



In This Issue:

- CNO speaks
- Ph. D. Fellowship awarded
- Barnaby Award
- Women's Equality Day set
- In the tank with Navy Relief

High tech developments pay off

Scotese takes Navy development award



Photo by NADC Photo Lab

Arthur Scotese (seated), winner of the Navy's best development paper award, receives congratulations and a \$5000 check from Technical Director Guy Dilworth.

By Mary Ann Brett

Arthur Scotese of the Aero Structures Division, has been selected by the Office of Naval Technology (ONT) for their Navy-wide Independent Exploratory Development Paper Award. Scotese authored the winning paper which describes the Shadow Moire Out-of-Plane Interferometric Damage Detector or

"SMOOPI." This award meant an additional \$50,000 toward the Center's technology base budget and \$5000 for Scotese.

Leading a small team of NADC scientists and engineers, Scotese developed SMOOPI which is a low cost, lightweight device for field inspection of impact damage and resulting flaws in aluminium honeycomb sandwich and laminated

continued on page 7

Patent royalties paid to Scott and NADC

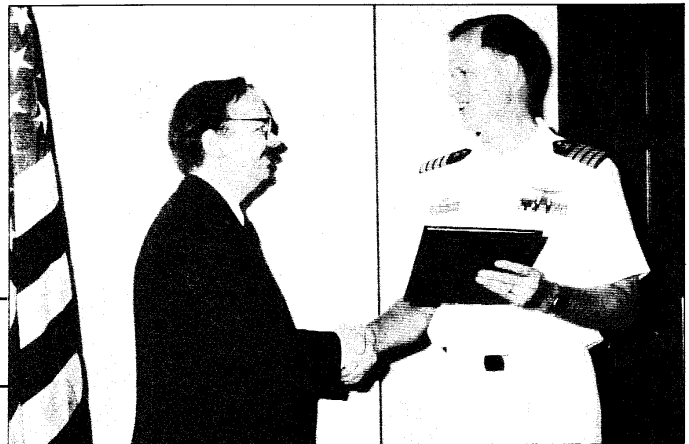


Photo by NADC Photo Lab

William Scott (left), first NADC engineer to receive invention royalties, is congratulated by Center Commander Curtis Winters. (See story on page 7.)

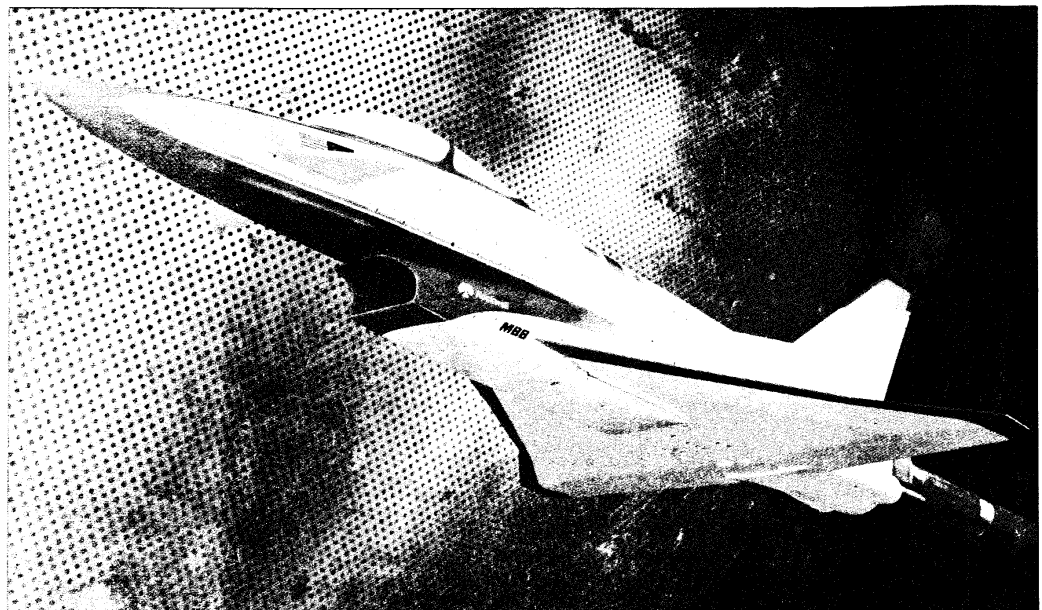
Center involved in X-31 development

By Larry Lshman

Aircraft for the 21st century will need a tactical advantage for close-in combat in the growing threat environment. This is especially true in the NATO environment where the number of aircraft is limited compared to the potential adversaries.

Responding to this need, the X-31 experimental aircraft program is a joint Defense Advanced Research Projects Agency Navy effort. The vehicle will demonstrate maneuverability in the post-stall regime using thrust vectoring to enable the aircraft to perform close-in combat

continued on page 4

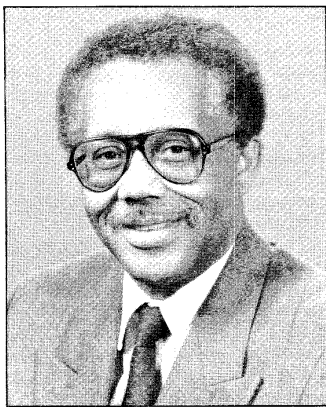


X-31 experimental aircraft

Command Corner



Captain Curtis J. Winters
Center Commander



Guy C. Dilworth, Jr.
Technical Director

CNO stresses War College attendance

A recent Chief of Naval Operations Service College Education policy statement urged "officers whose assignments do not permit in-resident education, to avail themselves of the education offered by the Naval War College, College of Continuing Education." The policy statement goes on to say "enrollment in these courses is an important and career enhancing professional undertaking and it should be recognized as such by commanders and commanding officers."

The Naval War College has offered continuing education courses through correspondence since 1914 and through nonresident seminars since 1974. The nonresident seminar program has recently expanded to cover 14 geographic sites around the country including the Warminster

area. Open to officers in grades O-3 and above and civilian employees of the government GS-11 and senior, this graduate-level education program offers the same three courses (i.e. Strategy and Policy, National Security Decision Making, and Joint Maritime Operations) taught at Newport. Completion of the three core courses leads to a Naval War college Command and Staff level diploma. Enrollment for the coming academic year, which begins during the week of 4 September, has already started and will continue through July. For further information contact, John Markow (Code 032) extension 1026 or the Naval War College, College of Continuing Education at Autovon 948-2135 or Commercial (401) 841-2135.

Commander Salutes

Moise Devillier (Code 20), Frank Scheetz, Joseph Paone, Kathleen O'Brien, Edward Lesoravage, Albert Knobloch, James Driscoll, Donald Davis, Mary Calci, Remo Buono, Donald Booz, Ronald Bellevue, Vincent Sieracki, Barbara Walker (Code 30), Robert Lehman (Code 10), Dr. Donald McErlean, John Olson, Joseph Notaro, Robert Palmer, John Parker III, Alfred Piranian, Albert Simkins, Michael Strizak, Ronald Trabocco, Frank Wenograd, Edward White, Peter Yost, Douglas Bagwell, Edwin McGlynn, James McNamara, Thomas Milhouse, Kenneth Miller, James Brindle, Stanley Brown, Michael Caddy, John Clark, R. Bradford Cope, Richard Dalrymple, Shawn Donley, Dr. Thomas Donnellan, Garry Gross, Charles Hegedus, Marshall Hynes, Mark Katzeff, Mark Libeskind (Code 60), Charles Cerquitella, William Mulley (Code 70), William Gibbons, Gordon Heal, Christine Healy, Jack Jankovitz, Leon Smith (Code 40), Margaret Tomlinson (Code 02): For outstanding support to the Naval Air Systems Command and the A-12 program.

Edward Kenkelen, Vincent Sieracki, Albert Knobloch, Carol Newman, Eugenia Boyes, Edward Lesoravage, Aaron Burstein (Code 30), Thomas Brennan, Robert Skalamera, Moise Devillier, W. Herbert Heffner (Code 20), Mary Calci, Christine Zaccaria, Barbara Walker, (Code 04), Michael Hess, Gregory Catrambone, Edward Mebus, Francis Darreff, Elizabeth Decker (Code 50): For professional technical assistance in presenting Center capabilities during a visit from COMNAVAIRPAC.

Ira Bellew (Code 50), Lois Savage (Code 03), Edward Swiski, Robert Casagrand, Robert Clegg (Code 80),

Joan Fallon (Code 05): For time, energy and commitment to the Veteran's Committee which coordinated a successful Memorial Day Service.

John Shannon (Code 03): For briefing on the P-3 Update IV and LRACCA to the Naval Aviation Depot Executive Board.

Roseanne Petro (Code 20): For contributions as lead activity fiscal budget coordinator in support of the F-14 class Desk.

If the SOC fits

By Robert Janes

Much of the Navy's Standards of Conduct (SOC) program focuses on contracts--how to utilize them properly and fairly. Indeed, the proper use of subcontracts is one of the big issues coming out of the Ill Wind procurement scandal, and is a subject that warrants a reminder here, for there have been instances where an NADC employee has been pressured, typically by a sponsor in Washington, to get some work into the hands of a particular firm by directing an NADC prime contractor to place a subcontract with that company.

In this regard, a recent memo from the Commander of the Space & Naval Warfare Systems Command (SPAWAR) is instructive. In a portion of that January 1989 memo, Admiral Weaver advises, "Our contract is with the prime contractor. It is his decision on how best to satisfy Command requirements within the scope of his contract. Apparently, on rare occasions, SPAWAR personnel have

identified an emergent requirement for support and have circumvented the procurement process by utilizing an existing prime contractor to acquire that support through a contract with a subcontractor of choice. At times it was also questionable whether such support was within the scope of the prime contract. This conduct is unacceptable. If the work is properly within the scope of the prime contract, it is sufficient to rely upon the prime contractor to perform that work in whatever fashion he chooses. If the work is not within the scope of the prime contract it should not be performed under that contract. If there is work that must be performed by a particular subcontractor, that effort must be highlighted as a directed subcontract at the time an RFP for the contract is issued. SPAWAR employees are not to otherwise influence, direct, or request prime contractors to enter into a subcontract with any business entity or individual."

Letter to the Editor

Dear Editor:

On Friday 28 May I was on my way to the credit union. As I passed the cafeteria I saw a piece of scrap paper further down the hall. I started toward the piece of paper to pick it up. Mr. Dilworth came out of the door heading to the credit union lobby. He and I both reached for the scrap paper at the same time. He picked it up and asked me if I had intended to pick it up.

I think that this should be an inspiration to all of us that if the TD would stop to pick up some trash, that we all can. Not only that, it might help your waistline. The real change would be for people to take those few extra steps and put trash in a trash container, not on fire extinguishers, window ledges, etc. I don't know of many places on Center that you cannot see a trash can from where you are.

Name withheld

— Ski for Ice Cream —

Come to the W & R ice cream sale on August 2nd to get details on the Ski Club and its trips. Free toppings for those who renew their memberships or join the club. Memberships are \$4 for NADC employees and family members.

Planned your vacation yet?

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



Reflector

Volume 34
Number 7
July 1989

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.

It is printed commercially with appropriated funds in accordance with the provision of NAVPUBINST 5800.42 August 1979.

The REFLECTOR is a subscriber to the American Forces Press Services.

All correspondence should be addressed to Editor, REFLECTOR, Code 041, Naval Air Development Center, Warminster, PA 18974-5000 (441-3067).

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

Gibbons takes NSAP position in Fleet



William Gibbons

By Robert Zaleski

William E. Gibbons, Head of the Communications Subsystems Integration Branch in the Communication Navigation Technology Department has been selected by the Navy Science Assistance Program (NSAP) to become the Science Advisor (SCIAD) to the Commander, Naval Air Pacific (COMNAVAIRPAC).

Chosen from a field of Navy-wide candidates from R&D laboratories and

centers, Gibbons will deploy to COMNAVAIRPAC, San Diego, CA mid-August for a one-year assignment with an option to extend for a second year.

As Science Advisor, Mr. Gibbons, who will receive a temporary promotion to GM-15, will serve directly on the staff of VADM John Fetterman. His primary duty is to make available to the Commander all the technical expertise resident in the Navy Laboratories to provide solutions to combat operational

problems.

The NASP Mission is threefold: to identify and resolve urgent technical problems affecting fleet operations and readiness, to establish direct lines of communication between the operational forces and Navy R&D communities, and to expose system development personnel to the operational environments.

Further information regarding the program is available by contacting Robert Zaleski, NADC NSAP Coordinator, extension 3104.

Teti selected for 1st Ph.D. Fellowship

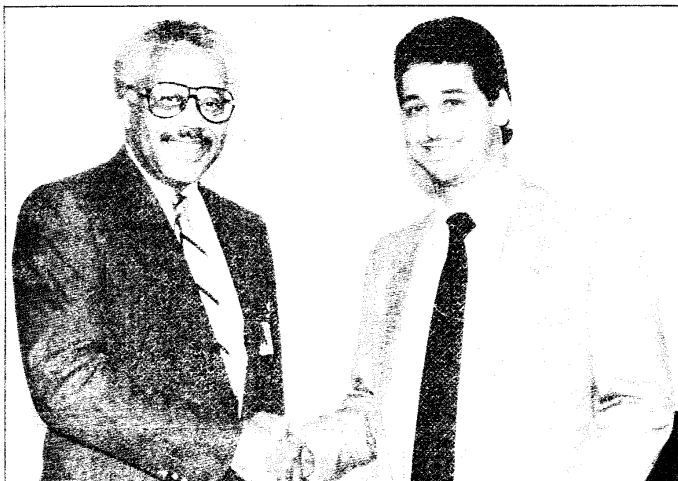


Photo by NADC Photo Lab

Technical Director Guy Dilworth congratulates Joseph Teti on his Ph.D. Fellowship

By Mary Ann Brett

Joseph G. Teti Jr. of the Microwave Technology Division is the first to participate in the Center's new Ph.D. Fellowship program. Teti, an electronics engineer, will be sponsored for up to two years at the University of Pennsylvania's Moore School of Electrical Engineering.

Hired in May '87, Teti is presently project engineer on the L-Band Devices project aimed at a next generation wide-band solid-state transmit receive module which utilizes state-of-the-art custom-developed microwave devices suitable for use in future surveillance radar and communication systems. He is also project engineer for an Independent Research project which developed an ocean surface model.

This model is used to investigate phenomenology associated with the backscatter of electromagnetic waves at radar frequencies and to interpret the effects of backscatter on Synthetic Aperture Radar image spectra.

Funded by the Technology Base Manager Dr. Arno Witt the new Ph.D. Fellowship Program provides an opportunity for competitively selected Center employees to obtain doctoral level academic knowledge in specialized critical areas of expertise. The selectees may be sponsored for up to two academic years of full-time Ph.D. level training and would receive full salary and related authorized academic expenses minus book expenses.

For additional information on this program contact Edward Calvello, Code 032, on extension 1020.

Brennan named Barnaby Award recipient

By Mary Ann Brett

Thomas J. Brennan, Head of the Tactical Air (TACAIR) Systems Department was named recipient of the 14th annual Ralph S. Barnaby Award by the Center's Naval Civilian Managers Association (NCMA).

Named for the Center's first Commander, CAPT Ralph S. Barnaby, this award was established in 1975 to formally recognize outstanding contributions and distinguished service by an individual to the Center and the Navy at large. The award stresses the administrative and managerial aspects of the contribution.

According to David DeSimone, NCMA President, Brennan was credited with forging a strong set of programs with full Center involvement in both systems and technology. In two years, the department realized a surge of new and significantly growing programs including Morning After, A-12, the Naval Advanced Tactical Fighter and Unmanned Air Vehicles. He described Brennan's career as characterized by "involved leadership" of such diverse Center projects and organizations as VSTOL, the office of the Associate Technical Director, and the Sensors and Avionics Technology Department.



Photo by NADC Photo Lab

Mrs. Patricia Brennan accepts the Barnaby Award (for husband Tom Brennan) from Center Commander Curtis J. Winters during a special luncheon ceremony at the Center.

And the Nominees Are . . .

There are nearly one hundred honorary awards available throughout each year for which NADC's outstanding employees might qualify. However, unless deserving individuals are nominated, these awards will surely elude us. The nominations themselves are a way to recognize dedicated and diligent employees. Those awards accepting nominations through Sep 1, 1989 are:

- PMRS Performance Award (Cash)
- Excaliber Award (Honorary)

- Secretary of Defense Productivity Excellence Award (Honorary)
- Secretary of Defense Letter of Commendation (Honorary)
- Presidential Management Improvement Award (Honorary)
- Department of the Navy Procurements Competition Award (Honorary)

For specific information about these and any awards, contact Bettie Simpson-Lawrence, Code 031, extension 3079.

Combined Federal Campaign tops \$100k goal



Photo by NADC Photo Lab

Al Kaniss, Chairman of this year's Combined Federal Campaign for federal agencies in Bucks County, is congratulated by Center Commander CAPT Curtis Winters for conducting a successful campaign which resulted in a \$126,684.47 contribution. More than \$110,200 was collected from NADC employees. The 43 United Way Agencies on the official list serving Bucks County will receive \$14,328.50.

Center involved in X-31 development

continued from page 1

maneuvers quicker than any existing conventional aircraft.

NADC is playing a major role in the X-31's development aspects including the vehicle and systems as well as the pilot interface. The Center is also supporting the Naval Air Systems Command in a planning process for potential new technologies where the X-31 can serve as a future test bed for evaluation.

Experimental aircraft are significant to the Center's technology research because they will demonstrate aerodynamic and flying qualities as well as pilot interface technology that has never been demonstrated on conventional aircraft. This new technology may lead to new and better ways of building and flying next generation aircraft for the Navy.

Two aircraft are currently being developed jointly by Rockwell in the United States and MBB in Germany. The first is expected to be ready for flight test by the end of this calendar year.

The X-31 program is significant because of the technology potential for new flying qualities and pilot research initiatives. With the limited new efforts for experimental aircraft research, the X-31 offers a major opportunity to demonstrate new technology for what to date has been analytical in nature.

The Naval Air Development Center is the lead laboratory for providing skilled personnel in supporting NAVAIR for the experimental aircraft development. After completion of the flight test program in 1992, the X-31 may continue to be used to demonstrate future technology enhancements for advanced fighter aircraft. This program is proving to be an exciting new technology program for both the Navy and NADC.

NADC also coordinates major project efforts for aircraft systems requiring application of multiple target disciplines. It also supports several new aircraft systems including P-7A, T-45, NATF, V/STOL, HALE as well as the X-31 Enhanced Fighter Maneuverability Aircraft.

EEO is for everyone

How to stop sexual harassment

From the EEO Office

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

comments, gestures or physical contact of a sexual nature in a work or work related environment which are considered intimidating or hostile.

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

In the event you are sexually harassed, there are several steps you should pursue. These include: 1) Make it clear to the offender that his/her comments or gestures are unwelcome. **DO NOT IGNORE THE PROBLEM.** Inaction usually makes the situation

worse. 2) Make a record of pertinent facts including the date, time, place, circumstances and any witnesses to the event. 3) Report the incident immediately, either to your direct supervisor, or if this is not possible, to Kathleen Gause, Deputy EEO Officer, Robin Halperin, Federal Women's Program Manager on extension 3061,

or to any EEO Counselor (pictures are posted on all official bulletin boards).

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

Women's Equality Day set

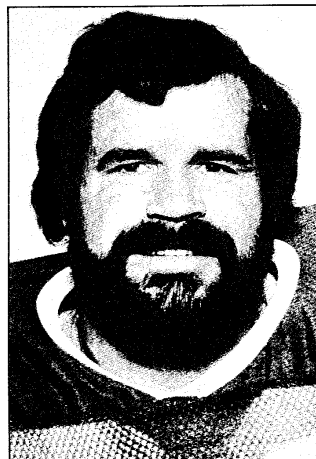
Bergey to speak on motivation and team spirit

By Robin Halperin

Women's Equality Day is observed each year to remind each of us how far women have come in the work force. This year The Naval Air Development Center is celebrating Women's Equality Day on Tuesday, 29 August 1989 with a luncheon at the Blair Mill Inn. At that time the Federal Women's Program will present its First Annual Award for Excellence (formerly Woman of the Year). This award will be given to the person who best exemplifies the spirit of helping others as well as the desire for self-development.

The Keynote Speaker will be Bill Bergey, former Philadelphia Eagles linebacker, who will address "Motivation and Team Spirit." Bergey was a three-time selection as the Eagles most valuable player and a four-time Pro-Bowl Choice. Since his retirement in 1982, Bergey has appeared in numerous television and radio commercials and has toured as a guest lecturer.

There will be a notice in the LOG when tickets are available.



Bill Bergey

Plan Your Getaway!

U.S. Savings Bonds are a great way to save for a vacation getaway. They are an easy way to save regularly... and they are safe, have guaranteed minimum rates and tax benefits.

U.S. SAVINGS BONDS
THE GREAT AMERICAN INVESTMENT



Navy Relief makes a splash at NADC



Captain Bill Moroney did his "creature from the black lagoon" imitation.



"Gentleman" Tom Brennan is always well dressed for any occasion -- even a dunking.

We call them DUN-KEES because they're all wet -- literally. They chose to tarnish their proper executive images in the interest of supporting Navy Relief. What's more, judging from the photos here, they enjoyed every minute of it. Others got some sadistic satisfaction from dunking their favorite (or not so favorite) department head or Navy Captain.



Then...Brennan gets a chance to get even.



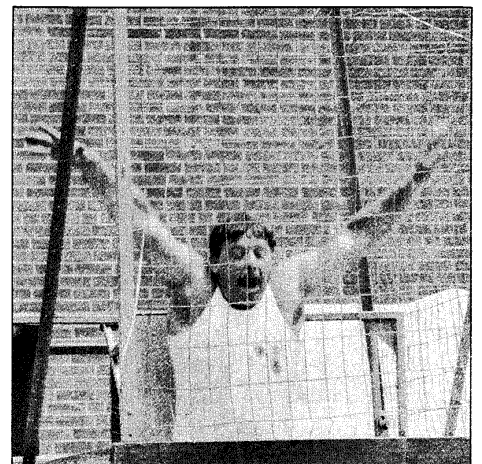
Dr. Don McErlean keeps his hat on tight but still got wet.



Center Commander, Captain Curtis Winters, rises grinning from the deep.



On the other side of the fence, Center personnel supported Navy Relief with varying degrees of enthusiasm.



Fire Chief, Don Meadows takes an Olympic pose as he heads for the water.

Give a little; get a lot

By Christina T. Miksis

You could be part of a special program by giving a little of yourself. A little bit of your time means so much to a special child. During the summer of 1989, the EEO Public Relations Subcommittee is sponsoring the coordination, solicitation, and indoctrination of volunteers to help support the Handicap Program at the McDonald School. When available, starting in September and running for the entire school year ending in June, volunteers would donate their lunch/leave time to take handicapped children/young adults for walks, play games and/or read to them.

Bucks County is considered a leader

in the area of special education. When a special education program is needed, the local school district is obligated to provide a program to meet the child's needs. If for some reason, the local school district cannot provide this service, the Bucks County Intermediate Unit Special Education Directors establish a program.

In Bucks County, a special education program has been established at the McDonald School. A professional staff of administrators, supervisors, teachers, aides, and support personnel carefully adapt the learning environment, instructional materials, and strategies to meet the diverse needs of the child.

There are many programs that

make these services possible. For example, a Trainable Mentally Retarded Program helps the student gain as much practical skill as their limit potential permits. A Physically Handicapped Program facilitates a child's entry into community life. The Severely and Profoundly Handicapped Program is geared to increase functional independence for a child. The Social and Emotional Development Program allows the students to receive credit toward graduation as approved by the local school district.

Consider lending a hand, it will not only mean so much to a child, but will allow you to feel good about yourself as well. For additional information call the EEO office on extension 3061.

How to read electric and gas meters

By Michael Blank, P.E.

Electrical Meter

It is a good idea to keep a monthly record of the electrical and natural gas service that you use in your home.

Electrical meters may have either four or five dials. In any event, four and five dial meters are read the same way, from right to left. According to the Philadelphia Electric Company "Read it Right" is a good way to remember this.

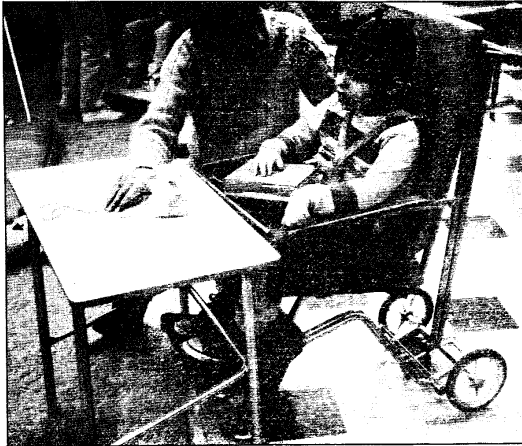
Electric meters are like big wrist watches. They either come with dials or digital readouts, and you read the sequence like any number. The illustration below shows five meter dials. Please note that the pointer on each dial turns in a different direction, clockwise and counter clockwise.

To read the meter, write down the number the pointer has just passed. Always use the smaller number even when it's exactly between the two numbers. (Between 9 and 0, the smaller number is 9.)

In the example, the meter reading this month is 64875 kwh. To check your energy use during a month's time, simply subtract last month's reading (64345 kwh) from this month's then you have used 530 kwh.

Gas Meters

The pointer system works the same as on electric meters except that gas is measured in cubic feet instead of kilowatt-hours. Most meters are calibrated in hundreds of cubic feet, so each digit on the righthand meters represents 100 units. A reading of 650 on a three-dial meter means you've used 65,000 cubic feet of gas. If next month's reading is 658, then the difference is 8. You've used 800 cubic feet of gas during the month.



Teacher working with student instructing him to use panel switch to activate robot



Child in Sidelyer (for positioning) using large joystick to activate battery operated toy

Commander Salutes

Rosa Cerankowski (Code 80): For contributions to the Hispanic Employment Council and IMAGE of Philadelphia.

AXAA James Taylor, AZAN John LeFurge, AT3 Derek Horne, AT2 Bradley Levault, AT3 Matthew Edgin, YN3 Anthony Fletcher, AD2 Joseph Zarzaca, AMH2 Gary Poulin, AD2 Howard Kritzerberger, AME2 David Blood, PR2 Mark Spencer, AO2 Robert Hines, AO2 Todd Meguet, AO1 William Maynor, AO1 Paul Fries, AOC Julian Boddie, Lois Savage (Code 03): For participation in the Memorial Day Service dedicating the Naval Air Development Center courtyard area to all of the Center's veterans and military personnel.

Robert Lutz, Jerome McGlynn (Code 20): For invaluable engineering professionalism in support of the Phoenix missile and the AIM-54C Upgrades Programs.

Ferdinand Reetz (Code 20): For invaluable leadership in organizing an excellent functional team ready to meet the Reconnaissance Program needs.

William Halpern (Code 03): For the presentation-demonstration on POWER at the Second Annual Navy Scientific and Technical Information Program of April '89.

NADC firefighters save a life

By JO2 Michael Delledonne

Firefighter James Bassler and Emergency Medical Technician (EMT) Chuck Steinbach of the NADC Fire Department recently teamed up to help save a 74 year old man having a heart attack.

"We had a second alarm assignment to assist in the evacuation at the Centennial Springs Nursing Home," said Bassler. "While I was hooking up a supply line, I glanced over and saw an elderly man go down to the ground. I knew by the way he fell that he was in definite trouble. I told Chuck and he went right over to assist him."

After seeing the victim, Steinbach knew it was a heart attack. "He was unresponsive and had no pulse," he said. "After opening the victims airway, another EMT from a local squad and I proceeded to give Cardio Pulmonary Resuscitation (CPR). We had to bring him back twice before the paramedics arrived."

Fire Chief Don Meadows praised the two men for going beyond the call of

duty. "Their main function was to fight a fire and help evacuate the nursing home. While doing this they were observant enough to save this man's life who wasn't even in the immediate area. They were

outstanding."

"This was a witness arrest or we saw it happen," said Steinbach. "His chances were better because of that. I've had three saves using CPR and it sure beats losing a life."



Chuck Steinbach and James Bassler at the NADC Crash House.

Photo by NADC Photo Lab

Scotese takes Navy award

continued from page 1

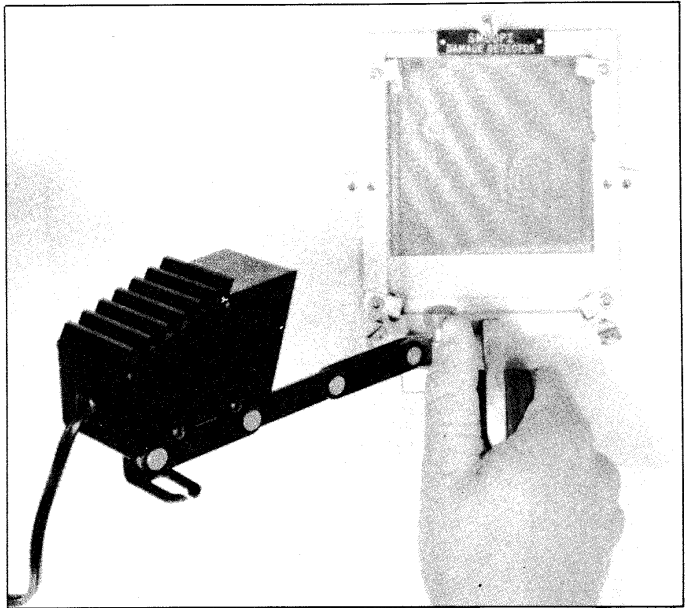
composite materials used in naval aircraft. These inspections assure the composite structures provide the same level of structural reliability as comparable metal structures. The detector consists of a lightweight battery power source, a 4-inch x 5-inch moire' screen and a pistol grip and is capable of detecting surface anomalies of .0001 inch. It has several advantages over existing inspection techniques. It is a fast, simple, accurate, portable, inexpensive device that can be used in the field by personnel with minimal training and eliminates the tedious scanning procedures required to inspect large structures.

A variety of methods, including ultrasonics and x-rays, already exist to detect internal damage; however, these methods tend to be laborious and unreliable in the field where the results are affected by temperature, humidity and vibration.

Scotese explained that SMOOPI

works on the interference fringes created by superposition of two grids (a master grid and a specimen grid) or the shadow moire' technique. "Moire' is the term used to describe a wavy pattern," he stated. These shadows are distorted by the out-of-plane elevation or depth of the surface. When viewed with SMOOPI, moire' fringes are created which represent the topology of the specimen's surface (similar to a contour map). A damaged area can be quickly identified; then ultrasonics can be used at selected locations to further define the nature of the damage. The SMOOPI device is also able to identify minute blisters in anti-corrosion paint.

SMOOPI has been demonstrated at several Naval Air Depots and the Naval Air Systems Command and has received consistent favorable responses. A patent application has been filed and an exclusive license for the commercial development of the device is being negotiated.



The Shadow Moire Out-of-Plane Interferometric (SMOOPI) damage detector.

Technical Highlights

Mission Reconstruction Capability for SH-26 and SH-3H

The Mission Data Playback System (MDPS), developed by the NADC to provide a mission reconstruction capability for the SH-30F (CV-Helo), has been so well received by Fleet personnel that its application has been extended to include the SH-26 and SH-3H. June NAVAIR issued an Airtask and funding to the Center to start the MDPS for the SH-26 and SH-3H.

Navy Acceptance of CV-Helo HSIF

A CV-Helo Hardware Software Integration Facility (HSIF) was accepted by the Navy and provided to the prime contractor, Sikorsky, NADC, as the lead field activity for NAVAIR, was responsible for establishing the technical criteria for acceptance of the HSIF, performing the acceptance testing and generating for the final report.

Cockpit Automation Technology

NADC is designated Beta Site for the Cockpit Automation Technology (CAT) Tools developed under the Air Force's CAT program. This Beta Site responsibility was initiated in support of the Navy's *Advanced Technology Crew Station (ATCS) Program*, and is being conducted under a *Joint Navy/Air Force Memorandum of Agreement*. Currently, two of the seven CAT Tools are being installed in the Man-Machine Integration Facility for initial demonstration in August 1989. Formal evaluation of the CAT Tools will begin in September 1989. It is planned for the CAT Tools to support both the Navy's In-House ATCS efforts and current aircraft programs.

Standard Targets Processor

The effort was kicked off to develop a standard digital avionics processor for aerial targets. It is a joint program with PMA-208 sponsorship. It is anticipated that the processor will be modular and have a "building block" concept to allow for more or less memory and/or throughput depending on the specific needs of the platform. Low cost and flexibility are the primary requirements drivers. This work is to be conducted in the planned Unmanned Vehicle Laboratory.

Unmanned Air Vehicles (UAV) Program

We were designated Prospective Software Support Activity for the Mid Range UAV Program by AIR-546. This means that we are the Software Support Activity through Full Scale Development.

The Request For Proposal (RFP) for the Improved Multi-Mission Optron Stabilized Payload was released on 26 May 1989. This is a joint Israel/U.S. (non-NATO) program to develop a standard optical payload for UAV's. We prepared all the technical portions of the RFP and anticipate leading the source selection at the Center beginning in mid-July.

S-3B Software Successfully Completes TECHEVAL

The VS Branch (Fixed Wing Carrier-Based ASW Branch) announced the successful completion of the TECHEVAL for the B4.2.1 software. This software represents the first product baseline update for the new S-3B aircraft. New sensors include the APS-137 ISAR Radar, the UYS-1/OL-320/ARS-2/ARR-7B/AQH-7 acoustic suite, and the ALR-76/ESM system. Additionally, Harpoon capability and ALE-39 Electronic Countermeasures have been added. The Operational and System Test Programs have undergone rigorous Navy testing. OPEVAL is scheduled to start in July.

A first at NADC

Patent royalties paid to Scott and NADC

By Mary Ann Brett

William Scott of the Aerospace Materials Division is the first at NADC to receive royalties as the result of the sale of his patent on a piezopolymer sensor.

Until the 1986 Federal Technology Transfer Act, royalties on government inventions were paid to the U.S. Treasury. Now, in most cases, the inventor will receive 20% of those royalties and the Center will receive 80%. Scott will receive \$5,000 over the next five years. This patent is the second of two resulting from a Center IR program. The purpose of which was to develop small, light weight, high frequency transducers for application to inspection of critical structural materials on Navy Aircraft.

According to Jerry Bortman, NADC's Technology Transfer Manager, "We see this as a beginning ... we hope that our inventors will be more concerned with filing patents for their inventions as well as with looking for applications of their developments in the private sector. He also explained that other government inventors are receiving as much as \$100,000 in royalties. At least two other NADC developments are looking forward to commercial licensing; — they are UNICOAT, a one coat primer and paint with corrosion inhibitors, and SMOOPI, the Shadow Moire Out-of-Plane Interferometric Damage Detector.

The sensors use a high strength plastic, known commercially as

KYNAR, which has the property that it produces electrical signals when subjected to strain vibration or changes in temperature. Pennwalt, the Corporation that purchased the patent, originally manufactured KYNAR as a weather resistant coating for the steel siding used on houses, but is now exploiting some of its interesting electronic applications including capacitors, sensors microphones and loud speakers.

In June of this year, a more advanced piezopolymer sensor was tested. A sensor about the size of a large postage stamp was placed on an inaccessible area of the rotor grip on a V-22 Aircraft prior to structural testing. Using this device NADC specialists were able to monitor the integrity of the material in this critical component at various intervals during the test.

In recent years the Navy has also become interested in using piezopolymer technology in sonar systems for ASW applications and groups on the Center are now active in developing sonobuoys containing piezopolymer arrays.

Piezopolymer technology is an area where US and Japanese companies are in active competition and in which the US is now taking a lead. It is a goal of the new Navy technology transfer initiative to encourage such commercial competitiveness through sale of inventions and through cooperative R & D programs that are beneficial to both the Navy and the private sector.



Softball standings take shape



Although the weather has extended the softball season, it has not stopped the truly talented teams from rising to the top. As expected, the Misfits and 8th Inning are starting to dominate the league, both with 9-1 records. The Intimidators, are following close behind with a 9-2 record. The Rebels and Bandits fill out the top five and the Granfalloon is still proving to be a force to be reckoned with in sixth place at 7-5.

The middle of the league is a log jam involving the Renegades, Herassers, Bearcats, Guzzlers, and Rumlbers. Only time will determine the final standings of these teams, one of which will probably not make the playoffs. It may come down to several tiebreakers. The Renegades have suffered mightily as a result of injuries and travel. Bill Brower, a big

stick, is out indefinitely due to injury and other key players have missed games due to official and unofficial travel. Coach Steve Spadafora hopes to have a solid lineup back before the playoffs start. With three tough games left, the Renegades had better regroup before the playoffs.

The lower echelon teams have managed to win a few since our last article. The Orange Crush were victorious against the Dynatigers and the Life Supporters, the Dynatigers won their first against the Life Supporters, the Life Supporters took out their frustrations on the Phantoms winning 18-1. The Phantoms now are the only team without a victory.

Surprising news from the Granfalloon. Coach Mike Bubbs has accepted an invitation to pitch semi-pro ball in Toledo, Ohio and is

leaving the Center in mid-July. (Actually, Mike is changing jobs.) The league will miss this guy who has been an up-and-coming leader and also one of the league's best umpires.

The standings as of 7/7/89 are:

Misfits.....	9-1
8th Innings.....	9-1
Intimidators.....	9-2
Rebels.....	4-1
Bandits.....	6-2
Renegades.....	7-4
Granfalloon.....	7-5
Herassers.....	5-4
Guzzlers.....	5-6
Rumlbers.....	5-6
Orange Crush.....	2-7
Dynatigers.....	1-8
Life Supporters.....	1-13
Phantoms.....	0-11

Earl places third in all Navy meet



LT Martin Earl

By JO2 Michael A. DelleDonne

Imagine firing a rifle to hit a four-inch bulls-eye . . . 500 yards away! That's just what NADC's LT Martin Earl had to do at the All Navy Shooting Championships. For 20 rounds his patience and steady hand were tested to the limit and he placed third out of 90 competitors to receive the Secretary of the Navy M-1 Garrand Trophy Rifle, and original M-1 Garrand.

"The competition included both surface rifles which have iron sights and scoped (telescopic sights) rifles," said Earl, who has been stationed at NADC for almost a year. "We were given 20 rounds to shoot a full score. I scored 99 on the first ten and 96 for the second. I was very pleased."

Not only did he shoot extremely well, but he did so under trying

circumstances. "The competition was held in Miramar, Ca., which is on the edge of the desert," noted Earl. "After three or four days on the practice range I began to get sun poisoning. I almost didn't even shoot at the competition, but I got a break when the weather turned overcast. It all worked out well."

At the awards ceremony, Earl, 34, who works in Vertical Flight, noticed he was eighth or ninth on the list.

"What I didn't realize was that all but two had shot with scoped rifles. When they called my name for third place I was overjoyed," he said.

Earl's next stop will be at the interservice championships in Quantico, Va., in July and the Nationals at Camp Perry, Oh., in August.

What is his secret to success? Earl smiled and said, "Never make the same mistake twice."

Colorado ski trip set


By Jim Macaulay

The 1990 ski trip is set for March 3-10 at Tulleride, Colorado. It's a restored Victorian mining town set in one of the prettiest valleys in southwest Colorado. The skiing provides outstanding terrain for all levels. SKI MAGAZINE calls "The Meadows" at Tulleride "the best beginner area in the country." Half of its 756 skiable areas are intermediate, and the expert runs are ranked third in the country. Thirty kilometers of groomed Nordic trails will delight cross country skiers, and powder hounds will want to sample the highest helicopter skiing in the U.S.

An innovation in ski trips is the four-day Colorado weekend. Favorable airfares to Denver make such trips very attractive. Our trip will be to Dillon, giving easy access to Keystone, Arapaho Basin, Breckenridge and Copper Mountain. Plan on spending Martin Luther King's Birthday savoring Colorado's famous powder.

A three-day weekend in New England will delight those who don't feel ready for the West. Bus trips like this have been the mainstay of the club and provide an inexpensive escape with only one day of leave.

Call Diane Heal, 441-7132 for more info.



HEADS UP!

CYCLISTS TOO, MUST OBEY THE RULES OF THE ROAD:

- Obey all applicable traffic regulations, signs, signals and markings.
- Observe all local ordinances pertaining to bicycle operation.
- Keep right, drive with traffic, not against it. Drive single file.
- Watch out for drain gates, soft shoulders and other road surface hazards.
- Watch out for car door opening, or for cars pulling out into traffic.
- Don't carry passengers or packages that interfere with your vision or control.
- Never hitch a ride on a truck or other vehicle.
- Be extremely careful at all intersections, particularly when making a left turn.
- Use hand signals to indicate turning or stopping.
- Protect yourself at night with the required reflectors and lights.
- Drive a safe bike. Have it inspected to insure good mechanical condition.
- Drive your bike defensively, watch out for the other guy.

Ski club president Diane "Lady Di" Heal with Center Commander CAPT Curtis Winters and ski club officers: (skiing) Jim "Mad Dog" Macaulay, "Shy Donna" Morgan, "Uncle Roland" Bender, Charlie "Faultless" Falchetti, "Mean Marguerite" Hoefling, and "Gordo" Heal. (Not present: Larry Coar.)



Photo by NACC Photo Lab