The Reflector

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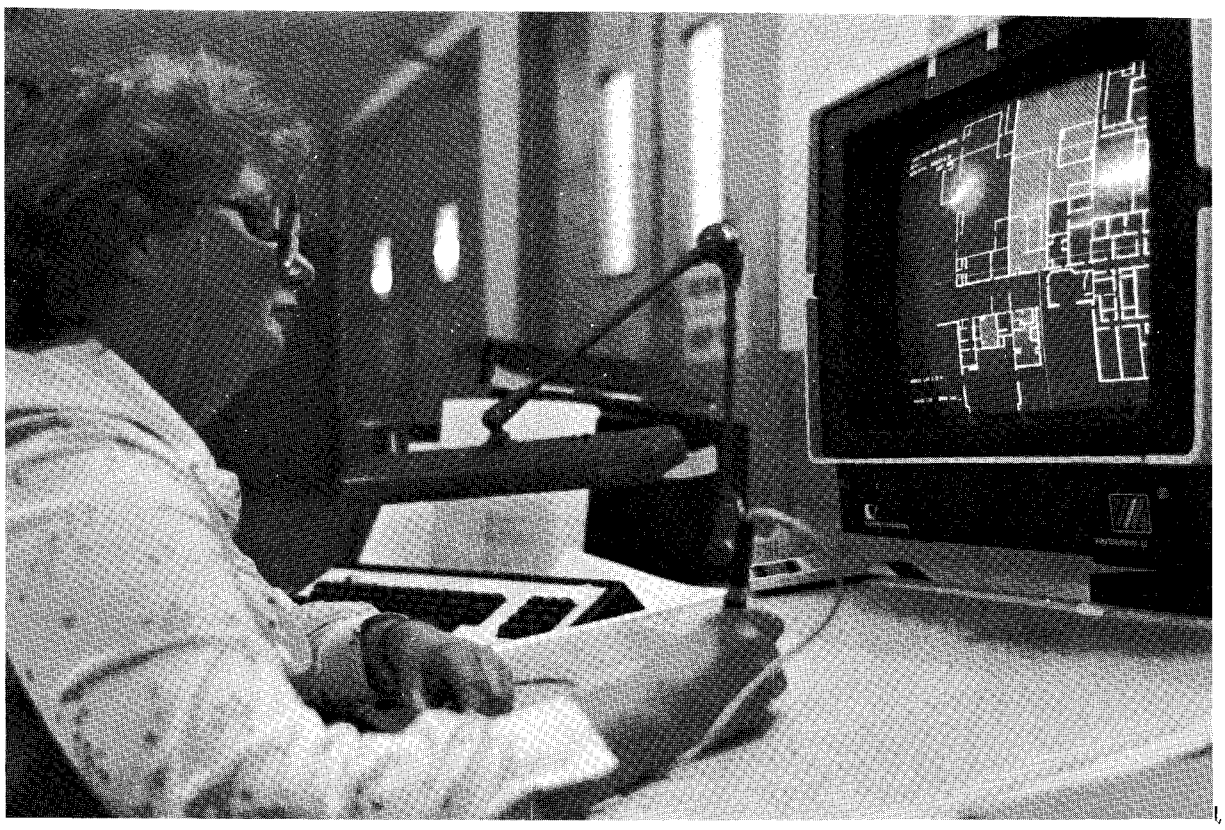
A designing computer speeds the production of drawings

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 digitized 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.



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

Another interesting feature involves the use of stored information. 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 proceedures 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 rennovation 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

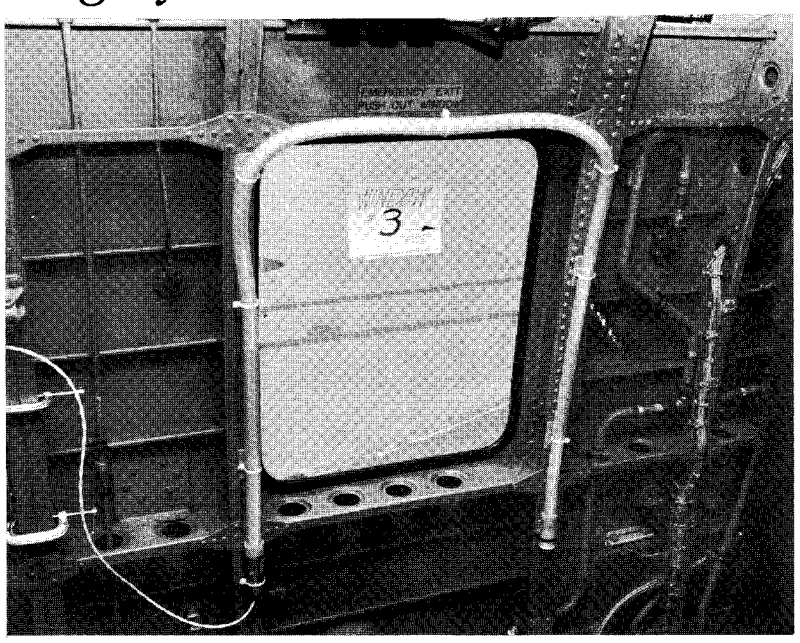
(continued on page 2)

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 comp'eted 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 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.



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

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)

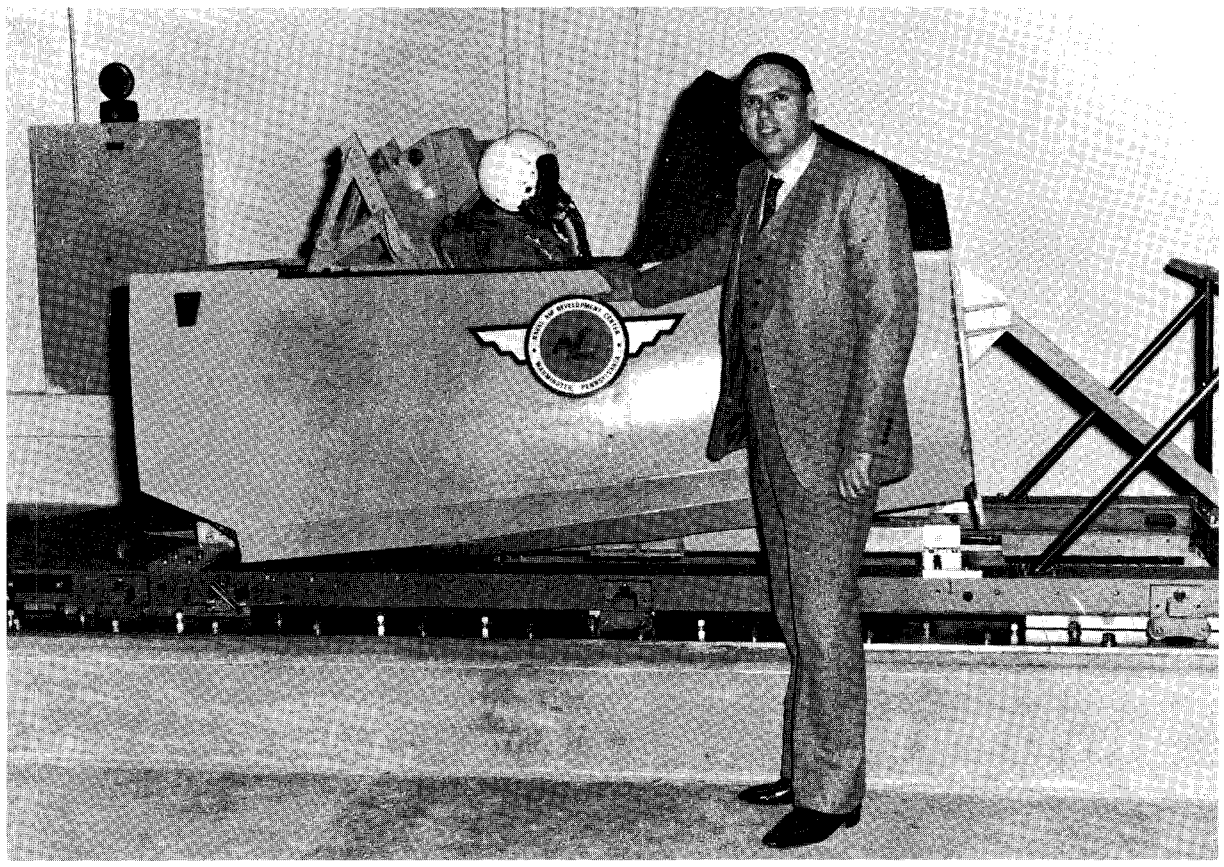
Library adds retrieval service, NASA documents now available

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 Aeronautics 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.



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 accomodated. Data taken from transducers onboard the sled is transmitted via hard line to a data acquistion 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.

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 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.

(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."

RADM Chambers hears about S-3

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

(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

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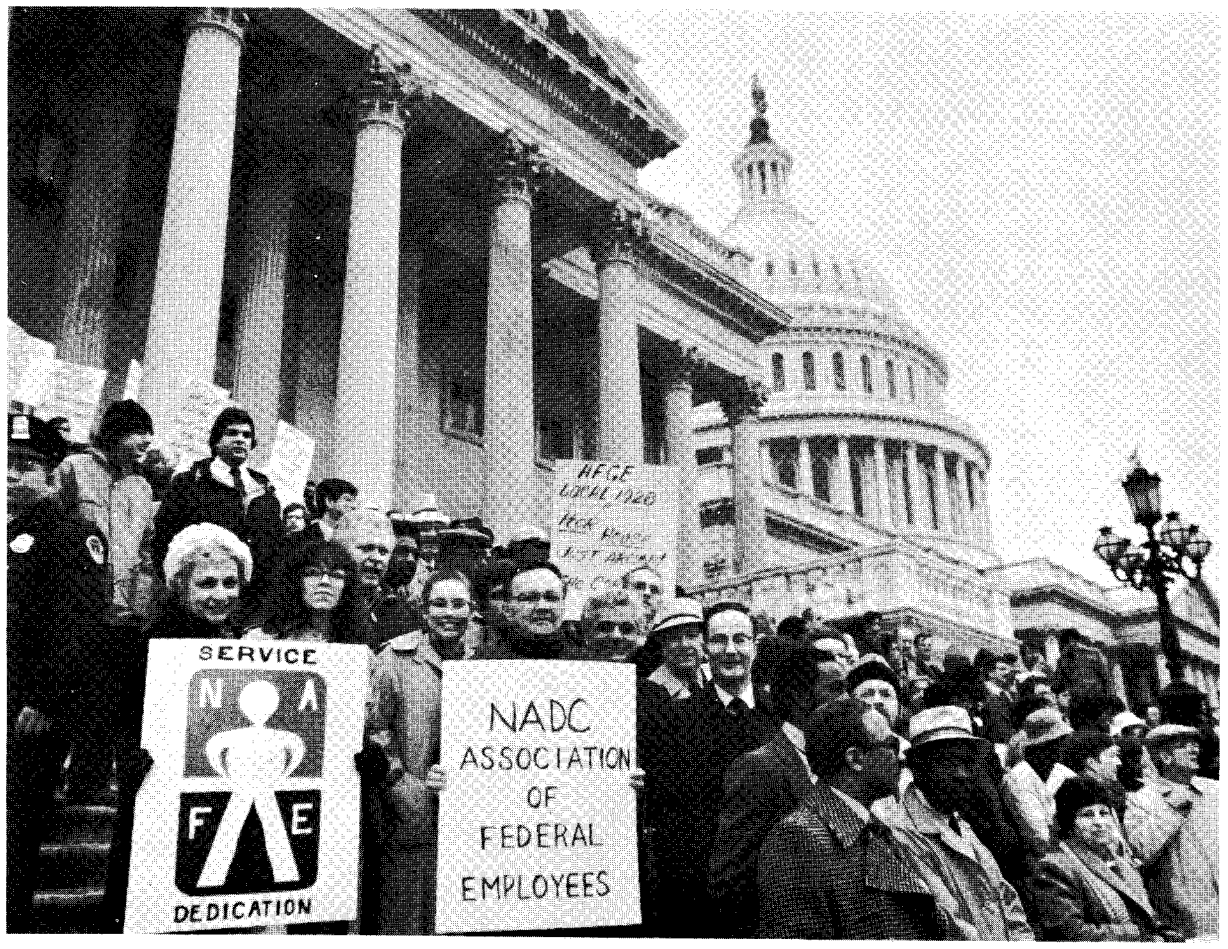
David Polish — Editor

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 Federation of Government Employees (AFGE). The highlight of the meeting was the showing of a videotape of the McNeil-Lehrer Report. This program delt 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 ingenunity 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 recieved $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 SNOWSTORM, 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, assignments 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 Developement 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 lt to rt, Rockne Anderson, Bob Hayes, Maureen Satchtell, Bill Eisenhower and George Gillespie are all members of the Toastmasters.

There's a group here that has been talking continously for the past 26 years. The purpose of the group in fact is to help their members become even better at talking. Of cousrse 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 parlimentary 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 NAVAIRDEVCEN 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 Kosanchuk, 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. Nonfinancial 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 chose 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 chemical disposal."

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

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