

The Reflector

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Naval Air Development Center, Warminster, PA

January 1983

School Students Send Aid to Tornado Victims Via NADC



NADC flight crew pose with relief material sent by Unami Jr. High.

The Public Affairs Office receives many requests for assistance, information, photographs and other material, but recently a unique request for help brought to mind just how caring and loving people can be. Jack Hall, a teacher at the Unami Junior High School, called NADC's Public Affairs Office with an idea that he needed help with. He said that he wanted to get his students involved in helping people out during the holidays. What he had in mind initially was a drive to collect cookies and distribute them either to the Marines stationed in Lebanon or to the victims of the floods and violent weather in the Mid-West. He called NADC to see if the Center could somehow assist with the transportation arrangements.

was scheduled at Scott Air Force Base in Missouri. A quick call to the Public Affairs Office at Scott confirmed that a town near there had been hit by a tornado and was in need of help. Next a call to the town, New Baden, Illinois, was made to let them know that the cookies were on the way. During the conversion it came out that the town also needed other things. The Mayor said that the townspeople needed personal items like toiletries. This information was passed back to the Unami students, who filled about forty boxes with cookies, personal items, canned goods and clothes.

On Monday 20 December a group of students from Unami and Hall arrived at NADC to help load the P-3 with the cargo for New Baden.

Since Lebanon is not on the beaten path it was decided that the Mid-West would be the target for the cookies. Now what was needed was some type of transportation. It just so happened that on 21 December NADC had a training flight going to the West Coast and a refueling stop

Many boxes of cookies and other items were sent to the people of New Baden, people who lost everything before the holiday season. With the gesture of good will that was sent by the students of Unami Junior High School the people of New Baden had to know that people felt their plight and answered with kindness.

Artificial Intelligence Technology at NADC

As we all know, the age of computers is dawning.

More and more of the daily routine is being taken over by the magical machines. As computers become more sophisticated they will acquire the attributes of human intelligence. Artificial Intelligence or AI, is the science of having machines engage in activities that normally require human intelligence. The concern of AI researchers is to get computers to emulate such unstructured and vaguely defined mental operations as speculating, reasoning, inferring, hypothesizing, drawing conclusions and making logical guesses.

To help introduce the technology of Artificial Intelligence to NADC personnel, Dr. Rudolph A. Stampfl and Dr.

Mort Metersky of the Systems Directorate decided that it was time for a briefing. The meeting will be held in the Center's auditorium on 21 January. Both men feel that it's time to start integrating Artificial Intelligence into the Center's R&D process. With the available AI technology and potential advances coming in the future, the Fleet can improve its effectiveness and be better equipped to cope with increasing data rates and technological complexities.

Artificial Intelligence covers many different areas but those which are most advanced include robotics, pattern recognition, knowledge based systems, and natural language processing. Although the field was begun about 25 years ago in the academic community, AI

Technology is just beginning to be employed in real world systems. Metersky feels that NADC should join other Navy Laboratories in applying AI.

The various segments of the briefing will be given by experts in the Artificial Intelligence field. Because this is an introduction to AI technology, the substance of the briefings will be on an introductory level. About 70 seats have been reserved for the conference but after that it's first come first served, said Metersky. "It will be possible to get an overview of the entire program in about one and a half hours", Metersky added. If someone wishes to stay for a more detailed briefing on a specific subject they can pick the session they are interested in or stay for the whole seminar.

Nominations Wanted for NADC Awards

NADC AWARDS FOR ENGINEERING AND SCIENTIFIC ACHIEVEMENT — Nominations are requested for the Annual Engineering and Scientific NADC Awards. These two awards recognize any employee or former employee, military or civilian, who has made a substantial research or development contribution to the U.S. Navy while employed by NADC. Each nomination must be accompanied by a concise statement of the achievements and contributions being recognized, and any supporting documen-

tation available that attests to the significance of the contribution.

NADC AWARD FOR PROJECT LEADERSHIP—Award nominees, civilian or military, may be from DCP or technical departments for command or other level technical projects, or from PAR, Staff or Engineering Support Group for some special project leadership contributions. Although the nominee need not be the most senior leader in a project, he must have had sufficient responsibility to demonstrate outstanding leadership with regard to other project con-

tributors.

SUPPORT ACHIEVEMENT AWARD—This award will recognize an individual from any organizational unit of the Center who, through his or her effort, has made a significant and identifiable contribution to the smooth and efficient operation of the Center. Each nomination must be accompanied by a concise statement of the achievements and contributions being recognized. Please forward nominations to 031 not later than 15 Feb. 1983. For additional information, call x3078.

Now You Can Patent Programs

1968

IBM wins a big round

Patent Office decides that computer programs cannot be patented. It's a major victory for IBM, which has opposed the concept. But the decision remains subject to change

At a conference at George Washington University next week, the U.S. Patent Office will spell the hopes of many companies and consultants that had hoped to cash in on the business of selling proprietary computer programming. Patent claims, and programs that written for them simply turn into specialized calculators for specific jobs. It is possible, usually uneconomic, to write programs that simulate electronic circuits that

1972

Computer Work Isn't Patentable, High Court Says

Programming Ruling Reverses Lower Court, 6-0, Settles Battle of Producers, Users

Congress Likely to Get Issue

By LOUIS M. KOBLITZ, Staff Reporter of THE WALL STREET JOURNAL

WASHINGTON—The Supreme Court ruled that computer programming isn't patentable and thus settled for the moment a

1982

Patents: a look at the law

Process employing digital computer held patentable by Supreme Court

by Robert J. Frank

Believers in the patent system accept as an article of faith that new ideas should seldom be kept secret, and that patents are the best vehicle for promoting disclosure of inventions. Recently a recent decision

Svante Arrhenius. However, the temperature inside the press was treated as an uncontrollable variable so that, even using the Arrhenius equations, the time at which the mold should be opened could only be known approximately. As a result, the mold would sometimes be opened too late and the rubber sometimes opened

puter the reaction time by use of the equation, comparing the calculated reaction time with the elapsed time and opening the press when the two times are equal. The new method provides accurate cures on a uniform basis.

The patent examiner and the Patent and Trademark Office Board of Appeals rejected Mr. Diehl and Mr. Lunton's claims on the ground

The United States Patent and Trademark Office (PTO) has recently reversed its long-standing policy of steadfastly rejecting patent applications drawn to computer programs or algorithm related inventions. More liberal guidelines have now been formulated for its Patent Examiners which review the

Navy's interest in securing rights to computer programs developed in-house or under contract.

The patentability of computer programs, software, and even computer hardware was muddled by a plethora of court decisions which plagued the Navy Patent Program and patent practitioners continued on page 3

Alert Flight Crew Saves Helicopter from Destruction

Saving a multi million dollar aircraft from possible destruction was all in days work for this flight crew. LT Norm Edwards, LCDR Stu Schreckegast and AE1 Billy Bonn were flying a CH-53 helicopter on a logistics mission to the Calverton Naval Weapons Industrial Reserve Plant (Peconic Field) on Long Island Sound, New York when something went wrong.

The flight to Calverton was uneventful. After dropping off passengers, refueling and a quick lunch, the flight crew launched for the return leg of the flight. About thirty minutes after takeoff, as they were flying down the coast of Long Island, the

crew noticed that the Master Caution light had come on along with the First Stage Hydraulic Pressure Caution light.

At the time the lights were noticed the pressure in the hydraulic system dropped to 1800 pounds per square inch and was fluctuating in that range. Edwards, who was the pilot, reduced both altitude and airspeed in preparation for an emergency landing.

Because the crew could not see a suitable landing area along the flight path, Edwards elected to turn back towards known terrain rather than continue ahead. The pressure in the First Stage Hydraulic System continued to

drop to 100 psi and the First Stage Servo Out Caution light was on. AE1 Bonn saw hydraulic liquid seeping from the overhead.

Up ahead the crew saw a large parking lot and decided that it was the only safe landing zone in the area. Using the last known wind direction and speed, Edwards executed a no hover landing in the lot.

Upon landing the crew in-

spected the helicopter for damage. They found that the First Stage Hydraulic Pump Pressure Line had ruptured at the quick disconnect seal, depleting the hydraulic system and cavitating the pump. The crew remained on the ground for five hours, aided by the local Coast Guard Station and citizens until a maintenance crew arrived. A new pump and hydraulic lines were in-

stalled and the system was reworked. After a ground maintenance turn to check for leaks, the crew took off and returned to NADC.

This in-flight emergency was serious and could have cost three lives and one helicopter but cool heads and knowledge of how to handle the problem made it a story that the crew and NADC can be proud of and not one that will be remembered as a tragedy.

More Effort Needed for Energy

With all the energy saving devices and ideas that NADC has put into effect you'd think that we would be in pretty good shape as far as reaching the 1985 goal of a 20% savings, right? Wrong, says Tom Ames, NADC's Energy Coordinator. Ames explained that new computer and airconditioning equipment have caused the Center to move away from its energy savings target. "In the last quarter of 1982", Ames said, "we have put on line, computer terminals and other related equipment that is the equivalent of an entire computer mainframe." This increase, projected into 1983, will drop NADC's energy savings to 8% when it should be at about 16% by the end of the year.

Once this reverse trend was identified Ames was tasked with finding some other ways of saving energy. Several no-cost ideas were floated before the Center Management Group (CMG). The first proposal is to set up an Energy Hotline. The Hotline will

provide a focal point for employees to report energy violations or suggest ways to further save energy. The top ideas submitted before 5 February will be written up and submitted as beneficial suggestions. Also planned is a review of the Center's lighting requirements. Emphasis will be placed on increasing task lighting, decreasing general lighting and making desk lamps easier to obtain.

Ames will be offering an energy briefing package to the directorates, departments and tenants in an effort to make Center personnel aware of what they can do to save energy. An energy status board is proposed so that employees can track the savings effort throughout the year. Section monitors will be designated to act like an end of the day security detail, making sure all unnecessary equipment is shut down for the day.

One other proposal that Ames presented would involve an alteration in weekend overtime

schedules. The Center could be shutdown on alternate weekends to save energy. It would involve scheduling overtime in advance, Ames stated, but the savings could be significant.

All these ideas are being considered now. NADC needs to save energy now and with you're help we can achieve the goals.

Tax Savings

Did you know that the capital-gains tax on the profit from selling a home need not be paid by military personnel if they reinvest the money in another home of equal or greater expense within four years. The Internal Revenue Service says that you must remain on active duty during the four year period to take advantage of the longer grace period. Also the house must be used as the taxpayer's principal residence to qualify for the tax exclusion.

Update III Aircraft Delivered



Captain Anderson, center rt, turns over Update III Aircraft to Pax River Crew.

A major milestone has been reached in the P-3C Update III Project. NADC's Update III aircraft was turned over to the Naval Air Test Center on 21 December for the beginning of Validation and Verification tests. This phase of the Update III Project marks the successful completion of an overall Center effort that people at NADC can be proud of. According to LCDR David Seckinger, Update III Project Officer, "The next step will be a Follow On Test and Evaluation (FOT&E). After that the Update III will receive Approval for Full Production (AFP).

The Update III Project has been in development since 1974. This new avionics package, represents a "quantum leap in (Anti-Submarine Warfare) ASW capability", Seckinger said. Towards this end NADC has been making final software and hardware improvements to the Update III system which had received preliminary approval for service use last July.

The heart of the Update III ASW avionics suite is the Advanced Signal Processor (ASP) which replaces the AQA-7 acoustic processor. This ASP provides the two acoustic operators in the aircraft with CRT displays and a manual entry panel for operator/machine in-

terface. Other Update III improvements include the Advanced Sonobuoy Communication Link (ASCL) receiver, the Adaptive Controlled Phased Array (ACPA) antenna, the Acoustic Test Signal Generator (ATSG) and the Digital Magnetic Tape System (DMTS).

The ASCL receiver is a 99 channel, computer tunable acoustic receiver system that replaces the ARR-72 Sonobuoy Receiver. Update III uses the ACPA antenna system to provide directional/omnidirectional RF reception for either increased RF sensitivity or anti-jamming capabilities. Simulated RF signals for acoustic system end-to-end tests are provided by the ATSG. All four special Update III software products are loaded into the aircraft using compact tape cassettes with the DMTS.

The Update III avionics suite was developed, integrated and tested by the Naval Air Development Center Update III Project Office, under the sponsorship and direction of the Naval Air Systems Command (PMA-240). After the three month test cycle at NADC the Update III aircraft will go to AIRTEVRON I for follow on T&E. If all goes well Update III will go into production in May of 1984.

Last year was a very good year for the Naval Material Command. The Chief of Naval Material Admiral John G. Williams said in a year end message that, "The accomplishments (by the people of the Naval Material Command) were the direct result of literally hundreds of thousands of people performing their assigned duties in an outstanding manner".

Williams reported a 32 percent increase in awarded contracts for acquisition of new equipment. That translates into approximately 37 billion dollars. Some of the things that money has bought are contracts for, 205 new aircraft, 31 new ships, delivery of 159 aircraft and 36 ships.

Also 18 candidate programs for multiyear procurement were forwarded with a potential savings of over 407 million dollars. Under the Defense Acquisition Improvement Program savings of about 5.3 billion dollars were identified.

On the logistics side, depot overhauls of 57 surface ships and 9 submarines were completed. Private sector surface ship overhauls were delivered on an average of 2 days late versus 23

days in FY 81. Ordnance asset readiness improvements included a 7 percent increase for air launched missiles and a 9 percent increase for ship gun ammo. In 1982 1,516 aircraft reworks were scheduled and completed.

In the area of Military Construction 1 billion dollars in construction was completed during the year. Three hundred new facilities were turned over to the Navy and 693 new family housing units were added to the inventory. Improvements were also made to 300 substandard housing units.

In summation Williams said, "I thank you and as we prepare to greet 1983, I ask for your continued support so that the Naval Material Command will keep setting new records in support of the Navy". "It is this improvement year by year, that is the single most important item that will enable us to obtain our 600 ship navy. We must continue to look for all the ways in our business that will enable us to get more program for our dollars. I know you will continue to support this endeavor as we enter the new year."

1982 Was a Great Year for CNM

The Reflector

Naval Air Development Center

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CAPT James B. Anderson — Commander, NADC

Robert S. Buffum — Technical Director

Joseph P. Cody — Public Affairs Officer

David Polish — Editor



TIES laboratory demonstration is presented by G. Heal and L. Smith to Squadron Leader (RAF) Weber (seated), CAPT Harper, MAJ Register and Mr. Botha.

TIES Lab Demonstrated

The Navy is currently in the process of completing a six year R&D effort for the concept definition, development, and laboratory demonstration of an advanced integrated Communication Navigation - IFF avionics system for Navy platforms of the 1992 era. This program, designated as the Tactical Information Exchange System (TIES), is sponsored by NAVAIR-33 utilizing NADC's Communications, Navigation Technology Directorate as the performing R&D laboratory. Because of the broad scope and wide range of technologies inherent in the TIES, the TIES represents the military's most sophisticated integrated avionics architecture serving as a model for

projected state-of-the-art technology and overall automated control of on-board resources.

On 23 November 1982, AIR FORCE personnel from Wright Patterson Air Force Base visited the Center to obtain a first hand briefing on the TIES and review the TIES integration laboratory facility.

They are responsible for the Integrated COMM-NAV-IFF Avionics (ICNIA) development program being conducted by the Air Force; and, as such, both the Navy and Air Force want to insure that maximum benefits are derived from common areas of interest and the potential to utilize common developmental resources.

PRIVACY ACT STATEMENT

Under the authority of 10 USC 5031, information regarding training/experience is requested in order to develop a skills data base. The information provided by you will become part of your skills record. This information will not be divulged without your

written authorization to anyone other than the Technical Volunteer Program. You are not required to provide this information; however, failure to do so could result in you not being notified of opportunities to volunteer your special skills.

Technical Volunteers Wanted

Help is requested in providing volunteer *technical* assistance to local governments and community groups. With a combination of diminishing Federal and State funds available to local communities, coupled with a rise in complex issues and problems, there is an urgent need for volunteer help to provide technical assistance. Some of the critical needs faced by one local township include:

- computer assisted file management
- computer assisted scheduling
- training programs and assistance in locating video training tapes
- underground water leak detection by acoustic or other means.

Current employees and recent retirees who are willing to volunteer some part of their off-hours to these or other local community problems are encouraged to respond by providing information on the reverse side of this notice and returning it to:

Jerry Bortman, Code 703

The Technology Transfer Office will assist these efforts and is currently trying to establish a *Technical Volunteer Service* with the help of individuals who are interested in helping their local communities.

Changes in Retirement

If you are a military retiree working for the federal government there are some changes to the civil service retirement system that you should be aware of. Military retirees in civil service jobs will have their pay reduced by the same amount their retired military pay is increased by cost-of-living adjustments in fiscal years 1983, 1984 and 1985. Employees whose retired pay is based on wartime, service-connected disabilities will not be affected.

Credit for military service has also been changed. Military ser-

vice previously was credited to civil service annuity. The annuity subsequently was recomputed at age 62 to exclude military service after 1956 (for those eligible for social security). Now, those hired before 1 October 1982 will choose between continuing under that system or depositing an amount equal to seven percent of basic military pay received after 1956, preventing reduction of civil service annuity.

Regulations, pay tables and instructions are expected soon from the Office of Personnel Management.

Patents continued

in general. Consequently, little was done to encourage invention disclosures in this area.

In the private sector, computer programs are most frequently protected simply as trade secrets by restricting their use and disclosure under software licensing agreements. The rub in this form of protection is that once the program is let "out of the bag", it can't be put back and the protection is lost. Less frequently, computer programs are copyrighted, but this form of protection is not available to the Government. Even if it were, the scope of protection is murky because copyright, in general protects only the form of presentation and not the substance. For example, it is not clear whether there is infringement when a copyrighted program, described by flow diagrams, listings, documentation, etc. is stored in memory or transformed into electronic circuitry.

The change in the PTO policy

stems from a U.S. Supreme Court decision (*Diamond vs. Diehr et al*, March 3, 1981) which held by a narrow margin (5 to 4) that a process using a digital computer program for regulating the curing time of raw rubber in a mold press was *patentable*. Temperature in the press was monitored and periodically fed to the computer which recalculated the cure time according to a well-know equation. The basic premise of the Court decision is that "anything under the sun that is made by man" is patentable - even a process which includes a procedure or algorithm for solving a mathematical formula. However, the algorithm *per se* is similar to laws of nature or mathematical formulas which have long been held to be unpatentable.

The "bottom line" is that the invention must be viewed in the *whole*. A mathematical formula or algorithm which is only one step of a combination of steps in a whole process cannot be singled

out by the Patent Examiner for attack simply because that step is tantamount to an unpatentable law of nature.

New computer programs of particular interest to the Navy for patent prosecution are those which are or will be used in Fleet Operations or on a continuing basis in RDT/E. Computer programs with these prospects developed in-house or under NADC contract, should be discussed with the NADC Patent Counsel. The disclosure needed for preparing a patent application should include the following elements:

- a. Specific use of the program,
- b. Mathematical formula if any
- c. Flow charts.
- d. Listings in machine or machine-independent (object or source) language, and
- e. Block diagrams, if any.

If your computer program *appears* to fit this "show", please contact the NADC Patent Counsel, Code 93, X3000.

Bumper Stickers: Statements with Impact

by Regina Beans

There is always someone who makes life tougher. Not only are we faced with commercials, magazine and newspaper advertising, junk mail, bill boards and signs but we are all bombarded by our fellow drivers sporting numerous stickers affixed to their bumpers. These bumper sayings encompass a wide spectrum of ideas, beliefs, sentiments, vacation spots, teams and bawdy colloquialisms.

Here at the Naval Air Development Center many employees seemed compelled to state their minds using messages printed on gummed paper. One can determine a lot about a person from looking at their bumpers.

A visual survey by the Public Affairs staff turned up some prime examples of bumper communications.

Someone here is determined enough to "Bet Your Shamrocks, I'm Irish." Some potential Pied Pipers are here beckoning

"Follow Me To Church This Week", and "Follow Me To Feasterville/Bristol." A relative of E.T. could possibly be among us as he boasts a sticker with warning "Look Out for Real People."

Are you aware that the first amendment guarantees you freedom of "Bumper Religion" for nowhere can you drive without being reminded of a car owner's religious affiliation.

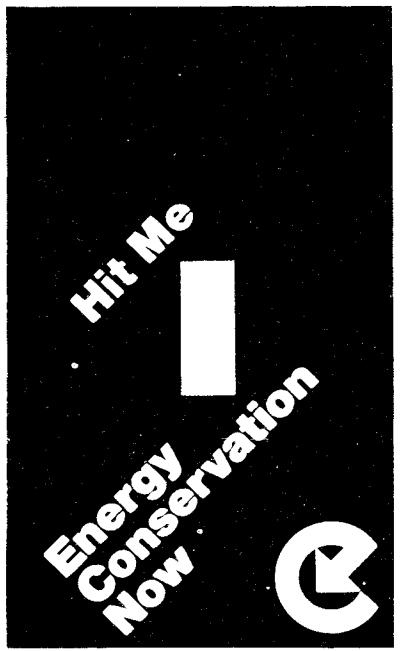
Someone is willing to "Make It In Massachusetts" and I'll bet that person is Italian because "Italians Make Better Lovers." This sort of thing doesn't appeal to everyone though because some would "Rather Be Sailing."

An employee here would really like to "Take a Mandolin Player to Lunch" in case anyone qualifies. How would you like people working in Security, Advanced Weapons Concepts, or one of the warfare branches sporting stickers reflecting "Take My

Gun, Like Hell You Will", or "The West Wasn't Won With a Registered Gun."

Four people love New York, three people are rooting for the Eagles and the Phillies and Sixers are tied with two a piece. However, the NADC award winning bumper sticker for its deep moving concern for creatures of the earth is awarded to the owner of the automobile with this catchy little phrase: "Caution: I speed up to run over small animals."

Consider these staggering ideas: "I've Seen Paul Bunyan", and "I Love Lithuanians." With important messages such as these to convey it would be a serious injustice not to keep the many bumper sticker companies profitably in business. Who wants to take in nature's scenery or keep their eyes on the road when they could be getting educated reading bumper stickers?



Commander Salutes

CDR Gary Smith, Al Hellman, Jules Lewyckyj, Dan Lorch and Bill Zarkowski, all of ACSTD, for their assistance to the Fighter Airborne Early Warning Wing, U.S. Pacific Fleet.

Ed Yanuzzi, Donald R. Furmanski and John Tate, all of SATD, for their contributions to the Helicopter Night Vision System (HNVS) Project.

Howard Sheckman, SD, Henry H. Cornell, George R. Mott, Robert Loewenstern, Matthew J. Lamb and Richard Routzahn, all of ACSTD, for their support given to the On Board Oxygen Generating System (OBOGS) Program.

LT Norman M. Edwards for professionalism shown during in-flight emergency, (see story this issue).

Jim Moran, Paul Devlin and Vincent Petrone, all of PAR, all for their performance during the NAVMAT Training Course entitled "Implementing the Commercial Activities Program at NAVMAT R&D Centers".

Joseph Spodaryk, Comptroller, for his assistance during the testing phase of the System 2000.

Franz Bohn, DCP, and David

Hammond, SATD, both for their expertise during the recent testing of the P-3C DICASS system.

Daniel Probert, PAR, Stu Boose, Bob Starry, Howard Krumboltz, Jerry Ferguson, Mike Contarino, Ken Petri and Dr. Arno Witt all of SATD, for their support to the Defense Advanced Research Projects Agency on the LIDEX Program.

Ellen McGrody, SATD and James Weikert, SD, for their work on the Active Gated Television (AGTV) project for the Coast Guard.

Mark Wagner, Joe Franz and Mike Caddy, all of ACSTD, for their assistance in updating the F-14 tactical manual.

George Werts, Ross R. Barklow, Raymond K. Satterfield, Edward H. Malloy and Walter H. Tolle, all TSD, for their support to the Director, Naval Reserve Intelligence Program.

Robert Bauder, ESG, for his completion of the Contract Management Program

Edward W. Richardson, SD, for his past accomplishments on the Long Range Airborne ASW Systems Program and the ARAPAHO Merchant Ship ASW Systems Program

Corrections

Last month's article titled "NADC Personnel Fly Over the North Pole for Tests" contained some mis-information. The Directorate identified should have been CNTD not SATD and the following personnel should have been recognized for their efforts in making the test flights a success: Chyau Shen, Joseph Perrine, Gina Luce and Carl Anderson, all of CNTD, Captain Richard Fidler, Major Stan Toole, LT Dana Place, LT Lee Erdman, LT Dan Paterson, ADC Gary Kreutzer, AD1 Gary Matthews, AT1 George Post, AE2 Kevin Starks, AD2 Curt Miglionico, also AMH3 Ralph Woolums and AW1 Mike McNamara.

New Prices

For those of you that eat lunch in the Enlisted Dining Facility please take note that new prices are in effect. These prices will impact on civilians and Officers.

Higher Pay Officers Elected

Good news for those civilian employees that are at the upper reaches of the federal pay scales. Pay caps that have been in effect for several years have been lifted to new levels. The pay limit for GS/GM employees is now \$63,000. SES pay will be raised to a top level of \$67,000. And Executive Service people will have their limit raised to \$80,100.

Retention Rate

The year 1982 was a successful year for the Navy's retention program. Defense Secretary Caspar W. Weinberger said the reenlistment rates have been, "the highest we have enjoyed in many years". Chief of Naval Operations, Admiral James D. Watkins saluted all members of the Navy's retention team by saying, "Credit for this accomplishment is shared by Chief Petty Officers, Leading Petty Officers, Command Career Counselors, Division Officers and upward through the chain of command". "Maintaining the momentum attained in FY-1982 is essential to meeting the Navy's long range requirements to man the fleet of the 1990's."

NADC's Toastmasters Club has elected new officers for the coming year. Robert D. Hayes was chosen as President with Rockne S. Anderson as Educational Vice President. Administrative Vice President will be William E. Eisenhower. Secretary for 1983 is Maureen Satchell and Janice L. Gess will be the Treasurer. George P. Gillespie will serve as Sergeant at Arms.

The Toastmasters Club is a group whose aim is to improve public speaking skills. If you are interested in joining, contact any of the above people.

Benefits News

If you need information about CHAMPUS benefits there are two offices in the area that can help. The numbers for the Health Benefits Advisor's Office at NAS Willow Grove is 443-6376 and at the Philadelphia Naval Hospital 755-8288.

Drunk Driving

Sure you've heard about the new tougher laws that apply to drinking and driving but do you know that your parking privileges at NADC can also be lifted if you're caught. If you're caught drinking and driving either on or OFF the Center the Commander has the authority to scrape off your parking sticker and rescind the parking privilege for one year.

According to OPNAVINST 11200.5B/MCO 5110.B any individual found guilty of driving while intoxicated by a civil court, a court martial or base administrative procedure will be prohibited from operating a private motor vehicle on base for a minimum of one year. Additionally, offenders must complete the 36 hour Navy Alcohol Safety Action Program or an equivalent alcohol education program before base driving privileges will be reinstated.

Super Safety Fights Fireplace Fire *By Mike Masington*

Prometheus Pyro, former financial advisor to Atari Inc., and author of the "Ultimate Homeowner," decided to cheer up a snowy day with a fire in his seldom used rec room fireplace. As the freshly cut pine logs began crackling, Pyro left momentarily to attend to other chores. Suddenly, smoke began billowing out and sparks spat from the hearth opening, starting several small fires in the orange and mauve plaid rug. Finally smelling the smoke, Pyro grabbed his trusty CO₂ extinguisher (recently liberated from an unattended government vehicle) and aimed it at the fire. Unfortunately, the extinguisher hadn't been checked since VJ day, and it sputtered uselessly. Dashing to the phone, the perplexed Pyro pawed through the yellow pages for several minutes looking unsuccessfully for the number of the local fire department.

By now the fire had consumed the rug, his new Kawabonga stereo, the beanbag sofa and was endangering his prized collection

of glass door knobs. In a panic he ordered his wife and kids out of the house, and ran back into the smoke to save his valuable treasures.

Super Safety, the pharaoh of fire fighting, noticed the dense smoke, and flew to the scene. Quickly taking charge, he sent Pyro's wife to a neighbor's house to alert the fire department, donned the breathing apparatus from his utility belt, wrapped himself in his flame retardant cape and rushed into the burning house. He found the prostrate Prometheus lying overcome on the kitchen floor, and dragged him outside to the fresh air. As he recovered, the parboiled Pyro gasped his thanks and asked what happened.

"You almost became a crispy critter, that's what happened," retorted his reproachful rescuer. "You should know better than to ever use a fireplace without first ensuring that the flue, damper and chimney are clear and operating properly. Also, using soft, unseasoned wood not only

reduces the amount of heat, but also creates an excessive amount of sparks. In any case every fireplace should have at least a screen to completely cover the opening, but glass doors are better especially if the fire is unattended. As far as fire extinguishers and other emergency items are concerned," continue the pasha of protection, "they must be checked regularly to keep them ready for use. If you should have a fire and it can't be put out immediately, call the fire department. Their emergency number should be readily available near every phone in your home. An even better idea is to evacuate the house, make sure everyone is out, and call from a neighbor's phone. Finally, the most important rule is never go back inside for anything. Burning synthetic materials in drapes, rugs, furniture, etc. emit toxic gases which can overcome an unprotected individual in seconds. Nothing, regardless of how valuable, is worth your life."

"Mr. Safety, how can I ever

repay you?" pleaded the penitent Pyro. "How about some slightly devalued Atari stock? Maybe a singed glass door knob? How about a copy of my new book, "Home Fire Protection Made Easy?" With that last comment the scion of safety swallowed a few Roloids with a Pepto-Bismol chaser and left.

Bridge Open

The pedestrian bridge that links NADC's main laboratory complex with the airfield is now opened. The new bridge is located about a hundred feet north of the old bridge which was damaged last year. The bridge is now higher and it has lighted hand rails for safety at night.

NAME:

ADDRESS/CODE:

PHONE:

EXPERIENCE/TRAINING:

AREAS OF INTEREST FOR VOLUNTEER SERVICE:

DEPARTMENT OF THE NAVY

NAVAL AIR DEVELOPMENT CENTER
WARMINSTER, PENNSYLVANIA 18974

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE \$300

POSTAGE AND FEES PAID
DEPARTMENT OF THE NAVY
DOD-316



FIRST CLASS

MR J. BARTON 3021



The Reflector

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Left to Right, Owen Medd, Millard Mitchell, Joe Spodaryk, Reginald Zelton, Capt. James B. Anderson, Zinnie King, Carl Reitz, CDR Fred Ameel and Gil Ridley pose after the EEO Awards Luncheon.

EEO Program Honors NADC Employees

In Honor of Dr. Martin Luther King, Jr. NADC held its Annual EEO Awards Luncheon on 13 January. Each year those employees and Center organizations that make significant contributions to the Equal Employment Opportunity program are recognized for their work. Three individuals, a division and a directorate were honored this year.

Millard Mitchell, SD, Carl Reitz, ACSTD, and Joseph Spodaryk, Comptroller, were singled out for their EEO efforts. Reitz has served as ACSTD's EEO Committee representative for the past two years. In that capacity he has taken a personal interest in the problems and needs of minorities at NADC. Reitz has interviewed various people to help get a better picture of what needs to be done. He was also responsible for chairing the subcommittee that generated the Semi-Annual EEO Assessment and Accomplishment Report on the progress made in the Center's Affirmative Action Plan. Developing and writing the FY 82 Directorate Affirmative Action Plan and helping create a new instruction and charter for the Center EEO Committee were additional tasks that Reitz undertook.

Joseph Spodaryk provided assistance to the EEO program by helping automate the EEO reporting procedure. Also, he played a part in developing a standard computer program that will be given to other activities to help them produce EEO reports quickly and easily. Spodaryk's efforts resulted in achieving a 90-95% rate of automation for EEO report procedures.

Millard Mitchell has been

actively involved with the EEO program for the past fifteen years. He has served on the EEO Coordination Committee from 1967 to 1976. From 1974 to 1976 he was the Committee's Chairperson. In 1980 Mitchell was responsible for bringing two Co-op students from Lincoln University to NADC. One of those students is now a full time employee. A Drexel student was also brought to NADC under the Co-op program by Mitchell's recruiting efforts. Five students from Cheyney State College were referred to the Civilian Personnel Office as a result of Mitchell's interviewing. In 1982 he served on the Center's Affirmative Action Plan Hiring Goals Committee. Mitchell currently serves as an advisor to the Systems Analysis Division EEO Committee and is developing an EEO awareness training program for all division personnel. On the outside Mitchell has been an active member of the Bucks County Branch of the NAACP.

Two organizations received awards for EEO efforts. The Sensors and Avionics Technology Directorate and the Systems Integration Branch of the Systems Directorate were honored for their aggressive and ongoing programs to recruit and hire minorities for NADC.

The following personnel and organizations were awarded letters of appreciation for their contributions to the EEO program: Systems Directorate, Aircraft and Crew Systems Technology Directorate and its EEO Committee, Engineering Support Group, Software and Computer Directorate, John McFadden, Arno Witt and Joseph Clay.

Objective, Increase Pilots "G" Tolerance

NADC's civilians are getting a unique look at human testing. A new series of tests are being held in NADC's centrifuge. About 28 volunteers have come forward to take part in a very comprehensive "Flight" program. Although the normal procedure involves the use of military subjects, this series of tests has used civilian volunteers both male and female with a wide range in age. LCDR Michael White, the project director, explained that civilian volunteers were used because of the need for additional subjects, especially inexperienced subjects and subjects with different types of physical make up. These tests are an extension of the Loss of Consciousness

LOC tests run last year at NADC.

In last year's tests subjects were flown in the centrifuge until they lost consciousness. The purpose of those tests was to look at LOC in a controlled environment and especially to look at recovery from loss of consciousness. The current tests are looking at how the pilot's position in the seat affects the blackout threshold and what can be done to delay the LOC.

LCDR White said that pilots have a procedure for delaying the loss of blood to the brain. It is called the M-1 Maneuver. In a high "G" turn, the pull of gravity causes the blood in a pilot's body to be forced towards their feet. The heart

tries to work harder to push blood to the brain but when the "G" force overpowers the heart's pumping capacity the brain loses oxygen-giving blood and blackout occurs. The M-1 is a muscle straining maneuver that is designed to limit blood flow to the lower part of the body making it easier for the brain to receive blood. White said however that the M-1 only increases "G" tolerance to about 2 Gs over the normal LOC threshold for an individual.

The tests being conducted are also looking at how a person's position affects the effectiveness of the M-1 maneuver. According to White

(continued page 2)

What Did the Ride Feel Like?

What's it like to ride the centrifuge? John Scott of Supply always wanted to know what it felt like so he, along with 27 others, volunteered to become test subjects. During his eight years at NADC Scott had several contracts come across his desk that involved modification

to the centrifuge. he wanted a ride because he thought it would be exciting and interesting.

Scott got his chance when he saw an ad in the Daily Log that asked for volunteers to participate in "G" tolerance tests. He signed up and found himself involved in a project

that required a very complete physical and a little bit of guts. Over a period of two weeks, Scott was measured and tested to make sure he was fit to "fly" the centrifuge. he was even sent to Fort Dix for a set of spinal X-rays.

After the tests were completed, Scott was given a brief familiarization ride in the centrifuge. "I was scared," he said, "I wanted to quit after that but I had volunteered for the entire program so I didn't quit." "I got sick on the first project ride because I moved my head between runs," Scott stated. Each successive ride he found to be much more comfortable and he began to enjoy the tests. He said he began to experiment with the "G" tolerance maneuvers to see if what he was being told was true.

"I was very impressed with the professionalism and the safety procedures of the flight deck crew and all the people running the tests." When asked about how much he really liked the experience Scott said, "I'll do it again."



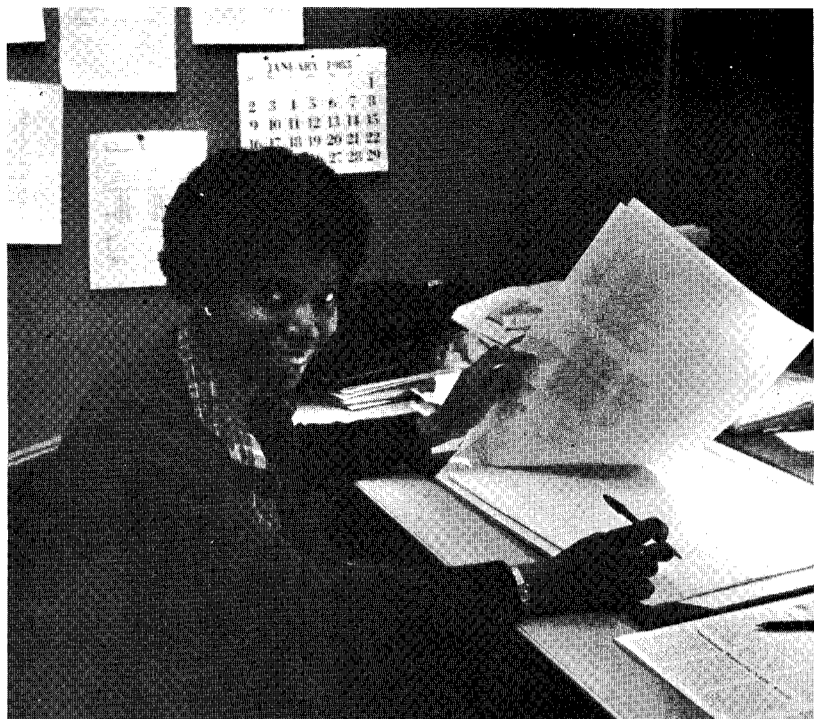
John Scott, suited up for his ride in the Centrifuge.

Technical Volunteers Wanted

Help is requested in providing volunteer *technical* assistance to local governments and community groups. With a combination of diminishing Federal and State funds available to local communities, coupled with a rise in complex issues and problems, there is an urgent need for volunteer help to provide technical assistance. Some of the critical needs faced by one local township include, computer assisted file management, computer assisted scheduling, training programs and assistance in locating video training tapes and underground water leak detection by acoustic or other means.

Current employees and recent retirees who are willing to volunteer some part of their off-hours to these or other local community problems are encouraged to call Jerry Bortman, 441-3070.

The Technology Transfer Office will assist these efforts and is currently trying to establish a *Technical Volunteer Service* with the help of individuals who are interested in helping their local communities.



Carol Blakey-Taylor says she enjoys the family atmosphere at NADC.

Engineer Makes Center History

Carol Blakey Taylor holds a rather unique place in the history of the Naval Air Development Center. According to Gil Ridley, NADC's Deputy EEO Officer, Taylor is the first black female engineer to be hired by the Center. She comes here with an Electrical Engineering degree from North Carolina A&T.

Taylor's story of how she came here is one of NADC's EEO successes. As a student in an Alabama high school she became interested in engineering because of trips to a local college. Taylor said she had always enjoyed and done well in math and science, making her a natural for an engineering career. Upon entering college she pursued the engineering field with a concentration in digital design and microprocessors.

While she was in college Taylor remembers several Career days in which Gil Ridley from NADC participated. She thought that NADC would be a good place to work and her husband had relatives in the Philadelphia area so she applied after graduation and was accepted.

Working now in the Digital Technology Branch, Taylor says that she likes the "family atmosphere" at NADC. "People are very friendly and helpful," she added. Taylor is now training in the design of printed circuits and logic debugging.

When asked about her experience in becoming an engineer, Taylor stated that, "even though things may seem to be going against you, if you have confidence in yourself you can achieve your goals."

ASW Group Meets at Center



The initial meeting of the Air ASW Assessment Study Technical Group was held at NADC on 15-16 February. Captain James McNulla, OP-981 opened the meeting with a background statement and an overview of the goals and objectives of the ASW study. The purpose of the gathering was to define the research, development and production programs for air ASW systems thru the 1990's. About 70 industry and DoD representatives attended the meeting that was held in the Center's auditorium.



RADM Jerry Tuttle gets a briefing on LAMPS as TD, Robert Buffum looks on.

Emergency Leave Procedures Have Changed

Important changes to emergency leave and household goods storage regulations have been approved by the Department of Defense.

New emergency leave provisions authorize government funded commercial transportation for personal emergencies. This applies to members and dependents stationed overseas or members on temporary duty or deployed in overseas areas.

One round trip may be authorized from the area involved. Temporary duty or deployed personnel may be provided transportation to the airport serving their homeport or permanent duty station.

Members performing temporary duty or deploying for more than 90 days can now be authorized storage of household goods during deployment at government expense. The

LOC

(continued from page 1)

the tests seem to show that head position has a lot to do with how long a person can tolerate high "G" forces. As a subject turns their head blood flow becomes restricted causing a more complete loss of vision and quicker LOC.

It should be remembered though that these tests are very carefully monitored. An extremely thorough physical along with a complete set of body measurements is completed before a test subject is allowed to ride in the centrifuge.

Results of these tests will help all pilots fly safer knowing that they can perform better using the data received from the volunteer subjects at NADC.

new household goods storage provisions will particularly benefit single members who live off base and are subject to extended deployments. This special storage is authorized up to 13,500 pounds for all members.

Changes in emergency leave and storage policy are effective 3 January 1983.

Letter to the Editor: Concerned Over Pay

As a federal employee, I wish to express my grave concern over recent administration proposals which would drastically curtail federal government retirement and leave benefits.

Federal employment was very attractive to me when first applying ten years ago because of specific retirement, leave and insurance benefits plus many promotion opportunities. Attempts to now decrease these benefits represent an ethical and legal breach of my employment contract. As a young person with most of my career ahead of me, I do not wish to be associated with an employer who "breaks contracts". Industry does not put up with this, federal employees should not be expected to put up with this either. In addition, with the promise of future reductions in benefits, pay freezes and increased taxes, I cannot, and will not encourage any young person to seek employment in the federal government. To do so would be to condone the actions of a system that has created low productivity, low morale, poor benefits, no pay raises and no job security.

Federal employees cannot be expected to be concerned about the national security of this country when their own personal job security is at stake. It is illogical for an administration committed to strengthening our national defense to destroy all career inducements to attract the caliber of personnel needed to achieve this goal.

With these prospects the ultimate result will be the hiring of "cast offs" instead of top-notch people. Our future recruits will be the private sector's rejects. No one in their right mind would seek federal employment knowing full well that the benefits and opportunities

are already poor and only due to get worse. Our federal government should have the best people, the best technologists, etc., but these people are going to industry where there are better opportunities and benefits.

The following suggestions are offered:

1. Instead of freezing pay raises, at least allow the 4% pay raise for each year; something is still better than nothing.
2. Leave the Federal Retirement System intact and away from the Social Security System. We cannot be expected to bail out years of mismanagement, waste, and fraud. Furthermore, what money would be left for my retirement if all *new* employees are forced to join the Social Security System????????????? By eliminating new contributors, the retirement system will become insolvent by the time younger participants reach retirement age.
3. Invest the Federal Retirement money in something which would yield a nice return for both the federal employee and the federal government. I have ten years worth of dollars sitting in essentially a "dead account". IRA's

give a much more substantial return. At least an IRA is a true contract which is more than can be said for the Federal Retirement System.

4. Crack down on the waste and extra expense created by "contracting out". Have the federal workers do the job. It is very difficult to have job incentive when the work will eventually be taken away and given to a contractor.
5. Launch an all out effort to inform the general public that meaningful work is being done in the government. We are sick of being badgered by those in the private sector who insist that government workers are drones. It is too bad that millions of us must be subjected to these comments because of a small number who abuse the system.

These are just some of the things that can be done to make federal employment more attractive. My biggest fear is that the senators and representatives of this country concern themselves only with their reelection and that this letter along with millions of other letters will fall on deaf ears.

Thank you,
(Mrs.) Frances M. Chiodo-Gross

The Reflector

Naval Air Development Center

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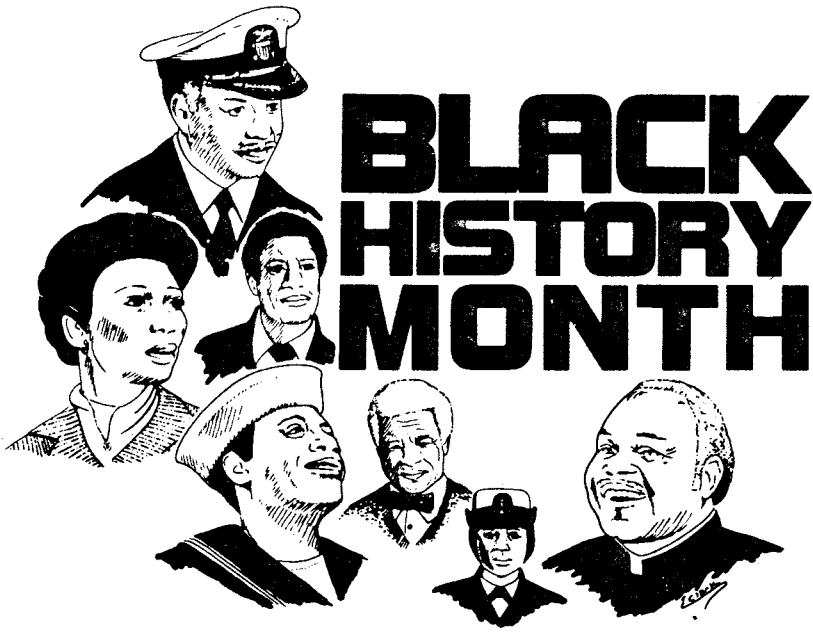
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CAPT James B. Anderson — Commander, NADC

Robert S. Buffum — Technical Director

Joseph P. Cody — Public Affairs Officer

David Polish — Editor



BLACK HISTORY MONTH

New Positions Open

The Naval Air Development Center has begun a major recruiting campaign to hire one hundred and thirteen recently graduated junior professionals in science and engineering.

Recruiting ads in local and national newspapers and trade journals are aimed at hiring aerospace engineers, electrical and electronics engineers, software engineers, mechanical engineers, materials and chemical engineers, computer scientists mathematicians and physicists.

The center will also be hiring a substantial number of journeyman professionals, particularly aerospace, electronics and software engineers.

The decision to increase the work-

force at NADC was influenced by what, over the years, has been a steadily increasing work load at the Center, the removal of Congressional restraints governing the maximum number of people that NADC can employ; and the status of the current economy which has made available large numbers of both recent graduates and experienced engineers and scientists.

The Naval Air Development Center currently employs a total of 2,393 full and part time personnel, over one-half of whom are professionals.

The new positions are expected to add approximately 5 million dollars to the current payroll of \$83 Million.

Women's Advisory Committee Helps



Beverly Haberle, from BEACON, addresses a Women's Advisory Committee meeting.

by Regina Beans

Maria Hura says that there is a group of women at NADC that in 1982 saw some significant accomplishments for their efforts on behalf of the female workforce. The goal of the Women's Advisory Committee is to improve the status of female employees in the workplace. Hura says that, "too many women are not familiar with the work of the Women's Advisory Committee and therefore are not fully aware of the capabilities of the group devoted to assisting women on Center."

The Women's Advisory Committee and comes directly under the auspices of the EEO program and in support of the Federal Women's program. The committee's chairperson is Maria Hura and co-chairperson is Arleen Anderer. The committee is further comprised of representatives from each directorate on Center.

Chairperson Hura explains, "by making recommendations on how to improve the status of female employees, women can make an even greater contribution toward accomplishing the Center mission." "Providing assessments of current Center programs and goals, providing information and points of contact to individuals or groups, and

recommending solutions or changes to current policy are just some of the means utilized by the committee," she explained.

The members meet on a monthly basis to plan and discuss their work. In 1982 participation was better than ever before and accomplishments were many. A presentation on the availability of computer education in the local area was offered for women considering opportunities in that field. During "Federal Women's Awareness Month" the group offered courses and clinics on "Effective Communication Within the Organization", "Women's Networking", and "Stress and Management". Also during Awareness month there was a presentation of the Woman of the Year Awards for outstanding accomplishment and support of women on Center. The Group conducted an informal survey to assess the opinion of Supervisor's regarding the Sexual Harrassment course.

A very important accomplishment of the committee this year was the formation of sub-committees for clerical, technical and administrative women on Center so that they can be afforded the opportunity to address specific problems and goals or to combine their capabilities

for the benefit of all the groups. The points of contact for each sub-committee are A. Anderer for technical women; B. Kempf for administrative women; and D. Sodano for clerical women.

Additionally, the committee has worked on two booklets, one on Upward Mobility and the other on Filling Out Supplemental Experience Statements, which will be available in the near future.

All women on Center are urged to read the Women's Advisory Committee minutes, talk to their directorate representative and/or sub-committee point of contact, and participate in committee sponsored events. Hura said, "Representatives are at a loss to understand and project our needs unless we speak to them." "Likewise, the exchange of similar needs and aspirations as well as the answers to problems that might have already been solved can only happen if we communicate with each other."

If every woman would make an effort to attend at least one Women's Advisory Committee function, attendance would be drastically improved. Participation is the key to not only the success of the Federal Women's Program but to our individual success as well.

Over 154 Pints of Blood

- 00A Sheehan, James E.
- 02 McDonald, Wm. A. Rodriquez, Debra
- 04 McCrossan, Thomas F.
- 03 Brownlee, Rita J. Carroll, Robert J. Keenan, Geraldine C. Pomrunk, Robert F.
- 10 Beach, Edward C. Bridges, Deborah Kolbe, Richard J. Koper, Harry F. McCafferey, Grace Merkel, Thomas B. Mitchell, Reed C. Stretch, William A. Torok, Steve F.
- 20 Baker, Dennie G. Bellis, Douglas C. Brookes, Richard D. Cerino, Anthony T. Dupont, Alden C. Dyba, Bridget M. Gartling, Gale E. Hall Jr., Roland S. Katz, Gale Knerr, Wilbur C. Koszarek, Edward M. McFadden, John J. McGlynn, Albert J. Michalski, Thomas A. Micklin, Theodore Oakley, Robert L. Quinn, Kathleen Sapovits, Phillip E. Savory, Richard P. Spector, Alvin Sztubinski, Debbie A. Vanwyk, Carl W.
- 30 Dedominicis, Theresa Falcon, Lee A. Furmanski, Donald K. Harris, John Hontz, Roger W. Howarth, Lawrence R. Jadney, Glen J. Kaszupski, Joseph W. Lipski, Walter F. Melby, Robert D. Pancoast, Eric T.
- Pirch, John J. Ricca, Harry L. Schuck, David W. Schwartz, Ronald Tate, John M. Trailies, John M. Weiss, Thomas M. Wilks, John W.
- 40 Barron Theodore E. Beals, Edward H. Bradley, William E. Hoffman, Gerald T. King, Doris J. Pearson, Lawrence D. Pelosi, Louis P. Pfeiffer, George C. Risko, William P. Smith, Leon E. Walsh, William P.
- 50 Davies, Gary J. DeShield, Michael J. Greenberg, Stanley B. Irvin, Jeffrey L. Kichula, John M. Licalzi, Deborah J. Madison, Katherine McElhinney, George S. Pilas, Robert A. Rachiele, James Reynolds, Edward L. Robinson, Jeremy C. Salvati, Umberto A. Santini, John L. Smith, Larry M. Smith, Robert F. Sutton, Dennis G. Taylor-Blakey, Carol Weisbeck, Robert A. Yaffe, Harold D.
- 60 Anella, Sheriann Bethke, James J. Betz, Herbert J. Bowes, John J. Brooks, Reynolds E. Chambers, Teresa M. Cirilla, Chris R. Cisco, James F. Darrigo, Dan Deesing, Edward F. Evensen, Deanna L. Felix, John L. Focht, Bruce M. Inskeep, Todd M. Kaufman, Phillip Kuster, Fred A.
- Lee, Richard C. Lu, Lin Markushewski, Leonid J. Mayhinney, William A. McGinley, Kevin M. Mergner, Kenneth G. Miller, Charles P. Ohlson, John Oliveto, Michael D. Preston, Carole A. Reed, 3rd. Edgar A. Reitz, Carl O. Schultz, Gregory I. Siggorch, Samuel Shaffer, Irving S. Stallings, Leon Walters, Marvin M. Wells, Daniel C. White, Edward L. Zenobi, Thomas J.
- 70 Jencks, Craig S. Moran, Mary
- 81 Daymon, William G. Druckenmiller, John M. Dwornik, Joseph J. Green, Robert P. Hall, Robert A. Moore, Robert W. Myers, James D. Newton, John V. Pfeiffer, Stephen R. Rogalski, Michael F. Rothermel, Ervin Wiggs, William
- 82 Edwards, Kenneth J.
- 83 McFetridge, Robert G. McKenna, William L. Miller, Gregory J. Scheid, George W. Tierney, Clifford E. Urban, Robert J. Varner, David J.
- 84 Ashley, Clare K. Dunn, Loretta E. Fisher, Margaret Mitchell, Norman F. Ridpath, Selina M. Stadler, Dennis L.
- 901 Hendricks, Ross M.

Weinberger Talks on Pay Reform

During his State of the Union address delivered 25 January, President Ronald Reagan stated "...I will also propose a one-year freeze on a broad range of domestic spending programs and for federal civilian and military pay and pension programs. Let me say right here, I am sorry with regard to the military, in asking that of them, because for so many years they have been so far behind and so low in reward for what the men and women in uniform are doing. But I am sure they will understand that this must be across the board and fair."

In a related message to Department of Defense personnel. Secretary of defense Caspar W. Weinberger further addressed and explained the proposed pay freeze.

"Recently, you may have read about the overwhelming budget deficits facing the government this year and next, and the President's

decision that there will be no annual cost of living pay raise for all military and federal civilian employees in FY 1984. The deficits have made it necessary not only for all government employees, including everyone in the Department of Defense, but all beneficiaries of the federal programs, including social security recipients, to give up some or all of the planned pay increases for next year. This is necessary to help reduce the deficit in an effort to restore our Nation's economy to long-term real growth. Difficult decisions had to be made to achieve an 11 billion dollar reduction in the defense budget without severe adverse impacts on our programs to restore the combat strength of U.S. military forces."

"This decision was made very reluctantly by the President, and we all share in his disappointment because this administration came into office committed to making

military pay competitive with private sector pay. The Uniformed Services Pay Act of 1981 signed by President Regan increasing military pay by 14.3 percent carried out that promise. For the first time in a decade, military pay was again competitive. Since then, the combination of greatly reduced inflation rates, the FY 1983 pay raise, and income tax reductions have halted erosion to the value of military pay. The President and I have expressed particular regret that the government-wide pay cap for next year had to apply to the military too. The President and I are well aware and deeply appreciative of your dedication and commitment to the defense of our nation... You can be assured that I will continue to press for appropriate financial and moral recognition of your efforts, and that I will stongly urge that the 1985 budget provide for the full recovery of the pay cap in 1984."

Commander Salutes

Lawrence G. Johnston, SCD, for his support on the Ada Programming Support Environment.

Theodore Micklin, SD, for his participation in the technical evaluation for the AN/ARR ().

Personnel of Code 403 for their support to Oceanographic Unit THREE.

Ralph Catanese and Eugene Rapposelli, both of PAR, also Authur DuHaime, Gerald Lepone, John Lorenz, Theresa Angelossi, Virginia Johnson, Roy Radzai, Joseph Griffin, Margaret Callahan, Ervin Alba, Alfred Rooney, John Druckenmiller, Tina Mark, Lisa Christiansen, Charles Fichera and Eugene Wood, all of TSD, for their assistance in creating the CNM Command Presentation.

LCDR Frank Piazza, LCDR Mark Frye, George P. Lange, John H. Licht and William R. Wentz all of DCP, Robert Chin, Anthony C. D'Addezio, James W. Beck, Eugene R. Haley and James J. Bowdren all of SCD, also, John J. Kraus, Dennie G. Baker, Richard Stickney and William R. Darmofal, all of SD, for their contributions to the CV-ASWM Program.

AT2 Robert J. Collette, for his assistance to the Commander of Air Anti-Submarine Wing One, Captain L. F. Schriefer, during his visit to NADC.

AK2 Wayne E. Shuey, for his outstanding performance while serving as Treasurer of the Naval Air Association.

HM1 Mark K. Ammerman, for his assistance to Dr. Alan Hein from the Massachusetts Institute of Technology during tests on atypical gravity states.

Major James Keane, USMC, for his presentation to the Marine Aviation Weapons and Tactics Squadron-1 on AR-5 Protective Equipment.

William Paraskewik, Alan E. Cantor and Peter Ayoub, all of ACSTD, for their support given to the ESCAPAC Replacement Project.

Thomas E. Milhous, ACSTD, for his work in developing Military Standards for suspension and release equipment and stores management systems.

Barney B. Krosnick, Supply, for his assistance to NJROTC Area FOUR.

Dr. Bruce Steinberg, SATD, for his presentation at the Council Rock School District Career Fair.

LT Dana A. Place, for his support of the Strategic Systems Project Office's testing of the Fleet Ballistic Missile Systems.

Salvatore R. Picard, SATD, for his support to the Commander Area ASW Forces Sixth Fleet.

Thomas E. Milhouse, ACSTD, for his participation as task manager of the Improved Multiple Ejector Rack/Improved Multiple Ejector Rack bomb rack development program.

Walter Latosh, Safety, and Regina Beans, PAO, both for their support of the recent Boy Scout Troop 147 tour.

Zinzinita L. King, EEO, for her participation as course manager of

the Prevention of Sexual Harassment Training course.

Ralph C. A'Harrah, ACSTD, for his performance as the Office of Naval Technology Program Element Manager for Aircraft Technology.

John J. Keane, SATD, for his assistance in helping introduce the VLAD sonobuoy to the Fleet ASW community.

Gary R. Whitman and Daniel S. McCauley, both of ACSTD, for their presentations to Cub Pack 204.

Edward Dinter, CNTD, for his contributions as NADC program manager of the Ring Laser Gyro Navigator and Integrated Inertial Sensor Assembly development programs.

Robert Carroll, CP, for his performance as an Associate Course Instructor in the Merit Pay System-/Basic Performance Appraisal program.

W. Scott Nissley, SATD, for his support to the team which evaluated the CA-810 low altitude aerial reconnaissance camera.

AMSC Robert I. Hopkins, ASMC Sidney G. Oliver, ADC Gary Kreuzer, ATC Robert J. Bruening, AO1 Ralph L. Simms, AZC Thomas R. Cregan, AMH2 Thomas M. Coyle, ADC John A. Barbagallo, ADCS Richard Barton, ADC Daniel E. Hill and Richard L. Nielsen, all for their outstanding performance during the Aviation Maintenance Management Team Review of the Maintenance Department.

Mark Zehner, James A. Williamson, Charles R. Koch, James Toth, George McClellan, William Brown, Thomas Kothstein and Joseph Halgas, all from SCD, also Jean Canton, Richard Pariseau, Thomas Castaldi and Tina Lanzetta, all of DCP, for their performance during the evaluation of the Enhanced Modular Signal Processor proposals.

Glen Jadney and Joseph Warren, both of SATD, and LT Norm Edwards, all for their presentations on night vision devices given to Marine Heavy Helicopter Squadron 464.

ADC William O. Tuite and Dick Neilson, both from the Aircraft Department, Charles Miller, ACSTD, and Scott Nissley, SATD, all for their assistance given to Patrol Squadron Special Projects Unit TWO during their recent visit.

Marvin Schulman, Alan Cantor and George Frisch, all of ACSTD,



One of NADC's CH-53's simulates an emergency landing during a mock drill. Photo by Regina Beans.

Dependent Kids Fly Free

Until March 26 TWA is offering free airfare to military dependents under 18 years old. According to an airlines spokesperson, one child may travel free when accompanied by an adult paying TWA's 50 percent military fare.

The furlough fare program offers discounts of up to 65 percent on standard airfares for military personnel and their dependents who travel at their own expense.

One day NAVCOMRAZLDAZL suffered 427 work related eye injuries during a three hour span of time. The alert, highly competent and quick thinking safety manager, Mike Mystique (former security chief at Buckingham Palace and part owner of a Tijuana tattoo parlor) immediately sensed that there just might be a problem in this area. Reacting in his typically confident, calm and self-assured fashion, he raced for the phone to ask his old friend Super Safety for help.

The sultan of sight safety spared scarcely a second speeding to his sidekick's assistance, and initiated an immediate in-depth investigation into the incidents. He found that in most cases proper eye protection was available, but that the majority of the injured workers

weren't wearing it at the time of their accidents. Recognizing a possible supervision problem, the proponent of pupilar protection called a meeting of all the work center honchos.

There are some restrictions on this program so check with the PASS Office or your local travel agent.

Recent Employee Promotions

Robert Andriszak, Florence Balasa, Theodore Barron, Marie Brennan, Lauren Bronikowski, Patricia Callahan, Joseph Cameron, Gilbert Campbell, Jasper Caro, Steven Catricks, Charles Cerquitella,

William Ganter, Robert Hewins, Kathleen Lampman, Linda Lips, Jeanie McCain-Walker, William Mueller, Karl Schraut, Mark Silbert, Elizabeth Walsh, James White, Irene Zuegil.

Super Safety Eyes Vision Safety

A somewhat less than happy crowd of supervisors assembled in the Center Confusion Room, and the air was full of mumbles about another e*#@!\$ safety meeting, falling behind schedule, etc. Kasmir Knuckles, from the cotter pin research branch, acted as self appointed spokesman for the group. "Listen Safety," started the self-centered supervisor, "all of us are always pushing eye safety in our work centers. We've got posters and goggles hanging all over the place."

"Posters and goggles are only part of an effective eye safety program." related the rectifier of retinal ravages. "To really ensure the safety of your people, you must insist that they wear appropriate eye protection in any situation that could

cause an eye injury. Take a few minutes during work center meetings to remind them about the potential eye hazards they work with, and why eye protection is so important. Check the equipment available in your area to make sure it is adequate and in good condition. New employees should be provided with proper gear before they even begin working. Also, remember that chemical handling and mixing pose special problems. It is such a routine activity in a facility such as this, that we frequently overlook its dangers. Finally and probably most important, anytime you see your people violating a safety rule, correct them immediately." (Authors Note: It is recommended that lengths of galvanized pipe and/or two by fours *not* be used for this purpose.) "Keeping a worker safe is an important part of a supervisor's responsibility."

The now sight conscious supervisors piled out of the room and back to their jobs. In the following weeks eye injuries declined rapidly. Mike Mystique's office did a booming business in requests for safety glasses, and even Kasmir Knuckles, with the zeal of a new convert, rigidly enforced the eye safety program. Unfortunately Kasmir carried things a bit too far and was told to take a few weeks off to relax when he insisted that his people wear goggles not only while working, but also while eating lunch, cashing their checks and attending W&R parties. It was last reported that Kasmir is doing well, and should be out of the rest home some time in late spring.

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The Reflector

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Naval Air Development Center, Warminster, PA

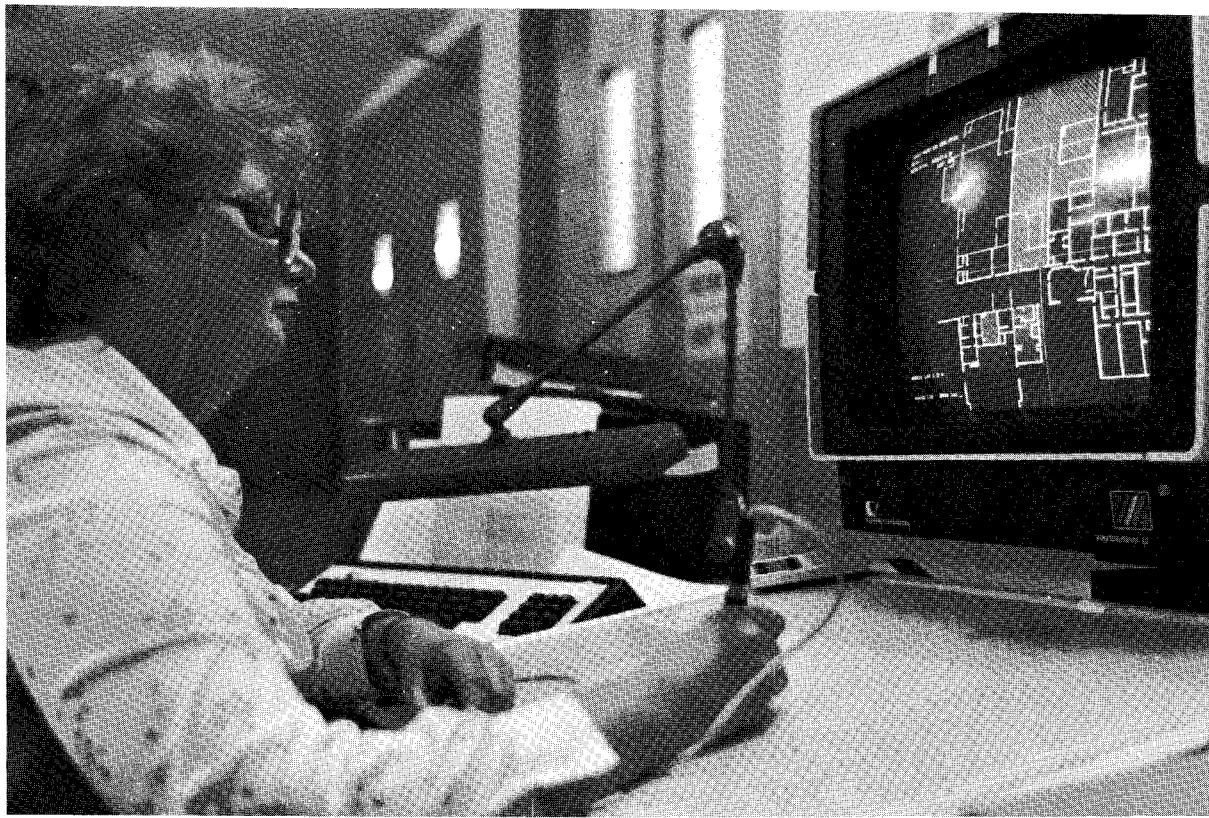
March 1983

A designing computer speeds the production of drawings

A new computer based design system is beginning to make itself felt at NADC. The system called CAEDOS, or Computer Aided Engineering Documentation System has seven work stations that are located in the Computer Department, Systems and Aircraft and Crew Systems Technology Directorates. According to Dan Tarrant of the Computer Department, CAEDOS is designed to automate the production of engineering drawings. In addition this system will increase productivity especially in the area of revision and changes.

Up until now all drawing was done by draftsmen or engineers who sat down with pen and ink working by hand. Making simple drawings was relatively easy. Not so when you want to make a change or design a very complicated piece of equipment. New drawings or hundreds of drawings may be needed, taking many hours to complete. The CAEDOS does away with most of the tedium and really cuts down on the time needed to produce quality drawings.

Using video displays and the latest computer technology, a draftsman or engineer can, after about two weeks training, sit down and "draw". Using a dig-



Millicent Murden use the CAEDOS to draw floor plans for the improvement of Center work spaces.

itized board, a person moves a special pen over the board to place lines or symbols on the screen. Using one of the four color work stations, you can produce areas that are shaded in different colors. Tarrant explained that the system allows drawings to be built-up in

"layers". Up to 256 layers can be used on one drawing. This layering can be effectively used in designing integrated circuits which have thousands of connections in a very small area.

Another interesting feature involves the use of stored informa-

tion. CAEDOS has a number of symbols and parameters in its memory. When a person wants to design a circuit all they have to do is call up the symbol needed and the computer draws it. Also the limits of the design can be input. If the designer goes beyond those

limits the computer will correct the designer's error.

The CAEDOS has the capability of automating manufacturing. It can be tied in to an automatic wire wrap machine and build a circuit board using the computer as a guide. Tarrant said that currently there are no Computer Aided Manufacturing (CAM) requirements at NADC but the capability exists if the need arises. Once a drawing is input into the CAEDOS it can be stored for future "playback" or a hard copy can be printed. CAEDOS is connected to two graphics plotters. One draws in just black ink but the other can have up to thirty-two different colors. Drawings can be made in various scales at the touch of a couple of buttons.

Plans call for the system to be tied into the main computer here. Tarrant said that with the additional analytical power various structural design and testing procedures could be done.

Some people might say that this type of system could replace a draftsman, but you still have to know how to do a drawing and what elements go where. The day of the draftsman is not over it's just catching up with the computer age.

Exterior to be upgraded

The Naval Air Development Center is about to embark on an all out effort to upgrade the appearance and working conditions at the Center. In the not too distant future work will begin on changing the way the NADC looks both internally and externally. (See related story on page 2). Jim Schaeffer, from Northern Division, the command that is responsible for planning assistance at NADC, explained that "a Base Exterior Architectural Plan for NADC was developed because of a Chief of Naval Operations directive to improve the overall image of the Navy as it is presented to the public." Ron Springfield, Public Works, said that the idea is to give the Center a sharp, crisp, professional look.

The original impetus for the program at NADC was from the Master Plan study. Springfield explained that "as part of the Master Plan Study each Directorate was surveyed for their requirements." The Master Plans purpose is to propose improvements to the Center. These improvements can range from new buildings to the renovation of work areas. Captain Anderson thought that since the Master Plan

study was being made it was a good time to incorporate changes to the exterior appearance of NADC.

The Benham Group, an architectural consulting firm, was contracted by Northern Division to evaluate NADC's physical assets and liabilities taking into consideration how the public, the military and civilian employees viewed the Center. The Benham Group has proposed some specific projects to correct the liabilities of the Center, such as open storage areas, and to develop the assets found here. Overall design guidelines will be established with specific recommendations for materials and color schemes to be included. The appearance of the buildings will look as though they were all constructed at the same time instead of the separate look they now have. All signs at NADC will be based on one design. Detailed plans to achieve the desired professional look will be presented to the Center in April. External improvements are scheduled to begin this summer.

The objective of these improvements at the Center is to

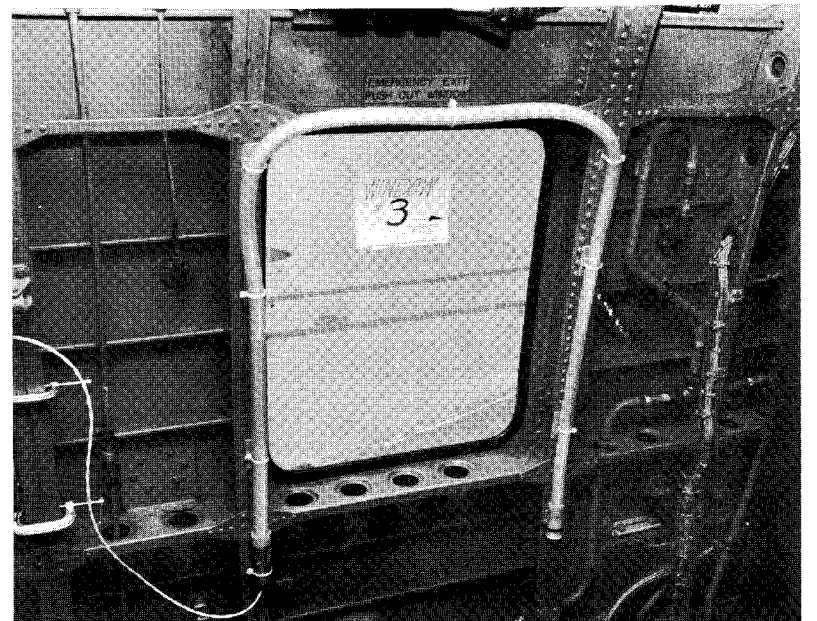
(continued on page 2)

Emergency lighting system will save lives

Let's imagine that you're in a room that's pitch black and your being spun around until you're not sure where the doors or windows are. Add to this little senerio the fact that the room is quickly filling with water and you have to get out before you drown. If you can picture that then you have some idea what it's like to crash into the ocean while you are in a helicopter. Thanks to a program just completed at the Naval Air Development Center, the problems associated with getting out of a submerged helicopter will be simplified.

The program titled, Helicopter Emergency Egress Lighting, is about to go into the final demonstration testing phase after which the system will be installed in fleet aircraft. Program Manager, Alan Cantor explained that the system consists of a special lighting equipment that is designed to function only in an emergency situation and is capable of working in water to a depth of 50 feet.

There was an urgent need for such a lighting system resulting in one of the quickest development programs ever at NADC. Cantor said that from start to prototype demonstration, the project has



This photo shows one of the lighting systems as it would be installed in a helicopter.

only taken one year. NADC defined the requirements for the equipment and then let a contract for prototype development. Eight contractors responded last September and two were selected to competitively develop the system. The two systems were delivered to the Center in 1983.

One system uses LED's mounted in a flexible plastic tube while the other uses electro luminescent strips. Both are mounted

around the inside of the window or door frame. A small nicad rechargeable battery pack is attached to the airframe close to the lighting system. The whole system weighs about five pounds per exit and it can be installed easily in any fleet helicopter in about a half days time. Switches are mounted on the pilots instrument panel that arm the system during pre-flight

(continued on page 2)

Library adds retrieval service, NASA documents now available

by Jackie Benner

The Technical Information Branch has broadened its information retrieval capabilities by subscribing to the National Aeronautic and Space Administration's RECON system. RECON (REmote CONsole) is a data base which relates directly to aerospace sciences. It contains over 1,700,000 documents, 383,000 books; 7,000 periodicals and new titles are added to the data base each month. By accessing the index through the remote terminal, citations and abstracts of relevant books, reports, and articles can be located for the researcher.

A quick look at the broad subject areas in RECON reveals its applicability to NADC's R&D efforts. Receiving sizable representation are aeronautics and astronautics, engineering, chemistry and materials, mathematical and computer sciences. Also included are geosciences and social life sciences. The largest groups of reports found in this system are contributed by the American Institute of Aeronau-

tics and Astronautics (AIAA) and NASA. AIAA provides coverage of the so-called "open literature" books, journal articles, and other formally published materials. Over 500 periodicals, of which over half are foreign, are scanned for input. NASA screens the report literature, both domestic and foreign, as well as pertinent theses, translations, and NASA-owned patents. RECON's book and journal titles represent the holdings of the participating NASA research libraries, as well as selected titles added to the Library of Congress. Other files contain computer abstracts and NASA's Research and Technology Operating Plan.

The NADC's Library has over 50,000 NASA reports on file and receives selected reports monthly. There is a good chance that if a report is located in RECON, it can be found in the Branch. As this new data base, RECON, receives repeated use, we shall undoubtedly find it a valuable addition to NADC's resources.

Work environment to change

A committee to review the current allocation and physical condition of Center facilities has completed its study and developed recommendations for improvements to create a more stimulating R&D working environment.

The study, chaired by Chief Staff Officer, Captain James Sheehan and Associate Technical Director, Thomas Brennan, has identified the need to renovate existing poor quality work spaces, consolidate functional groups and construct new engineering, laboratory and support areas where needed.

As the prime objective, work spaces will be upgraded to a more modern and comfortable appearance. In addition all new OSHA health and safety standards will be incorporated. A major effort is currently under way to clean up areas and survey old and unused equipment. Once the spaces are clean and renovated consolidation of the work areas will take place.

The purpose of the consolidation is to increase organizational efficiency. By moving components of each directorate together it is anticipated that the work flow of the organization will be improved. To accomplish the moves each directorate was asked

(Exterior continued)

present to the community, buildings and grounds which reflect the talent and professionalism of the employees and the importance of the work being done at NADC.

"All of this will take time," Springfield said, "but look for some of these changes to be completed by the end of this fiscal year."

to submit present and future space requirements, including the need for new laboratory and office space. The committee then weighed the needs and balanced them against the space currently available. Requests for future construction were considered for inclusion in the NADC Facilities Five Year Plan which identifies future Center requirements.

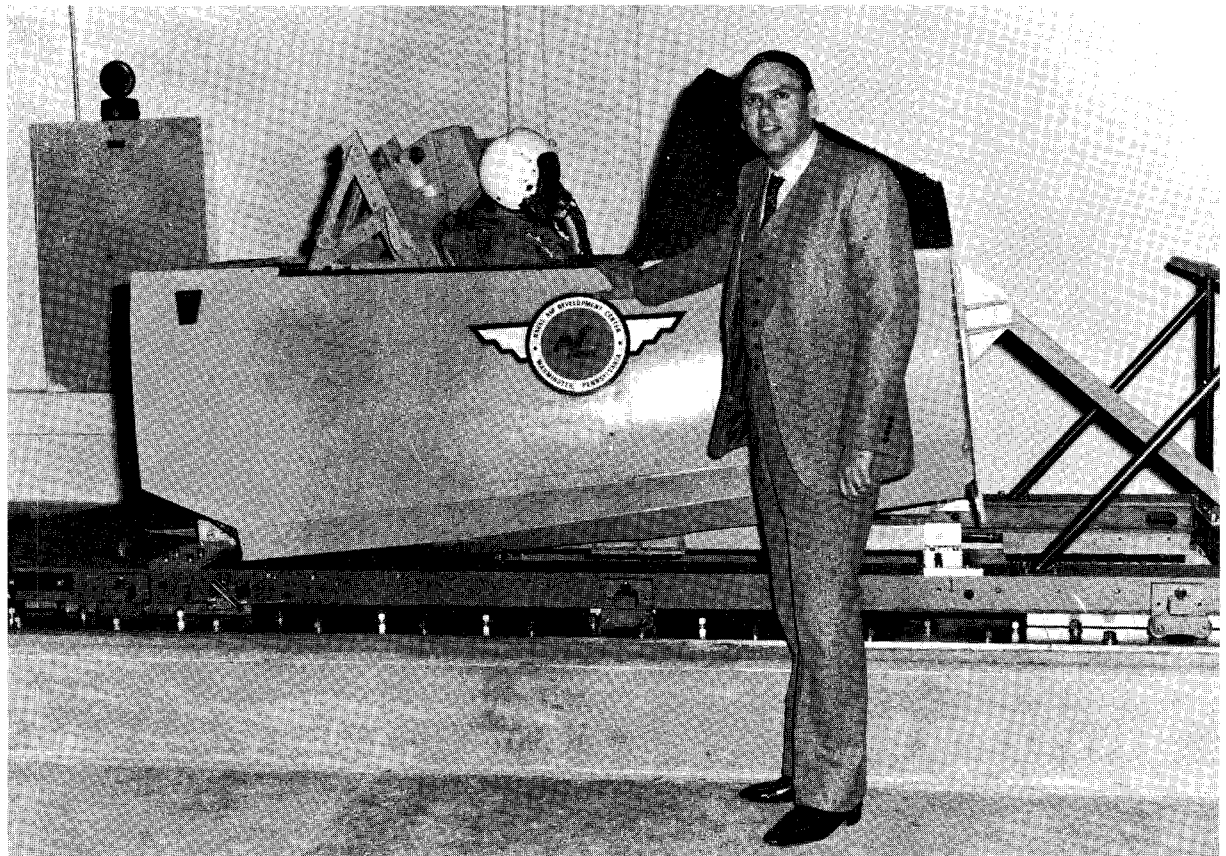
A list of all changes that require construction will be prioritized so that the projects can be accomplished quickly. Instead of having several areas worked on at the same time, progress will be taken step by step.

Changes have already started. The clean-up program is in full swing and some renovations have been completed. By the end of the interior and exterior upgrade program NADC will be a physically outstanding place to work.

RADM Chambers hears about S-3



RADM Chambers, second from right, enjoys a talk with CDR Mumford, CDR Lonsdale and Captain Anderson.



Mark Katzeff stands beside an A-4 cockpit mounted on the Horizontal Accelerator. Photo by Al Shanks

A unique NADC facility is dedicated

This month the Naval Air Development Center will add another wonder to its group of unique facilities. The new facility is a Horizontal Accelerator. Located in hangar bay #2 in building #4 on the airfield side, the facility will be used for the investigation and solution of impact problems.

The Horizontal Accelerator is a dynamic simulator which accurately produces a number of controlled accelerations making possible precise, economical and repeatable testing of aircraft systems and components under laboratory conditions.

Mark Katzeff, ACSTD, explained some of the details that make up the facility. It has a 2000 pound sled mounted on a one hundred foot set of tracks. Katzeff said that the energy producing mechanism consists of a 24 foot stainless steel cylinder divided into two sections, each 12 inches in diameter. The rear section is

charged with compressed air to produce the firing pressure. In the front chamber a thrust piston and a volume of hydraulic fluid are housed. Upon actuation the compressed air is valved into the piston chamber generating a controlled thrust. Up to 225,000 pounds gross thrust can be generated. A 75 ton reaction block opposes thrust and results in a smooth transition of energy from the thrust cylinder to the test sled.

Some of the performance characteristics are quite impressive. The sled can be accelerated with a maximum force of 50 Gs. Maximum velocity for the sled is 100 feet per second. A 5000 pound payload can be accommodated. Data taken from transducers onboard the sled is transmitted via hard line to a data acquisition system located in the facility's control room. High speed color motion picture cameras operating at speeds up to 1000 frames per second are used so that the tests

can be viewed in slow motion to permit a detailed kinematic analysis.

Safety has been a primary consideration in the design and layout of the Horizontal Acceleration Facility. All access doors are equipped with electrical interlocks which prevent the system from being fired whenever the doors are opened. Another safety device locks the piston to prevent it from being fired when the piston is in the normal position. Finally the test area is off-limits to personnel when the system is fired.

Some of the proposed uses for the accelerator include testing, seating and restraint systems, energy attenuating devices, sensors, structures, protective clothing and survival equipment. This new facility brings a wealth of research and test capabilities to NADC, capabilities that will only add to the Center's reputation for quality within the naval air community.

(Lighting continued)

check out procedure. A sensor in the main rotor assembly turns the lighting system on when the rotors stop turnings if the system is armed. The yellowish green glow of the lights guide crewpeople to

the exits so they can escape.

The end result of the Emergency Egress Lighting System is the saving of human life, something that the NADC can be proud of.

The Reflector

Naval Air Development Center

The REFLECTOR is published monthly by the Public Affairs Office to inform Center personnel about topics of interest, and to promote the morale and general welfare of all concerned.

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NADC employees join in Washington march



Some of NAFE's members appear on the Capitol steps during a March 9 protest of changes to federal employee benefits.

It's becoming more than an undercurrent here at the Center. A diverse group of employees have joined together to fight the proposed changes to the federal pay and retirement system. The group, which calls itself the Naval Air Development Center Association of Federal Employees (NAFE), got its start by reading and hearing about the proposed changes and all the adverse publicity that was being generated by people who had misconceptions about who and what a government worker really was.

The premise or charter of the group is to educate the public by countering the negative connotations about federal workers,

express opposition to the pay reform measures that would hurt workers, retirees and their families and inform the key members of the Congress, the Office of Personnel Management and the President, that the Federal workers are tired of being pushed around.

The first general meeting of NAFE was held in the Center Auditorium on 4 March. A standing room crowd of over 300 people came to hear about the proposed changes and action that could be taken. Paul Devlin, PAR, NAFE's chairperson, talked about NAFE's goals and plans to send buses down to Washington on 9 March. This trip was first planned by the American Federa-

tion of Government Employees (AFGE). The highlight of the meeting was the showing of a videotape of the McNeil-Lehrer Report. This program dealt with Civil Service Reform and featured Dr. Donald Devine, OPM Director; Rep. Mary Rose Oakar, Chairperson of the House Subcommittee on Civil Service Compensation and Benefits. After the tape was shown an appeal for members was made resulting in about 160 sign-ups.

In the future NAFE will become more involved with the welfare of federal employees. If you want to join call Rebecca Gray X 2749.

Suggestion brings many dollars

Just five dollars worth of parts, a little ingenuity and a lot of thought saved the Navy almost 1.6 million dollars. This saving is the result of a beneficial suggestion by Gwynn McConnell of ACSTD. McConnell works in the Non-Destructive Testing Lab as a Physical Science Technician. His suggestion involves the modification of testing equipment to support the F-18 and AV-8 aircraft.

Currently the Navy uses an ultrasonic flaw detector designated AN/GSM-238. This piece of equipment is used to detect structural flaws in aircraft parts. Up until now the testing equipment has been adequate, but with the advent of composite materials the effectiveness of the AN/GSM-238 has been questioned.

The manufacturer of the two aircraft, McDonnell Douglas, found that the ultrasonic device

could not detect near-surface flaws in composite materials. Therefore they recommended that a different piece of equipment should be bought. That would have meant the procurement of 200 devices at a cost of \$8000 each.

McConnell found that by using \$5 worth of off the shelf parts, he could make the existing equipment perform as well as the \$8000 device. McDonnell Douglas has tested the modification and now specifies the change for testing of the F-18. In addition, the Air Force has a large number of AN/GSM-238 devices that could be similarly modified for further savings to the government.

So far McConnell has received \$2000 for his idea but keep watching because if his suggestion is adapted by the Air Force, he could get more.

Snow kidding: they did a great job

WOW WHAT A SNOW-STORM, a record in fact! We really got socked but you wouldn't have known it if you came to NADC the Monday after the storm. The parking lots and walkways were clear but little elves didn't do it. Twenty people from the Transportation Division, Public Works Supply and ESG all worked many long and hard hours over the weekend to make NADC operational.

Starting on Friday afternoon the crew began plowing, shoveling, and blowing the white stuff. All night Friday until 1600 on Saturday they toiled. Then back

again on Sunday giving some finishing touches to an outstanding job.

A vote of thanks from the entire Center goes to the following employees: Michael Bessler, William Deboer, Ed Colon, Richard Capaldi, Donald Laderer, Joseph Maio, Thoman Ryan, Donald Santangelo, William Zar and Ed Linke, all from Transportation, William Capps, Frank Sherard, Bill Mitchell, James Dively, Greg Miller and Phil Morrissey, all of Public Works, Dennis Bellevou, ESG, and Robert Clegg, Steve Ridpath and Mike Green, all from Supply.

Director of Navy Labs, Robert Hillyer, sets R&D goals

The Secretary of the Navy and the Chief of Naval Operations have recently stated that we must focus upon our ability to win a war so that potential adversaries cannot realistically consider war as a viable course of action to achieve their objectives. The ability to do this depends upon the Navy's readiness to fight and, to a certain degree, roles of the Research and Development Centers in developing and maintaining centers of excellence in fields of science and technology related to readiness.

We must maintain progress toward achieving the 600 ship Navy. This objective is as fundamental to the Navy's long term maritime strategy as current readiness and sustainability are necessary to prevent the use of an early strike option by our potential adversaries. In the NMC we must maximize the utility of our systems acquisition procedures such that performance and schedule

goals are met at affordable costs. The Centers are vital members of the R&D team. We must strengthen the involvement of the Centers in our programs so as to take maximum advantage of their technical expertise.

It is important that we plan well, define our resources and needs carefully, and raise issues that threaten or potentially threaten progress toward our objectives. Effort must be devoted toward the building and maintaining of better technical skills. It is also incumbent upon us that we document our progress and accomplishments so that the confidence extended to the Centers is sustained.

This is a time of opportunity for the Navy R&D Centers (Laboratories) -- opportunity to assume increased influence in important research and development programs. At a time when we are committed to attaining a 600 ship Navy, there exists broad

acceptance of the need to bring the technical resources of the R&D Centers to bear on the required systems acquisition programs. It is also a time of challenge--challenge to succeed in delivery to the fleet of effective, reliable, and affordable systems. The price of failure is unacceptable.

I have established five principal thrusts aimed at significant progress in the near future:

1. Couple the R&D Centers more closely to the Systems Commands' and Program Managers' systems acquisition programs. If the Navy is to improve the research and development of new systems it must, among other factors, bring more technical skill to bear in the management of these programs. The R&D Centers represent a source of skills and a pool of expertise which broadly cover Navy requirements. We must bring these talents more directly to bear on the Navy Programs.

2. Increase the technology base program in the R&D Centers. The technology base program serves a dual function in the R&D Centers. First is the classical function of developing technology for Navy application and avoiding technological surprise. Second is the importance in developing skills, people, knowledge, and facilities to provide adequate support to the development programs; we must devote a larger share of our young professionals to this program.

3. Improve the evaluation of the performance of the R&D Centers and, explicitly, their top management. Improved operation and performance of the R&D Centers need to be assured; therefore, methods must be developed to measure that performance.

4. Assure that the roles, capabilities, and facilities of the Centers span the technological needs of the Navy. To accomplish this, the roles, missions, assign-

ments of responsibilities, and work assignments of the Centers will be continually evaluated and revised to maximize the effective use of our limited resources. This will help us to assure relevance to future acquisition needs as well as to focus Center resources into the most efficient packages of capabilities with required interface relationships with other laboratories and field activities.

5. Improve long-range tactical and strategic planning by and for the R&D Centers. This is a necessary element of the above thrusts; yet it is so important that it must be highlighted separately. To excel in the future, we must have a strong sense of where we are going and what the future promises. This requires that all of us strive for substantially improved long-range planning for people, products, and facilities.

R.M. Hillyer
Director of Navy Laboratories

Commander Salutes

AMS2 David L. Kaye, AME2 John F. Harris, AD3 Jeff C. Johnson, AMH3 M. Garnick, AT2 James R. Warden, AE3 Robert N. Gray, AC3 Vickey S. Terry and ADC Daniel E. Hill, all for their assistance in supporting the NADC's CH-53A during a recent emergency landing.

Thomas E. Hess, ACSTD, for his assistance rendered to the Naval Weapons Center.

Robert G. Peck, SCD, for his support to the Independent Research and Development Program.

HM1 Mark K. Ammerman and HMC Leland M. Donnan, both for their presentation to the USAF School of Aerospace Medicine.

Charles E. Halko, CNTD, and George F. Eck, SD, both for their efforts on behalf of the IEEE.

CDR P. Taylor Lonsdale, DCP, for his assistance to the S-3A Fleet Issue 4.0.3. Training.

Joseph Spodaryk, Comptroller, for his support to the Office of the Project Manager for Training Devices.

Charles L. Bartberger, SATD, for his efforts on the VLAD Project.

Toastmasters speak out



From left to right, Rockne Anderson, Bob Hayes, Maureen Satchell, Bill Eisenhower and George Gillespie are all members of the Toastmasters.

There's a group here that has been talking continuously for the past 26 years. The purpose of the group in fact is to help their members become even better at talking. Of course the group's name is the Toastmasters.

The basis for the Toastmasters is to help people become more confident in a public speaking situation and allow them to express themselves more fully. This increased confidence translates into better opportunities for career enhancement and community involvement.

A typical meeting consists of a short business session that allows the members to practice parliamentary procedure. After the business is concluded several members are

asked to present prepared speeches that relate to a general theme. The speakers are reviewed by other members and written and verbal evaluations are produced to help the speaker improve. Next members are asked to speak on topics that are chosen at random with the intended speaker having no prior knowledge of. This portion gives people a chance to see how well they react to pressure. All speeches are timed helping the speaker to get his point across in a concise manner.

The overall atmosphere is friendly and relaxed with everyone having a good time. If you would like to sit in or join call Bob Hayes x 3076.

Cafeteria Award

Macke Company has awarded NADC's Cafeteria food services contractor with one of its highest honors. Our food services were voted the best in the three state area of New Jersey, Delaware and Pennsylvania. In that area there are over 60 Macke operations. The quality of the service and food here at NADC are what won the award but the real winners are the Center employees who enjoy the meals.

Beni Suggs

#102-81 Jay R. SARVER, TSD, titled "Receiving/Shipping Traffic Signs." \$25 Award.

#162-82 Ronald A. NICOL & John HANKINSON, PW, titled "Electric Motor for Spill Gate & Sign." \$40 Award to be shared equally.

#3-83 Ernest S. RONYECS, TSD, titled "Form for NAVAIR-DEVCCEN Technical Report Review." \$25 Award

#11-83 Robert J. LANGDALE, PW, (Retired), titled "Paint a 4" wide yellow strip along upper surface all flush roof edges." \$50 Award.

#35-83 William E. STUMPP, PW, titled "Safety Suggestion (Industrial Sinks)." \$125 Award.

Promotions

Stephan Bazow, Edward Beach, Kevin Birney, Philip Brickman, Elizabeth Chapman, Thomas Chien, Michael Deshield, Janet Drulis, Debra Erney, Joan Farrow, Arthur Fletcher, Patricia Foley, Carol Greenwood, Robert Griet, Elizabeth Harvey, Doris King, Joseph Klicka, Timothy Kowalszyk, Margaret Kosan-chuk, Barbara McGrath, Joseph Oriti, Kenneth Petri, Nancy Rodriguez, Margaret Tomlinson, Mark Wagner, Francis Winterer, Mark Zehner.

Your gift helped

Navy Relief, Philadelphia, reports that total assistance to Naval and Marine Corps personnel for the year 1982 was \$378,007. Of this amount \$345,405 in loans went to 1309 service members, while 143 service members received \$32,602 in grants. Non-financial service was given to 1395 personnel which included 68 layettes.

Injured Sailor transferred

A mission of mercy was recently carried out by the NADC's Helicopter crew. One of the Center's sailors, AE3 Donald Fraleigh was involved in a serious automobile accident resulting in a broken neck. He was treated at Warminster General Hospital after the accident. They put Fraleigh in a steel brace called a halo which is screwed into his skull and designed to hold his head immobile. Although Fraleigh received excellent care at Warminster it was determined that additional

services were available at Bethesda Army Hospital in Maryland. The transportation of a patient with a broken neck can be tricky so NADC's helicopter was chosen as the best means available. After a short ambulance ride, Fraleigh was loaded into a CH-53 piloted by LT Norm Edwards. The flight took about one hour and 15 minutes. Upon landing, Fraleigh was transported to Bethesda where he is currently in good condition.

Super Safety disposes evil

by Mike Masington

Baron Tod von Hazard, despicable doer of dastardly deeds and possessor of a particularly pernicious personality, strode menacingly through the halls of NAVCOMRAZDAZL looking for an opportunity to perform some noteworthy evil. He recoiled in horror from one doorway when he overheard a safety brief being given by a supervisor, and gasped at another where new machine guards were being installed. It looked like a less than auspicious day for the nefarious nobleman when he chanced upon some employees removing chemicals from a storage area. Imagining a magic moment in which to manipulate these malleable men with some maniacal machinations, the malevolent, master miscreant made his move.

"What are you gentlemen doing?" asked the seemingly helpful von Hazard.

One of the workers, Flash Kaboomchik, gladly paused from his labors to respond. "Well, our boss told us to clean this place out. We've got to check each item, and separate the useable chemicals from the overage and obsolete stuff. "As if that wasn't bad enough," continued Kaboomchik, "anything we're throwing out has to be identified and segregated according to hazard category. Then we have to fill out this stupid NCRD 4570/6 form and list everything by name, type, and quantity."

"Why, that's a crime against humanity," sputtered the Baron in mock shock. "It's a violation of your rights, a sin that cries to heaven for vengeance, an obvious deterioration of the entire moral fabric of our society. Not to mention a pain in the neck."

"Yeah, and if you think that's bad," continued the encouraged employee, "we even have to initiate a rigging request to have the stuff moved to property disposal."

"What perversion," gasped the Baron in his oscar winning performance as the schocked bystander. "Look friend," soothed the epitome of evil, "why don't you throw the stuff in the trash, or

just leave it somewhere, or better yet dump it down the sink."

"Well, hedged the weakening worker, "we're not supposed to, and besides our Safety Manager gets really upset if we don't dispose of it properly. The first time he catches you, he sends your supervisor a nastygram, the second time, he breaks your kneecaps and blows up your car, after that, he gets mean. I tell you the guy is crazy."

"He'll never know," promised the Baron as he lead Flash and his discards to a waiting dumpster.

"But I will," boomed an authoritative voice. Without turning, von Hazard realized that his masked nemesis, Super Safety, had arrived to foil his plans. Ignoring the sputtering Baron, Super directed his comments to Kaboomchik. "Flash all these disposal procedures are set up to protect you, your fellow workers, and the environment. By following the rules, potentially toxic wastes can be catalogued, packed, shipped, and eventually reclaimed or destroyed safely. By discarding them illegally, some innocent person could be hurt by exposure to a leaking container or while removing the trash. The water treatment system could be severely damaged if chemicals are carelessly poured in the sink, or if they're dumped outside, a lake or stream or other water source could be destroyed.

Now realizing the potential harm his actions could cause, Flash quietly went back to work. The Baron, however, was far from quiet. "I'll get you for this, you caped, goody-two-shoes," blared the beaten Baron as he stormed away. Unfortunately, in his haste, von Hazard kicked a discarded box containing several unlabeled bottles of picric acid. The resulting explosion launched the malevolent malefactor into the stratosphere.

As he looked through the hole in the ceiling, Super called out, "Hey Baron, maybe when you get back we can rediscuss your views on official disposal."

* Author's Note: The real Hazardous Waste Disposal reporting form is NADC 4570/6.

DEPARTMENT OF THE NAVY

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FIRST CLASS

DR J. SMITH

3022



The Reflector

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April 1983

NADC Retains Fueling Function

Naval Air Development Center civilian employees have shown that they can do the job better and less expensively than commercial contractors, thereby saving the taxpayers almost a quarter of a million dollars over the next three years. In competitive bidding held in accordance with the federal government's Commercial Activities (CA) program, the cost of the Center providing its own in-house Automated Data Processing and Fuel Distribution Services was compared to the cost of similar services offered by private contractors. The competition showed that civil service employees did the work at a savings of over \$218,000.

The study took into account the jobs and salaries of twelve NADC employees. Currently the Center employs 2,393 people with an annual payroll of over \$83 million.

Cost comparisons between government services and those available from commercial contractors will continue to be made in several other areas including: Transportation,

Maintenance, Administrative Services and Ground Electronics Equipment.

The CA program is set up to make sure that taxpayers are getting the best services at the lowest price. When a function such as data processing is identified as a candidate for the CA program, a bid package including a detailed job description is prepared and the function is advertised as "Open for Bid." The bids that are received are screened on the basis of expected performance and price. NADC also develops a bid which, at the time of bid opening, is compared to the bids received from private contractors. If the contractor's bid is 10% less than NADC's cost, then they receive the contract to perform the work.

In both of the cases involving NADC, the Center's bid was lower than the contractor's bid. Captain James Anderson, Commander of the Naval Air Development Center said, "Our employees are providing the best for less."

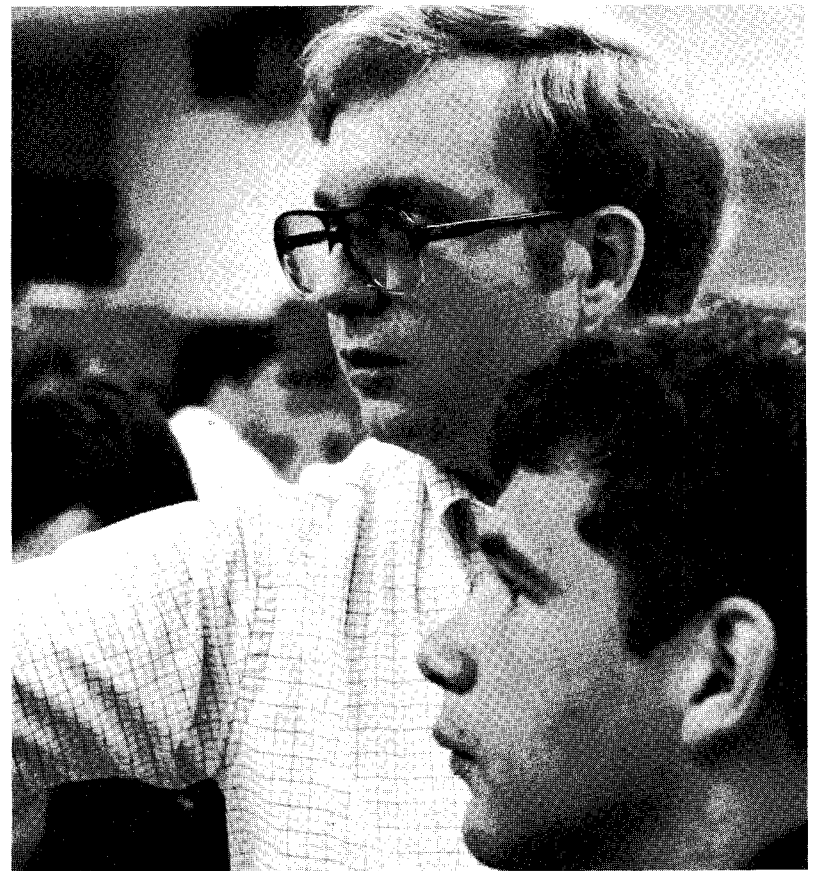
Barnhart Does Research and Teaches Electrical Engineering at Naval Academy

by Rodney Barnhart

I was informed many times during orientation week activities that the mission of the United States Naval Academy is to: "Prepare midshipmen morally, mentally, and physically to become career officers in the naval service."

During that week when a representative of every major function of the Academy had an opportunity to speak to the newly arriving faculty, I never thought that I could become so involved with the mission, being in spirit, a transplanted NADC'er. Within a week after arriving in Annapolis via the NSTEP sponsorship, I was facing my first class of midshipmen. The encounter was not unlike an old west gunfight standoff, each side carefully weighing the potential of the other. The young men and women, all juniors (2nd class) were facing a new, unidentified civilian prof with no background data in the Mother Bancroft files for a course with one of the hardest repu-

(continued page 2)



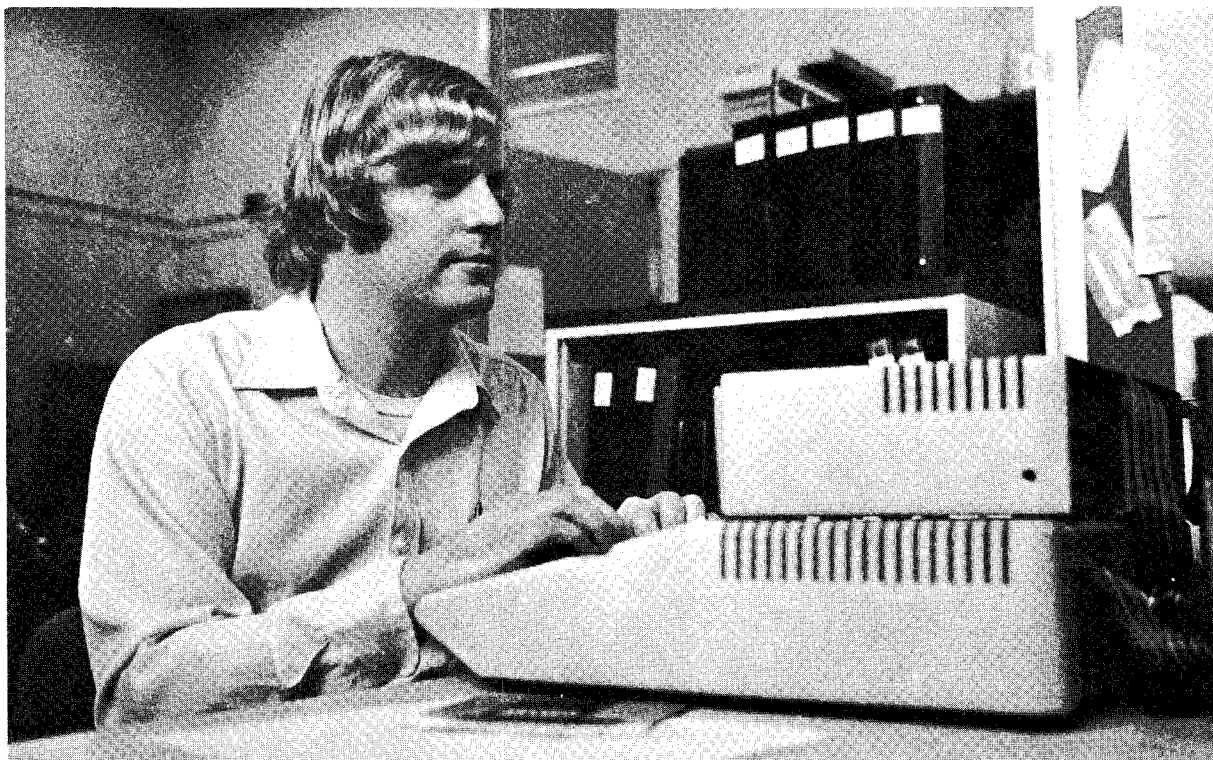
Professor Barnhart and Midshipman Pendola work together in a "WIRES" lab

Compassion Plus a Computer Gives Woman a Voice

Paula Turnbach of Shippensburg, PA was in an automobile accident four years ago that resulted in an almost total loss of sensory usage. On top of that she can now move only one leg and one arm. Paula cannot speak, yet she understands what is being said. She has great trouble seeing. The only way she could communicate was through the use of a hand squeezer that emitted a noise. Paula would use it for yes/no responses only. Her world, as one can imagine, is very limited but through the help of Wayne Phillips, SCD, and Jerry Bortman, NADC's Technology Transfer Coordinator, Paula's world is getting bigger.

Bortman received a call from Paula's sister, who works at the Naval Ocean Systems Center in San Diego, California. She had heard of NADC's expertise in the area of voice interactive systems and thought that the Center might be able to help. Bortman in turn contacted Paula's family to find out just what limitations Paula had. He also made an appointment with an eye doctor in this area to evaluate Paula's vision. The examination showed that she could read two inch letters at about five feet.

Next Bortman contacted electronics engineer Wayne Phillips, a member of the NADC's Apple Users Club. Phillips said, "I had been interested in getting involved in a project that would help the handicap-



Shown working on an Apple Computer, Wayne Phillips developed software for Paula

ped". In talking to Bortman and Paula's parents, Phillips decided to create a program that would generate large characters on the screen so Paula would not have any trouble reading them. Phillips explained that all the available character generating programs produced letters that were too square in appearance, and confusing from a distance. The solution Phillips came up with was to design and program his own characters that were rounded with each letter more recognizable from a distance.

To help Paula use the computer a special switch had to be designed.

Since she could only squeeze with her hand she was unable to use a standard keyboard. The switch that Paula now uses is a pressure sensitive switch that sends on/off commands to the computer.

Phillips then created programs using the large characters to help Paula communicate with her family. He explained that her parents would turn the system on and Paula could then select certain "menus" of words. These "menus" are words that denote categories such as "NEEDS". If Paula stopped the program at "NEEDS" a series of

words would then be printed on the screen in a time delay sequence. That means that the words roll by on the screen and stop for a certain amount of time, giving Paula a chance to read the words and select the word that fits her need. For example "NEEDS" asks if she is thirsty, hungry, etc.

Phillips also has programmed the alphabet into the system so Paula can select letters to spell words that are not on the menus. Phillips is now

(continued page 2)

Center Gets 21 High Grades

In a message from the Director of Navy Laboratories, Mr. R. M. Hillyer responded to a request by NADC for an increase in high grade ceiling allocations. Hillyer's message stated that NADC would receive an increase of 21 high grades. The unique aspect of this increase is that the entire Naval laboratory system was allocated 28 high grade increases for FY 1983.

According to Thomas Brennan, Associate Technical Director, the reason NADC received the high grade increases was that, "we were able to couple corporate business goals with required personnel needs, thereby showing a good accounting of the significant short falls in the high grade area. Although we still have a significant short fall, this ceiling increase is a welcome step toward additional high grade allocations in the future."

Brennan said that the Center will use the increase to "bolster the technical and project management paths of the Tri-Ladder Career Development Program advocated by Technical Director Robert Buffum." The Director of Navy Laboratories, R. M. Hillyer, has recognized NADC's program as an outstanding initiative toward insuring technical excellence.

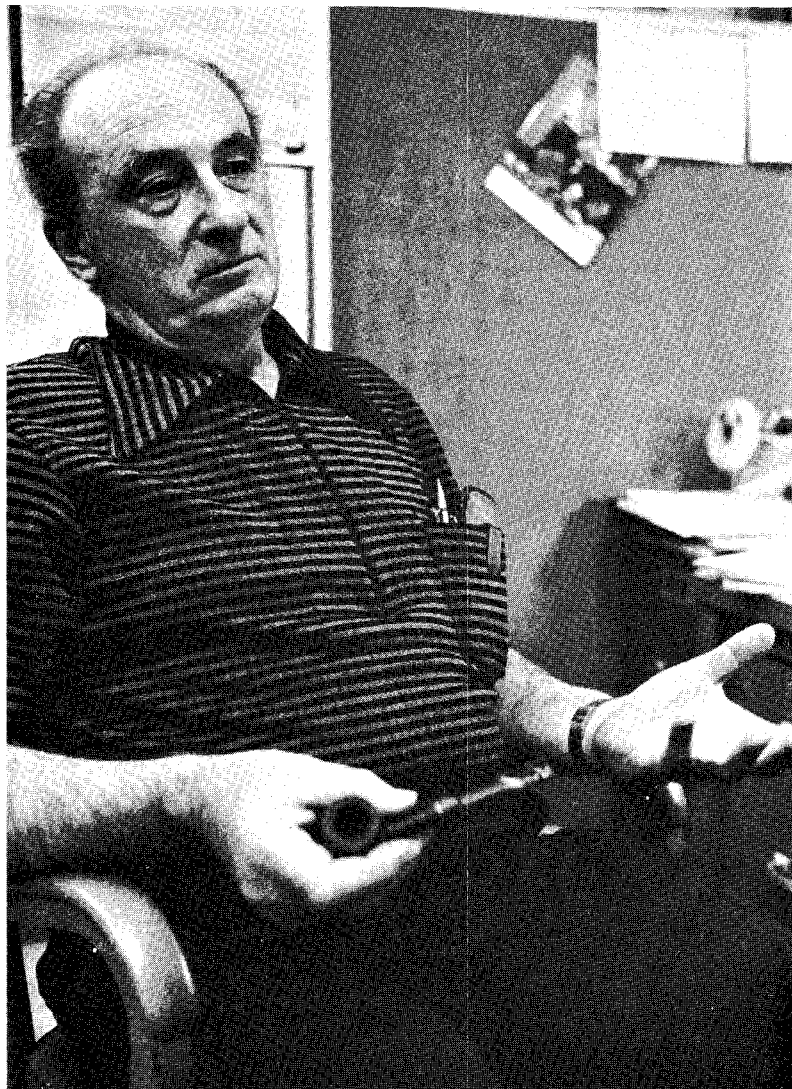
Technician's Invention Receives Patent

During his forty-three years with the Federal government, Electronics Engineering Technician Frank Previti of CNTD has become somewhat of an expert on Inter Communications Systems (ICS). His knowledge and innovative thinking have resulted in a patent being issued for a preamplifier device. Previti explained that his device, called a Balanced Impedance Coupler, is designed to eliminate inherent noise that is present in microphone systems.

Although to the layman the patented circuit sounds rather complicated, Previti said, "It was so simple I wondered why nobody had thought of it sooner". His inspiration came out of his work on shipboard communications systems for the Light Airborne Multi-Purpose System (LAMPS) helicopter. That system used a sound powered microphone. Previti stated that the system was used to provide last minute instructions to the LAMPS aircrew before taking off. Inherent noise caused by mis-matched impedance started Previti thinking.

What he finally came up with was a circuit using four transistors, nine resistors and three capacitors. In effect, what the circuit does is even out unbalanced voltage containing noise and therefore greatly enhancing the signal. It would replace any expensive and heavy transformers that are now in use.

Besides the uses in microphone systems, Previti's device has spin-off applications. Serious Hi-Fi listeners now spend between \$200 and \$300 on transformers for moving coil cartridges. Previti says that his circuit could eliminate the transformer. In addition the device, when mass produced, would only cost about one tenth the transformer's price. Fur-



Frank Previti developed a low cost pre-amplifier

thermore, the device may be envisioned as a cheap, very effective low

noise microwave amplifier for satellite receivers.

Editorial: Parking Praise

Three cheers for the enforcement of Center parking regulations. The abuse of these regulations by people who have no business parking in spaces that are for Center employees had gone on long enough. While it's true that these measures will not solve the entire problem, because space is

at a premium, they go a long way in making the situation more equitable. For the federal employees at NADC it is something of a victory, a small one, but a victory just the same. At a time when we stand to lose much, even the small victories have meaning.

Letters to the Editor:

Clouded View as Employee Tries to Clear Smoke!

Dear Editor

Last January I wrote the Editor of the Reflector with regard to the problems which were being encountered by those who commute to the Center by bicycle. It seems that someone is listening and sympathetic with the Bikie's plight. The other day I received a note from code 80 which indicated that a new locker/shower/bike storage project is in the FY-84 plans. Also, the bike rack has been moved into a visible location in hangar bay 1 to discourage pilfering from bikes.

Since my last letter has met with some success I thought I would try again, this time with regard to office smoking. On every pack of cigarettes there is a disclosure which says that cigarette smoking is hazardous to your health. From recent articles I have been reading, perhaps the disclaimer should state that cigarette smoke is also hazardous to the health of nearby non-smokers. Judging from the smoking habits of individuals in my office area, you would think that smoking was actually the answer to Ponce De Leon's fountain of youth rather than being hazardous to one's health. By 0800 the odor of smoke

has already permeated the office surroundings. By 0830 the haze from smoke is already causing eye irritations and throat discomforts which affect work for the rest of the day. The ventilation system would help the situation but it is rarely turned on because of energy conservation measures and noise. I recognize the rights of smokers, but what about the rights of non-smokers to breathe smokeless air? Would it be possible to somehow officially limit smoking to areas or times when there is adequate ventilation in the office areas? Also NAVAIRDEVCCEN instruction 6010.1 which specifically prohibits smoking in conference areas is flagrantly ignored. What good are such instructions when there is no enforcement?

Alvin Spector

According to NADC Safety Manager Mike Masington, problems with smoking within work spaces should be referred to your supervisor. A balance, however, needs to be struck between smokers and non-smokers.

There are standards for ventilation in work areas. If the ventilation is ad-

equated, both groups should be able to co-exist. The Safety Office should be contacted for the area to be checked.

As for smoking in conference rooms, it is the responsibility of the conference room manager to enforce the no smoking regulation. Those who fall in this category take note!

Editor

Lunch

I'm not sure if it has been brought up before, but I think it would be a good idea to place benches and tables outdoors so the employees can enjoy their lunch hour outside. There are many available grassy areas where a bench would fit in nicely. I am not sure who I should address this letter to, but I thought you might want to mention this idea in the *Reflector* or at least know who might be able to respond to this suggestion.

Thank you,
Steve Bazow

The Base Exterior Architectural Plan does not presently include an area dedicated to picnic tables and benches. The Base Exterior Archi-

NADC at Annapolis: Teaching and Research

(Barnhart continued)

tations for years standing. The prof was looking at twenty-four future naval officers waiting for the first words to set the tone for all that was to follow, knowing little more about what to expect than the crisp military discipline and the incredible statistics of the Academy admission process that shrinks 12,000 applicants down to 1200 plebes entering each year. The section leader brought the class to attention, stated roll and turned them over to me for 16 weeks of learning and struggling together.

The day-to-day accomplishment of parsing out knowledge at just the right pace would not have been possible without the unique teaching environment at the Academy. The Academy, from its founding, was designed to have a faculty composed of an equal mix of civilian and military instructors, a feature still very much in effect. The exchange of academic and fleet points of view is immediate and reinforcing with a senior fleet officer just transferred in for a tour of duty, or a long standing civilian professor with significant academic experience just a couple of doors away. The atmosphere is rich in tradition amplified by the dynamics of the modern Navy. The Superintendent of the Academy, Vice Admiral Edward Waller, USN, and the Commandant of Midshipmen, Commodore Leon A. Edney, USN, are quick to point out that there are no "duds" at the Academy, either students or faculty.

Coupled directly with the professional atmosphere, are the teaching resources available on campus. Besides ample modern classrooms, there are numerous laboratories in several buildings used for student work and fundamental research in all the fields for which the Academy provides curriculum. Oceanogra-

(Compassion from page 1)

working on a voice synthesis program that will allow the computer to talk, greatly enhancing the system's capabilities.

Both Bortman and Phillips, who have devoted a significant amount of

tectural Plan will address the area of landscape treatment. However, the plan has not been presented to the Center Commander in its final form. This presentation is anticipated in

phy, physics, math, chemistry, meteorology, engineering, English, history, political science, language studies, and aerospace labs are organized under the four major divisions reporting to the Academic Dean, Dr. Bruce Davidson.

The NSTEP assignment also includes research effort in parallel with the teaching duties assigned under the program. My project is associated with microprocessor signal processing and graphical display of non-destructive ultrasonics testing data and includes work with 16-bit microprocessors, a high resolution color graphics display and the preparation of two papers. I have been able to apply both hardware and software experience and enjoy the opportunity to spend time working on state-of-the-art problems, with state-of-the-art resources.

I can see that there are ways in which the resources and skills of the faculty at the Naval Academy can work with their counterparts at NADC to solve mutual problems and answer technical questions within the naval community in a way that has not been exploited previously.

The assignment continues to be an eye-opener in many ways not possible at NADC, while highlighting the need for labs like NADC in the naval community. I strongly encourage individuals at NADC to seek the opportunity to invest in the NSTEP assignments at the Naval Academy, as the return on the investment is many fold.

Rodney Barnhart

Rodney Barnhart is completing a one year NSTEP assignment in the Electrical Engineering Department at the United States Naval Academy in Annapolis, Maryland and will return to the Software and Computer Directorate in August 1983.

their own time, are involved with a program that is rewarding not only for Paula but for themselves as well. It's just one example of what Technology Transfer and caring can do.

late April or early May. By that time it is anticipated that the general type of area stated in the letter will be included in the Plan.

Editor

The Reflector

Naval Air Development Center

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CAPT James B. Anderson — Commander, NADC

Robert S. Buffum — Technical Director

Joseph P. Cody — Public Affairs Officer

David Polish — Editor

Navy Relief Events Scheduled

Relief is on the way, Navy Relief, that is! Spring has sprung and the annual drive to support Navy Relief is right around the corner. This year along with the ticket sales, and the SuperStars competition, there will be some special events. On 30 April the Cavalcade of Corvettes will be held. This show brings together over 100 custom Corvettes, several dozen vendors and thousands of visitors. Last year, in return for use of NADC's facility, the Cavalcade of Corvettes donated \$3,000.00 to Navy Relief.

A first time event to support Navy Relief will be held on 13 May. On that date a card of professional prize fights will take place in hangar bay #1.

Tickets for the event will cost \$20.

The profits from the fights will be shared by Centennial Charities, Inc., better known in this area as Kelly's Kids. Kelly's Kids is a group of physically disadvantaged children sponsored by District Justice James Kelly.

The 1982 Navy Relief Campaign raised in excess of \$165,000 in our area, an increase of 31 percent over the 1981 drive. Last year the area Navy Relief Office provided \$345,000 in loans and \$33,000 in direct grants to a client population that increased 47 percent over 1981.

Navy Relief is worthwhile. It helps those Navy personnel who need assistance. They make a sacrifice for the service of this country. We can make a little sacrifice to help them out in time of need.



Vice Admiral T. J. Kilcline gets a look at a night vision device demonstrated by Don Furmanski during a Center briefing

Mini-raft Goes Into Final Testing Stage This Month

One of NADC's many technical advances is about to go into Operational Evaluation (OPEVAL) with a production contract scheduled for 1984. The innovation is the Mini-raft, a twelve inch square by one and a half inch thick inflatable life boat. It replaces the currently used LR-1 life raft which weighs eight pounds. The Mini-raft weighs less than four pounds and its design has many advantages.

George Gillespie, ACSTD project engineer, explained that the Mini-raft can be worn as a back pack. The older LR-1 is worn around the waist and is somewhat cumbersome. The new raft is so compact that it can be easily worn without limiting mobility. This new raft is first intended for deployment with helicopter crews where mobility and compactness is important.

One of the principal features of the Mini-raft is its stability in water. It is actually shaped like a boat with a keel. The keel shape lowers the center mass below the center of buoyancy to create a very stable raft. The older LR-1 has its center of mass above the water causing it to be unstable in rough seas.

The Mini-raft has successfully completed tests with Australian Air Force, Royal Canadian Air Force, US Air Force and the Navy. NADC has compiled a maintenance manual and produced an operator and maintenance training video tape. Gillespie said that the mini-raft is being considered for use in other aircraft such as the E-2C and tactical aircraft.



Mini-raft in the water

Tech Trans Deals with Fortune 500

Several Center products, having commercial potential, were looked over carefully by a group of Fortune 500 companies recently. ARCO Chemical, Monsanto Company, Johnson Wax, Procter and Gamble Company, Amoco Chemicals, Phillips Petroleum, Eaton Corporation and others expressed interest in manufacturing and/or using several corrosion preventive compounds developed at NAVAIRDEVEN.

The occasion was a Government-Industry Technology Transfer Conference held in Baltimore. The

conference was sponsored by the Mid-Atlantic Region of the Federal Laboratory Consortium for Technology Transfer (FLC) and the industrial participants.

Ten Federal R&D Laboratories and Centers described promising technological innovations that might lead to commercially valuable products or processes.

Dr. John DeLuccia (ACSTD) presented information on AML-350, AMLGUARD, WDP (Water Displacing Paint) and the Barnacle Electrode technology. Jerry Bortman

(PAR), Regional Coordinator of the FLC, welcomed the participants. After the presentation, almost half of the industrial participants interviewed Dr. DeLuccia regarding potential applications of the corrosion preventive processes and products.

NADC, with MAT-08I sponsorship, is continuing to explore innovative programs to promote commercialization of Navy technology, thus stimulating business and economic development.

Employees and Organizations Given 1982 Safety Awards

Five out of fifteen Center organizations and forty-one individuals have received recognition for completing one accident free year. The Computer Department, Civilian Personnel, Command Projects Directorate, Systems Directorate-Sensors and Avionics Technology Directorate and the people whose names are listed at the end of this article have all been honored for their safe work habits.

Accident free means that during the past year no time had been lost

because of occupationally related mishaps. In the past year the Center recorded twenty-five lost time accidents and illnesses resulting in 1648 lost hours due to injury.

When organizations effectively make an effort to reduce potential hazards the results can be seen in increased productivity. Those individuals and organizations that strive for safety can be proud of the records they establish.

These employees received individual safety awards: From 81; Vincent

Mistico, William Siner, Svend Bernsten, John Rudolph and Vincent Morelli. From 84; William Sunday, Harold Hidleburg, John Kuklinski, John Indelicato and Edward Engle. From 83; George Sterling, John Hanson and Edward Linke. From 044; Edward Long and Martin Armstrong.

The following received Material Handling and Construction Equipment Operators' Awards: From 83; Edward Scott, Dale Jackson, Lister Ransom, Herbert Camper, William

Walto, Robert Urban, John Boney, Leroy Stover, Joseph McHugh, Julius Newman, Frank Sherard and William Capps. From 84; James Taylor, Joseph King, John McGee, Andrew Hall, Robert Clegg, William Robertson, Kenneth Danser, William Singleton and Harry Tkoch.

Safe Driving awards were received by: Joseph Tarvin, Thomas Ryan, William DeBoer, Michael Beasler and William Zar.

Special Family Day Planned

Get ready for NADC Family Day/Open House. This year the Center will host employees and their family members for an afternoon of exhibits and demonstrations. On 8 July, from 1230 to 1530 NADC will open its doors to the families of its Federal employees and full time contractors. One hour of excused leave will be granted for the purpose of leaving the Center to bring back any family that lacks transportation.

It's still some way off but now would be a good time to start thinking about exhibits that would best show what your work is about. Directorate coordinators will be looking for ideas so speak up and let them know. Watch for further announcements as the time gets closer.

Decade of Disabled

On December 3, 1982, the United Nations General Assembly proclaimed the period 1983-1992 as the Decade of Disabled Persons. The National Office of Disability is heading the decade program in the United States and coordinating its activities among federal organizations and private sector communities.

Despite the progress the Department of Navy (DoN) has made in recent years—the extensive activity of the 1981 International Year of Disabled Persons and the 1982 National Year of Disabled Persons—there is still considerable work DoN can do to improve the representation of disabled persons in the workforce and to assure their participation at all levels of the organization.

The Navy goal is to establish the groundwork for a federal-wide Navy role as the "model" employer of disabled persons. We can begin by identifying barriers and initiating innovative programs to eliminate these barriers or to lessen their impact.

Commander Salutes

NADC's Fire Department and the Senior Watch Officer for their assistance to Warminster General Hospital during the February snow storm.

David Davis, SATD, for his contributions to the Tri-Service Combat Identification Systems Conference.

Super Safety Reduces Danger

by Mike Masington

Myron Muchgut, well known foodaholic, original junkfood junkie, and only person (other than Billy Carter) to receive a personal letter of commendation from the Budweiser Brewing Company, looked deeply dejected as he returned to his office after a visit to his family doctor. Quenton Macho, Myron's right-hand man, had been waiting for his boss to come back and quickly noticed his somewhat less than enthusiastic demeanor. "What's the matter, Myron?" queried Quenton.

The perturbed protein predator peered up peevishly from his prodigious paunch and said, "Aw, my doctor said I'm overweight. He said it's elevating my blood pressure, overworking my heart, and that my spare tire looks like a fugitive from an 18 wheeler." "Wow, that's pretty harsh," replied Macho. "If you think that's bad," continued Muchgut, "he also said if I don't lose forty pounds, he's going to perform a stomach lift on me with a rusty Boy Scout knife."

"Hey, no problem, boss," replied the much muscled Macho. "You've just got to follow the diet the doctor gave you and get some exercise."

"Exercise," snapped the sensitive

supervisor. "Just yesterday didn't I walk all the way to Elroy's Ice Cream Emporium for the two-for-one banana split special, and don't I hold the Club record for one-hand beer can crushing?"

"Ah, that's not quite what I had in mind, boss," said his supportive subordinate. "You've got to jog, or bicycle or swim or something to get that fat off."

Muchgut, never one to attack a problem half-heartedly, realized the wisdom of his friend's words and set out on a weight reduction program with grim determination. First, he threw out that "dumb" diet his doctor had prescribed and tried the Dr. Malpractice diet, the Bean Curd diet, and the Sword Swallower's diet before finally settling on one used by his 90-pound teenage daughter. This one consisted of consuming nothing but guacamole dip, yak milk and natural prune juice (it doesn't have much protein, but it greatly enhances your ability to run short distances). In addition, even though he'd been flying a desk for some time, he began a crash program of strenuous exercise including running, weight lifting, calisthenics, etc. He noticed that he often felt a little weak and dizzy, but

he kept up the pace and even added an occasional sauna to melt off the pounds. It was during one of these extended periods in the pressure cooker that Myron's overzealous activities finally caught up to him, and he collapsed on the floor.

As luck would have it however, the fastidious aficionado of physical fitness, Super Safety, happened to be in the gym that day, saw Muchgut's plight and pulled him out in the nick of time. As Myron returned to consciousness Safety said, "Myron, what are you trying to do, imitate a giant steamed clam?"

"No, Super," mumbled the groggy Muchgut, "I guess I just fell asleep in there. I have been kind of tired lately, but I've got to lose weight."

"You'll lose more than that if you keep this up," continued the concerned caped crusader. "Any major weight reduction program must be carefully controlled. Exercise of course is important, but it should be done gradually and in stages. Proper nutrition is also a necessity. Crash or fad diets seldom supply the full range of nutrients the body needs to sustain itself. Follow your doctor's advice, and eat what he tells you to. You may not shed the weight as fast, but you'll lose it more safely and probably will find it easier to keep off in the future."

Myron had apparently learned his lesson and as they waited for the medics to arrive, the peerless paragon of protection asked if there was anything he wanted.

"Yeah," replied Muchgut, "I could really go for a pepperoni pizza, a root beer float, a jar of dill pickles, a chocolate Ding Dong, a bag of po-

tato chips and a couple of Big Macs. "Oh, on second thought," he recanted, "I'm still on a diet. Instead of a root beer float, make it a Diet Pepsi."

Good Bonds Deal

The annual Savings Bond campaign within the Department of the Navy commenced 1 April and will continue through 1 May 1983.

In a message launching this year's campaign, Secretary of Defense Caspar Weinberger stated:

"Today's Savings Bonds are more attractive than ever before. Savings Bonds now offer a variable market-based rate if held for five years or more. That rate is 85 percent of the average return on outstanding treasury marketable securities that mature in five years. The interest rate on Savings Bonds, thus, floats as market rates fluctuate, continuously providing a fair return. In addition, savings are protected from drastic declines in market rates by a guaranteed minimum return.

"I hope you will give the Payroll Savings Plan your careful consideration when you're called on during the campaign. It's an investment in our country, a convenient way to save, and with the new market-based rate, a better investment."

Library Has IEEE Periodicals

The Institute of Electrical and Electronics Engineers, Inc. currently publishes 55 periodicals containing information on every aspect of electrical, electronic, and computer science engineering. The Technical Information Branch holds most of the IEEE periodicals published since the 1950's, as well as the *PROCEEDINGS OF THE INSTITUTE OF RADIO ENGINEERS* (IEEE's predecessor) back to 1929. Due to overcrowding shelves, all IEEE periodicals since 1971 have been received in microfiche. IEEE has begun several new periodicals. Holdings and descriptions of those in the TIB are listed below.

IEEE CIRCUITS AND SYSTEMS MAGAZINE, vol. 5, 1983—Full-length papers of practical use to circuits and systems engineers. Also features tutorials of a light technical nature, book reviews, news and notes and conferences.

IEEE COMPUTER GRAPHICS AND APPLICATIONS MAGAZINE, vol. 3, 1983—Computer graphics hardware and software, display technology, computational geometry, geometric data structures and data bases, industrial applications, human factors for graphics, interactive graphics languages, and distributed graphics techniques.

IEEE CONTROL SYSTEMS MAGAZINE, vol. 1, 1981—Technical articles emphasizing control system applications and experiences, design tools, conference programs, and book reviews.

IEEE ELECTRON DEVICE LETTERS, vol. 2, 1982—Rapid publication of short communications on new results in the fields of electron devices.

IEEE MICRO, vol. 1, 1981—Microprocessor technology, applications, fabrication and computer-aided design, system support software, interfacing techniques, chip design and fabrication, personal computing, draft standards for hardware, software, and interconnections, control hierarchies, and architectures.

IEEE POWER ENGINEERING REVIEW, vol. 3, 1983—Electric power system engineering. Includes one-page summaries of all papers accepted for publication in the *POWER APPARATUS AND SYSTEMS TRANSACTIONS*, selected prize papers, and the *POWER ENGINEERING SOCIETY NEWSLETTER*.

IEEE TRANSACTIONS ON MEDICAL IMAGING, vol. 1, 1982—Medical imaging relating to ultrasonics, x-ray imaging and tomography, and nuclear isotope imaging systems. Image processing by computers, microwave imaging, mathematical tools and analysis of image formation, perception, and display and pattern recognition.

IEEE TRANSACTIONS ON COMPUTER-AIDED DESIGN OF INTEGRATED CIRCUITS AND SYSTEMS, will receive beginning 1983—Methods, algorithms and man-machine interfaces for physical and logical design including planning, synthesis, partitioning, modeling, simulation, layout, verification, testing, and documentation of integrated circuit and system designs of all complexities.



Hal Tremblay, Computer Department Head, explains NADC main computer complex to RADM E. J. Hogan

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The Reflector

Volume 27, No. 5

Naval Air Development Center, Warminster, PA

May, 1983



The airship during its final assembly.

Blimp Scheduled to Arrive at NADC in June

The first modern technology airship to fly in 23 years will be at the Naval Air Development Center in late June. The blimp built by Airship Industries Ltd., a British Company, is to be tested under contract by the US Navy. Interest in Lighter Than Air (LTA) technology has been renewed as a result of energy conservation. LTA craft offer lower energy

consumption and significantly longer flight time than conventional aircraft.

Both the US Navy and Coast Guard are interested in airships for maritime patrol, search and rescue and geo-survey applications. The vehicle that will be tested, called the Skyship 500, is 164 feet long, 65.5

feet high, and is powered by two Porsche engines that move it along at about 64 knots. After demonstration flights at NADC, the Skyship 500 will fly to the Naval Air Test Center at Patuxent River, Maryland for further evaluation by the Navy, and then to Elizabeth City, North Carolina for exercises with the Coast Guard.

Boxing Bouts Set to Benefit Navy Relief

Professional boxing is coming to NADC. For the benefit of Navy Relief and Centennial Charity, seven bouts with a light heavyweight feature event will be held in hangar bay 1 building 4 on 10 June at 8:00.

The main event will feature a grudge match between Richie "The Bandit" Bennett of Darby, PA and Larry Davis of Elizabeth, NJ. This ten round bout is a return match between the two fighters. Bennett, 25-6-2, 18 KO's, will seek revenge against Davis, 8-4, 3 KO's after suffering a first round knockout in their last bout at the Claridge Hotel and Casino on 9 May.

This event will be the primary fund raiser for Navy Relief this year. Arrangements for the event are being made by an Atlantic City fight promotion firm, Joe Hand Promotions,

who have made provisions to bring up from Atlantic City an excellent professional fight card along with a Casino announcer, professional ring and ring girls. Everything about this fight will be casino caliber, except the prices.

During that evening the drawing

Center Honors Five Employees for their Achievements

People are what NADC is all about and each year the best are honored with awards for outstanding contributions to their projects, leadership in scientific and engineering and support to the Center. This year five people were singled out for their performance.

LCDR David N. Seckinger and Franz Bohn shared the Project Leadership Award for their contributions to the P-3C UPDATE III Project.

for the Navy Relief Raffle Grand Prize, a 1983 Chevette, will take place.

It promises to be an exciting night so get your tickets early. They are available from the Public Affairs Office at \$12 each. Call X3067 for further details.

They both directed the design, development, integration and testing of both avionics and software for the next production P-3C system.

Maureen T. Marron received the Support Achievement Award for her work in developing NADC's Employee Assistance Program. She arranged for an outside agency to provide counseling/professional assistance to all Center employees. In addition, Marron contributed to the

Director of Navy Laboratories Visits NADC

The Director of Navy Laboratories, Robert Hillyer, visited the Center recently for the purpose of briefing NADC's management on the progress of the DNL goals for Navy labs. In the year that Hillyer has been DNL he stated that "progress has been made in several areas."

On increasing the technology base, new ceilings have been set. NADC, for example, was allocated over 200 positions. In addition, Hillyer said that 21 new high grade positions were given to NADC as a result

of justifications prepared by Center Management. Another one of Hillyer's goals is to assure that the eight Navy research and development centers maximize the use of their resources. To that end, agreements between the laboratories to clarify mission parameters have been finalized.

Hillyer fielded questions from division and branch heads. He was asked about what can be done to speed up the procurement process and a suggestion from the group in-

volving the setting of procurement milestones interested Hillyer and he said he would take it back to Washington for review. He was questioned about how government managers are supposed to attract new hires in the current environment. Hillyer said that he views scientist and engineer salaries as fairly competitive when benefits such as educational opportunities and project responsibility are included. He added that the government must become more aggressive in recruiting young people.

Center Announces Winner of Sailor of the Year Award

By Carolyn Riemer

AME2 John Harris has been named the Center's Sailor of the Year for 1982 for his work as a member of the Aviators Life Support Branch (8213).

In addition, the winner of the Sailor of the First Quarter for 1983 has also been announced. HM2 Jose Marrero, of the Aircraft and Crew Systems Technology Directorate, won this award for work as project coordinator for some of the Center's aviation bio-medical research programs.

The winners of the Sailor of the Year and Sailor of the Quarter awards are chosen by the Center's Chief Petty Officers from nominations submitted by the various division chiefs. The award requirements are set by NAVMAT, according to AFCM Boyd Stodolski, chairman of the Chief Petty Officers Association on Center.

The choice of Harris for the Sailor of the Year award was for his "pride, professionalism of work, adaptability and leadership among his peers," Stodolski said.

Harris, who is responsible for helping to maintain the survival and air conditioning equipment in NADC aircraft, was also commended in a letter from Center Commander CAPT James B. Anderson.

"Demonstrating superior technical competence, leadership and personal initiative, you exemplify the pride and professionalism of today's Navy," the letter stated. "You have proven to be a conscientious and dedicated individual, and a leader by example."

establishment and administration of realistic and objective performance assessment procedures.

For his research in the area of laser beam spreading, Dr. Lloyd C. Bobb was honored with the Scientific Achievement Award. Bobb's work has been recognized by the University of Pennsylvania, Princeton University, Massachusetts Institute of Technology and Johns Hopkins University.

On winning the award, Harris said he was both surprised and glad about his selection.

Besides the selection of Harris, the Center's Chief Petty Officers also chose Marrero as the Sailor of the Quarter for the first three months of 1983.

Marrero is responsible for the scheduling for many of the aviation bio-medical research programs, a job that includes scheduling times program subjects are to participate in a project. It also includes tasks such as taking a subject's vital signs and insuring the subjects are dressed in proper gear.

Marrero was selected for the award because of his "outstanding professional performance and contributions" to ACSTD, according to the letter of commendation sent by Capt. Anderson.

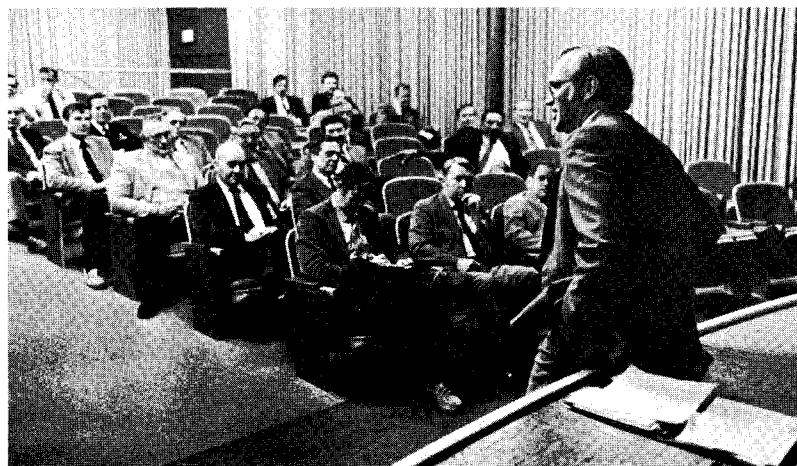
"Your expertise, resourcefulness and devotion to duty have greatly contributed to many of the current aviation bio-medical research programs being conducted at the Center," the letter stated. "... you maintained the required flexibility and composure to ensure efficient use of time and personnel in extremely variable situations."

Marrero, too, said he was surprised and pleased about winning the award.

Just a reminder, NADC Family Day will be held 8 July. Bring in the family and show them where you work. The Center will be open to the families of employees and contractors with badges that require no escort from 1300 until 1600 that day.

Donato M. Russo received the Engineering Achievement Award for his contributions to acoustic signal processing. His work has resulted in the Advanced Signal Processor, AN/UYS-1, which will be installed in over 500 aircraft, ships and submarines.

Lou Daouphars was honored by the Navy for his 28 years of technical and professional competence. For his achievements the Navy Superior Civilian Service Award was given to him by CNM Admiral Williams.

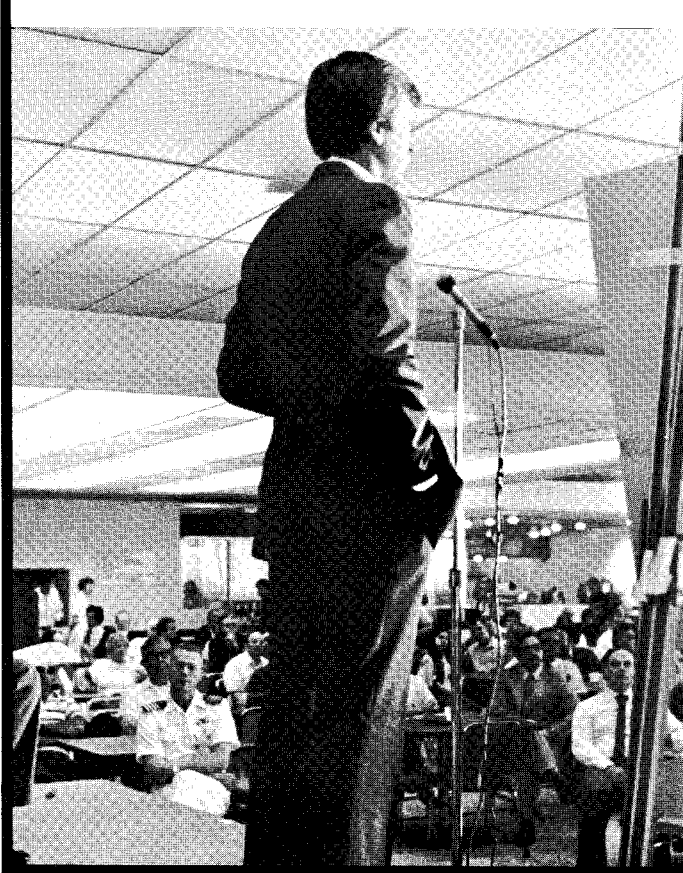


Director of Navy Laboratories, Robert Hillyer addresses Center project managers and division heads.



Top: The Center was recently presented with a certificate by principal Kenneth Kastle of William Tennent High School for the Center's Stay-in-School program. Under this program, students are allowed to work 20 hours a week while enrolled in school and are allowed to work full-time during vacation periods. Currently 13 students are participating in the Stay-in-School Program. Eleven of the students attend Tennent. Two other students attend Bucks County Community College, and are also graduates of Tennent. Pictured (l to r): Thomas Brennan, Associate Technical Director; Gil Ridley, Deputy EEO Officer; Ron Young, Director of CPD; Marlene Grubb of Civilian Personnel; John Baginski, Cooperative Education Office of Tennent; Captain James Anderson, Center Commander; and Kenneth Kastle, principal of Tennent.

Left: Eighth District Congressman Peter Kostmayer talked to center employees about changes in the civil service system this month.



Parking One

To the Editor:

I am writing in response to your editorial on parking in the April *Reflector*. You have apparently not thought this through. You speak of the now "equitable situation" due to regulation and enforcement. Oh. . . *Contraire! Pierre!* Restricting contractors to parking in the back lot is blatant institutional discrimination! What's next, relegating contractors to the back of the cafeteria? Separate lavatories? Wouldn't these be bigger and better "victories?" The NADC administration officially promotes the theme of a harmonious "One Big Team" effort. Military, civilian and contractor, all pulling together for the common good. The whole situation brings to mind the anecdote about the drill sergeant lecturing to his troops. "We are all Marines. No black Marines. No white Marines. All of us are green Marines. Now let's fallout. You light green Marines proceed to the chow hall while you dark green Marines dig the latrine."

There are places here at NADC where contractors are not welcome or allowed even on government business, i.e., special programs, shop stores, purchasing. This year's Family Day poster invites military and civilian in 40 point type while a misleading "also permanent contractors" is there in 28 point.

If you are inviting people on board

to work with you, equitable treatment would be expected, not turning us into adversaries to do battle with. The situation created by the base administration is bad enough without your editorial which was in rather bad taste.

Not Yet Vanquished
Stephen Grant Shipley

Parking Two

We now have the editor of the *Reflector* (NADC, Warminster, Pa. monthly newsletter) calling the new NADC parking regulation a "small victory" for Federal Employees. This is irresponsible journalism. This regulation requires that contractor personnel, working full-time at NADC, park in Parking Lot #2 which is about an 8 minute walk from their work stations.

Another "small victory" may be that contractors are not allowed in certain offices even though their job requires that they interface with that office. Those office personnel (Federal Employees) state that they are not allowed to talk to contractors (these cases may be isolated).

I guess that these examples are "small victories" to Federal Employees who state that with all the benefits they are losing this is some tangible gain. The victim of the gain is the contracting sector. A group with no representation at any personnel policy meetings and with no avenue of redress. The victory is over

the defenseless.

Why do we have contractors? In 1979 the Office of Management and Budget (OMB) issued a circular (A-76), which states in part, "In a democratic free enterprise system, the Government should not compete with its citizens." This means that if the civilian sector can do the job as well and cheaper they will get the job. Along with this circular a study was conducted regarding relative cost to do a specific task. The cost from least to most expensive was contractor, military, Federal Employees. Why? The military and Federal Employees have benefits that are costed (prorated basis) for each job. These costs include medical benefits, overhead (facilities) and retirement. These costs are added to wages and material to estimate the cost of a job. This can, in many cases, make the government cost much higher than contractor cost.

Additionally, a part of the platform that the last two presidents ran on included a resolution to reduce the size of government. This issue helped to elect both of these presidents. They followed through on their promise—Federal Employee positions were reduced. However, this is a huge government with an enormous amount of work to perform. Contractors were hired to do some of these jobs. Sure, we have cut down on government size, but just as many people are working in jobs to support the government. They are not paid directly by the Federal Government. This approach may be fiscally sound; the jury is still out on

that.

The entire point is, that contractors exist because the government says they will. Government agencies have the responsibility to employ contractors if they can perform the same task cheaper. Now a particular agency, NADC, will take it upon itself to gain "small victories" at the contractors' expense. An 8 minute walk to work is 16 minutes out of a 30 minute lunch.

Covert institutional discrimination is as much against the law as overt segregation. There are better ways to gain "small victories" than to make a particular segment of your work force pay for victories with losses.

Respectfully,
Barry Sanders

Parking Three

To the Editor:

I was somewhat surprised at your obvious lack of control over the recent April 1983 issue of the *Reflector*. May I remind you that, as editor, you are directly responsible for the contents of any unsigned editorials that appear in print under your supervision. I am referring, of course, to the Parking Praise article complete with its claims of "victory" and "equity."

As stated in its preamble, the *Reflector* is published with appropriated funds to promote the "morale and general welfare of all concerned." Well, I am concerned and my morale is not promoted in the least.

This article should have mentioned the total waste of time and therefore government tax dollars that is incurred daily as hundreds of contractor personnel are forced to park in blatantly remote locations for the mere convenience of the purported "victors."

I must ask you, who has declared a war? Is it a victory when a "Center Employee" may now get a prime parking space regardless of the time of arrival at work, even at the direct inconvenience to his fellow workers? During my past years as a user of the parking areas in question I never once had ANY difficulty finding a parking place in the first three rows when arriving before 7:30 AM. I would imagine that the current quest for "victories" would be better served by initiation of a better sense of teamwork and esprit-de-corps among all factions of the Center.

Robert P. McCaskey

Smoking

To the Editor:

Your reply to the letter in the last *Reflector* with regard to smoking read like a NAVAIRDEVCON instruction and gave me the impression that I was reading a lot of words that completely bistedped any solution to the problem outlined by the writer and shared by a very large majority of people who work here at NAVAIRDEVCON.

We need no balance between smokers and non-smokers because it's been proven that cigarette smoking causes cancer.

I sit in conferences with managers who light up even when there are signs posted and no one will say anything because of their positions. Supervisors don't want to, and shouldn't have to, be put in a position to take any one part on an issue such as health. If you sit in a doctor's office, there are always "no smoking" signs because they know it's important.

This Center should revise the instructions regarding smoking or perhaps have areas set aside for smoking if they want to, but individuals should not have to express their objections to a subject that is just as detrimental to the health of the work force of the Center as the recent issue of the potential hazard of contamination of water in the Warminster area.

The rights of a few at NAVAIRDEVCON are being defended at the expense of many.

Sincerely,
Concerned Non-Smoker
Name withheld by request

Energy Tip

To the Editor:

Please consider recommending the following energy saving tips which appear to have been (and continue to be) overlooked:

1. close doors—especially doors that lead to the outside.
2. close both sets of double doors.

Thank you very much.

Sincerely,
Frank A. Corredine
Code 4032

As is common newspaper practice, editorials are written by the editor or the editorial staff. Since the *Reflector* has no editorial staff, the editor writes the editorials.

A meeting held with contract employees and CAPT James Anderson resulted in several suggestions to improve the parking problem. Some of those suggestions are now being implemented.

The Reflector

Naval Air Development Center

The *REFLECTOR* is published monthly by the Public Affairs Office to inform Center personnel about topics of interest, and to promote the morale and general welfare of all concerned.

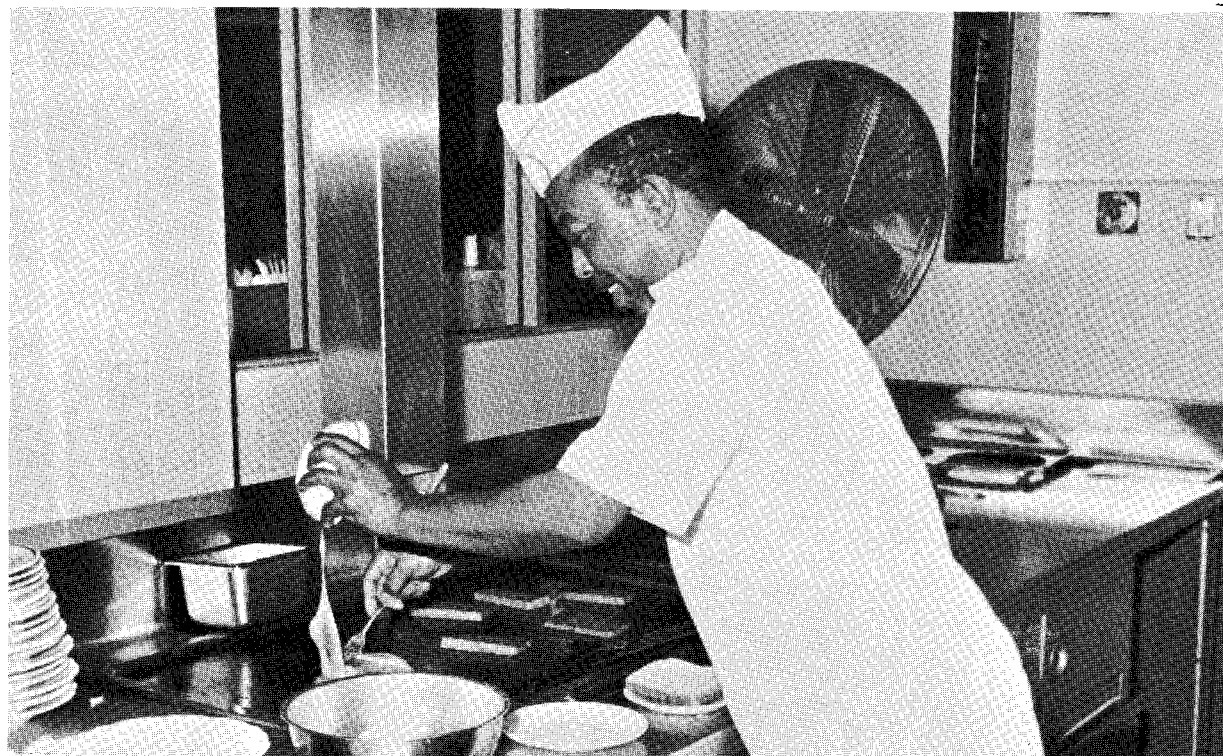
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CAPT James B. Anderson — Commander, NADC
Robert S. Buffum — Technical Director
Joseph P. Cody — Public Affairs Officer
David Polish — Editor
Carolyn Riemer — Assistant Editor



Marshall Medley prepares breakfast.

NADC Employees Served Breakfast With a Smile

By Jeannie Beans

After a long drive through morning traffic, you arrive at work, stumble sleepy and bleary-eyed into the cafeteria for something to get your day started. Not only do you get a nice fresh breakfast made quickly to order but you receive one of the warmest, cheeriest greetings you could hope to get before 8:30 a.m.

Recently, Marshall Medley was commended by the Food Services Board for his courteous service and pleasant personality. Many NADC employees have been so impressed by Medley that they felt compelled to let someone know.

The Public Affairs Staff visited Medley one morning to catch him in action. No matter how despondent one might be when entering the cafeteria, you cannot help having your spirits lifted with his greeting. Medley commented, "I have to treat the people of NADC right; I have to keep them happy."

Medley has been here for a year. Prior to working at NADC he was an Assistant Manager at Amstar Sugar Plant in Philadelphia. When we asked Bob Greene, the cafeteria manager, how he felt about Medley's letter of appreciation, he said, "Marshall is a very meaningful and assertive person. He is well liked, well mannered and Macke is pleased to have him as an employee. All the employees of the cafeteria wish Marshall congratulations!"

Medley feels obligated to bring the people down to the cafeteria with his manner so he can get them interested in giving their bodies some nourishment in the morning. He describes this as being "energy-wise."

NADC is lucky to have Medley working in the cafeteria. In today's world of shortfalls, shortcuts and good things short-lived, Medley's smile and friendly greeting go a long way.



John Marquez (seated on left) and Joe Marone (right) sign up for their 10 June bout to be fought at NADC. Looking on (l to r) are: Trainer Nick Scilovati; Steve Collins, Marone's manager; promoter Joe Hand; Warminster District Justice James Kelly; and Captain James Anderson, Center Commander.

Digital Display Technology Undergoing Modification

The NADC developed carrier based anti-submarine warfare module (CV-ASWM) is currently undergoing a modification to its display equipment. Tony D'Addezio, SCD, said the modification is a result of a two year effort to incorporate digital display technology in the CV-ASWM.

The new display system is an outgrowth of the "Q-21" family of displays. Designated AN UYQ-21, the system has color graphics, and the capacity to process 17,500 alphanumeric characters, 10,000 vectors, 500 conics (circles or ellipses) and 5,000 symbols per second.

D'Addezio explained that the sys-

tem, built by Hughes, uses raster technology. Raster technology is the same type of system our home televisions use to display pictures. Images are formed by a series of dots on a horizontal line. This type of system gives the display all of its increased capabilities mentioned earlier. The system being used now on the Q-21 uses stroker technology which has limited graphics.

Delivery of the new display system is scheduled for January of 1985. It will be installed in NADC's CV-ASWM where software can be tested. Later CV-71 USS Roosevelt will be the first carrier to receive the display system. All other CV-ASWM's will be retrofitted with the system.

Computer Networking

Computerized Communication System to Interconnect Various Labs on Center

"The idea is to form a distributed network by interconnecting a number of diverse laboratories," explained John McFadden, SD. What he's talking about is a newly inaugurated computerized communications system. That system will give the Center the ability to build new concepts in aircraft systems using the many assets that already exist here. To get a picture of how the system works, you can imagine it as a set of building blocks. Each block is a different laboratory, for example the Basic Lab, CREST and Central Computer Center. For the blocks to be put together you need mortar. In this case the mortar is called a Network Adaptor

Device (NAD). The NAD is like a minicomputer and it is designed to handle the flow of information between the separate laboratories. It acts as a translator, a memory storage device, a data routing system and an error checker. All the communications are currently handled over coaxial cable at a transmission speed of 50 mega bits per second; that's 50 million pieces of information per second.

The real advantage to the system is that new systems can be developed without procuring new hardware. Future plans call for the dynamic flight simulator and other technology labs to be tied in as the need arises.



John McFadden discusses the computerized communications system that will interconnect the various laboratories on Center with the Center Management Group.

Commander Salutes

Larry Buchsbaum and William A. Stranges, both of SD, for their presentation "The Selection of Microcomputers in Weapon Systems Cost Analysis" designated as the best presentation in the C-2 working group at the 50th Military Operations Research Society (MORS) symposium recently completed at the US Naval Academy.

Paul B. Aller, SD, Joyce Moore, Richard A. James and LCDR Charles L. Butler, all of DCP, for their support to NAVAIR by participating in a Program Management Assistance Group to study the avionics testing, installation and verification efforts at IBM.

Blaine Price, Comptroller, Thomas Willey, PAR, and Robert F. Swierczynski, ACSTD, all for their work on NADC's Corporate Plan.

Edward C. Beach, Edward H. Beals, Frank A. Corredine, Mary K. Daly, Vincent A. DeCristofaro,

Steve J. Dunham, Steve P. Fleischut, Anthony Geneva, David J. Hancharik, John T. Handal, also John R. Kauker, Stephen Kochanski, Timothy J. Kowalczyk, Jules Kriegsmann, Martin E. Leblang, Anthony Marino, Sidney A. Mittman, Frederick M. Pappalardi, Arthur P. Stevens, all for their work during sea trials on the USNS H. H. Hess (T-AGS-38).

Daniel Probert, PAR, for his assistance to the NAVAIR Sonobouy Logistics Working Group.

Jerold M. Magill, SD, for his presentation to NAVAIR titled "Anti-Air Warfare in Fleet Air Defense".

LT Alfred A. Manzi for his validation of S-3 FI 4.0.3 software for the Naval Weapons Evaluation Facility.

A01 Albert A. Castro, for his past performance as Ordnance Branch Supervisor and Loading Crew Chief of Patrol Squadron NINETEEN's Ordnance Shop.



Corvettes lined up at the Cavalcade of Corvettes, which was held 30 April and 1 May to benefit Navy Relief.

Cavalcade of Corvettes Held at NADC

Two warm sunny days brought thousands of car buffs to NADC for the Cavalcade of Corvettes. This was the second year that over 200 cars were on display for fans to drool over. Part of the admission price

goes to Navy Relief. Last year over three thousand dollars was raised.

Corvette lovers from all over the East competed for trophies in stock, semi-custom and full-custom classes. Vendors were there to supply the

real devotee with every nut, bolt, spring and clamp for their cars.

Special thanks go to the Aircraft Department, Public Works and Security for making the event possible.

Super Safety Skewers the Menacing Baron von Hazard One More Time

By Mike Masington

Baron Tod von Hazard, machiavellian master of menace, kicker of small dogs and children, and general all around, utility creep, was riding in his sleek, black (air-polluting) limousine, when he spotted Laslo Lumphcrantz preparing to build a wooden lawn shed in his back yard. Recognizing a golden opportunity when he saw one, von Hazard quickly donned one of his devious disguises and emerged as a "helpful" passerby. The unsuspecting Laslo gratefully accepted the offer of aid, and the pernicious peer was positively palpitating as he pondered all the potential pandemonium he planned to perform.

The nefarious nobleman began by showing Laslo the wrong way to lift a stack of 2 x 4's. This particular method was designed to inflict the maximum amount of pain and strain on the individual, and had been banned by the Geneva Convention. As the now herniated homeowner was attempting to straighten up, the Baron convinced him to change from his steel-toed work shoes into a more "comfortable" pair of sneakers. When the deludable Lumphcrantz went inside to change, the Baron used the time well to scatter scrap lumber, tools, and other tripping hazards around the work area. When Laslo returned, the Baron

helped him lift six sheets of 1/2 inch plywood and ensured that he walk backwards as they carried the load across the yard. As planned, the bungling builder fell over a waiting sawhorse and had three inches of wood forcefully inserted into his mouth as he fell. Then the Baron, in a pure stroke of evil genius coupled with dazzling digital dexterity, dropped his end of the load allowing it to fall on Laslo's unprotected toes. As an added touch he then yelled, "Look out!"

After the screaming had stopped, von Hazard got Lumphcrantz to his battered feet, and helped him count his few remaining teeth. The next task involved cutting the plywood with a circular saw, and Laslo, understandably shaken by the preceding events, looked around for his safety goggles. "What," mocked the vicious von Hazard, "You're not at work now. Nobody wears safety equipment at home, it's just not needed."

It was then that a voice from behind them said, "Well Baron, up to your old tricks again, I see."

"Super Safety," gasped the heart-sick von Hazard. "What are you doing here?"

"Just keeping tabs on you, old friend," replied the popular proponent of personal protection. Turning

his attention to the luckless Lumphcrantz, the hooded hazard hater said,

"Laslo, you've got to realize that safe work practices apply every bit as much at home as they do on the job. For example, never lift more than you can safely handle. When you lift, do so with your back straight and your knees bent. This puts the weight on the legs and helps prevent back injuries. Also, using personal protective gear such as steel-toed shoes and safety glasses for home projects is just good common sense. Over 62,000 people a year could avoid home incurred eye or foot injuries just by wearing proper safety equipment. Finally, just as on the job, your work area at home should be kept neat and orderly. Tools, equipment, etc., should be put where they won't become slip or trip hazards."

The look of sudden awareness on Lumphcrantz's face told the Baron he'd been foiled again. "Well Safety," sneered the still haughty von Hazard, as he leaned against one of the supports of the partially completed shed, "You may have won this round, but you haven't heard the last of me." Unfortunately for the Baron, Laslo's carpentry was as bad as his safety habits, and as he rested against the 2 x 4, it gave way, causing

the entire structure to collapse on the hapless von Hazard.

As they surveyed the wreckage Laslo said sheepishly, "I guess I didn't build it very well."

"Nonsense," said the scion of

safety, "Mr. Goodwrench couldn't have done a better job."

"But Mr. Goodwrench is an auto mechanic," retorted the puzzled Lumphcrantz. "I know," replied Super, "I know."

The 'Voice' Records Narration for NADC



John Facenda recently recorded the voice over for the Center's new Command Presentation, which will premiere Family Day.

New Library Book Titles

Following is a partial list of books recently added to the Technical Information Branch. Visit or call your library at x2541 to inquire about these books.

MANAGERIAL SKILLS
The Art and Science of Negotiation
H. Raiffa BF637.N4R34 1982

Engineering Management
D. I. Cleland TA190.C58

In Search of Excellence: Lessons from America's Best-Run Companies
T. J. Peters HD70.U5P424 1982

Logistics Engineering and Management
B. S. Blanchard TA168.B57 1981

Managing Incompetence
W. P. Anthony HD58.9.A55

Models for Management: The Structure of Competence
HF5549.M62 1980

The One Minute Manager
K. H. Blanchard HD31.B527 1982

Winning by Negotiation
T. A. Warschaw BF637.N4W37

OFFICE AUTOMATION
Office Automation: A Survey of Tools and Techniques
D. Barcomb HF5548.2.B332

Office Automation, The Productivity Challenge
D. N. Chorafas HF5548.115.C46

Tutorial Office Automation Systems
HF5547.5.T87

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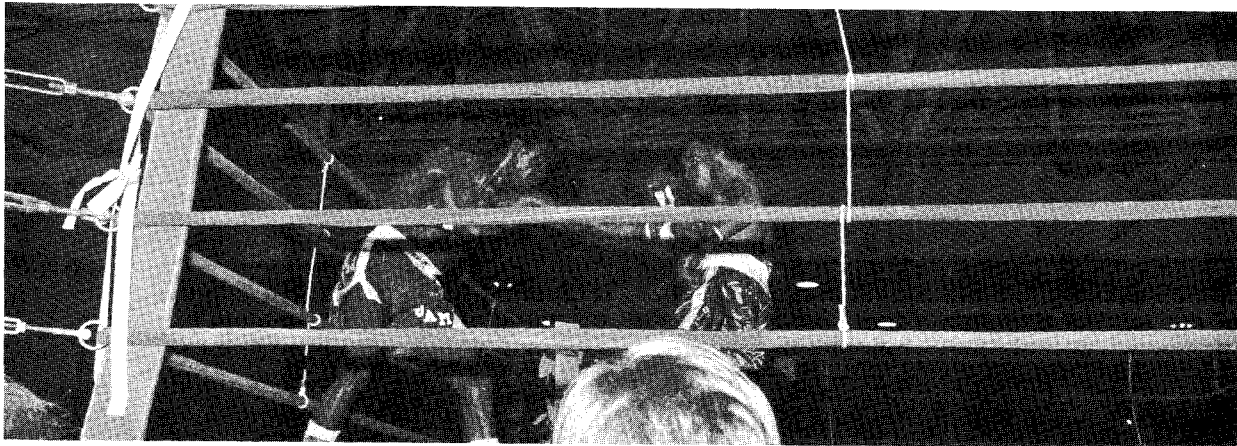


The Reflector

Volume 27, No. 6

Naval Air Development Center, Warminster, PA

June 1983



Two fighters slugging it out for Navy Relief and Centennial Charities

NADC Holds Pro Boxing Match

The first professional boxing match in NADC and Warminster history was held on 10 June 1983 in NADC's hangar. Almost 1500 screaming cheering fight fans saw a spirited group of young pro fighters slug it out in support of Navy Relief and Centennial Charities. Several of the boxers were from the Warminster area. They had many of their own family and friends in the audience.

Many in the crowd were new to the fight game. Not knowing what to expect made the night even more exciting. The first bout was short and fast, ending in the first round with a technical knockout. Several other fights also ended in TKOs. One four round match ended in a hard fought draw.

The main event was a middle-weight fight between Warminster

resident Ben Serrano and Marciano Bernardi. It was the second time these fighters had met and Serrano was out to avenge the loss he suffered in his first match with Bernardi. Serrano almost made his wish come true in the first round by flooring Bernardi just 12 seconds into the fight. Unfortunately, Serrano hurt his right hand when he nailed Bernardi. The injured hand made Serrano less effective. Bernardi took advantage of Serrano's misfortune and ended the fight with a fourth round TKO. Bernardi, however, did not escape unscathed as Serrano opened a cut on the bridge of his nose.

Before the main event the drawing for the Navy Relief raffle was held. NADC's Commander, Captain James B. Anderson, reached in the glass bowl and picked Commander

F. S. Iaquina as the winner of a 1983 Chevette.

Many positive comments were heard as to how professionally the show was run and there is already speculative talk about the next match, maybe a middleweight championship?

CNM Admiral Williams Briefs Center Executives

By Carolyn Riemer

Chief of Naval Material Admiral John G. Williams, Jr. briefed NADC senior executives about issues of importance to the Center, including the direction the Navy is headed in the next several years, the personnel ceiling and the Efficiency Review Program, during a visit to the Center last month.

Williams, who was on board with Director of Navy Laboratories Robert Hillyer to participate in the Center's Award Day ceremonies, said one message he wanted to convey was that the Navy is on the way to becoming a 600-ship Navy.

A study was conducted that showed there had been no real program growth during the years 1971 to 1981, he said. Since 1981, however, there has been real program growth. The question now is what year the Navy will achieve its 600-ship goal.

In the process of building a 600-ship Navy, there are three areas of concern, he said. One is in the area of procurement accounts, where the Navy must seek to receive more program for the dollar.

A second area of concern is to reduce the cost of ownership and a third concern is research and development. There has been a real growth in 6.1 and 6.2 funding, Williams said. This is the funding allocated for research and exploratory development as part of the Research, Development, Test and Evaluation appropriation.

Williams noted the importance of this research and development: "It all starts here—the ideas come from here, the technology comes from here... You are responsible for what the Navy will look like in 10, 20 and 30 years from now."

(continued on page 2)

Record Amount of Blood Collected at Center

By Carolyn Riemer

The Penn-Jersey Red Cross, as part of its ongoing effort to provide blood to the community, collected an NADC record 183 pints when its Bloodmobile visited the Center on 8 June.

The blood collected at NADC, and from other businesses and com-

munity organizations, is used as part of the Red Cross' program to supply blood to area hospitals.

About 1600 pints of blood are collected daily by the Red Cross and are used within two days of collection, Lorraine Pine, a Red Cross head nurse, said. This rates the Penn-Jersey area as one of the three most productive collection areas in the country.

This blood collected by the Red Cross supplies about 96 percent of the blood used in the area, Richard Stercho of the Red Cross, said.

Because the Red Cross supplies this blood, individuals are not personally responsible for replacing the blood they would use during a hospital visit.

Individuals, then, are not charged for the blood they receive; they are only charged a processing fee, which

is about \$40 a pint. Although the Red Cross blood service receives money from organizations such as the United Way, because of their \$22 million a year budget, it is necessary to charge the processing fee, Stercho said.

This blood collection program reflects the Red Cross' theory of community responsibility, he said. Blood collected from the community is used to provide blood to the community. Previously, the Red Cross had operated under a policy whereby only those covered by their plans at their place of business or by their families could receive blood free of charge.

Such a policy often caused hardship for the elderly and others on a fixed income, Stercho said. As a result, the policy was changed to the

(continued on page 3)

Ejection Tower Used to Test Aircraft Seat

Human subject testing using the Center's ejection tower, which is maintained by the Technical Services Department's Environmental Analysis Branch, was undertaken this month to test modifications made to an SJU-5/A ejection seat for the F/A-18 aircraft.

Four subjects from the Aircraft and Crew Systems Technology Directorate—Senior Chief Woodrow

Miller, HM1 Mark Ammerman, HM2 James Cisco and HM3 Donald McGee—each rode five ejections with increasing g force to test the most recent modifications to the seat.

All new ejection seats, and current seats with modifications that would change the ejectee's safety, require human subject testing to determine their physiological acceptability.

Previous testing of the SJU-5/A ejection seat showed that head rotation could be a problem for the ejectee.

As a result of this previous tower program and as a result of spinal injuries on actual aircraft ejections, possibly due to head rotation, the SJU-5/A seat was modified to im-

(continued on page 3)

Center Officer's Wives Club Makes Donations to Local Groups

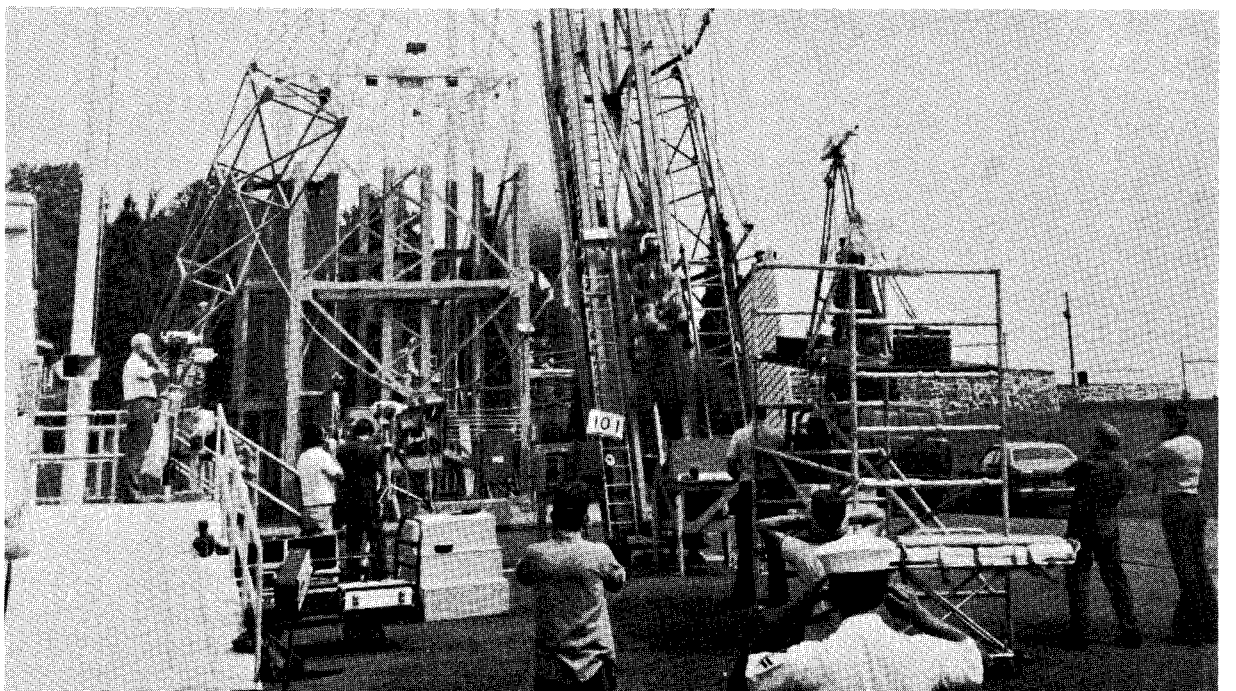
By Regina Beans

On 9 June the Naval Air Development Center Officer's Wives Club presented a check of \$1,500.00 to a representative of Bucks County Community College. This money was donated to the Ginger Tuttle Memorial Scholarship Fund. In addition, they donated \$100.00 to "A Woman's Place," a Bucks County Domestic Violence Project, \$100.00 to "Women Organized Against Rape" and \$100.00 to a Seminary Scholarship Fund.

The Navy Wives club is comprised of 60 members. Former president Barbara Patterson commented that

"the purpose of the Officer's Wives is twofold: first, to provide a support system for Officer's Wives for the time their husbands are stationed at the Center and secondly, to make a positive contribution to the community mainly by donating to charities in the area usually regarding concerns of women."

The Officer's Wives raised this money by having a bake sale, a Valentines Day flower sale and an auction. One hundred percent of the money they raise is given to charity; all their operating expenses are covered out of the money collected for dues.



Senior Chief Woodrow Miller tests the SJU-5/A ejection seat.



CNM Williams makes a point to Technical Director Robert Buffum and DNL Robert Hillyer.

Logistic Support Personnel for C-130 Meet at NADC

Recently a group of logistic support people met at NADC. The Integrated Logistic Support Management Team (ILSMT) Meeting is the only type of formal meeting utilized by the Navy in which all activities (including NAVAIRSYSCOM, Field Activities and Fleet Activities) concerned with providing logistic support are represented. Only this type of meeting provides the opportunity for all members of this ILS Team to assemble, "face to face," define a particular problem, and decide a course of action "on the spot," for its resolution. By action item assignment, the responsibility for accomplishing the required action is delegated to specific individuals or activities.

ILSMT provides fleet representatives with an overview of programs presently underway, and those planned for the future, which will have an

impact on the logistics and maintenance support for the C-130 community.

It solicits fleet inputs to certain ILS programs in the formulative stage of development.

The ILSMT identifies current deficiencies and problem areas of logistic support, factors which are adversely affecting the operational readiness, and anticipated problems related to planned programs.

Also it determines actions to be taken to eliminate the deficiencies and problem areas, and assign responsibility for such actions.

This meeting was a formal gathering of approximately one hundred representatives from all Navy, Marine and contractor activities associated with providing logistic support to the C-130/TACAMO community.

North Pole Flight Team Joins Two Exclusive Clubs

By Major Stan Toole

As reported in an earlier edition of the *Reflector*, an NADC team went to the North Pole last October. The trip carried out in P-3C 153443, was to test a prototype ring laser gyro navigation system at high latitudes and over the pole where all directions are south. The crew managed to pick the correct south and returned home safely.

The flight to the pole started from Eilson Air Force Base in Alaska and continued on over Canada's Yukon and Northwest Territories. "443" marked "on top" of the pole at 2325Z and again at 2345Z on 25 October 1982 before returning to Eilson.

To get to the Pole it is necessary to cross the Arctic Circle; by so doing, the NADC team became eligible for membership in two very exclusive organizations. These are the Navy's Bluenosers and Canada's Northwest Territories Polar Bear Chapter of the Order of Arctic Adventurers. Bluenose and Arctic Adventurer Certificates were presented to the team members in a ceremony on 10 June 1983.

The team included CAPT

Richard Fidler, LT Lee Erdman, LT Dana Place, pilots; Major Stan Toole (Canadian Forces) and LT Dan Patterson, navigators; ADC Gary Kreutzer and AD1 Gary Mathews, flight engineers; AT1 George Post, AD2 Curtis Miglionico and AE2 Kevin Starks, technicians; Joe Perrine, Gina Luce and Carl Anderson, NADC Project engineering staff; also George Dickos and Gordon Westernoff of Singer Kearfott who manufactured the ring laser gyro that was tested.

Fire Department Lends Aid

A tense drama was played out in Feasterville this past month and NADC's Fire Department was a part of it. The scene centered around a cache of dynamite stored in a trailer behind a religious school on Street Road. NADC's crash truck and crew were called in under a mutual agreement plan that interconnects area fire and police departments. Our fire people were called in to help control any possible disaster that might have resulted

Williams Briefs Senior Executives

(continued from page 1)

After his brief, Williams and Hillyer answered questions posed by NADC executives. This session was also broadcast over the Center's closed circuit television system.

One question posed was about the lifting of the personnel ceiling. The Navy was interested in hiring more engineers and scientists for Navy research and development before the ceiling was lifted, Williams said.

"We started to want to bring more engineers and scientists in before the ceiling was lifted, but before we needed special permission," he said.

There is also the concern, he continued, that the ceiling will be put back. Consequently, it is important that the Navy be disciplined in its hiring practices.

Another question posed centered on the Efficiency Review Program, which is a program to review those areas that are exempt from the com-

mercial activities studies program. The purpose of this program is not to contract out, but to find the most efficient organization for the area, which could possibly result in manpower reductions.

**"It all starts here—
the technology
comes from here . . .
You are responsible
for what the Navy
will look like
10, 20 and 30 years
from now."**

"There is a problem with the program, which is the amount of work to do the efficiency review relative to the payoff," Williams said.

To complete the program in strict accordance with the guidelines, it

would take 1600 man years of work. As a result, he said, he is encouraging the Chief of Naval Operations to run the program so it is not so manpower intensive.

The possibility of exchanging an engineer between the Office of Naval Research and NADC was also posed. Hillyer said such an exchange was a good idea, as long as the resources were used properly, because it would help the office "keep in touch with what you are doing."

Williams, too, agreed that such an exchange was a good idea and noted the importance of keeping the lines of communication open.

"So much is done in research and development that those in the system's command don't know about," he said.

If there were a greater appreciation of what was being developed, there would be a better use of it in the fleet, Williams said.

NADC Investigates Use of a New Mask

The Naval Air Development Center in Warminster, Pennsylvania is investigating the use of a British-developed mask for chemical and biological protection. The mask, designated AR-5, is being viewed as a replacement for the current U.S. Army M-24 mask hood assembly and the US Air Force MBU-13/P mask and hood.

The AR-5, in tests already completed by the British and NADC, has shown its superiority to any other system now available.

When compared to the current U.S. military M-24, the AR-5 really stands out. According to Dennis Herbert, NADC's project engineer, the M-24 has several drawbacks that are overcome by the AR-5. The M-24 mask and hood has a very narrow field of view, it can't be used with night vision goggles or any helmet mounted system and its passive breathing system causes fatigue and there are no provisions for drinking.

The AR-5, which was developed by the British Ministry of Defense, overcomes all of the M-24 shortcomings. It is made of butyl rubber and formed into a cowl that is attached to a rigid polycarbonate face plate. A small blower system provides filtered air to the user, cutting the fatigue factor associated with the M-24's passive breathing system. The AR-5 provides aircrew mem-

bers with no loss in peripheral vision; no visual distortion; it can be used with various helmet mounted systems, including ANVIS night vision goggles; this forced air system reduces breathing fatigue and keeps

the visor clear and it has an agent-proof drinking capability.

Herbert stated that the AR-5 is in an accelerated test program with a target of getting the mask approved for helicopter use during FY-84.



The AR-5 system.

The Reflector

Naval Air Development Center

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CAPT James B. Anderson — Commander, NADC

Robert S. Buffum — Technical Director

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David Polish — Editor

Carolyn Riemer — Assistant Editor



Zig's Follies (left) won this year's Superstars Competition against the challenge of DCP's Duds and Dolls, last year's champions.

Tower Used to Test Seat Changes

(continued from page 1)

prove ejectee safety. Modifications were made to the headrest, backwedge and cushioning to improve occupant safety and comfort.

The modifications made to this seat are part of an ongoing program to improve the F/A-18 escape system. In addition to the problem of head rotation, there had also been problems with pilots striking their feet on the instrument console as they ejected from the aircraft.

To correct this, toe clips were installed on the rudder pedals and this modification tested at the ejection tower. These clips are designed to guide the pilot's feet out past the instrument console in the event of an ejection.

If testing indicates that the modifications are effective, then the changes will be incorporated into the fleet.

Besides testing for physiological acceptability, data from the human subject testing was also used to determine spinal compression during ejection.

This data is being used to compare a human's response during an ejection

to a test dummy's response, which will allow better conclusions to be drawn about human ejections while using dummies.

Prior to the human subject ejections, tests were made with dummies. These tests, which besides being used for the occupant comparison, also provided the opportunity to check for structural integrity during an ejection in the seat. Various sizes of dummies were used, including oversized dummies, which were used to see if the system could take the stress.

Despite such precautions as dummy tests, the possibility for injury still exists. In fact, the only way to make a final determination on the safety of the seat is through the use of human subjects.

"If it ever hurts, it hurts badly," one of the subjects, Senior Chief Miller said. "It (the ejection) is a controlled explosion."

But, as one of the other subjects, Mark Ammerman said, "It's better for it to happen here than in the fleet." Five ejections were made for each subject, using various *g* forces. The

first test was made at 7 *g*'s and lasted less than a quarter of a second. This 7 *g* ejection was a familiarization ejection.

By starting with an ejection force of 7 *g*'s, which is the equivalent of seven times the force of the pull of gravity on the individual, any problem with the seat would be discovered and corrected before the higher *g* force shots. High speed films, taken by the Photography Branch of the Technical Services Department, are reviewed between shots to detect any potential problems before the ejections at higher *g* levels.

The ejection *g* force level is then increased by approximately two *g* increments until a 14 *g* level is achieved. The 14 *g* level force is the *g* level at which pilots eject under actual flying conditions.

During all shots, safety and emergency procedures are in effect. The fire department, emergency medical technicians and flight surgeon, LCDR L. Mills, were standing by at the tower for all the tests.

Transfer of Military-Critical Technology Poses Threat to Security

Editor's Note: "Technology Transfer" has become a subject of intense interest across the upper echelons of the Defense Department. The term, "technology transfer," refers to several types of technical information dissemination, from the beneficial exchange among American scientists and institutions, to the unauthorized disclosure of militarily critical technology.

By James D. Watkins
Admiral, U.S. Navy

The U.S. Navy has consistently been a leader in applying the best of America's modern technology. For example, in 1955, with the words

"Underway on nuclear power," USS Nautilus proved that we were a leader in nuclear propulsion and could effectively use technology to stay qualitatively well ahead of Soviet counterparts.

This recurrent theme continues—today's Navy is heavily involved in using the latest American technology across the naval warfighting spectrum.

Tomorrow's navy will continue to be the best possible expression of American technology and its practical utilization. Selected, critical technology is among our few remaining advantages in the existing, fragile military balance. This narrow edge makes up the extremely impor-

tant difference which separates us from the Soviets, a difference unfortunately evaporating even while I speak.

Should any sensible nation accede to a policy which would allow the clear technological lead of its military to erode intentionally? Of course not. But unwittingly, accidentally? Possibly. For monetary gain? Unfortunately, yes . . .

America has always prided itself in its ability to research, develop and effectively employ new concepts. This has been a national strength and has helped maintain us as a leader of the western world and defender of freedom. The Soviets are not blind to this. They have seen that much of our strength, militarily and as a nation, lies in our steady flow of technological developments, a stream they have tapped in the past with alarming success. We are certainly not endangered by the transfer of technological con-

cepts. In fact, free exchange of scientific ideas is also one of our hallmarks of world leadership. On the other hand, our goal should be to protect those few selected blue chips of U.S. military superiority

"The Soviet Union and its surrogates are embarked upon the most impressive, systematic, calculated effort the world has ever known . . . to raid the free world's technological base."

which remain, what I like to call applied militarily-critical technology.

The Soviet Union and its surrogates are embarked upon the most impressive, systematic, calculated effort the world has ever known—using both legal and illegal means—to raid the free world's technological base.

Technology transfer is too often thought of in terms of clandestine sale or transfer of specific goods or equipments, like a computer or a

new missile system; or again in terms of stolen secret defense documents like the famous U.S. photo-satellite handbook sold by an American traitor only a few years ago. But most transfers are subtle, harder to

detect and deter. In fact, technology transfer largely occurs in the marketing literature published by competitive industries who are too quick to publicize their highest technological achievements often derived from nuggets of militarily critical technology. An unrelenting well-orchestrated and financed Soviet process is quick to collect scraps of information until all essential elements of the latest U.S. military capability are in Soviet hands.

(continued on page 4)

Bloodmobile at NADC Collects Record Amount of Blood

(continued from page 1)

current policy in 1976. In addition, the blood collected is used not only to provide blood to local hospitals, but is also used to provide coverage to area residents when they are in hospitals not in the Penn-Jersey area.

Often these other hospitals will ask that a patient replace the blood that has been used during their hospital stay. The Red Cross can make provisions to do this.

Once the Red Cross collected the blood from NADC, with the assistance of volunteers from the Navy Officer's Wives Club, the blood was typed, tested, distributed and used within two days.

Patients receiving blood, however, most often do not receive whole blood. Often they receive only the part of the blood they most need.

Before collection begins, the Red Cross has determined what uses the blood collected from the various collection centers will be. The various

uses are as doubles, triples, quadruples and quintuplets.

The blood collected from NADC was scheduled for a triple, meaning the blood was to be broken down into three parts. One part would be platelets, which is used for patients with bleeding problems.

A second part the blood is broken down into red cells, which are used for those patients with red cell deficiencies, and the third part is plasma, which is used for patients with plasma deficiencies.

Often people give blood because they know it benefits others and because it makes them feel good, Pine said. This view was confirmed by those donating blood.

Ray Bernard, Public Works, said, "I was in the service and my boys were in the service. I know what good it can do." Kevin McGinley, of ACSTD, expressed similar sentiments, "It's a good cause, and it's always possible there could be a shortage."



John Williamson (foreground) and Ray Bernard, both of Public Works, give blood to the Red Cross.

Transfer of Military-Critical Technology Poses Threat

(continued from page 3)

How do the Soviets get away with this? Most of their efforts take place right before our very eyes; only a small contingent continues to employ more traditional "hand-in-the-safe" techniques. It is amazing what is openly published in magazines, journals and reports in this country. The Soviets are the world's largest producer of scientific and technical abstracts, employing over 100,000 full-time people to translate, review and catalogue information generated from "free societies."

In this country you can easily find full-color photographs with detailed layouts of our weapons, display consoles and interiors of aircraft and ships published in various defense, scientific and company journals.

Scientific exchanges are another area of technology transfer abused by the Soviets. Since 1972 this nation has signed 10 bilateral agreements with the Soviet Union on scientific and technical subjects. At one time there were as many as 250 different ongoing projects in these 10 areas of agreement with over eleven hundred people engaged in this exchange.

Fortunately, almost all of these bilateral agreements have now been terminated. But the most important and self-defeating of all areas of technology transfer is Soviet importation of sophisticated manufacturing technology, unwittingly delivered to them by manufacturers within the military-industrial complex.

Much of this has, in the past, been carried out openly and legally in trade agreements between this country, other western nations, and the USSR.

This is not just the Government's problem. It's a problem for all who are concerned for the security of this nation. We must learn to discipline ourselves, to hold high technology cards close to our chest, carefully watching those with whom we deal to determine intentions.

Before this initiative to control transfer of critical technology runs its course, it will entail new legislation and policy direction at the national level. But laws and regulations are inadequate in themselves. What is required is a grass-roots effort with the combined support of industry, academia and Government. And while there is no need for national paranoia, a clarion call is urgently needed for our free society to protect what should be, at least for a time, held as *our own*. There must be an educational program to understand and accept that a significant problem exists, and then we must find a solution. Once this is done, then industry can work successfully with defense and other national agencies toward establishing reasonable and practical guidelines for stemming the flow of selected, militarily-critical technology to the Soviet Union.

Acquisition and application of our technology by the Soviets allows them to remain state-of-the-art

without spending time and money for research, development and testing. It means that each of their rubles spent on military hardware goes further and is multiplied by dollars we spend on research and development of systems and technologies which they can pick up from us and our allies nearly free of charge.

To keep our deterrent of warfighting capability, we must ensure our nation's militarily-critical technology remains *our* technology. We cannot allow the Soviets to take *ours* for *theirs* and at such a bargain basement price. Too often in the past we have casually written off these costly losses as the price of a free open society. I contend we can have the latter without the burden of the former if we put our minds to it. And if we can do so, we would make as important a contribution to the defense of our country as any other of our major defense programs.

In fact, if we can get our national act together on this issue, we would not only enhance our warfighting capabilities vis-a-vis the Soviet forces by limiting technology loss, but do so at reduced spending levels as well. The time is right for all of us to join in an effort to keep what remains of our sparse technological lead from slipping further through our collective fingers. I can assure you of the Navy's intense dedication to this end.



Warminster celebrates Memorial Day each year with a parade. This year NADC's Color Guard Unit marched up the parade route. Also LCDR C. L. Butler handled the guest speaker honors. As you may remember it was a rainy cool day for a parade but many local resi-

dents turned out to remember those who have dedicated their lives to the service of the United States.

Those who marched in the parade were AD2 Thomas W. Anderson, AC2 Brandon S. Bentley, AME2 John F. Harris and ADAN Brenda Milner.

CHAMPUS Claims

DEERS Sign-up Necessary

Families who have not signed up with the Defense Enrollment Eligibility Reporting System (DEERS) will have their CHAMPUS claims denied starting this July.

Active-duty families not properly enrolled with DEERS, or who need

updates to their records, should contact the personnel office of their parent service right away. Retirees, their families and survivors should immediately contact the nearest personnel office of any service.

"DEERS has been a major undertaking," said CHAMPUS Director Theodore D. Wood, "and we are ready to reap the payoff—with more effective use of our health care dollars. DEERS has already proven valuable in planning. Now it will help crack down on fraud and abuse of the health benefit for military families."

The DEERS/CHAMPUS linkup has been tested since 1981 and will actually "go live" in the Western, Mid-Atlantic and Southeastern states in July. And soon after, all states will be phased in. Starting in October, families will not be able to get non-emergency care at military hospitals or clinics unless they are properly signed up with DEERS.

By now, all persons in the United States who are covered for Uniformed Service health benefits should be enrolled with DEERS. The Defense Department estimates that at least 98 percent of active duty and retired sponsors are, in fact, signed up, as well as the majority of their families.

CHAMPUS officials expressed concern, however, about those people who are eligible for CHAMPUS but have their claims denied because they hadn't signed up with DEERS or hadn't updated their records. But once the DEERS/CHAMPUS tie-in is made, sponsors must be enrolled and be on the DEERS computer before their claims can be processed. Families should expect a six to eight week lag from when they mail or bring in the enrollment papers until they're actually on the computer. Their CHAMPUS claims could be denied during this time—no matter whether the claim was filed by the family or a provider. Such families can resubmit their claims after they enroll and are on the DEERS computer.

Commander Salutes

David R. Gottlieb, SD, Leslie W. Greenbaum and Thomas J. Shopple, Comptroller, Ralph Cantanese, Stuart B. Simon and Thomas E. Willey, PAR, all for their assistance during discussions of the Center Information System with the Naval Air Test Center.

Henry S. McCloskey, Computer Department, and Larry M. Smith, SCD, both for their support of the NAVAIR S-3 Project Office.

Thomas J. Green, SD, and Emil S. Bazow, DCP, both for their contributions to the Tactical Air Reconnaissance Pod System (TARPS).

Alan Kaniss, Computer Department, Gerald Ferguson, Nelson Hall, Edward Seibert, Craig Volker, David Schuck, Ted Trilling and James Dunn, all of SD, for their support of the Bucks County High School Science Seminar.

Norbert J. Armstrong, SATD, for his contributions to the NAVAIR

Reconnaissance and Photographic Systems Division.

William W. Maslin, TSD, for his efforts in maintaining equipment for COMPATWINGSLANT.

Frederick D. Vaow and George R. Gowen, Jr. both of ACSTD, for their analysis of the CRU-79/p Miniature Oxygen Regulator.

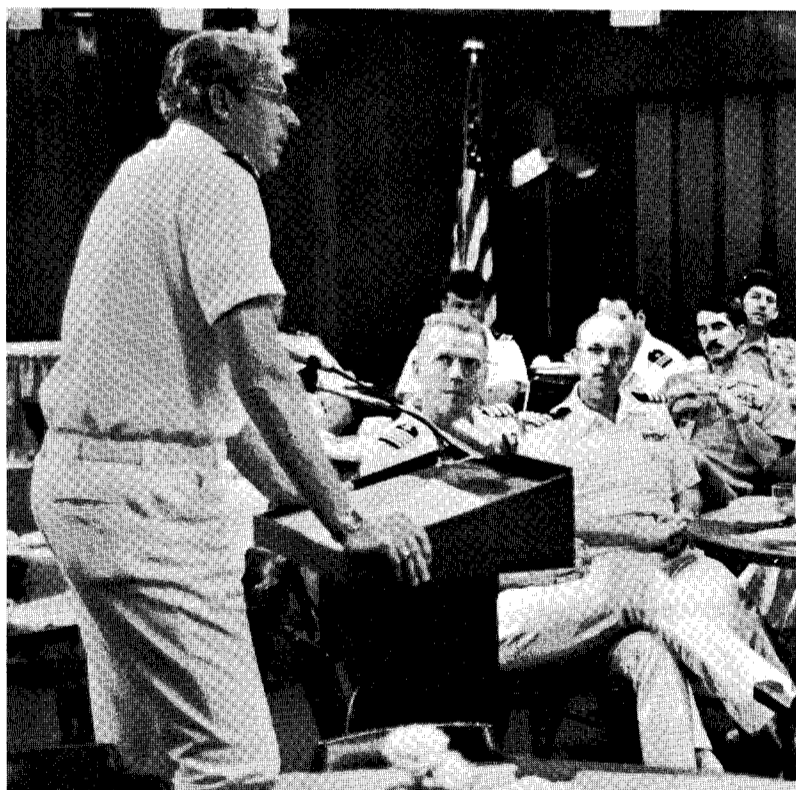
Daniel C. Probert, Robert J. Orr, George Reeder and Carol Greenwood, all of PAR, for their support to the Naval Weapons Evaluation Facility.

NADC Worker Wins Medal

Gene Wood of NADC's Photo Lab is a national champion. He recently won a gold medal in the Masters National Championship competition held at Lehigh University. Wood competed in the shot put for the 66 to 69 age group. His winning effort measured 11 meters 71 centimeters.

To win a national championship you have to work hard. Wood works out almost every day. He practices during his lunch break at NADC and goes to the YMCA or a high school track in the evening. Shot put is not the only event he takes part in. Wood also competes in the discus, 25 pound weight throw and the long jump.

Wood has been at NADC for 18 years working in the color print area of the photo lab. Originally from Boston, he now makes his home in Philadelphia.



RADM R. Johnson talks about career opportunities in the Navy during a recent visit to the Center.

DEPARTMENT OF THE NAVY

NAVAL AIR DEVELOPMENT CENTER
WARMINSTER, PENNSYLVANIA 18974

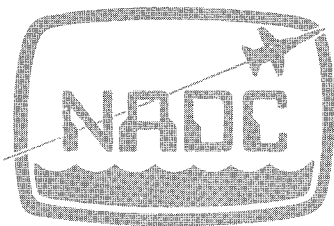
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The Reflector

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July 1983

The People at NADC Make it One of the Best Navy Labs

We are the Naval Air Development Center, the Navy's laboratory for the creation of aircraft systems. We also develop navigation systems for surface ships and submarines. From these two sentences grows jobs for over 2300 people and an impact that is felt from here in Warminster to the far flung reaches of the US Navy's Fleet.

The "We" is a diverse mixture of people, critical to the successful operation of not only this Center but the freedom of the world's oceans. NADC has both military and civilian personnel who have the ability to create, test, operate and maintain extremely complicated systems that help the United States keep its defensive edge in today's fast changing world.

We are electrical, mechanical, material and chemical engineers. We are research scientists, mathematicians and physicists. We're carpenters, sheet metal mechanics, secretaries, photographers, psy-

chologists, computer scientists, modelmakers, supply clerks, contract administrators, accountants and personnel classifiers. We are operations re-

or not, there are a whole lot more. We are project managers, division, branch and directorate heads, pilots and aircrew members, security officers, illus-

We are a research and development center. The people at NADC take concepts and turn them into reality. When you think about the future you can

the preeminent people in their fields of endeavor. We have to have these types of people if the Navy and the United States want to stay ahead in the fast changing world of technology. We develop things like communication systems that transmit and receive not only voice communication but digital, tactical and strategic in-



Craftsman Nic Tursi works on an RF-18A prototype aircraft installation.

search analysts, electricians, plumbers, aircraft maintenance mechanics, transportation drivers and mechanics and systems engineers. And, believe it

trators, writers and public relations practitioners. All working together smoothly. Working to build the most advanced aviation systems in the world.

only visualize what it will be like but at NADC you can see the future right in front of your eyes.

If you look at any of the aircraft that the Navy flies today you will find a system that was conceived or enhanced by the people at NADC. These systems include computers and displays, life support equipment, avionics (controls), airframe construction, communications and navigation. NADC has some of

formation.

At NADC we analyze what the future needs of the Navy will be. Then we develop new concepts for airborne systems. When a new system is designed it must be integrated into the existing aircraft. Many different pieces of equipment may have to be changed to accommodate the new system. A computer reprogrammed, wiring modified, airframe restructured

(continued on page 3)

The United States really is, I'd say, more than ever in our history, counting on the products of Centers like this.

—Vice President George Bush

Navy Helps Army Inventory Weapons

By Carolyn Riemer

A voice recognition system, designed to provide greater ease in handling an inventory of a large number of small arms, is currently being developed at NADC by Dr. Christian Skriver.

The system, which is being developed under the sponsorship of the U.S. Army and is scheduled for delivery to the Army in July, is being designed to provide a more reliable and more efficient system for keep-

ing track of a large volume of guns via their serial numbers.

In addition to providing the Army with this system, the system will also provide long-term information about voice recognition systems to the Navy, according to Skriver, who works in the Human Factors Division of the Aircraft and Crew Systems Technology Directorate.

After a Department of Defense-sponsored Technical Advisory Group meeting on Voice Technology, Skriver was

approached by the Army to develop a voice recognition system to keep track of the two million small weapons that are remanufactured and stored at the Anniston Army Depot. Anniston is the Army's primary site for storage and remanufacture of small arms.

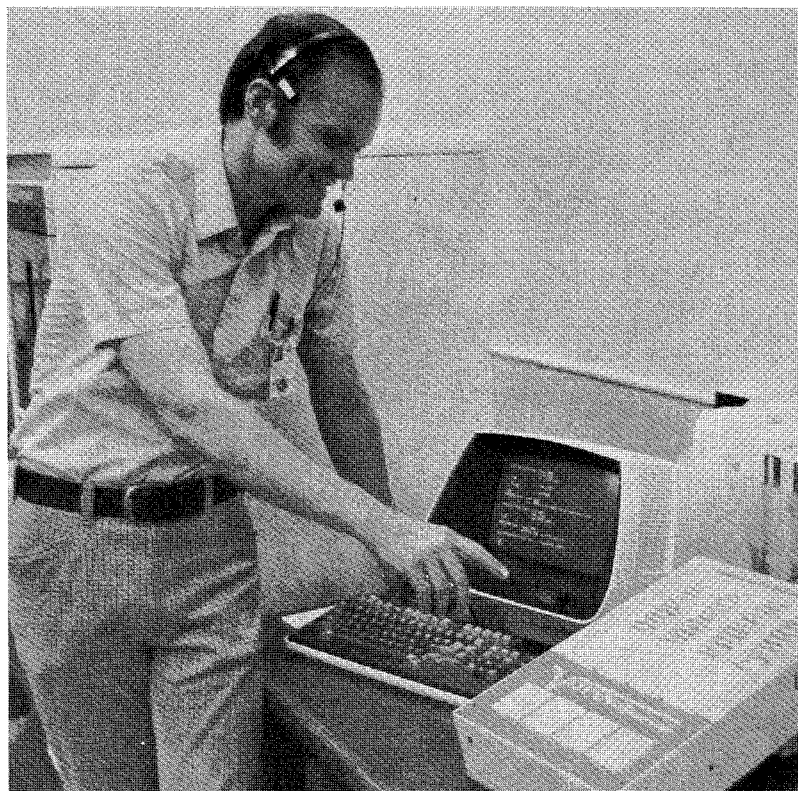
Currently, the Army requires five operators to inventory the weapons due to the systems of checks and cross-checks employed in its manual system of inventory. Using Skriver's system, only two operators will be needed—and the system will also be more reliable and more efficient.

By employing a voice recognition system, all that is necessary is for one operator to read the weapon's serial number into a voice recognition device using a headset and a microphone that cancels out the background noise of the depot's factory-like setting.

After the information is read in, it is transmitted to a computer system that first checks for errors by checking the serial number read in against a file of the serial numbers that should be found in the inventory.

A weapon is often inventoried three times when it is at the Anniston Army Depot. It is inventoried when it is received, inventoried during the remanu-

(continued on page 2)



Dr. Skriver demonstrates the voice recognition system.

Welcome to Our Family

On behalf of the entire NADC family of employees we would like to welcome all of you who are visiting the Center today. We all work here so we can give our families the comforts of life in the United States. We also work to help keep these United States and its friends free. Your support toward

these goals is appreciated and welcomed. We hope that by seeing what your husband, wife, son, daughter or relative does here you can have a better understanding of why they work here and how important their work is to the future of this country. We wish you an informative and enjoyable afternoon.

Captain James B. Anderson

Mr. Robert S. Buffum

Talking to an F-18 Over the Phone Will Soon Be Possible

Wouldn't it be nice if we could call a repair person on the phone and just by talking to them determine what was wrong and a course of action to fix the problem. According to Richard De Sipio from NADC's Communication and Navigation Technology Directorate, the day of telephone diagnosis and repair is just around the corner. This past June, De Sipio demonstrated a Remote Site Avionics Support System that connected an F-18A aircraft based at the Naval Air Test

Center, Patuxent River, Maryland and the BASIC Laboratory at NADC via telephone lines. This allows for a person located many miles away to maintain the digital system aboard an aircraft.

Using a modem that encodes and decodes digital information for transmission over the telephone and a Loral Serial Bus Analyzer tied into the F-18A aircraft at one end and another modem and analyzer at the other end, a person can check

(continued on page 3)



Various automated systems are now used by technicians to calibrate test equipment.

NADC Fireman Rescues Boy from House Fire

By Jeannie Beans

Recently the borough of Norristown awarded Joseph Perkins a certificate for "bravery above and beyond the call of duty" for his rescue of a small boy when his home was swept with fire on April 20th.

Joseph Perkins is one of NADC's firemen but he is also a member of four volunteer stations in Norristown where he lives. Perkins was on duty as a volunteer on April 20th when at approximately 6:30 PM they rushed to the scene of a row home fire in Norristown. He was responsible for pulling little two-year-old Brandon Johnson from a burning second floor bedroom. The child was then treated for acute smoke inhalation and second degree

burns at Suburban General Hospital.

Perkins has been a fireman for 11 years. He has been at NADC for a year and four months. He has also worked at the Frankford Arsenal. Perkins feels this was a fairly dangerous rescue as compared to others he has been involved with. He commented, "You always hope you don't have to do something like this, but that's why you constantly train so you can be prepared when the situation does occur."

The parents of Brandon Johnson were very grateful and wrote a letter to the editor of their Norristown newspaper commending Perkins and the fire company for saving their child.

Automation Allows Greater Productivity

By Carolyn Riemer

Automation and update of the Naval Air Development has allowed the laboratory to achieve greater productivity and to increase its workload with a shortened turnaround time.

This automation of the laboratory, which is supervised by Joseph Griffin of the Electronic Test Equipment Branch of the Technical Services Department, has made it possible for the lab to convert from a manual system of calibration to an automated system that has greatly reduced the time needed to calibrate test equipment. The Center has an inventory of approximately \$27 million of electrical/electronic equipment with about 6,000 items that require periodic calibration.

The automated system, which was installed in a newly refurbished laboratory, can be utilized for a full range of testing. The lab is capable of calibration oscilloscopes, meters, time and frequency systems, electro-mechanical signals, and signal analysis systems and generation systems.

Calibration time for calibrating equipment has been improved so that it can be completed three to five times faster than had been possible with the manual system previously used. For instance, calibration of the Hewlett-Packard 3400 RMS Volt Meter, which took

more than five hours to complete manually, can be calibrated in less than half an hour using the automated system.

This shortening of turnaround time made it possible for the Calibration Laboratory to meet a mandate of the Secretary of the Navy that Testing and Monitoring Systems (TAMS) be certified at specified intervals. Equipment must be certified in accordance with this mandate and the MEASURE program (Metrology Automated System for Uniform Recall and Reporting).

For the past several years, operating under the manual calibration system, the laboratory had only been able to calibrate test equipment on a demand basis and was not able to comply fully with the Secretary of the Navy's mandate.

By switching to an automated system, the laboratory will be able to meet all current calibration requirements and all requirements for the foreseeable future, according to Griffin. In addition, the laboratory now can provide calibration services for other installations.

At this time, for example, the laboratory is doing some work for the Willow Grove Naval Air Station. Eventually, the laboratory, Griffin said, hopes to establish itself as the regional center for providing this kind of service.

Besides being able to calibrate instruments more efficiently and more quickly, the

automated system provides greater reliability. Measurement repeatability is good and operator fatigue is reduced, Griffin said.

Accuracy is also improved since the computer generates a printout of the test results, whereas using the manual system operators had to transfer the results to paper. This printout can also be used to verify calibration procedures.

Installation of the automated system required that software be developed implementing the procedures necessary to calibrate test equipment. Over 770 programs, using Navy Instrument Calibration Procedures, have been developed this calendar year to be used in conjunction with the automated system.

In an effort to achieve this level of higher productivity in the Calibration Laboratory, Kenneth Clegg, former head of the laboratory and current head of the Technical Services Department, applied for funding through the Productivity Enhancement Capital Investment Award (PECI) program to provide money to update and automate the laboratory.

The money, totaling \$386,000, was awarded in May 1982 and Griffin, who succeeded Clegg as head of the Electronic Test Equipment Branch, purchased two Fluke, two Tektronix and three Hewlett-Packard systems with the funding. Various systems were purchased to reduce the technological restrictions that any one system might impose and to reduce the operator fatigue, Griffin said.

Under the provisions of the PEGI program it is required that the cost of the equipment be recouped within a three year period. It is projected that costs will be recovered well ahead of schedule, Griffin said.

Under the manual system previously in operation, 16 technicians would have been needed to fulfill the requirements of the Secretary of the Navy's Mandate and MEASURE. With the automated system, only eight technicians are

(continued on page 4)

Voice Recognition System Used For Inventorying Weapons

(Continued from page 1)

facturing process if it is being rebuilt, and it is again inventoried before it is shipped.

Once the serial number is read in, the computer is programmed to have a keypunch produce a computer card, which is sent wherever the weapon is sent. These punch cards are used by the Army as the means for keeping track of its inventory of small weapons.

In addition to producing a punch card, the computer system is programmed to have a bar code printer print out a bar code symbol for the appropriate serial number. The second operator puts the bar codes with

the appropriate weapons.

Software for this system is being developed separately under contract to Analytics. James Stokes, of Analytics, is designing the program that will be used in conjunction with the voice recognition system set up by Skriver.

This voice recognition system works by matching the voice patterns of the operator reading the serial numbers with those patterns stored in the computer's memory. In effect, the device is trained for a particular operator. Voice recognition technology, however, has not advanced to the point where patterns from any speaker can be recognized and matched.

The vocabulary to be used, in this instance, is limited to numbers, the international phonetic alphabet and several control words. Because the vocabulary is limited, there are a restricted number of patterns that the computer must recognize. Although the vocabulary is limited, it can be altered or expanded to fit any changing needs.

On occasion, the voice recognizer might have difficulty in recognizing a particular word or number. When this occurs, the system can be retrained until it does not have trouble in recognizing the word.

There were other possible alternatives to a voice recognition

system for improving the system of inventorying small arms. One possibility was a keyboard and computer system. But because the inventorying of small arms at Anniston is an entry level position, the Army wanted a system that could be used by personnel with limited training and no keyboard skills.

A second alternative, labeling, could not be used because there is no type of labeling device that would adhere to a weapon throughout the remanufacturing process.

Potential Hazards With Two Types of Chairs

This note is to alert all personnel to a potential problem with two pieces of office furniture. The furniture in question are chairs identifiable with the following information:

NSN 7110-00-597-7959

High back, color orange/rust

NSN 7110-00-602-0263

Low back, color blue/black

There have been two recent incidents involving these chairs. Both chairs broke at the same spot causing the individuals sitting in the chairs at the time, to fall out of the chairs to the floor. The Command Safety Office and the Supply Department have jointly reported these incidents to GSA, in an effort to determine whether the

chairs have a manufacturing defect or if these are just two isolated incidents.

All personnel who have these chairs should periodically check the backrest for excessive looseness. If anyone feels they have a problem with these chairs, they may contact the Command Safety Office.

The Reflector

Naval Air Development Center

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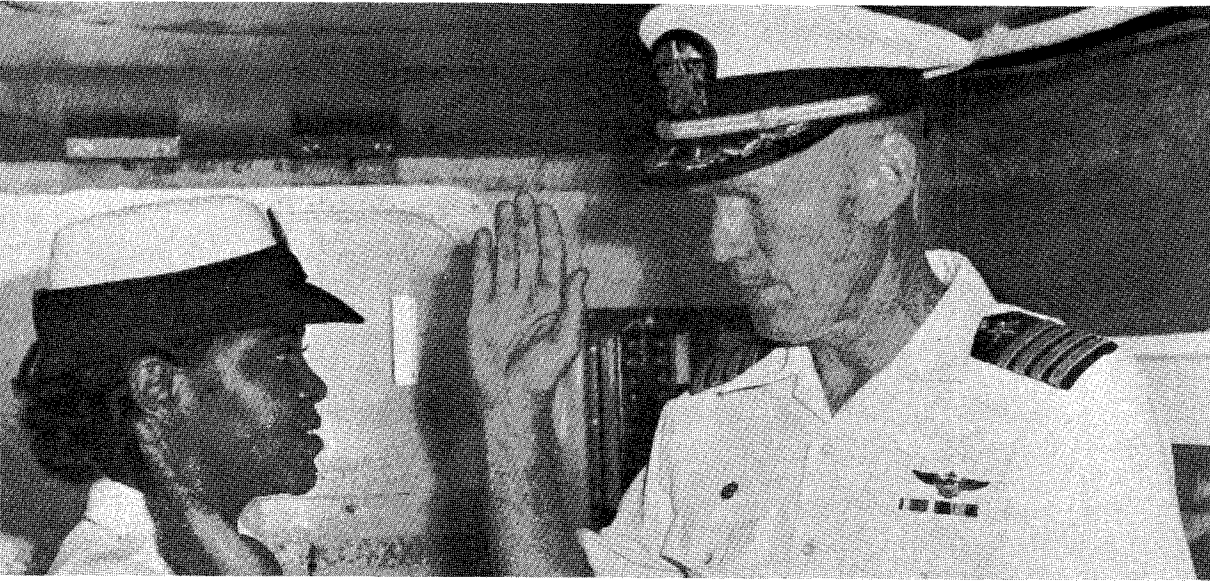
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CAPT James B. Anderson — Commander, NADC
Robert S. Buffum — Technical Director
Joseph P. Cody — Public Affairs Officer
David Polish — Editor
Carolyn Riemer — Assistant Editor



CAPT James Anderson reenlists AT1 B. Bailes on the Skyship 500 when it was at NADC last month. NADC's current reenlistment rate is 83.3 percent.

NADC Employees Make the Center What It Is

(continued from page 1)

or controls reconfigured: all of this is done here at NADC.

We're working on the future of naval aviation now. We test lighter and stronger materials, develop new protective equipment and monitor the performance of these developments as they transition into the Fleet.

A great deal of work done at NADC is in the area of sensor technology. We develop devices for the detection of submarines. They listen for noises, feel for temperature changes and detect current differences. Radar and sonar equipment for ships, submarines and aircraft are also conceived by the people at NADC.

The ability to detect and identify submarines, ships and aircraft is an important objective that our research helps the Navy accomplish. One of our main products is the entire line of sonobuoys—sophisticated sensors dropped into the ocean, to monitor temperature, current speeds and noises like those of submarines. We've de-

veloped various radars and sonars, and tailored them to specific aviation and anti-submarine warfare applications.

At NADC we perform basic and advanced research on new navigation concepts. We design

We see long term growth in the importance of NADC to the Navy . . .

**—SECNAV
John Lehman**

entire systems and determine how they will be incorporated into the ship, submarine or aircraft. We propose what kind of navigation equipment will be needed in the future and how existing equipment can be improved.

Computers play an ever increasing role in the control of naval platforms. The engineers and scientists at NADC in turn play an important role in designing the hardware and software that make up the

Navy's computer systems. We design and test programs for many applications and update existing programs as changes need to be made.

All the materials and equipment that go into a Navy system really can't be effective without the human in ultimate control. For that human to be there a workable and comfortable environment must be designed. NADC's efforts in the area of life support and crew station equipment are known throughout the military communities. We develop and test survival apparel, seating systems, rescue equipment, work station configurations and display systems. We also do research into the human biochemistry and how a person reacts to stress and exposure.

NADC's people are involved in every aspect of the Navy's operation from creation of a system to the maintenance of existing equipment, from conserving resources to training personnel. All of us are involved in an exciting adventure helping the Navy keep the world free.

Skyship 500: A Spectacular Ride through the Air

By David Polish

Almost all of us saw the big white airship parked at the Center during the week of 20 June but only a few got to ride in what only can be described as a seat hanging from a cloud. The blimp (an airship without an internal frame work) was called the Skyship 500. It carries a crew of two and five passengers in a gondola attached to a 164 ft. long helium filled bag. The motive power comes from two turbo charged Porsche engines driving ducted fans that tilt. Because the fans can tilt, the Skyship has the ability to hover, take off and land vertically and make some pretty tight turns.

Helium in the bag does the lifting so the power from the engines can be used almost entirely for maneuvering. The Skyship, despite its size, can fly fast, almost 72 miles per hour. It's almost like being in a helicopter but much different.

The only description I can use to convey how it feels is to say

that it's like sitting in your living room but you're in the air. There is virtually no vibration and no sensation of movement. The view through the large windows is spectacular. The Skyship can hover in one spot or pivot on its own axis. It can

move up or down to get a closer look at an objective. When flying over the local area the Skyship literally stopped traffic. People got out of their cars to take pictures or just stare. I just wish I could have been up there longer; it was a great feeling.

Sailors Man Airship Lines

Most of these sailors weren't even born when the Navy last flew airships but they were out there on the lines meeting the challenge of handling the Skyship 500 when it visited NADC. With instruction from the seasoned ground crew from Airship Industries Limited (the owners of the Skyship) some of NADC's sailors helped move the big ship when it was landing and taking off.

The experience apparently made a great impression on those sailors who held the lines. AMS2 William Reese said that if the Navy started flying air-

ships again he'd "sign right up." "I'll follow it anywhere," added ATAN Vern Neal.

Maybe some time in the future the Navy will be back in the Lighter than Air business and when that happens these sailors could be teaching others just how it's done.

The rest of the ground crew included ADC Jerry McSwain, AD2 George Potter, AMS2 Stephen Lawson, AD2 Thomas Parkin, ADAR Martin Krueger, AD2 Curtis Miglionico and ADAN Richard Whittington.

Command Inspection Complete

Within the Chief of Naval material corporate plan there is a plan that requires an inspection of each activity once every three years. NADC has just had its inspection completed by a team of experts drawn from other naval activities. The Inspector General (IG) for this most recent look at the Center was Captain Zeke Newcomb. He explained that for an R&D activity of this size a two week period is set aside for the inspection. "Most of the functional support areas take about one week to inspect," Newcomb said. The rest of the organization takes the whole two weeks.

Newcomb explained that there is a multi-purpose reason for an inspection. First the inspection insures that the organization is being run in accordance with the regulations, instructions and procedures that have been established. Sometimes changes are made in the rules that the activity may not be aware of or a gradual drift away from the approved way of doing business is discovered. Any minor discrepancies are discussed between the IG team member and their counterpart within the organization.

These are constructive discussions helping to point out the right way of doing business and explain the reasoning behind the regulations. Secondly the IG team looks at organizational efficiency. The team will help point out better ways of doing business. The final reason for an inspection is to listen to people in the activity. "Sometimes," Newcomb said, "the organization may have a problem carrying out its business according to the rules." The IG can help solve the problem or feedback the information to NAVMAT for further help.

Newcomb stressed that the IG inspection is not an "axe hanging over our heads." "There's a lot of good that comes out of an inspection." All the strong points of the organization are also noted. If the Center has a better and more efficient way of doing business, the IG team takes it back to headquarters where it may be incorporated in changed regulations.

In his closing brief to the Center's management, Newcomb said that, "I appreciated the opportunity to take a close look at a very professional organization."

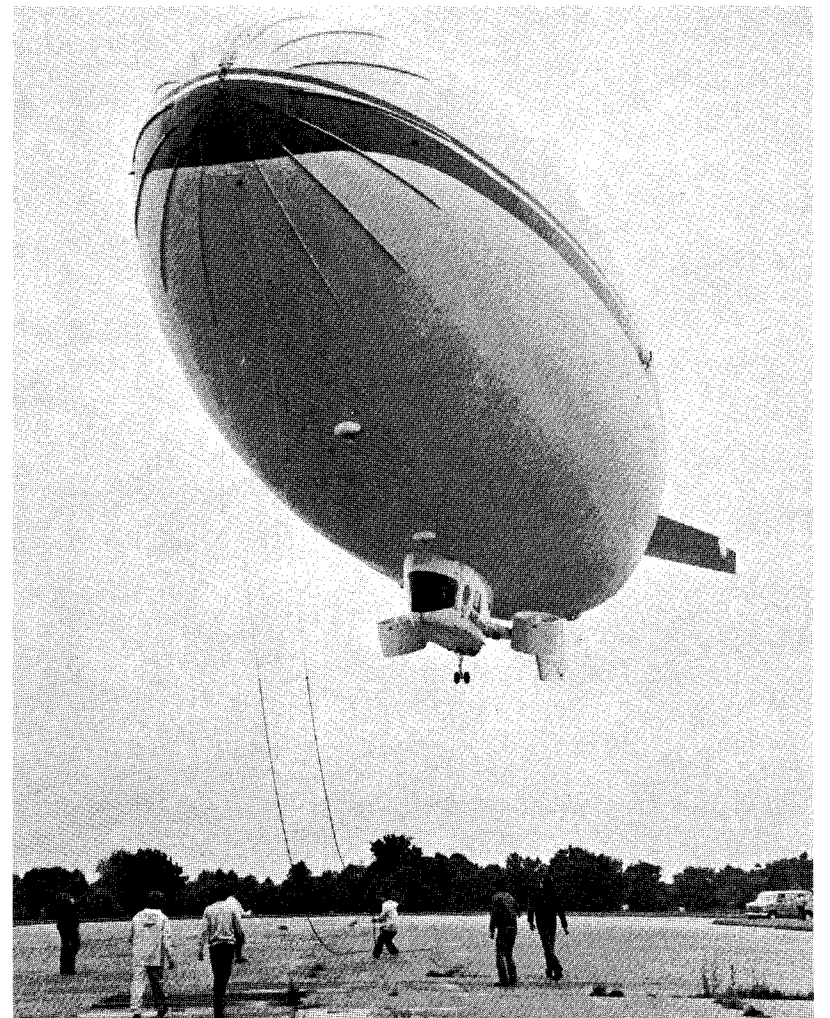
Talking to an F-18

(continued from page 1)

the status of the aircraft without having to be there. De Sipio said this could open up new horizons for maintenance and diagnosis of aircraft systems. For example, ships that might not have sophisticated maintenance equipment on-board could "dial" a ship or shore base

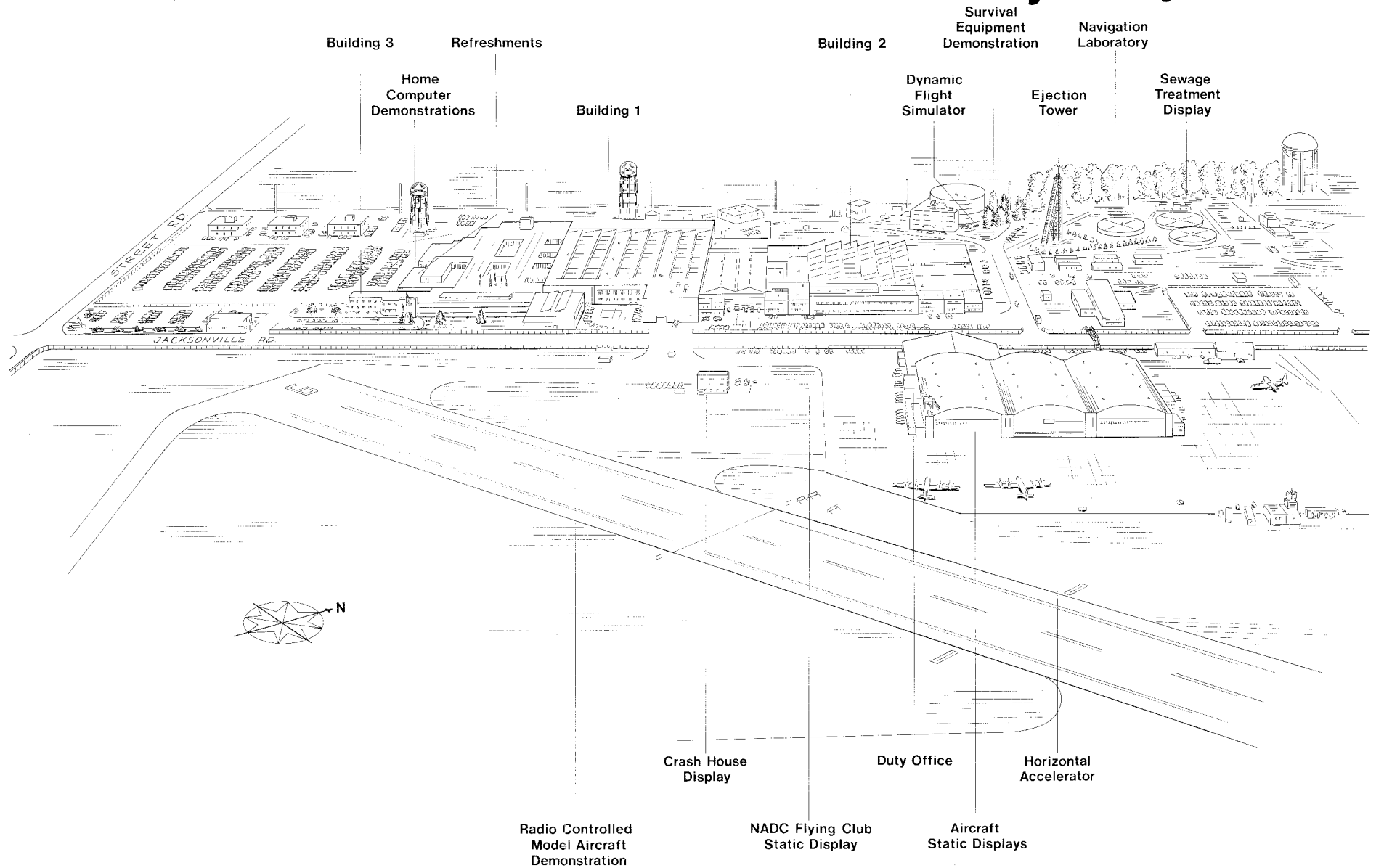
that had the needed equipment and use that equipment to help fix the aircraft.

The Remote Site Avionics Support System is in the initial stages of development but it could mean lower cost and greater use of resources for the Navy.



The Skyship 500 at NADC.

When, What and Where: NADC Family Day 1983



SCHEDULE

THE FOLLOWING DISPLAYS AND DEMONSTRATIONS WILL BE CONTINUOUS

AIRFIELD RAMP AREA

Aircraft Static Display A-7, CH-53, P-3C, Flying Club Aircraft

INSIDE HANGAR ONE

Airship Model Demo

BUILDING TWO FIRST FLOOR

Laser Demo
Infrared Demo
Night Vision Demo
Photo Reconnaissance Display
Miniature Video Camera Demo
CREST Lab Demo
Computer Graphics

BUILDING TWO SECOND FLOOR

Electron Microscope Demo
Chemistry Lab Display

BUILDING THREE FIRST FLOOR

Civilian Personnel Displays
Public Works Master Plan Renderings
Software and Computer Directorate Display

BUILDING ONE FIRST FLOOR

S-3A Mechanical Room
Transportation Display
Structures Testing Demo
VS Program Film
CV-ASWM Film
VP Program Balloons, Games and Computer Graphics
Aircraft Energy Conservation Display
Central Computer Display
Simulation Display
BASIC Lab Display
Scorsby Test Area Display
Computer Users Club Demo, Cafeteria

BUILDING ONE GROUND FLOOR

Public Works Area
Machine Shop Display
Sheet Metal Shop Display
Electrical Safety Display
Air Conditioning Shop Display
Carpenter Shop Display

SCHEDULED EVENTS

BUILDING 70 LAWN

Flare Gun Demo 1400-1500
Life Raft Inflation 1400-1500
Helmet Communication System 1400-1500

BUILDING 70

Centrifuge Demo 1300 1345 1445 1515

EJECTION TOWER

Firing of Ejection Seat 1330 1430 1530

HANGAR BAY 2 BUILDING 4

Horizontal Accelerator 1315 1415 1515

AUDITORIUM

Command Presentation 1300-1400 1430-1530 (continuous)
Choral Group 1400-1430

RAMP AREA, AIRFIELD

Model Airplane Club Demo 1345-1445

FOOD

Hot Dogs 25¢, Soda 25¢, Waffles and Ice Cream 25¢ — Cafeteria

DEPARTMENT OF THE NAVY

NAVAL AIR DEVELOPMENT CENTER
WARMINSTER, PENNSYLVANIA 18974

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE \$300

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FIRST CLASS

Calibration Laboratory

(continued from page 2)

needed to meet this requirement.

In addition to the savings on personnel, the laboratory will receive an increase in direct funding from the Naval Air Logistics Center as a result of the lab's compliance with MEASURE.

In fiscal years 1984 through 1987, a savings of over \$1 million. Besides personnel savings, there is also a \$100,000 in additional funding for fiscal year 1984 and \$125,000 in additional funding for fiscal years 1985 through 1987 expected from the Logistics Center for compliance with the MEASURE requirements.

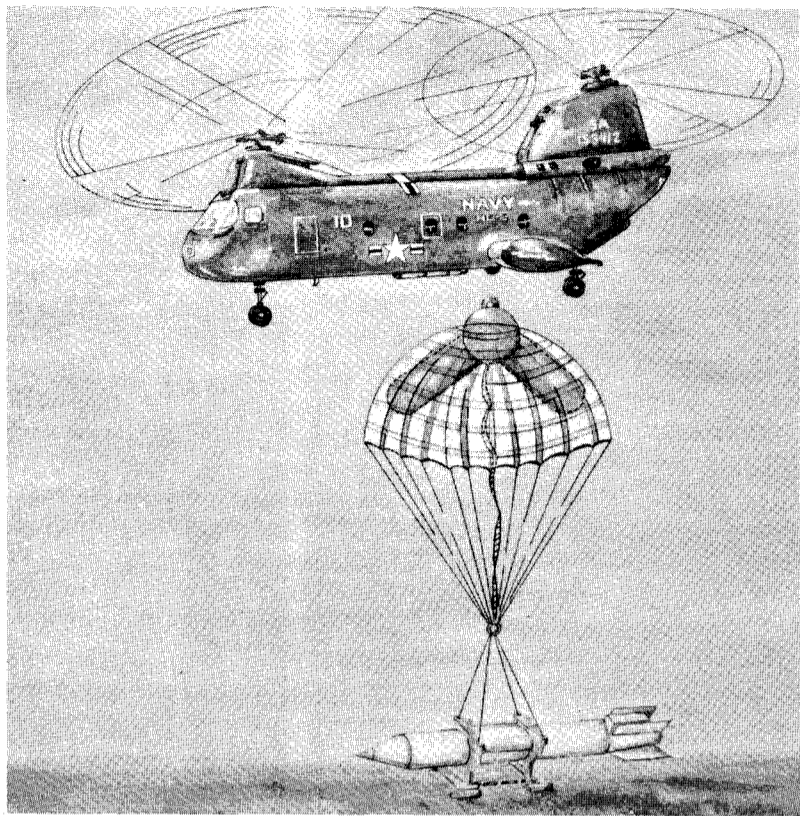


The Reflector

Volume 27, No. 8

Naval Air Development Center, Warminster, PA

August 1983



A drawing of the VERTREP system.

VERTREP RAFT Testing Successfully Completed

NADC has successfully completed testing of a recovery system for high value cargo that may be jettisoned during transfer over the open seas, according to project engineer Michael Burch of the Aero Mechanical Branch (6013).

Called the Vertical Replenishment Retardation and Automatic Flotation (VERTREP RAFT) system, it is designed to limit damage to and aid in the recovery of high value cargo that may be lost during vertical replenishment.

Testing of the system was conducted last month with the assistance of the Pacific Missile Test Center in Point Mugu, California. Dummy cargo loads were dropped from a CH-46 helicopter, with the system working as it should, Burch said. Prior to this testing, static

testing had been conducted at the Naval Air Engineering Center at Lakehurst and at the National Aeronautical and Space Administration center at Langley, Virginia.

With the successful completion of the flight testing, the project moves from the feasibility phase to the developmental phase. The next step is engineering a final system and putting it into the fleet.

Currently, the fleet has no provisions to limit damage or to provide for rapid recovery of externally carried cargo that is intentionally or inadvertently jettisoned during transport over the ocean.

This system is designed so that upon release, the VERTREP RAFT detaches from the helicopter and inflates within a
(continued on page 4)

White Replaces Williams as CNM

ADM Steven A. White succeeded ADM John G. Williams, Jr., as Chief of Naval Material on August 1.

White becomes the seventh Chief of Naval Material. As Chief of Naval Material, White will direct the world-wide activities of the Naval Material Command, an organization with some 200 installations and more than 220,000 military and civilian workers.

White was Commander Submarine Force, U.S. Atlantic Fleet, his sixth sea command, from 1980 until his selection for promotion and for his present assignment. His other assignments as a flag officer were as Commander Submarine Group TWO at New London, Connecticut; as Deputy Chief of Naval Material (Operations and Logistics); and as Assistant Deputy Chief of Naval Operations (Submarine Warfare). He was born in Los Angeles, California, on September 18, 1928.

After attending Occidental College from 1946-48, White transferred to the University of Southern California under the Naval ROTC program. There he received his bachelor's degree in Political Science, his master's in International Law and attended the USC School of Law. Commissioned in 1952, he served in the cruiser USS MANCHESTER before entering the submarine service in 1954.

He served two years as Engineer Officer of USS TANG and subsequently reported to USS NAUTILUS after completing Nuclear Power Training. He served in this ship during its 1957 Arctic explorations and in 1958 when NAUTILUS became the first ship ever to reach the North Pole.

In September 1960, White reported as Engineer Officer to the commissioning crew of USS ETHAN ALLEN, and served as its Executive Officer during six patrols. He was on board when ETHAN ALLEN conducted the only fully operational test ever made of a submarine launched strategic missile with warhead in 1962.

After duty as Force Nuclear Training Officer for the Atlantic Fleet Submarine Force, he commanded USS PARGO from 1966-69. PARGO received the Meritorious Unit Citation and the Navy Unit Commendation under his command.

From August 1969 to October 1970, Admiral White commanded Submarine Division One Hundred Two, and from February to May 1970 was additionally Commander Submarine Division One Hundred One. Following service as Assistant for Training and Per-

sonnel Matters in the Office of the Manager, Naval Reactors, Atomic Energy Commission, he commanded Submarine Squadron Sixteen in Rota, Spain, from June 1972 to July 1974. He was chosen for rear admiral during this assignment.

White replaces Williams, who served in the destroyer USS DUNCAN before completing Submarine School in 1949. For the four years following, Williams served in the submarines USS POMODON and USS CHIVO.

He was also first Assistant Deputy Chief of Naval Operations for Submarine Warfare; then Director, General Planning and Programming Division; and Director, Department of the Navy Program Information Center.

Promoted to Vice Admiral in January 1980, he became Deputy and Chief of Staff to the
(continued on page 2)

Security

Guarding NADC's Integrity

"We are all our brother's keepers." The quote is an old one but in this instance is from Robert Fisher, head of NADC's Security Division. Fisher referred to the quote as a way of describing an employee's responsibility toward physical and informational security. People at the Center should always be on the lookout for security violations, Fisher said. It's not only the job of the Security Division to see that badges are worn and government property is used properly and safeguarded. "It is everybody's responsibility," Fisher added.

The Security Division is charged with protecting the physical plant from the perimeter fence line to the locks on

safes. To accomplish this job, there are 44 contract guards, 22 civil service guards plus supervisors. These people control access to the Center through the issuing of vehicle passes, control and distribution of keys, the issuing of badges and the control of government property leaving the Center. Other facets of physical security include the closed circuit television monitoring system and the various alarm systems that protect special areas.

The Command Investigator is charged with investigations of missing, lost or stolen material and equipment, vandalism and misconduct. These investigations involve incidents occur-
(continued on page 2)

Stampfl, Director of 20, Retires This Month

By Carolyn Riemer

Dr. Rudolf A. Stampfl, director of the Systems Directorate since 1979, is retiring from NADC this month after 10 years of service at the Center.

This senior executive service position will be announced competitively and will be advertised federal service-wide, Technical Director Robert Buffum said. The position should be filled permanently by November. It has not yet been determined who will fill the position in the interim, however.

In addition to serving as head

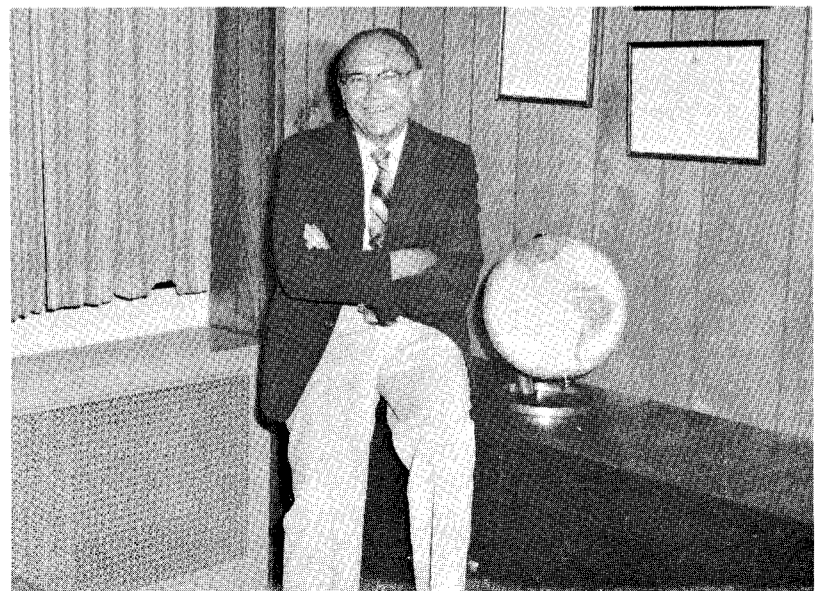
of the Systems Directorate for four years, Stampfl also served as director of the Communication Navigation Technology Directorate for two years and as director of the Aero Electronics Technology Department for four years.

When a senior executive, such as Stampfl, retires, the impact is one that is felt by the entire Center, Buffum said.

Stampfl has been a strong supporter of the Center and its programs, Buffum said, and through his position as a nationally recognized member

and elected officer of the Institute of Electrical and Electronic Engineers (IEEE), he has brought considerable outside recognition to the Center.

There were numerous project accomplishments during the time Stampfl headed the Systems Directorate. These accomplishments include: completion of the P-3C Update III technical evaluation, completion of an anti-submarine warfare master plan, a design for a reconnaissance version of the F/A-18 was performed and ac-
(continued on page 4)



Dr. Rudolf Stampfl

Three Center Programs Recently Assigned New Directors

By Jeannie Beans

Although NADC's population is made up primarily of civilian employees, the military are certainly an important part of the Center's operation. Evidence of this is in the Command Projects Directorate which has a military officer as the director of each of their major programs. Three projects within the directorate have recently been assigned new directors.

LCDR Nick Brownsberger is the new director of the Acoustic Systems Program (1A). This program provides for the design, development, test and evaluation of a programmable acoustic processing system which is capable of processing present and future ASW sensors developed through the 1980's. The program also includes the development of many of the future generation

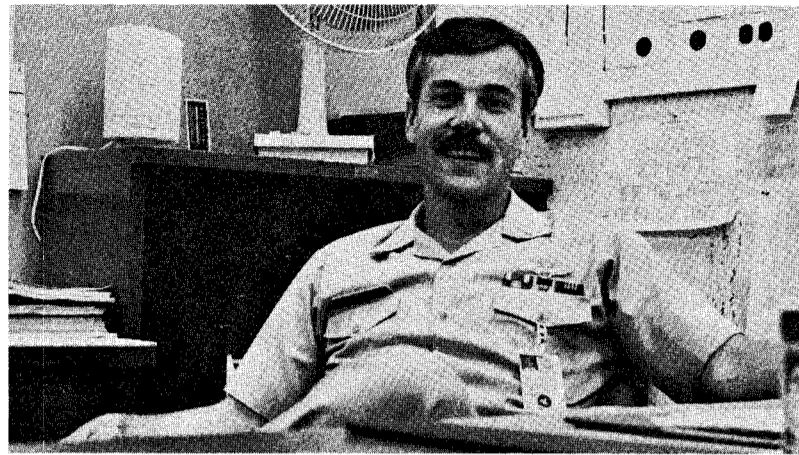
School in Pensacola, Florida which was followed by a three year assignment in Patrol Squadron-16 in Jacksonville. His positions there were that of Aircraft Division Officer and Quality Assurance Officer.

In 1977 Brownsberger attended the Naval Postgraduate School where he received a master's degree with distinction in Aeronautical Engineering. He also was designated an Aeronautical Engineering Duty Officer while in Monterey. For the next 3 years Brownsberger was the S-3 Project Officer and Project Manager for the US-3 conversion at the Naval Air Rework Facility in Alameda, California.

Brownsberger then came to the Naval Air Development Center and served as the head of the Aircraft Department before he assumed responsibility for

ing influence as well as to coordinate the development of these new systems with their respective platforms."

The VP Program (1P) leads the Center's efforts to support the P-3C Fixed Wing/Land



CDR Mike Milchanowski

Based Patrol Aircraft. The program is responsible for the design, development, integration, testing and introduction to the fleet of a series of avionics and software improvements to the basic P-3C known as the UP-DATE series.

NADC recently welcomed aboard CDR Mike Milchanowski as the new director of this program. He is a native of Johnson City, New York and began his naval career when he was graduated from the Naval Academy in 1969 with a Bachelor of Science in Naval Engineering.

His first tour of duty was for VP-8 in Brunswick, Maine. This was followed by his earning a master's degree in Aeronautical Engineering from the Naval Postgraduate School in Monterey. For the next three years Milchanowski was High Energy Laser Officer for the Air Force Weapons Lab in Albuquerque, New Mexico.

Center. The readers could be programmed to allow certain people in at certain times and could limit access on the basis of the level of clearance, i.e., secret, confidential, etc.

In keeping with Fisher's opening statement to help the other person in their security responsibility, we should all be on the lookout for security violations. Remember to wear your badge, lock that safe or door, close that gate, put away the classified documents and make sure you have a property pass for all government material. Security is indeed everyone's business.

Williams

(continued from page 1)

Commander in Chief, U.S. Pacific Fleet. In October of that year he returned to the Office of the Chief of Naval Operations as Deputy Chief of Naval Operations for Submarine Warfare. While in that assignment, he was chosen to become Chief of Naval Material and for promotion to Admiral.

Before coming to NADC as Program Director he was the Support Equipment R&D Director and Industrial Department Head at the Naval Air Engineering Center in Lakehurst, New Jersey. Also to

got his start in the Navy by enlisting in the Naval Reserve in March 1959. This was followed by his entering the Naval Academy and in 1964 he was graduated with a Bachelor's of Naval Science. He received his Naval Aviator Wings in 1966 and began his first tour of duty in Quonset Point, Rhode Island in VS-31.

He then went to VX-1, Key West where he was the S-2G Project Officer and the Assistant Project Officer for the S-3A and LAMPS Programs. Parry spent the next year as CVSG-56 ASW Officer aboard the USS Intrepid.

He was advisor to the Turkish Navy for two and a half years in Maritime Patrol Squadron 301 in Bandirma, Turkey. In 1975 Parry received an American University master's degree in Public Relations. The following two years were spent aboard the USS Nimitz as VS-24 S-3 Squadron Operations Officer. He also spent a year on staff in VS Wing 1, Cecil Field, Florida.

Directly before coming to



CDR Dave Parry

Program's capability to lead in the direction of technical development, integration, test and support of the P-3C and its replacement weapon system into the 21st century."

CDR Dave Parry is the new director of the VS Program Office (1S). This program office acts as the single point of contact for all NADC involvement in the VS Weapon System development, testing and fleet software introduction and support. Currently this program is the S-3 Software Support Activity and the lead development activity for avionics improvements.

Parry is originally from Peckville, Pennsylvania and

NADC Parry was the Executive Officer at the Naval Air Propulsion Center in Trenton, New Jersey. Parry is pleased to be on the VS team. "The S-3 Program here has been almost exclusively software development up to just recently," he said. "Now it looks like we're moving into the world of systems hardware development as well. It's an exciting move for the S-3 team, and I'm glad to be a part of it."

"Development of the S-3 Communications Control Group, I'm sure, is just the first of many hardware projects that will result in this Center's providing the fleet an enhanced capability in all facets of battle group effectiveness."



LCDR Nick Brownsberger

sonobuoys.

Brownsberger is from Orange Park, Florida and graduated from the Naval Academy in 1972 with his bachelor's in Aeronautical Engineering. His first tour of duty was aboard the destroyer USS Brownson. He then attended the Navy Flight

the Acoustic Systems Program. When asked about what he hopes to achieve, he commented that "one of my goals as program director is to provide meaningful leadership for the projects within the Acoustic Systems Program Office."

"I hope to provide a stabiliz-

James E. Sheehan, increased frequency of random vehicle searches, increased manning of gates and new badges are in the process of being instituted or are taking place now. Limiting access to "Shop Stores," remodeling the Main Lobby, changing the after hours traffic patterns in parking lot #2 and extensive modifications to the perimeter fence are other improvements that are being investigated. The stationing of additional perimeter guards around Center will help better control access to NADC. A civil service guard is now on duty in the main lobby to assist with visitor control during the morning. Additional security guards are positioned, one at the Credit Union and one at the crash gate, to help eliminate unauthorized access into the Center.

Sheehan stated that, "we are investigating 'state of the art' identification badge readers at all gates, entrances, conference rooms and shop stores." These readers would then allow only authorized employees, contractors and visitors access to the

Security

(continued from page 1)

ring on Center, including Navy Housing.

On the informational side of security administration programs, eight people are employed. They review material for public release, determine classification of information and when it can be downgraded or declassified. They provide guidance to contractors on the classification of their work and assist in the training of new employees on security procedures. Visitor control, foreign travel, clearances and security debriefs are also provided by the Security Division personnel.

There is an on-going program administered by the Security Division to help keep security fresh in the minds of NADC employees. Briefings, LOG notices and Security Notes are produced periodically for the purpose of increasing security awareness.

As a result of the recent "IG" inspection several changes in security procedures are becoming apparent. According to Chief Staff Officer, Captain

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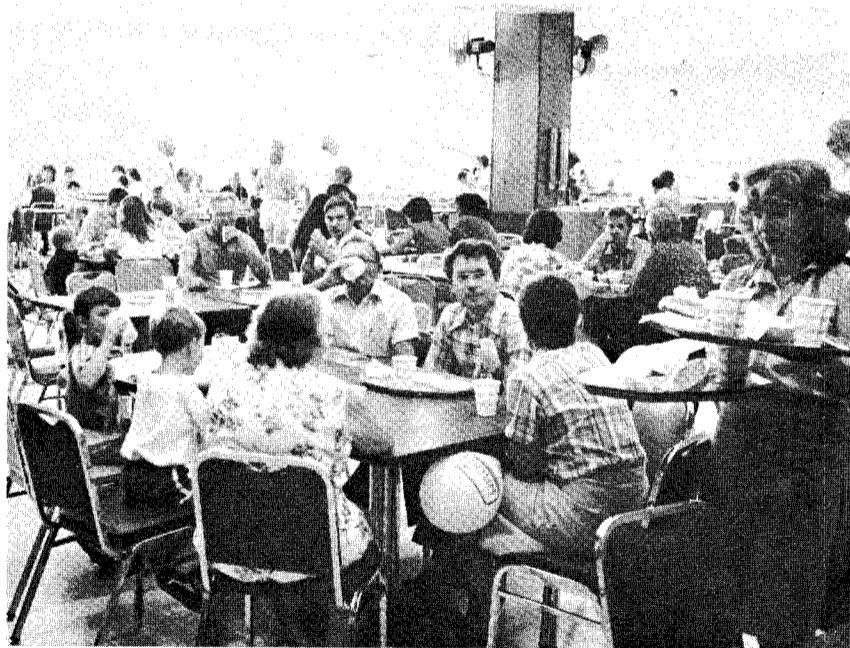
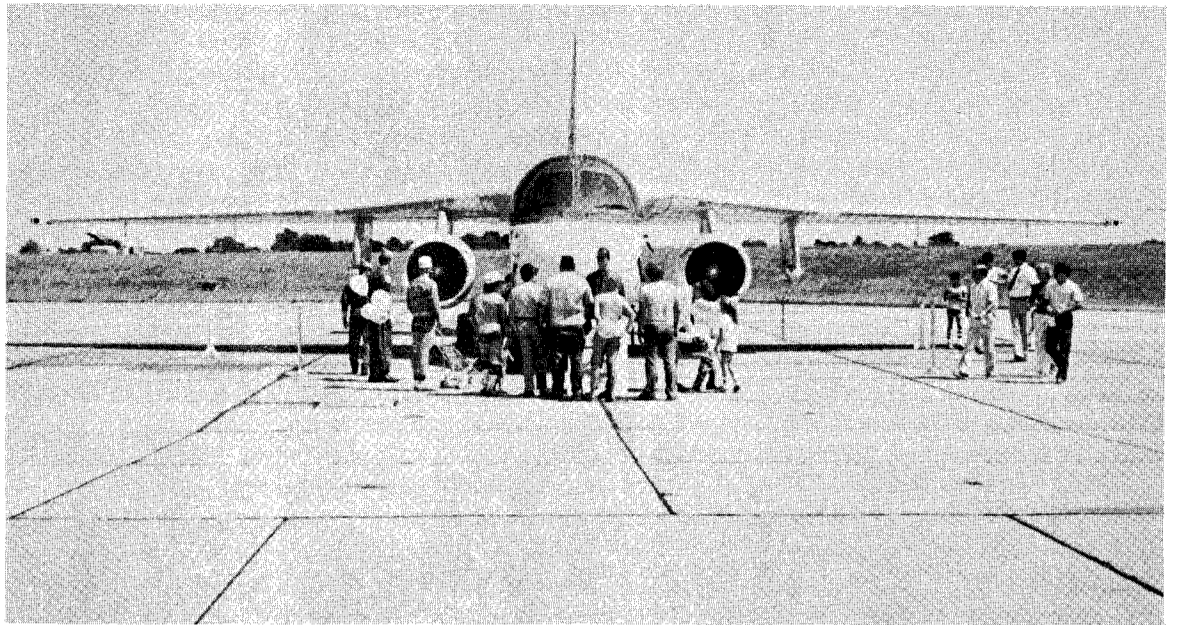
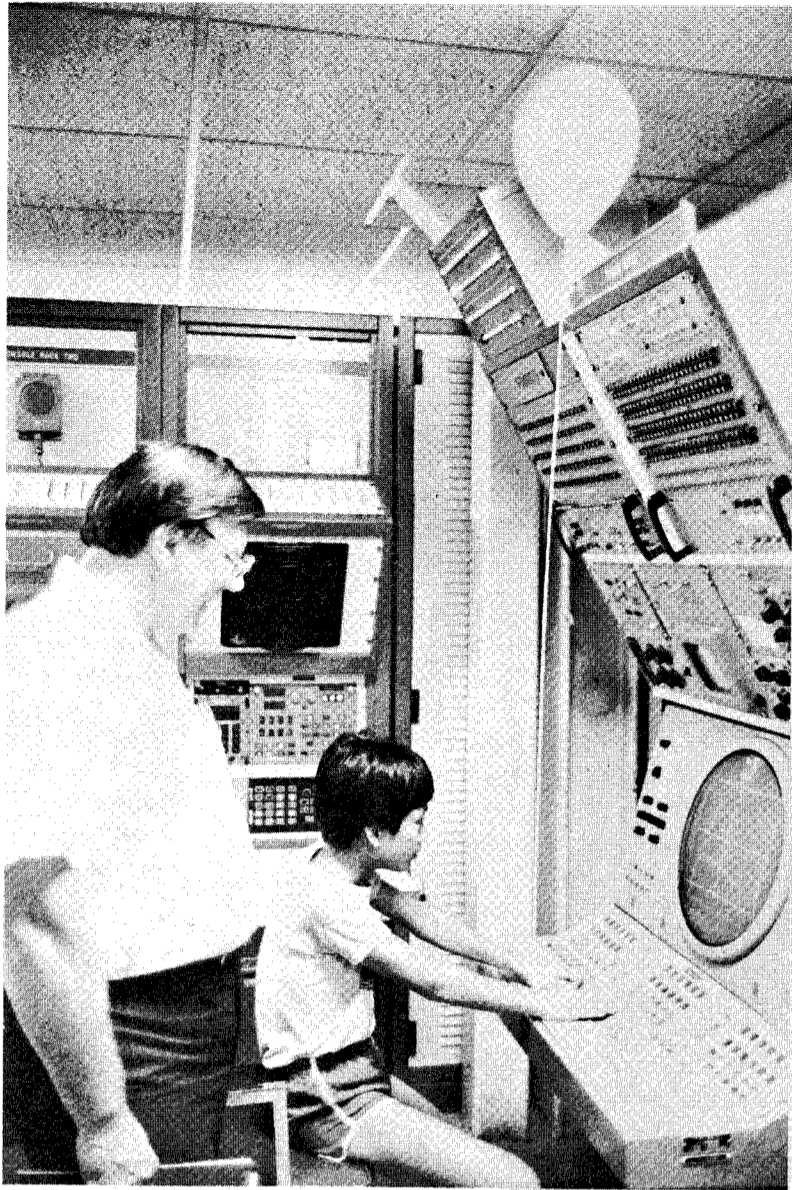
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David Polish — Editor
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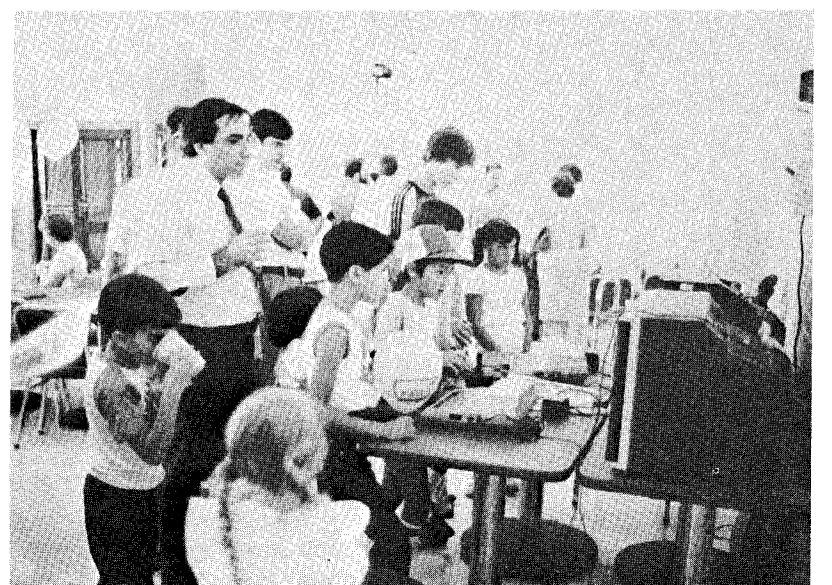
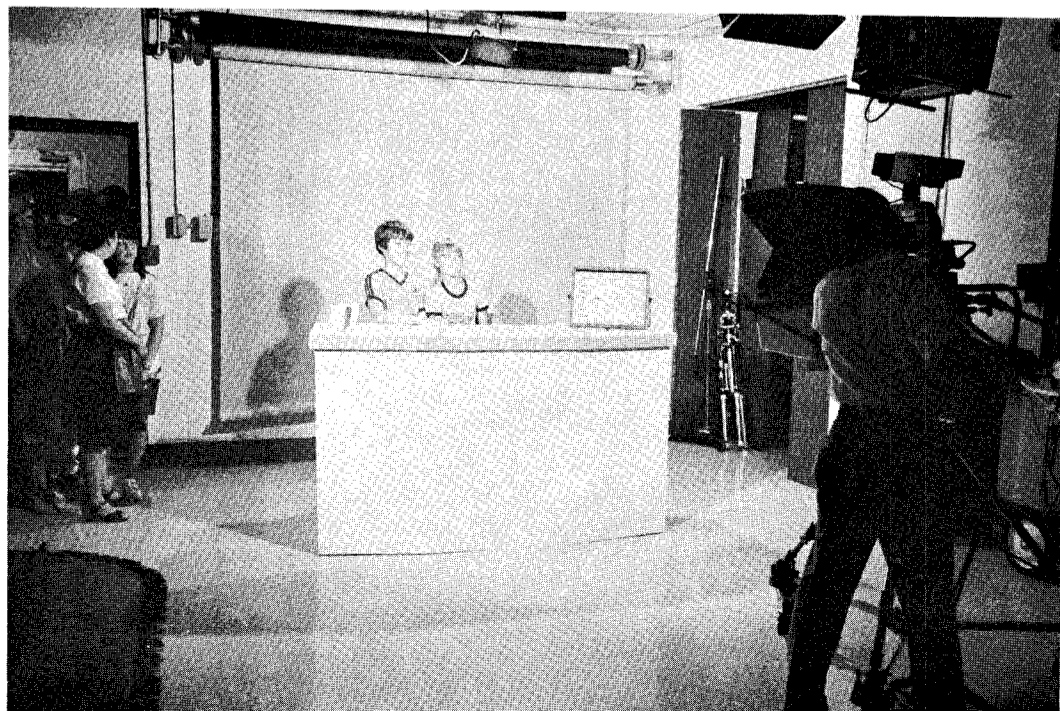
FAMILY DAY 1983



They came, they saw, they consumed. They were the families of NADC's employees who came to Center on the afternoon of 8 July for Family Day/Open House. Hundreds of children with balloons tethered in their hands, aunts, uncles and parents crowded the hallways, labs, offices and the cafeteria. It was time to acquaint family members with the work place and to let them know what we do for the tax-

payers. Displays and demonstrations, films and slide shows, all held the families' interest.

There were life rafts to play in, centrifuge and ejection tower demonstrations to watch and computer club sponsored games to test the skills of video addicts. For 25 cents you could get a hot-dog, a soda or waffles and ice cream. By all accounts NADC's Family Day was a success, the smiles told the whole story.



Employee Teaches Scouts About Safety and Survival

By Jeannie Beans

Annually for the past four years George Gillespie has combined his love for children and his pride in his work to the mutual benefit of both the Navy and the Boy Scouts of America. He does this by demonstrating safety/survival procedures and equipment to the scouts at the George Washington Scout Reservation day camp in Lambertville. This year he took Bill Zarkowski and four summer co-ops with him.

Gillespie said this is excellent training for the co-ops. Nancy Holden, Connie Newnham, Susan Gradous, and Dominic Arcidiacono received first-hand experience in public speaking and answering questions on survival equipment.

Gillespie and his group gave two demonstrations this year; one at the end of June and again at the end of July. He spoke to approximately 45 scouts, and underprivileged children from the Trenton area, ranging in age from 8 to 12.

"The kids enjoy it," Gillespie said, "it's good for them and keeps me in touch with people." Gillespie said that this gets him back to basics as he gears his presentations to the children's level. He also said that this is a

good opportunity for the children to see that the safety/survival procedures they are learning in scouting are basically the same kinds of things that we are doing here at NADC.

Some of the items that he showed the children included: helicopter and fighter attack helmets, anti-exposure suits, life rafts, signaling items, life preservers, survival vests and kits, and chemical/biological protective masks.

"This is really rewarding," Gillespie said. "Sometimes I get feedback from children who have relatives and friends who are interested in or who work with various types of survival equipment.

"Years later I talk to children who remember my presentation as a very positive experience," Gillespie said.

NADC's guest speaker program is administered by the Public Affairs Office in cooperation with area schools and scouting programs. The goal of this program is to provide career guidance and information to children in their formative years and to create a positive impression of the Navy as a good employer and a good neighbor.



George Gillespie describes survival procedures and equipment to a group of Boy Scouts.

VERTREP Testing Successfully Completed

(continued from page 1)

75 foot free fall. A unique inflating balloon structure aids in the opening of a parachute and keeps the cargo close to the water's surface for easy recovery. The parachute limits the impact damage to the cargo.

Because the flotation device inflates only when the cargo separates from the aircraft, deployment of this device is seldom and requires a minimum of servicing by fleet personnel.

The VERTREP RAFT system, a project sponsored by Steve Hurst of NAVAIR 310C, is designed to recover and limit

damage to cargo weighing from 300 to 3,000 pounds when it is jettisoned from an altitude of 75 feet to maximum altitude—while the helicopter is moving as fast as 100 knots.

Besides limiting damage and aiding in recovery, there are other advantages to the system. Certain types of cargo are more time consuming, thus more expensive, to transport internally; this system allows the external transport of high value cargo.

In addition, all types of ships can be serviced since no landing pad for the helicopter is required. Likewise, it eases transfer during rough seas, again, since no landing platform is required.

Use of this system requires little modification to those helicopters it is used with. It

also has a minimal impact on the performance of the helicopter.

The system additionally has potential for technology transfer. The technology might be used in areas related to the delivering or dropping of emergency supplies, and the rescue and evacuation of personnel at sea.

The VERTREP RAFT was developed by the Aero Mechanical Branch, headed by Leo Markushewski, of the Aircraft and Crew Systems Technology Directorate. Besides Burch, Tor Jansen and William Wiseman participated in the development of the system. Two contractors, Air Cruisers Company and Boeing-Vertol were also involved in the development of the system.

Stampfl Retires From Systems Directorate

(continued from page 1)

cepted, and acquisition of the TACAMO/ECX project.

In addition, the directorate has helped revolutionize the Navy's approach to the cost of logistics, Stampfl said. A Naval Air logistics model has been proved and applied to logistics and budgetary planning.

From 1977-79, Stampfl headed the Communication Navigation Technology Directorate, and was responsible for a broad development program in air communication, command and control, and in air and ship navigation. Among the significant projects under his direction were the ring laser gyro, the electrostatically suspended gyro navigator and the Joint Tactical Information Distribution System.

As director of the Aero Electronics Technology Department from 1973-77, Stampfl was responsible for overseeing the research and development in the fields of electro-optics, communications, radar, underwater acoustics and information processing. This was during the turbulent years of the early microprocessor, he said.

After working in the federal civil service for over 30 years, Stampfl said he had no regrets in choosing a civil service career over a career in private industry.

"If young people asked me today, I'd recommend looking into the civil service thoroughly," he said.

"A technical career in the civil service is very unique in the U.S. because it gives you a wide range of opportunities and

a variety of technical subjects and projects to work on . . . There are much narrower choices in private industry."

Stampfl, who received his bachelor's, master's and doctoral degrees in electronic engineering from the Institute of Technology in Vienna, Austria, said he had no specific plans for after his retirement from NADC, although he would like to continue to work in a suitable technical field.

Prior to working at NADC, Stampfl worked for several other federal agencies, including his longest time—13 years—with the National Aeronautics and Space Administration Goddard Space Flight Center and with the Army's Ft. Monmouth Signal Research and Development Laboratories.

Commander Salutes Employees

Charles W. Haney, Michael E. Mocerter, Richard C. Gleich, Norwood J. Metcalf, and Donald R. Furmanski, all of SATD, for their presentations on reconnaissance photography given to Patrol Squadron-66.

Daniel S. McCauley, ACSTD, for his contributions to the Source Selection Evaluation Board for the Army's new Aircrew Integrated Helmet System.

LCDR Michael J. Duncan and Joseph P. Cody, PAO, both for their planning efforts for NADC's Family Day/Open House.

Structures and Aircraft Fire Division, Vincent Crusco, Rigging and Grounds Section, Security Division, Howard Security and the Electrical Test Equipment Branch, all for their outstanding performance during the Third Annual Flag Day Celebration and Fireworks Display.

HM1 Mark K. Ammerman, HM2 Jose R. Marrero and HM3 Donald K. McGee, ACSTD, all for their efforts in conducting the Unit Sweep Urinalysis.

Joseph Griffin and Vincent Crusco, both of ESG, AMCS Joseph Lamere, LCDR Paul Fredenthal, LCDR Steward

Schreckengast, CDR Ronald Monkres, LCDR Burton Streicher, George Gianios, NPPSO, and Kenneth Clegg, ESG, all for their efforts during the recent prize fights held at NADC for the benefit of Navy Relief.

NADC's Commander, Captain James B. Anderson, stated that the people who helped during the visit of the Skyship 500 were instrumental in kicking off a successful technology demonstration. A special thanks is extended to John Eney, program manager, and David Bailey, project engineer, for their efforts. The following people also deserve thanks for their efforts during the four day demonstration: Robert Fisher, John Kupetz, Sgt. Ed J. Long, Lois Kieserman, Joseph P. Cody, David B. Polish, William Myers, LT Norman Edwards, Jay Sarver, fire and crash personnel; also ADC Jerry McSwain, AD2 George M. Potter, AMH3 Stephan Lawson, AD2 Thomas E. Parkin, AD2 Curtis E. Miglionico, ADAN Richard T. Wittington, AMS2 William J. Reese, ATAN Vern C. Neal, John Linke and Donald Shaw.

DEPARTMENT OF THE NAVY

NAVAL AIR DEVELOPMENT CENTER
WARMINSTER, PENNSYLVANIA 18974

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FIRST CLASS



The Reflector

Volume 27, No. 9

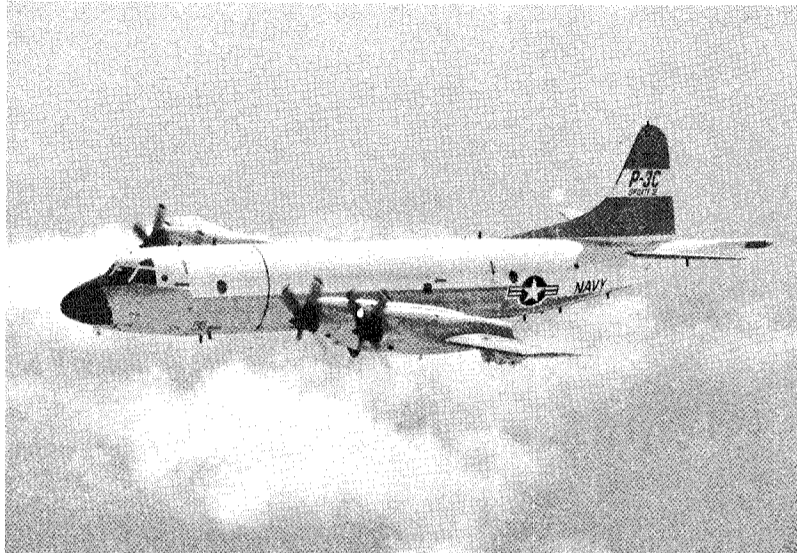
Naval Air Development Center, Warminster, PA

September, 1983

Latest P-3C Update III Aircraft Comes to NADC

The most computer dense aircraft in all three military services and NASA including the AWACS planes and the Space Shuttle has been delivered to the Naval Air Development Center. The delivery of this pilot production P-3C Update III aircraft to NADC is the culmination of a ten year involvement by the Center in the Update III program.

Back in 1974, NADC started the initial design work for the Update III aircraft. Both Franz Bohn, the project engineer, and LCDR Dave Seckinger, the project officer, described the Update III effort as a major product for the Center. NADC has been the prime integrator and developer for the systems in the new aircraft and the prime



New P-3C Update III Aircraft will be at NADC thru July 1984.

developer for the software that controls those systems. We will be the central point for the maintenance of the controlling

software as the Update III is introduced to the fleet in May 1984.

The Update III has incorpo-

rated several new systems that will expand the capabilities of the P-3 in its ASW mission. It carries an Advanced Signal Processor (ASP), a phased array antenna (ACPA), an Automatic Test Signal Generator (ATSG), a new digital magnetic tape system (DMTS) and an advanced sonobuoy communications link (ASCL).

This new aircraft BUNO 161410 will be at NADC thru 1 July of 1984. The Center will be doing full system level operability checks to make sure everything works the way we designed it to work. It is significant to note that to date the Center has met all major Update III milestones on time and within budget.

Fraud Does Not Compute

If you read the paper or watch television then you probably have heard about computer fraud and penetration of computer systems. You also know that the authorities take a pretty dim view of such activity. The same is true here, at NADC. A number of cases have recently come to the Command's attention that involve fraud, waste and mismanagement of NADC's computer resources. The Center's computer resources include the Central Computer and any government computer equipment including stand alone systems. Abuse is defined as any unauthorized use, meaning running equipment for non-government purposes.

Of the several cases already processed; one person left their job as a result of unauthorized activities. Another case involved doing homework on the Central Computer System. And another investigation uncovered a person using government computer resources to run a private business. One final case found a person browsing through other people's files.

When computer time was misused payment was required to be made to the government. There exists a very efficient series of checks and balances to safeguard NADC's Computers, so beware and use the equipment properly.

Employees Earn and Learn Under Unique Program

"It's the opportunity of a lifetime," said Nancy Tillman. "I strongly recommend it," stated Ben Niccolo. "It gave me the tools to work on various assignments," added Victor Caddick. John Coyle said, "I think it's great, a rare opportunity." "An outstanding program," said Larry Pearson. The program they're all talking about is NADC's Part-Time Under-

graduate Study Award Program. This unique opportunity allows a full-time employee to work twenty hours at the Center and go to school for twenty hours to earn an engineering college degree in an engineering course of study that is critical to NADC's needs.

Program coordinator George Wynnecky said "The origins of the program lie in NADC's con-

tinued need to recruit certain kinds of professionals."

To augment recruiting efforts, management decided to create a program whereby current employees, who had shown a desire to obtain an engineering degree in one of the critical areas, could finish their academic course work more quickly. The program was set up to pay for selected employ-

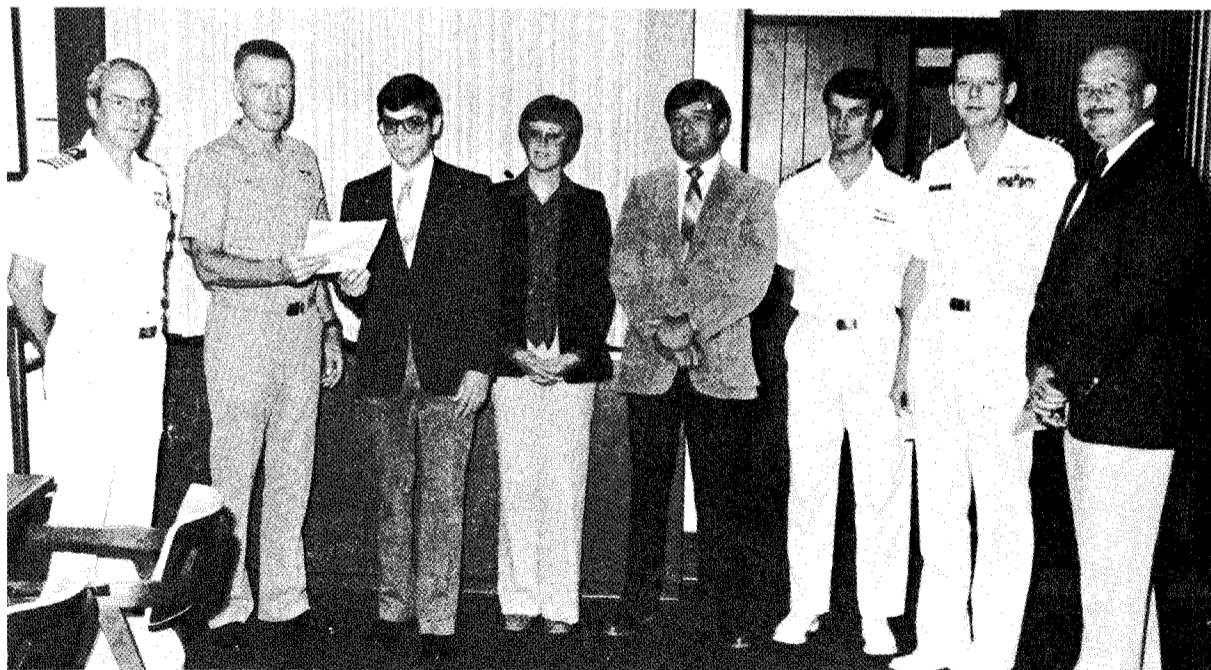
ees' tuition, allow for up to 20 work hours a week off for school studies and continue to pay a full salary.

Some of the participants like John Coyle, have mixed their class schedule so they go to some of their courses at night and some during the day. Ben Niccolo, a recent graduate from the part time undergraduate program, did his homework and studying during the day and took all his classes at night.

One of the most mentioned advantages of the program was that the time needed to obtain a degree is cut considerably. You are required to take a full-time student course load and are allowed up to 20 hours off a week to do so. Victor Caddick stated that he was taking courses through the tuition reimbursement program before starting the undergraduate program. He said it would have taken him almost ten years to get his degree taking one or two courses a semester. The undergraduate program, "really accelerated the accumulation of credits and condensed the time required," Caddick stated.

Niccolo added that the program allowed for greater flexibility in his course selection and scheduling.

Before employees get involved in the Part-Time Undergraduate Study Award Program, they must do a considerable amount of preparation. Wynnecky said that there are at least three areas that should be looked at. "First they should get their personal life in order" he



Captain Anderson, second from left, receives the funding document that put NADC over the \$300 million mark. Handing it to him is Mike Vardaro. Looking on are: lt. to rt. Capt. Richard Fidar, Kathy Felts, Paul Terpeluk, LCDR Bowling, LCDR Art Collier and Tom Brennan.

Center Funding Tops \$300 Million Mark

On 10 August 1983, a historical event took place at the Naval Air Development Center. For the first time ever, during any fiscal year, new funds received in support of mission workload reached \$300 million. With a month and a half re-

maining in the fiscal year, an additional \$10 to \$15 million should be received, resulting in an increase of 12% to 14% in total funds received over the previous high of \$277 million received in fiscal year 1982. The

document received that broke the \$300 million barrier was for an additional \$300,000 for the VP program. The total of new obligational authority received for this program, fiscal year to date, now exceeds \$31 million.

(continued on page 2)

Summer Aide Honored



Shirleen Cook accepts congratulations from Ed Yannuzzi.

Each year NADC employs a group of high school students under its Summer Aides Program. This year there was one really shining star. Her name is Shirleen Cook and for the past summer she worked for the Reconnaissance and Surveillance Branch in SATD. A senior from Harry S. Truman High School in Levittown, Cook was presented with a Special Achievement award during the recent summer aide recognition day.

Cook was honored for her outstanding performance while serving as a clerk typist in SATD. She handled the production of correspondence, time card records, travel orders and visit clearances. While doing her regular duties, Cook also volunteered to fill in for vacationing full time clerical personnel.

Cook's supervisors called her thorough, dependable and responsible.

SATD Director, Edward Yannuzzi, presented Cook with a check for one hundred dollars and a citation documenting her contributions to NADC. As an organization that employs about 17% of all the summer aides SATD can be proud of Cook's accomplishment. The Summer Aide Program not only contributes to the productivity of NADC but it enables young people to have the opportunity to learn about the federal government and earn money doing it.



Captain James Sheehan wields the shovel for the Crash House ground breaking. From lt. to rt. LCDR Sjodin, Lcdr Bert Streicher, Mr. Robert Buffum, and officials from E.P. Guidi, Inc.

Crash House to be Built Here

Ground was broken on 18 August for a new Fire and Rescue Station. The station will be located off of the closed runway near the EM Club. This 1.2 million dollar project is part of a larger five year plan that in-

cludes the building of a new hangar and control tower complex in the area of the Fire and Rescue Station. Donald Menz, of the Navy Construction Office, explained that actual construction will begin during the first week of September. August 1984 is the target for the Station's completion.

The Fire and Rescue Station will be one of the most modern buildings at NADC. It is designed to take advantage of solar heating for its hot water system. Mounted on the roof will be a series of solar panels

that will supply hot water for such things as laundry and cleaning. A signal tower design is incorporated into the building so vehicles on the airfield can get visual and radio instructions.

This new complex was designed by Wallace and Watson Associates of Bethlehem. The contractor for the construction is E.P. Guidi Incorporated of Ambler.

NADC has made this new building part of its five year plan for building replacement and renovation.

Personnel Implements New File System

With the advent of computers every file system will be put on some type of system. One such system is the new Navy Civilian Personnel Data System (NCPDS). This informational management system, which is slated for introduction at NADC during FY-84, has been modified from an existing Air Force program. The Northeast Region of the country is the first region to implement NCPDS and NADC will be one of the first activities to run the system. Terminals will be located in Civilian Personnel and tied into the main computers located in Oak Ridge, TN. Once NCPDS is operating it will be the only authorized civilian personnel data system for the Department of the Navy and the only official source of automated information about Navy civilian employees.

NCPDS will provide Navy and Marine Managers at all levels with an Automated Civilian Personnel System which is complete, timely, accurate, coordinated, and comprehensive. It will provide automated support to approximately 140 civilian and EEO offices and to higher levels of command. The following DON personnel functions will be partially or fully supported by NCPDS: Attendance and Leave, Budget Support, Employee Relations, Employment, EEO, Incentive Awards, Insurance and Retirement, Labor Relations, and Manpower Support.

Also Merit Pay, Mobilization Readiness, Performance Appraisal, Position Classification, Position Management, Personnel Management Evaluation, Security, Senior Executive Service, and Training and Career

Development will be on the system.

The Center is scheduled for conversion to NCPDS in July 84. The NCPDS project office, OP-14, has established Implementation and Conversion Teams which consist of ADP and Personnel Specialists. The conversion team will visit NADC three times, the first in September 1983. The first visit will be primarily for the purpose of checking and evaluating our site and to provide data collection guidance. The Civilian Personnel Office at NAVAIR-DEVCON will also establish a Transition Team responsible for the implementation and conversion process. They will review Official Personnel Folders and collect and code both position and employee data. It is estimated that it will take approximately two to three hours to complete data collection and coding for each employee.

Within the next few months, each employee will receive a questionnaire which they will be asked to complete in order to assist the Civilian Personnel staff in accurately coding all personnel data. Each authorized position will have pertinent information coded into one file and each Center employee will have data coded into a separate file. It is most important to remember that the value of the NCPDS Data Base will only be as good as the value of the data captured and that meticulous efforts must be expended in order to assure that this data is accurate and complete.

The data collection process will be time-consuming and will impose substantial additional workload on the Personnel Of-

fice. Regular personnel and EEO office business will be temporarily disrupted during the conversion process. New equipment will be installed and new procedures established. Employees in the Civilian Personnel Office and EEO Office will be receiving special training on the system. Line managers will also be receiving briefings on the capabilities of NCPDS and the retrieval of information through use of terminals. The Civilian Personnel Office will do its best to implement NCPDS with as little impact on day-to-day operations as possible but it will take the cooperation and support of everyone on Center to make this transition period a smooth one.

After the initial implementation and conversion stages are completed, the last task to be accomplished will be the building of a history file on each employee. After this has been accomplished and the files created, employee resume's will be printed and distributed to each employee for verification of all data. This will be the final clean-up in the data capture process. Although it is recognized that implementing NCPDS represents many man-hours of tedious efforts, the end product will be an accurate and cost-effective automated data processing system.

NCPDS is happening—NCPDS works—and although NCPDS implementation will cause disruptions and inconveniences, with good planning and cooperation from everyone this will be minimal. The payoff will be an up to date information system that will make everyone more productive.

Letter to the Editor:

Few days have passed since my formal retirement and some weeks after my departure from NADC, which gave me time to reflect on the honor and overwhelming expression of friendship by my friends and colleagues, bestowed on my family and myself. Ten years is a significant period of time in which I had the privilege to form deeply appreciated working relations with highly respected associates. These friendships matter most to me

and it is with a degree of sadness that I depart.

My family joins me in thanking all of you who have made the effort to honor us with your presence and for the charming remembrances we received.

As I start on a new career, or perhaps return to a chapter I have left before, I am sure my association with you will be cherished ever and once again I like to thank you for it.

Yours,

Rudi Stampfl

Earn & Learn

(continued from page 1)

The one thing that came out when talking to all the current participants in the program is that it's not easy. Juggling your home life, work and school work can create pressure. The courses are not easy and they

require large amounts of study but everybody agreed that the rewards far outweigh the negative aspects. The chance to go to school for free, and get paid on a full time basis is indeed the opportunity of a lifetime.

The Reflector

Naval Air Development Center

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NADC Adopts a School to Motivate Students

The Center has begun participating in a program designed to introduce and motivate secondary school students to careers in the engineering sciences.

Called PRIME (Philadelphia Regional Introduction for Minorities to Engineering), the program is a partnership between local industry and educational institutions. Resources of industry and governmental agencies are used to help motivate and prepare minority students for careers in engineering and other technically-oriented professions.

Business and governmental agencies provide the students with the opportunity to participate in tours, presentations, career counseling and other special programs in the business' or agency's particular field of expertise.

Each firm or agency "adopts" a particular school; NADC has

adopted the Leeds Middle School in Philadelphia. The Center has also agreed to an active involvement—providing tours, presentations and the like—with Girls High School, Central High School and the High School for Engineering and Sciences.

As part of its participation with Leeds Middle School, the Center will be providing students with tours of Center facilities and laboratories; presentations on engineering concepts; and career guidance. On-Center visits would include presentations on the Dynamic Flight Simulator, life support equipment, the central computer system, lasers and other similar technical facilities.

The decision to participate in the program was a part of the Center's overall community effort, and its affirmative action program according to Barbara Ward (CPD) the Center's

point-of-contact for the program.

Students participating in the program might also have the opportunity to participate in the Center's Research Apprenticeship Program, where high school students are hired in lower level technical positions.

In addition to the tours and presentation programs it sponsors during the academic school year, such as the one NADC is participating in, the PRIME program also sponsors summer courses at local universities for selected students.

PRIME seeks to reach students at an early grade level and motivate them to pursue careers in technical fields, using the resources of local industry and academic institutions to do so. Those participating in the program include students from the elementary level to the college level.

Pay Change

Some 1.4 million federal workers, including more than 320,000 Navy civilian employees, will have a slight reduction in pay starting 2 October due to changes in hourly pay rates required by a section of a 1982 federal law (Omnibus Reconciliation Act of 1982, PL 97-253).

The government expects to save more than \$271 million in each of FYs 84 and 85, the years the changes are effective, according to the GAO.

Civilian pay is decreasing because the Act, signed into law last September, requires that hourly pay rates be determined by dividing gross annual salary by 2,087 work hours per year instead of the 2,080 hours used since 1945. The difference amounts to 0.33 percent.

According to a GAO report, the old rate allowed people to be paid for one or two days a year they didn't work. The number of workless paydays varied from year to year during a 28-year cycle. This gave workers an extra paycheck in the 11th year.

General schedule, merit pay, senior executive service, levels III-IV-V executive service employees, and those paid under the Navy faculty schedule are affected by this change.

Thousands Saved

Bills, we all have them, and we worry about paying them on time, but can you imagine how many bills NADC must pay in just one month? Joseph Dugan, of the Cost Accounting Branch, estimates that there are over 1500 bills to be paid in an average month. Since fiscal year 1983 began the Center has paid over \$53.7 million on 14,884 invoices. The way in which government and the private sector work together involves discounts for prompt payment and penalties for lateness. That means getting the actions processed quickly and accurately to take advantage of the discount policy.

An indication of how good a job the Center is doing was recently reported to the Navy Comptroller. According to the report the Center paid its bills so promptly that it has received 90% of all the discounts that were offered for quick payment. These discounts amounted to \$123,326.25. That's money saved for the federal government thanks to the efficient work of all the employees in the Center's Cost Accounting Branch.

Science Fair Winner is Impressed

by Regina Bennis

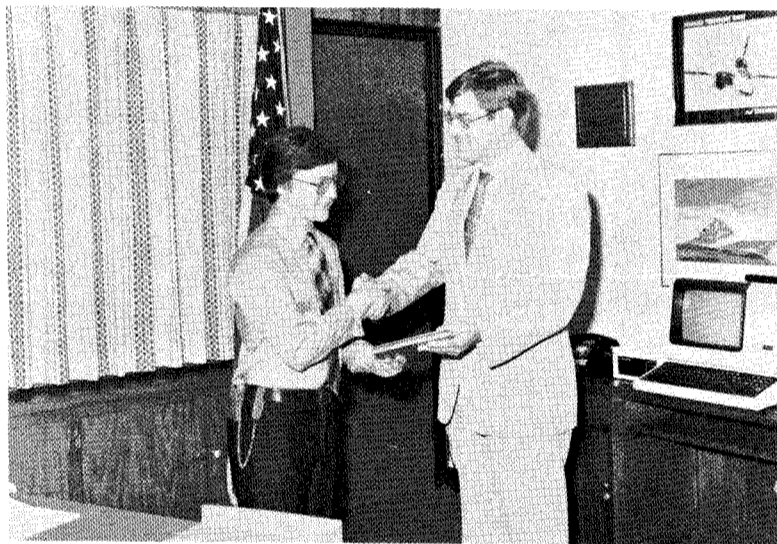
Recently NADC had the 34th International Science and Engineering Fair winner on board to see first-hand the workings of a naval laboratory. David DeVore from Houston, Texas spent the week of August 15 through 19 here as part of his award which is sponsored through the Naval Air Systems Command. David was also afforded the opportunity by his winning the Science Fair to participate in the 25th London International Youth Science Fortnight. The Office of Naval Research administers this program and finds it to be a means to encourage the nation's youth to develop their interest in science and to pursue scientific and technical careers.

DeVore's project investigated "The Effects of Different Stimuli on the Platy" (tropical fish). This project is just a part of a larger project of which he is the biological manager. DeVore and his fellow students at Clear Creek High School will be sending tropical fish into space aboard the 12th space shuttle flight. It will be a study of the behavior and orientation effects of space flight on fish.

While at NADC DeVore was able to spend time in each of the Center's directorates. He had an opportunity to speak with some new employees just out of college concerning the beginning of their careers here at NADC.

DeVore thought that work at NADC would consist mainly of applications research, however, he was surprised by the amount of independent in-depth research that will not only benefit the Navy but other industries as well. He was also taken with the diversity of the programs here at the Center.

Of his visit to NADC DeVore said, "I loved it; it was great."



David DeVore receives a plaque from TD, Robert Buffum.

He further commented, "I was especially interested in Dr. Lloyd Bobb's experiments with lasers because they are in my field of study."

Mr. Robert Buffum, Technical Director, and his family

played host to DeVore while he was at NADC. In addition to seeing the Center, he viewed our surrounding community and had a visit to all of the historic sights of downtown Philadelphia.

They Handle Millions

Really big business is one way to describe NADC. Another way is to say that we topped the \$300 million mark for money received. When we talk about large sums of money like \$300 million you wonder who sees it all. The answer is Mike Vardaro; he's in charge of receiving the funding documents from NADC's various sponsors. As a budget analyst in 02, he coordinates with the people in Planning, Assessment and Resources, the amount of money received and how that money is to be spent.

Using the Management Information System and inputs from the budget people assigned to each directorate track the Center's funding. Also, constant verification of funds that the Center receives is done with

the Accounting Branch so the books can always be kept in balance.

Vardaro also keeps in touch with the sponsors in Washington. He checks to see if the funding documents have been sent to the Center or he reminds sponsors that money is due to be transferred to the Center on a certain date.

The paper work in a job like this, as one could imagine, is quite voluminous. Working with Vardaro is clerk typist Connie Cosgrove. She handles the filing, typing and organization on a part-time basis.

Through the coming years NADC's business base will continue to grow but the \$300 million milestone is one of which the Center can be proud.

New Promotions

Janice Hammond
Martha E. Snyderwine
John F. Andujar
Thomas J. Kreppel
Peter T. Shaw
James E. Marshall
Edward M. Whalon
Mark J. Sewell
Philip H. Sorens
Daniel Ng
Busey S. Cottier
Kevin J. Platz
Stanley J. Zugar, Jr.
Peter Boretsky
Ying Leung Nip
Paul E. Manecke
David W. Roberts
John E. Harrison
Albert L. Cavalieri
Phillip E. Whitley
Robert M. Seltzer
Brian J. Brady
Eileen Craig
Susanna Dougherty
Carol Smiley

CFC Kickoff

The 1984 NADC Combined Federal Campaign will kick off on 11 October and end on 15 November 1983.

Reminder

Secretary of Defense Weinberger has proclaimed the week of October 24-30 as Department of Defense Energy Awareness Week and has called on all hands worldwide to observe it.

THE WHITE HOUSE WASHINGTON

August 8, 1983

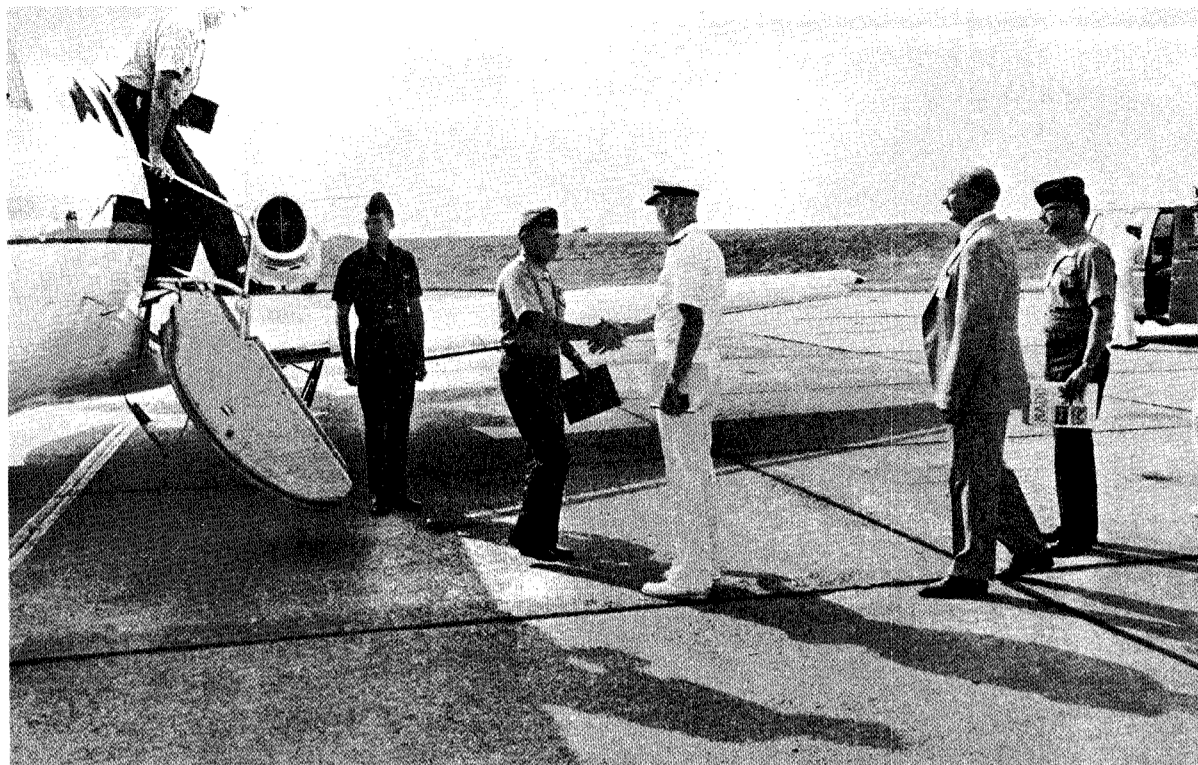
MEMORANDUM FOR ALL FEDERAL EMPLOYEES AND MILITARY PERSONNEL

Each year we have an opportunity to show our concern for those in need through participation in the Combined Federal Campaign. The Campaign combines the annual fundraising efforts of a number of charitable organizations working in the fields of health and social welfare both in the United States and abroad.

Through voluntary giving, we can provide services and programs for our neighbors and countrymen without making them dependent on government. We can help relieve pain and health problems now and support research to help eliminate them in the future. The Campaign also makes it possible to help the less fortunate in other countries, extending a helping hand to friends around the world.

Federal employees and members of the Armed Services have a proud record of generosity and concern for others. I am confident that record will continue this year. While the amount you give is a personal, voluntary decision, I hope that each of you will join me in supporting the Fall 1983 Combined Federal Campaign.

Ronald Reagan



Major General LeBlanc is greeted by Capt. Anderson during his briefings at NADC.

Navy Relief Offers Aid for Car Repairs

Today the majority of Naval servicemembers find it necessary to purchase motor vehicles because public transportation is not conveniently available at most bases. In recognition of this fact, several years ago the Navy Relief Society expanded its financial assistance policy to include assistance to help cover the expense of unexpected motor vehicle repairs.

Under the car repair program, Navy Relief can assist with repairs essential to the safe operation of a vehicle when associated expenses would cause financial hardship. However, car repair assistance can be provided for only one vehicle per servicemember, and the owner is expected to be able to afford the expenses associated with routine maintenance, car payments, insurance and licensing.

The Society will not lend money to finance vehicle purchases or to help cover the costs of registration fees, insurance and monthly car payments. Neither will it lend money to pay for regular upkeep, such as

oil changes, replacement of worn tires, other scheduled maintenance services or body work. Keeping a motor vehicle in safe operating condition is a responsibility of vehicle ownership.

Under certain conditions Navy Relief in Philadelphia can, as an exception to the above policy, assist with the amount of the increase in auto insurance incurred by a recent transfer to the Philadelphia area.

Interest free loans are available to help when your financial situation would prevent essential repairs from being accomplished promptly while in a traveling status, or within a reasonable time when the car is located at your home station. Navy Relief expects you to provide a written estimate of necessary repairs. It further expects that the cost of repairs not be excessive, and that the servicemember be able to repay the Society within a reasonable period of time.

If you apply for assistance to pay for motor vehicle repairs,

you must have in your possession at the time of the interview:

- Proof of ownership in your name
- Insurance in your name for the vehicle that is to be repaired and that meets the requirements of your home base for issuance of a base sticker
- A written estimate of costs of repairs required from the repair facility.

To apply for motor vehicle repair assistance, call the Pennsylvania Auxiliary at 755-3028 or 468-2448 to arrange an appointment. Person-

Super Safety Saves School Students

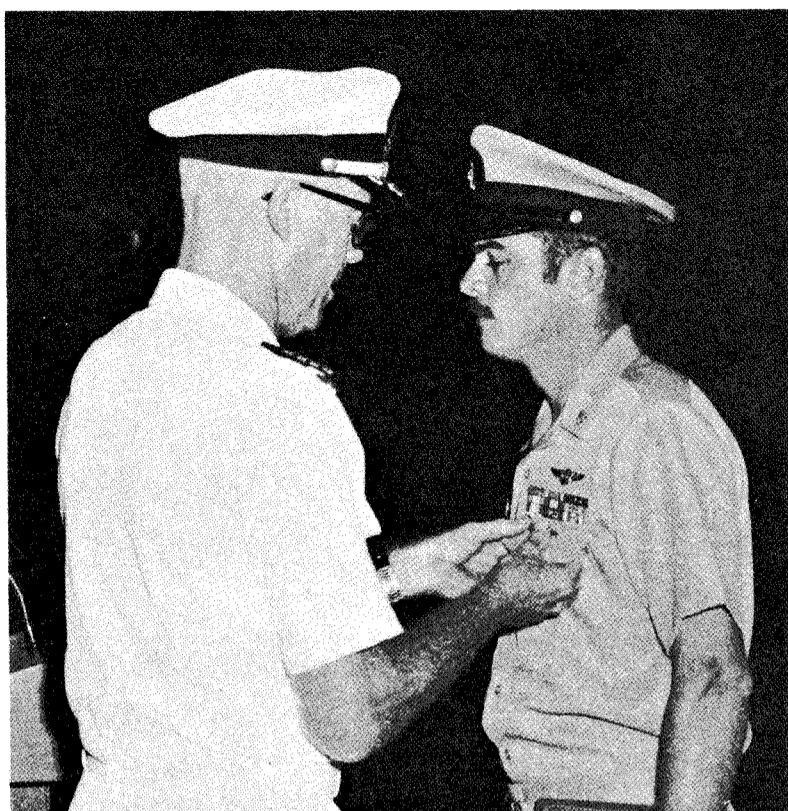
by Mike Musington

Leon Leadfoot, former senior boiler inspector for the Philadelphia Naval Shipyard, and charter member of the 55-Is-a-Bunch-of-Jive Association, was late again for his new job as a waste protein reclamation specialist.

Undaunted by the fact that he had to travel 37 miles in 12 minutes, Leon stomped on the accelerator of his '81 Kamikaze and grinned grimly as the 497 engine roared down the road. Barely seeing its flashing red lights, he blurred past a stopped school bus and made a sharp, two-wheel turn onto Maple, narrowly missing two first graders trying haltingly to cross the street. He then came upon a sweet, little old, gray-haired lady acting as a school crossing guard. Leadfoot noticed she just barely had time to get the children and herself onto the sidewalk as he soared past. He also noticed that the sweet old grandmother had an outstanding knowledge of obscene hand gestures, and was screaming some words at him that he hadn't heard since he left the Marine Corps.

Suddenly, the insensitive speeder sighted a sinister spec-

Amadio Receives Conduct Medal



They say good things come in threes and for ADC James T. Amadio that's exactly what happened. On 24 August, he received his fourth Good Conduct Award, was designated an Aviation Warfare Specialist and

was permanently appointed to the rank of Aviation Ordnanceman Chief. Oh, yes, one other thing just to top off the list. Three days later he reenlisted for three more years!

nel stationed at NAS, Willow Grove, or NADC, Warminster, should call the Willow Grove Branch office at 443-6024. Should your vehicle break down while you are traveling and not near a Navy or Marine Corps facility, Navy Relief assistance may still be available to you. You should contact the nearest American Red Cross office or an

Army Emergency Relief or Air Force Aid office if more convenient.

As will all financial assistance provided by Navy Relief, the car repair program is designed to help Naval and Marine Corps personnel in time of need when faced with unexpected expenses that would cause financial hardship.



RADM Kollemorgen discusses his recent NADC visit while LCDR L. Butler looks on.

ter shadowing his semi-supersonic sedan. The flying form turned out to be that paragon of pedestrian protection, Super Safety, who had been watching the progress of the careening convertible and decided that enough was enough. Forcing Leadfoot off the road, the vexed vigilante of vehicular violators removed the driver side door, and snatched the offending operator out by the lapels of his polyester leisure suit.

"What's the meaning of this?" mumbled the malefic miscreant. "Let me explain friend," hissed the hooded hazard hater. "In the past ten minutes you have managed to show a complete disregard for the safety of others. If you leave late for work or an appointment, just accept the fact that you will arrive late. Don't try to make up time by recklessly speeding. In addition, Pennsylvania law strictly forbids passing a school bus that is stopped with its red lights flashing, unless it is discharging passengers *at a school*. Remember, kids in many cases may thoughtlessly dash into the street without looking. It is your responsibility as a driver to watch out for them. This is

particularly true for new school children who may be crossing busy streets alone for the first time. They are often unsure of themselves, and may not really know what to do. Finally, although a school crossing guard does not have the authority of a police officer for traffic control, he or she does have the responsibility for the children in their care. Watch for them, obey their directions, and always slow down in a school zone."

The rather smug expression on Leon's face told the scion of safety that he was not getting through.

"And remember," added Super, "if you don't follow these rules, not only will you get a ticket, but you probably won't survive the operation either."

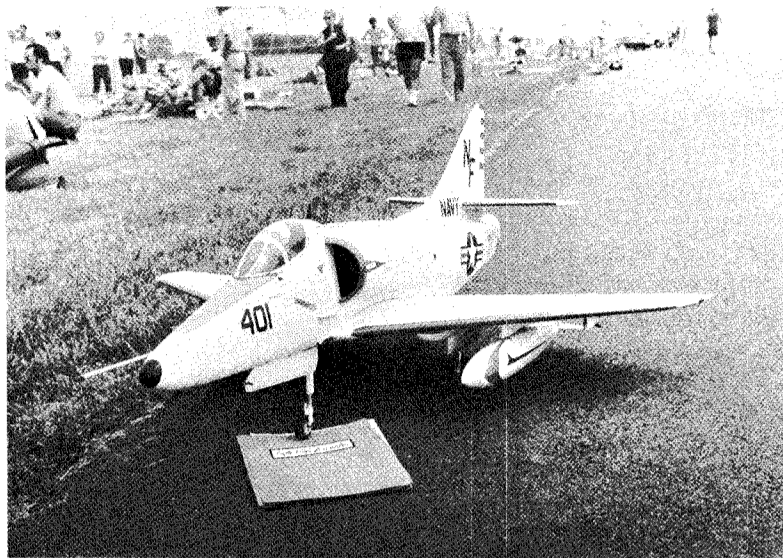
"What operation?" stammered the stunned speeder.

"The one they'll have to perform to remove the bumper I'll shove up your nose if I catch you again," said Safety with a malevolent smile.

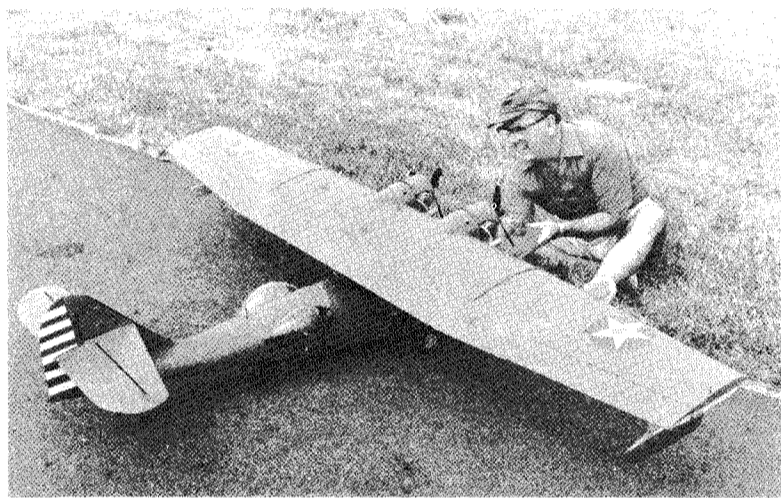
The horrified driver gasped a quick "Yes sir," jumped into his doorless car and drove very, very carefully on his way.

Modelists Buzz as Crowd Applauds

Several hundred contestants and thousands of spectators visited NADC for the 35th Annual Eastern States Championship Model Aircraft Meet. From children to senior citizens all were here to watch the planes fly and take part in the competition. Modelers from all over the east coast brought their planes to the skies over Warminster. The quiet floating of gliders and the snarling sound of racing planes cutting the air showed the contrast of a hobby that brings together people from all ages, occupations and backgrounds.



A-4 Radio controlled model that thrilled the crowd.



Winner of the Best Navy Scale Competition.

The crowds applauded as beautiful radio controlled scale aircraft flew by. A replica of a Navy PBY seaplane took the best Navy scale award. Almost every detail, down to the machine guns in the waist gunner position, was there. Another plane that drew a big reaction from the crowd was an A-4 Skyhawk. This model was powered by a ducted fan motor enclosed in the fuselage. The eight pound plane flew exactly like the real thing, doing loops and rolls and even dropping its wing tanks just like the big ones do.

Phone System to Streamline Center Communications

You say your fingers are tired of dialing frequently used numbers. You say you're aggravated when you get a busy signal several times while trying to get the same number. You say you would like call forwarding. Well NADC is getting a phone system that will solve all the above problems and more. It's called Dimension PBX and it should be in place by early November. According to Robert Angiolillo of the Center's Telecommunication Division, the new system will revolutionize the way Center personnel use their phones.

Instead of having phones with many extensions each person who has a phone now will have a dedicated phone with a separate number. The total number of instruments will not change but the way they work will. Angiolillo said that there will be more control by the individual user. First all the new phones will be push button touch tone. A memory system will provide automatic dialing of frequently used numbers. The system can store from 10 to 30 numbers. There will be call forwarding and call waiting. In addition a feature called trunk queuing will be available. Cost savings will result because

there will be fewer lines needed. If you dial "9" on any of the other codes to get an outside line and the line is busy, the system will call you back when a line is free.

Angiolillo explained that a majority of the current phone numbers will change with the addition of the new system. To help ease the transition a new listing will be distributed two weeks prior to the implementation of the PBX system.

Department representatives who are trained in the operation of the new phone network will be available to help anyone who is having difficulty adapting to the new methods of phone operation. Brochures and a video tape about the system are also scheduled for distribution.

Although all this sounds like it will cost a lot of money it really will save the Center money in the long run. It will make for a more efficient system and the equipment will be cheaper to lease. It is estimated that the new system will save approximately 10% over the old system. The new network can be better monitored for abuse. Not only long distance calls will be checked but local calls will be recorded and checked.

Awareness Month Events

October at NADC will once again be Awareness Month. The theme this year will be "Working Together is Winning Together." In preparation for Awareness Month, the Women's Advisory Committee has scheduled a series of programs to be brought to the Center. The Committee also plans to give a "Woman of the Year Award" to one of the outstanding women on Center who continually

demonstrates high standards of achievement and professional support to fellow employees.

The Awareness Month Program below, has been specifically developed with the interests of the Center women in mind. All Center employees are invited to attend the various presentations, however, the Committee hopes that the Center women will be able to fully participate in the program.

Schedule of Events

6 October 1983	10:00 a.m.— 12:00 Noon	Availability of Positions for Women in Other Government Agencies and Private Industry Speaker: Ms. Stephanie Garret Regional Federal Affirmative Action Program Manager, OPM
12 October 1983	1:00 p.m.— 3:00 p.m.	Consumer Awareness Speaker: Prof. Blaine Greenfield
19-21 October 1983	8:00 a.m.— 4:00 p.m.	Effective Communications Within the Organization Dr. Beth Stearns
26 October 1983	12:00 Noon	AWARDS LUNCHEON Speaker: Ms. De Burton National President FEW
31 October 1983	9:30 a.m.— 11:30 a.m.	Sexual Harassment Speaker: Ms. Zinnie King

Township Commends NADC for Tech Help

The Township of Warminster has sent a letter of thanks to NADC for its assistance through the Technical Volunteers Service program. People from the Center have volunteered their time and expertise to help solve problems that the township faces. Several NADC employees have joined the program and have assisted Warminster technically.

Jerry Bortman and Stewart Lee (retired) got together with representatives from Warminster and identified areas in

which NADC could be of assistance. An interference problem in the township's communications equipment was found. Howard Krumboltz and Doug Crompton successfully diagnosed the problem and eliminated the Interference. Also Mike Massington, NADC's Safety Officer, helped steer Warminster's Township Safety Committee in the right direction.

Warminster is currently asking for assistance with the fol-

lowing:

- Development of a computer system
- Recommendations for a telephone system
- Recommendations for township building lighting
- Recommendations for township building air conditioning

If you have expertise in any of these areas and would like to volunteer some time, please call Jerry Bortman at X3100.

Recipe Contest to Satisfy Appetites

Starting with this issue of the Reflector, the government's gourmet guide to better living, "The NADC Recipe Review" will be a regular feature. It's new and it's for you.

If the number of requests that the NADC Food Services Board receives for various recipes served in the Center's Cafeteria is any indication of the quality of the food prepared and served by Bob Green, our cafeteria manager, and his staff we are very fortunate to have them on board. As a result, the Food Services Board along with Mr. Green's enthusiastic support has arranged to have the NADC Cafeteria Recipe of the month published in the Reflector. This will be a recipe for one of the items served by Macke that has been shown to be a favorite

among the Center's employees. BUT THAT'S NOT ALL.

Mr. Green has, in addition, offered to select a recipe each month to be served in the cafeteria from among recipes submitted to him by Center personnel. The Food Services Board was so impressed with this idea that they have agreed to award the employee whose recipe is selected by Mr. Green with a \$50.00 U.S. Savings Bond.

This is your chance to share your favorite recipe with your friends and fellow employees as well as receiving a Savings Bond from the Food Services Board in appreciation of your helping to enhance our work environment.

The rules are simple. Send

your recipe to Bob Green, NADC Cafeteria Manager, no later than the second Friday of each month. Remember the recipe you submit must be such that it can be reasonably prepared and served in the cafeteria. The quantities and proportions called out in your recipe will be adjusted accordingly, by Mr. Green, for serving large numbers in the cafeteria. If your recipe is selected by Mr. Green you will be notified by the Food Services Board and presented with the award.

Watch this space next month for an NADC Cafeteria favorite recipe as well as the winning Center employee's recipe and when it will be served in the cafeteria. GOOD LUCK AND BON APPETIT!

Commander Salutes

Jay Goldfarb, PAR, for his support to the Office of the Deputy Chief of Naval Operations during the period 1 July 1981 to 30 June 1983.

Joseph J. Kelly, Douglas O. Bagwell, Albert E. Simkins and Edwin F. McGlynn, all of ACSTD, for their evaluation of the Aerial Refueling Store (ARS) proposal.

George Lowenstein, CNTD, for his participation in President Reagan's Private Sector Survey on Cost Control.

Gordon K. Marshall and Edward J. Cotilla, both of SATD, for their coordination of the recent TTCP Subgroup G meeting.

Gregory P. Catrambone and Francis P. Darreff, both of SATD, for their preparation of an analysis of potential radar

alternatives for the A-6 and F-14 upgrade programs.

AW2 William Dearie, DCP, AT2 James Warden and ATCS William Pesek, both of the Aircraft Department, for their assistance to the Naval Surface Weapons Center during tests of the Offboard Deception Devices Program.

Stephen J. Mapa and James H. White, both of CNTD, for their work while modifying the USNS VANGUARD.

Janice Strozier and Maureen Satchell, both of SATD, Anamae Dyson, Computer Department, Helen Machen, SD, Maria Needles, Command Admin, and Ronald Kabin, Comptroller, all for their support given during the recent Command Inspection.



Surgical team members from a Pittsburgh hospital rush to board an aircraft at the Naval Air Development Center carrying with them a donated human kidney. With the organ recipient waiting on the operating table, the transplant team flew into NADC, the closest airfield to Warminster General, and following a three hour operation they were on their way back to Pittsburgh with the donated organ. The Center's Crash and Rescue Crew provided full Medevac backup support for the surgical team and their aircraft while the tower and ground crews extended their operating hours to assist in the emergency.

Granfalloon Champs Again

The Granfalloon defeated the Druids in the finals of the NADC Men's Softball League this year to recapture the championship. It's the fourth time in five years that the Granfalloon has taken the title. In the past several years the league has become stronger and more balanced; this year was no exception, with the playoff matchups not being decided until the last day of the season and only two games separating six teams.

The quarterfinals brought a few surprises as all four series went the full three games. The Eighth Inning (8-11 regular season) came close to eliminating the Granfalloon (17-2) early as they won the first game 2-1 on the pitching strength of John Bechtel (2 hitter) and a two RBI double by Jim Bebey; losing pitcher Steve Torok also allowed only two hits. The Granfalloon came back to win the next two games, however, 17-3 and 10-7. In the other series, the Swingers (14-5) went down in three close games to the defending champion Misfits (10-9). The Guzzlers (13-6) came back from a 15-0 first game defeat at the hands of the Bearcats (13-6) to win that series, and the Druids (13-6) also avenged an initial game 17-2 thrashing, by

the Renegades (12-7) to capture their series. The two semi-final matchups lasted the minimum two games as the Druids throttled the Guzzlers and the Granfalloon eliminated the Misfits in two close games.

The finals went surprisingly easily for the Granfalloon as they took both games 11-1. It was the first time the Druids made the playoffs. A high scoring team that usually scores runs in bunches, the Granfalloon jumped on Dick Cullen, one of the league's stronger pitchers, for five runs in the first inning, highlighted by a bases loaded, base clearing hit by Ed Swiski, and again for four runs in the third, capped by a bases loaded single by Garth Torok. Solo home runs by Swiski and Tom Weiss provided the final difference. The Druids' only run came in the third, when Mark Cahill scored Dave Dummeldinger from second with a base hit. Steve Torok scattered six hits to get the win. Druid pitcher Glenn Savage fared no better in the second game as the Granfalloon scored four in the first on RBI singles by Matt Brown and Tony Viola and a two run homer by Weiss. The final outcome was no longer in doubt when the Granfalloon scored four more in the second,

when Weiss clubbed a grand slam, his third home run in the finals and fourth in the playoffs. RBI singles by Steve Fleischut and Glenn Willis provided the final margin of victory. The Druids' only score came on a double by Buzz Vozzo and a single by Mike Kuszewski, as

Steve Torok, backed by the strong Granfalloon defense, limited the Druids to six hits.

Commissioner Craig Volker presented the Granfalloon with the championship trophy and thanked all the teams for an excellent season.

Fireman's Olympics are Hot

For the first time the Naval Air Development Center hosted the Bucks County Fireman's Olympics. There were about 30 men from four companies dressed in rubberized coats, hip boots, helmets, oxygen equipment and gloves on a 90° plus day. The four companies represented were: Warwick, Hartsville, Upper Makefield, and Northampton.

The idea behind the competition is to take skills that are used by all firemen and incorporate them into timed events. Four different events were staged. Of the four, which included fast hose hook-up and pumping, a driving skills course and another pumping test, the most interesting was the use of personal gear. Each fireman had to don his helmet, boots,



Fireman dons his helmet during Olympics.

New Titles

Following is a partial list of books recently added to the Technical Information Branch. Visit or call your library at x2541 to inquire about these books.

PERIODICALS

Defense Science 2001 +, Rush Franklin Publishing, Inc. Semi-monthly, February 1983-
Personal Computing, Hayden Publishing Co., Inc. Monthly, June 1983-
Popular Computing, McGraw-Hill Inc. Monthly, August 1983-

MICROCOMPUTERS

"IBM's personal computer" C. DeVoney QA76.8.I3D1
"IBM's personal computer, 2nd ed." C. DeVoney QA76.8.I2594D48 1983
"Interfacing to S-100/IEEE 696 microcomputers" S. Libes TK7887.5.L5

"Microcomputer architecture and programming" J. F. Wakery QA76.6.W325

"Programming the IBM personal computer, BASIC" N. Graham QA76.8.I2594G7 1982

"Your IBM personal computer: use, application, and BASIC" D. E. Cortesi QA76.8.I2594C67 1982

MICROPROCESSORS

"Microprocessor operating systems, vol. I and II" QA76.6.M486, QA76.6.M487

"Microprocessor systems and their application to signal processing" C. K. Yuen TK5102.5.Y8 1982

"Microprocessors and logic design" R. L. Krutz QA76.5.K77

"16-bit microprocessor systems" D. L. Cannon TK7895.M5C35 1982

Service Awards

A total of 18 Center employees were honored recently for completing 30 or more years of government service.

Those receiving 35 year pins were: Gerald Libby (03), John Wullert (20), Alphonso Boyd (60), William Justice (60), Leonard Tomko (60), Marvin Schulman (60), Vincent Misticoni (81), and Harold Hedleburg (84).

Schulman, who heads the Seating and Escape Branch, said he had no regrets about having a career with the government. "The work is rewarding and the diversity of the work is good. Contributing to the saving of lives by designing escape systems is important."

Those receiving pins for 30 years of service to the government were: Thomas Reiter (10), Francis Buck (20), John Kauker (40), Thomas Rothstein (50), Dominic Ottaviano (60), Anthony Negri (60), Gerald Lepone (81), Earle Largent (83) and Clifford Tierney (83).

DEPARTMENT OF THE NAVY

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gloves, and coat and go through a series of steps while being timed. After putting on the clothing he then had to put on a breathing tank and mask. After the breathing apparatus was on he proceeded to display his expertise in knot tying. When the knots were tied he then reversed the whole procedure to end up in normal street clothes.

When all was said and done, the Hartsville Fire Company won. They will proceed to the Pennsylvania state finals and maybe the Nationals.



The Reflector

Volume 27, No. 10

Naval Air Development Center, Warminster, PA

October, 1983

NADC Dedicates New Laboratory Complex for Flight Controls

A new laboratory complex was dedicated last month in the memory of George Tsaparas of the Naval Air Systems Command. The lab, which is located in the basement of building two, is designed for the development, test and evaluation, integration and system demonstration of air vehicle technologies.

Tsaparas had a long and extremely close working relationship with the Naval Air Development Center. His work as AIR-340D and acting AIR-340 encompassed flight control innovations, data multiplexing and reduction of cockpit clutter through state-of-the art display technology.

Tsaparas was responsible for the automatic throttle controls that are installed on all carrier based aircraft. He introduced digital flight controls, the building block approach to direct drive actuators, the skewed



From left to right; Captain James B. Anderson, Helen Tsaparas, Glenn Tsaparas and Steve Hurst.

gyro concept for fly-by-wire aircraft and the first integrated inertial and air data sensor system concept.

Another one of Tsaparas' major contributions to aircraft technology was the initiation of development on the 270 volt DC

generator and the application of digital multiplexing and solid state technology to power distribution, control and protec-

tion.

His work in the area of display technology has resulted in the highly efficient cockpits that can be found in the F-14 and F-18.

An overflow crowd came to see Tsaparas' wife, Helen, and his son Glenn accept a commemorative plaque, and cut the ribbon to open the lab complex.

The new lab takes a systems approach to the development of controls. In the complex, areas are set aside for electrical and environmental control system, flight controls, flying qualities,

(continued on page 2)

Three Investigators Get IR/IED Awards

A small ceremony was recently held to honor some special people for their unique contributions in exploratory development and independent research. Three NADC people, Dr. Lloyd C. Bobb, Samuel Greenhalgh, and Francis A. Karwacki, are doing fundamental work in areas that could have great impact to the Navy.

Greenhalgh

Greenhalgh, a former citizen of the United Kingdom, was singled out for his independent research on the Aerodynamic Properties of Inextensible Flex-



Samuel Greenhalgh

ible Membrane Lifting Surfaces. In general terms, Greenhalgh's work involves developing fundamental equations that will define how non-stretchable fabric wings get their lift.

Working with the wind tunnel facility at Princeton University, Greenhalgh designed a testing program to measure the dynamic lifting forces that are produced on a mylar wing section. There are various applications for fabric wings because they are foldable, lightweight and inexpensive. Fabric wings are in use today. They can be seen in Parafoil (inflatable fabric) parachutes and Ultralight aircraft. Greenhalgh's research may eventually lead to more efficient wing designs for use by the Navy for such things as targets and decoys.

Greenhalgh works at NADC on a part time basis. He also holds a position as a full time professor of physics, mechanical engineering and engineering graphics at Bucks County Community College. Greenhalgh additionally holds a visiting fellow position with Princeton. His undergraduate and master's degrees in mechanical engineering are from the University of Pennsylvania. He also has a degree from the University of Manchester, his hometown in England. Greenhalgh has a diploma from the Von-Karman Institute of Experimental Fluid Dynamics in Brussels.

Karwacki

Francis A. Karwacki, CNTD, was honored for his Independent Exploratory Development on a project titled "Development of a Nuclear Magnetic Resonance Apparatus." The device that Karwacki has been working on for the past three years is a Nuclear Magnetic Resonance (NMR) gyro.

The theory behind Karwacki's gyro is that information on vehicle rotation can be obtained from the dynamic angular motion of certain atomic nuclei. Interest in the development of a Nuclear Magnetic Resonance Gyro comes from its potential to be a small, extremely accurate and highly reliable strapdown gyro. It also



Francis Karwacki

has the capability of accommodating large input rates without sensitivity to acceleration. *(continued on page 2)*

Change in Navy Tuition

Navy people who are eligible for education benefits under the GI Bill can no longer use the Navy's tuition assistance program to help pay for off duty schooling.

According to an article in the 10 October issue of NAVY TIMES, nearly 182,000 active duty sailors still covered by the GI Bill are affected by the policy change, which went into effect as of 1 October. The move was a result of the 17 percent reduction in fiscal year '84 program funds.

Only those who joined the Navy before 31 December 1976 are eligible for GI Bill education benefits. These people must now use their GI Bill education benefits, or other Navy campus programs, to help defray tuition

costs while on active duty.

The cost-saving measure does not affect Program for Afloat College Education (PACE) students, or sailors in any other Navy campus program.

The tuition assistance program now becomes an off-duty education program only for those Navy people not covered by the GI Bill. It allows enlistees working toward a high school diploma to have 100 percent of their tuition reimbursed. E-5s and above with less than 14 years of service have 90 percent of off-duty high school or college education costs picked up by the Navy, and other enlistees and all officers receive 75 percent reimbursement for courses.

Birthday Message

"As we celebrate our Navy's 208th Anniversary, it is appropriate to step back and remember the source of our strength and superb performance. Without a question it is you, our wonderful Navy professionals.

We are a spirited Navy which is alive and ready to sail with the next tide. We are—as always—on watch and on station around the world, from the Caribbean to the Mediterranean, from the shores of Lebanon to the Eastern Pacific off Latin America. We are building to 600 ships and there is a noticeable bounce in our step. No matter whether you wear the uniform-of-the-day, or the uniform of reservist, retiree, civilian or Navy family member, it is you who puts action to our national commitment of "Peace Through Strength." A Navy's true strength is not measured by counting ships or aircraft, but is found in the quality of its people. It is your spirited professionalism which makes our Navy great.

While details of our passage through this coming year and the ones that follow cannot be foretold, our heading and course are clear and true: We must be strong and we must be ready whenever and wherever the Navy team is needed.

I thank you for your dedicated support and tireless performance over the past year. I know you will continue to stand a tight watch on our nation's security and ensure our navy remains a ready force for peace. Happy Birthday and God bless you all.

CNO

Navy's Energy Program Works fuel for the fleet ... every drop counts

The United States Navy pays a high price for energy. The Navy and Marine Corps used 84.2 million barrels of oil equivalent (BOE) in 1982, at a cost of over \$4 billion—228 percent more than in 1975 (then-year dollars). Energy cost increases have slowed and fuel is more widely available, but prices for petroleum and other energy sources are still high.

Oil plays a critical role in the maintenance of readiness because the current generation of weapons systems, and mobile and stationary equipment use petroleum fuels. Continued free use of the seas can be maintained only if sufficient fuel is available for the operation of ships, aircraft, and their supporting facilities. Petroleum fuels provide 70 percent of all Navy energy, and cost \$3 billion last year.

Programs that are improving energy efficiency in operations and reducing energy waste are apparent throughout the fleet and the shore establishment. In 1982, the hulls of nearly 250 ships were cleaned with scrubbing equipment to remove friction causing marine growth. The hull cleaning program saved over 600,000 barrels of fuel during 1982. Research and development of antifouling paints to eliminate marine growth on ship hulls is progressing well. Anti-fouling paints applied four years ago to USS OUELLET (FF 1077) continue to resist marine growth fouling. Paints applied to the hulls of USS SPRUANCE (DD 963) and USS SAMPSON (DDG 10) over two years ago are also performing well.

Water conservation aboard ships has the potential to save large amounts of fuel by reducing the load on ship desalination plants. This is being accomplished through new shower heads, improved laundry and galley procedures, and maintenance procedures. Already, reduced flow shower heads have been installed on approximately 100 ships. Installation will continue until all ships are converted to this energy/water efficient system.

Additional fuel savings will be achieved aboard ships by optimizing fuel-air mixtures in boilers through the use of oxygen analyzers. Approved for fleet use, the Navy is procuring 394 oxygen analyzer units to be installed as part of the fleet modernization program.

Naval aircraft are saving energy through operational changes, airframe modifications, and through the use of computers. P-3 aircraft conserve fuel by taxiing to the runway on two engines, and loitering on station, decreasing

cruise-in fuel flow, and by using more ground support equipment. Aerodynamic drag is reduced through slight modifications to the airframe and smoothing rough surfaces.

Aircraft performance advisory computers and flight performance advisory systems have been developed to assist pilots in making optimal fuel saving decisions in flight. The Naval Air Development Center along with NAS Moffett Field, NAS Jacksonville, NAS Willow Grove, NAS Whidbey Island, NAS Oceana, and the Naval Air Test Center, are all participating in efforts to develop new energy conserving methods for aircraft.

T-45s, the newest addition to the aircraft trainer fleet, will help the Navy save about 680,000 barrels of fuel each year. These exceptional aircraft use a third as much fuel as the current trainers do.

Energy savings at shore facilities have been achieved through the retrofit of existing buildings, energy efficient design and construction of new buildings, the use of more efficient equipment, and the care and attention of the naval community as a whole.

Energy Conservation Investment Program (ECIP) funding from 1976 through 1983 amounted to \$326 million. Since 1976, 271 projects were completed. About 89 projects are under construction. This investment will save the Navy 2.4 million BOE, valued at \$71 million.

Energy Technology Applications Program (ETAP) projects handle retrofits that fall below the ECIP funding threshold of \$200,000. Through 1982, approximately 300 ETAP projects were funded at a construction cost of \$9 million. Energy savings from these projects were 135,000 BOE valued at \$4.3 million.

(IR/IED from page 1)

tion. By the time such a device goes into production it is expected to have lower acquisition and lifecycle costs than those of a Ring Laser Gyro with comparable performance.

The NMR IED is a 3-year program with two phases. The first phase was directed at improving performance parameters by analyzing key aspects of NMR gyro design. This phase also included the development of Mr. Karwacki's new gyro design, which was based upon his prior analysis. The current phase is being devoted to the fabrication and integration of all of the gyro system hardware and software. It will also in-

clude experimental gyro parameter measurements as well as performance evaluation.

Two unique design concepts were conceived as a result of the phase one analysis and development. The first being a transverse AC-pumped NMR gyro design. The second, a unique magnetic field device designed with the assistance of Joseph T. Griffin (now of TSD), co-inventor. Patents have been applied for and are pending for these two design concepts.

Mr. Karwacki views the IR/IED program as being very significant to the attainment of NADC's goals. He said, "The IR/IED program gives the individual a chance to grow in his field of study." He then went on to say, "I really appreciate the support from my supervisors and people in other areas of the Center." He also had words of praise for his co-workers, "They helped me solve some of the 'sticky' materials and electronics problems that surfaced during the development of the NMR gyro—they deserve a special vote of thanks."

A ten year employee at NADC, Karwacki holds an AS in electronics from Philadelphia Community College, a BS in Physics from LaSalle, an MS in Physics from Drexel and is currently doing work towards his PhD at Lehigh.

Bobb

Dr. Lloyd C. Bobb, SATD, found NADC's Independent Research Program an extremely valuable source of money to pursue an idea that he thought was worthwhile. Bobb's project is based on the use of fiber optics in the development of sensors. His work holds the promise of small, inexpensive and extremely sensitive devices for the measurement of magnetic fields.

Benefiting from fiber optic research already done by the communications industry, Bobb has designed a series of sensors using fiber optics and small laser diodes that are on microchips.

Taking fibers that are eighty microns (one micron equals one millionth of a meter) in diameter Bobb, using the known properties of light and magnetism, utilizes the idea of coating the fibers with metals that are sensitive to magnetic fields. These metals react in such a way that they stretch in the presence of a magnetic field. By laying one fiber that is coated next to another fiber that is not coated and illuminating both with the same laser through a special coupling, readings at the other end of the fibers can be taken. These readings are based on the difference in the time it takes for the light to travel the lengths of the two fibers. Since the coated fiber would stretch in the presence of magnetic field, the time it took for the light to travel its length would be longer than the uncoated fiber.



Lloyd Bobb

An interference pattern results when the two light waves are measured together. This measurement can be correlated to the intensity of the magnetic field.

Because the components of the device are so small, an extremely sensitive magnetometer could be built in the space of a cigarette pack, Bobb stated. The simple physics of this device also holds the promise of

other sensors such as temperature, pressure and motion sensors, being made from the same concept.

Bobb tapped the resources of NADC and other activities, like Drexel University and the Naval Research Laboratory. He said that without the efforts of everyone on Center, from the people in Supply who contract, procure and receive the equipment, to the materials people who helped with the coatings and the supervisors who supported the research, the project just wouldn't have happened.

Bobb came to NADC indirectly from the Frankford Arsenal. He worked at Picatinny Arsenal before coming here. A resident of Willow Grove, Bobb used to drive by NADC and think it would be nice to work here. His wish came true five years ago. Bobb holds three degrees in physics, a BS from Penn State, a MS from Penn and a PhD from Temple.

Navy Space Command Established

ADM. James D. Watkins, Chief of Naval Operations, emphasized the requirement to use the potential of outerspace during remarks made at the inauguration of the Naval Space Command, Dahlgren, VA, 1 Oct, in which Capt Richard H. Truly assumed duties as the first commanding officer.

The CNO touched upon Greek mythology, during his opening, when he said, "Like the ancient tale about the Greek warrior-Prince Odysseus, who escaped the clutches of the mythical superpower Cyclops by blinding the giant and depriving him of his keenest sense, any power today would surely be found lacking in strength, open to defeat, if it lost use of one of its most cherished 'senses.' Today—and in the future—certain 'senses' are critical to our

Navy's survivability and capabilities... These senses at sea are being sharpened by movement of sensors from masthead to the edge of space. Our Navy is relying upon space-based systems to perform vital command, communications, control and surveillance functions.

"... Just as we require use of the seas to maintain our freedoms, so now we increasingly need the unimpeded use of space to ensure the security and well-being of our nation and our allies."

ADM Watkins concluded his remarks saying, "Now we will move out to meet challenges before us, for we cannot afford to have the space power of another nation ever rob us of our goal of sea power. We are a seafaring nation... this nation will maintain leadership in space."

New Lab (continued from page 1)

fluidic controls, actuators, armament systems and hydraulics. A full scale TA-7C airframe mockup can be reconfigured to simulate any aircraft, from a single engine to multi-engine.

In addition full weapons system integration can be accomplished using the video and digital multiplex system already on Center.

The Reflector

Naval Air Development Center

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CAPT James B. Anderson — Commander, NADC
Robert S. Buffum — Technical Director
Joseph P. Cody — Public Affairs Officer
David Polish — Editor

Supply, CV/ASWM and Canadian Liaison Office Have New Faces

Major Dale Tremblay jumped at the chance to come to NADC. The jump, however, was a big one as Tremblay came to NADC from Saskatchewan, Canada. His current post at the Center is that of Canadian Liaison Officer. The reason he jumped was that he wanted the chance to see, first hand, the state-of-the-art engineering that takes place at NADC. Another reason was that he had been taking courses at the Rochester Institute of Technology and he came to like the northeastern section

"all new aircraft are controlled by them and if you understand how computers work, then you can have a better understanding of the entire aircraft."

LCDR William Mugg is a product of the Navy through and through. He doesn't have what most people would call a home town because his father, who is a retired Navy Captain, moved his family around so much that they were never in one place long enough to call it home. Mugg, the new CV-

people here and I am looking forward to working with as many of them as I can," he said.

In his role as CV-ASWM Program Director, Mugg says he'll let the technical people do their jobs without him getting into the "nits" or detailed areas. "I hope to be here through the introduction of the new mission software and hardware refinements," he stated. Although that would mean an extension of his present tour Mugg feels that the scheduled changes are worth staying around for.

a reduction from 16,000 to less than 10,000 outstanding requisitions over a two-year period.

Weaver welcomes the opportunity to work at NADC and is impressed with the diversity

on all the supply standards and set specific goals so the results can be measured."



Major Dale Tremblay
of the United States.

As a Liaison Officer, Tremblay's assignment is to look at programs that are of mutual interest to Canada and the United States. Two of the major Canadian programs of interest are the Aurora and CF-18.

The Aurora is the Canadian version of the P-3 Orion. Tremblay explained that there are many areas of commonality between the two aircraft. For example software programs that drive the computers are exchanged between the two countries.

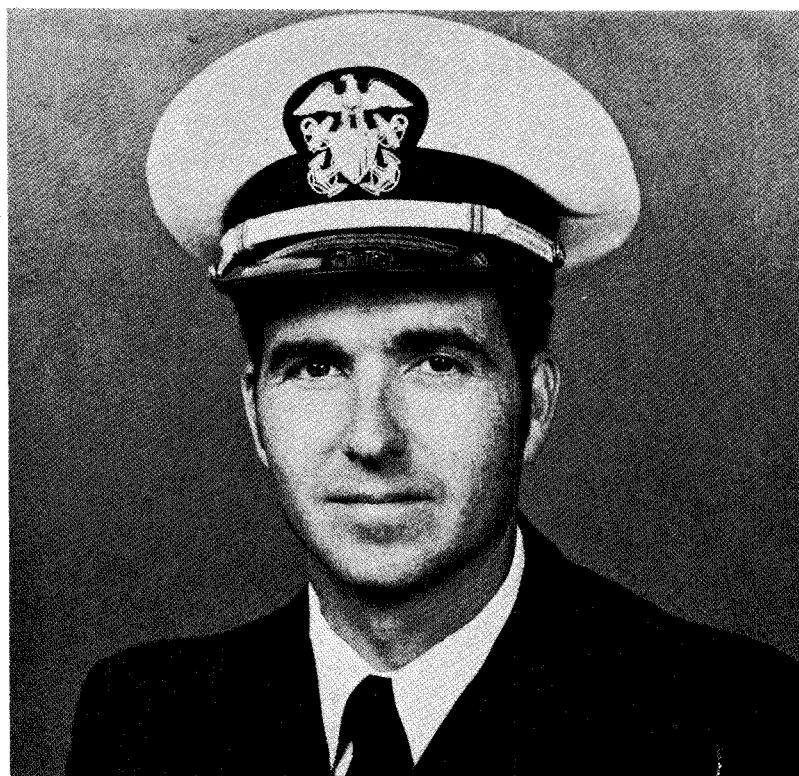
Canada's CF-18 is the designation for the U.S. Navy's A/F-18. Tremblay is looking at NADC's reconnaissance modifications to that aircraft. His background helps in this area. Tremblay did postgraduate work in photographic science and engineering at the Rochester Institute of Technology.

Tremblay's undergraduate degree in mechanical engineering is from the Saskatchewan Technical Institute in Moose Jaw, Canada. He served as a maintenance officer for the Argus ASW aircraft and has experience in fighter planes like the F-104, CF-5 and CF-18.

When asked about what it takes to be selected as a liaison, Tremblay said, "you should be an extrovert and like working with people." "Also you have to be performing your duty assignments very well." "Only those who do well are selected for liaison positions," he added.

One of Tremblay's personal goals during his three year tour at NADC is to learn more about computers. "Because," he said,

ASWM Program Director, comes to NADC from the Naval Air Rework Facility in Pensacola, Florida, where he served as comptroller.



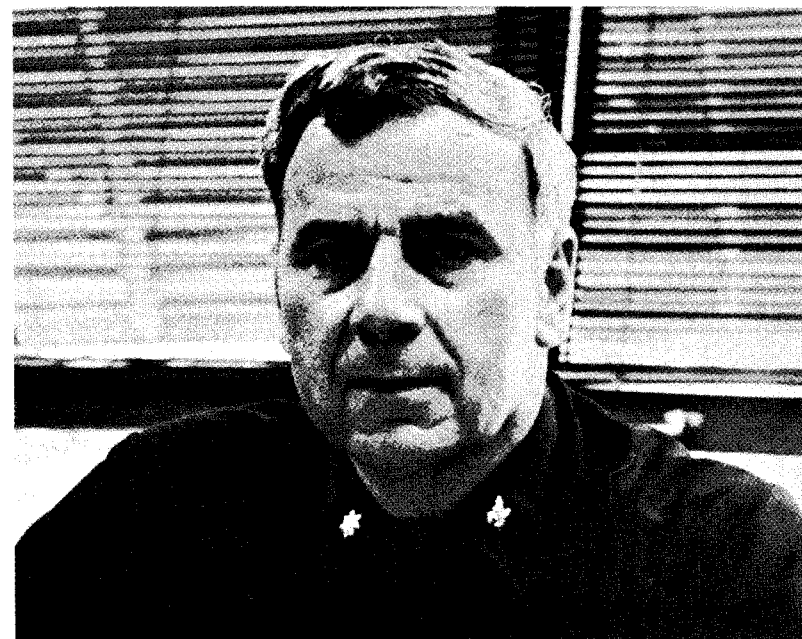
LCDR William Mugg

Mugg's background is in engineering with a 1971 MS degree in aerospace engineering from North Carolina State University. His undergraduate studies were done at Annapolis. After Mugg received his masters he took pilot training in rotary wing aircraft. He had two tours in Norfolk and several deployments in the Mediterranean. One interesting tour took Mugg to the University of Colorado as a ROTC instructor.

As a newcomer to NADC, Mugg is impressed with the people here. "There are many very intelligent and competent

As NADC's new Supply Officer, CDR Milton Weaver brings 23 years of Navy experience to the job. A 1960 Naval Academy graduate, Weaver served as an unrestricted line officer on USS Saratoga (CVA-60) and USS Barry (DD-933) before transferring to the Supply Corps in 1964. Subsequent tours included USS Truckee (AO-147), NAS Norfolk, NAVSTA Keflavik Iceland, ASO Philadelphia, USS Coral Sea (CVA-43), NSD Subic Bay Philippines, and Staff COMNAVAIRPAC.

He comes to the Center from a second tour at ASO Philadelphia where he was Head, Aviation Supply Control Center, responsible for maintenance of a world-wide data base of critical high priority Navy/Marine Corps requisitions. Data base validation and intensified expedite action at ASO resulted in



CDR Milton Weaver

and professionalism of the Center employees. He is conscious of the responsibilities of the Supply Department and the far reaching impact the department has on all aspects of Center operations. Well aware of the importance and high visibility of the Contracts Division with the Directorates, he is equally concerned with ensuring that all supply disciplines are well oiled and running smoothly. These disciplines are comparable, in responsibility if not in size, to major air stations and are the heart of daily Center functions. Included are issue control; packing, shipping and receiving functions; warehousing and shop stores; fuel operations; and the management of the Enlisted Dining Facility. Without a sound Material Control Division, Center aircraft would not be mission capable to perform Directorate projects — after all, Weaver said, an "aircraft is merely a collection of spares flying in close formation."

It is with all supply disciplines in mind that Weaver intends to further improve the excellent support already being provided to the Center customer. Weaver stated, "I want to make sure we are up to speed

BOSS Program

ADM Steven A. White, Chief of Naval Material, has announced a spare parts pricing initiative called project "BOSS" (Buy Our Spare parts Smart).

The BOSS initiative, which began in August, encompasses Secretary Weinberger's ten-point plan for improving spare parts procurement. It further stresses personal letters to the Chief Executive Officers of the Navy's top contractors emphasizing spare parts pricing, establishment of procedures for reporting suspected overpricing cases, strengthening incentive programs to reduce costs and disciplinary procedures for improper performance. It also calls for allocating funds to support a project to break out spare parts from prime contractors to ensure competition, lower prices, and alternate sources of parts from firms with lower overhead cost.

The BOSS project calls additionally for providing data from Navy industrial activities on sources of stock material which has been bought on local markets at cheaper prices, and, on a trial basis, listing military specifications and military standards in the "Commerce Business Daily" procurement announcements.

Cafeteria Recipe of the Month

The following recipe is provided by the cafeteria as requested by an NADC employee. Your recipes for the Recipe of the Month contest are due. Send them to Bob Green, Cafeteria Manager.

Veal Paprika

Veal cubes
1½ lbs. 1 inch square
Bacon fat
2 tablespoons
Finely chopped onion
2 med onions

All purpose flour
1½ tablespoons
Canned tomatoes
2½ cups
Salt
2 teaspoons
Water
½ cup
Paprika
1 teaspoon
Sour Cream
½ cup
Mustard
1 tablespoon
Brown meat in bacon fat; put

into shallow dish with tightly fitting lid.

Brown onion in remaining fat; stir in flour. Add mustard, tomatoes, a little salt and half a cup of water; stir until boiling. Pour over meat just to cover. If extra wetness is needed, add tomato juice and cover. Cook in preheated 350° F oven about 45 minutes, until veal is tender. Stir in paprika and sour cream. Mix well. Reheat without boiling, season to taste before serving. Yields 4 servings.

Commander Salutes

AD1 Christopher J. White, for his assistance during the visit of RADM Kollmorgen.

Karl Schraut, John W. Supp, Jr., Edward J. Sweeney, James E. Zoog, and Danny Chun, all

from SCD, for their support to the NAVAIR S-3 Program Office in reviewing the software documentation for the S-3B aircraft.

October Promotions

Constance Cosgrove, Catherine E. McGowan, Paul Terpeluk, Richard W. Black, William R. Darmofal, George A. Lazzari, Martin A. Leonardo, Rosemary Convery, David J. Farina, William L. Gelatka.

Also Michael V. Mele, John W. Wilks, William E. Bradley, Joseph C. Gentile, Kevin J. Lawlor, Leon E. Smith, Ernest

A. Wykes, David E. Zeidler, Michael J. Deshield, Alexander J. Kuhn, Jr., George McClellan, John A. Monastra, Jr., John D. Cyrus, Jorge Dominguez, Thomas E. Milhous, Alfred G. Piranian, Kathleen T. Tustin, John J. Tyburski, Carol A. Beckett, Salvatore J. Scelsi, Betty Eisold, Charles M. Harless, Jr., Kathleen M. McCloskey.



Oldest and newest member of NADC's military population cut the Navy Birthday cake. ATAN Joseph Boyette and CDR Thomas Mumford do the honors.

Navy Celebrates 208th Birthday



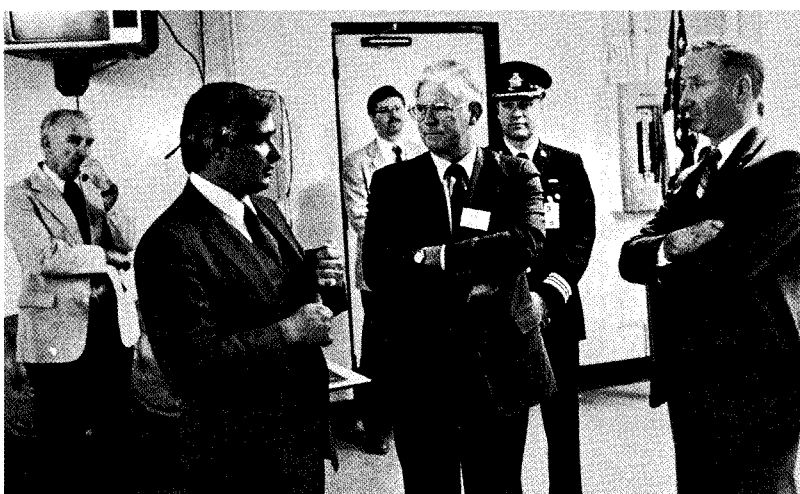
By the looks of the crowd around the cake, it must have been good.

Deputy CNM for Acquisition Visits



RADM W. D. Bodensteiner receives a briefing on NADC's Software and Computer Directorate from Lou Naglak, SCD Director.

Canadian Vice Chief of Defence Tours NADC



VADM Mainguy, center, tours NADC's Dynamic Flight Simulator. David DeSimone briefs.

As part of an ongoing process the external mailing list for the Reflector has recently gone

NADC had a very distinguished visitor this past month, Vice Admiral Daniel N. Mainy. He is the Vice Chief of the Defence Staff at the National Defence Headquarters in Ottawa, Canada. This position is the second highest position in the Canadian chain of command.

Accompanied by Robert Brown, Senior Trade Commissioner for Canadian Consulate General's office, Mainguy received a command brief from Captain Anderson. He also got a chance to see the Dynamic Flight Simulator.

through an updating survey. Over 600 forms were sent out. An overwhelming majority of about 90% wished to continue receiving the Reflector.

As the surveys were returned it was noticed that many favorable comments were written on the forms. Some of them follow.

"I appreciate the up-to-date info and contact. Thanx," Jack Meyers. "I enjoy every copy." Beryl Everist. "Thank you for sending the Reflector. I save

them and put them in a binder. I have some as far back as 1956." Joe Jamen. "I greatly appreciate this service. After 25 years at NADC I look forward to any news from NADC. Please keep it coming." Phil Singer. "Good job! Enjoy every issue!" Cliff Rigsbee.

It's nice to know that the people out there really do like reading this newspaper and that it is sort of link between the past and the present.

Ship Honors Germantown

The Secretary of the Navy, John F. Lehman, Jr., has announced that a new U.S. Navy Dock Landing Ship will be named Germantown (LSD-42), in honor of the historic Germantown community of Philadelphia, PA. Secretary Lehman made the announcement in Philadelphia during the German-American Tricentennial Celebration, 6 Oct.

Germantown was the scene of a revolutionary war battle between troops of the Continental Army commanded by General George Washington, and the British Army under Lt. Gen. Sir William Howe. Dock landing ships traditionally are named for historic sites.

LSD-42, second of the Whidbey Island class amphibious ships, will be the second ship to bear the name Germantown. The first was a 19th century sloop-of-war commissioned at

the Philadelphia Navy Yard on 22 August 1846. Designed to replace the LSD-28 class, this new class will be the first U.S. Navy combatants to be powered by medium speed diesel engines. These engines will reduce fuel consumption by more than 2.5 million gallons per ship per year over a conventional steam plant of similar power, saving, at today's costs, 1.3 million dollars per year, or more than 39 million dollars over the planned 30-year life of the ship.

Germantown will be 609 feet long, with a beam of 84 feet and will displace 15,745 tons. She can accommodate 55 officers and 859 enlisted personnel, including embarked troops. LSD-42 is scheduled to be launched in late summer 1984 at the Lockheed Shipbuilding and Construction Company, Seattle, WA.

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November, 1983

They Got Some of the Right Stuff at NADC

One of the most ballied hooded movies in recent years has just been released, the adaptation of Thomas Wolfe's "The Right Stuff." The movie depicts the selection, training and events in the lives of America's first Astronauts. For those who were around during that period in

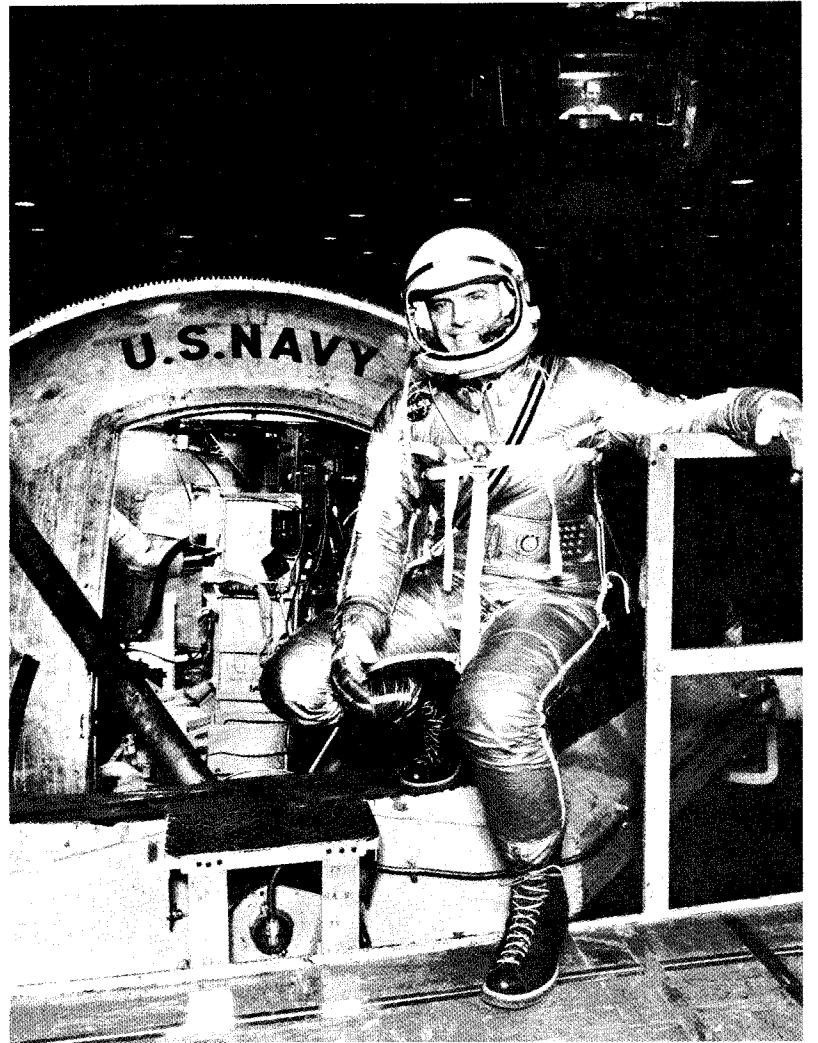
Richard Crosbie, ACSTD and Donald Morway, CNTD. They along with a select group of about 20 others, helped test and develop some of the "Right Stuff" right here at NADC.

Crosbie explained that NASA had the need to simulate the flight profile of the rocket that

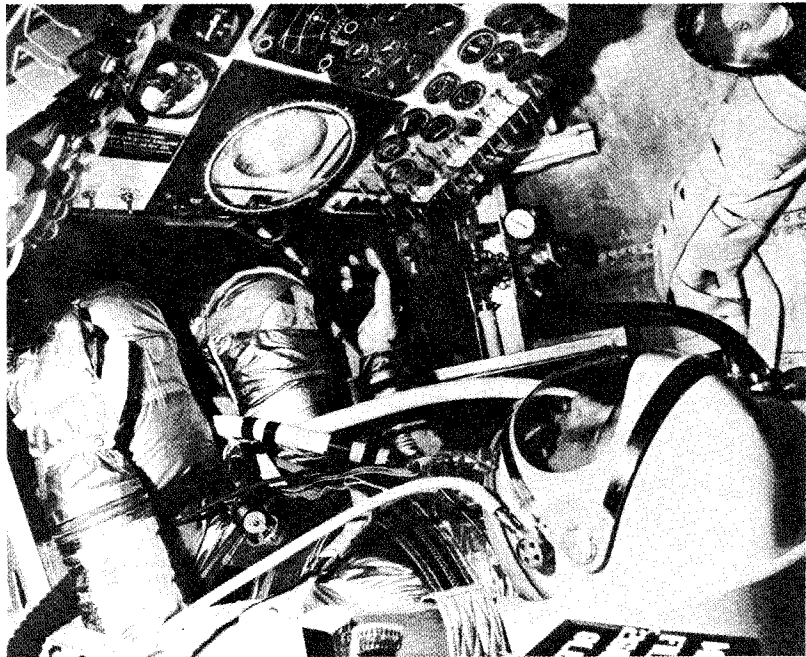
flight except the centrifuge at NADC. It was decided that all the astronauts would be brought to the Center for testing.

The centrifuge had been built almost eight years before the astronauts arrived by a designer who foresaw the need to include the capabilities that would be needed for the simulation of space flight. When the test program was begun a replica of the Mercury capsule was built to be installed in the centrifuge gondola. A program to duplicate the profile of a space flight was developed. Everything was done to make the test program as realistic as possible.

By this time the astronauts were beginning to get national attention. The year was 1959. The astronauts began arriving at NADC. Sheppard, Glenn, Grissom, Armstrong, Cooper and all the rest, came to be spun in the centrifuge. Crosbie said that the excitement level at the Center would rise in anticipation of the Astronauts arrival. "They were the nicest bunch of guys you would ever want to know," Crosbie stated. "They would fly in here in the newest and shiniest planes." Crosbie remembers that they all seemed to love fast cars. "They, (the Astronauts), would take every opportunity to borrow someone's sports car and take it for a spin up Street Road. They also liked the Bucks County area," Cros-



Alan Sheppard poses outside the gondola.



John Glenn in the centrifuge.

the early 60's, they remember every exciting detail of this country's first manned space efforts. Two of those people who were involved in the training and simulation program were

would carry men into space. At that time there was no facility that had the capability of producing under pilot control the forces that would occur during a rocket launch and the return

bie added. They went to New Hope and other local points of interest. While the Astronauts were at NADC they even took a trip to Willow Grove Amusement Park to ride the rides.

Donald Morway, was the Flight Director during the time that the Astronauts were here.

It was his job to meet and brief them when they arrived at the Center. As an engineering psychologist, Morway studied the way the Astronauts reacted to the simulated flights.

Morway remembers that the tests were evenly divided be-

(Continued on page 2)



Dr. Gloria Chisum Wins Ninth Annual Barnaby Award

Dr. Gloria T. Chisum has been named by the Naval Civilian Administrators Association as the winner of its ninth annual Ralph S. Barnaby Award. Dr. Chisum, who manages the Life Sciences Research Branch and heads the Environmental Physiology Research Team in the Aircraft and Crew Systems Technology Directorate was recognized at the award ceremony by NCAA President Frank Drummond for 23 years of "outstanding technical and administrative accomplishment."

The award was presented to Dr. Chisum by Captain Ralph Barnaby, USN-Retired, the first Commander of the Naval Air Development Center.

Dr. Chisum, the award citation noted, holds several patents and has received numerous honors including the Aerospace Medical Association's Raymond F. Longacre Award, the designation of "A distinguished Daughter of Pennsylvania", and honorary degrees from the Medical College of Pennsylvania and Ursinus College.

Fly-By-Light Control System Successful

NADC has proven for the first time that helicopters can be flown with control systems that use light pulses under computer control. These systems are called, fly by wire and fly by light flight control systems. Charles Abrams, CNTD, stated that there are two fixed wing aircraft that use the fly by wire technology. They are the Navy's F/A-18 and the Air Force's F-16. Abrams said that although fly-by-wire control technology is state of the art, it's not currently used in production helicopters.

One advantage to the fly by wire and fly by light systems is that they eliminate the need for the pulleys, cables and mechanical devices that are currently used. The resulting weight savings could be translated into the installation of more equipment.

Abrams said that the two sys-

tems were installed in the same helicopter, a Bell Model 249 Cobra. Each system was connected to the collective control channel of the helicopter. The collective was selected because it has a triple redundant hydraulic pump configuration.

Another part of the installation included two Linear Optical Displacement Transducers (LODTs). One was used as a pilot command sensor and the other as a feedback transducer for the collective actuator.

(Continued on page 3)

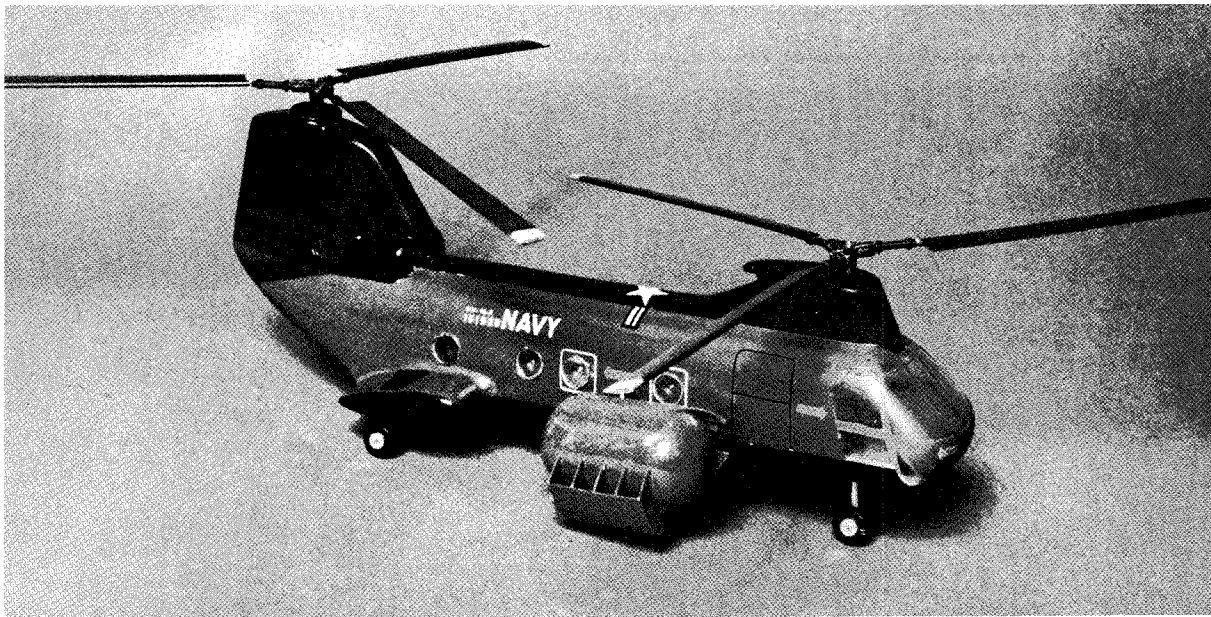
TV Studio Wins CHINFO Merit Award

NADC's television production crew has won an award from the Chief of Naval Information (CHINFO). They won second place in the category of Special TV Program or News Segment Covering a One-Time Event. The program that was submitted for the competition was on the subject of sonobouys.

Each year the CHINFO Awards competition is held to honor the best efforts by Navy personnel in the field of audio-

visual and written communication. Hundreds of entries from all over the world are received at CHINFO headquarters. They are judged by a group of communications professionals from the Navy and the national media.

To be a winner of a CHINFO Award is an honor that few receive. NADC's Television Studio personnel have joined a select group.



H-6 helicopter model with float attached.

Helicopter Flotation Device Ready To Begin System Testing

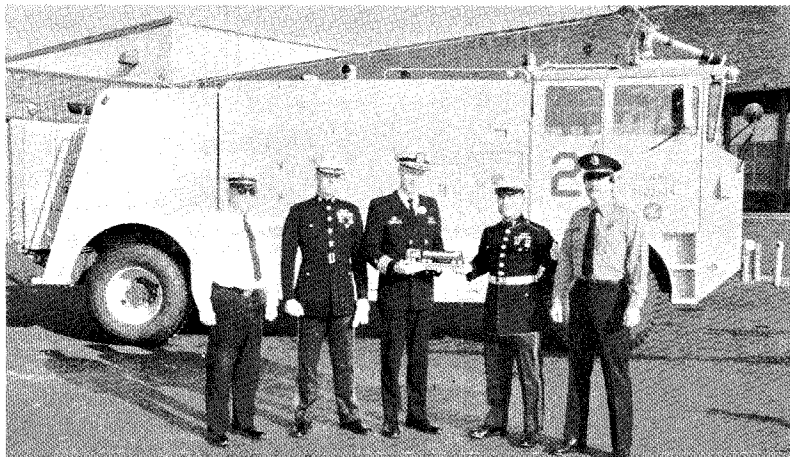
A new helicopter flotation device has recently been developed at NADC. According to Project Engineer Jack Tyburski, the new device will significantly improve the chances for survival in an at sea ditching of a H-6 helicopter.

Although the H-6 helicopter is built to remain afloat in a calm sea situation the aircraft does tend to tip over and sink in conditions of wind and waves. NADC's flotation device is designed to stabilize the helicopter and give the crew enough time to exit the craft in the case of an at sea emergency.

Tyburski explained that the flotation system is made up of two compartmented bags with inflation devices that are attached to both sides of the helicopter. The bags are constructed out of Kevelar, an extremely strong and lightweight material. A coating of polyurethane is applied to the bags to make them waterproof. In addition the bags have scoops on their sides that act as sea anchors. These scoops are designed to fill with water when the bags are inflated. The weight of the water helps stabilize the helicopter in rough seas.

The H-6 Helicopter Flotation System is scheduled to go into full scale testing early next year. It was designed to save

both lives and equipment, something NADC people have been doing for a long time.



MSGT Clark presents the first toy of the Toys for Tots Drive to Captain Anderson. Also present are Chief Richard Walther, Major James Kean and Alfred Keiss.

Toys-For-Tots Drive Begins

For the past 36 years the U.S. Marine Corps has been holding its annual Toys for Tots drive. Toys for Tots has grown from a local Los Angeles area project to a national campaign.

Each year NADC collects new, unwrapped toys for the Toys for Tots drive. The toys you donate are, in turn, given to needy children. In 1980 a record 5.7 million new toys were col-

lected and the drive is still growing.

You can drop off those NEW, UNWRAPPED, toys at several sites around the Center. Look for them in the Credit Union area, by the Fire House and in the Duty Office. This drive is important to a lot of needy children and Christmas, remember, is the time to give.

(Right Stuff)

tween flight and abort simulations. He said, "It was these abort tests that helped build the confidence that the Astronauts needed to fly in space." Also during the testing long holds were built into the count down procedure. Morway said that, "The performance of the Astronauts would be tested both before and after the holds to see if the frustration of sitting in the centrifuge for up to two hours had any effect on how they handled the flight." "These holds also helped build up the Astronauts frustration tolerance," Morway added.

Crosbie says that he was impressed with the patience and inquisitiveness of the Astronauts. He said that no matter how trivial the test was, they wanted to know every detail of the equipment and the test procedure. If there was a delay in the testing, they didn't seem to mind even if they were fully suited up.

Being the same size and weight as Gus Grissom gave Morway the opportunity to pressure test his flight suit and ride in the centrifuge to make sure the equipment was operating correctly.

Being so close to the Astronauts gave Crosbie a chance to get friendly with them. He said that Alan Shepard was sort of the class clown, always cracking jokes. He said that even before the first flight, John Glenn seemed kind of special. There was a certain air around him. As it turned out Shepard was the first to make a sub-orbital

launch, Glenn became the real celebrity when he orbited the earth three times.

The simulation program at NADC was so accurate that the Astronauts said that real flights felt exactly the same as the flights in centrifuge. Crosbie said that the Astronauts reported a tumbling sensation after each thrust stage during the centrifuge runs. It was thought that the sensation was peculiar to the centrifuge, but the same feeling was experienced during the real flights.

"There was no such thing as an eight hour day when the Astronauts were here," Morway stated. They would drive a NASA van to the Center and park it next to the centrifuge building. The Astronauts would suit up in the van, sometimes at 2 o'clock in the morning. And then they would walk to the centrifuge flight deck, just like a real launch. "We would be here until 11 o'clock at night and the long days would get to me," Morway said. But the Astronauts were always ready to proceed with the tests and they never complained. He remembers them saying that if all the testing went as well as the program at NADC, then the entire space program would be a success.

In all, 31 Astronauts trained at the Center from 1959 to 1964. They came here to find out what space flight was about. The people and the equipment at NADC had all "The Right Stuff" to help the Astronauts in their quest for space flight.

Letter to the Editor . . .

On Wednesday, 2 November 1983 at approximately 1530, I approached my car and discovered I had a flat tire. In this day of Women's Lib I am ashamed to say that I found myself totally unprepared in knowing how to change a tire. Before I could look for a telephone to call a service station for help, a smiling face with a friendly voice approached me and offered to help. That smile belonged to Donald Neuner, a welder in the Technical Support Department. When Donald looked in the trunk of my car for the spare, he found that it too was flat (bad valve). This could have easily been his cue to say goodbye but instead he personally took the spare over to the men in the Transportation Division to get repaired. These men, again like

Donald, cheerfully agreed to repair the tire valve. In less than fifteen minutes, I was on my way.

I also would like to say that while I was waiting for Donald to return with the tire, three other men also offered their assistance. I must say that I felt very proud to be a part of the Naval Air Development Center's team because it employed men who still believed in helping others in time of need. To Donald and the men in the Transportation Division, I offer my sincere appreciation for a job well done. Your team spirit reflects highly not only on yourselves, your departments, but on the Center as a whole and I am one lady who is glad to work here.

BARBARA J. KEMPF

Aussies from Down Under Visit NADC



Captain Anderson stands with visiting Australians who came to NADC to discuss the development of new sonobuoy and acoustic processor equipment to improve detection and localization capability of the P-3 aircraft.

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CAPT James B. Anderson — Commander, NADC
Robert S. Buffum — Technical Director
Joseph P. Cody — Public Affairs Officer
David Polish — Editor

CDR Arnold Reports To CNTD

The Communications and Navigation Technology Directorate has a new Military Project Officer. CDR William K. Arnold is assigned to the Airborne Tactical Command and Control Office in CNTD. Arnold explained his position as being the focal point for bringing the Center's expertise in command and control into tactical platforms.

For the past month Arnold has been busy collecting data on what the Center has done and where it is going in the field of airborne tactical command and control. As the only military person in the directorate, Arnold will be there to provide an operational point of view for various projects.

With a vast amount of experience in the fleet, he finds his first "R&D" tour a little different. Arnold was commissioned after his ROTC training at the University of Virginia in 1962.

(Light continued)



CDR William K. Arnold

The next year he received Naval Flight Officer training with a specialization in tactical electronic warfare. After his first squadron tour he went to the Naval Air Test Center and their Test Pilot School. While there, Arnold was designated the EA-6B Project Officer for the Board of Inspection and Survey trails.

In 1971 Arnold was assigned to NAS Whidbey Island and participated in the fleet introduction of the EA-6B. He then went aboard ship for a WESTPAC cruise. In 1975 Arnold entered the Naval Postgraduate School in Monterey. He then went to NAVAIR, PMA 253 and served as the TACAIR Electronic Warfare Project Officer.

Arnold served as the Staff Material Officer of Carrier GROUP II from 1980 to 1981. From 1981 until he transferred here in October, Arnold was the Commanding Officer of Naval Air Technical Services Facility at ASO.

He is presently involved with the engineers supporting the Pilot Project for Improved Battle Group Navigation Accuracy. His position is a new one at NADC but he brings years of fleet expertise to an important area of the Center.

President Sends Important Message

THE WHITE HOUSE

WASHINGTON

AUGUST 30, 1983

MEMORANDUM FOR FEDERAL EMPLOYEES

SUBJECT: Unauthorized Disclosure of Classified Information

Recent unauthorized disclosures of classified information concerning our diplomatic, military, and intelligence activities threaten our ability to carry out national security policy. I have issued a directive detailing procedures to curb these disclosures and to streamline procedures for investigating them. However, unauthorized disclosures are so harmful to our national security that I wish to underscore to each of you the seriousness with which I view them.

The unauthorized disclosure of our Nation's classified information by those entrusted with its protection is improper, unethical, and plain wrong. This kind of unauthorized disclosure is more than a so-called "leak"—it is illegal. The Attorney General has been asked to investigate a number of recent disclosures of classified information. Let me make it clear that we intend to take appropriate administrative action against any Federal employee found to have engaged in unauthorized disclosure of classified information, regardless of rank or position. Where circumstances warrant, cases will also be referred for criminal prosecution.

The American people have placed a special trust and confidence in each of us to protect their property with which we are entrusted, including classified information. They expect us to protect fully the national security secrets used to protect them in a dangerous and difficult world. All of us have taken an oath faithfully to discharge our duties as public servants, an oath that is violated when unauthorized disclosures of classified information are made.

Secrecy in national security matters is a necessity in this world. Each of us, as we carry out our individual duties, recognizes that certain matters require confidentiality. We must be able to carry out diplomacy with friends and foes on a confidential basis; peace often quite literally depends on it—and this includes our efforts to reduce the threat of nuclear war.

We must also be able to protect our military forces from present or potential adversaries. From the time of the Founding Fathers, we have accepted the need to protect military secrets. Nuclear dangers, terrorism, and aggression similarly demand that we must be able to gather intelligence information about these dangers—and our sources of this information must be protected if we are to continue to receive it. Even in peacetime, lives depend on our ability to keep certain matters secret.

As public servants, we have no legitimate excuse for resorting to these unauthorized disclosures. There are other means available to express ourselves:

- We make every effort to keep the Congress and the people informed about national security policies and actions. Only a fraction of information concerning national security policy must be classified.
- We have mechanisms for presenting alternative views and opinions within our government.
- Established procedures exist for declassifying material and for downgrading information that may be overclassified.
- Workable procedures also exist for reporting wrongdoing or illegalities, both to the appropriate Executive Branch offices and to the Congress.

Finally, each of us has the right to leave our position of trust and criticize our government and its policies, if that is what our conscience dictates. What we do *not* have is the right to damage our country by giving away its necessary secrets.

We are as a Nation an open and trusting people, with a proud tradition of free speech, robust debate, and the right to disagree strongly over all national policies. No one would ever want to change that. But we are also a mature and disciplined people who understand the need for responsible action. As servants of the people, we in the Federal Government must understand the duty we have to those who place their trust in us. I ask each of you to join me in redoubling our efforts to protect that trust.



Cobra helicopter during fly-by-light test.

Although the fly-by-wire system had four redundant channels the fly-by-light had only one optical fiber path. For this reason the flight tests of the fly-by-light system, were conducted at an altitude of 1000 feet.

All the flight tests took place at the Bell Flight Research Center in Arlington, Texas. Both systems were put through a series of turns and straight flight maneuvers. Abrams said that the fly-by-wire system was

also failure tested to make sure the redundant circuits operated correctly. The test pilots stated that there was no difference in the feel of the helicopter and that the collective control break-out force was reduced which is a desirable feature.

FWA Hotline Attracts Calls

Citing the ongoing drive for the elimination of Fraud, Waste and Abuse (FWA) within Department of the Navy activities, Capt. Paul F. Carroll, Director, Investigations Division, Office of the Naval Inspector General, said, "The Navy will investigate any allegation of waste or wrongdoing, no matter who is involved because the Navy is responsible and accountable for the identification and elimination of such practices."

The central Navy hotline is one of the vehicles by which instances of Fraud, Waste and Abuse may be reported. Established by the Chief of Naval Operations, the hotline became operational on 3 Oct. A summary of Navy hotline operations, for the period 3 Oct-12 Oct, reflects considerable interest in curbing FWA by members of the Naval community:

Abuse of annual leave	1	should first attempt to deal with
Drug Abuse	1	the problem by working
Excessive charges by contractor for spare parts	2	through the on-scene chain of command, or even a local hotline. Local officials will normally be able most quickly and
Procurement procedural deficiencies	1	most effectively to take appropriate action. The central Navy
Substandard contractor performance	1	hotline is for use when normal
Travel Fraud	1	problem solving procedures for
Personnel mismanagement	1	some reason don't seem to work.
Waste of government funds	1	Navy Hotline Telephone
Illegal expenditure of government funds	1	Numbers:
		Toll-free: 1-800-522-3451
		Autovon: 288-6743
		Commercial: (202) 433-6743

As is always the case, personnel suspecting wrongdoing

Bilodeau's Chicken Recipe Wins First Prize in Cafeteria Contest

4 Tblsp. soy sauce
 3/4 cup ketchup
 3/4 cup water
 2 Tblsps. vinegar
 1/2 cup brown sugar
 1 diced onion
 Dash of garlic powder
 Dash of seasoned salt
 Place 6 small boneless breasts, rolled up, into shallow baking dish, seam side down. After

mixing sauce, composed of above ingredients, pour over chicken and bake at 350° for 1 1/2 to 2 hours. Occasionally spoon sauce over chicken.

(Note: Chicken parts can be substituted for breasts).

I like to serve this dish with Rice-a-Roni or wild rice.

Submitted by: Joanie Bilodeau (40S), X2350

SUBJECT	Number of Complaints
Misuse of Govt. property, vehicles & manpower	5

Commander Salutes

Lorraine M. Koch and David Panetta, both of SD, for their outstanding service to the Carrier Air Wing Composition Study for the Chief of Naval Operations.

Thomas Ames and the entire Public Works Staff for their efforts that resulted in the awarding, to NADC, of the Secretary of the Navy Certificate Of Energy Conservation Achievement.

Isadore Zaslow, PAR, for his performance as Commander THIRD Fleet Antisubmarine Warfare Technical Advisor.

Michael L. Stellabotte, ACSTD, for his participation in the H-60 Tri-Service Common Quality/Nondestructive Testing and Inspection Program Planned Meeting.

William L. Hicklin, SATD, for his assistance to the Naval Material Command while acting as the Division Assistant for Airborne Anti-submarine Warfare, Electronics Warfare and Intelligence.

Charles E. Halko, CNTD, for his contributions to the development of the Avionics Configuration Master Plan for the Naval Air Systems Command.

AMEC Arnold L. Cross and PR1 Barry E. Clements for their assistance to the Aviation Supply Office's "ASO Day Program."

Edwin S. Gernant, Michael V. Mele, Terry A. Shephard, Stephen M. Elchenko, Gerald

D. Toland, Lawrence F. Coar, Emil Garkav, Charles D. Pizichello and Joseph Palumbo, all of SATD and John P. Mikulich of SCD, all for their contributions to the Naval Air Systems Command's Direct Measurement Program.

John B. Tye, Donald E. Pisechko, Forrest V. Miller, Vincent V. Giansanti and Alan S. Hellman, all of ACSTD, for their streamlining the procedure for responding to contractor requests about survival equipment.

Elliot L. Ressler, Dr. Gerald J. Palatucci, Sidney Krieg, Ernest W. Coleman, Walter J. Schoppe, Jr. and Gordon B. Heal, Jr., all of CNTD, for their briefings during the Communications Technology Review sponsored by the Naval Ocean Systems Center.

Geraldine Keenan, CP, for her participation in the Northeast Region Staffing Conference.

Squadron Leader Christopher M. Sweeney, RAF, for his support to the P-3C program from 1980 to the present. Sweeney has served as P-3C Fleet Software Support Project Officer and Chairman of the P-3C Software Operational Advisory Group. He has managed the software design for employing P-3C weapons and the integration of a passive acoustic tracking capability into the P-3C acoustic processor.



HM2 James F. Cisco

Cisco, Sailor of the Quarter, Four Others Honored

Hospital Corpsman HM2 James F. Cisco has been named NADC's Sailor of the Quarter. He was singled out for his assistance in setting up a training program for the military personnel assigned to the Human Factors Testing area. He also helped design a display for the 1983 SAFE conference.

As Sailor of the Quarter, Cisco received a plaque from the Southeastern Chapter of the Navy League. He also was presented with a 72 hour pass, a re-

served parking place at the NX and relief from the Watch Bill for a month.

Four sailors at NADC recently received honors from Captain James B. Anderson. HM2 James Cisco was awarded NADC's Sailor of the Quarter title. HM3 Ivan J. Goyco, HM2 Charles Spears and DP2 Allen Hamilton all received first time Good Conduct Awards. AW2 Harold Parks got his wings in the Aviation Warfare designation.

Divots Defeat Haphazards To Win The 1983 NADC Golf Title

The Divots defeated the Haphazards in the final round of the NADC Golf League Championship Playoffs.

During the regular season the Divots finished third in the Red Division.

In the first playoff round the Divots team of Mebby, Lutz, Crosbie and Ammerman defeated the Fourth Place Chipper.

Meanwhile the Purple Tide (Second Place) were victorious over the Fifth Place Double Eagles. The second round saw the Divots team defeat the manpower short Purple Tide, thus earning the right to play the First Place Brassies for the Red Division Title.

The Divots beat the Brassies 11 to 3. At the same time the White Division First Place

Haphazards were defeating the winners of the first two play-off rounds in their division—The Night Clubbers. Thus the stage was set for the 18-hole Championship Match between the

Divots and Haphazards.

The Divots fielded the strong team of Clark, Melby, Whitsel and Crosbie, and won the match 7 to 3.

by Bob Lutz



The Divots from lt to rt, Dick Crosbie, Mark Ammerman, Len Tomko, Jack Mulhern, Bob Lutz, Bo Melby and Lou Daouphars.

Active Duty Chief Petty Officer Exams To Be Held 19 January

"NOW IS THE TIME ..." Start studying NOW for the annual Navy-wide chief petty officer exams which will be held on Thursday, 19 January 1984 for active duty personnel. The Commander, NAVAIRDEVCON may authorize participation in the examination provided you meet all of the eligibility requirements indicated below:

1. Have completed 3 years in pay grade as of 1 January 1985.
2. Have completed required Navy training courses.
3. Are recommended by your commanding officer.

A review of the past three first class petty officer—annual evaluation reports (NAVPERS 16 16/18 or NAVPERS 16 16/24) shall be completed commencing with the period 1 January 1981 through 31 December 1983. Summarize and submit missing completed ACDUTRA periods and drill attendance to COMNAVMIIPERSCOM (NMPC-93D).

Weight factors for the final multiple score place emphasis on demonstrated leadership ability. Candidates should ensure that their command has submitted a current evaluation. Commands must compute the performance mark average which is entered on each candidate's answer sheet.

Candidates must meet all eligibility requirements, with the exception of TIR and ACDUTRA for inactive candidates, by 1 December 1983.

If your final status is Selection Board Eligible (SBE), your microfilm service jacket will be placed before the Fiscal Year 1985 Chief Petty Officer Selection Board which convenes in the Navy Department, Washington, D.C. The board for active duty candidates will convene on or about 18 June 1984, and the board for Reserve candidates will convene on or about 9 July 1984.

Navy Relief Offers Help for Baby

The birth of a child is a joyous occasion. Each Navy and Marine Corps junior should be a source of pride to the new parents. Navy Relief is pleased to have the opportunity to share in this celebration of new life by providing a small gift to help defray the initial cost of caring for this "new addition" to a family.

On request, the Pennsylvania Auxiliary provides a lovely starter set for the new baby of sea service personnel. This gift is provided in every instance to service families in pay grade E-4 and below. For service families in pay grades E-5 and above, layettes are provided on

the basis of need. The baby clothes and related infant care items given in this "Junior Seabag" are purchased new and some are handcrafted by Navy Relief volunteers.

It is suggested that together the prospective parents visit the Navy Relief office during the final six weeks of pregnancy. A Society volunteer will give the couple some tips about the expense involved in providing for the needs of this new child. The couple will receive the layette at that time.

Some wonderful people, Navy Relief volunteers, take great

pleasure in crocheting and otherwise preparing your baby's layette, and hope that you will allow them to share in your pride and joy on this special occasion. To receive this beautiful layette, you can stop by the Pennsylvania Auxiliary Office, Building 674, Philadelphia Naval Base, from Monday to Friday, 0900 to 1400. Branch hours at the Willow Grove Branch Office are Wednesday and Friday, 1000 to 1400.

DEPARTMENT OF THE NAVY

NAVAL AIR DEVELOPMENT CENTER
WARMINSTER, PENNSYLVANIA 18974

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The Reflector

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Naval Air Development Center, Warminster, PA

December, 1983

Castaldi: Technical Excellence and Quality Are Paramount



Mr. Thomas Castaldi assumed the reins of the Systems Directorate in November.

Paper Problem Cut Down To Size

Is there any truth to the criticism about the government being all tied up in paperwork? If the 41,250,000 sheets of paper generated in FY82 at NADC are any indication, then we are guilty. This astronomical figure averages out to 20,000 pieces of paper per person per year here at the Center. The 41,250,000 sheets of paper can be broken down into the following statistics: Approximately 16,272,000 pieces of paper came out of reproduction, 14,970,000 sheets of paper were generated out of the computer department and the balance of 10,008,000 were all produced from the stand-alone

quick-copiers around the Center.

If you find the amount of paper astounding, just think about how much time is utilized moving this paper around. Consider the impact of the turnover of 41,250,000 pieces of paper through-out the system. Then there is the question of disposal. There can be no doubt that to eliminate the unnecessary paperwork at the Center would mean a considerable savings of both time and money.

The figures presented are part of an evaluation completed by a committee of Center personnel which began in the summer. The paper reduction program is already in effect and the committee will be reviewing all paperwork here at the Center for possible elimination, consolidation, reduction and redesign.

For example, the Navy Publication and Printing Office will be duplexing all work from now on without exceptions. No flyers will be printed in the future, including W&R, Ski Club, Computer-User groups and various retirement & luncheon announcements. The intent here is for employees to utilize the Log, Reflector, and Bulletin Boards as a means of transmitting information.

(Continued on page 2)

Mr. Thomas Castaldi has been selected as Director of the Systems Directorate replacing Dr. Rudolph Stampfl who retired from that position in August. Mr. Castaldi, formerly the Project Engineer for the VP Program, began his career with the Navy at the Center in 1962 working on the design and development of surveillance and tactical ASW systems. In 1977 he became the Science Advisor to the Commander-in-Chief, U.S. Atlantic Fleet. In 1978 he was named as a Technical Advisor to the Chief of Naval Operations in the OPNAV ASW Division and in the ASW Systems Project Office. In 1969 Mr. Castaldi returned to the Center as Program Director for the ASW Systems Program office and was later assigned as VP Program Project Engineer.

Mr. Castaldi believes that the Systems Directorate plays a very important role at NADC. "It boils down to one phase," he said. "The Systems Department is the cement that binds the avionics and the platform into a single cohesive weapons system. We have people at the Center strong in the development of avionics technology," he continued, "and on the other hand we have people here with an excellent grasp on the vehicle and the crew. That doesn't mean anything if we can't bind them together. That combination will give us the best weapons systems possible."

Castaldi believes that coming

from the Command Projects Directorate will make him more sensitive to the requirements of developing large systems. "In the VP Program I managed the overall work performed by the other Directorates. Now I provide the major systems engineering support to the projects. I bring with me an understanding of the schedule and financial demands that are faced by Project Directors. However, the needs of supporting Project work must be balanced against the need as a Directorate to increase our systems engineering capabilities. This Directorate has a good reputation for engineering excellence and I want to strengthen it."

Castaldi's goals for the Systems Directorate are simply stated. "I want to ensure that the need for high quality, reliable airborne systems is met in the most efficient manner. The operant word," he explained, "is 'reliable.' All system design and development," Castaldi said, "will be approached in a professional manner. Technical excellence and the quality of work are paramount."

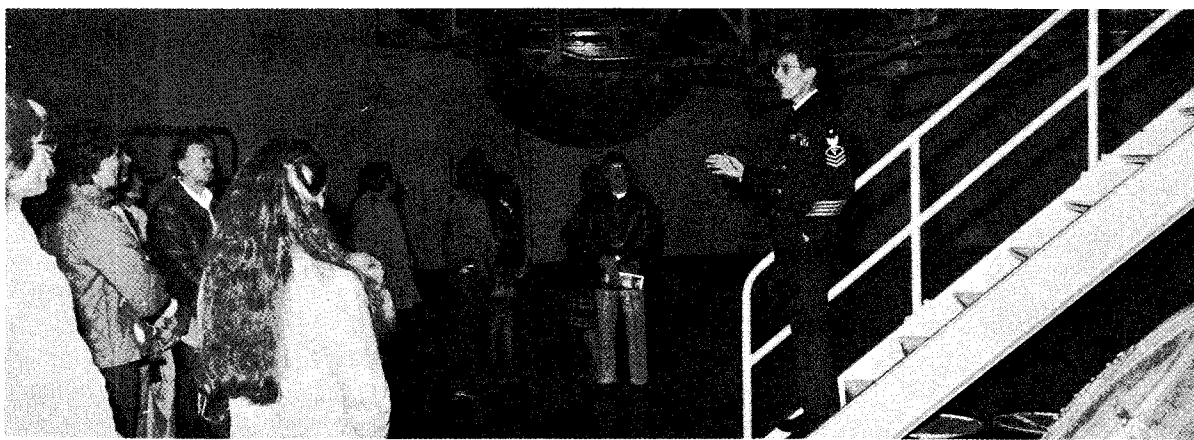
From a personnel perspective the new Systems Director is set on establishing an environment where the large numbers of scientists, engineers and analysts in the Directorate can grow through challenging and interesting work. "I am impressed," he said, "with the depth of technical talent and the breadth of capabilities here.

The same engineer can work on three different programs each requiring different technologies and techniques. That is to me a very impressive demonstration of capability."

Will Castaldi's management style bring changes to the Directorate? "I believe clearly in delegation of authority with the attendant responsibility for performance in that area," he explained. "Most operating decisions will be made at the division level with as much latitude as possible. Accountability will be through the review process." He added, however, that he will retain the ultimate responsibility for major decisions with impacts "which are felt external to the Directorate or the Center."

There will be no surprises from this Director either. "I'm not the type to shoot from the hip," he said, "I will strongly seek counsel and advice and will hear out all options. When appropriate," he continued, "I will try to explain my decisions to people who do not agree. I like to feel I am approachable. I want to hear about both the good things and the problems from anywhere in the organization," he concluded.

Mr. Castaldi is a graduate of St. Joseph's University, where he received a B.S. Degree in Electronic-Physics. He received his M.S.E.E. degree from Penn State. He has also attended the Naval War College.



Senior Chief W. C. Miller briefing members of the Experimental Aircraft Association during one of many tours in support of the PAO Program.

HMCS Miller Receives PAO Award

Recently HMCS Woodrow C. Miller was presented the 1983 Public Affairs Award for his outstanding contributions to the Center's Public Affairs Program. Senior Chief Miller is the Flight Director for the Dynamic Flight Simulator in the Aircraft and Crew Systems Technology Directorate. This month marks the end of a 15-year tour of duty for him here at the Center in

which he has participated in every major project that Crew Systems ever had. Besides his primary responsibility as Flight Director he is in charge of the subject pool for projects involving human subjects in the dynamic flight simulator, cold water and ejection tower studies.

Senior Chief Miller's conscientious and dedicated efforts

have aided the Public Affairs Office immeasurably and his professionalism and enthusiasm have enhanced the Center's image throughout our local community. Senior Chief Miller will be stationed with the Marine Corps at Camp Pendleton as Senior Chief Hospital Corpsman and Medical Liaison for the First FSSG Fleet Marine Force.



Weighing in excess of 1600 pounds each, NADC used paper bales are sold for recycling through the Defense Property Disposal Office at \$192.50 a ton.

Final Draft of Facilities Improvements Submitted

A final draft of the new Master Plan and Base Exterior Architecture Plan for the Center have been submitted by the Northern Division of the Naval Facilities Engineering Command for review and approval by the Center Commander, Captain James Anderson. These are the first ever developed for the Center and, when approved, will be a significant step forward in providing timely and professional facility management.

As part of the Center's Business Plan, a detailed facility plan was approved for the coming year. The plan, as currently configured, calls for the most extensive program of renovation and construction ever undertaken by this command. In all there are 81 special projects planned for FY84 as compared to 21 projects in FY83 and 16 in FY82. The total value of Fiscal Year 1984 projects is approximately \$14 million. As the plan is approved, says Public Works Officer, LCDR Bert Streicher, "We are going to have to issue hard hats to everyone."

The purpose of the planning which has been under preparation for almost a year, is to provide the Department of the Navy with realistic and orderly development proposals for improvements at the Naval Air Development Center. The Master Plan has identified specific sites for future projects on existing land while the Base Exterior Architectural Plan recommends exterior landscaping improvements.

When taken in total, this year's Facility Plan is designed to upgrade Center facilities and equipment with improvements in six major areas: Directorate or Department office consolidation moves; physical improvements in support of technical directorate business plans; security improvements; essential maintenance and repair; heating, ventilating, and air conditioning repairs; and quality of life improvements. Evidence of some of these changes is already obvious.

Construction of a new office "staging" area has begun in the basement area of building 2. This staging area office is critical to all construction that fol-

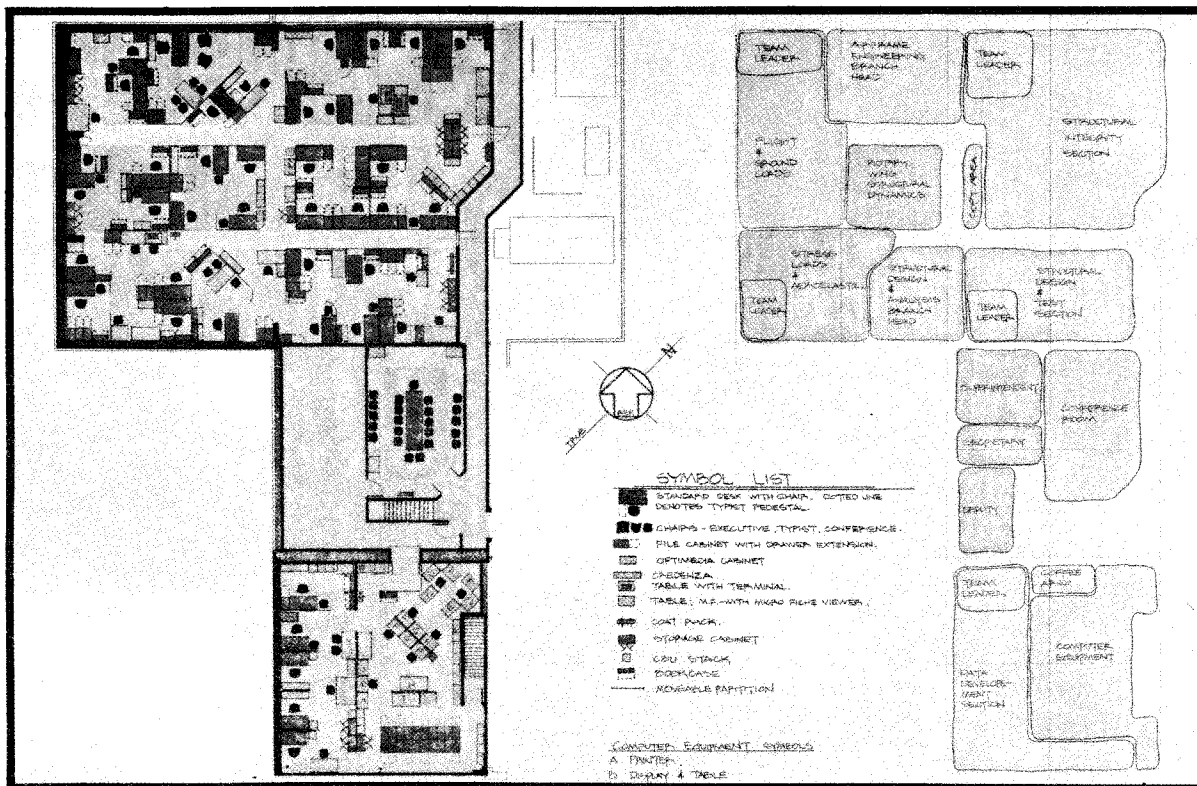
lows since it will permit branches and divisions to be relocated to comfortable and efficient spaces while permanent office renovations are underway. First to occupy the new spaces will be the Aero Structures Division of ACSTD and the Digital Technology Branch of SCD.

"The staging area is also a trial balloon to get people's reaction" to some new energy saving ideas said LCDR Streicher. In many of the office spaces to be renovated he added, "we are going to indirect lighting." "Within a space," he continued, "people move so frequently that we are planning to install free standing lights which reflect off the ceiling." Each Directorate's Business Plan has also been reviewed with an eye toward facility needs. Projects resulting from that review, and scheduled for FY84, include a new TACAMO Library and new Command Projects office space. In addition, the offices and laboratory spaces in nine divisions are scheduled for renovation this year. "There is also a directed effort," Streicher added, "to improve general overall habitability at the Center." Facility support contracts will be developed for painting, floor and ceiling tile replacement, roofing repair, door repair and partition installation.

Planned Security improvements in this fiscal year include repairs and modifications to the security fences, and a study to improve the security access control system.

There is also an impressive list of Quality of Life improvements scheduled to begin shortly. The list is topped by such items as providing a face lift for numerous rest room facilities, renovation of the Auditorium, Cafeteria and Main Lobby, improvements to parking facilities, and the renovation and relocation of the Library.

Looking ahead, some of the more obvious changes planned for the near future are detailed in the Master Plan and Base Exterior Architectural Plan. These plans were designed to present an overall impression of unity throughout the Center, linking diverse functional areas



Proposed renovations to the Aero Structures Division (604) office spaces are typical of improvements currently being planned for many areas of the Center.

and establishing a unified architectural motif. The proposed architectural treatment presents a high technology image that is consistent with the research and development activities associated with the Center. Elements of the plan call for exterior improvements to the existing facade of all buildings to create a uniform appearance, landscaping improvements virtually across the entire Center, construction of

(paperwork)

The Administrative Services Division (041) has reworked some of the official NAVAIR-DEVICEN Distribution Lists to eliminate unnecessary and redundant paperwork.

For instance, the currently used C-9 distribution is being eliminated and replaced by a choice of C-4, 7, or 8 resulting in a savings of \$73,416.24 and 1,700,000 pieces of paper. C-2 distribution is being reduced to a new C-6 category, saving \$76,930.88 and 1,800,000 pieces of paper. Lastly the Plan of the Day will have a special distribution and will no longer go out under the C-4 and C-7 lists. POD savings amount to \$57,222.76 and 1,500,000 sheets of paper. Aggregate sums of 5,000,000 pieces of paper and \$207,569.88 will be realized by distribution list changes alone.

Of the 10,000,000 pieces of paper that are generated from NPPSO (Repro) on distribution lists, the changes listed above

would result in an almost 50% savings on paper. Administrative Services is currently working to expand the base of selection for the distribution lists to limit as precisely as possible the distribution that is needed.

The Computer Department is transferring an increasing amount of work to the Xerox 9700 high-speed printer to reduce the amount of print-outs generated in the computer department.

The Comptroller Department (02) has completed a paperwork reduction analysis that will reduce the number of report pages generated out of 02 by 606,700 from the present output of 1,740,000.

The use of micropublications to duplicate and store material will be of increasing importance to the Center's paper reduction efforts. Training sessions on the use of microfilming and microfilming equipment can be expected. In the near future the NAVAIRDEVICEN Logo will be

construction near the UEPH building, a new TACAMO/GPS Facility adjacent to Building 175, a new Life Sciences building adjacent to Building 70, a new Aircraft Maintenance and Installation Facility and a new Materials and Structures Facility.

As Public Works Officer, LCDR Streicher says, "It's a tremendous workload and a challenge for Public Works."

permanently affixed to all stand-alone quick-copyers throughout the Center and will appear on all copies made.

In a facility this large, written communication is a necessary function. The Center's paper reduction program will not limit the amount of information available; it will just change the manner in which we are informed. It is every Center employee's responsibility to cut back where they can. Asking ourselves the real need for what we are copying and the number of copies required is a good way to begin.

A Paper Reduction Hotline has been set up to report instances of paper abuse but more importantly to take suggestions anyone might have regarding the more efficient dissemination of information.

Call Mr. George Gianios of the Naval Publication & Printing Office on X2220 or the Fraud, Waste and Abuse Hotline number X3015.

The NADC RECIPE REVIEW

For this month's winning recipe: **Chicken Madeira**

Ruth Pickering will receive a \$50 Bond from the NADC Food Service Board. Selection by NADC Cafeteria manager.

2 chicken breasts (deboned, skinned)
2 tsp. rosemary (be careful not to use too much)
3-6 Tbsp madeira wine
2 Tbsp chopped parsley

Cut deboned chicken into bite size strips (1" wide). Coat chicken pieces in flour/salt/pepper. Lightly coated. In a saute pan, melt 4-6 Tbsp. butter. When butter is foamy, add chicken pieces. Stir chicken pieces while cooking. When chicken is well-browned and firm, add rosemary and madeira wine. Continue to cook to reduce the wine. Add chopped parsley for a garnish and stir it around with chicken pieces. Serve. **Makes 4-6 servings.**

LOOK FOR THIS RECIPE TO BE SERVED IN THE NADC CAFETERIA

Cut here for file card

The Reflector

Naval Air Development Center

The REFLECTOR is published monthly by the Public Affairs Office to inform Center Personnel about topics of interest, and to promote the morale and general welfare of all concerned.

Views and opinions expressed in this publication are not necessarily those of the Department of Defense.

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CAPT James B. Anderson — Commander, NADC
Robert S. Buffum — Technical Director
Joseph P. Cody — Public Affairs Officer

Regina Beans—Editor

Toastmasters Install New Officers



New Officers from lt to rt, William Bristol, Sergeant-at-Arms, Arthur Horbach, Educational Vice President, Larry Smith, President, Jim Davis, Administrative Vice President, Rockne Anderson, Treasurer.

The NADC Toastmasters Club has elected Mr. Larry M. Smith as its new president for 1984. Mr. Smith, of the Software Engineering Methods Branch in the Software and Computer Directorate, will be installed on 10 January.

Mr. Robert Hayes, outgoing Toastmasters President, said "the Toastmasters Program is designed for self-improvement and the means chosen to do that is through improved communications."

The NADC Toastmasters Club meets on Center every second and fourth Tuesday at 11:45 am in the VS Conference Room. New members are welcome.

Other officers who will be installed on 10 January include Arthur Horbach, Educational Vice-President; Shauket Gadiwalla, Secretary; Rockne Anderson, Treasurer; Rebecca Gray, Bulletin Board Editor; and William Bristol, Sergeant at Arms.

NADC Employees Contribute \$72,000 To CFC

The 1984 Combined Federal Campaign has exceeded its goal of \$68,000.00 with collections to date of over \$72,000.00. Frank Dolan, Campaign Chairman, was impressed by the spirit of giving at the Center. "NADC has shown that they care about supporting such individuals as the poor and the homeless. This year we have received some very large contributions from individuals," Dolan said.

Of the \$72,000.00 to date over \$14,000.00 has been contributed in cash. The balance of contributions will be made through payroll deductions. Many NADC employees showed a specific interest in one or more charities supported by the Combined Federal Campaign.

"The majority of contributors do designate, including most large donors," said Dolan, "because they have had specific experience with an agency and are moved by it." Fifty-six percent of the money collected in this year's campaign has been specifically earmarked.

The Aircraft and Crew Systems Technology Directorate led all other Departments and Directorates with donations amounting to \$16,863.25, an increase of over \$1,000.00 from last year. The Sensors and Avionics Technology Directorate contributed \$10,906.50. The Computer Department had the highest percentage of participation with 95% of its employees contributing.

Squadron Leader Stuart Heppenstall Joins the VP Team

Squadron Leader Stuart Heppenstall of the Royal Air Force came on board early last month to assume the position of Fleet Software Support Project Manager in the VP Program Office. Squadron Leader Heppenstall is expected to be here for the next three years. He joined the Royal Navy in 1968 as a helicopter pilot in Culdese, Cornwall, England. In 1971 he transferred to the Royal Air Force and became a navigator. Since his transfer he has been flying on the Nimrod (the British version of our P-3 aircraft). Most of his time with the Royal Air Force has been spent in Kinloss, Scotland, although he has been involved in torpedo

trials at AUTEK (Atlantic Underwater Test and Evaluation Center) in the Bahamas for the Nimrod Mark II.

This is Squadron Leader Heppenstall's first tour abroad. Prior to this tour though, he has visited the United States five times in the course of his duty with the Royal Air Force. He is very enthusiastic about his tour and when asked about his goals in his new position, he said, "I see this as an on-going effort to provide the best possible software to the VP fleet and my efforts will be concentrated in that direction."

We welcome Squadron Leader Heppenstall aboard along with his wife Heather,

Performance Rules Surrounded In Controversy

The Office of Personnel Management has announced that "pay-for-performance" and reductions-in-force (RIF) regulations were to become effective for the Civil Service on November 25, 1983." A controversy surrounding the regulations, however, has yet to be resolved as both Congress and the Courts have moved to block the regulations.

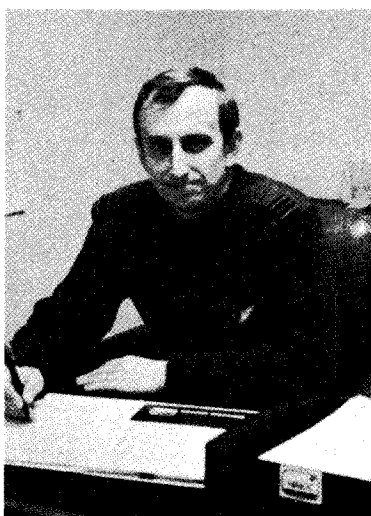
In recent action the Congress has barred the spending of funds to implement the new rules. The effect of this action may be to prohibit OPM's administration or enforcement of the regulations. Also a federal judge has temporarily blocked, for at least 20 days, implementation of the rules.

"We have the paradox of rules becoming effective without the oversight to assure that they are implemented fairly," said Donald Devine, Director of OPM. "The fact that we have rules that will not be overseen by the oversight agency, while not unique, is certainly unusual. We believe, however, the agencies can in general be expected to implement the rules fairly," added Devine.

The effect of these regulations, if implemented over the objections of Congress and the courts, is that the Federal workforce will be governed by the principle of performance. Within-grade pay raises and reductions-in-force will be based more on performance for the overwhelming majority of the workforce.

Mr. Ron Young, Civilian Personnel Director for the Center said that "there will be no immediate change in procedures at NADC until we receive guidance to do so from the Department of the Navy."

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Squadron Leader Stuart Heppenstall

and their three children, Paul (11), Charlotte (8), and Daniel (4).

Technical Highlights

S-3A SOFTWARE DELIVERED TO THE FLEET

The S-A Fleet Issue 4.0.3 Tactical Mission, System Test, and Positional Trainer programs have successfully completed Navy and Operational Test and Evaluation and were released to the Fleet in November 1983. This represents NAVAIRDEVCCEN's first major software upgrade to the S-3A Weapon System. Major functional highlights of the program include increased operational capability, faster deck turnaround, and significantly reduced fault-isolation time. The new Fleet Issue software products will lead to increased S-3A weapon system readiness and ASW capability.

FORWARD PASS COMPLETES TECHNICAL EVALUATION

Forward Pass, the Marine Corps remote sensor store and forward relay system, developed by NAVAIRDEVCCEN, has completed technical evaluation. Operational evaluation has commenced by the Marine Corps at Camp Pendleton, California. Tests include air dropping the sensor data storage system, over-the-horizon relaying of the stored data, and processing and analysis of data received over the relay link.

RAFT TRANSITIONS FROM FEASIBILITY TO ENGINEERING DEVELOPMENT

The Retardation and Automatic Flotation System (RAFT) has completed its 6.2 conceptual feasibility stage and is ready for 6.4 engineering development. The RAFT system is designed to limit damage and provide rapid recovery for nuclear weapons or high value cargo that has been intentionally or inadvertently jettisoned during vertical replenishment. Present missions for transporting high risk cargo have been limited to internal aircraft use only.

SPECIAL PROGRAM ON RAPID SOLIDIFICATION TECHNOLOGY BEGINS

Rapid Solidification Technology (RST) is a major DOD thrust area in which significant advances in the properties and performance of metal alloys can be achieved especially for airframes and engine applications. The new Navy-wide Special Technology Program on RST, which the Center is managing for NAVAIR and the Navy, has been organized and initial funding for FY84 has been received.

THREAT MISSILE DETECTION SYSTEM SUCCESSFULLY TESTED

The Threat Missile Detection System (TMDS) is a radar sensor being developed for high speed aircraft protection against threat missile attack. Implementation of the Feasibility Demonstration Model Hardware of TMDS was completed. The system underwent initial testing in New Mexico. The tests were highly successful. A variety of projectiles differing in size and velocity were fired into the TMDS pattern of coverage. All were detected. No system failures were experienced during the test. An Advanced Development Model phase will follow.

NAVSTAR GPS USER EQUIPMENT TESTED ABOARD KITTY HAWK

NAVAIRDEVCCEN successfully conducted preliminary integration tests of GPS User Equipment aboard USS Kitty Hawk (CV63). The tests included operation of the User Equipment integrated with both the ship's NTDS (Navy Tactical Data System) and SINS (Ships Inertial Navigation System). This accomplishment is the first integrated systems test of GPS User Equipment aboard an operational Navy surface ship, and will aid preparation for the planned formal TECHEVAL aboard CV64.

Power Shutdown/Paychecks

Again this year the Center will be closed between Christmas and New Year's to save energy. The energy shutdown will begin at 1600 on Friday, 23 December and end at 0500 on Tuesday, 3 January 1984. Only specifically designated areas which are necessary to operate

will have power.

Civilian paychecks will be distributed in the cafeteria on Thursday, 29 December 1983 from 0730 to 1130 unless arrangements to mail your check have been made. The Credit Union will also be open Thursday morning.

Commander Salutes

LCDR Dave Mills, HM2 Neil Nelson, HMC Michael Ryan and HM1 Walter Krasa, all of the Aircraft and Crew Systems Technology Directorate, for their assistance in the evaluation of the NADC Branch Clinic's Mass Casualty Drill.

CDR Lynn Butler, Ms. Barbara Turner, of Command Projects Directorate, Mr. Richard Stickney, Mr. Richard Zielinski, of the Systems Directorate and Mr. Rudolph Merando, and Mr. Paul Hafele both of the Supply Department for their assistance to the NAVAIR-SYSCOM LAMPS MKIII Proj-

ect Manager in developing an Avionics Integration Laboratory at the Naval Air Development Center for Life Cycle Support of the SH-60B operational and test programs.

Mr. Robert Finkelman of the Computer Department for briefing the NADC Naval Reserve Units, NADC 0193 and NADC 0293 on the operation and capability of the Central Computer Facility.

Mr. Daniel Probert for assistance provided to the USAF 91st Tactical Reconnaissance Squadron.

November Promotions

Congratulations to:

John A. Coyle, Marlene E. Worden, Kathleen M. McPeak, Kenneth W. Lee, Sheila Y. Dorrey, Robert Mullen, Khien B. Nguyen, John A. Nichols, David B. Klock, Stephanie M. Berdis, Dannie Darrigo, Thomas M. Donnellan, Elizabeth M. Goehring, Arnulfo Hinojosa, Jr., Kevin M. Kennedy, Phyllis E. Morway, Donna M. Nicolo, Frances R. Prettyman, Nancy H. Tillmann, Helen A. Watkins, Gary R. Whitman, Sharon P. Miller, Robert S. Turzanski, Jr., Neil A. Bailey, Jacquelyn R. Benner, Jaime Clavell, John J. Sprenger, S. Herbert Herman, Tyrone R. Snowden.

Welcome Aboard

We would like to welcome to the Center:

Irene L. Knechnetsky, Thomas N. Ryan, Elizabeth J. Seibel, Betty Bodor, Donna M. Reagan, Elia Calabro, Yean Mei Lee, Madeline A. Arcangel, Joan Kopper, John R. Beckum, Gerald Miklosh, Thomas J. Whittle, Tina M. Polichetti, Carl R. Ruzicka.

Did you know . . .

The Navy's first fleet ballistic missile submarine, USS *George Washington* (SSBN 598), was commissioned 24 years ago—on Dec. 30, 1959.

-USN-



For the last 30 years NADC employees have sponsored a Christmas party for children from Christ and Bethanna Homes. Otto Engdahl, Electrical Trades Branch, was a convincing Santa at this year's party.

Dynamic Flight Simulator Improved

by Dave Polish

Since 1979 NADC has been involved in upgrading and redesigning its human centrifuge. After four years and \$5 million what has emerged is the most capable dynamic flight simulator in the world. Project Engineer Jack Eyth said, "For the first time a flight simulator will be able to replicate the sustained 'G' forces encountered in actual flight."

The program to build, install, and integrate all of the necessary system hardware was primarily an in-house effort. A project team composed of personnel from SCD, TSD and ACSTD worked for many months to complete this extremely complicated facility. The design of the system is based on the F-14 aircraft. An F-14 configuration was chosen back in 1979 because of spin problems that were occurring.

Eyth explained that, "between 1978 and 1979 several F-14 aircraft were lost due to departures and flat spin accidents." You can visualize a flat spin if you imagine an airplane flying like a frisbee. At that time NADC proposed that the spin problem could be investigated in the Center's centrifuge without risk to the flight crew and the aircraft. The proposal was endorsed by NAVAIR and work began. Since then a fully operable F-14 cockpit has been constructed and installed in the centrifuge. Its design incorporates a high degree of flexibility

which will permit future upgrades and changes. One such change may be the simulation of the F-18's flying characteristics.

The entire Dynamic Flight Simulator is under digital computer control. It is connected by a fiber-optic link to the System's Cyber 170 mainframe. The software that drives the system uses the NOS real-time operating system. The aerodynamic model that is currently being used simulates the F-14 flight characteristics. This unit enables the centrifuge to feel like an F-14 when a pilot flies in it.

"Flying" the centrifuge is a proper description because the test subject will actually control the twisting and turning movements of the centrifuge. As an optional mode of operation, the DFS cockpit can be removed from the centrifuge and utilized as a fixed-base simulator. This feature also allows the centrifuge to be returned to its conventional configuration for physiological studies.

To help give a fuller sensation of flight, a visual display system has been added. The visual system projects real-world scenery in front of the pilot's cockpit. It has an airfield scene that incorporates flashing runway lights and contains enough detail to show tire marks on the end of the runway. The weather can be changed at the touch of a button from clear to full overcast. The time of day can also be changed

from day to night. Other scenes include mountainous terrain, cities and farm land. An enemy aircraft can also be generated for simulated dog fights.

The new updated centrifuge has the potential for simulating flight maneuvers that cannot be done safely in the real world. It is with this capability that NADC hopes to save aircraft and lives.

W&R Invites Retirees

NAVAIRDEVCCEN's Welfare and Recreation Department welcomes retirees to participate in W&R recreational activities. Planning for the coming year includes Walt Disney World/Epcot Center in May 1984; a one-day bus trip to Radio City Music Hall to see the Easter Show (including dinner) in March 1984; a one-day bus trip to Longwood Gardens (including dinner) in April 1984; a one-day bus trip to the Smithsonian (including dinner) in June 1984; and a four-day bus trip to Quebec City, Canada, in September 1984.

Trips already underway include Hawaii, 28 March through 6 April 1984. Space is still available for this trip. Call Ida on 441-2451 for information.

Watch for further announcements from your Welfare and Recreation Association. We'll try to keep you informed so that you can join in our activities.

Forty Years — by Dave Polish

It was selected because it was the highest point within a ten-mile radius. The original facilities were built in less than a year and it was, and still is, the hub of employment in the Bucks County area. The Navy moved in during the year of 1944 making it forty years old next year. If you haven't guessed by now, the facility that is about to celebrate its anniversary is the Naval Air Development Center.

NADC started as a modifica-

Super Safety

by Mike Masington

"Twas the night before Christmas, and Johnathan Krause, Was checking for safety, all through his house.

The lights and the wiring, were UL approved. And the tree was secured, so it couldn't be moved.

The fire was blazing, with a screen right in place. And a good working flue, drew the smoke from the space.

And John and his wife, with precision and care. Assembled the gifts, for the kids up the stair.

No games with sharp edges, no dangerous toys. You've got to be careful, with three little boys.

With a bang and a thump, someone came to the door. It was Santa himself, in a red RX-4.

"He really exists!" gasped John with a yelp. "You bet your sweet bippy," said the chubby red elf.

"I seldom am seen, so adults don't suspect. But I thought I'd drop by, just to pay my respects."

"I really am pleased, by your Christmas decor. And the safety you practice, makes it mean so much more."

"That tree that you've flameproofed, is but a small sample, of the safety you preach, through deed and example."

"You see I keep records, on big people too. And I've kept special watch, over Mary and You."

"You care for your family, and the folks where you work. You protect them from hazards, wherever they lurk."

"So I thought I'd say thanks, for a job so well done. Now I've got to be going, for it's almost one."

With a click of a seatbelt, and a turn signal light. The jolly old man drove off in the night.

He waved his gloved hand, and glanced to the rear. Then he called, "Merry Christmas and a Happy New Year."



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