House and senate conferees agreed August 10th to include a pay raise for federal government service and executive level four and five employees in the treasury-postal appropriations bill, which President Reagan is expected to sign.

Although the bill only covers civilian

pay raises, federal law guarantees that military members will also receive the 4.1 percent increase in their basic pay and basic allowance for subsistence and quarters (BAS and BAR), unless congress modifies the percentage.

A separate proposal for a 4.1 percent increase in basic pay and BAS for the military is still pending in house and senate conferences on the defense appropriation bill.

Helmsin takes charge of ASW Systems Department

By JO2 Todd Lufkin

Captain F. K. "Ken" Helmsin, new head of the Anti-Submarine Warfare Systems Department, is a firm believer in flying as often as necessary for "the good of the service." "Flying is an attitude-adjustor for me," said Helmsin, a seasoned pilot, "it allows you to remember why weapon systems acquisition is so important."

The son of a Navy Senior Chief, Helmsin went the enlisted route for 22 months before his admission to the U.S. Naval Academy and commissioning in 1966.

He advanced in rank during tours with Attack Squadron VA-112, NAS Lemoore, Calif.; the Naval Post Graduate School, Monterey, Calif. (he received his Master's in Aeronautical Engineering, with a specialty in

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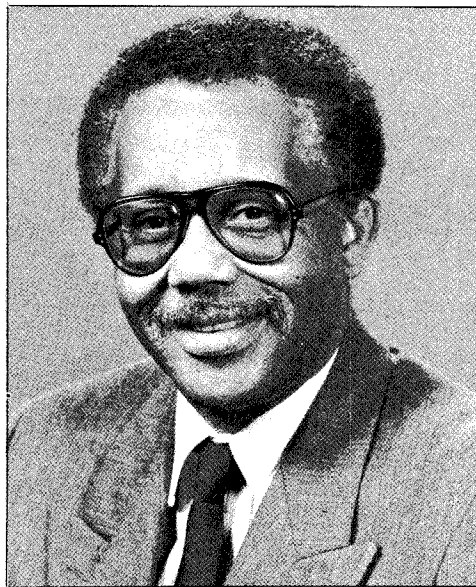


Captain Ken Helmsin

Command Corner



Captain Curtis J. Winters
Center Commander



Guy C. Dilworth, Jr.
Technical Director

To All Hands:

To establish a more focused and self-sufficient antisubmarine warfare capability, we have approved and implemented the following changes to the Center organization:

- The Antisubmarine Warfare Systems Department (Code 10) was restructured to provide the major product lines with resident systems and software engineering resources.
- Code 70's Weapon Systems Software Division (Code 704) was disestablished. Consistent with paragraph 1a above, almost all Code 704 personnel were assigned to Code 10.
- A cadre of personnel with expertise in signal processing systems was reassigned from Code 50 to Code 10.

— The Systems Specialty Engineering Division (Code 702) was established consistent with Code 70's overall responsibility for generic systems engineering.

Revised organization charts and functional statements will be incorporated in the Center Organizational Manual.

C. J. Winters
C. J. WINTERS
Commander

Guy C. Dilworth, Jr.
GUY C. DILWORTH
Technical Director

Civilian drug testing to begin November 1988

The secretary of the Navy signed an order Aug. 6, that directs drug testing of civilian employees occupying specifically-designated sensitive positions within DON begin November 1st, 1988.

The testing, part of DON's drug-free workplace program, affects about 81,000 civilians in jobs related to public health and safety; protection of life and property; law enforcement; and national security. Employees in such jobs will receive a written notice identifying their job-position as included in their activity's random testing pool at least 30 days before the actual test. Approximately 25 percent, or one out of eight employees occupying designated positions, will be tested in the first year.

Disciplinary action, ranging from administrative measures to removal from federal service, will be initiated for the first failed test or refusal to submit to a drug test. The severity of the action taken will depend upon the circumstances of the case.

A second test failure; failure to

refrain from drug use following counseling and rehabilitation; or altering or substituting a specimen will result in removal action.

Just like the Navy's drug testing program for active duty personnel, employees who voluntarily identify themselves to their supervisor as a user of an illegal drug and are seeking counseling and rehabilitation assistance, prior to testing, will be eligible to get help through the Civilian Employee Assistance Program (CEAP). Employees who do identify themselves and seek assistance will not receive disciplinary action for prior drug use. The drug-free workplace program directs any employee found using illegal drugs be referred to CEAP for counseling and rehabilitation referral.

The Department of the Navy considers the civilian drug testing program an important element of the many programs that support the National Defense Mission, and that a drug-free workplace is essential to the operational readiness of Naval forces.

Commander Salutes

Donald Dobbins, Emil Rongione, James Mosley, Maureen Hanna, Vincent Pagliacetti, Gordon Goodman, Alexander Stevenson, James Shields, Debra Rubin, CT01 Robert DeLeeow, Charles Marvasso, Robert Angiolillo (Code 043): For performing in an outstanding manner, far exceeding requirements.

MAJ Barry Hansen (Code 09): For coordinating the visit of the aviation officers of the Amphibious Warfare School.

Charles Mayers, Alfred Keiss, Joseph Perkins, Claude Mobley, Glenn Watson, Michael Goldberg, Arnold Gibson, Eugene Byers, Michael Hartman, Tommy Hunter, David Burns, Jeffrey Tarman, Kurt Braejnle, Jeffery Tolle, Harry McNickle, Wesley Maughans, Richard Gerhard, Herbert Schoell (Code 90): For professional response to an emergency situation preceding any damage to the Central Computer System.

MAJ Blaine Feltmate CF: For outstanding efforts in arranging the visit and information exchange between personnel of the Canadian National Defense Headquarters and Center officials.

Major Blaine Feltmate (Code 09): For an informative presentation to Boy Scout Troop 121.

Aaron Burstein (Code 20): For outstanding performance on the Advanced Air-to-Air Missile Program.

A. Thomas Weaver, Robert Dolceamore, John Heap, John Kichula, Donald Spry, Robert Minder, Barry Knouse, Helen Keller-Surman, Ralph Collins, Edwin Salada, Lawrence Bolmarcich, AX1 Douglas Kallman, Dominck Siano, Paul Scherer, William Myers, John Bramer, AW2 Minor Morris, LTJG Robert Toth, AD1 Richard Rock: For intensive

efforts toward delivering the P-3C aircraft Channel Expansion Program for formal U.S. Navy test and evaluation.

Robert Muller (Code 60): For initiative in implementing the procedures necessary to secure the needed parts for the A/P 22P-9 (V) CB program.

Marlene Grubb, Lynn Scott (Code 03): For assistance to the Philadelphia Region's Personnel Office during their conversion to the Air Force's Automated Personnel Data System.

Sherry Kabin (Code 03): For assistance in developing the Space and Naval Warfare Systems Command submission to the Navy-wide Position Description Writer project.

Jonathan Harding, Donald Pisechko, Victoria Mathews, Suzanne Reep, John Tye (Code 20): For outstanding assistance and cooperation to the Aviation Supply Office, Aviation Life Support Systems units.


LT Erickson (Code 60): For outstanding effort in organizing and presenting a brief on current Laser technology to the Commanding Officers, Naval Air Station Willow Grove, et al.

Faye Brown (Code 02), Rebecca Gray (Code 04), Sidney Williams (Code 10), John Hester (Code 20), Desiree Beverly (Code 30), Jeanie McCain, Shirely Jones, Sharon Robinson, Ruth Pickering (Code 70), Teri Hackett (Code 80): For commitment to and participation in the Center's Black History Awareness Month celebration.

LCDR B. Gritte, AW1 K. Carrigan (Code 10): LT M. Christiansen, AEC M. Grant, W. Myers (Code 90): For initiative and enthusiasm during the Naval Air Propulsion Center's Infrared Signature Evaluation at NADC.

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Reflector

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Commander, NADC	CAPT Curtis J. Winters
Technical Director	Guy C. Dilworth, Jr.
Public Affairs Officer	James S. Kingston
Editor	Mary Ann Brett
Assistant Editor	JO2 Todd Lufkin

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Warfare Systems Analysis

A focus on the future of Navy air



Photo by J02 Todd Lufkin

Front row (l to r): CDR Leo Dacey and Otto Kessler. Back row (l to r): Nancy Ballwe, Ruth Fuller and Debbie Sztubinski.



Photo by James Moore

Front row (l to r): Jeanie McCain, Bruno Cavallo and Bob Johnstone; Back row (l to r): Morton Metersky, Larry Buchsbaum, Bill Wiesemann, Dave Panetta and Frank Scheetz.



Photo by James Moore

Front row (l to r): Don Promish, Jan Gess, Michelle Willis, Ann Kolb and Ellen Moffitt; Back row (l to r): Dave Panetta, John Taylor, Glen Carter, Robert Geyer, John Strobel, Cheryl Zarzi-Brodzik, David Woodcock and Pam Craija.

Front row (l to r): Carla Mackey, Arleen Anderer, Lauren Brake and Nick Onorato; Back row (l to r): Pat Spensieri, Ed Lesoravage, Jean-Marie Kita, Steve Kerr, Mike Grossman, Frank Scheetz, Lee Poore, Roland Hall, Carol Newman, Donald Davis and Burgess Rhodes.

continued from page 1

tradeoffs. We hope to show in quantitative terms what platforms, sensors, support systems and configurations will be needed to meet future air warfare requirements.

"Battleforces of the future won't consist of a number of autonomous aircraft, ships and submarines," he said. "Just as our weapons systems of today have evolved, through concepts of integration, from the black boxes of yesterday, these individual platforms must evolve into a force-wide concept, warfare systems comprised of many platforms functioning as a coordinated whole."

Kessler continued, "Our job is to understand how air elements — platforms, sensors, the full range of technologies — will fit into this force; we need a strong analytical base to evaluate current trends and emerging threats in order to identify and prioritize our technology and subsystem needs."

Kessler intends to accomplish these goals with the help of approximately 90 employees in the department. Subdivisions of WSAD include: Code 3001 — Staff, Code 30B — Warfare Systems Architecture and Engineering (WSA&E), Code 30C — Scientific and Technical Intelligence Liaison Office (STILO), Code 30D — Fleet Interface Support Team (FIST), Code 30E — Reliability and Maintainability/Integrated Logistics Support (R&M/ILS), Code 301 — ASW Analysis, Code 302 — TACAIR Analysis, and Code 303 —

Multi-Warfare and Advanced Concepts.

WSA&E provides center leadership in the Navy's warfare systems architecture and engineering efforts in support of the Space and Naval Warfare Systems Command. It coordinates inputs developed by analysts within code 30 and technologists throughout the Center to represent air capabilities and systems needs for future platforms.

The FIST office ensures the Fleet is familiar with NADC products and identifies and analyzes Fleet problems and concerns for their solution.

STILO provides NADC's interface with the intelligence community and the threat information critical to the formulation of Center products. STILO provides a full range of briefings, studies and reports on technology trends and threat capabilities relevant to all warfare areas.

R&M/ILS/Cost and Value Engineering/Affordability oversees NADC responsibilities in these areas, establishing policy and providing guidance to the Center's various departments for these activities for all Center programs.

"An offer I couldn't refuse," said Kessler, describing the opportunity to direct the Warfare Systems Analysis Department. "It's a significant challenge, but with this new organization of capable and senior people and a positive perspective, I believe we can provide the warfare systems analysis guidance, leadership and representation that the Center needs to the headquarters community."



Photo by J02 Todd Lufkin

Front row (l to r): Noreen LaPira, Carl Van Wyk and Joe Lindinger; Back row (l to r): Glenn Rhodside, Dave Bailey, Joe Orasz, Judy Thomas, Fred Barker, Paul Bumgardner, Al Knobloch and Bob Klump.



Photo by Mary Ann Brett

EEO is for everyone

Five honored for EEO accomplishments



CAPT Curtis Winters, Center Commander, and Guy Dilworth, Technical Director, join with Kathleen Gause, Deputy EEO Officer, in honoring the 1988 EEO Honorary Award recipients. Shown are: (L to R) CAPT Winters; Awardees: John Hester, Carlos Falcon, Kathy Hanling, Morton Metersky, awardee Edward Yannuzzi not pictured; Kathleen Gause and Mr. Dilworth.

By Lynne Edwards

"Today . . . is a time to pat some of our employees on the back for significant achievements and dedication in EEO." With these words, Captain Winters presented five Center employees with honorary Equal Employment Opportunity awards.

The awards presentation took place during a recent Business Advisory Group meeting in the Center Conference Room. Each of the winners received a letter of congratulations from the Captain and an engraved plaque. All are outstanding employees in the area of Equal Employment Opportunity.

Carlos Falcon (Code 30C) was selected as a recipient for an award in the Personal Incentive Category (PIC) for his work with Hispanic Americans and his recruiting efforts with the Center's Special Emphasis Recruiting Programs. His efforts resulted in the subsequent Center Adopt-a-College initiatives.

John Hester (Code 2011) was also a recipient of a PIC award. He served as an EEO counselor for seven years and as chairperson for the Center EEO Committee for two years. He has successfully served not only as a recruiter at Tennessee State University, but also as an interviewer at other minority schools.

Kathy Hanling (Code 4041) and Mort Metersky (30D) won an EEO award for their "Prejudice Reduction through Knowledge Program" which included informative bulletin boards, workshops, films, posters, and speakers. A two-hour workshop conducted on Center by the Philadelphia Anti-Defamation League was part of a region-wide World of Difference Campaign.

Now retired Edward Yannuzzi was the recipient of an award in the Manager/Supervisor Category for his dedication to and promotion of the ideals of EEO as head of the former Battle Force Systems Department. He was also an active participant in the Adopt-a-College Program and was responsible for the conception and implementation of the "Prejudice Reduction through Knowledge" training initiative.

Women's Equality Day observed

By Lynne Edwards

"Equality and progress are precious commodities for a democracy. They can not be auctioned off to the lowest bidder or contracted out in the interest of short term efficiency," said Ruth Lawhorn in her address on Women's Equality Day, (WED) August 26, 1988.

Lawhorn, Director of the Office of Civilian Personnel Management, Northeast Region, was the keynote speaker at the WED luncheon sponsored by the Federal Women's Program (FWP) Committee. Women's Equality Day was designated as a reminder of women's continuing efforts toward equality. Lawhorn addressed the point of "continuing efforts" in the final words of her speech: "On this Women's Equality Day, we must be mindful that the larger issue is always

equality at its best and our best, not a single job or promotion, not a single success or event no matter how spectacular."

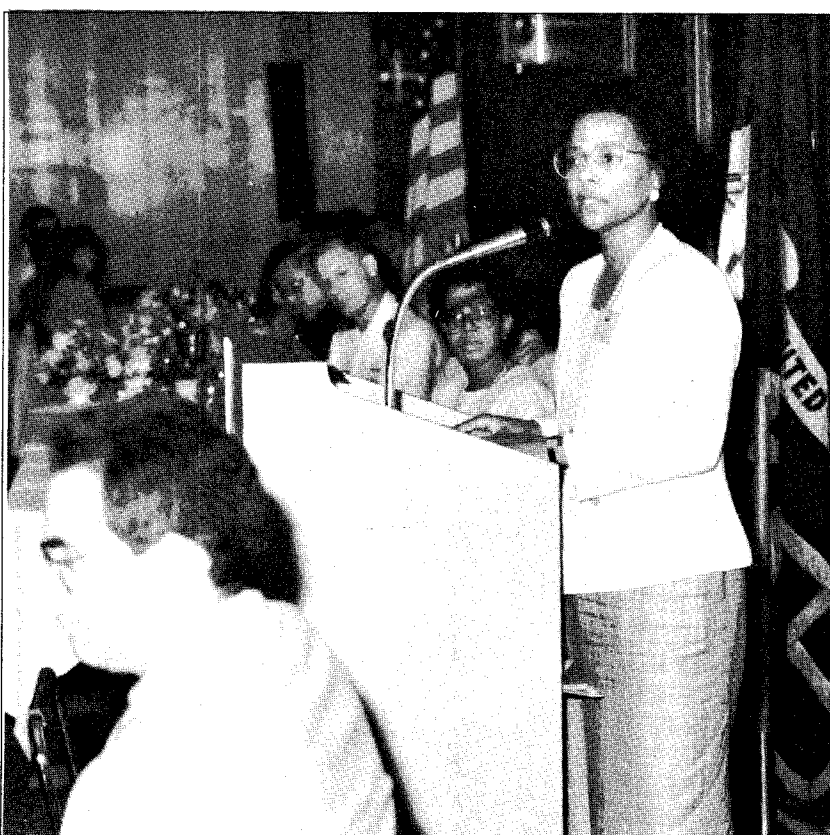
Captain Winters also addressed the audience with statistics on the achievements of women on Center and achievements of the Center as a whole. He, too, commented on the "continuing efforts" of women in the federal service: "The glass ceiling is an invisible barrier to the advancement of women, but these women (16 high-grade women on Center) have penetrated it, and the Center offers opportunities for each and every woman to do the same."

The FWP Committee arranged the entire Women's Equality Day celebration which included a bulletin board display, the luncheon with speaker, and the presentation of the annual Women of the Year Award.

This award is given to the woman on Center who has sought to improve herself through education, upward mobility, or other career enhancement opportunities. The five nominees for the award, all of whom were outstanding, were Barbara Baum, Frances Caffrey, Ranae Contarino, Helen Keller-Surman, and Ruth Pickering. This year's recipient, Barbara Baum, distinguished herself as a software engineer in Code 701 and has received three Sustained Superior Performance Awards for her achievements. Baum is an active member of the FWP Committee on Center. In her community, she contributes her free time as a volunteer tutor in mathematics, as a member of the P.T.A.'s Executive Board, and as a member of the League of Women Voters.



Woman of the Year Barbara Baum



Ruth Lawhorn, keynote speaker at the Women's Equality Day luncheon.

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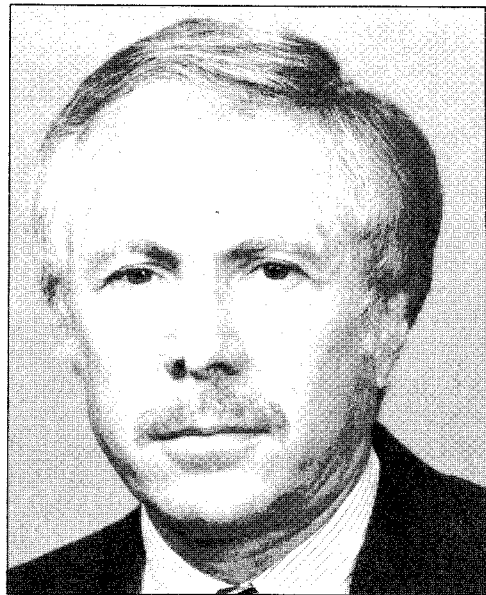
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A'Harrah takes D.C. assignment

Joint Director of Laboratories position filled



Ralph A'Harrah

By Mary Ann Brett

Ralph C. A'Harrah of the Air Vehicle and Crew Systems Technology Department (AVCSTD) was recently named the new Director, Joint Directorate of Laboratories (JDL) Secretariat at the Office of the Chief of Naval Research. This two-year assignment through August 1990 was filled under the auspices of the Center's Naval Scientific and Technical Exchange Program (NSTEP).

According to A'Harrah, the JDL position offers a dual challenge. The first of these is to make the best possible use of Army, Navy and Air Force laboratory personnel, facilities and tech base funding. "The real challenge, perhaps," he said, "is to

simultaneously help the people doing the work to get the job done; that's the tough part."

For nearly six years, through April 1987, A'Harrah directed the Aircraft Technology Program including aerodynamics, structures, flight dynamics, displays, controls, hydraulics, electrics, and personnel protection. Most recently, he worked as AVCSTD's Flight Mechanics Consultant providing technical support to the DARPA, Navy, Air Force and NASA on the X-29, X-30 and X-31 experimental aircraft programs. He is also the Deputy Chairman of the Flight Mechanics Panel of the NATO Advisory Group for Aeronautical Research and Development.

A'Harrah's extensive career in industry, the Naval Air Systems Command, the Office of Naval Technology and NADC spans 37 years. He says, "My whole career has been spent either doing or managing research sponsored by tech base funds." Because of this familiarity, A'Harrah added, "I feel I have a sensitivity for the needs of researchers as well as those of management and this will substantially help in doing the JDL job in an appropriate and effective fashion."

"I've really enjoyed the past seven years at NADC," he concluded, "but, I'm looking forward to the dedicated bicycle trails of northern Virginia for my daily commute and the challenge of the new JDL position."

Twiest named Blue Jacket of the Second Quarter

By JO2 Todd Lufkin

AT3 John E. Twiest has been named NADC's Blue Jacket of the Quarter (BJQ) for the Second Quarter of 1988. It was with "disbelief" that Twiest learned of his accomplishment. "It sounds trite, but I didn't expect to win," he explained, "I thought that someone else would get it."

A native of Grand Marais, Minn. and the eldest of three children, this 21-year-old BJQ has been in the Navy for 37 months, 15 on Center.

Twiest joined the Navy to take advantage of the educational benefits and travel. "They paid me to learn what I wanted to learn (electronics),"

he explained. Twiest also stated since January he has been on detachment to Willow Run, Mich.; Key West, and Jacksonville, Fla.; St. Croix, V.I.; and Whidbey Island, Wash.

Thus far in his naval career he has been stationed at Recruit Training Command Orlando, Fla.; Naval Air Technical Training Center Millington, Tenn.; NAS Jacksonville, Fla. and then NADC.

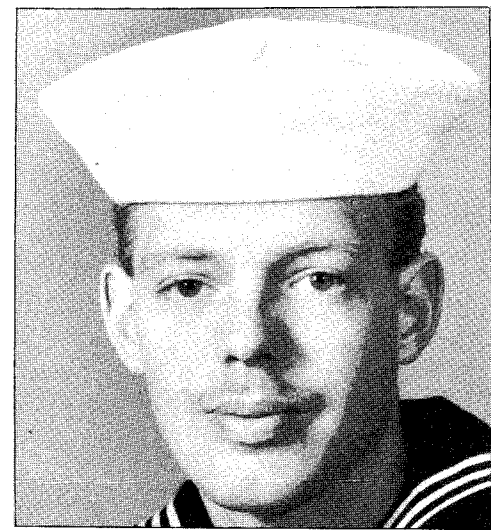
As an Aviation Electronics Technician, Twiest maintains the P-3's radar, communication, sonar and navigation systems.

Twiest is impressed with NADC; finding it "interesting." He feels going on a detachment to support the

Center's research and development is the best experience a sailor can have. "There are many opportunities here at NADC — education and spare time are only a few," he explains, "a person needs to make the best of it (NADC) while they can."

In his spare time the BJQ is in charge of 25 children as a Youth Leader at the Wyncote Calvary Assembly of God Church. He finds this experience to be "very rewarding."

His future plans are uncertain at this time, but include the prospect of a college degree and perhaps participating in one of the officer programs. Twiest will tentatively be at NADC until September of 1991.



AT3 John E. Twiest

Colket returns from NSTEP assignment

By Mary Ann Brett

William "Currie" Colket, a participant in the Center's Naval Science Training and Education Program (NSTEP), recently returned from a one-year assignment at the Carnegie Mellon University, Software Engineering Institute (SEI).

Colket, a Computer Scientist for the P-3C Modernization Program in the AntiSubmarine Warfare Systems

Department worked with SEI as a Navy resident affiliate. At SEI, Colket worked with the Distributed Ada Real-Time Kernel Project which will implement a subset of the current Ada Real-Time Environment Working Groups proposals into a kernel to provide a distributed runtime environment for Ada applications software. He also assisted with the transition of mature software engineering technology to Navy users.

Colket talked of his long time interest in the Ada language. He said the SEI was a very good forum for technology transition between academia, government, and industry. As a result of this NSTEP experience, Colket considers himself a more valuable asset to the Center and strongly recommends this type of assignment to his peers.

NADC sponsors various long-term off-Center programs such as the Naval

Science Assistance Program (NSAP), NSTEP, and Fleet Support (including Technical Advisors). These programs are designed to improve both dialogue and responsiveness between the Navy's RDT&E laboratories and the operational forces by directing and managing a small field team of personnel attached for one or two years to major Navy and Marine Corps operational commands and headquarters.

For information on the NSTEP program, call Jackie Benner on extension 1329.

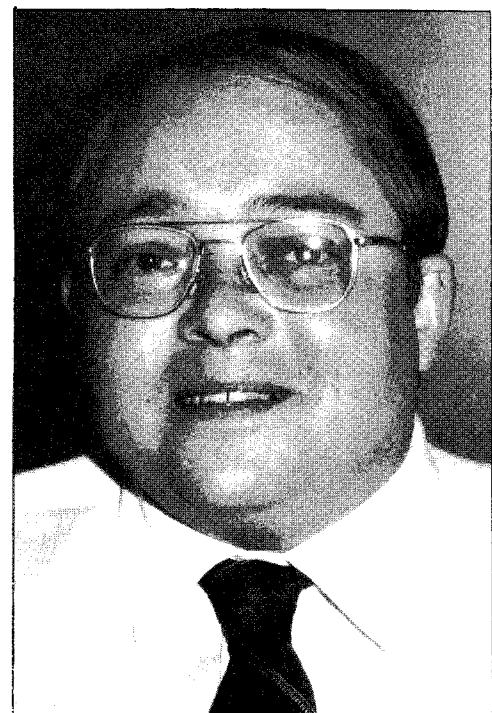


Photo by JO2 Todd Lufkin

William "Currie" Colket

Tankins masters the marathon

By JO2 Todd Lufkin

"I run an average of 300 miles a month ... about eight miles a day, with 30 miles runs during the weekend!" says Edwin Tankins. This statement doesn't seem extraordinary in this day and age. In fact, it's fairly commonplace. However, what is extraordinary is that Tankins boasts his age to be 60 ... an age when many other people may be thinking more about retirement than running marathons. "I've run for 20 years, but only seriously for the past eight," he said.

In 1967 Tankins was a Navy Lab representative in Da Nang, South Vietnam and began running with the Marines who were stationed there. Now he is in such good physical

condition that he "could run a marathon on the spur of the moment."

A metallurgist in the Aerospace Materials Division of the Air Vehicle and Crew Systems Technology Department, Tankins proudly has won 120 running awards in eight years. Among these racing awards are: Third place in the 1987 Philadelphia Distance Run; second place in the 1988 Broad Street 10-Miler; twice qualified (1984 and 1985) and ran the Boston Marathon (to qualify he had to run a marathon in 3.5 hours); and this past May ran the St. Patrick's Day Run, where he placed second in his age group and an hour later ran a five kilometer race and won. "I don't run so often anymore," he explained, "now it's just the more important races."

His health is the major reason he runs — "by running a person lives longer," he said. Tankins is also a retired Army Colonel and in the event of mobilization would be in charge of a training brigade and so needs to stay in shape. Continuing, he states "I enjoy running; it gives me time to reflect and allows me to set goals and measure my achievements."

His only negative comment was "running can lead to injuries, so you have to be very careful." The hot weather also necessitates Tankins run slower, if at all. "A runner knows what he should do, but his feet don't always listen."

Tankins future race plans include another try at the Marine Corps marathon in Washington (he took a

Continued on page 6



Photo by Mary Ann Brett

41ST ANNUAL EASTERN STATES CHAMPIONSHIPS AT NADC — LCDR Brian Gritte (left) presents an NADC plaque to Ed Rhoads for his Best Scale Model U.S. Navy Aircraft during the recent Eastern States Championships held at the Center's airfield. More than one-hundred model airplanes competed in the various categories. The event has been held here annually for several years.

Marathon Master

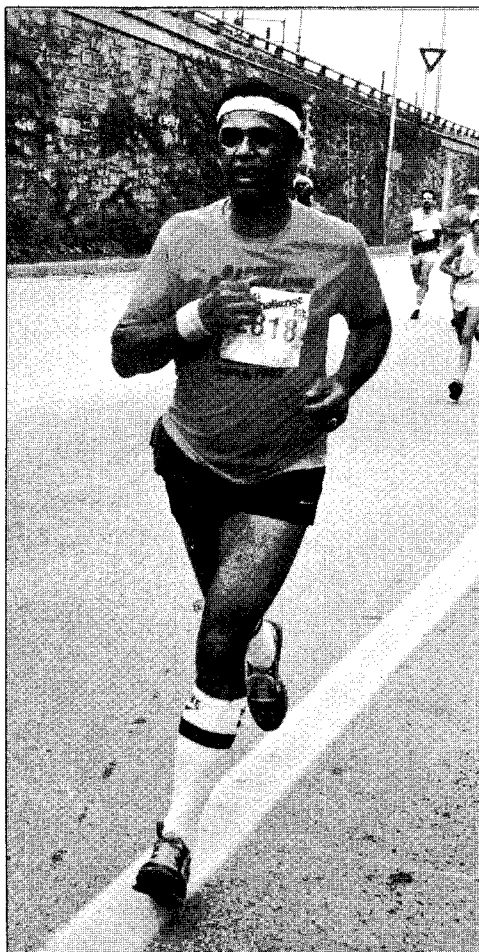
Continued from page 5

second place in this race in his age group) and the Philadelphia Distance Run. "I'm toying with the idea of running the original marathon in Greece," he explained, "but the terrorist activity is giving me reservations."

When he isn't competing, Tankins "test-runs" tennis shoes. "I met a representative of a major shoe manufacturer and asked if they had enough product testers?" He filled out an application and became a tester. "I keep a log when I run and note the temperature, weather and terrain. The company is looking for shoe stability and comfort under various conditions." Tankins runs the prototype shoes for 500 miles (about 5-7 weeks) and then sends them back with his evaluation.

In his free time Tankins teaches the National Security Management course here on Center, which examines mobilization — the economic aspect, human resources, and private sector; everything except actual tactics. He is also an Adjunct Assistant Professor at Drexel University, teaching finite mathematics, operations research and quantitative management theories.

Tankins has been on Center since 1970 and has published more than 40 papers in his field.



Ed Tankins, as he competes in one of his many 10K races.

Fall back in October

"Fall-back" time this year is Sunday, Oct. 30. That's when you set your clocks back one hour and standard time resumes — officially, at 2 a.m.

Under standard time, it gets dark one hour earlier in the evening; thus, an "extra" hour of daylight in the morning. This suits some and is opposed by others.

Farmers, for example, like more daylight in the morning to do their chores. Others like more daylight in the evening — to get home from work and school and to run errands in the evening. The controversy has continued over the years.

Last year, a bill was passed that affects the time daylight-saving time resumes in the spring. It is now the first Sunday in April instead of the last. Standard time, however still resumes the last Sunday in October.

Take the challenge

Suggest an MTP improvement

By Bettie Simpson

So far this fiscal year, Center employees have submitted 102 Beneficial Suggestions (Bene Suggs). Of these, 57 were adopted, meaning 57 employees will be rewarded with cash for their suggestions.

Presently, the Center is looking for ideas to improve our operations while working within the limitations imposed by the Navy's new Managing-to-Payroll (MTP) program. Under MTP, the Center is given a control which determines the total payroll available for the fiscal year including the amount the Center may spend for hiring, overtime, promotions and all aspects of compensation. Like many controls, the level given to the Center is not always sufficient to meet all requirements, yet we must continue to accomplish our mission in the most efficient manner possible while insuring the top quality of our work. In light of this we need ideas to accomplish our work while conserving payroll resources. These ideas might include improving methods,

procedures, equipment usage, or even inventions which directly contribute to the three E's—economy, efficiency or effectiveness of Navy or government operations.

Here is a systematic approach to developing a good idea: select a situation needing improvement; get all the facts (what, where, when, who and how); analyze these facts (ask why); think of a variety of possible answers; choose the 'best' way to do the job. Remember, merely pointing out a difficulty or shortcoming without providing an answer is not a valid suggestion.

Military as well as civilian employees are encouraged to submit suggestions on OPNAV Form 5305/1 available in the new Bene Sugg boxes located throughout the Center. Each employee who submits a suggestion receives a no-spill coffee mug with NADC logo and "I made a difference" printed on the cup.

Take up the challenge. Send in your MTP suggestion to the Bene Suggs Awards Administrator (Code 0311). If you have questions, call on extension 3079.

Golden energy rules

By Michael Blank

Today, more than ever, we find ourselves in a high-tech world. From lasers and computers to VCR's and home appliances, our lives have become oriented around electrically-operated machines. Regardless of the type of modern technology, however, every savings will continue to be a prime concern until a cheap and inexhaustible source of energy is discovered. The following rules are the key to significant reductions in energy cost at work and in your home:

1. Turn off the switch to equipment, motors, HVAC, appliances, or lights whenever they are not in use.
2. Adjust the temperature, pressure, speed, and other controls to settings requiring less energy.
3. Have a regular preventive maintenance program that includes cleaning, calibration, tuning, adjusting, lubrication, and replacement of worn parts.
4. Have main equipment overhauled for increased energy efficiency, if the economic evaluation justifies this.
5. Replace inefficient equipment, heating system, cooling system, etc., with equipment having higher Energy Efficiency Ratio (EER).
6. Install new money-saving state-of-the-art Automatic Energy Control devices.
7. Consider using various energy sources: electricity, gas, oil, or coal, solar, wind, and/or nuclear energy, depending on current prices.

The Naval Air Station (NAS) Willow Grove and the Delaware Valley Historical Aircraft Association are sponsoring the Wings of Freedom '88 Airshow to be held at the NAS on October 15 and 16. Scheduled activities to be repeated both days include:

Time	Activity
1230	Parachute jump and flag salute
1240	Six of Diamonds Acro Demonstration
1252	C-130 Demonstration
1300	Fly-by A-4's
1305	Fly-by A-37's
1310	Helicopter assault with A-37 and A-4 ground support
1320	Harrier Demonstration
1330	P-3 Demonstration
1340	F-14 Demonstration
1350	Cat Flight
1400	F-14 Cat Flight Missing Man
1405	Warbird trainer fly-by
1415	Fouga Demonstration
1425	Warbird Fighters
1435	Corsair or Bearcat Acro
1445	Warbird bombers
1455	Zero attack and mock battle
1505	All other Warbirds take off to join air group
1508	F-9 Demonstration and/or MIG combat
1515	Finale—Warbird Formation Pass



Softball All-Star game closes season



1988 All-Stars — The Evens (L-R): Front Row — Skip Reed, Jack Reilly, Tim Barry, Greg Heydet, Jeff Price, Ed Swisky, Tom Weiss. Second Row — Brian Kearney, Jim Palmer, Al Dick, Jim Kearney, Bob Reichert. Third Row — Dave Pierce, Tom Morello, Steve Hynes. Back Row — Harry Frost, Scott Kee and Mark Thomas.



1988 All-Stars — The Odds (L-R): Front Row — Stan Zajdel, Ken Beebe, Rick Sames, Chuck Yeastadt, Dennis Shin, Bob Hay. Second Row — Scott Holloway, Jim Henderson and his award, Jack Eyth, Mike Greco, Bill Brower. Third Row — Bob Mackrell and Dean Kimmelheim. The Background is provided by John Bowes and John Markow. The camera shy 8th Inning were Bob Larr, Rich Mihoci and Art Redd.

By Mark Lilly

The NADC Softball League paid tribute to the better players in its ranks as it held the annual All-Star game on August 11. The belated game, normally held mid-season, was held two weeks after the league championship. The game is designed to recognize the season's best players and to be fun at the same time. Anyone who attended knows that both of these objectives were accomplished.

The game pitted the Odds against the Evens. The Odds team was

composed of representatives from the teams finishing first, third, fifth, etc. during the regular season. The Evens team was similarly comprised. Thus, the league was divided as follows.

ODDS	EVENS
Bandits	Misfits
8th Inning	Granfalloon
Renegades	Bearcats
Nightriders	Rebels
Intimidators	Rumblers
Druids	Guzzlers
Orange Crush	CSC
Herrassers	Animals
Phantoms	Dynatigers

The manager of the Odds team was the Bandit's Rick Sames and the manager of the Evens was the Misfits' Jim Kearney. Each team elected two representatives to participate in the contest and each of the managers chose the best three pitchers from any team on their side.

Before the start of the game, Tom Weiss, acting as league spokesman, presented Jim "Hollywood" Henderson with the Jerry F Guarini Sportsmanship Award. This trophy is presented annually to the player who exhibits the highest standards of

conduct during competition. The common denominator among recipients is the ability to keep the game in the proper perspective. Jim Henderson is worthy of the honor.

As far as the game goes, the Odds team took a 5-4 lead into the top of the eighth inning with the help of a Rick Sames line shot over the center field fence. The Evens team had two more chances, but needed only one, to take the lead in the ad hoc extended game. Before the eighth inning started, the Misfits' Jeff Price told me in a rare display of confidence, "I'm going to win this game." Well, with one out, CSC's Tom Morello advanced to second on two errors. The Falloon's Ed Swisky then doubled in Morello to tie the game. Price then doubled in Swisky to fulfill his prophecy and give the Evens a 6-5 lead. Price eventually crossed the plate to end the scoring and make the final 7-5. However, nobody ever really cares who wins this game. The object is to have fun.

In closing, I would like to thank Fred Kuster, on behalf of the league, for organizing this successful event. With that said, I bid the 1988 softball season adieu.

Falloon favored for fourth football title

By Mark Lilly

It's a Fall Friday afternoon. The sky is clear and the air is brisk. You arrive at the field a half hour before the game. You change into your spikes and shoot the breeze with a buddy as you stretch out various parts of your anatomy. Game time arrives. The opening kickoff signals the start of another

contest. You run the field and enjoy the friendly competition. After the game you go to the Club and down a cold one as you talk about the day's game. There you have a glimpse of life in the NADC Football League.

The Granfalloon are the frontrunners to win the 1988 league championship. They have both the experience and the talent to win the

title. The Falloon have won three consecutive titles and five of the last eight. With this predicted victory they will have won the football and softball titles in each of the last three years—A feat not accomplished by mortal teams. As far as the talent goes, most of you have been burned enough by Tom Weiss, Steve Fleischut, Mike Bubb and company to know where the talent lies. No doubt about it, they are the team to beat this season.

Blue should make the playoffs in 1988 for the first time in three years. Last year they picked up two little hustlers in Mike Jeronis and Chuck Lagrossa, during the first round of the draft. veteran Bob Larr will be throwing and he has a championship ring that proves he can play the position. The final piece of the puzzle will be the return of league patriarch Fred Kuster. Kuster, who is built like a retired NFL tight end, has been one of the league's best possession receivers. Additionally, he will provide both the on-field and off-field leadership that Blue lacked last year.

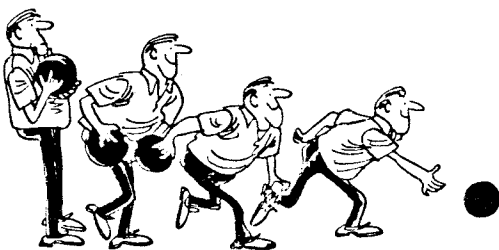
The Renegades should also make the playoffs in 1988. However, they've lost two of their best players in Jerry Costanzo (off-season injury) and Scott Lassen (pre-season injury). These losses should seriously hinder their bid

Mixed League Bowling News

By Tom Reiter

Welcome to another season. The Mixed League started this year with several changes of note. The Lane Brains couldn't field a team and to our surprise we've lost some of our most proficient and best liked bowlers. People like Hank and Roe Lystad and Rudy and Phyllis Virga have been Mixed League standards. John Vincent, who has only bowled with us forever, also decided not to return.

They will be missed. Wes Gleason has deserted the Goofers to start a replacement team (Gutter Dusters). Wes has reached into our recent past and is bringing back Mary (Lentz) Vaughn. Mary was one of our premier bowlers and is surely welcomed back. Everyone will be after Bob Geyer's dreaded Alley Cats, last season's champions who ended with an overall win loss record of 87-49. Three of last year's championship round teams are in the A Division (Goofers, Nine Pins, Alley Cats) together with some of the best alsorans like the 11th Frame, Red Winos, and the Warveyhallbangers. John Bowes' Who Cares (48-88) add some balance to the Division— just kidding John. Here's wishing all of our 240 bowlers good luck and good bowling. Remember the banquet is only nine months away.



Continued on page 8

Coffee Alert
The caffeine in coffee stimulates the brain and central nervous system and, in small doses, makes drinkers more alert and energetic. Too much of it, however, can cause rapid heartbeat, trembling and insomnia.

Helmsin takes charge of ASW

Continued from page 1

propulsion); Attack Squadron VA-146, Lemoore; Commander Naval Air Pacific, Force Material, San Diego, Calif.; Naval Air Systems Command, Weapons Systems Class Desk (F/A-18), Washington, D.C.; Naval Air Propulsion Center, Trenton; Naval Military Personnel Command, Washington, D.C.; Naval Air Rework Facility, Jacksonville, Fla. as the Executive Officer; and most recently the Naval Air Propulsion Center, Trenton, as the Commanding Officer.

Helmsin specifically requested duty at NADC, feeling he could make a contribution because of his background in research and development. Included in his background are 15 years of experience in a broad-based field,

detailed knowledge of headquarters and a strong desire to improve naval aviation capability. "I've worked with NADC off-and-on since 1978," stated Helmsin, "and am impressed with the high quality of technical competence throughout the organization. The Center has a clear and strong desire to make an impact on naval aviation — more so than any other activity."

Helmsin's short-term plans include "focusing on the stability and organizational structure of the ASW Department and consolidating working spaces to maintain ASW's high-level of productivity." His long-term goal incorporates a quality of performance philosophy — "a quality technical effort coupled with on-time cost

efficient delivery of the customer's requirements."

To that end, he feels his biggest obstacle will be "meeting the customer's expectations in the face of a constrained fiscal environment over the next 3 years."

With the completion of his tour here in 1990, his future plans are up in the air. Helmsin options include heading a major command or retiring and starting a second career. For now, however, he is concentrating on "focusing ASW systems toward the future; successfully meeting the threats of tomorrow."

Helmsin is married to the former Robbin Johnson of Alexandria, Va. The couple has three sons: Sean, Joseph and Erik.



By Evelyn D. Harris
American Forces Information Service

"I'd give my right eye for . . ." You may have said this before, but obviously you didn't mean it. Your eyes are a precious possession and deserve the best of care. Since September is National Sight-Saving Month, here are some tips on eye care:

Regular eye exams are important even if you don't think you have vision problems. Adults should get an eye exam at least every two years. This ensures that vision problems will be identified in time to treat them, and may well tip off the doctor to other conditions such as diabetes and high blood pressure. For example, diabetes often leads to diabetic retinopathy, the leading cause of blindness among those aged 20 to 74.

A good eye exam includes reading an eye chart, a glaucoma detection test and dilation of the pupils so the doctor can check the back of the eye for problems. A test for peripheral vision and other blind spots, called a "visual field test" should also be included for patients over 40. You can get a complete eye exam from either an ophthalmologist or an optometrist. The basic difference between the two is that an ophthalmologist is licensed to perform major eye surgery.

If a child can't see well, he probably won't complain. Identifying and treating children's vision problems while they are still young will prevent needless loss of vision. The following are symptoms of vision problems: frequent eye rubbing; more blinking than usual; too much frowning; undue sensitivity to light; squinting when looking at distant objects; red, swollen eyelids or watery eyes; and frequent sties.

If you have an eye infection and live in close quarters, such as aboard a ship or in the barracks, be considerate of others and keep your personal items to yourself. Eye infections are highly contagious but usually clear up quickly with medical treatment.

Even if you're wearing sunglasses, don't look directly at the sun. With or without sunglasses, this can cause cataracts.

Technical Highlights

AIRCRAFT FATIGUE LIFE TRACKING PROGRAM

The Center was tasked by the F/A-18 class desk to investigate possible methods to improve the aircraft Fatigue Life Tracking program. This program is designed to extract direct strain gage data from seven specific locations on the aircraft as a means to determine actual fatigue life expenditure as opposed to Scheduled Depot Level Maintenance projections to facilitate more accurate aircraft rework schedules.

Presentation of this proposal was made to the F/A Class Desk within four weeks of the initial tasking and was received with considerable enthusiasm. The Class Desk has now taken action in conjunction with AIR-5302 to institute this program.

SMART INTERFACE DEVICE

In support of NSAP Task CPF 2-87, NADC has completed the fifth installation of a smart interface device for the recently fielded AN/SRN-25. The AN/SRN-25 is an integrated radio navigation system which combines TRANSIT, OMEGA, and GPS signals with ownship's speed and heading to

establish ship position. The interface unit selects the best solution from the SRN-25 and distributes it to the combat systems (i.e. NTDS and JOTS). The 9 Aug 88 installation aboard the USS DOYLE (FFG-39) was preceded by installations aboard the USS ENTERPRISE (CVN-65), USS JACK WILLIAMS (FFG-24), USS HALYBURTON (FFG-40) and USS RUEBEN JAMES (FFG-57).

HIGH STRAIN COMPOSITE WING

The NADC high strain composite wing was tested for survivability to a 30 millimeter high energy impact at the Naval Weapons Center, China Lake. Preliminary results indicate the wing successfully withstood load carrying capability to 50% design limit load.

NIGHT TIME SURVEILLANCE AND RECORDING

Under special request from the Naval Scientific Assistance Program (NSAP) office, the Reconnaissance/Surveillance Branch demonstrated and provided Fleet Marine Forces, Atlantic with night time

surveillance and recording capability. The NADC-developed system will be used by Marine forces in special operations.

MODULE TEST PROGRAM

A single Module Test Program was developed to test each transmit/receive (T/R) module in the HARPS phased array antenna. The program provides a quick and thorough T/R module status report which is crucial prior to radar data collection. Program modes were developed to provide operational verification of the transmit amplifiers, receive amplifiers, and phase shifters (all seven bits). In addition, provisions were made to run the tests either manually or automatically. In the automatic mode, all eighty modules (including phase shifters) can be tested in under five minutes.

A-12 ADVANCED DERIVATIVES

The Center has recently been assigned lead responsibility for A-12 advanced derivatives. Furthermore, the UAV Joint Program Office has designated NAVAIRDEVGEN as lead laboratory for medium range, high endurance and mission planning efforts. The Center has also been assigned responsibility for technical management of the Navy's Air Effectiveness Measurement (AIREM) Program.

FLEET EVAL OF REPAIR METHODS

The Center organized and participated in a fleet evaluation of repair methods on 9-10 August 88 for Bismaleidmide elevated temperature structure at the Naval Aviation Depot, Cherry Point, NC. Bolted and bonded repair procedures were developed for fleet maintenance personnel, and repair panels, representative of V-22 structure, are being used to test the repair methods.

INBUOY PROCESSOR

NADC designed and implemented a four-band/DIFAR inbuoy processing system running in real time on SUN workstations.

Football's Falloons favored

Continued from page 7

to reach the finals again. On the flip side of the coin, the Renegades still have rifle-armed quarterback Steve Hynes. Even without Costanzo, the Renegades still have excellent team speed in Mike Elser and the newly acquired Bill Schork. Their defense should still be fairly strong with Elser at D-back, Hynes at linebacker and the intimidating presence of Jeff Price in the middle. However, they will not be as strong as last year.

The Barking Spiders have a good chance at making the playoffs. They have compiled an 11-3 regular season record over the past two seasons and went to the finals in 1986. The key to this team's playoff chances is finding an able replacement at the quarterback position. Ken Koper, who was the QB on the '86 finals team, has an injured arm so he should see

reduced playing time this year. On the plus side of the offense, the Spiders' still have Scott Fowler who has been called the Steve L'Argent of the NADC Football League. Additionally, the Spiders' defense should still be tough with Joe Wolfe and Jack Connors holding down the fort.

The remaining four teams in the league have the potential to knock one of the last mentioned teams out of the playoffs, if they have a good year. The Lasers have the best shot at postseason play since they made the playoffs last year and have improved every year they've been in the league. Gang Green has made the playoffs in seasons past so they are a threat to contend. The Pit Bulls and Dragons have some talented, competitive ballplayers and could turn things around if they play well as a team.

HELP
SOMEBODY
THROUGH...

SUPPORT
YOUR





Reflector

Volume 33 Number 10

NAVAL AIR DEVELOPMENT CENTER, WARMINSTER, PA.

October 1988

In This Issue:

- New Pay Chart
- Smokeout
- New Tacair Deputy
- Warrant Officers
- On Guard!
- Training Prepays

NADC sensors track space shuttle launch



Discovery space shuttle photographed from 10 nautical miles away with the tactical optical surveillance system aboard a P-3 aircraft piloted by LT. Mel Mason.

By special invitation from NASA, the Reconnaissance/Surveillance Branch participated successfully as part of the airborne coverage and documentation team during the launch of the space shuttle "Discovery". The team was assigned the task of covering the shuttle during the critical initial launch phase. If complications resulted during the launch phase, the sophisticated electro-optical sensors developed in-house would be employed for search and rescue purposes.

The project team from the Reconnaissance/Surveillance Branch, led by project engineer Francis Chamberlain and test coordinator Norwood Metcalf, the Test and Evaluation Group, NASA and the Engineering shop for the special

mission. With approval and support from the sponsor, the Tactical Optical Surveillance System (TOSS) developed in-house under the Electro-Optical Sensor program and undergoing flight evaluation aboard the NADC test bed aircraft was utilized for the mission. A special flight crew was assembled by the T&E Group and the NADC test bed aircraft was deployed to Cecil Field, Florida to accomplish the special assignment. On the day of the shuttle launch, the NADC test bed aircraft was assigned air space at a distance of 10 nautical miles from the launch pad. Utilizing the high resolution telescope and electro-optical sensors within TOSS, the project team successfully covered and recorded the launch of the "Discovery" (at 10 nmi distance).

'PEP' gets going — Productivity proposals produce awards

By Mary Ann Brett

NADC is streamlining the approach to make suggestions and is offering cash awards of up to \$3,000 for those ideas which will significantly improve productivity at the Center or Navy level.

Beginning November 1st, a simple electronic mail system will be available on the COAS menu system to submit your ideas. The system will require only the employee's name and code, the idea, and the potential benefit(s) as the individual sees it.

Currently, many productivity-related programs exist including Productivity, Value Engineering, Management Improvement, Management Improvement Extension, Productivity Improvement Fund, Productivity Enhancing Capital Investment, and Beneficial Suggestions. Each has its own forms and rules for submission. The Center is combining all of these to make it easier for an employee to submit a suggestion which might result in a cash reward. The focus of the program is real dollar savings and removal of administrative barriers to allow more efficiency.

According to Stuart Simon who has been designated the Center Productivity Principal, suggestions made under this program will be evaluated

by a team of Branch Heads from the systems, technical and support departments. Then, a supporting advisory panel will develop implementation strategies for the selected ideas. An employee should be notified that his/her suggestion is approved or disapproved within 30 days of submission. Additionally, where the panel feels the idea is good enough to be submitted under a standard Navy program for Navy-wide implementation and increased cash award, the panel will help the submitter fill out any required paperwork.

Rewards will be of three types—non-monetary, up to \$1,000, and up to \$3000:

Non-monetary rewards can be presented for ideas providing a safer way of working, minor cash savings to the Navy, major Center image enhancement, morale improvements, or removal of minor process impediments.

Cash awards up to \$1,000 can be granted for a minimum of \$50,000 savings to the Navy, removal of impediments which free at least ½ worker years, elimination of the need for at least ½ worker years of effort during the first year of implementation or, an idea forwarded to higher

Continued on page 8

Murphy preps to be new Chief Staff Officer



CAPT. Roy Murphy

By Mary Ann Brett

"There's much more going on here than I realized," said CAPT James Leroy (Roy) Murphy, of the many diverse projects at NADC. Murphy will replace current Chief Staff Officer (CSO) CAPT Fred Wright who will be retiring the end of October.

Favorably impressed with his visit to NADC and Bucks County in April of this year, Murphy accepted his assignment as CSO. Since his arrival earlier this month, Murphy has embarked on a rigorous schedule of orientations and training to prepare for the position.

"At this point," said Murphy, "I see no need for any changes; everything and everyone seems to be working."

Continued on Page 7

COMING SOON:
Special Award Edition of REFLECTOR featuring
the Annual CO/TD Awards and the Fellow Awards.

The smoking lamp is out -- almost!

By Jim Kingston

It's getting tougher and tougher for smokers to find a place to light up any more. They're hanging around the hallways, the rest rooms, they're out-of-doors, any place to light up—legitimately. Now, just when you thought it was safe to light up again, we're going to ask smokers to give it all up, at least for 24-hours.

Smokeout planned

It's the Great American Smokeout, Charlie Brown! And the Navy, in cooperation with the American Cancer Society (ACS), has declared November 17th as "Navy Smokeout Day".

Quitting is easy

Anyone who has smoked—and I have—knows how hard it is to kick the habit. The first step is wanting to stop. Without the desire to quit, there's no quitting. The smoker's favorite cop-out is, "I can stop smoking anytime . . . I've probably quit a dozen times already." Well, let's try for number 13. Maybe this time will be the last time.

Navy smokers = 43%

There's good reason for special emphasis to get Navy people to stop smoking. Statistics show that a full 43% of Navy folks are puffing on some form of tobacco compared to just 27% for the general population.

Activities planned

A number of interesting activities are planned for Navy Smokeout Day to make it easy and stress-free to survive without cigarettes. Non-smokers will be asked to "adopt-a-smoker" to help him or her make it through the day. A fun-run for a smoke-free Center will take place at Noon and "cold turkey" sandwiches and platters will be featured on the cafeteria menu. Smokers who pledge not to smoke will find reserved seating in the "non-smoking" sections of the cafeteria and dining room.

POC is PAO

Start planning your smokeless day now. If you're already a non-smoker, choose a smoker to adopt for the day. There will be more details in the Log and on the Center's closed circuit television. Get ready to Smokeout. Point of contact for the Navy Smokeout day is the Public Affairs Office — X3067.

JANUARY 1989 GENERAL SCHEDULE PAY CHART*

	1	2	3	4	5	6	7	8	9	10
GS-1	\$10,213	\$10,555	\$10,894	\$11,233	\$11,573	\$11,773	\$12,108	\$12,445	\$12,461	\$12,780
2	11,484	11,757	12,137	12,461	12,601	12,972	13,343	13,714	14,085	14,456
3	12,531	12,949	13,367	13,785	14,203	14,621	15,039	15,457	15,875	16,293
4	14,067	14,536	15,005	15,474	15,943	16,412	16,881	17,350	17,819	18,288
5	15,738	16,263	16,788	17,313	17,838	18,363	18,888	19,413	19,938	20,463
6	17,542	18,127	18,712	19,297	19,882	20,467	21,052	21,637	22,222	22,807
7	19,493	20,143	20,793	21,443	22,093	22,743	23,393	24,043	24,693	25,343
8	21,590	22,310	23,030	23,750	24,470	25,190	25,910	26,630	27,350	28,070
9	23,846	24,641	25,436	26,231	27,026	27,821	28,616	29,411	30,206	31,001
10	26,261	27,136	28,011	28,886	29,761	30,636	31,511	32,386	33,261	34,136
11	28,852	29,814	30,776	31,738	32,700	33,662	34,624	35,586	36,548	37,510
12	34,580	35,733	36,886	38,039	39,192	40,345	41,498	42,651	43,804	44,957
13	41,121	42,492	43,863	45,234	46,605	47,976	49,347	50,718	52,089	53,460
14	48,592	50,212	51,832	53,452	55,072	56,692	58,312	59,932	61,552	63,172
15	57,158	59,063	60,968	62,873	64,778	66,683	68,588	70,493	72,398	74,303
16	67,038	69,273	71,508	73,743	75,978	78,213	80,448	82,683	84,918	87,153
17	76,990*	79,556*	82,122*	84,688*	87,254*	89,820*	92,386*	94,952*	97,518*	100,084*
18	86,682*	89,500*	92,318*	95,136*	97,954*	100,772*	103,590*	106,408*	109,226*	112,044*

* Reflects a 4.1 percent increase across the board. The rate of basic pay payable to employees at these rates is limited to the rate for level V of the Executive Schedule, which will be \$75,500.

Commander Salutes

Michael Wolfe (Code 02), **John Markow**, **Geraldine Keenan** (Code 03), **James Moran** (Code 04), **Al Kaniss** (Code 05), **Robert Janes** (Code 09), **Dorothy Grygiel**, **Barbara Turner** (Code 10), **AnnMarie Burke**, **John McFadden** (Code 20), **Larry Buchsbaum**, **Morton Metersky** (Code 30), **Arthur Gutzler** (Code 40), **Jack Hirsh**, **John Cunningham** (Code 50), **Andrew Atkinson** (Code 60), **Martha Malin** (Code 80), **Ann Kaercher** (Code 81), **William Hogarth** (Code 8342), **Thomas Leahy** (Code 90): For contributions to the three-month ad hoc working group to formulate innovative strategies to enhance productivity, efficiency, and morale.

LCDR Timothy Singer (Code 60): For assistance to the Naval Air Systems Command in support of the Air Warfare Human Engineering Technology Research Program.

Carl Pierce, **James Koch**, **Joseph Armstrong**, **James Nycum**, **Dennis Kiefer**, **Joseph Cutili** (Code 80): For significant contribution during recent successful testing of Northrop's Advanced Fighter Crew Protection System.

Jasper Caro (Code 10): For intensive and effective efforts leading to the successful on-site acceptance testing and declaration of Ready-for-training status of the Channel Expansion (CHEX) configured Single Advanced Signal Processor (SASP) Acoustic Trainer (SAT) Device 14B53 at both NAS Jacksonville, FL and NAS Moffett Field, CA.

AT1 Granville Pennypacker, **AX1 Douglas Kallman** (Code 60): For assistance to the Naval Air Test Center, Patuxent River, Md.

Mark Gindhart, **Calvin Harvey**, **Paul Cronin**, **Steven Fisher**, **John Scott**, **Michael Quinn**, **Kevin Haggerty**, **James Marlin**, **Michael Evanick**, **Charles Steinbach**, **Mark Showmaker**, **Thomas Young**, **Peter Schecter**, **Charles Mayers** (Code 90): For Engine Company 69's participation in the Bethanna Bonaza '88.

Charles Mayers, **Vince Crusco**, **Rich Valeski**, **Mark Showmaker**, **James Marlin**, **James Bassler**, **Mark Girdhart**, **Thomas Young**, **Richard Gerhard**, **Kevin Haggerty**, **Michael Quinn**, **John Scott**, **Stephen Fisher**, **Alfred Keiss**, **John Dworsky** (Code 90): For assistance during a garage fire adjacent to the historic Bryn Athyn Cathedral.

Michael Hess and **Harvey Sokoloff** (Code 50): For technical support in establishing the Non-Acquisition Program Definition Document for Surveillance Infrared Search and Track Advanced Technology Demonstration.

Dr. Richard Bromberger (Code 60): For outstanding assistance you provided to the Marine Corps during NSAP assignment.

Jeffrey Lytle, **John Andujar** (Code 50): For outstanding performance efforts on the design, development and evaluation of an airborne radar target identification system.


Morton Metersky (Code 30): For significant technical support provided to the Strategic Defense Initiative Organization and the National Test Bed Joint Program Office for leadership of the National Test Bed Simulation Evaluation Methodology Technical Group.

Alvin Spector (Code 20): For efforts in updating the Naval Air Systems Command Technical Support Assignments instruction.

John Wrigley, **Larry Reich**, **Richard Thomas**, **Carl Frey** (Code 70): For preparation and professional interaction with the Software Maintenance in DoD team during their research visit to NADC.

ADC Richard Henshaw: For assistance rendered as a proctor for the Cycle 119 Navy-wide Enlisted Advancement Examinations.

AW1 Kenneth Carrigan (Code 10): For dedication in supporting the Naval Air Technical Services Facility's automatic distribution of the P-3C Update III Channel Expansion Software Reference Manual and In-flight Handbooks to the Fleet.



GREAT AMERICAN SMOKEOUT

AMERICAN CANCER SOCIETY


A FEW QUIT TIPS

Hide all ashtrays, matches, etc.
Lay in a supply of sugarless gum, carrot sticks, etc.
Drink lots of liquids, but pass up coffee & alcohol.
Tell everyone you're quitting for the day.
When the urge to smoke hits, take a deep breath, hold it for 10 seconds, & release it slowly.
Exercise to relieve the tension.
Try the "buddy system," and ask a friend to quit too.

TAKE A BREATHER

Join the Great American Smokeout on Thursday, November 17. Millions of smokers across the country will take a break and try not to smoke for 24 hours. How about you? Or, if you don't smoke, adopt a smoker for the day and promise to help that friend get through the day without a cigarette!

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Reflector

NAVAL AIR DEVELOPMENT CENTER, WARMINSTER, PA

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JO2 Todd Lufkin

TACAIR Systems gets new deputy

By JO2 Todd Lufkin

"NADC is a fascinating place," said Commander Winston E. Scott, new deputy director of the Tactical Air (TACAIR) Systems Department, "there are a lot of interesting things going on here and I've met some of the most pleasant people."

Scott has been on Center for just a short while, but has been in the Navy since 1973. During his career he has been at Aviation Officer Candidate School and Navy Flight Training School at Pensacola, Fla.; Helicopter Antisubmarine Squadron Light (LAMPS)-31 and -33 at NAS North Island, Calif.; Naval Post-Graduate School in Monterrey, Calif. (he earned his Master's degree in Aeronautical Engineering with Avionics); Navy Training Squadron-7 at NAS

Meridian, Miss.; Navy Fighter Squadron-81 and -84 at NAS Oceana, Va.; and most recently the Naval Aviation Depot (formerly the Naval Air Rework Facility) in Jacksonville, Fla.

"My interest in flying prompted me to join the Navy," said Scott, "after looking at the other services, I was impressed with Naval aviation . . . I've never regretted my decision."

The new deputy is still getting used to his job, and finds he is "in awe of the research and development aspects of TACAIR. It's exciting to think the Navy's future is being developed today in my department!"

Scott visited last November ("it was one of several duty stations suggested by my detailer!") and found himself sold on NADC after being shown around by CDR Roger Hill, then

TACAIR deputy. "I knew the place existed, but didn't know much about it," he stated.

A native of Miami, Fla., he is looking forward to contributing what he can for the betterment of the Center in general and his department in particular. "When I leave in 1991, I want people to remember me for being a pleasant person who works well with everyone and who added to the betterment of the facility," Scott enthusiastically stated, "If I can do that, this will have been a successful tour."

In his spare time he enjoys music; is very active in karate (he is a certified first degree black belt); and enjoys reading scientific and technical literature.

Commander Scott, his wife Marilyn, and their two children, Winston and Megan, reside in Yardley.



CDR Winston Scott

Three selected for Warrant Officer

By JO2 Todd Lufkin

Navywide, only 33 people were selected to rise to the height of aviation maintenance warrant officer. Of that number a full 11% of them fell to chief petty officers here at NADC. Those chosen are AMSC Michael DiVona, AXC Robert J. Smith and AECS William Bonn.

AMSC Michael DiVona

AMSC Michael DiVona has been in the Navy more than 14 years and on Center a little more than two. During his career he has seen duty at Recruit Training Command, Orlando, Fla.; Navy Air Antisubmarine Warfare Squadron-22 at Cecil Field, Fla.; Flight Engineer School, Jacksonville, Fla.;

Navy Patrol Squadron-10 at Brunswick, Maine; Navy Helicopter Training Squadron-18, Whiting Field, Fla.; and most recently Navy Patrol Squadron-19 at Moffett Field, Calif.

"I joined the Navy on the spur of the moment," explained DiVona, "I wanted to travel and learn a trade without attending college." He became an aviation structural mechanic somewhat accidentally. "It sounded interesting and I enjoyed working with my hands."

A native of Cranston, R.I., he decided to apply for warrant officer because "I knew that I could do as well or even better than those who were being selected! I've always wanted to be in the position to implement policy . . . I guess I'm more of a leader than a follower."

DiVona had applied for both the warrant officer and LDO (Limited Duty Officer) programs several times before and decided not to reapply. However, at the last minute he was convinced by NADC's Lieutenant Robert Toth to at least be interviewed by the officer board. Afterwards, he decided to apply.

"I was very surprised to be selected," said DiVona, "and even more surprised that two others from NADC were also. That speaks very highly of the command."

In April, 1989 he will transfer to Pensacola, Fla. for six weeks of Officer

Indoctrination School—"classroom work, 'how to be an officer' and physical training is emphasized there and the competition is keen."

He advises that those who apply for any officer programs "make your application package stand out from the others and correct all mistakes. Remember, if you want it, go all out for it." In any career-enhancing endeavor he urges his fellow sailors "not to settle for anything less than you can rightfully expect to get."

AMSC DiVona and his wife, Vicki have two children, Eric and Joshua.

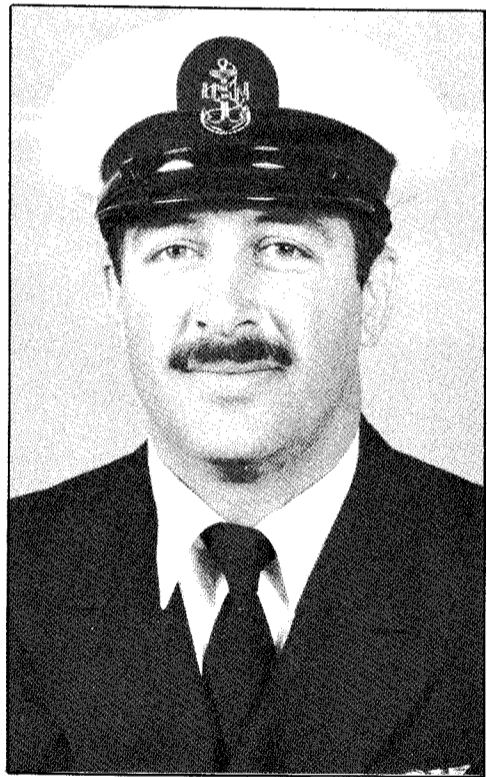
AXC Robert J. Smith

AXC Robert J. Smith has been stationed at NADC for three of his 14-year naval career. He has been stationed at Memphis, Tenn.; Naval Air Station Moffett Field, Calif.; Navy Patrol Squadron-1, Barber's Point, Hawaii; the Pacific Missile Test Center, Point Mugu, Calif.; and most recently Navy Patrol Squadron-8, Brunswick, Maine.

Smith was prompted to join the Navy because his father was a retired aviation electronics technician chief (21 years) and he decided to become an aviation anti-submarine warfare technician because he liked flying and enjoyed electronics.

A native of Las Vegas, Nev., Smith thought he "had a good chance at

Continued on page 6



AMSC Michael DiVona



AXC Robert J. Smith

Two NSAP field reps return

By Robert Zaleski

Dr. Richard Bromberger of the Air Vehicle and Crew Systems Technology Department and Jerald Nice of the Antisubmarine Warfare Systems Department recently returned from two year temporary duty assignments as Science Advisors with the Navy Science Assistance program (NSAP). These assignments provide command level experience and insight into operational requirements which prove beneficial to the Center and career-enhancing to the individual.

As Science Advisors, Bromberger and Nice received temporary

promotions to GM-15 while acting as command advisors on technical matters of high interest and relevance to fleet operational issues. They also assisted in staffing the technical aspects of command assignments, coordinated communications between the commands and the technical community, and managed other NSAP personnel and tasks supporting their commands.

Bromberger was deployed to the Marine Corps Development and Education Center, now the Marine Corps Research Development and Acquisition Center in Quantico,

Continued on page 6



Dr. Richard Bromberger



Jerald Nice

On Guard!

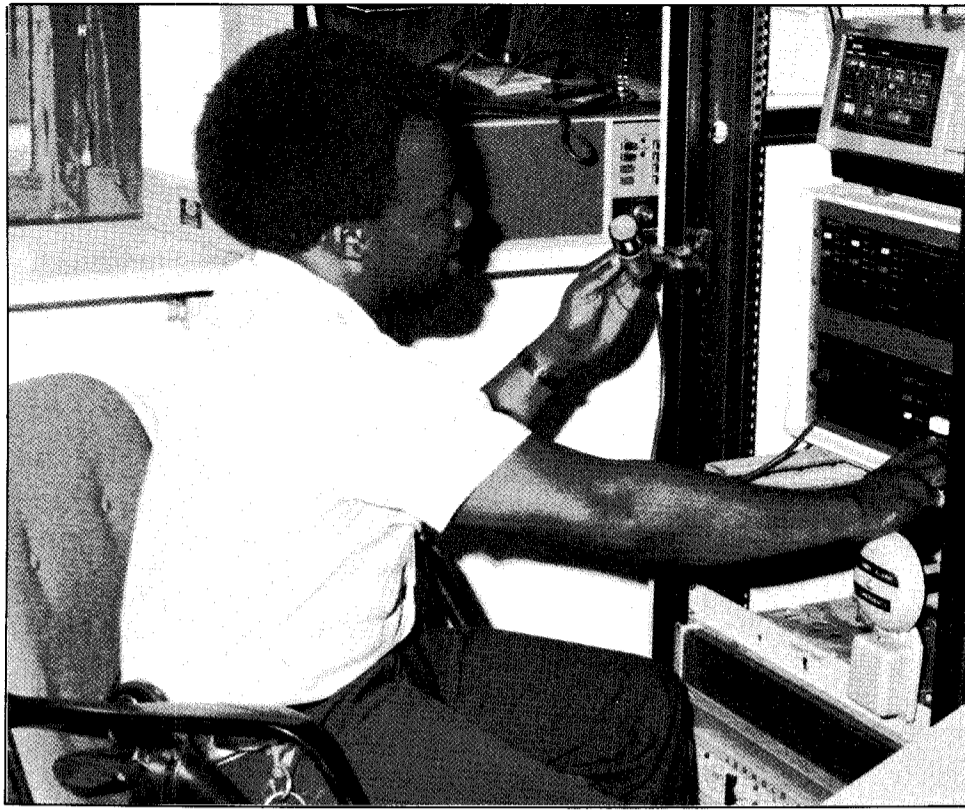
By Jim Kingston

They're here when we come to work. They're here when we leave. They're here all the time — night and day, seven days a week. "They" are the DoD police force . . . another group of NADC's "unsung hero's". We asked NADC photographer, Bob Goodyear, to capture a day in the life of the force.

Under the direction of Chief John Kupetz, the 25-man force is charged with the safety of every person on Center as well as all property. Based on the Center's current employment and property value, that averages out to each man being responsible for 100 people, 33 acres of ground, and about \$7 million worth of property . . . a fairly awesome responsibility.

In addition to the safety of people and property, the force has general security duties, protecting against sabotage and espionage, and policing the military housing area.

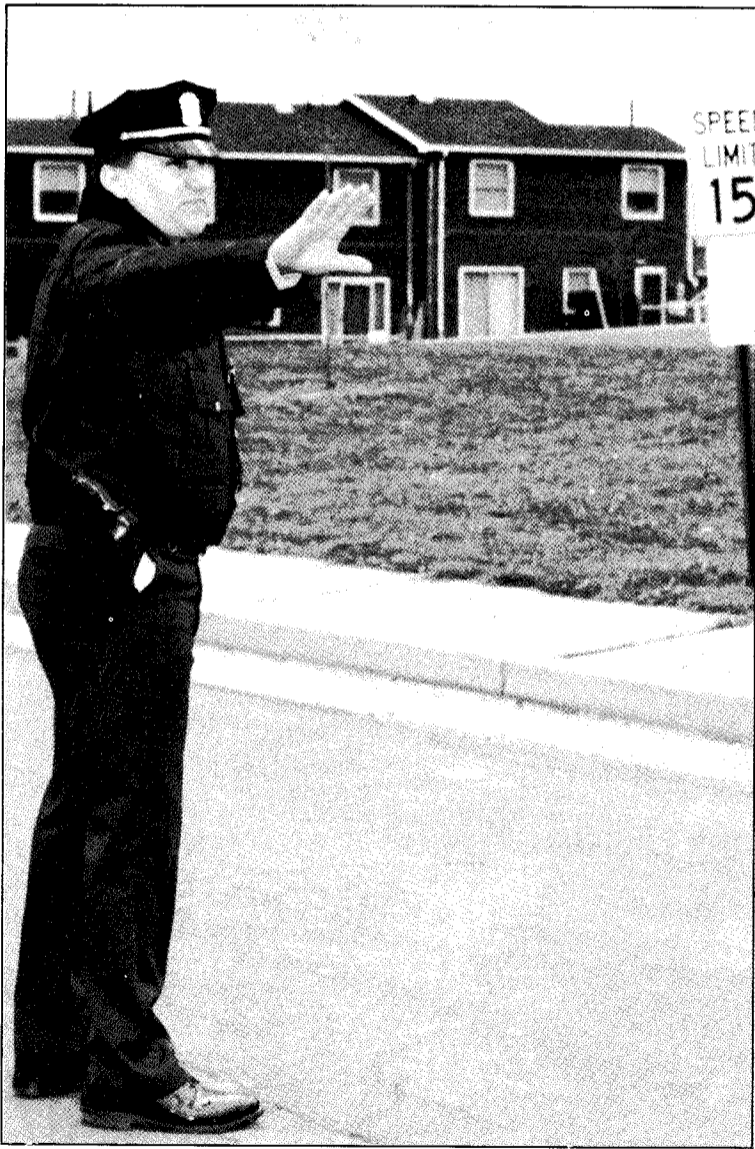
According to Chief Kupetz, he is always recruiting. That's partially because hiring presently is limited to Vietnam era veterans. Although there are no women on the force, they are eligible — provided they too are veterans. There's no age limit, but applicants must pass a rigid physical exam and a firearms test.



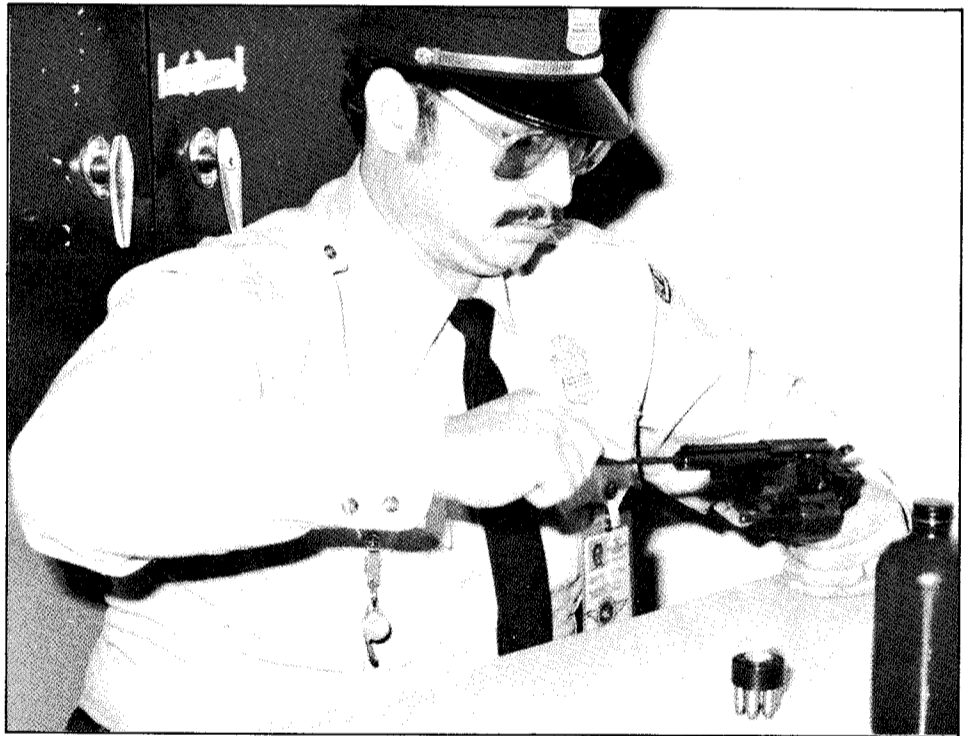
From behind the microphone, Patrolman Charles Wilson is "on the air" from Security's radio control center.



Patrolman Donald Lawl... at the police pistol rang...



Patrolman George Chase directs traffic at a school bus stop in military housing.



Safety is the key word as Patrolman Michael Geginto cleans his .38 calibre service revolver.



Margaret Vigellis smiles as Patrolman Victor Olmedo checks her employee ID badge in the Center's main lobby.



Sergeant Central.

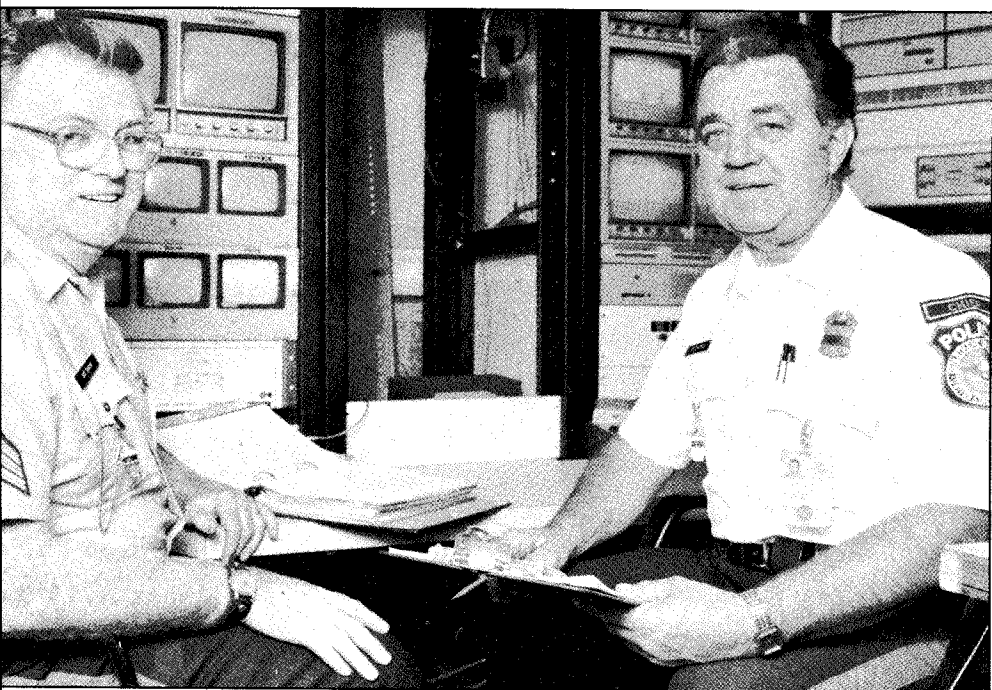


Hand-car Seidel.

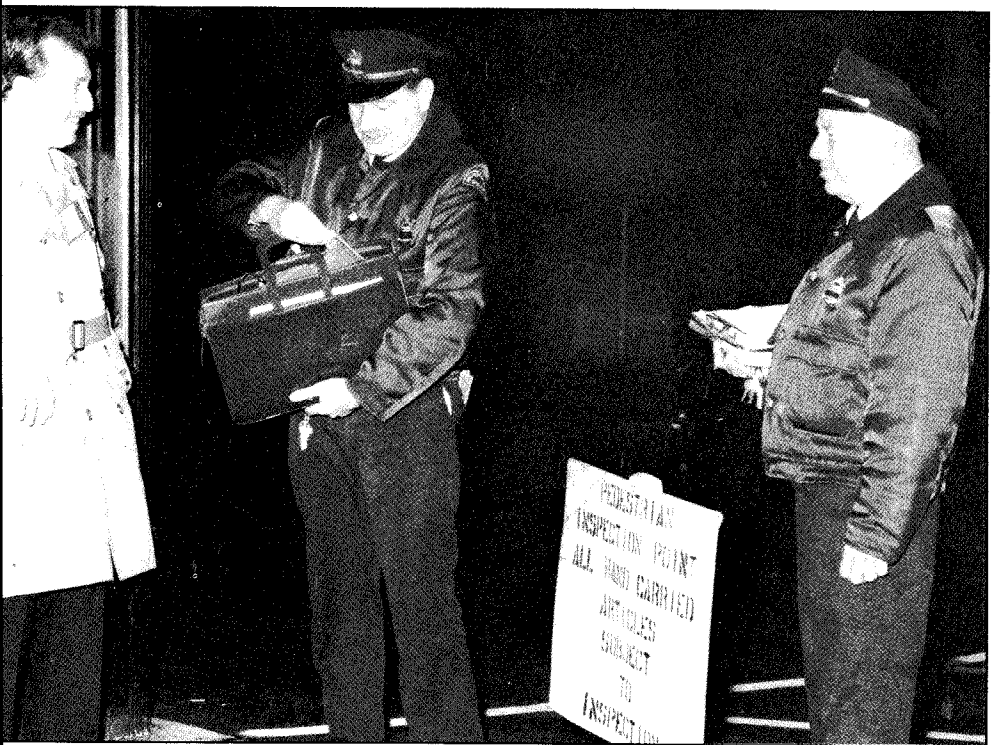
Photos by Robert Goodyear
NADC Photo Lab



akes careful aim during firearm qualification



eph Tangye and Chief John Kupetz discuss guard force operations in Security



articles are inspected at Gate #8 by Patrolmen William Nagel and Edward



Patrolman Jonathan Sheetz reports in to Security Central from his patrol vehicle.



Photo by NADC Photo Lab

ITALIANS ROAM THE CENTER — during a recent visit by members of the Italian Navy led by Rear Admiral Umberto Battigelli and accompanied by Rear Admiral (Select) Luther Schriefer, USN (CNO-OP-0982). Their agenda included a briefing from Anthony Maggio, VP facilities manager (far right) and an exchange of plaques with Center Commander Captain Curtis J. Winters.

Three named Warrant Officers

Continued from page 3

making warrant officer because of all my prior experience." He was pleasantly surprised to be successful with just the first application. "When I came into the Navy," he explained "I set three goals for myself: to fly, to make chief petty officer, and to become an officer. So by applying for warrant officer I was following a career path I had set for myself years ago."

He advised those who apply for any of the Navy's officer programs to make sure that everything they submit is "accurate and up-to-date—if you don't you're only hurting yourself." He is very thankful to Commander David Cudia and Senior Chief Steven Markham for all of their help and support.

AECS William Bonn

AECS William Bonn has been in the Navy for almost 17 years and is currently at NADC for the third time, "I was here in 1970 and 1971 as summer help, 1979 to 1983 as a first class petty officer and now since 1986."

In his naval career the senior chief has been stationed at Navy Fleet Tactical Support-5, NAS Willow Grove; NAS Memphis, Tenn.; Aviation Electrician's Mate "A" School, NAS Jacksonville, Fla.; Navy Fleet Tactical Support-5, NAS Willow Grove; Navy Fleet Tactical Support-1, NAS Norfolk, Va.; Navy Helicopter Mine Countermeasures Squadron-12, NAS Norfolk; Navy Helicopter Mine Countermeasures Squadron-14, NAS Norfolk; NADC; and most recently, Navy Helicopter Mine Countermeasures Squadron-16, NAS Norfolk.

"My dad told me I had to join the Navy," he said jokingly, "I come from a family of 9 children and all of the sons went into the service." He became an aviation electrician's mate because he tested well for it, "the Navy wanted me to become a corpsman, but I shot that idea down."

A native of Horsham, he was "surprised because I didn't really think I would be accepted having applied four times previously. Becoming an officer seemed like a challenge." Bonn said, "and if I hadn't made it this time, I would have tried again. If unsuccessful, I would have gone up for master chief and then maybe thought of retiring."

The Senior Chief is quick to give credit to Commander Cudia, "he has driven me the most," he said, "and taught me a lot since I've been here and it's hard to teach a salty 'ol chief like

Energy Awareness Week "Energy Makes America Work"

By Michael Blank

To increase our understanding of and dedication to skillful energy management, the Center will observe in 1988 the Eleventh Annual Energy Week, commencing on 24 October, with the national theme "Energy Makes America Work." The recognition of energy efficiency as a practical and profitable strategy for the use of command resources results not only in cost savings, but enhances operational mobility and reduces logistic support requirements.

While Energy Awareness Week is but seven days during the year, energy efficiency must be considered a standard operating procedure, a duty to be carried out at every opportunity. We have a duty to pursue more efficient energy use and reduce waste in every practical way, daily and throughout the year. We can no longer use energy any other way but wisely.

Our experience shows that the key to a good energy management approach is dedicated involvement at all levels within the command. Neither one person nor a small group can do it all. We need to work together, and saving energy is everyone's business at NADC

Two NSAP reps return

Continued from page 3

Virginia in August 1986. He served on staff to Major General R. Milligan and later to Major General R. Winglass.

Among his accomplishments, Bromberger was instrumental in developing the Project Helo Lift Device and designing new pendants for external lifts with the CH-53E helicopter. These pendants eliminated the need for a grounding wand and resulted in electroshock hazard prevention to helicopter support teams.

Nice was assigned to the Fleet Marine Forces, Atlantic in Norfolk, Virginia and served on staff to Lt. General A. Gray followed by Lt. General E. Cook.

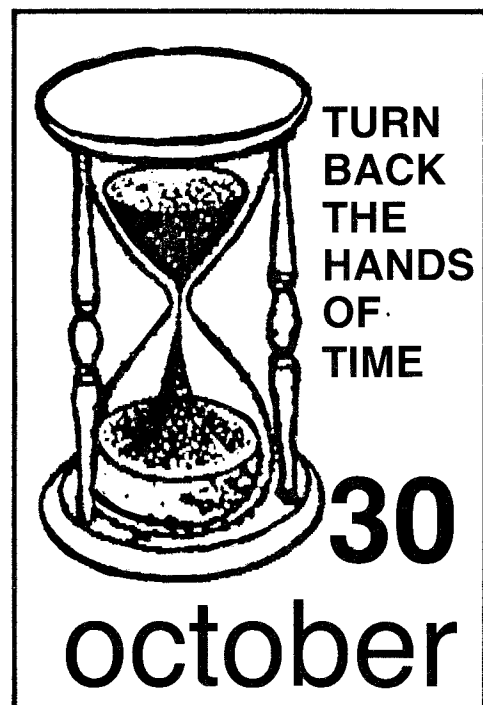
Nice successfully interfaced the Marine Corps Landing Platform class ship and the Rigid Raider Craft (RRC). This interface resulted in reducing the time to configure and launch RRC's from four hours to one.

NSAP traces its genesis to the Vietnam Laboratory Assistance Program (VLAP), a highly successful operation launched to provide direct RDT&E to the Commander, Naval Forces Vietnam. VLAP's success prompted Director of Navy Labs to

expand the program by offering similar assistance to the major Navy commands, both afloat and ashore. In June 1970, NSAP was established to make available the full spectrum of resources and capabilities of the Navy laboratories and RDT&E centers to an increasing number of major commands of naval warfare on a quick-reaction basis.

Today, NSAP provides assistance to the numbered fleets, type commands, Fleet Commanders-in-Chief, and the Fleet Marine Forces, US Marine Corps. It deploys some 17 field Science Advisors, who are senior laboratory engineers and scientists and several consultants, who are laboratory specialists in selected warfare or technical areas. Overall program management is provided by the NSAP Program Office, located at the Naval Surface Warfare Center in White Oak, Maryland.

There is a designated NSAP coordinator at each participating Navy laboratory. At NADC, the point of contact for NSAP tasks is Robert Zaleski (Code 30D) on extension 3104.



myself."

After Officer Indoctrination School, Bonn will attend six weeks of Aviation Maintenance Officers' School at Pensacola. He will then report to Navy Patrol Squadron-22 at Barber's Point, Hawaii.

Senior Chief Bonn and his wife, Robin have three children; Todd, Bridgett and Craig.

All will be appointed warrant officer at NADC; DiVona in April '89, Smith February '89 and Bonn at the first of the year, and then transfer to Officer Indoctrination School, Pensacola.

and at home.

Until the early 1970's, energy sources seemed to be both inexhaustible and expendable. These assumptions were seemingly verified by the relatively low cost of most energy forms. Since this time, the cost of fuel and all energy prices have increased dramatically.

We, in the Department of the Navy, as managers of public funds, have a responsibility to continue seeking economy and efficiency in all facility management and operation activities at NADC. With our ever-increasing annual energy bill, we must continue our efforts to improve our energy efficiency.

Today, we are under ever-increasing pressures to meet NADC commitments with reduced operational budgets. The cost of energy represents a significant portion of these budgets. With wise management techniques, we can be as successful in winning the energy battle in the years to come as in the past decade.

The goal of any energy management program is not to inflict suffering on our residents, but rather to identify and eliminate non-productive energy consumption. We all need to efficiently

evaluate our own energy use and to reduce unnecessary consumption. Using energy wisely is the act of every responsible individual in order not to waste a costly and critical resource.

There are many ways to reduce today's energy costs and to minimize the impact of future price increases and hundreds of ways to improve the energy efficiency of your home.

To promote energy awareness among Center employees and contractors, the events listed below are available:

SCHEDULE OF EVENTS FOR ENERGY AWARENESS WEEK

1. *Energy Tips.* The Center television system and the Log will carry daily energy tips throughout the week.
2. *Static Displays.* Static displays will be placed in the corridor next to the Credit Union or Cafeteria. These displays will contain information regarding energy management at the Center.
3. *Center Video System.* The Center Video System will show videotapes on different energy conservation programs and projects completed at the Center during Fiscal Year 1986-1988.



Mixed League Bowling News

By Tom Reiter

The new season ended its first month with the Red Winos atop the A Division and the Gutter Dusters with the B Division lead.

The standings and highest individual scores bowled by each team are:

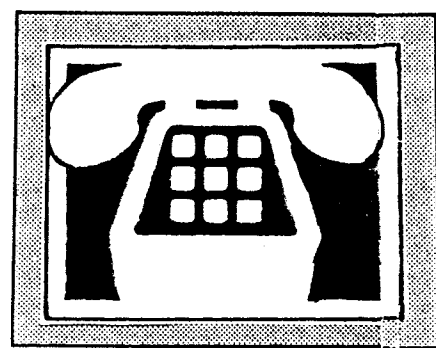
A DIVISION

Red Winos	Mike Dent—210
14—2	Elaine Granieri—212
Eleventh Frame	Ted Weathers—190
13—3	Helen Halko—186
Nine Pins	Jerry Asip—212
13—3	Linda Stickney—199
Rolling Thunder	Mike D'Aulerio—194
10—6	Sharon Robinson—157
Spare Us	Dick Coughlan—230
9—7	Donna Morgan—156
Goofers	Leo Markushewski—203
8—8	Lorraine Reidinger—179
Warveyhallbangers	Glen Mckee—195
8—8	Caroline Tierney—191
Alley Cats	Kevin Ryan—208
7—9	Patricia Aspinall—208
Destroyers	John Lommock—179
7—9	Karen Thomas—170
From The Gutter	Rick Yeager—211
6—10	Lois Savage—168
Les Champignon	John Harris—194
4—12	Ann Harris—157
Who Cares	Cliff Tierney—188
1—15	Barb Fleischut—159

Gutter Dusters	14—2
Magic Markers	13—3
Dynamic Duos	9—7
White Winos	9—7
Bullshooters	8—8
Neiners	8—8
Falcons	7—9
Lucky Strikes	7—9
Big Spenders	6—10
Blue Light Special	5—11
Screwballs	4—12
Pinheads	2—14

B DIVISION

Wes Gleason—233
Mary Vaughn—181
Ed Beach—195
Andrea Sicher—156
Neal Polin—180
Jane Gifford—149
Rick Eppright—225
Terese Wells—159
Bill Halpern—213
Eileen Cunnane—170
Mark Lind—214
Nelda McMillen—130
Aaron Burstein—225
Judy Jerdan—173
Art Duhaime—187
Mary Feeley—204
Bob Pullen—231
Sue Casagrand—130
Scott Kee—159
Eileen Bradley—187
Jack Horning—191
Pat Tease—150
Tom McHugh—179
Sheila McGuire—132



I heard it through the grapevine

by Mary Ann Brett

Is the Center staying open? Are we getting a pay raise? Did they freeze promotions? Why can't we hire someone? When are they giving awards?

If we took a poll, these would probably be among the top-10 questions most Center employees might ask.

In the majority of cases, your own supervisory chain of command is the most informed and credible source, especially since he/she can best explain how certain decisions might affect you personally. However, at times, you may want to seek a 'second opinion' as it were.

Accordingly, and in response to a recent Tiger Team recommendation aimed at improving morale, the "I heard it through the grapevine" telephone information line in the Public Affairs Office is now in operation. Just dial extension 3088, listen for the recorded message on directions, then leave your question.

Leaving your name, code, and extension will enable us to obtain additional information or clarification to answer your question. However, we will not respond to 'frivolous' calls.

Our response might consist of any combination of a return phone call or written response/answer/explanation from an authoritative source, a referral to the office or person who can answer your question, or an article in the REFLECTOR or LOG addressing your concern.

Let us know what you heard on the grapevine and we will try to RAISIN it out together.

Onorato heads local AIAA

By Mary Ann Brett

Nicholas A. Onorato of the Warfare Analysis and Advanced Concepts Division was recently elected Chairman of the Greater Philadelphia Section of the American Institute of Aeronautics and Astronautics (AIAA). According to Onorato, this section includes 750 of the organization's 35,000 nationwide membership and essentially all of Delaware Valley's aviation and space industries are represented.

Onorato has worked at NADC since graduating from Villanova University in 1971. Specializing in tactical air warfare analysis, he has evaluated the effectiveness of many new weapon

systems for the Navy including the F-14 Tomcat and the F/A-18 Hornet aircraft, the Phoenix missile, future tactical fighters, and even advanced ship designed for 21st century.

Last year, the Greater Philadelphia AIAA hosted technical dinner meetings featuring: A. Scott Crossfield of X-15 fame and first man to fly Mach 2 and Mach 3; Guy Bluford, Challenger space shuttle astronaut from Philadelphia; and James Fletcher, current Director of NASA. This year's program includes presentations on advanced helmet integrated display systems, the Harrier jet, solid state lasers and lighter-than-air technology. Each subject will be presented by a nationally recognized expert in that field.



Nicholas Onorato

Murphy: new CSO

Continued from Page 1

continued, "I understand the Center has undergone some fairly extensive reorganizations recently so I'll probably let the dust settle for awhile to see what, if anything, needs to be changed."

A U.S. Naval Academy graduate, Murphy's 21-year naval career includes tours at the Aviation Training Command, Oceanographic Development Squadron Eight (VXN-8), Naval Post Graduate School, Patrol Squadron 44 (VP-44), Air Development Squadron One (VX-1), Patrol Squadron Four (VP-4), Naval Air Systems Command (NAVAIR), and Chief of Naval Operations (CNO) Staff.

Murphy feels his experience has provided him with a 'broad research and development background' including a Masters degree in Aeronautical Engineering, nearly 15 years of anti-submarine warfare operational experience, project management at NAVAIR and an R&D staff position with the CNO (OP-098). "My background lends itself to the Center's mission," said Murphy, "and I'm sure I'll be able to make some contributions."

Murphy's hobbies include computer hacking, biking, swimming, running and puttering around the house. For the next three years, he will be puttering around Quarters "B" where he and his wife Paula are residing.

Fiber optic radiation patterns: a research goal at NADC

By Richard Hammond

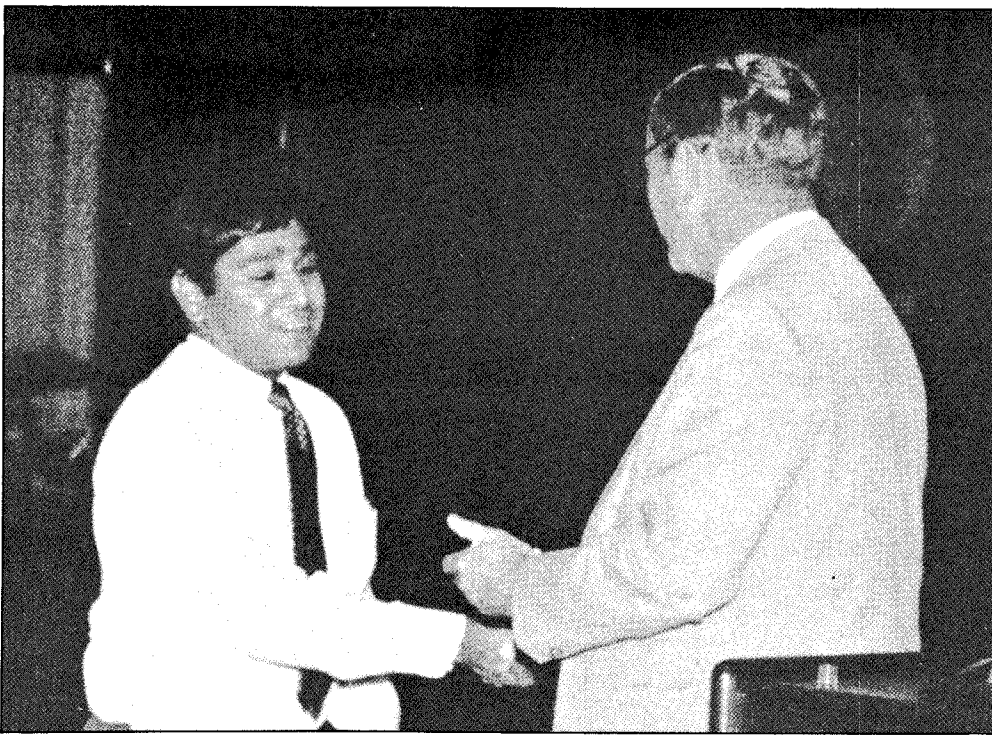
One of the Center's current research goals in the area of fiber optic sensors is to relate far field radiation patterns to aircraft skin states.

Fiber optic sensors have been used for many years, but many of these are interferometric, which means the fiber is split and recombined. More practical for Smart Skins applications, where the skin of the aircraft is embedded with sensors, are single fibers that run the length of the aircraft. As the skin undergoes strains, thermal expansions,

etc., these fibers will be physically deformed, and this will effect the light they carry.

The knowledge of the far field radiation pattern from a single mode fiber may be used to determine the characteristics of that fiber. Extending this concept, a knowledge of the far field pattern from multimode fiber carries information about the modal structure within the fiber.

By observing these modal interference patterns scientists can infer changes the fibers undergo and the resulting changes in the aircraft skin.



Falcon earns federal Hispanic EEO award

by Mary Ann Brett

Carlos Falcon, an Operations Research Analyst in the Tactical Air Systems Department, was recently awarded the 1988 Hispanic Employment Program Achievement Award by the Office of personnel management.

This award recognizes any federal employee, regardless of position, who has made outstanding contributions toward advanced equal opportunity for Hispanics in the federal government.

Falcon was credited for his work on the Center's Hispanic Employment Program Committee, and EEO Committee as well as for developing

NADC's Special Emphasis Recruiting Program and actively recruiting at the Universities of New Mexico and Texas.

In recognition of his accomplishments, Falcon also has received the NADC 1988 EEO Award in the Personal Incentive Category.

Falcon has been working with the Center since April 1985, after graduating from West Point Military Academy and an eight-year career with the Air Force. According to his citation, Falcon has performed excellently as an Operations Research Analyst and has, most notably, impacted this Center's Hispanic Recruiting.

PEP produces rewards

Continued from Page 1

headquarters for approval.

Cash awards up to \$3,000 can be granted for a minimum of \$150,000 savings to the Navy, removal of impediments that free at least 1.5 worker years, elimination of the need for at least 1.5 worker years of effort during the first year of implementation, or, an idea approved at higher headquarters for implementation.

All awards will be approved by the Center Commander or Technical Director and presented to the suggestor as soon as possible.

"We hope," said Simon, "this new system will relieve employees of having to understand all the administrative details of the various productivity programs, encourage more employees to submit suggestions and allow them to be quickly rewarded for the good ones."

Technical Highlights

TECHEVAL aircrews were fitted for Laser Eye Protection (LEP) spectacles. Preliminary compatibility testing was conducted by one of the test pilots with an HGU-55/P helmet, an HGU-33/P helmet, and Cats Eye Night Vision Goggles. The pilot also wore the spectacles in the cockpit of an F-18 to determine if the instrumentation was readable. Only minor problems were found during the preliminary testing.

The Center investigated problems with Pilots' Breathing Regulators. The investigation at the contractor's facility revealed that contamination was being introduced into the regulator demand valve during production. The contractor agreed to disassemble and clean the production run of two suspected lots, totaling 1000 regulators and return the regulators to the Navy at no cost to the government.

At the request of AIR-5401F, CDR L. Butler, NADC took part in the failure analysis review of the Pioneer Remotely Piloted Vehicle (RPV) tail boom. NADC performed an independent analysis of a structural problem area, verified the adequacy of the contractor's proposed short term fix and provided recommendations for a long term solution to the problem.

At the request of AIR-53021, the Center attended a Program Management Review of the A-6 Composite Rewing Development Program. The first critical structural test was monitored. The test article successfully withstood 115% design limit load for the A-6F requirements. testing is scheduled to proceed to 127% (A-6F) DLL which is equivalent to 150% DLL for the A-6E condition.

A model of the Navy Advanced Tactical Fighter (ATF) has been developed for the GETUP aircraft

simulation code for use in the evaluation of the Joint ATF Engine duty cycle. Several missions were flown to evaluate the maximum mission severity that the Navy mission may present. The results will be used to delineate requirements for a joint duty cycle requirement with the Air Force. To get further information on fighter tactics, visits were made to the Navy Fighter Weapons School and OPTEV Squadron 4, as well as the TACTS ground station and VX-143 Aggressor squadron.

Formal Fleet release of Navy/IBM software 1.18.1 for the LAMPS Mk-III occurred after considerable testing by VX-1. This software includes both Helo Threat Warning (HTW) and ESM improvements. The Vertical Flight Program was instrumental in the expedited development and testing of the HTW capability for the SH-60B which provides an ESM warning when the aircraft is being tracked by hostile radar. NADC will send a Fleet introduction team to North Island and to Mayport to explain the software changes to HSL squadron representatives and to answer any questions about FI 1.18.1.

During August and September, the AV-8B RECCE Pod was flown on numerous flights at altitudes ranging from 200 to 20,000 feet and speeds up to 400 knots. The imagery that was recorded by the system was excellent. Marine Corps Headquarters had directed NADC to proceed with further development leading to procurement of 15 systems for fleet operations.

NADC successfully completed at-sea testing of the prototype MilSpec GPS Receiver integrated with the Navigation Subsystem aboard the USNS WYMAN for the Oceanographic Survey Program.

COMPUTER SECURITY PROGRAM REMINDERS

1. Understand and comply with your software's copyright and licensing agreements. Do not make, use or distribute illegal copies of software.
2. Back up your data disks and cartridges on a regular basis.
3. Lock up your software and data when not in use.
4. Do not use the Government's computers or software for personal use.
5. Log out and clear your screen when leaving the work area.
6. Passwords having names or words are easily broken, so don't use them as passwords, use random combinations of letters and numbers.
7. Read and follow the computer's security standard operating procedures.
8. Process classified data only on computers approved for Level I data.
9. The Center's Computer Security Program is described in NAVAIRDEVCEININST 5239.1 and NAVAIRDEVCEININST 5230.2C.



Photos by JO2 Todd Lufkin

UNIVERSITY EVENING TUITION PREPAYMENT PROGRAM BEGINS — Barbara Stewart (right), Code 04, a student at Philadelphia Community College, becomes the first person to take advantage of the Center's new university prepayment program as Marianne DeCicco of the Employee Development Division (EDD), and Training Director Dick Chern, present payment. This program, developed by the EDD as a result of a Tiger Team initiative, allows Center employees to register for approved courses without using their personal funds.



Reflector

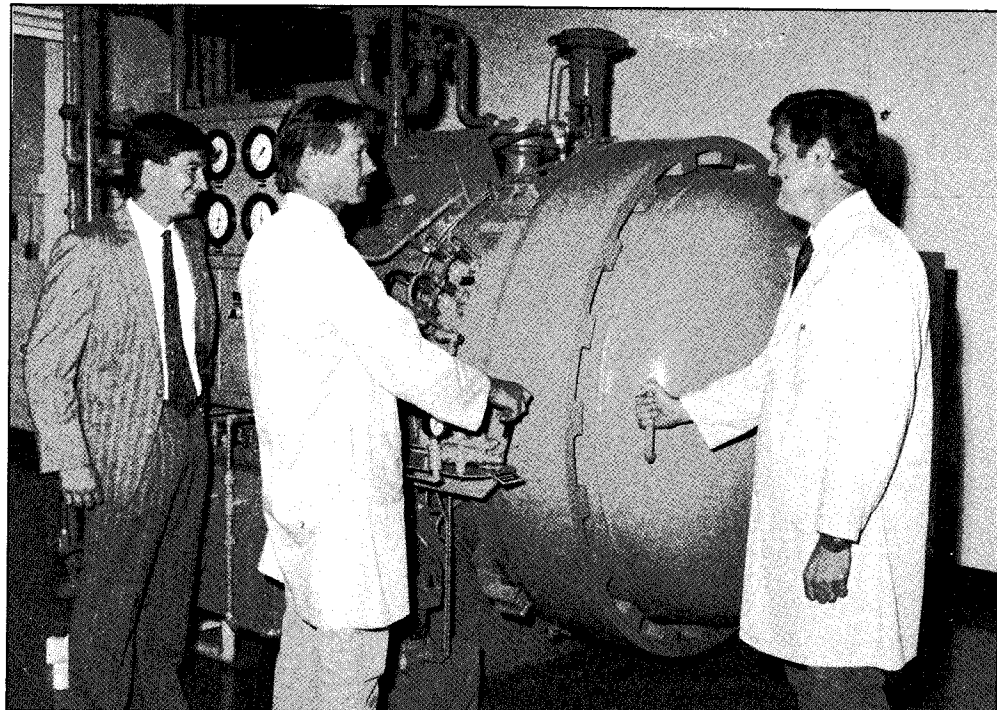
Volume 33 Number 11

NAVAL AIR DEVELOPMENT CENTER, WARMINSTER, PA.

November 1988

In This Issue:

- SOQ and BJQ
- Wright retires
- Education and excellence
- Smith returns
- Football champs
- Santa Claus



New autoclave to process futuristic composites

The new high temperature pressure autoclave was dedicated at NADC. This new autoclave is a unique capability; it will enable the Center to process composite materials at high pressures and temperatures 400 psi and 1,000 F, respectively. This means that NADC will be able to process and

fabricate new, as well as futuristic organic matrix materials requiring extensive capability regarding to temperature and pressure. Thus, this Center will be able to maintain its position at the forefront of composite technology well into the future.

Steve Thomas, Materials Engineer (far left) and Michael Bosak and Dickson Alley, Material Science Technicians prepare to use the newly installed autoclave at NADC.

Agarwala co-authors a winner



Dr. Vinod Agarwala

By Mary Ann Brett

"It's a novel approach," said Dr. Vinod Agarwala of the study addressed in the research paper he coauthored and which recently received the Melvin Roanoff Award. This award is presented by the Northeast Region of the National Association of Corrosion Engineers (NACE) to the best academic research paper first published in one of NACE science journals.

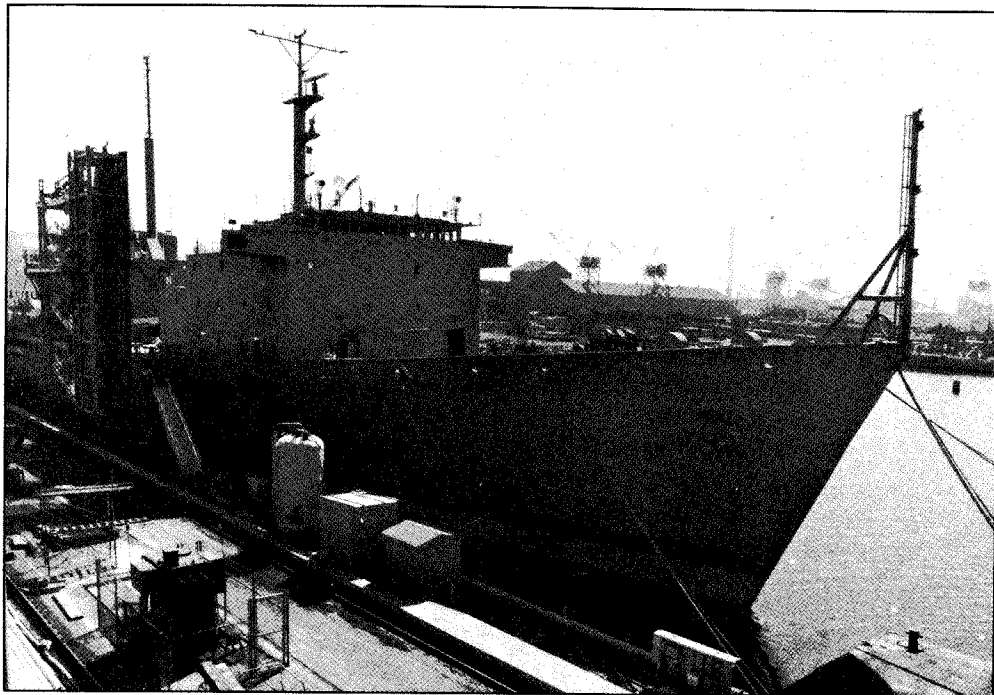
Agarwala, a metallurgist in the Aerospace Materials Division, has worked at the Center for eleven years. He and researchers from the University of Connecticut authored the winning paper on a Navy study to

protect metal from rust caused by salt in air and water.

The study examines a new approach to impede corrosion of metal surfaces like those used in Navy vessels. Instead of the current practice of coating ships and instruments with paint or oxides, an electronic barrier created by a thin semiconductor film effectively slows rust.

An electronic field was set up to impede the natural loss of electrons from metal to agents in the air—a process known as oxidation, or rusting. Voltage necessary to create an electronic barrier between metal and air is built into the semiconductor insulation coating the metal.

NADC develops ship's mission survey equipment suite



The USNS MAURY, an oceanographic survey ship with NADC's mission survey equipment suite.

By John Durfee

After a decision to retire two oceanographic survey ships, the USNS BOWDITCH (a World War II victory ship converted into an oceanographic survey ship in 1958) and the USNS DUTTON, the Naval Sea Systems Command was asked with providing two new replacements. NADC's involvement in this new ship construction program includes developing the mission survey equipment suite, specifying and procuring all mission navigation and sonar systems, and installing and checking the mission survey navigation and sonar systems.

The primary mission of one replacement ship, the USNS MAURY, is to conduct ocean surveys, collecting bathymetric, gravity, geomagnetic, and other scientific data for the Naval Oceanographic Office. The primary SONAR system is the SONAR Array

Continued on page 3

Friend or foe—lasers pose a threat

By Dr. James Sheehy

The possibility of being exposed to either a friendly or unfriendly laser poses a significant threat. In order to protect the fleet, in response to Navy needs, NADC has mounted a three phase effort designed to provide laser eye protection against both currently fielded and future sources.

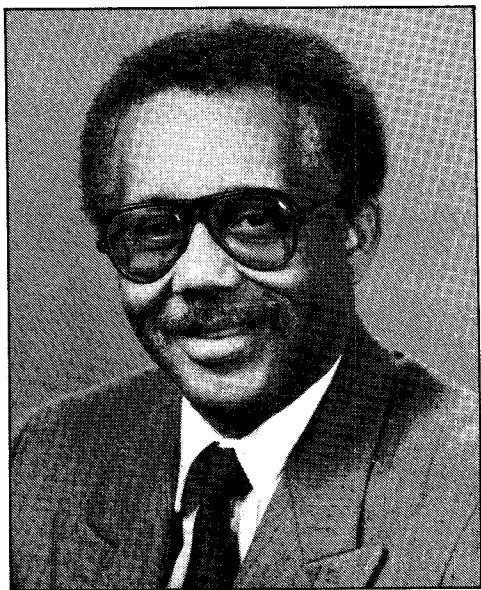
The first phase became operational in the late 1970's and consists of a single wavelength neodymium visor and spectacle. The second phase is divided into two parts. The first consists of eye protection currently available 'off the shelf'. The major drawback is the low transmittance of these devices. The second part is a five wavelength pair of spectacles with higher transmittance. The spectacle used both absorptive and holographic technologies to achieve a better overall transmittance. The spectacles are currently undergoing test and evaluation.

The goal of the third part is to protect against advanced technology lasers. This joint service and DARPA program is a two to three year phased effort which is currently exploring eight potential technologies. The technologies were selected based primarily on dynamic range and response time. The goal is to provide a device which can be transitioned to 6.3 by early 1990's, and operational by the mid 1990's.

Command Corner



Captain Curtis J. Winters
Center Commander



Guy C. Dilworth, Jr.
Technical Director

Thanksgiving Day Message

To all Naval Air Development Center employees:

The leaves are falling, the air is brisk and daylight hours shorten—all are signs that year-end is nearing and this year, 1988, marks another successful year at the Naval Air Development Center.

Our contributions to Naval technology, the national defense, Equal Employment Opportunity and Small Business were recognized with several Navy and federal awards. We achieved this only through your efforts—personal and professional dedication, untiring hard work and a strong sense of team spirit.

We have much to be proud of and thankful for here at the Center and I hope we can continue to honor our commitment to technical excellence and equal opportunity.

The Technical Director and I extend our deepest appreciation for your fine efforts throughout the year and we sincerely wish you and your families a happy Thanksgiving holiday.

C. J. Winters
C. J. WINTERS
Commander

If the SOC fits

Contractors, too . . .

By Robert Janes

The Navy's Standards of Conduct (SOC) are directed at our individual conduct as Navy employees, but we also need to be alert to possible SOC-type violations by our contractors. Not long ago a gentleman was named in the press as being the subject of an SEC investigation concerning improper insider trading. This man had served as a consultant under an NADC contract, on which his primary function had been to assist NAVAIR in the evaluation of proposals on a large contract which NAVAIR was to award. As a result of this work, he learned the identity of the likely awardee, and allegedly bought a large amount of that company's stock one day before the contract was awarded. When the award was announced, the company's stock rose in price, and he was then able to sell the stock at a nice profit.

The Navy's utilization of this particular individual could not be faulted, for his technical expertise was well-known, and he had an excellent

reputation of long standing. Moreover, prior to utilizing the man in the evaluation, the Navy had him sign a statement agreeing not to disclose any of this information nor to utilize it for personal gain. Nevertheless, because of this and similar incidents involving Navy contractors, the Navy is stressing the need for minimizing the use of contractor support in the procurement process. The Under Secretary recently issued a directive reiterating the general governmental policy to keep any decision-making or managerial functions in-house, and then stresses the need to scale down contractor support in all phases of the procurement process, naming, among other things, requirements definition; acquisition planning, preparation of J&A's, procurement requests, and RFP's; and participation in the source selection process itself. The directive emphasizes that access of contractor personnel to sensitive information must be strictly limited, both in terms of the amount of information seen and the number of people permitted to see it.



Commander Salutes

Robert Balitski, Norwood Metcalf, Francis Chamberlain, Carmen Pontelandolfo (Code 50): For providing vital support to JCS tasked operations.

Ronald Young (Code 03): For successful efforts as an "OPM Flexibilities" workshop facilitator.

Donald Furmanski (Code 20): For an extremely informative and well received V-22 Development Program briefing to the Naval Reserve Unit NAVAIRSYSCOM 0993.

Lewis Lippel (Code 60): For an outstanding Advanced Cockpit Display Technology briefing to the Naval Reserve Unit NAVAIRSYSCOM 0993.

LT Brian Bennett (Code 60): For efforts to introduce Dr. Bagshaw of the University of Pennsylvania to aviation medicine.

W. Herbert Heffner (Code 20): For technical expertise in support of the **OUTLAW PHANTOM** and **OUTLAW AQUARIUM** programs with the Naval Air Systems Command.

Janice Gess (Code 10): For supporting the Army War Games at the request of the Naval War College.

Thomas Kister (Code 40): For effective leadership during equipment removal from the NOAA ship **DISCOVERER**.

James Dunn, Nelson Hall, Arthur Samouris, Michael Rankin, Marty Squiciarrini (Code 50); **Nancy Lindsey, Jack Eyth** (Code 60): For the time, expertise, and extra effort

given to help make the 1987-1988 Bucks County Science Seminar program a success.

Robert Janes (Code 09): For participation as an instructor of a Contracts Law course at the Cherry Hill Inn, N.J.

Robert Berry, Harry Deal, Maxwell Zelikoff (Code 00); **Edward Peterson** (Code 04), **Robert Finkelman** (Code 05): For volunteer participation in the Introduction to Navy Internal Review training program.


Timothy Springer (Code 60): For support to the Habitability and Ancillary Systems Section at the Naval Air Systems Command.

LT Richard Erickson, Suzanne Reeps (Code 60): For exceptional knowledge and professionalism resulting in the nomination for the 1987 Outstanding Naval Aerospace Physiologist and the 1987 Special Award in Aviation Physiology, respectively.

Richard Chern, John Markow (Code 03): For valuable assistance to the 79th U.S. Army Reserve Command during a recent training session at NADC.

James Henderson, Harvey Clarke (Code 60): For participation in this year's National Disaster Medical System exercise.

Steven McComas (Code 10): For valuable support to the Naval Air Systems Command on the S-3 aircraft weapon system.



NADC

Reflector

NAVAL AIR DEVELOPMENT CENTER, WARMINSTER, PA

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Commander, NADC	CAPT Curtis J. Winters
Technical Director	Guy C. Dilworth, Jr.
Public Affairs Officer and Editor	James S. Kingston
Associate Editor	Mary Ann Brett
Assistant Editor	JO2 Todd Lufkin

Sailor and Blue Jacket of the Quarter named

By JO2 Todd Lufkin

Sailor of the Quarter

AMHI Robert T. Fordham has been named NADC's Sailor of the Quarter for the third quarter of 1988. "I was happy to win and after being nominated several times the first thing I told myself was 'finally,' " he said laughingly.

A native of Dixon, Ill., this 30-year-old SOQ has been in the Navy for 13 years, two of them on Center.

Fordham joined the Navy because his father was a Quartermaster Chief

Petty Officer and a recruiter. "My dad was the one who decided I would go into the Aviation Structural Mechanic Hydraulics rate," he explained, "it was either go along with the plan or pay rent!"

Thus far in his naval career he has been stationed at NAS Memphis, Tenn.; NAS Keflavik, Iceland; Navy Patrol Squadron-24 at Jacksonville, Fla.; Navy Recruiting District Chicago; Navy Training Squadron-19 at Meridian, Miss.; and most recently Navy Patrol Squadron-49 at

Continued on page 7

Survey suite built

Continued from Page 1

Sounding System (SASS), a multi-beam "wide angle" precision sonar system that permits continuous charting of a broad strip ocean bottom under the ship. The secondary SONAR system includes two AN/BQN-3 narrow beam sonars.

The ship's navigation subsystem integrates position data from several sensors to produce continuous precise positioning data. These include: Miniature Ship's Inertial Navigation System, LORAN-C, Navigation

Satellite Data (NAVSAT/GPS), MK29 Gyrocompass, Doppler Sonar and Electromagnetic Log Rodmeter Velocity Information.

The USNS MAURY (T-AGS 39) is presently under construction and should be completed in January 1989. The MAURY is the first ship designed and built from the keel up as an oceanographic survey ship. Her sister ship, the USNS TANNER (T-AGS-40) is also under construction and should be completed by July '89.

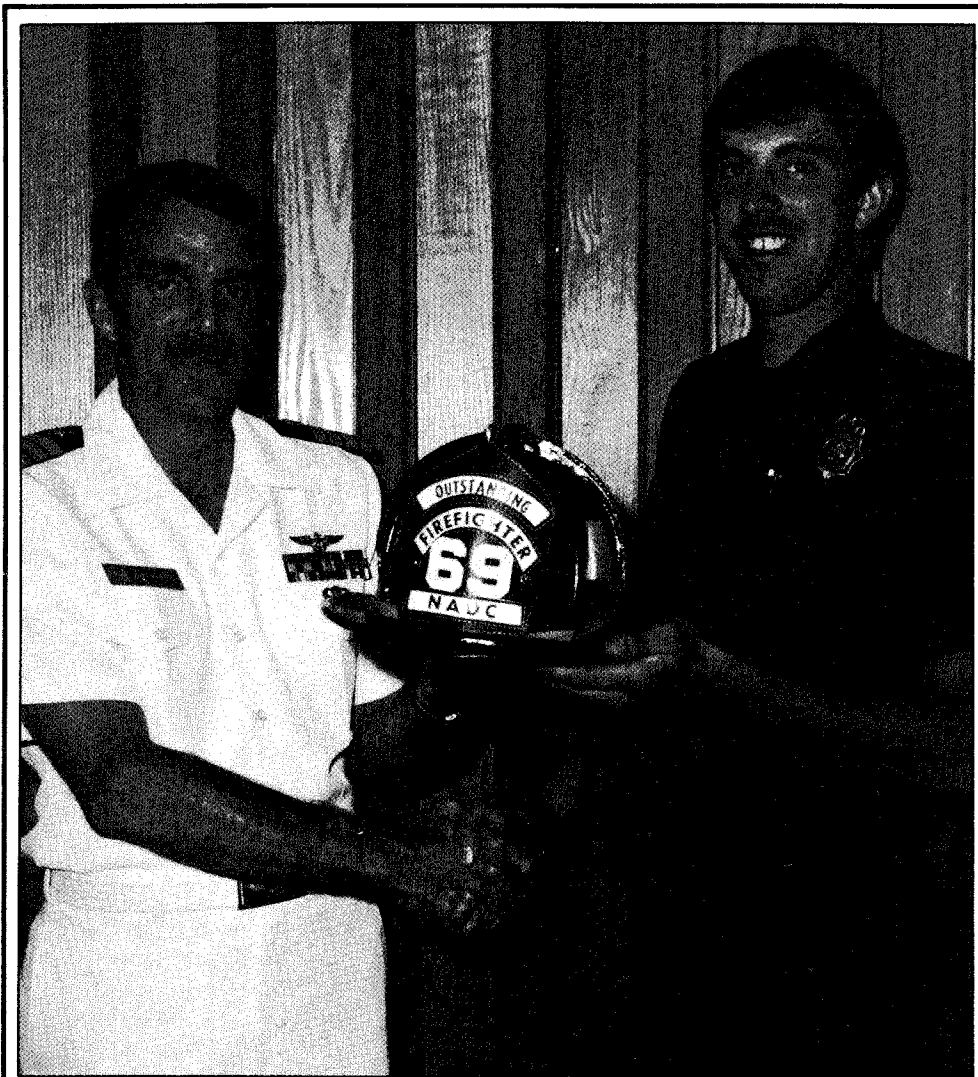


Photo by NADC Photo Lab

FIRST OUTSTANDING FIREFIGHTER OF THE MONTH NAMED — New Chief Staff Officer CAPT Roy Murphy (left) presents the First Outstanding Firefighter of the Month Award to Herbert W. Schoell. Schoell has been with the NADC Fire Department for more than a year.

Wright retires after 30-year Navy career

By Mary Ann Brett

After 30 years of service at 19 duty stations, CAPT George Fredrick Wright retired from the U.S. Navy and his position as Chief Staff Officer on October 28th. Wright, who enlisted as

Upper left: CAPT Curtis Winters, Center Commander presents retirement letter to CAPT Wright. Lower left: CAPT and Mrs. Wright hold the career display case with medals and U.S.A. flag presented to Wright.



Photo by Robert Goodyear

an E1 lifeguard in 1958, came to NADC in May 1984 from Sigonella, Italy where he commanded the Naval Air Station there.

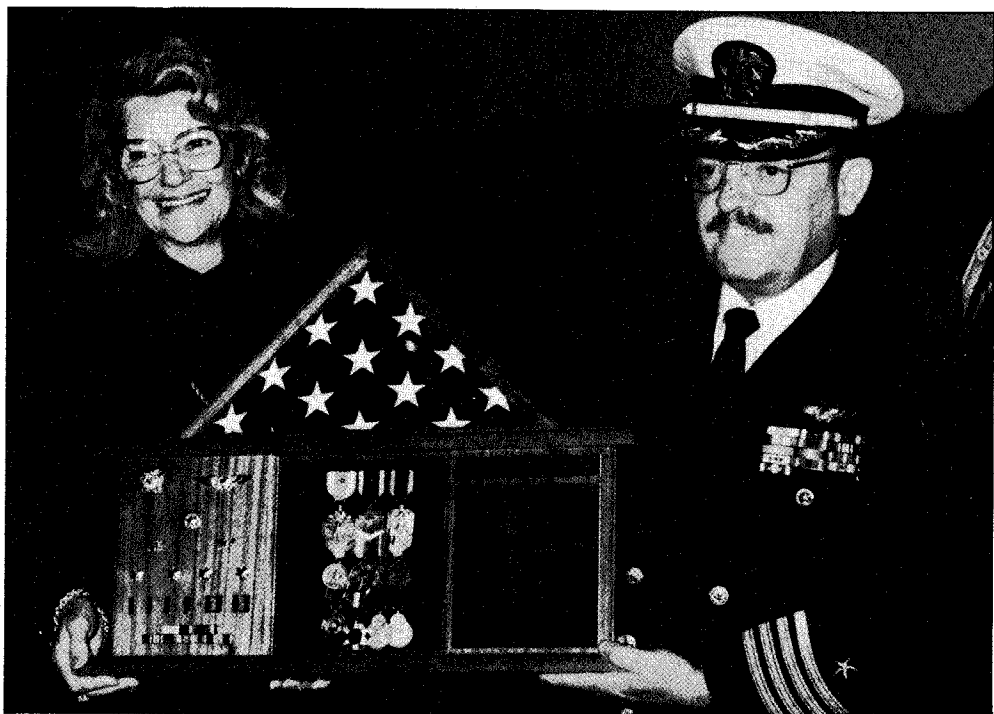
A traditional Naval ceremony for the Captain and Mrs. Ann Wright and was held in Hangar 3 at the airfield. There, Center Commander CAPT Curtis J. Winters presented Wright with the Meritorious Service Medal for his outstanding work at the Center. Winters also presented him with a U.S.A. flag, folded and enclosed in glass. The flag was flown atop the Capitol building in Washington, DC at the request of Senator Arlen Specter specifically for the occasion of Wright's

retirement.

At the presentation's end, Wright commented briefly on the personnel chosen to participate in the ceremony. "In my career, I've worn just about every Navy uniform that stands in ranks today. Because I joined the Navy as an enlisted man, I chose enlisted personnel to be my official sidebuys.

With troops and sidebuys at attention, and at the tone of three bells, the Wrights were 'piped over' in traditional naval fashion.

That evening, friends and their families wished the Wrights fair winds and following seas at a dinner in their honor.



Retiring CAPT Wright is "piped over the side" in traditional Navy style.

Education encour

By Mary Ann Brett

At every opportunity NADC management, especially Technical Director Guy Dilworth reinforces the importance of advanced degrees and continuing education in supporting the Center's commitment to state-of-the-art technical excellence. The Center is proud to boast more than 80 Doctorates, hundreds of Masters degrees and more than 300 personnel currently attending graduate level training. These civilian and military employees span nearly twenty science and engineering disciplines as well as the legal and medical professions.

Various measures, including on-Center university courses, prepaid tuitions, and the Graduate Study Award Program, are offered through the Center's Employee Development Division to encourage continuing education, especially in the critical sciences.

Some of the individuals who have recently joined NADC or recently attained a doctorate are highlighted here.

Other personnel across the Center who have attained a doctorate are:

V. Agarwala, N. Ali, J. Alper, M. Anton, D. Barrett, LCDR B. Bennett, M. Blank, A. Blumenthal, L. Bobb, B. Boczar, W. Bromberger, L. Buckley, J. Caro, A. Cenko, D. Chen, G. Chisum, J. Davis, LCDR J. Deaton, J. DeLuccia, J. Duke, LCDR M. Eyraud, E. Feinberg, W. Frazier, M. Gaer, K. Green, G. Greenland, D. Hall, R. Hammond, Lt. P. Holmes, L. Hrebien, S. Huang, R. Janes, R. Josephs, D. Kaufman, P. Kennedy, C. Krafft, G. Kydd, E. Lee, E. Lee, R. Lee, S. Lin, R. Llorens, G. London, D. McErlean, N. Morales, CAPT W. Moroney, A. Ochadlick, C. Oh, J. Omeara, R. Parker, M. Paul, W. Rosen, W. Schmidt, C. Schmiedekamp, W. Scott, E. Seibert, R. Shah, LCDR T. Singer, R. Singh, C. Skriver, J. Smith, B. Steinberg, M. Squicciarini, M. Subrahmanyam, H. Tsai, W. Tseng, A. Varma, J. Waldman, M. Wann, N. Warner, S. Weisgerber, P. Whitley, J. Williams, R. Williams, A. Witt.

For more information about continuing education, contact the Employee Development Division (Code 032) extension 3076.)



Dr. Barry Schender

Dr. Barry Schender received his Ph.D. in Biomedical Engineering from Drexel University in September 1988. At the Center for nearly 18 months, Schender said, "I needed my doctorate and the extra experience it provided in order to be an effective scientist and to better plan, organize, develop and run my experiments in acceleration research. Currently, Schender is developing a subject panel of military and civilians trained in sustaining high G's on a regular basis.

Dr. Mary Eileen Farrell received her degree in Theoretical Solid State Physics from Drexel University in June 1987. Currently a member of the Signal Processing Branch, Farrell came to NADC in September 1987. "I always want to learn more," she said of her academic pursuits. She explained she wanted the additional education to keep up with new developments, to simplify working on sophisticated calculations and to help analyze data.



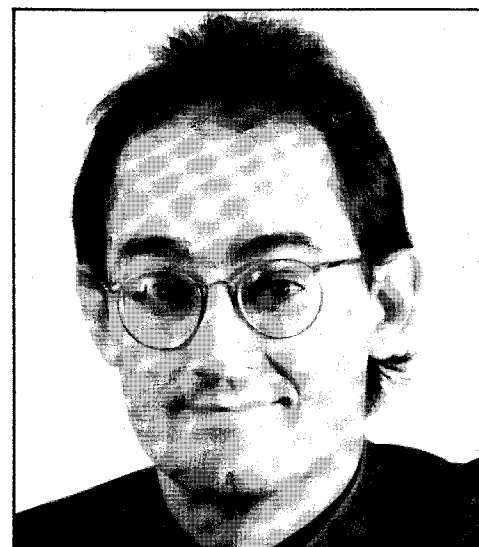
Dr. Mary Eileen Farrell



CDR Victoria Voge

CDR Victoria Voge an M.D. specializing in Aerospace medicine began her second tour at the Center in April of this year. She was originally assigned to NADC from 1973 to 1976. Voge received her degree in 1971 from the National Autonomous University of Mexico. At NADC she performs medical monitoring of human subjects being tested in the Dynamic Flight Simulator, cold water chamber and other Center facilities. "I always wanted to be a doctor," said Voge, "and I chose aerospace medicine because I like airplanes!"

Dr. Kenneth Gish joined the Center in the last year at the encouragement of Dr. James Sheehy, a former classmate. Gish received his degree in Experimental Psychology from Pennsylvania State University. "I knew I needed to know more . . .", he said of his reasons for continuing his education. Gish works together with Sheehy and world renowned Dr. Gloria Chisum on assessing laser eye protection and the affects of lasers on visual performance.



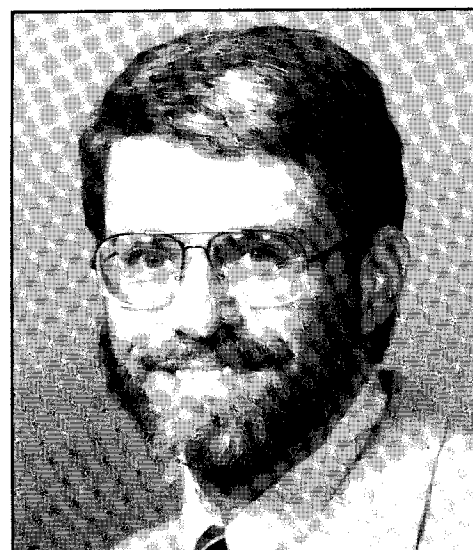
Dr. Kenneth Gish

Dr. Tseng encourages excellence



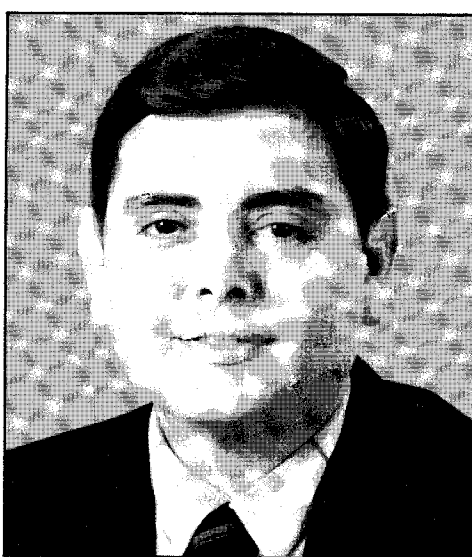
Dr. Jine Tseng

Dr. Jine Tseng completed her degree through the Center's Advanced Graduate Study Award Program. "I might never have completed my studies," she said, "if it weren't for the Center's help." Tseng, a ten year employee, attended the University of Pennsylvania and received her Ph.D. in Systems Engineering in May 1985. Tseng feels this degree increased her competence, helps in her work with both computer hardware and software, and enables her to look at problems from a systems level perspective.



Dr. Michael Rankin

"I'm just a scientist at heart," concluded **Dr. James Whinnery** of his reason for continuing his education while he admitted it was necessary to his area of interest. Whinnery, who has worked at NADC for one year, has a Ph.D. in Biomedical Physics from Texas Christian University, Fort Worth, Texas (1972) and an M.D. from the University of Texas (1975). Whinnery is NADC's chief aeromedical scientist and directs the Center's Acceleration-related work and human experimentation studies, such as those conducted on the Dynamic Flight Simulator. Whinnery's philosophy is: "Try not to worry about the cost of an education or the compensation associated with any particular field; security will follow. It's more important," he said, "to do what you like and do it well."



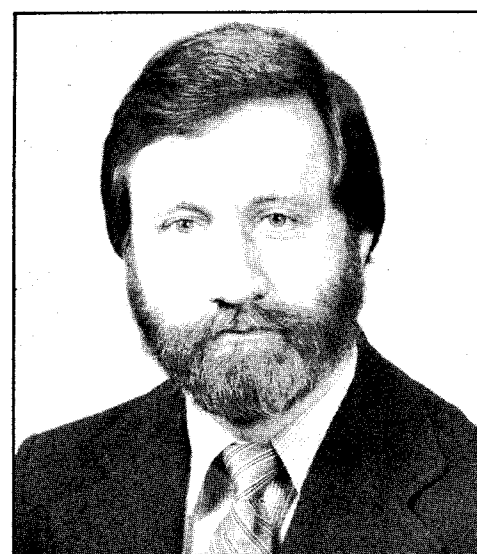
Dr. James Whinnery

Dr. Michael Rankin of the Electro-optics Development Division received his degree in Physics from Drexel University in 1986. Rankin has worked at the Center since 1974 and is currently working on problems in non-linear optics and laser physics. "A Ph.D. is crucial to serious research and that's what I'm interested in," he explained. Rankin also participated in the Center's GSAP. "My previous perspective," said Rankin, "was shaped and in some ways limited to Center programs and knowledge gained on-the-job. The additional education has given me a much broader perspective and many more contacts in the professional community."

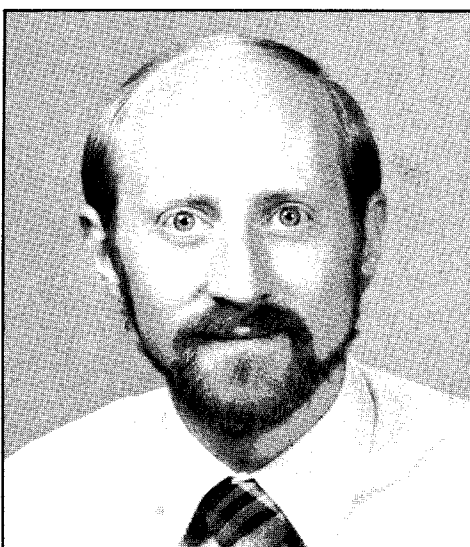
Dr. James Sheehy came to NADC shortly after receiving his doctorate in Visual Psychophysics from Pennsylvania State University (PSU), January 1985. Working at the Center's vision laboratory, Sheehy is studying the effects of glare on human performance and laser eye protective devices. A member of PSU's adjunct faculty at the Ogontz campus, Sheehy said, "I became so interested in my studies, it was natural to continue my education." He added, "I also wanted to do research and a Ph.D. was essential to that."



Dr. James Sheehy



Dr. Arthur Horbach



Dr. Thomas Gabrielson

Dr. Thomas Gabrielson of the Acoustics Development Division received his degree in Acoustics from Pennsylvania State University in May 1985. Another recipient in the Center's Advanced Graduate Study Award Program, Gabrielson said, "In general, to do the level of work required here at the Center, I needed more education and the opportunity to work with other experts in the field." Gabrielson is currently coordinating theoretical modeling in acoustics and developing a device that converts heat into sound.

"Take advantage of every training opportunity," advised **Dr. Arthur Horbach**. "Do it now and build schooling into your lifestyle because the longer you wait the more difficult it becomes," he explained, speaking from his own experience. Horbach received his Ph.D. in Acoustics from Pennsylvania State University in December 1987. Here for nearly 15 years, Horbach, of the Acoustics Processing Division, is involved in underwater acoustic studies in the Arctic region. "I felt I needed the extra courses to become more capable in my field," he said, "and with the Center's help I was able to finish."

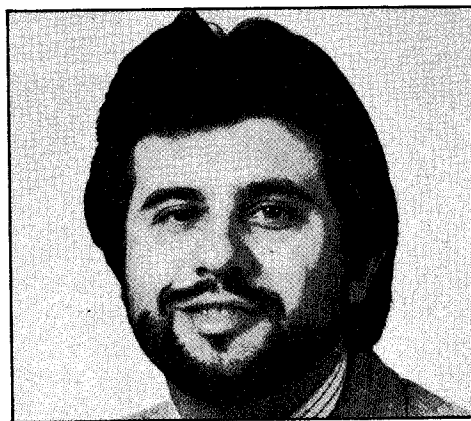
VIEWPOINT

Question: When did you stop smoking and why?

Photos by NADC Photo Lab and JO2 Todd Lufkin

Jim White
Code 02

"When both my smoking brothers died in middle age of lung diseases; it convinced me to stop. It's been ten years now."



Joseph Laska
Code 50

"I stopped smoking during college when I was out of breath ten minutes into a touch football game."

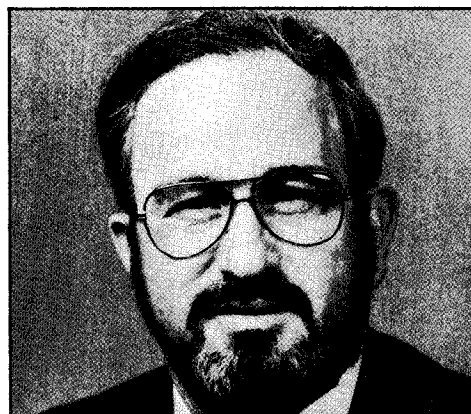
Helene Weinstock
Code 70

"Last year after 15 years of smoking, I stopped. You don't realize how awful it smells until after you've stopped."



Nancy Ballew
Code 30

"I stopped smoking in 1970 after nearly 15 years; it was getting too expensive."



Bill Hicklin
Code 50

"Twenty-six years ago I stopped smoking. I 'got smart' and stopped for health reasons."

Technical Highlights

Artificial Intelligence

The Center established a development task for an Artificial Intelligence (AI) system with CINCPACFLT, Pearl Harbor, HI. The Fleet Command Center Battle Management Program at CINCPACFLT is sponsored by DARPA under the Strategic Computing program and is a test bed for hosting advance AI systems that support the CINCPACFLT Command Center, NADC will provide force planning AI software to drive four alternative threat scenarios to stimulate and evaluate various Capabilities Assessment Expert System (CASES) assessments. The AI software will be derived from knowledge acquisition activities conducted with CNA and CINCPACFLT analysts. This AI software is based on concepts originating from the "Plan Recognition Project," an NADC IED program. We will also provide an SPA generation model to realistically predict the occurrence and location of SOSUS search probability areas.

NASEE Software Tool Set

The NAVAIR Software Engineering Environment Software Tool Set (NASEE) effort is a multi-lab program designed to save money and to improve productivity and efficiency in software development and Support. With the competitive award of eight Indefinite Quality contracts in FY88, totaling \$7.6 millions, NADC has successfully coordinated and completed the evaluation, specification, and acquisition of a software tool set for NAVAIR. The software tools, which are collectively referred to as the NASEE Software Tool Set, will be the nucleus of a modern, capable software engineering environment for NAVAIR's Software Support Activities (SSAs). The NAVAIR field activities and Navy labs that cooperated in this successful team effort are NAC, NADEP NI, NATC, PMTC, NADC, NWC, and NOSC. As a result of this effort to acquire and use a common tool set, significant cost savings and efficiency and productivity

(Continued on page 8)

Capt F.K. Helmsin
Code 10

"I stopped on 13 September 1987 for love of family, life and respect for friends."



Emphysema:

"... drowning in a sea of air."

Emphysema is a severe lung disease that usually develops gradually, not suddenly. The walls of the air sacs in the lungs lose elasticity and are destroyed. Stale air gets trapped in the lungs, which become overinflated. The exchange of oxygen and carbon dioxide is disrupted. The person with emphysema feels as if he or she is drowning in a sea of air.

The flow of blood in the lungs is disrupted by the changes caused by emphysema. The heart has to pump harder and may become enlarged. Death due to a damaged heart is often an end result of emphysema.

Very few nonsmokers develop emphysema. Most people who have the disease have been heavy smokers for years. People who are born with a deficiency of a blood protein called alpha-antitrypsin — and who also smoke — run a very high risk of developing the disease.

Breathlessness can be a beginning symptom. As the disease develops, breathing becomes more and more of a chore. Though there is no known way to reverse the damage involved in emphysema, medical treatment can help patients to breathe easier with the disease. Continued smoking can cause the disease to develop into even more advanced stages.

Security Reminder

BADGES—NAVAIRDEVCCENINST 5530.1, Chap. 3, requires that badges be worn on the upper part of the body in full view, to facilitate identification. All employees are reminded the wearing of Center Badge is mandatory while on the Center.



Smith returns for second tour at NADC



CDR. Gary Smith

By JO2 Todd Lufkin

"I feel deeply pleased to be back as part of this Center, and especially this division again" said Commander David G. "Gary" Smith proudly on his return to the life Support Engineering Division. Smith had been on Center from 1981-84 and specifically requested another tour of duty.

In his 21-year naval career Smith has been stationed at the Naval Aerospace Medical Institute, Pensacola, Fla.; the Naval Air Test Center, Patuxent River, Md.; the Naval Air Systems Command, Washington, D.C.; Commander Naval Air Forces Atlantic, Norfolk, Va.; the Naval Air Station Cecil Field, Fla.;

NADC; and most recently at the Naval Air Station Corpus Christi, Tex.

A native of the Dayton, Ohio, the 46-year-old Smith wanted to be a naval officer since graduating from college in the mid-60s. "I was interested in naval aviation and had worked a year with NASA on the Apollo program," he explained "when I had the opportunity to enter the Naval Aviation Program it seemed to be (and was) the logical thing to do." He received a direct commission as a Lieutenant (Junior Grade) in the Navy's Medical Service Corps after completing his Masters Degrees in 1967.

The Commander will be here until 1991. "I believe our Life Support Engineering Division has a particularly challenging task because

most of our products must be worn, carried, or strapped on by the pilots and aircrewmembers we can technically develop equipment that will meet specific operational requirements for protection fairly easily," he said. "However, pilots and aircrewmembers must be able to wear, carry, or sit on the equipment without interfering with their performance in the aircraft. Part of dealing with that challenge is engineering, and the other part is properly 'marketing' our product to the fleet users. I believe we have made great strides in our Division in both these areas."

Smith and his family reside in Newtown, and plan on retiring in this area some day.

Sailor and Blue Jacket of the Quarter named

Continued from page 3
Jacksonville, Fla.

Fordham works as a Quality Assurance Representative in Aircraft Maintenance. "We're involved in making certain our aircraft are safe for flight and also maintain the Safety Program." He feels the Center is good shore duty — "NADC is a unique opportunity to travel and be involved

with new and up-and-coming systems for the Navy."

In his spare time this SOQ is the secretary and treasurer for the NADC military bowling league and is also a member of the football team.

His plans for the future include making chief petty officer and retiring from the service when he is eligible. Forham added, "I also want to finish

my schooling and get into the industrial safety field."

Blue Jacket of the Quarter

"After being previously nominated three times, I was surprised to have received this honor," stated AD3 Darren Wenzlick. The honor is his selection as Blue Jacket of the Quarter (BJQ) for the Third Quarter of 1988.

The 25-year-old BJQ has been on Center for 2½ of his 7 years in the Navy. "NADC isn't that bad," he said, "You're really not under too much pressure." Working nights, this BJQ is a jet mechanic and "takes care of the plane's four engines, four props, auxiliary power system and some of the fuel system." Prior to being assigned at NADC, Wenzlick was stationed at Recruit Training Command Orlando, Fla.; and Navy Patrol Squadron-45 at the Naval Air

Station Jacksonville, Fla.

A native of New Lothrop, Mich., he joined the Navy because he was "bored with Michigan—there were no jobs and I wanted a change." Wenzlick became an Aviation Machinist's Mate because he took the rate that would quickly get him into the Navy and he "enjoyed working with engines and thought airplanes would be a challenge."

Wenzlick has no patience with those who constantly bemoan the Navy. "You freely decided to join, so you should have to make the best of it—always the best you can."

His plans for the future include the probability of getting out of the Navy at the end of his current enlistment. Ultimately he would like to return to Michigan and get a job with one of the airlines.

Wenzlick, his wife Kerensa and daughter Lucinda reside in northeast Philadelphia.



AHM Robert Fordham (center)
Sailor of the Quarter



AD3 Darren Wenzlick
Blue Jacket of the Quarter

No controls on weather

... but what about your thermostat?

By Michael Blank

This summer's all-time record breaking heat brought us 10 days of very hot temperatures ranging from 100 to 110 degrees, and 25 days in the 90's. These resulted in large electrical bills. And now, weathermen predict the winter will be very cold, and we will have even larger heating bills.

We cannot yet control or influence the weather, but we can follow some tips to conserve energy and save money:

- Lower the thermostats during the heating season to maximize both efficiency and comfort. The thermostat should be set at 65-68 degrees F in the winter during the day, reducing it to 55-60 degrees F at night.
- Lower the thermostat a degree or two before guests arrive when entertaining a large group during the heating season. Otherwise, the space may become wastefully overheated because people generate heat.
- Set the thermostat back 10 degrees for the weekend if you're going away.
- Heat only the rooms in use. Close off areas of the house that aren't needed, except for the room in which your

thermostat is located.

- You'll feel warmer if you seal drapes and shades tightly to the sides of the windows.
- Open draperies on south-facing windows on sunny winter days to take advantage of available solar heat.
- Make sure registers for supply or return air are not blocked by drapes or furniture.
- Check the filter on your furnace once a month during the heating season. If it's clogged, replace it for better system efficiency.

ADDITIONAL MEASURES YOU MAY CONSIDER:

- Cover window air conditioners with plastic covers in the winter.
- Install automatic door closures on exterior doors.
- Install storm windows or put up clear plastic window coverings.
- One more tip, caulk and weatherstrip around doors, windows, and electrical outlets as well as attic and crawl space access holes. Experience shows that sealing air leaks this way can sharply reduce heating costs in many cases and materials used are relatively inexpensive.

The "hotline" is ringing

By Jim Kingston

The Center's new "Grapevine Hotline" (X-3088) is getting a good workout in its early stages.

The first few questions raised reflected concern over base closings. To calm everyone's fears on that subject, here are the facts:

Presently, no official list of base closings exists! The Secretary of Defense has established a committee to study possible base closings that would result in real savings — not just a shift of function from one base to another. The committee is to submit on or about November 15th the criteria it will be using. Next, a recommended list of bases — about 20 — will be submitted to the Secretary by December 31st. He can accept or reject the list in its entirety only and he must do so before inauguration day in January.

Another very pertinent question raised was this: Does the 4.1% pay raise apply to all pay scales ... to include the special engineer and computer scientist scales? The answer is, Yes.

If you have questions or comments to pass along the grapevine, call us on the hotline — extension 3088.

Here comes Santa Claus



Gee Santa, is this for me?

For the past 30 years, the NADC Welfare and Recreation (W&R) association has sponsored a Children's Christmas party for Bethanna and Christ's homes. This year the party will be held in the Anchorage cafeteria on Saturday, December 17, at 10:00 a.m. It will include entertainment, a visit from Santa and a luncheon. Your support has been very much appreciated in the past. We ask for your support again by making a contribution through our Christmas poster campaign and donations at the W&R store.

Christmas past! Santa brings a smile to this boy during the W & R Christmas party held last year.

Registration drive held

The Voter Registration Drive held in October in the Credit Union Lobby was a huge success. The drive was sponsored by the Center's Federal Women's Program (FWP) Committee and the League of Women Voters. Three representatives from each organization were on hand to assist in answering questions and filling out voter registration forms. The FWP representatives included Maryanne DeCicco, Jeanne-Marie Kita, and Kathleen Stempeck; and from the League of Women Voters, representatives included Jean Isaacs, Judy Osterman and Raymond Osterman.

More than 300 registration forms were distributed to NADC employees and their families. One hundred twenty-eight forms were actually filled out during the two-hour drive.

The Center's Equal Employment Opportunity Office and FWP Committee would like to extend their thanks to the League of Women Voters for their volunteer effort in making the voter registration drive a success.

(From the Equal Employment Opportunity Office and Federal Women's Program Committee)



Mixed Bowling News

By Tom Reiter

News from around the league — Now that **Chris Miller** has taken over the Who Cares things have to improve; **John Bowes** had them bowling at a 7-25 clip. **Sharon Robinson's** Rolling Thunder is using **Jim Palmer** and **Vicky Schwartz** to stay close to the top of their Division. **Helene Goldstein's** Eleventh Frame is getting clutch bowling from her husband **Al** and **Chuck** and **Helen Halko**. At this writing my Red Winos at 29-5 have the best record in the league and lead the A Division thanks to our big man **Mike Dent**. **Linda Stickney** and **Jerry Asip** head up the Nine Pins. Spare Us with **Dick Coughlan** and **Donna Morgan** are holding on waiting for **Bob Bollard** to come back. **Dave Oliver** seems to be the secret weapon of the Les Champignons. **Karen Thomas** is holding the Destroyers together until **Lorrie Dunn** returns. **Bob Geyer's** Alley Cats with **Jack Eyth** and **Patty Aspinall** are the reigning champions and are still tough. **Al Knobloch's** Goofers remain the only team bowling with just two females on their roster; **Lorraine Reidinger** and **Anne Hoyt** continue to be the ironpersons of the league, never miss a night, and are keeping them close to the lead. **Rick** and **Sue Yeager** make it a pleasure to bowl against From The Gutter, they're always smiling. What more can you say about the Warveyhallbangers **Caroline Tierney**? She has class, style, bowls great, and brings buttered popcorn each week. The Magic Markers are hanging tough, waiting for **Jeff Irvin** to break out of his funk. **Lisa Johnson's** Pinheads have got to have

the wildest team in the league. All the noise you hear every week is coming from those two party animals **Larry** and **Queenie Pearson**. The White Winos confuse you by throwing five different people at you each week. It's working; Captain **Rick Eppright** has his balanced attack in fourth place. **Carla Mackey's** Bullshooters have been using **Bill Halpern's** magic pipe to tone down noisy **Mary Williamson**. **Ben Polin** has taken over the Dynamic Duos and must be doing a good job since **Debbie Sztubinski** and **Nick Doto** are always smiling. Though he is retired, **Art Duhaime** still helps those young wippersnappers, the Lucky Strikes. **Jack Horning** and the Screwballs are shooting for a prize this season for being the last team to finish bowling each week. Les Smith's Neiners with **Mark Lind** and **Terry Clause**, besides being in third place, are in the lead for the league's fashion award. **Steve Jerdan's** Falcons have improved immensely with the additions of **Denise Beck** and **Aaron Burstein**. **Bob Casagrand's** Big Spenders could be competitive if they get their schedule worked out, bring out five team members, and less liquid refreshment. The Blue Light Special could use a healthy **Scott Kee**. **Wes Gleason's** Gutter Dusters with **Mary Vaughn** and her Semcor buddies, are in first place and are the team to beat in the B Division.

The season is nine weeks old, we're having lots of fun, and no one has kicked a ball return yet. Both Divisions are still fairly close with everybody looking forward to the first half knockdown night on January 4th.



1988 NADC Football League Champions — The Renegades: Front Row (L-R) — Kevin Birney, Mark Lilly, Steve Hynes, Scott Lassen, and Jeff Lytle. Back Row (L/R) — Glenn Rhodeside, Jeff Price, Scott Holloway and Mike Elser. Missing are Bill Schork and Jerry Costanzo. The Renegades beat the Falloon 19-7 to take the title.

Technical Highlights

continued from page 6

improvements will be realized. The actual cost savings for acquiring the software tools are projected to be approximately \$5.4 million which equates to over a 41% savings over costs incurred by tool acquisition on an individual basis.

CV-ASWM Software Delivered

The CV-ASWM Model 4.2 Mission Software Program was delivered to the

USS AMERICA in preparation for development testing of the Advanced Combat Direction System (ACDS) Block Zero program. Model 4.2 provides improved performance of many current functions on a new Navy Standard Display and AN/UYK-43 computer and provides the added capability of mapping, message management, improved interface with the ACDS and growth capability for future significant features.

In This Issue:

- Rumors are only rumors
- New arrivals
- ASW laser aircraft
- Optical Disk Workshop
- DFS . . . the best

Center outlines characteristics for Navy ATF



Artists rendition of Navy Advanced Tactical Fighter

Photo Courtesy of Lockheed Aerospace

**Michael Kuszewski and
Mary Ann Brett**

Recently, NADC's Navy Advanced Tactical Fighter (NATF) program office headed by program engineer Michael Kuszewski, was tasked by the Naval Air Systems Command (NAVAIR) to develop a preliminary System Definition Document (SDD) to adapt the the Air Force Advanced Tactical Fighter for the Navy's use. The draft SDD is complete and is presently being distributed for Navy review.

Since the Navy has different requirements than those of the Air Force, the Navy defines its own system needs, examines the engineering options and reports on the ability of these options to meet those needs.

Continued on page 6

CFC '89 — a success

By Al Kaniss,

The 1989 Bucks County Combined Federal Campaign is now closed and was once again very successful. The three participants, NADC, the Post Office and Social Security, have thus far combined to contribute over \$125,000, well exceeding this year's goal of \$120,000. More than 80% of NADC's employees demonstrated their generosity by contributing to this very worthwhile effort.

Thanks!

The ethics of procurement

By Jim Garamone

Do we need new rules or laws for procurement in light of the alleged Pentagon procurement scandal?

The answer is "probably not," according to two experts in military ethics.

"I wouldn't say laws are the answer at this point. The Ten Commandments have been around for thousands of years, yet people who profess to believe in them continually break them," said Col. Mal Wakin, the head of philosophy and fine arts at the U.S. Air Force Academy. "It seems that we can make all the laws we want, but if people don't have the ethical background to stick with and obey them, then it really doesn't matter."

Wakin joined colleague Col. Kenneth H. Wenker, the deputy head of the department, in discussing the ethics of procurement with American Forces Information Service

Both men agreed that the ethical climate of the office, company or agency is important. "This isn't limited to procurement, this is universal," said Wenker. "But how do you foster that type of environment?"

This isn't simple. Both men said that supervisors with the same type of training, work experience and similar backgrounds can foster different types of ethical environments. "Management style plays a part in the ethical

environment," said Wenker. "A 'results at all cost' style may encourage unethical behavior."

But whatever the style, an ethical awareness and grounding is necessary because even recognizing an ethical problem is not always easy.

Many commentators have said the

so-called procurement scandal now going on has — as one of its roots — the "revolving door," in which military experts return from active duty and then take jobs with defense contractors. "I don't think you can blame the scandal on that, and I think

Continued on page 6

President's Holiday Message

This holiday season—Christmas, Hanukkah, and New Year's Day—is a time for celebration and joy. Our country has remained at peace for another year, for which we can be grateful. But it is a sad truth that peace can only be maintained by preparing for war.

You, the members of the Armed Forces, stand at the front edge of the readiness that allows our Nation to pause and reflect during this holiday season.

From the days of Valley Forge, our country has asked great sacrifices of its citizens and citizen-soldiers. These sacrifices are felt more deeply this time of year, as some of you spend the holidays away from your homes and loved ones—in many cases, for the first time. I want you to know that I am deeply grateful to you, as are Americans everywhere.

I feel great pride as I look back over the eight years it has been my privilege to serve as your Commander in Chief. You are the Nation's finest. Your patriotism, dedication, and ability to do your difficult but vitally important jobs have enabled Americans everywhere to stand tall—and free.

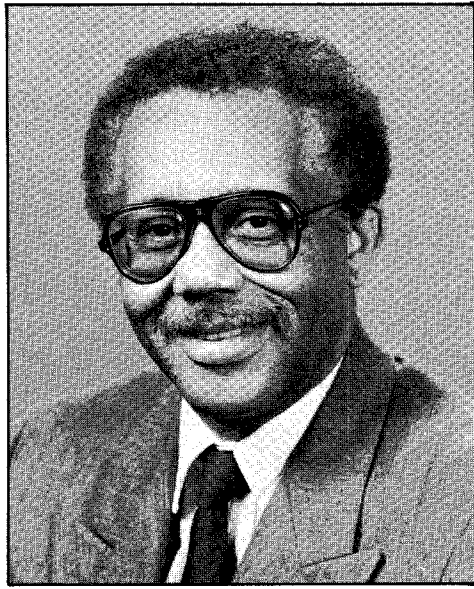
Nancy and I wish you and your families a very happy holiday season, and a peaceful and prosperous 1989. God bless you all.

Ronald Reagan
Ronald Reagan
President

Command Corner



Captain Curtis J. Winters
Center Commander



Guy C. Dilworth, Jr.
Technical Director

To all hands:

Base closure rumors abound

Despite all that has been factually written in the military and general press regarding base closures and realignment, many are still asking the same old question — is the Center on the list?

The answer at this moment is: there isn't any list to be on. Furthermore, no list will be published before the end of December. Until then, we can only take a wait-and-see posture.

I realize the waiting is stressful, but what is important to keep in mind is that those 12 men who are compiling recommendations for base alignment and closures are following a strict set of guidelines. By contrast, those lists on which the Center has appeared in the past were, at best, suspect if not blatantly motivated by ulterior motives of the authors.

I have confidence that the official list presented to Defense Secretary Carlucci will not include the Center and that the matter will be resolved once and for all. This is my Christmas and New Year's wish for all.

C. J. Winters
C. J. WINTERS
Commander

G. C. Dilworth, Jr.
GUY C. DILWORTH
Technical Director

Letter to the Editor

Dear Editor:

Subject: Quality

My first thoughts on reading the November 88 REFLECTOR article *NASEE Software Tool Set* were "This is great. The Contracts Division is proud of the NASEE buy. It was done well and will save some Navy dollars." As I read through the article, I became a bit less enthusiastic. While we have authority to write the full range of contract types recognized by the Federal Acquisition Regulation, "Indefinite Quality Contracts" are not cited in the Reg, nor are they

something that will appear in future. A must in any contract is a specification describing the mini quality product we will accept.

The NASEE contracts are "Indefinite Quality Contracts" allowing us some latitude in the number of items we buy under each contract.

Thanks for the coverage, we appreciate the publicity.

Frank Drummond

To the Manager and Staff of the NADC Cafeteria:

Congratulations and many thanks for a wonderful meal served yesterday, our Thanksgiving Day Special.

While no doubt everyone enjoyed the bargain — I saw lots of people who never frequent the place — the special price was only one of the highlights. The astounding thing was your ability to serve probably more than 2000 delicious meals attractively and hot. It must have taken lots of planning and

coordinated work effort.

We are all prone to be very fast in criticizing, myself included. Yet we are fortunate in having you serve us daily in a most satisfactory manner. This event, of course, was outstanding.

I know I speak for many of us when I say, 'Hats Off' and Thank You.

Ralph E. Seckel

Commander Salutes

John Reeves (Code 70): For major contribution to Chief of Naval Operations brief to the Scientific Advisory Committee of the Defense Intelligence Agency on the Wing-in-Ground vehicle.

LT Richard Erickson: For volunteering time to brief the "Condors" of VP-64 on the Soviet laser threat.

Patrolman Michael Deginto (Code 04): For diligence in discovering a leak and taking necessary action that precluded more extensive damage to valuable laboratory and electrical equipment.

Diane Heal (Code 09): For assistance to the Naval Ship Systems Engineering Station's new Small Business program.

Walter Werner (Code 60): For expert assistance to the Marine Corps in identifying and cataloging a large number of artifacts in the personal survival gear for their historical program.

LCDR Brian Gritte, Dennis Baker, Michael Kijesky, AW1 Raymond

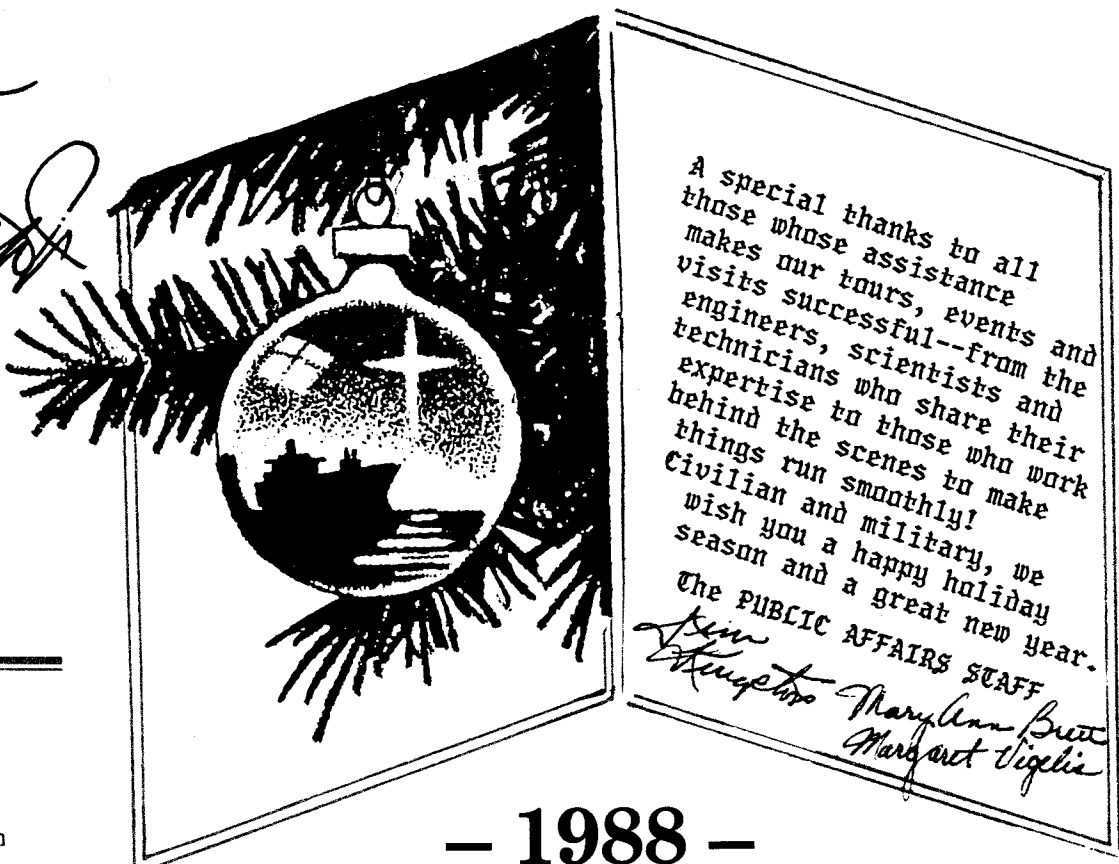
Gottry, AX1 Douglas Kallman, AW2 Minor Morris, LCDR Richard Hudson, John Shannon (Code 10): For significant contribution to AIRTEVRON ONE's Operational Assessment of the Long Range Air ASW Capable Aircraft.

Kathleen Gause (Code 03): For participation in the Philadelphia Area Navy EEO Council's Seventh Annual Manager's EEO Training Forum.


AW2 Paul Benn (Code 10): ETCS James Waterman, PR1 Robert Elliott, HMC Duane Murray, HM3 Joseph Kailis (Code 60); Carl Pierce (Code 80); AD2 Howard Kritzberger, AMH2 Dean Countz, AD2 Troy Harden, AY1 Don Jernigan, AO1 Julian Boddie, AME2 David Blood, AMS3 Thomas Smith, ACAN Deidre Wilkerson (Code 90): For participation in this years' National Disaster Medical System exercise.

Joseph P. Notaro (Code 60): For support to the Naval Air Test Center on their Compliance Review Evaluation of the F/A-180 Crew Station Lighting System.

Continued on page 6



- 1988 -



Reflector

NAVAL AIR DEVELOPMENT CENTER, WARMINSTER, PA.

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Commander, NADC	CAPT Curtis J. Winters
Technical Director	Guy C. Dilworth, Jr.
Public Affairs Officer and Editor	James S. Kingston
Associate Editor	Mary Ann Brett

Cox heads Test and Eval



CDR Richard Cox

By Mary Ann Brett

Twenty year Navy veteran CDR Richard Cox recently assumed the duty as Head of the Test and Evaluation (T&E) Group replacing CDR "Butch" Henke.

Cox, whose experience has been concentrated on the operational Navy, said, "working in this research and development environment is certainly unique." He explained, "In the operational Navy, you often respond to an already existing situation where circumstances in many ways dictate your actions. Here, we create our own situations allowing for much more flexibility in how we respond."

T&E, feels Cox, is involved in almost every aspect of the Center and simultaneous management of all the independent requests from each of the departments is quite a challenge. Included in his group are: the NADC

Key West detachment, the Fire Department, airfield operations, aircraft maintenance, test resources and planning and flight safety certification.

During his Navy career, Cox' duty stations have included the Naval Air Station (NAS) Bermuda, NAS Jacksonville, FL, Armed Forces Staff College, Norfolk, VA, Readiness Command and Joint Chiefs of Staff, Tampa, FL. "I enlisted in the Navy, expecting to go to Vietnam," he said, "but they sent me to Bermuda instead."

Cox has set some goals for himself. "Since many of our products don't transition directly to the Fleet, I'd like to make the Fleet more aware of how impressive NADC is. We have some fantastic projects going on."

Another of his goals is to spend more time in the cockpit because, he said, "I love to fly."

Officers reassigned

According to Chief Staff Officer CAPT Roy Murphy, several officers will either report for duty or be reassigned during December. The transfers look like this: CDR Richard Cox will replace CDR "Butch" Henke as the Head of the Test and Evaluation Group (Code 90); Henke will replace LCDR David Cornell as the Air Operations Officer (Code 91); LCDR Douglas Walters will replace CDR Richard Feierabend as the Mission Avionics Technology Department Deputy Director (Code 50A) and Cornell will replace Walters as the Fleet Interface Officer (Code 30D).

Washnock settles in Public Works



LCDR William Glenn Washnock

By Mary Ann Brett

"Today my biggest challenge may be the snow," said laughing LCDR William Glenn Washnock, new Public Works Officer, on a day when two inches of white powder was predicted.

Scheduled for duty here at the Center from August 1988 through 1991, Washnock sees his biggest challenge as catching up on the backlog of maintenance requests — a task, he says, the Chief of Naval Operations has set a realistic goal of 1994 for completion.

Washnock attributes part of the backlog to the age of the facilities and also to undermanning of Public Works which he considers a Navy-wide condition. He said, "Even though low manpower has been supplemented by contractors, we can't turn contractors on and off at our convenience as we could our own civil service workforce."

Addressing another challenge, Washnock stated, "many projects here at the Center require fast, if not instant, response time and Navy facility systems just aren't set up that way. The system is purposely set up to make it hard to spend the government's money."

He continued, "Sometimes it's frustrating to know world renown scientists really need something, need it now, and I just am not able to give it to them."

My advice to Center personnel is to let us know as soon as possible when our help is needed. Often, long lead times are necessary and the more notice we have, the better.

Washnock who has a bachelor's degree in Mechanical Engineering and a master's degree in Thermal Systems, has been stationed at the Naval Air Station (NAS) Memphis, TN; NAS Pensacola, FL; NAS Whiting Field, Milton, FL. He attended the University of Illinois and was subsequently assigned to Clark Air Base, Philippines; the Naval Hospital Bremerton, WA; and the US Naval Academy, Annapolis, MD where he taught Engineering.

Washnock, his wife Alexis, and their daughters Joy and Heather have settled in Warminster.

New ombudsman from PA

By JO2 Todd Lufkin

"My biggest goal will be keeping the Navy families happier," stated Amy Levault enthusiastically, "they need a sense of community; of belonging. I would like them to get more involved in Center functions." Amy is NADC's newly-appointed ombudsman.

Married to AT2 Bradley Levault for five-and-a-half years, Amy laughingly admits they were high school sweethearts when they were growing up in Spring Grove, Penn.

So far in their married life she and her husband have been stationed at the Naval Air Stations in Brunswick, Maine; Jacksonville, Fla.; and Memphis, Tenn.

She wanted to serve as the Center's ombudsman because it would give her an awareness and knowledge of the Navy that she wouldn't receive simply being a dependent. "In a very brief time I've learned quite a lot," said Levault.

The mother of 2-year-old Emily, Amy feels it would be okay if her daughter wanted to join the Navy—"It hasn't been too bad for us and she could do much worse with her life."

Levault feels her main obstacle will be getting the Navy wives to know and trust her. "I'll have to present myself to them as often as possible," she said "and trust is something that develops and a person earns. But I don't really

foresee any problems." She quickly adds "I'm available all the time — I have an answering machine and will return any calls I might receive if I'm out — so call me at 672-4126, even if you don't have a problem."

The Levaults are expecting their second child in April and will be on Center until mid-1991.



Fourth quarter '88 galley awards presented

— Chief Staff Officer CAPT Roy Murphy (center) presents the Fourth Quarter (July-September 1988) Galley Awards for outstanding performers to sailor MS2 Arthur Mason and civilian employee Chirstina Middleton. The awards were presented to these Food Services Division personnel during an early morning breakfast ceremony.



Ombudsman Amy Levault and Command Master Chief Nelson Williams discuss upcoming events.

Laser Research P-3 readied

By Dan Lorch

The Navy now has a new research aircraft courtesy of the Center's Design Engineering Branch (6011) and Electrical and Structural Shops (811). This new aircraft enables NADC to stay in the forefront of applied laser research and development.

It required approximately one year and the combined efforts of more than fifty dedicated NADC personnel to complete this unique research vehicle. A year ago P-3A #152150 was baking under the hot Arizona sun providing shade for coyotes and rattlesnakes. It was retired along with other Navy aircraft stored at Davis Montham AFB. In 1987 the aircraft was reactivated and flown to NADC for extensive overhaul and redesign so it could be used by the Center for ASW laser research projects.

All the navigation and communication equipment had to be replaced with new avionics. This was done under the direction of Dick Dietrich. I was the Lead structural engineer in charge of gutting the aircraft interior, restructuring the floor to support 5000 pounds of research laser equipment, and designing four large windows into the aircraft belly. These windows provide 21 square feet of observation area for a variety of cameras, sensors, and laser equipment, making this practically a 'glass-bottom' aircraft.

All of this structural redesign had to be analyzed by Jim Marron of the Structural Design & Analysis Branch to assure it was structurally adequate.

The electrical system was engineered by Jerry Duley. His design provided the electrical power for all the complex lasers, coolers, and recording devices.

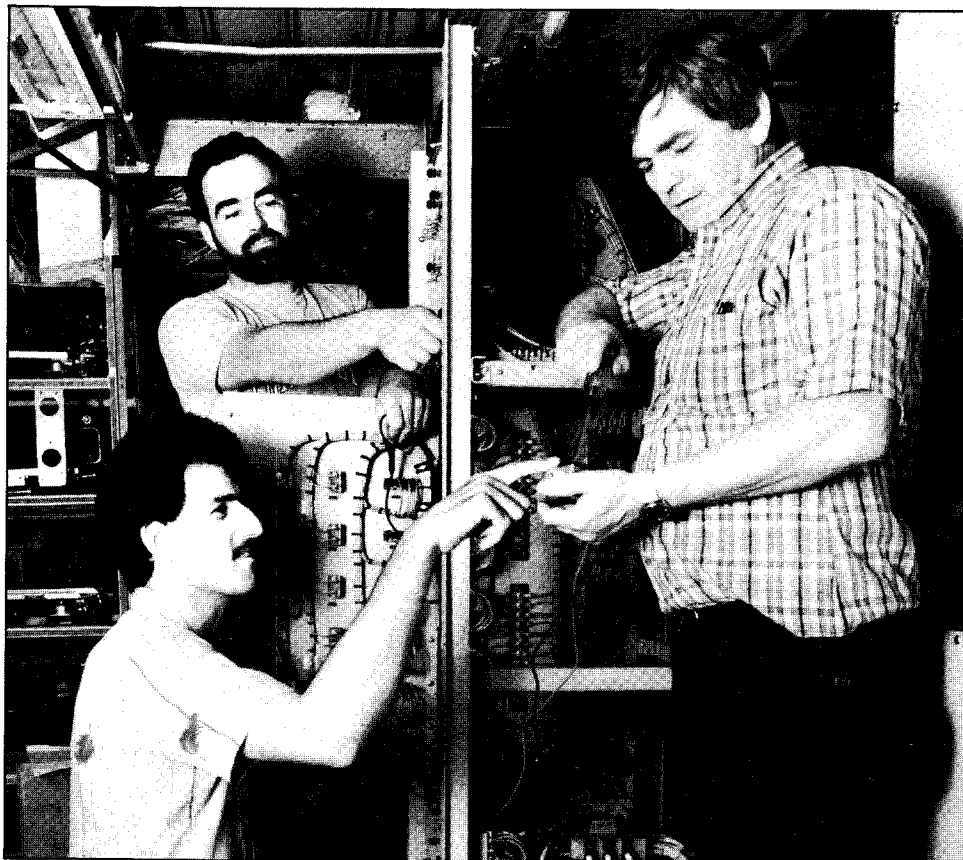
We depend on the nique talents of men like Rod Pursell to provide over 600 square feet of interior upholstery. Rod normally works on the design and modification of aircrewman life support equipment! And everything which Rod did not recover was given a bright new coat of paint by Harry Cain.

And all of these complex designs needed to be fabricated and installed aboard the aircraft. Every bit of this work was done within the Center's own shops. The extensive rewiring and the structural modifications are so professional the aircraft looks it rolled fresh off the production line.

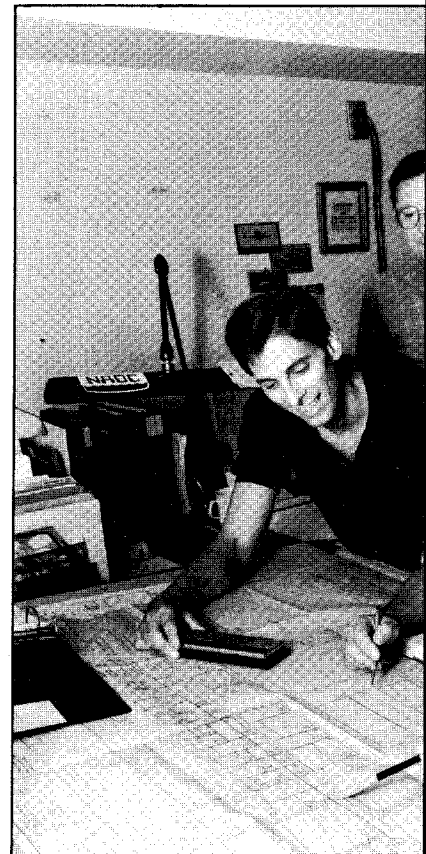
This is actually the fourth testbed aircraft designed by NADC the past few years. We now have aircraft specifically designed for; (1) acoustical ASW research, (2) airborne to submarine laser communications, (3) Synthetic Aperature Radar research, (4) ASW laser research.



OUT OF MOTHBALLS — This P-3A was selected from its Arizona desert location for renovation as NADC's new ASW



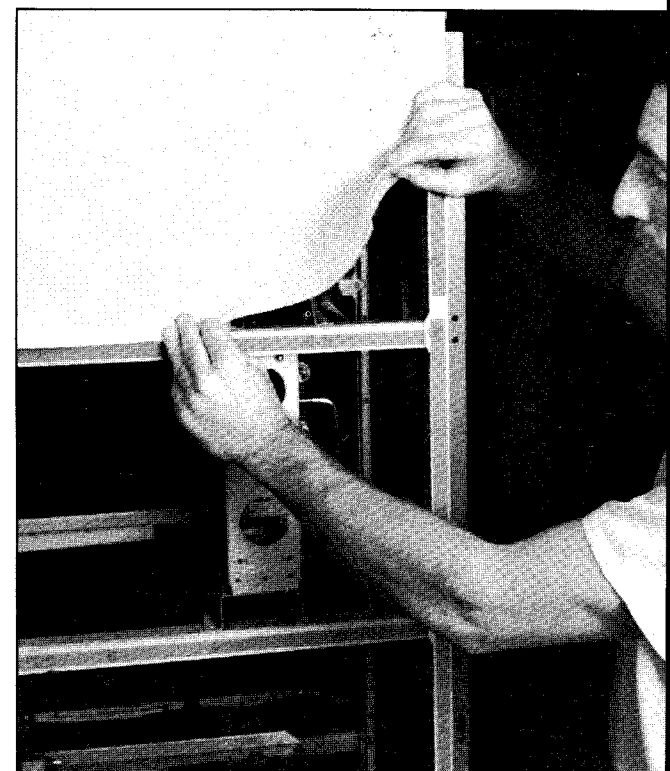
CHECK IT OUT — Mike Doncevic, Dave Torr, and Phil Huber check out their installation of the electrical power control center.



PLANNING STAGE — Paul Lubie and Clarke review some of the P-3 m



WIRED IN — Tom Haug and Jerry Duley watch Phil Huber put their electrical design into practice as he wires the P-3's control panel.



DRESSING UP — Rod Pursell checks the fit of aircrewman life support equipment on the revitalized P-3.



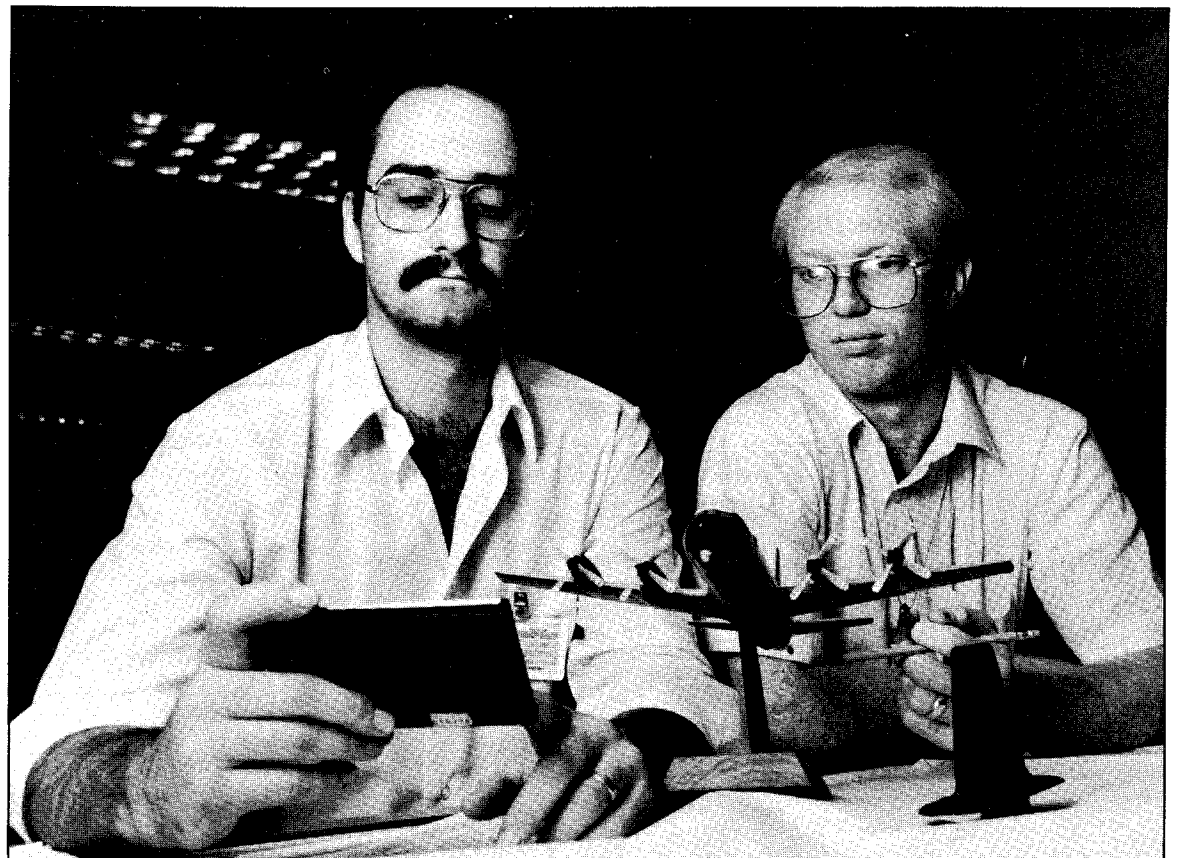
er research testbed aircraft.



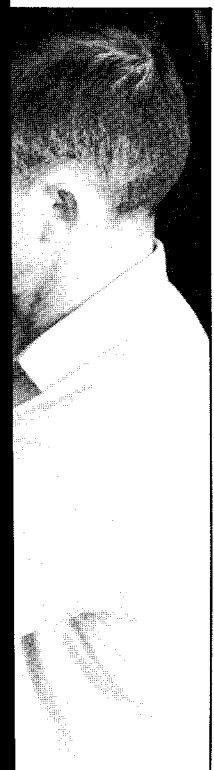
LOOKIN' UP — Jerry Duley, Dan Lorch, John Duvall, and Jim Lezoche examine one of the four belly windows of the ASW laser research aircraft.



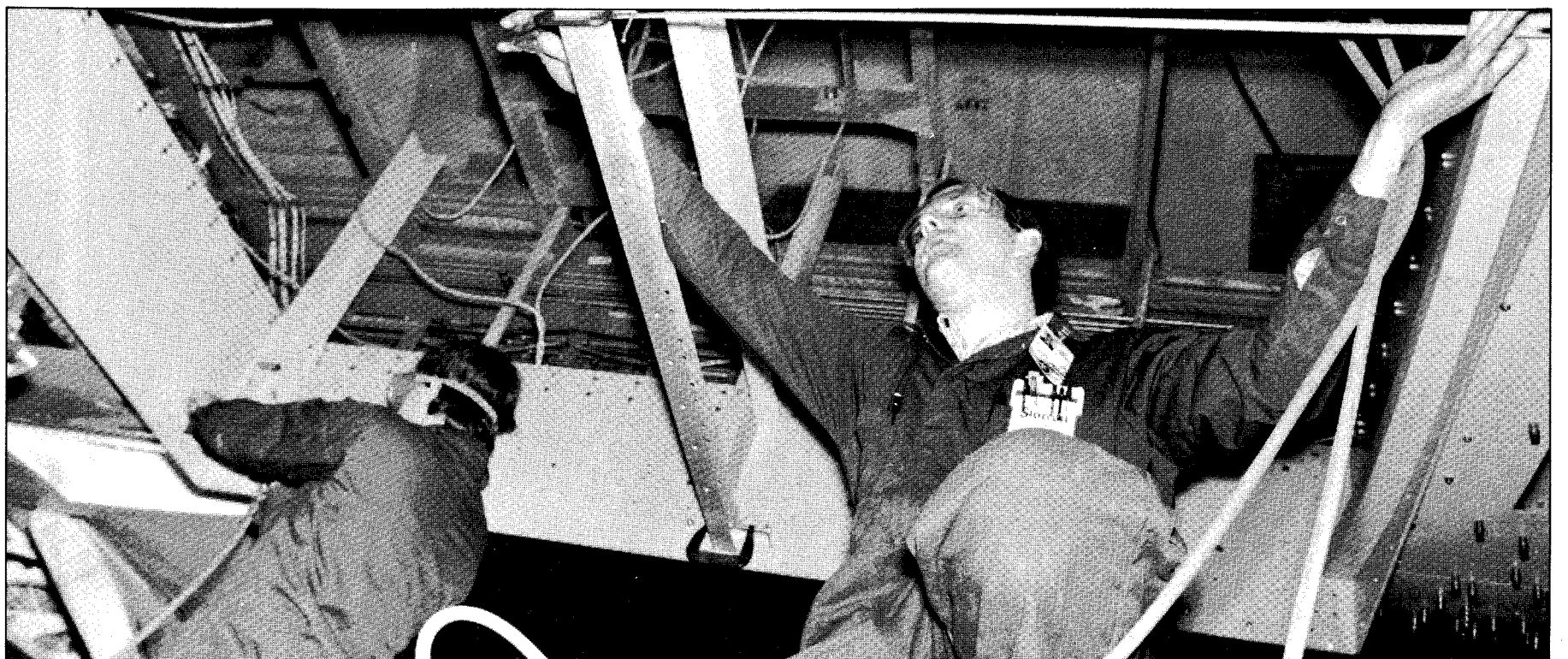
ki, Bernt Vurlicer, Sam Sizgorich, Mike Lavin, and Harvey calculations.



IT ADDS UP — Steve Troyanoski and Pat Clausius recheck some of their calculations.



pholstery on



MEASURES UP — Mike O'Neill measures dimensions of the framework for installation of four windows in the belly of the ASW laser research P-3.

Center develops requirements for Navy ATF

Continued from page 1

The NATF SDD is an interim Navy document representing what the system is expected to achieve. NAVAIR anticipates the SDD will be used as a starting point for the official Operational Requirements (OR) development and a Full Scale Development specification. Also, the SDD can be used to define areas where the NATF must differ from the ATF for Navy needs.

The SDD represents the efforts of a

small ad hoc committee working within a tight schedule. This committee, including NADC's Walter Beamer, Al Blumenthal, Jack Eyth, Fred Kuster, Rich Mezzak, and Terry Miller, was chaired by Nicholas Onorato of TACAIR's Analysis Division. Early in November 1988, an Air Force team briefed the NATF team on its entire requirement process, updates, and the rationale for ATF requirements. Then, a Navy workshop

was held which produced broad Navy inputs into the process. This workshop was attended by representatives from NADC, CNO, NAVAIR, TOPGUN, Strike U, the Naval Weapons Center, the Pacific Missile Test Center, the Naval Air Test Center and squadron personnel.

The SDD was then completed on 1 December 1988 and is now being reviewed by NAVAIR and workshop participants.



Ethics in gov't procurement

Continued from page 1

it would be a mistake to try to legislate an end to it," said Wakin. "Let's say you have the best F-16 pilot in the world and he retires from active duty. No one knows the system like he does. Are you going to deny his talents to the country? Are you going to tell him that he can't make a living out of his skills?"

Wakin said if a company hires the man because of his technical expertise and that gives the company an edge over its rivals, then that would be fine. "If they hire someone because he knows who to bribe or solely because of his contacts in the procurement field, then there is an ethical problem," he said.

Fairness can mean a number of things. In procurement, according to Wakin and Wenker, the most important aspect is probably a fair decision procedure. "If the decision procedure is fair, then the outcome is irrelevant," said Wenker. "In the contracting business, as long as it is a fair procedure, then justice is preserved. What happens is that people go under the table and circumvent the procedure. Then it's unjust."

Wenker said that even contracting officers who subvert the procedures for all the right reasons — they want to eliminate bottlenecks, or they want to ensure a company with the means to do the job gets it — are still performing an unjust act.

The allegations and the accompanying proposals for changes remind Wakin and Wenker of talk in the 1950s and early 1960s of the

military/industrial complex and its influence on government. "No one doubts that an (industrial) complex is needed, and no one doubts that relations between the military and industry must be on an ethical basis," Walkin said. "It all goes back to hiring ethical people and giving them an ethical atmosphere to work in."

"All facets of society are confronting ethical problems," Wenker said. "In the

military, we teach (and we have since the mid-1970s) all officers to guard against ethical problems. For the last 15 years, business schools have been stressing ethics. Law schools, medical schools, corporations and government agencies at all levels are stressing ethics more than they have in the past.

"They have to. We all have to prepare (our people) for ethical challenges," Wenker said.

Commander Salutes

Continued from page 2

LCDR P. Hogan, LCDR N. Padula, G. Lange (Code 10): For contributions to the National Security Industrial Association's Antisubmarine Warfare (ASW) Module subcommittees of the Battle Group ASW Information group.

Kathleen Gause, Lois Savage, Robin Halperin, Nancy Jordal, Marie Lane (Code 30): For efforts in making the Philadelphia Area Navy EEO Council's seventh annual Manager's EEO Training Workshop a success.

Lt. Brian Bennett, ETCS James Waterman, PRC Michael Patterson, HMC Duane Murray, PR1 Robert Elliott, HMI David Edwards, HM3 Joseph Kailis, HM2 Mark Butler, HM3 Somchai Williams, HM3 Elvin Santiago, HM3 Luke Maxwell, HN James High (Code 60): For assistance to Northrop in testing their Advanced Fighter Crew Protection System.

LT. Richard Erickson (Code 60): For the LASER briefing to the Tactial Training Team of VP-64.

Elliott Ressler, Leon Smith (Code 40): For outstanding performance during the Microwave/Millimeter Wave Monolithic Integrated Circuits program evaluation proposals.

Sydney Oliver, Armando Gaetano, Gwynne McConnell (Code 60): For assistance to the Naval Aviation Depot during their recent Product Oriented Survey.

AFCM Nelson Williams, AE2 Adelio Tregia, AT2 Bradley Levault, AT3 John Twiest, AZAA John Lefurge, for assisting with the Naval Air Propulsion Center Change of Command.

Gerald Pirrung (Code 50): For efforts as Workshop Chairman to the TTCP Technical Panel STP-8.

John Cunningham (Code 50): For participation on the engineering team working in the bench integration of the AN/ALQ-162 jammer and CF-18 electronic warfare suite.

Joseph Laska, Dr. John Smith, Francis Mulholland, Sideny

Laser research P-3 readied

Continued from page 4

Hundreds of drawings and engineering orders were required for this project. These essential details were performed by skilled engineers and designers like Harry Frost, Barbara Potts, John Davis, and Tom Haug.

Security Reminder

DOORS—Exterior doors are locked at the end of each work day and all day on Saturdays, Sundays and holidays to reduce the opportunity for unauthorized entry to those who might want to damage or steal material, property or equipment. Interior doors to offices and labs should be locked during the regular working day if they access "restricted areas" or when an office or lab is vacated by all employees as frequently happens at lunch time. This will reduce the possibility of theft or damage to equipment, material or personal property. Doors that don't secure properly because of warping, damaged hinges, damaged closures, or faulty locks should be reported promptly to Public Works.

Technical Highlights

Airborne Low Frequency Sonar

NADC completed the baseline evaluation of the Gould-Fathom-Plessey candidate for the airborne Low Frequency Sonar (ALFS) Advanced Development Model (ADM) program. The evaluation included measuring: 1) transmitter source level as a function of pulse shape, length and frequency; 2) system horizontal and vertical beampatterns; 3) transmitter endurance; 4) system minimum detectable signal; 5) system range and bearing accuracy; and 6) sonar winch performance. This is the second of five candidate systems that will be evaluated this fiscal year.

Aircraft Structural Life Surveillance

NADC completed the following tasks under the Aircraft Structural Life Surveillance (ASLS) program: 1) provided 19 counting accelerometer groups (CAGs) as government furnished equipment to Beech Aircraft Company to support PMA-200 T-34 aircraft delivery schedule; 2) conducted ground tests of CAG systems installed in 7 F-14A aircraft at NAS, Oceana, VA. Appropriate corrective action taken to correct malfunctioning system; 3) provided NAVAIR with extensive F-18 flight loads data on assymetric maneuvers for design criteria study. Initiated the

development of bivariate loads spectra (i.e. normal acceleration vs roll rate) for various mach number/altitude range; 4) completed a study of Blue Angel F-18 flight loads data and defined the effect on structural fatigue life expenditure rates by replacing negative three g maneuvers with positive six g maneuvers; 5) completed and issued the October 1988 F-18 Fatigue Life Tracking Report. This publication is now update quarterly (was semi-annual); and 6) completed the Navy Aircraft Integrity Program (NASIP) documentation report.

Continued on page 8



Photo by Jim Kingston

All aboard — the first "scenic NADC bus tour." This riding tour of the Center's grounds along with general viewing of the NADC overview video tape is part of an Equal Employment Opportunity Committee (EEOC) initiative. EEOC Chairman, Tim Armstrong (far right) welcomes the early arrivals. Public Affairs Officer Jim Kingston narrated the tour.

Commander Salutes

LCDR John Bramer, FLTLT Alex Danischewski, RAF, Stan Dunn (Code 10): For supporting the upgrading of the Royal Australia Air Force P-3C Fleet.

Daniel Carbo, Gino Lostracco (Code 30): For support to the AN/ALE-47 Countermeasures Dispenser System Source Selection.

Anthony Madera (Code 50): For selection as the American Defense Preparedness Association 1988 Special Achievement Award winner.

John Cyrus (Code 60): For a briefing to the Naval Reserve Unit NR-NAVAIRSYSCOM 0993 on the T406-AD-400 engine for the V-22 aircraft.

John Savage (Code 50): For contributing to the increasingly successful utilization of the VLAD sonobuoy by the Fleet.

Sharon McKay (Code 80): For nomination for the Military Traffic Management Commands Annual Award for "Excellence in Traffic Management."

Christmas Safety Tip

As a fire prevention measure, after presents are opened, keep wrapping paper from fireplace and tree area. Ignited wrapping paper can cause a flash fire.



Optical Disk Workshop to be held at NADC

The advent of Optical Disk technology not only has created a new media to be explored and developed within itself, but has 'broken down the doors' and has eliminated many obstacles in the way of immediate end user applications, both commercially and in the military. Optical disks are real! The technology is here! Fully militarized optical disk drives will be incorporated into platforms in the next year or so!

How to best utilize the potential of Optical Disk Technology is the subject of this workshop.

TOPICS FOR DISCUSSION INCLUDE:

- Optical Disk—Computer Peripheral or Data Recorder?
- Optical Disk—Capacities and Limitations
- Optical Disk Access Times—System Architecture Alternatives
- Data Verification—Time and Techniques
- Date Integrity—What Happens When the Disk Hiccups?
- Disk Write time—How Long Does It Take to Load?
- Optical Disk Standards—Physical, Logical, File ... None
- Optical Disk Types/CD-ROM, WORM, OROM, Erasable ...
- Optical Disk Operating Systems—MS-DOS Extensions, OS-2 ...
- Optical Disk Data Formats—CLU, CAU, MCAU ...
- Graphic Storage Formats—Raster, Vector, Compressed ...
- Optical Disk Interface—SCSI, MIL-STD 1553, Fiber-optic ...
- Optical Disk Application Areas—Documentation, Digital Maps ...
- Optical Cards and Tape—Applications, Limitations, and Future
- Date Base Bottleneck—Collection, Organization, Structure

PLACE: NADC
DATE: 7, 8, 9 FEB.
TIME: 8:30-1600

For more information on attendance call: Roman Fedorak, (215) 441-1278
Ron Kushnier (215) 441-1624

Energy conservation means savings

By Michael Blank

There are several operational methods, techniques and procedures than can be used to conserve energy in residential homes. Basically these systems include: Building Envelop System, Heating and Air Conditioning System, Lighting System, Water Heating System, Appliances System and Landscaping System.

The following cost energy savings analysis addresses two major systems:

COST ENERGY SAVINGS ANALYSIS

Building Envelope System

- | | |
|---|--------|
| 1. Lower interior temperature | 5-10% |
| 2. Reduce water temperature | 15-30% |
| 3. Close unused rooms | 2-8% |
| 4. Use curtains and drapes | 3-7% |
| 5. Install flow restrictors & aerators | 20-30% |
| 6. Install ceiling insulation & attic vents | 20-30% |
| 7. Caulk & weatherstripe complete buildings | 7-10% |
| 8. Install roll plastic inside storm windows | 6-10% |
| 9. Install reflective films & curtain liners | 10-20% |
| 10. Install floor or basement sill insulation | 5-10% |
| 11. Install wall insulation | 10-20% |
| 12. Install storm or thermal doors | 1-2% |
| 13. Install storm or thermal windows | 6-10% |

Heating and Air Conditioning System

- | | |
|--|--------|
| 1. Install clock set-back thermostat | 4-12% |
| 2. Tune heating system | 3-18% |
| 3. Seal and insulate ducts | 5-15% |
| 4. Seal and insulate pipes | 2-7% |
| 5. Replace inefficient home heater | 5-15% |
| 6. Install pilotless ignition for gas heating | 2-4% |
| 7. High efficiency air conditioner replacement | 10-25% |

Building envelope, and Heating and Air Conditioning.

According to the Government's Energy Council these potential savings were calculated for improvements to a "standard" 1500 square foot, two story Pennsylvania home.

The following cost energy savings analysis addresses two major systems: Building envelope, and Heating and Air Conditioning.

According to the Government's Energy Council these potential savings

were calculated for improvements to a "standard" 100 square foot, two story Pennsylvania home.

The potential savings may vary depending on the size and type of home, the amount of window area, age of building and the amount of insulation.

Please note: The savings potential shown are not cumulative. They cannot be added up because as your reduce the use of energy by improving efficiency additional savings must be calculated on the reduced use.

Another practical approach to save energy and lower electrical bills is planting evergreens and shrubs next to the house and particularly around the foundation wall. This natural insulation reduces air infiltration and conductive heat loss during winter time, improves your landscaping and increases the value of your home.

Worth Repeating

"One reason I don't drink is that I want to know when I'm having a good time."

—Nancy Astor, British politician

Planned your vacation yet?

To help with all of your personal travel arrangements, call SATO Travel, ext. 2729, Mon. thru Fri., 8 AM to 4 PM.



DFS program: "One of the best"

By Jim Kingston

Hundreds of the Navy's top guns — fighter-attack aircrew members have been reporting to the Naval Air Development Center (NADC) directly from their carrier squadrons to increase their knowledge of acceleration stress and "fly" the Center's Dynamic Flight Simulator (DFS) — the human centrifuge. The training consists of two parts: G-awareness instruction and centrifuge exposure. "G" is the normal force of gravity. From 10 to 15 pilots are trained daily. They measure their own tolerance to $+G_z$ — a seat-of-the-pants G-force that pushes the pilot down into his seat. The DFS exposures require the pilot to "fly" to $+9G_z$ for 15 seconds at a G-onset rate of 4 to 6 G's per second while tracking a 'bandit' aircraft. Physiologically, this equates to a 200-pound pilot becoming a 1600-pound behemoth in about one second. The heart labors to pump blood the equivalent of molten iron to the brain to maintain vision and consciousness. The experience usually

leaves the pilots totally exhausted. They all develop a severe case of 'high-G measles' — large areas of small capillary hemorrhages over the arms, back, and buttocks. About 10% of the pilots lose consciousness during one of the exposures.

"The centrifuge training are is was pretty strenuous, but well worth it. It greatly increases your confidence in your ability to pull G's." said one A-18 pilot.

The NADC aircrew training is part of an even bigger Navy G-TIP. The Navy program is aimed at designing, building, and installing two training centrifuges. The Center's G-TIP not only trains fighter aircrew, but is also a vital part of developing the curriculum and training technical personnel who will man the new centrifuges. "We are making sure the best training facilities will be built for our naval aviators. By training personnel now who will run the future facilities, we are ensuring they hit the ground running." said LCDR Tim Singer. Singer heads the



Pictured are some of the fighter pilots who have experienced the DFS (Lower left, our own Dr. James Whinnery.)

Human Factors and Protective Systems Division and the Center's team working on the Navy G-TIP.

Although not patentable, the Center's program is as much a product of the Human Factors research and development as any piece of hardware. "This product may actually enhance the combat capability of our fighter

pilots as much or more than any piece of hardware."

An F/A-18 pilot probably said it best. Following his run in the DFS and observing a firing of the Ejection Seat Test Tower, he remarked, "You guys here at NADC are really working hard on the things we need . . . the things we need to survive in combat."

Technical Highlights

Continued from page 6

The Escape Systems Branch completed the second phase of Ejection Tower testing of the F/15/F-16 Oxygen Hose and the Communication Cord quick disconnect assemblies for the Air Force's Tactical Aircrew Eye Respiratory System program. Six, 14G shots using the 5th and 905th percentile Hybrid III dummies were conducted to evaluate the safe disconnect and reaction forces of the disconnect assemblies during dynamic ejection conditions. The testing resulted in no failure of the disconnect function and no undesirable hose routing or hang-ups with the TAERS system.

LRAACA Competitive Award Determined

The Center concluded extensive planning, evaluation review and requirements development which enabled NAVAIRSYSCOM to select a contractor for the development of a Long Range Air ASW Capability Aircraft (LRAACA). A sustaining engineering contract was awarded in November 1988 to Lockheed with the development contract expected to be awarded in December after formal approval by the Defense Acquisition Board. The result will be an extended mission duration, higher capability ASW platform which will eventually replace the P-3 aircraft as we know it today.

First ERAPS Program Review Held

The initial Program Reivew for the Expendable Reliable Acoustic Path Sonobouy (ERAPS) program was held. ERAPSCO, a limited partnership of Magnavox and Sparton, was the recipient of a \$23M contract award from NAVAIRDEVEN in July of 1988 for a 4-year ERAPS development. The ERAPS is expected to provide the

Navy with a long range active acoustic detection capability in most ocean areas.

NADC prototypes successfully deployed

NADC assisted with the C-2A air dropping of SEALS cargo and personnel flight test. As the lead activity we designed and prototyped the roller system and the pallet. After a series of smaller pallet drops, our pallet loaded with a Combat Rubber Raiding Craft (CRRC) package weighing 2500 lbs. accompanied by eight jumpers successfully deployed from a C-2A. The SEAL team unpacked the CRRC and returned to shore under their own power.

Self-primer nominated for DoD award

The self-priming (Unicoat) development has been nominated for the Secretary of Defense productivity award. All demonstrations of this material on fleet aircraft continue to produce positive results. The uniconat applies to F-14 on the USS Kennedy and the 3 H-3 helicopters at Pensacola is performing well with fewer problems in service than the conventional system of primer and topcoat.

OV/10 ejection seat tests completed

NADC completed 6 dummy haulback test with the OV-10 ejection seat at the

Center Horizontal Accelerator Facility. Three of the tests were conducted using the actual seat ballistic activation system, and 3 tests were conducted using an NADC designed pneumatic system that accurately simulated the ballistic system. These were follow-on tests to those conducted at NADC in September 1988, at which time the OV-10 release cable failure was successfully recreated. Based on the results of the first test series, NAD Cherry Point (OV-10 Ejection seat CFA) requested NADC to test another cable design. These six tests produced no cable failures, demonstrating the adequacy of the latest cable design to prevent seat/man separation failures.



Mixed Bowling News

By Tom Reiter

Congratulations to our Thanksgiving Turkey Shoot winners. Last year's female winner repeated this year — **Linda Stickney** saved Rick some more holiday money by taking home another gift certificate. Despite some tough competition, Linda bowled a two game high series of 463. **Mike Robinson** also had a great night, copping a bird with a two game total of 476.

In other bowling news there were two outstanding efforts accomplished outside of our League that deserve recognition by the Reflector. A pair of Purdue graduates turned in professional bowling performances. In the NADC Tuesday night Men's League, **Steve Jerden** started the night rolling eleven straight strikes, had a decent hit on his twelfth ball, and

ended the near perfect game with a 298 score. Most of us would have been done for the day, but Steve followed that with a 230, and finished the night with 24 strikes and a 720 series. **Wes Gleason** also almost made history competing in an outside League at Levittown Lanes. Wes struck in his first nine frames, came up in the tenth admitting that the pressure was awesome, but continued with his twelfth straight. Again perfection eluded NADC when he settled for a 296. Congratulations to **Steve** and **Wes**, we all know that a 300 game is one of the most remarkable individual feats in sports, and coming that close had to be thrilling for them and for their teammates.

We wish to extend **sincere holiday greetings** to all our bowlers and readers of this column. May you all have a safe and happy holiday season.

Alcohol Abuse

Alcohol is a "downer" drug. It depresses the central nervous system and can cause slowed reactions, slurred speech and unconsciousness.

Drunk Driving Facts

American Forces Information Service

Twenty-six billion dollars. That's how much drunk drivers cost America every year, according to a congressional joint resolution designating National Drunk and Drugged Driving Awareness Week, Dec. 11-17.

Other statistics on alcohol-related crashes from the U.S. Department of Transportation:

- Two out of five Americans will be involved in an alcohol-related crash at some point in their lives.
- Approximately 50 percent of all traffic fatalities occur in alcohol-related crashes. That means more than 23,000 lives are lost every year in alcohol-related crashes.
- About two-thirds of all people killed in alcohol-involved crashes are drivers or pedestrians who had been drinking, while one-third are innocent victims: drivers or non-occupants (primarily pedestrians and cyclists) and passengers in either vehicle.
- Between midnight and 4 a.m., about 80 percent of drivers killed have been drinking.
- Drivers between 16 and 24 have twice as many fatal crashes per mile driven as older drivers. When alcohol is involved, the fatal crash rate of these drivers is almost three times greater than that of older drivers. 🍷