



A Very Merry Christmas To You All!

Christmas message

Let me take this opportunity to express my thanks to each member of the Naval Air Development Center team for the job so very well done this past year.

As we celebrate the Holidays with our families and friends, let us remember those Americans who are Prisoners of War and listed as Missing in Action. Let us pray that they, too, will soon join their loved ones.

Mrs. McCaulley and I would like to extend our warmest greetings to you and your family for this holiday season.

H. B. McCAULLEY
Captain, USN

Study group is examining Equal Employment program

A three-man study group is currently examining all aspects of NADC's Equal Employment Opportunity Program.

Results of the study will be used in drawing up the Center's Affirmative Action plan due early next year.

THE STUDY GROUP, composed of Project Leader Irving Custis, and Trainees Steven Collier and Dennis Stiles, has been conducting interviews since November 14.

"We're trying to identify problem areas," said Steven Collier. "Anyone's ideas are welcome. There may be some we haven't heard, but I doubt it."

Besides interviewing Department Heads, the study group talked with EEO Committee members, the Federal Women's Program Assistant, and employees throughout the Center.

"WE HAVEN'T BEEN too surprised at the answers we've gotten," said Dennis Stiles, "but they have been helpful."

Areas being emphasized in the interviews include: recruiting, training, upward mobility, use of skills, publicity, and community affairs.

Persons interested in being interviewed, should contact the group members on extensions 2944 or 2527.

1972 Campaign is "best ever"

The 1972 Bucks County Combined Federal Campaign raised \$42,276.57, CFC Chairman Owen Moll has announced.

This is an increase of \$504.19 over last year's total.

"In general, I'm happy," Moll said. "The number of contributors was down, but the average gift was up almost \$3.00. Also, NADC contributed two per cent more than last year."

The Bucks County Combined Federal Campaign aids the International Service Agencies, Na-

tional Health Agencies, and the Bucks County United Fund.

Besides NADC, the federal campaign includes Bucks County Post Offices and Social Security Offices.

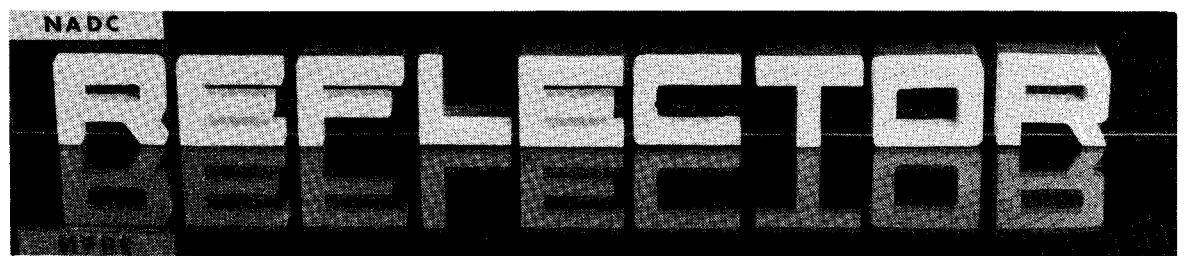
More than 79 per cent of NADC's employees contributed to the campaign. The average gift was \$18.37.

AVTD was the top department, contributing \$10,140.74.

Thirty-three per cent of the employees contributing used payroll deductions, accounting for 61.8 per cent of the total amount collected.

Results of CFC

Department	Amount	Per cent contributing	Average contribution
Admin	\$ 2925.50	83.1	\$12.14
CPD	\$ 405.00	100	\$12.27
PF & Staff	\$ 1524.50	96.7	\$17.32
AETD	\$ 9113.23	81.4	\$21.96
AVTD	\$10140.70	98.0	\$22.44
SAED	\$ 6808.25	62.8	\$27.23
CSD	\$ 2714.50	82.7	\$16.25
PW	\$ 1734.50	87.7	\$10.58
SU	\$ 1308.25	92.6	\$10.47
NAF	\$ 2465.10	51.2	\$12.58



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Fire phones bring quick assistance

A modelmaker collapsed without warning near the Credit Union Lobby on November 16.

A dispensary team was at his side within one and one-half minutes rendering first aid.

THE EMERGENCY was simulated. The purpose was to emphasize to employees the importance of using the red fire phones in all emergencies.

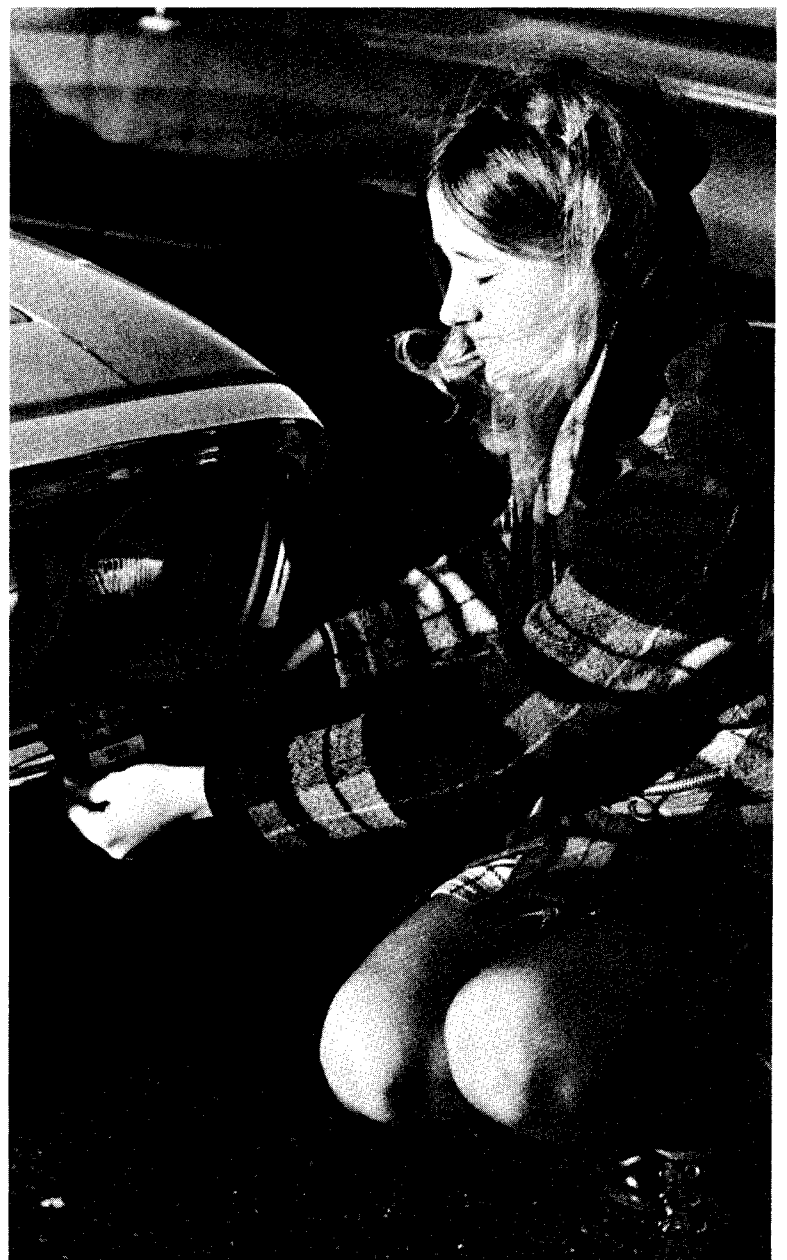
"The dispensary is located away from the work areas," says Fire Chief John Yuhas, "and we want people using the fire phones to get the quickest possible help in all emergencies."

The phones connect directly with the fire station switchboard that is manned 24 hours a day.

"YOU SAVE TIME when you use these phones," Chief Yuhas emphasizes. "You don't have to dial, and we know exactly where the phones are located. This is especially helpful if someone is in an unfamiliar area and doesn't know the column numbers. As soon as you pick up the phone you get an answer."

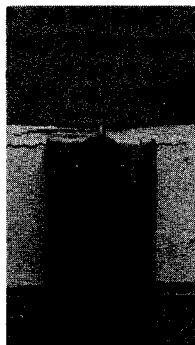
Thirty-eight of the red phones are located throughout NADC and NAF.

"People using the phones should stay by them until help arrives," he points out, "so they can direct the dispensary team or fire department to the right location."



Right on

NEW DECALS — CPD's Debbie Loughery puts one of the new Navy decals on her car. The new decals, distributed by Security, can be used at any Navy installation. They are to be on all cars by December 15.



Viewpoint

What New Year's resolutions are you planning to make for 1973?

PR 3 Michael Szydowski, NAF—"I don't plan to make any. I've made some in the past, but I've never followed up on them."



Dr. Herman W. Shmukler, Biochemist, CSD—"I don't make New Year's resolutions. I don't believe they're of any value."

Steve Collier, Student-Trainee, CPD—"I make them. Some of them you can't put in. One would be to save more and spend less. When I get back to school, it will be study more and play less."



Dale Malott, Engineering Technician, Admin—"I don't make them. I wouldn't keep them anyway."

Audrey Dinkins, Editorial Clerk, AVTD—"I don't normally make them. I have one. I'm going to make some. When something comes up, I'll let you know."



Ptl. Frank Cavanaugh, Security—"I don't make any that I can't keep. So I don't make any. I'll just do less drinking."

Lois Guise, Librarian, Admin.—"It's too early to think about that yet. I never make them because I never carry them out."



Three are frocked in November

LTJG Stephen J. Hackney has been promoted to Lieutenant, and three other officers have been frocked at NADC.

They are: Commander Frank Brown, Commander John McMichael, Jr., and Lieutenant Courtney Kronk, III.

Frocking is a procedure in which an officer who has been selected for promotion by a special selection board, and who is assigned to a billet at the higher rank, may assume the title and wear the uniform of that rank.

Captain McCaulley authorized the frocking on November 17.

Frocked officers do not receive the pay or allowances of the higher rank, and do not receive increased disciplinary powers until they actually receive their promotion papers.

Advisory panel reviews Center tech programs

Eight top aerospace scientists visited NADC on December 6 and 7 to review the Center's Technical Programs.

They were members of the Laboratory Advisory Board for Air Warfare which reports to the Naval Research Advisory Committee (NRAC).

Chairman was Dr. Coleman duP. Donaldson, President and Senior Consultant, Aeronautical Research Associates of Princeton, Inc. Vice-Chairman was Admiral James S. Russell, USN (Ret.).

NRAC provides the Assistant Secretary of the Navy (R&D) with a continuing overview of Navy Laboratories. The Committee advises the Secretary on the relevance of technical programs and the quality of work being performed.

In memoriam

Peter McKeown, Public Works

William McFadden, Security

Naval Air Development Center

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All correspondence should be addressed to: Editor, Reflector, Naval Air Development Center, Warminster, Pa. 18974 (OSborne 2-9000, Ext. 2980).

CAPT. H.B. McCaulley
Commander NADC
Aris Pasles—Public Affairs Officer
Jim Murphy—Editor



Urinalysis testing begins for military

A urinalysis drug testing program is now underway at NADC.

Begun in early December, it's part of a Navy-wide program to identify drug users and provide treatment for them.

"THE PURPOSE OF THE program is not to catch people and punish them," says Dr. Mickal, the Medical Officer. "It's to give people treatment. It's part of the Navy's policy of taking care of its people."

All officers and enlisted men 29 years of age and under serving at Warminster will be tested during 1973, a Dispensary spokesman said.

The urinalysis test can detect if a person is using narcotics, amphetamines or barbiturates. The best-known examples of these are: heroin, methedrine and seconal.

THE TEST WILL show a positive reaction if a person has used one of these drugs within three days.

Military personnel declining to take the test will be subject to investigation.

Under the program, three different groups can claim exemption from punishment under the Code of Military Justice; those who voluntarily disclose that they are using drugs; those whose tests show a positive reaction and claim an exemption within 24 hours; or those implicated by another person claiming exemp-

tion, and who claim exemption themselves within 24 hours.

THE IDEA IS to retain these people if at all possible, a dispensary spokesman said. And, if they are to be discharged, to treat them before they leave the service.

People claiming the exemption may not be dishonorably discharged, unless they abuse the privileges of the exemption. Pushers, personnel already under investigation, and those who have claimed a previous exemption, will not be eligible for the exemption process.

Samples will be taken under dispensary supervision. Processing will be done by a civilian contractor.

THE COMMAND PLANS to test everyone at the rate of 1.2 times per year, the dispensary spokesman said. This means that some may be tested more than once.

Selection for the test are being made on a random basis. Fifty people were tested in December.

Twenty-nine years of age is used as the break-off point because of past exemption statistics, and because it gives the Navy a feasible number to test.

There is about one-tenth of one percent possibility of error on the test, according to the spokesman.

Moll says "Thank you"

As General Chairman of the Bucks County Combined Federal Campaign, I want to say thank you to the 2131 people at NADC and NAF who unselfishly supported our efforts this year.

May the coming Holiday Season be as rewarding to you as it will be to those you have helped.

I also want to thank the nearly 150 keypeople and Department Chairmen who are responsible for the success of the 1972 campaign at NADC.

During a time of rising taxes and increased cost of living, as well as restrictions on wage increases, NADC contributed two per cent more than last year.

I am justly proud of the people at the Center who worked with me, and of those of you who so generously contributed to the CFC.

Thank you again.
Owen Moll, General Chairman

What has happened to the old American values ?



by Lewis F. Powell, Jr.

Associate Justice of the U.S. Supreme Court
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There is reason for concern that values once held high in our society now tend to be denigrated. I have in mind those values the individual once gained from respect for authority and from responsible participation in a larger community life. Today, we are being cut adrift from this humanizing authority which in the past shaped the character of our people.

I am thinking not of governmental authority but rather of the more personal forms we have known in the home, church, school and community, which once gave direction to our lives. They were our reference points, the institutions which molded our characters. We respected and grew to maturity with teachers, parents, neighbors, ministers and employers — each imparting his values to us. We gained from these relationships an inner strength, a sense of belonging, as well as of responsibility to others.

I WAS TAUGHT in my home, church and schools, and still believe, that a sense of honor is necessary to personal self-respect; that duty, recognizing an individual subordination to community welfare, is as important as rights; that loyalty, which is based on the trustworthiness of honorable men, is still a virtue; and that work and self-discipline are as essential to individual happiness as they are to a viable society. Indeed, I still believe in patriotism, because worthy national goals and aspirations can be realized only through love of country and a desire to be a responsible citizen.

Sadly, the influence we once experienced in family and other community relationships is fading away. Today, the overriding concern — not merely of youth, but of other large segments of our people — often seems to be a highly individualized self-interest. In the familiar phrase, everyone wants to do "his own thing." Self-assertion seems to be the modern aspiration; to be independent of — if not indeed to reject — the familiar disciplines and values of home, school, church and community.

THE WORK ETHIC, in many ways the cornerstone of a viable society, is also scorned by many

— by some who simply think society owes them a living, by other who equate dedication to work with a materialism which they wish to repudiate.

Perhaps the primary belief of the "new ethic" is that the individual owes little loyalty or obligation to authority and to traditional values. Rather, one's chief allegiance is thought to be to his own conscience and his own desires.

We see manifestation of this unanchored individualism not merely in hostile attitudes toward existing institutions but in excessively tolerant views toward personal conduct — in matters of sexual morality, in use of drugs, in disobedience to laws believed by the individual to be unjust. Even the concept of honor is now widely questioned. The national press, for example, recently described the flourishing new business of selling college theses and term papers to be thousands of students who practice cheating. One university is reported to have withheld grades from some 600 students suspected of submitting, as their own work, papers they had bought from commercial firms. Many colleges and schools have been forced to abandon any pretense of maintaining honor systems.

WHAT BRINGS ABOUT these attitudes on the part of so many young people? I wonder if persistent and often destructive self-criticism is not a prime cause. It has become increasingly fashionable to question and attack the most basic elements of our society. It is said that religion is irrelevant, that our democracy is a sham, that the free enterprise system has failed, and that somehow America has become a wholly selfish, materialistic, racist society with unworthy goals and warped priorities. It is also persistently said that our system of criminal justice is repressive. If these criticisms are accepted, there is little wonder that our institutions and inherited values are no longer respected.

We have always been prone to self-criticism. Certainly no thoughtful person would wish to mute the debate and dissent which have strengthened our democracy. No traditions are more firmly rooted, or more essential to the ultimate preservation of our liberties, than the rights of speech, press and assembly.

ONE MIGHT WISH, however, for a better balance and a higher level of responsibility in the criticism. America, its institutions and the values of our people deserve a better billing than they often receive. In our concern with the present and

our serious social problems, we are losing a proper perspective of history. History balances the frustration of "how far we have to go" with the satisfaction of "how far we have come." It teaches us tolerance for the human shortcomings and imperfections which are not uniquely of our generation, but of all time.

It would be irrational to say that all of the criticisms of America and its institutions are unfounded. Yet excessive self-flagellation is destroying the ties that bind us together. We, as a people, are entitled to recall that the history of America is a proud and decent one. However slow and painful progress at times may seem, the consistent vision is of a society in which all can live in self-respect and responsibly pursue their own aspirations.

IT IS TRUE, of course, that we have witnessed racial injustice in the past. But no one can fairly question the present national commitment to full equality. Racial discrimination by state action is now proscribed by laws and court decisions which protect civil liberties perhaps more broadly than in any other country. But laws alone are not enough. Racial prejudice in the hearts of men cannot be legislated out of existence. It will pass only in time, and as human beings of all races learn in humility to respect each other — a process not furthered by undue self-accusation.

THE FREQUENT CHARGE that criminal justice is unfair and repressive is another example of exaggerated self-criticism. Whatever may be said as to the past, the present dedication to fairness in criminal trials in courts throughout America cannot be doubted. As former California Chief Justice Roger J. Traynor has said, "It is irresponsible to echo such demagogic nonsense as the proposition that one group or another in this country cannot get a fair trial. No country in the world has done more to ensure fair trials."

I believe that the time has come when thoughtful judgments as to our institutions, as to our role in history, should be tempered by the perspective of history. Let us remember that our system of government and our institutions have forged a country which in many respects has been the envy of the world.

NAVY
SPOKEN
HERE

METALLURGICAL DIV.
CREEP & STRESS RUPTURE LAB.

WORD
PROCESSING
CENTER

10
SERVICE
NUMBER

Signs
around
Center

Warminster stop may open in Summer



NEW STATION — SEPTA hopes late Summer of 1973. This is the first published sketch of the station.

Trains should be running to the new Warminster Railroad Station by late Summer of 1973.

That's the estimate of SEPTA Project Engineer Vince Costello, who is overseeing the work. Constructed of traditional brick, the new station will be 75 feet long and 15 feet wide. It will contain a waiting room, ticket office, and quarters for Reading Company train crews.

THE NEW STATION, according to Costello, will contain parking space for 350 cars, with room for more later. It is to be situated about 1250 feet south of Street Road along the railroad's right of way. It will be on the southeastern side of the tracks.

"We expect to divert a lot of traffic from the Hatboro station," Costello said, "and relieve some of the strain there. Eventually we hope to provide parking space for as many as 1000 cars."

A SEPTA study made several years ago indicated that as many as 400 Warminster residents were utilizing the Hatboro station each day. About 450 daily passengers are expected to use the Warminster stop in 1973.

THE COST OF constructing the new station, and extending and electrifying the 1.8 miles of track from Hatboro, is \$1.8 million.

"The new welded track will be excellent for passenger service," Costello told the Reflector. "Welded rail provides a considerably smoother ride than the jointed rail presently on the line."

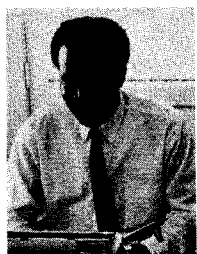
Work on the Warminster extension began in June, 1972. "It's been in the planning stage for about five years," Costello said.

Completion of the work is planned for late Summer of 1973.

Words worth repeating

"In the last resort nothing is ridiculous except the fear of being so."

—Henri Fauconnier



The career counselor says:

The Navy takes care of its own

By Chief Antoine

Of all the many Navy traditions, the greatest and most important has always been the tradition of taking care of its own people-including their families.

Education, medical care and chaplains have been a part of the Navy since its beginning. The American Red Cross has served the military for many years in more ways than can be counted. The Navy Relief Society was established, during World War II, solely to assist Navy and Marine Corps personnel and their dependents.

All sorts of recreation facilities are available to Navy families. Legal assistance is available which provides trained attorneys who are naval officers themselves to help Navy men and their dependents with legal problems. Navy wives clubs and associations provide important assistance to Navy families in time of need. Housing Referral Offices help you find off-base housing and protect you from unfair landlords.

In July of 1970 the Navy's people-tradition got a real boost when Admiral Elmo R. Zumwalt Jr. became the Chief of Naval Operations. Since that time the Navy has become an enormously better organization for everyone-officers, enlisted men and dependents.

Beginning with the basic theory that people are the most important of all the elements which make up the Navy, he instituted his now famous Z-Grams. These made policy changes familiar to everyone, from more realistic hair regulations, to improved conditions within individual ratings, to dependents' conveniences, to women at sea. Most importantly many of them are aimed at the "Mickey Mouse" regulations, and have eliminated those small annoyances; small annoyances which, added together, can make big morale problems.

The Navy, like any element of our modern society, has its share of people with drug or alcohol problems. They provide referral to professional help, 24-hour crisis counseling, information programs, dependents' drug education programs and aid to those returning from rehabilitation centers.

Fifteen alcoholic rehabilitation centers are planned at Navy hospitals around the world. (The first is now operating in Philadelphia). The program combines intensive psychiatric care with counseling by former alcoholics.

The Navy 1971 Charter on Race Relations and Equal Opportunities put a program of equality-for-all in writing. It establishes five basic goals to achieve an effective naval organization and true, equitable treatment for all members of the Navy community:

1. Attract to the Navy people with ability, dedication and capacity for growth...regardless of race, religion, creed, economic background or national origin.
2. Provide real opportunity for all personnel of the Department of the Navy to rise to the highest level of responsibility that their talent and diligence will take them.
3. Make service in the Department of the Navy a model of equal opportunity for all... Eliminate all vestiges of racial discrimination so that all members of naval service can be proud to serve to their fullest.
4. Help each serviceman at the end of his service in his adjustment to civilian life.
5. Participate in the progressive improvement of social-cultural interaction in our society by using our human, economic, physical resources.

The biggest "People Program" results have come in the areas of drug abuse, alcoholic assistance, personal liaison and minority affairs.

Action being taken by the Navy to provide equal treatment and equal opportunity for minority groups includes:

- * Recruiting programs to attract more minorities.
- * Special Assistants for Minority Affairs at all commands.
- * Project BOOST to prepare minority candidates for competition with others for selection for specific officer programs.
- * More black midshipmen at the Naval Academy.
- * Opening up of ratings other than Stewards Mate to Filipinos.

- * Elimination of cultural and geographic bias from qualifying tests for selection for training programs and ratings.

- * Requiring officer fitness reports to include comment on equal opportunity aspects of leadership displayed by the officer being evaluated.

Also:

- * Grooming aids designed for minority groups will be stocked by ship's stores and Navy Exchanges.
- * Cosmetics suitable for minority groups will be available in Navy Exchanges.
- * Navy Exchange barber shops and beauty shops will have products, equipment and instructions for styling black patrons hair.
- * Qualified black barbers and beauticians will be hired by exchange shops.
- * Major commissaries will stock food and produce frequently requested by minority groups.
- * Books, magazines and records for minority groups

will be available at Navy libraries, wardrooms, lounges and clubs.

- * Special Services will handle discount tickets for special minority events.

- * Courses in black studies will be made available.

In the past couple of years the Navy's tradition of taking care of its own has grown tremendously. The new "People Programs" have truly made the Navy better for everyone. THE NAVY. It's more than ships at sea. . .IT'S PEOPLE

80,000 retired in June

The recent 4.8 percent cost-of-living annuity increase, which became effective July 1, triggered the greatest number of retirements in the 52-year history of the Civil Service Retirement System, the U.S. Civil Service Commission has announced.

Normally, about 5,000 Federal employees retire each month. However, during May, June, July, and August, the Commission received 80,000 claims—about 60,000 above normal.



PARTY TIME — Some of the 117 children from the Christ and Bethanna Homes who attended the W & R Christmas party on December 9 play with their gifts.

REFLECTOR

Volume 18, Number 1

Naval Air Development Center, Warminster, Pa.

July, 1973

NADC prepares for NSSNF

NADC's technological base is expanding—again.

In a move familiar to many NADC employees who have been transferred here from other laboratories, the Secretary of Defense has ordered the disestablishment of the Naval Strategic Systems Navigation Facility (NSSNF), Brooklyn.

NSSNF's personnel and functions will be transferred to NADC. Its mission is to develop, test and evaluate ship navigation systems and associated equipment.

Al Scarcelli, Leader of the Relocation Team, estimates that about 200 people will probably transfer down here. The bulk of the people will be relocated between January and March, 1974.

"Our biggest problem now is providing space," Scarcelli says. "Since there's not much available, we've got to build."

Plans call for improving some of the area near the old hammer shop in the back of building 1. Relocatable office structures with about 10,000 square feet of space will be placed near Parking Lot 3.

Reaction to the closing announcement in Brooklyn was mixed. "I was really very much surprised," one man said. "It's upsetting," another said. "New Yorkers are really small-townish, and want to live and die here."

A young engineer reacted differently. "We've got good jobs and good pay, and we'll have security down there. Also, we'll be part of a large organization. Being part of a 2200-man work force offers stability we've never had before."

As Scarcelli sees it, the major problem for the NSSNF people will be personal in nature, such as moving and buying new homes. "But, we're

trying to take steps to ease some of those problems."

The relocation team has prepared a brochure detailing NADC's organization and services. They've also distributed a Homefinders' Directory to all personnel, and ordered Philadelphia area newspapers for the Brooklyn facility.

Scarcelli says the response from Brooklyn has been enthusiastic and encouraging. "They appear to be eager, sharp people." A NSSNF employee agreed: "We think we'll be bringing NADC an area of expertise they didn't have before. We aren't going down there with an inferiority complex. We feel we can make a contribution."

In recent developments, a computer terminal has been set up at NSSNF to tie in with NADC's computer, and some data has already been transferred. Helicopter service, on a request basis, has also been started.

Street Road bus begins

SEPTA has begun an experimental cross-county bus service along Street Road from Warrington to Cornwells Heights.

BEGAN JULY 2

Begun July 2, the route passes seven shopping centers and 13 schools. It also connects with seven other bus routes and railroad stops. The six-month experiment is being funded by the Pennsylvania Department

of Transportation and by Bucks County.

"We started it because there was no cross-county service of any kind," a SEPTA spokesman says. "We're trying to eliminate the need for a second car. But if enough people don't use the service, we may have to drop it."

The 14 round-trip per day service extends from the Cornwells Heights Railroad Station

to Street and Easton Roads. Passengers can presently stop the bus anywhere along the route by waving their hands. SEPTA will establish regular stops shortly.

17-mile route

Busses run from approximately 6:00 a.m. to 7:45 p.m. The 17-mile route is divided into three zones. Bus fare is \$.35 per zone.



Communicating

Marvin Foral, Bucks County's Big Brother of the Year, tells how he tries to loosen his little brother up so the two of them can communicate.

Marvin Foral is named Big Brother of Year

by George Marcinkowski
Summer Assistant

In the last nine and one-half years, Marvin Foral has had six little brothers, none of them named Foral.

For his efforts he's been named Bucks County's Big Brother of the Year.

Foral, who's employed in AETD, defines a Big Brother as an experienced person who can advise a boy, not just someone who provides transportation to amusement parks, movies or ball games. "It's closer to a father-son relationship," he explains.

Foral tries to spend an after-

noon each week with his little brother working on a scout project, or just talking. "I get a lot of satisfaction out of it," he says.

Once he was assigned the oldest brother in a family, and also assumed responsibility for three younger brothers as well. He is a Big Brother to one boy now, but also maintains lasting relationships with all his boys. His little brothers have ranged in age from five to 16 years.

Foral also finds time to be a photographer, ham operator, gardener, father and grandfather. He and Mrs. Foral have been in charge of the Big Brothers' Annual Picnic for many years.



Last Day

The day of retirement is a time of reflection and good memories, as shown here in the faces of Vince Giancaterino (left) and Dick Scharmann. See related story, page 3.

Galley says nay to waste, keeps costs to \$2.14 per day

If you ask LTJG Steve Reisinger what the Enlisted Men's Mess will be serving for dinner on this date in 1980, he could probably tell you. Or at least take a pretty good guess.

Because NAF'S galley works on a five-week cycle menu that theoretically runs forever. It's one of the key reasons the mess can provide the sailors with three huge meals a day at an average total cost of \$2.14.

And the meals are good. So good in fact, that this year, for about the eighth time in twelve years, the galley was nominated to compete for the Ney Award as one of the Navy's best feeders.

cycle menu

The cycle menu works like this: The cooks prepare a menu for five weeks, and then repeat it. They collect data on each day's operation, including the number of people attending, number of portions served, and the weather. The cooks then use this data to plan meals on the same weekday five weeks later. That way they can get a pretty good idea how many meals to prepare, how much it will cost, and how much food they should carry in the state-rooms.

"Monday we had swiss steak for dinner," Reisinger, the mess officer, says, "and we served 109 people. Today with salisbury steak maybe 50 will show up. We know this and prepare accordingly."

A typical menu, offered on June 29, included: oyster stew, cheese and hamburgers, grill-

ed frankfurters, deviled clams, deep fried fish portions, baked macaroni and cheese, seasoned mixed vegetables, tossed vegetable salad, lemon meringue pie and hot dinner rolls.

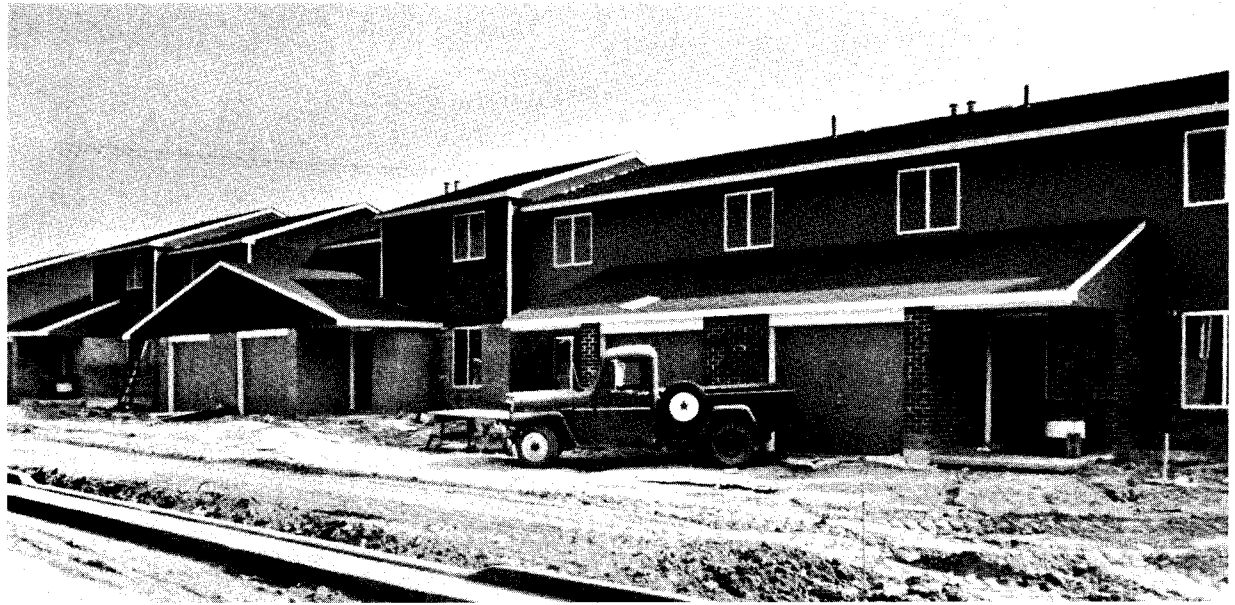
The enlisted men are permitted to eat as much as they want, but only one portion at a time. "We do it that way to cut down on waste," Reisinger says. "We had one tall skinny kid the other day who had a regular meal, then came back three times for hamburgers and milk. We don't mind that. What we hate to see is a man load up and then leave half his meal uneaten."

Reisinger admits that it takes a lot of work to keep within the galley's tight budget. "You have to know what you're doing," he says, "and you need a good cost control system".

progressive cooking

Besides the cycle menu, which also aids in the ordering of food, the galley personnel use progressive cooking to keep costs down. "With our facilities, we can cook up a small batch of vegetables in two minutes. We are not obligated to cook large batches in advance. That way they're coming out hot, and you're cutting down. We also try to grill some of the food right on the line".

The Ney Awards Committee inspects the galley's cooking facilities. The examiners also assign points on food preparation, the controlled amount of waste, sanitary conditions, record keeping, and even the noise level in the mess.



Only one vehicle appears in this view of the Navy housing rising near the NADC Picnic Grove. But more will be there soon. The housing is scheduled for occupancy beginning in September.

Completion date is December

Work progresses on Navy Housing

by Julie Sullivan
Summer Assistant

A new town is rising in Warminster near the NADC Picnic Grove.

Work that began on the \$4,639,000 enlisted men's housing project in August, 1972, is rapidly progressing and the current completion date for the project is December, 1973. However, according to Al Shea, Construction Representative for the Naval Facilities Engineering Command, the units will be completed and turned over for occupancy in increments beginning in September.

The Housing Referral Office, under Public Works Officer Commander Edmund Hughes,

has been processing applications for the project for five months.

The enlisted family men's major problem, says Helen Bergstrom of the Housing Referral Office, is knowing when to break their leases. The first units were originally scheduled for completion in June, 1973. But the unusually wet fall, winter and spring weather caused a three-month delay in construction schedules. So far, no definite date has been set for families to plan their moves.

According to Miss Bergstrom, 213 families were on the two, three and four-bedroom housing waiting lists as of July 1.

Some of the applicants with two-bedroom requirements may choose leased apartments instead of the new townhouses. NADC's Housing Office has been leasing 83 two-bedroom apartments for the last two years, and some families requesting two bedroom units will be placed in them.

"It depends on what is available when their name comes up on the two-bedroom list," Miss Bergstrom says.

popular units

The complex is divided into 150 three-bedroom and 50 four-bedroom units. Three-bedroom units seem to be the most popular, with 75 applications listed by July 1.

Gets DSA award

Taylor cited by area Jaycees

Bob Taylor doesn't find time to help in community activities. He makes it.

So much so that he's been awarded the Distinguished Service Award by the Doylestown Area Jaycees.

Taylor is an Associate Member of the Jaycees, and a former Senator of the organization. At one time or another he's also been President of the Central Bucks Family YMCA, President of the Doylestown Athletic Association, Chairman of the Congregation of the Grace Lutheran Church, and a member of the Doylestown Youth Recreation Council. He's also a Commander in the Naval Reserve.

Asked how he finds time for all these activities, he says, "With difficulty. It's a tight balance, and my schedule is very tight. You have to be somewhat of a juggler at times. But one thing about being busy—you learn to use your time more effectively, and that's the key."

Taylor says he enjoys what he does and feels it's important. He also admits his wife wishes he'd spend more time at home

with her and their two children. "But she's appreciative of what I'm doing," he says. "She's also involved in my activities, and helps me out."

Taylor chooses his activities selectively, and delegates responsibility generously. "The Doylestown Athletic Association is a lot of work that's traditionally handled by two or three people," he says. "This year I recruited about 30 or 40 people and practically everyone has lived up to his responsibilities. It makes it look like I'm doing more than I am."

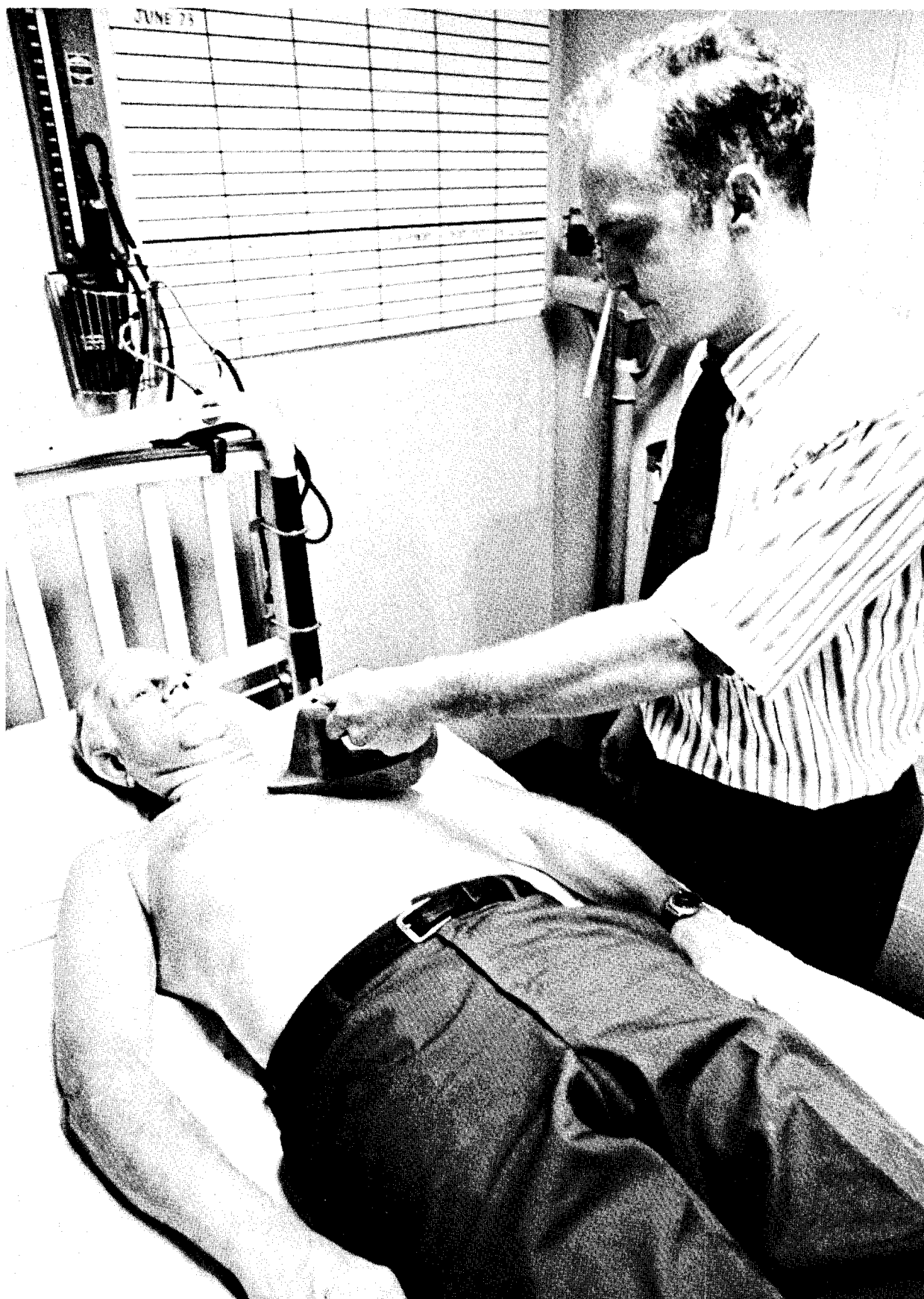
major project

His major project right now is the Doylestown Family YMCA. "I'm committed to that for a few years until we get our new building up."

Taylor, who was recently nominated by the Doylestown Jaycees for the Outstanding Young Man of America Award, is a native of Doylestown. An Aerospace Engineer by trade, he's been employed here since 1965. He's head of the Plans and Programs Division, AVTD.



NADC's Bob Taylor tells why he's involved in so many community activities. Taylor has received the Doylestown Jaycees' Distinguished Service Award.



Disaster device

George Bergey tests out the new portable EKG device developed in the Crew Systems Department upon his assistant, William Miller.

Portable EKG may be lifesaver

by Frank Warvolis

What do you get when you cross a portable grass trimmer with ingenuity and transistor circuitry? A portable electrocardiograph (EKG). This answer may not win \$5 in the Bulletin's "Double Crossers" game, but it may help save lives in a disaster or enemy attack.

George Bergey, an Electronics Engineer in the Electro-Physiology Laboratory, Crew Systems Department, has developed a rugged, lightweight instrument that can be used on the battlefield to detect a heartbeat on wounded soldiers.

The portable EKG is better than a stethoscope for this, since a weak pulse may not be heard during a mortar attack.

The portable EKG works on the principle that as the heart

muscle contracts, it produces an electrical impulse that is transmitted to the skin's surface. When the electrodes are pressed on the chest, the circuit detects the impulses and the heart beat shows up on an indicator light located on the handle of the trimmer.

Ten prototypes have been built and will be sent to Red Cross, local rescue squads and the police for evaluation. Bergey, who was assisted by William Miller, feels further development could produce a digital display that gives the pulse rate in beats per minute. The portable EKG could then be used by hospital "candy-stripers," freeing nurses for other duties.

Bergey's first step in developing the unit was to locate the optimum points on the

body for detection of heartbeats. "The ideal spot is across the heart," he says, "but the electrodes can be put essentially anywhere on the chest or back."

Bergey wanted something that was flat on the bottom, and could hold a five volt power source, a two inch square solid state circuit board, and a small light-emitting diode. A \$15 battery-powered grass trimmer was just what the doctor ordered.

Bergey removed the blades and motor and inserted a transistor module with quarter-sized electrodes.

The unit weighs one and one-half lbs., and costs about \$75 to build.

Bergey's only problem now, he says, is: "What do I do with ten sets of shears and motors?"

113 employees retire during month of June

A former Technical Director and three civilian department directors were among the 113 persons who took advantage of the 6.1% cost-of-living increase and retired on June 30.

Retiring along with Harry Krutter, Bill Raber, Marius Madigan and George Duval were:

George Bender, Walter Gustafson, Leo Rogin, John Davis, Flanagan Gray, Blanchard Hutchins, Henry Moore, George Polhemus, Lawrence Ritter, Charles Hendrickson, Howard Jopson, Meredith Munns Jr., John Power, James Rounding, Jr., Frances Sauter.

Also, Charles Sears, Ben Stamat, Floyd Cavileer, Gerald Donato, Louis Elliott, Clayton Erkert, Stephan Paris, William Trump, Robert Williams, Martha Brooks, Gertrude Huhn, Edmond Niemezura, Katherine Cuadra, Marjorie Newman, Joseph Ciminera.

And, Frederick Kraus, George Weilbacher, Leonard Gordon, John Yuhus, John Tischler, Charles Stiles, Richard Scharmann, Arthur Stander, L. Eugene Chipman, Einar Johnson, Werner Gleiter, Gregory Holmes, William Canning, Lynn Cobb, Nicholas D'Apuzzo.

Also, Robert Kelly, John Pobst, William Shepard, Wil-

liam Brenner, Nabor Cuadra, Arthur Cohen, Arthur Korch, Milton Mark, Richard Merkle, Finley Wilson, Carl Baddorf, James Bonfiglio, Joseph Curry, Joseph Harcharek, E. Ross King, John Lesniewski.

And Edward McDemus, Lambert Munroe, Karl Schaeffer, William Sipple, John Di-Geambeardino, Vincent Giancaterino, George Franchois, Mathilde Higgins, John Seredinski, Irene Umbstead, Eli Pergam, Francis Brick, Isabella Cody, Frances Wismer.

more retirees

Also, Helen DeCoursey, Margaret Kihm, Donald Sellers, Crispin Althouse, Howard Bauer, Leslie Beaupre, Maurice Brecht, Clarence Dorsey, Sherman Fariss, Joseph Gerstner, Oswald Holland, Helen Martell, Thomas Hoopes, M. Roland Knott, Milton Lanchak.

And, Rudolph Leckey, Roman Melnyk, John Nishparenko, Abe Shapiro, Edwin Walter, Willie Warren, Andrew Habermacher, Carlton Nelson, David Orr, Booker T. Johnson, James Mohler, Claude Nissley, Walter Clemmenson, Edward Dougherty, Ernest Bracht, Frank Catroppa, James Dempsey, Edward Feldman and James Ralph.

Teeth never heal

Dentists stress preventive measures

Most of the tissues of the body can restore themselves or fill in gaps caused by injury, but tooth tissues cannot. A damaged tooth can never heal itself.

That's why dentists place so much stress on preventing dental disease — stopping it before it starts.

Dental decay — the eating away of the hard tissues of the teeth by acids in the mouth — occurs most frequently among children and teenagers — and can largely be prevented.

WHAT ARE CAUSES?

What causes tooth decay?

Dental scientists believe that cavities are caused by chemical changes which take place in our mouths as a result of bacteria acting on the food we eat. These scientists explain that our mouths contain billions of organisms so small that they can only be seen by a microscope. Most of these microorganisms, as they are called, are bacteria. As many as 5-1/2 billion microorganisms may exist in a few drops of saliva. Others cover our tongues. Still others coat the oral cavity.

Our teeth, too, are covered by a thin film of bacteria.

Many of these bacteria are apparently not harmful, but some produce various acids that can dissolve some of the tooth enamel.

At the same time, the breaking-down process releases lactic acid and other acids strong enough to attack some tooth enamel. A harmful amount of acid can develop within five minutes. Fortunately for our teeth, saliva neutralizes acid.

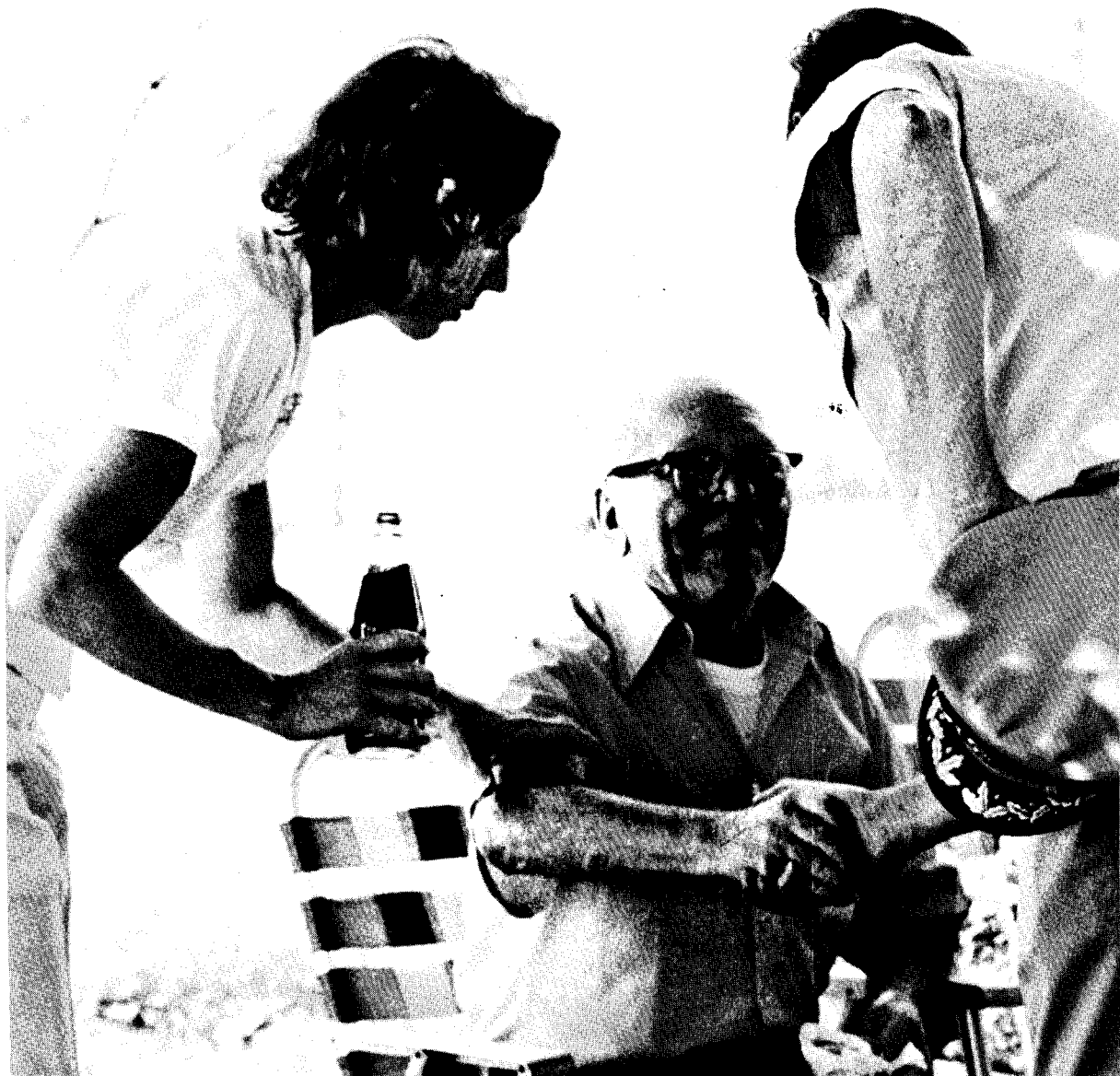
But if the acid is produced in a tooth crevice or pit where it may be protected from saliva, enough can accumulate to dissolve some tooth structure.

Once a hole has been made in the enamel, the acids attack and destroy the softer dentin underneath, and then attack the tooth nerve. Rampant decay, if neglected, means loss of your teeth.

How can decay be prevented?

The American Dental Association recommends a four point program:

1. Brush your teeth after each meal
2. A proper diet that's low in sweets
3. Fluoridation of drinking water
4. Regular visits to your family dentist.



Senior Citizen

Captain and Mrs. McCaulley greet a resident of St. Joseph's Manor at Quarters "B." The Navy Wives Club, which visits the home for the elderly in Meadowbrook each month, brought the residents to NADC in July.

"Upward Mobility" explained

by Sarah Ketcham
Federal Women's Coordinator

The goal of the Navy Upward Mobility Program is to increase opportunities for advancement, training and education of employees in lower level jobs. The program is particularly aimed at those in graded or ungraded dead-end positions who have the native ability, potential and motivation to perform at a higher level if given the proper training.

The concept is not new. NADC has been providing upward mobility opportunities for years, but on a piecemeal basis. The program is now being formalized and will be a continuing, on-going program.

The departments at the Center have analyzed their personnel needs for the next several years in the light of workload, vacancies that are anticipated from retirement or resignation, and skills required to fulfill their missions. The result is a list of possible upward mobility positions.

Some positions will be advertised in the near future. Announcements will state "This is an Upward Mobility Position". To qualify for one of these positions, prior experience in the field is not required.

The key factors in the selection of candidates for upward mobility positions is potential, (demonstrated by personal development, work performance and initiative), motivation and willingness to take the training necessary to climb a career ladder.

Career counseling will be available for all those who are interested in the upward mobility positions, but who need to gain an insight into what each job entails with regard to aptitude, skills and training.

Positions will be filled competitively as required by the merit promotion plan.

Anyone interested in more details of the program should contact the Upward Mobility Program Coordinator on Extension 2515.

Admiral Kidd receives EEO Award

Admiral Isaac C. Kidd, Jr., Chief of Naval Material, has received the first annual Naval Material Command Award for Outstanding Achievement in Equal Employment Opportunity (EEO).

Nathaniel Stinson, Chairman of the NMC EEO Board, presented the award to Admiral Kidd, who was the Board's

unanimous choice for the award.

One of Admiral Kidd's most significant EEO decisions last year was to direct all CNM activities with more than 500 civilians to hire a full-time EEO Coordinator with at least one full-time clerical assistant.

Gil Ridley's appointment to that post at NADC was detailed in April's *Reflector*.

Around the Center

NADC has received the 1972 Secretary of the Navy Award for Safety Ashore. The Award Trophy and Citation is presented annually to the department, bureau or command with the most outstanding safety record and program.

NADC recorded no lost-time accidents in 1972, although 72 persons did require occupational first-aid treatment at the Dispensary. Two vehicular accidents were also chargeable, with both vehicles receiving less than \$200 damage. The Fire Department responded to 45 fires with no reported damage.

Acting Safety Officer Bob Boylan attributes NADC's safety record to lab and shop personnel who accept responsibility for themselves and others.

Dave Orr, who recently retired, was also Safety Director when NADC received the Award in 1969.

In Memoriam

Walter Mikolajczyk, SAED

The Commander salutes:

... Seven NADC personnel who have been commended by Rear Admiral N.O. Wittman for their efforts in the successful at-sea tests of the CAINS program aboard the USS Independence.

They are: Ronald Vaughn, Abe Berman, Edward Dinter, Morris Snyder, Louis De Dominicis, Kenton Bachman, Robert Tafel, Jr.,

... CDR Lucius Day and Don Spangenberg who have been commended by the Chief of Naval Material for helping support the Bureau of Customs in the President's Narcotics and Dangerous Drug Control Program.

... Joseph Mignogna who's been cited by the Commander of the Naval Air Systems Command for his work in the F-4/AWG-10/AIM-7 Weapon Sys-

Tech Review is well-kept secret

One of the best-kept secrets at NADC is the **Technical Review**.

Started about 18 months ago, the **Review** is a monthly newsletter that summarizes NADC's major technical accomplishments. It also lists distinguished visitors, technical reports, and newly-issued patents.

Printed on yellow paper, it's referred to variously as the yellow sheet, tip sheet, and technical report. "It's actually a memorandum from the Technical Director to the Commander, NADC, listing our accomplishments," says Editor Bill Valenteen.

The primary purpose of the **Review** is to let people in the departments know what's going on outside their own walls. Valenteen says he tries to take hard technical information

tem. "Mr. Mignogna has demonstrated a high degree of professionalism which is a credit to himself as well as the United States Navy," the letter said.

... Harry Ubele and Steven Campana who have been commended by the Commander of the Naval Electronics Systems Command for their participation in the tri-service review team on Charge-Coupled Devices.

... Mort Metersky who's received a Letter of Appreciation from the Chairman of the Research and Development Planning Team 21, Airborne ASW, for his work in improving operational requirements and his use of modified Delphi techniques.

... Chief Stead, who's received a Letter of Appreciation from the Commandant, Fourth Naval District, for his prompt assistance in providing aerial photos of the Philadelphia Naval complex.

... CDR Richard Thompson, Roger Curran and Charles Curtis for their AWG-9 presentation to the Chief of Naval Operations Executive Board.

... Gerald Miller, Dale Malot, Charles Vogel, Carl Plantarich, Joseph Ludsick, Joseph Gerardi, Joseph Zito, Phillip Porter, Thomas Havar, Frank Whiteman, and the personnel of the Engineering Support Division who have been commended by the Director of the Naval Research Laboratory for modifying two helicopters for NRL's use in a timely and outstanding manner.

... Edward Wright, who's been commended for his quick response and technical assistance to the Liquid Oxygen Analysis Facility at the Naval Air Station, Rota, Spain.

... LCDR Arthur Kislack, Edward Koos and William Hicklin who have received a Letter of Appreciation for their part in the successful completion of radar tests at Molokai.

and make it more palatable to various groups, such as budget people, administrators, and the like.

Much of the accepted material for the **Review** is directed to Valenteen by Project Engineers and managers. "Though I have to nose around and dig for a good bit of it," he says.

To be included in the **Review**, an item must be significant, relevant and timely. "The work must have reached some milestone to be newsworthy," Valenteen emphasizes. "Something vital must have happened."

Since many Center projects are classified, the **Review** is normally classified Confidential. Two-hundred to three-hundred copies are distributed to the departments and professional employees are expected to read it each month.

Naval Air
Development Center
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All correspondence should be addressed to: Editor, Reflector, Naval Air Development Center, Warminster, Pa. 18974 (OSborne 2-9000, Ext. 2980).

CAPT. H.B. McCaulley
Commander NADC
Aris Pasles—Public Affairs Officer
Jim Murphy—Editor

REFLECTOR

BEEN REFLECTOR



Summer aid working on grass. See Page 2

Public Works' Harry Lewis shows summer aide Dave Holderer the correct way to trim grass.

Summer aid program draws mixed reactions

"I don't have time to be a babysitter."

— Disgruntled supervisor

"This is the best bunch of kids we've had."

— Harry Lewis

"Since we treat them like kids that is how they are bound to act."

— Rebecca Gray

by Julie Sullivan
Summer Assistant

Which is the typical summer aide? Is it the youth delivering mail who stopped to help pick up 16 coffee cups as they flew all over the main hangar? Or is it the one sprawled on the desk catching up on last night's sleep?

Actually there is no "typical" summer aide. But the attitudes and performances of the aides depend on three basic things: Do they like their jobs? Are they able to do the work? Have they developed good working relationships with their supervisor?

30 INTERVIEWS

Supervisors, aides, and counselors, in more than 30 interviews with the **Reflector**, talked about their part in the NADC summer employment program.

The 78 aides work in many areas, including Public Works, Reproduction, the Mail Room, Security, Supply, Administration and Public Affairs.

Harry Lewis, who has worked with aides for seven summers, says: "This is the best bunch of kids we've had."

Larry Grebe, a teacher from Bristol working with the Public Works crew, says: "Attendance on the job is definitely more regular than at school. Unfortunately, some people on-Center have a misconception about the kids. They think the kids come from jail or something."

The big question is, "What gives some people a bad impression of the summer aides"? According to Gil Ridley, EEO Coordinator, most complaints from supervisors focus on work adjustment problems, lateness, and lack of initiative.

Since some supervisors received aides who had difficulty doing the required work, finding a good match between the aide and the job seems most important to the program's success.

Bob Taylor, AVTD, suggests: "If we (supervisors) want a summer hire, we should state specifically what

we want them to do. Then we won't get somebody that doesn't fit. We can't expect the same level of competence. We have to learn to understand the circumstances."

The most common complaint of the aides is "not enough meaningful work," according to Gil Ridley.

Ted Boerckel, another PW supervisor, would like to let the aides work with some of the heavier equipment. "With close supervision," he says, "they could learn the fundamentals and gain experience for a future job." (Most of the aides are 16 and 17. State Law requires users of heavy equipment to be 18.)

EARNED RESPECT

Apparently Ted, a former marine, has earned the respect of the PW summer crew. Mike Ellzy, a junior from Bristol, says: "Ted is different from other supervisors. He works right along with you and makes you feel important. Self respect and straight feedback seem to be crucial to the aides' reaction to NADC."

Getting along with the boss plays a big part in their experience. One aide says nervously that this is the first time she's ever been in trouble on a job. Because of difficulty with her supervisor, she's been to see the counselors several times.

Counselors Bob Rhodes and Ralph Wagner, assisted by Bill Rissinger, attempt to deal with on-the-job problems as they arise. Changing the aides' jobs is difficult, Rhodes says, because of resulting paperwork. Despite this, Clarence Taylor was successfully moved in the middle of the summer from Supply to AVTD.

Interest in the job is most important to the aide's performance, says one supervisor. But, in some departments, the aides do boring work. Rebecca Gray blames reported alienation of aides from other workers on interruptions caused by Toastmasters and the Bucks County Community College program. "Since we treat them like kids, that is how they are bound to act," she says.

But the aides, who seem to like working at NADC, agree

that the college program was the highlight of their experience. Divided into three groups, the aides may choose to attend one of the three two-week sessions at the college.

They leave NADC at noon and attend a speed reading class, group therapy session, and gym. Vince Henderson, an aide from Bristol, says he increased his reading speed from 175 to 245 words per minute in the course.

BETTER THAN SCHOOL

About one-third of the aides attended the public speaking course taught by Mary Swanchak, a member of Toastmasters International. They say they like it because they are allowed to say what they think and talk about personal issues. "This makes it better than school," they report. At the beginning of the program many aides were afraid to speak in front of the group and stayed away.

The summer employment program naturally creates some conflict, because it brings together supervisors

(Please turn to page 6)



Green thumb

Technical Information Division's Ed Murray, who has a Ph.D. in horticulture, shows off the garden he's cultivating near Reproduction. Shortly after photo was taken, someone dug up half the garden.

EEO:

Affirmative Action Plan approved

NADC's Revised Affirmative Action Plan has been approved by the Regional Office of the Civil Service Commission.

"This is good news," says EEO Coordinator Gil Ridley. "It makes us one of the first navy activities to be in this position."

NADC's plan, a three-quarter inch thick document, identifies problem areas, action items, responsible officials and completion dates. The plan will be revised again for calendar year 1974.

Getting an Affirmative Action Plan approved is difficult, Ridley says. "The problem is that it has to conform with the Navy National Plan, and almost equally with regulations the Commission gives us. The language must be clear and specific, because the Commission has to be able to monitor it."

Captain McCaulley's EEO statement:

In March 1972 Congress passed the Equal Employment Act of 1972 (Public Law 92-261) requiring that Federal agencies utilize whatever resources or action required to make EEO a reality within the merit system.

The Navy goal is to diminish past injustices and to assure affirmative action takes place on a day-to-day basis necessary to achieve parity at all levels and all occupations for minority groups and women within the Navy work force.

As Commander of NAVAIRDEVCON and EEO Officer for the Center, I accept the challenge to carry out the EEO responsibilities of our mission in the same tradition

"Most people are dealing with symptoms, not problems," he says, "so they deal in generalities. You're held to this document when you write it. The Commission won't accept grandiose plans that can't be achieved. I even have to write a deviation report for Captain McCaulley if we don't keep to our schedules."

An Ad Hoc Committee of EEO members, chaired by CPD's John Ayer, drew up the first Affirmative Action Plan after six months of work. Ridley wrote the revised plan.

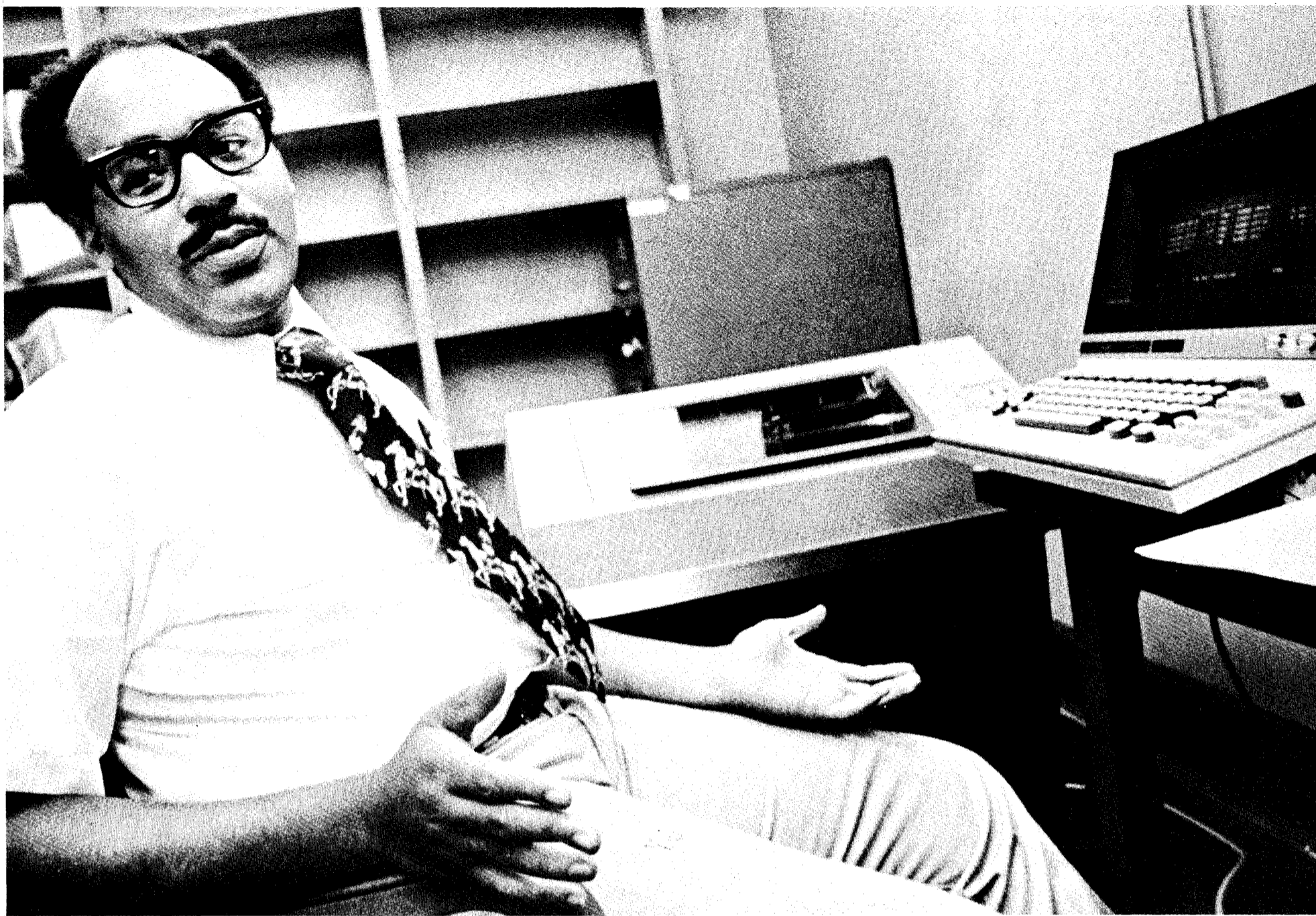
NADC's document is called a Regional Plan. All activities employing more than 2000 employees fall into the regional category.

of excellence practiced in our total mission, the defense of our country.

A regional Affirmative Action Plan for calendar year 1973 is now in effect. All employees of the Center are expected to do their share to complete the actions and meet the established dates for completion.

The Naval Air Development Center is committed to meeting the requirements of Public Law 92-261 in spirit as well as the letter of the law.

Captain H.B. McCaulley
Commander, NADC



Timesaver Technical Information Division's Jim Greene says its new computer terminal will greatly reduce research time.

New "monster" terminal links NADC TO DDC

"The future is now" at NADC's Technical Information Center.

A new computer terminal with direct access to the Defense Documentation Center, Alexandria, Va., now literally puts technical information at the fingertips of NADC scientists.

Mathematician Jim Greene, who helped automate NADC's system, says the new terminal, when used correctly, will cut months of research time down to minutes. "It's a monster," he says. "It really is. It's fantastic."

15 SITES

The terminal is one of 15 remote sites with access to the DDC's data banks. The data includes information on past, present, and future R&D efforts, thus earning the system the name "the time machine."

In a test run August 3, Greene queried the computer for information on "Cables." Within seconds the terminal displayed 14 "hits" from three different data bases. Had he wanted to continue his search, Greene could have selectively narrowed his topic.

Users of the system control their own search, and can modify, extend, revise or redirect it as they see fit.

Besides giving the amount and location of available information, the terminal can also display abstracts of articles and reports. Scientists desiring more information can then view the complete article or report on a micro film sheet or "microfiche." NADC automatically receives "fish" reports from the DDC twice each month.

SOME DISLIKE IT

Greene admits that some engineers dislike using microfiche, because they can't write in the margins, and they can't carry it on trains. "But we have enough microfiche to fill this room," he says, "let alone hardbound books." Information begets information, so sometimes we have to be autocratic."

New microfiche print machines now on order should eliminate some of the problems.

Anyone with a secret clearance will be permitted to use the terminal. A secret reading room will be set up in the Technical Information Division.

"The terminal should help NADC's people to keep up with the state of the art," Greene says. A new printer will also print out selected information in one-tenth of a second, compared to one to

two minutes for the older machines.

DDC's three data banks are: a Technical Report Data Bank, the R&T Work Unit Information System and the R&D Program Planning Data Bank.

Managers will be able to submit management and planning inquiries and receive summaries of funding, manpower and milestones within minutes.

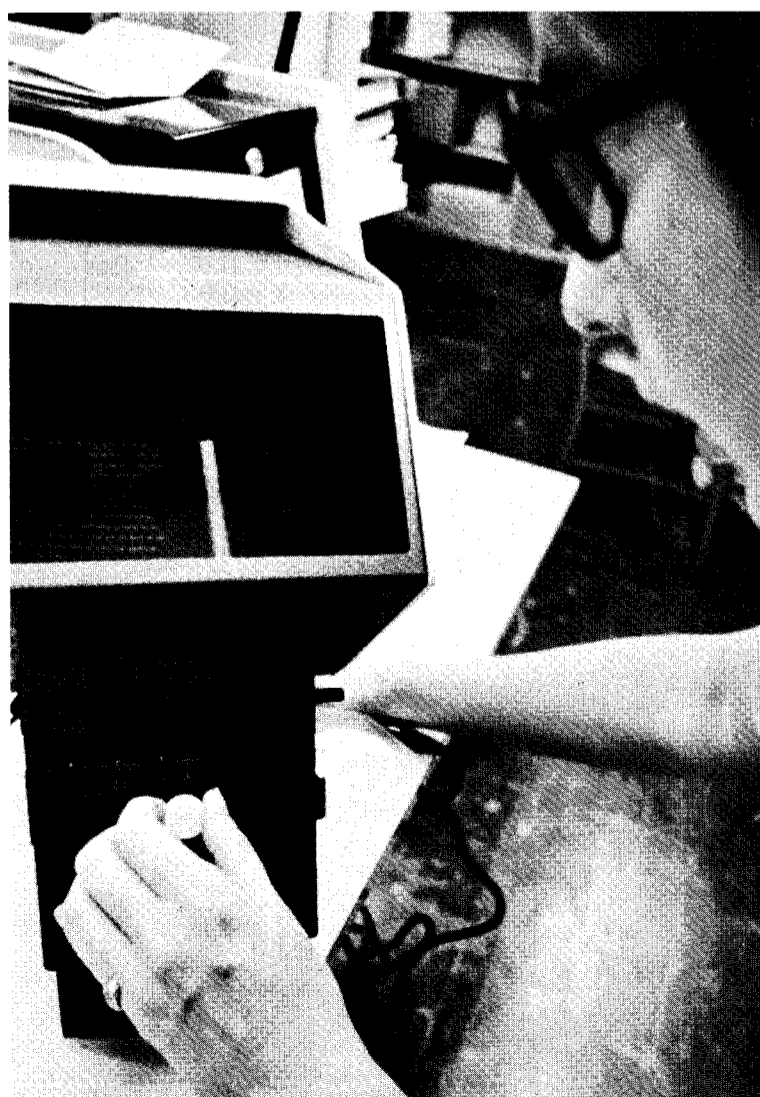
The data bank can locate or identify specific reports by subject, author, corporate source, contract or project number.

"You can even use the system to prepare yourself before going into a meeting," Greene says.

TWO-MINUTE WAIT

The longest wait for information should be two minutes. The terminal will be on-line from 7:30 a.m. to 4:00 p.m. Use from 4:00 p.m. to 7:30 p.m. will be scheduled by appointment.

Greene credits DDC for its help in setting up the system. "The people at DDC are so people-oriented it's fantastic," he says. "It's a breath of fresh air. They're a real service-type organization. Nothing is too small. They want people to use their product."



"Microfiche"

Lois Guise uses new viewer to read microfiche sheet.



Gene Haley seems surrounded by electronic equipment in the Tactical Support Center. It's NADC's newest major program.

ASW crews get "instant replay"

by Frank J. Warvolis

NADC engineers in the Center's newest program have taken a page from Monday Night Football's playbook. They're using "instant replay" to let anti-submarine warfare (ASW) crews evaluate their performances against real and simulated targets.

The "instant replay" device is part of the Tactical Support Center (CV-TSC) located near Reproduction. The center's mission is to develop, improve and eventually install aboard ship systems that support and control ASW aircraft.

CONCEIVED IN 1970

Conceived in the fall of 1970, the TSC is a carrier-based (CV) system designed to help aircraft pilots identify a target as a friend or foe and then decide whether or not to attack. The system includes digital processing units, displays and computers.

Installation of the present facility took place in April, 1973. Since then, TSC engineers have been adapting state-of-the-art computers for ASW use.

Specialties of the 26-man staff range from mathematics

to electronics. According to LCDR Richard Fidler, Head of the TSC Project Office, personnel from the old A-NEW project form the nucleus of his staff. A-NEW was a forerunner of the P-3C Update Project. The rest of the staff was recruited from other departments.

During shipboard operations, the TSC team will include three shifts of two officers and eight enlisted men each.

Teams for the first three carriers to be outfitted with Tactical Support Centers will train at NADC, Fidler says. They in turn will train the rest of the crews.

The TSC will be used with the S-3A Viking, the Navy's newest ASW aircraft. Gene Haley, Head of the Lab Display Section, describes a typical mission:

FOUR-MAN CREW

A four-man crew will fly to an area where enemy subs are suspected. The crew will launch two types of acoustic sensors (sonobuoys), one to confirm the actual presence of a sub, the other to plot its speed, direction, depth and even type.

An identifying mark or "fingerprint" of the sub will then be displayed on the pilot's

monitor, allowing him to determine if it is a friend or foe. The pilot, not the computer, then decides whether or not to attack.

When the flight is completed, the returning and succeeding crews will view a video tape "instant replay" of the entire mission and evaluate the crew's performance.

Attacks are presently simulated, Fidler says, so mistakes cause only embarrassment, not fatalities.

SPACE REDUCTION

Mike Saitta, Project Engineer, expects a mock-up of the system to be installed at NADC in late August. The present 7500 square feet of floor space will be reduced to 1000 square feet, the space available on the U.S.S. KENNEDY. It will be the first carrier to be outfitted with TSC.

"The mock-up will be as realistic as possible, with constraints such as overhead heating pipes and bulk placements," says Saitta.

LCDR Fidler forsee the project continuing through 1977, when twelve carriers will be outfitted with TSC.

After that NADC will periodically update the system.

Red Cross Bloodmobile will visit September 5

NADC personnel donated 126 pints of blood on Wednesday, June 27. Sixteen were rejected during the Bloodmobile visit.

The Bloodmobile will come again on September 5. It will be set up in the CPD Training Rooms from 9:30 a.m. to 2:30 p.m.

The donors on June 27 were:

ADMIN — Vanice Betterly, Joseph Bilotti, John Felix, Walter Gourley, Lois Guise, John Lorenz, Frank J. Pace, Henry Rahmer, Raymond Satterfield.

AETD — Lee Allen, Thomas Bahnck, Paul Cahill, Stanley Dunn, Joseph Ferace, Robert Finkelman, Nicholas Fitti, James Grego, Jerry Guarini, Patricia Grey, Carl Hammond, Roger Hontz, Robert Houser, Richard Lewis, Robert Melby, Gordon Marshall, Robert Senulis, John Swardstroh, John Tralies, William Trump, Akira Yoshida and Peter Van Schuyler.

AVTD — Curtis Baker, William Becker, Carolyn Bergery, Robert Brown, Edward Deeing, William Capece, Moise Devillier, Jr., Robert Fortenbaugh, Cecil Friedberg, Leona Gerstemeier, Kathy Gorman, William Hallow, Theodore Herring, Peter Kiproff, Frederick Kreuzberg, Fred Kuster, Kalmen Leikach, Leonio Markushewski, Thomas Neu, Edward Olson, Gabriel Pilla, David Pulley, Edgar Reed, Carl Reitz, Edwin Rosenzweig, Herman Rubin, Edward Schmidt, John Stewart,

Joseph Thompson, Daniel Scharf, James Vinson, Denise Wiggins, and Gordon Woods.

CPD — William Renz.

CSD — Richard Crosbie, William Daymon, James Glenn, Sr., and Edwin Sinamon.

CREDIT UNION — Beverly Weigle and Elizabeth Zaks.

P&FM — Norman Sheehan, Thomas Tarpey, Charles Urban and Dianne Zenobi.

PUBLIC WORKS — Lenwood Broomer, William Etter, Adam Krisko, Robert McFetridge, Helen Sullivan, and Clifford Tierney.

SAED — Dennie Baker, Douglas Bellis, Leonard Canter, Fred Casagrand, Mary Cummings, Roland Hall, William Hartman, Gary Fitzsimons, Mark Elfont, Paul Glassman, Clelland Green, David Jackson, James Jagodzinski, Veronica Kinder, Wilbur Knerr, Albert McGlynn, Bernard McHugh, Tom Merkel, Robert Miller, Robert Oakley, Larry Smith, Mark Smith, Robert Smith, Richard Thomas, Joseph Tither, Carl Van Wyk.

STAFF — Captain E. F. Stobie.

SUPPLY — Robert Clegg, Ann Dietrich, Margaret Gettings, Robert Giannascoli, Audrey Green, and John O'Donnell.

OTHER — Paul Colter, Margie Conlin, Vicki Kiproff, Steven Rosenthal, and Joanne Wilbak.

Around Center

Picnic draws 2000

More than 2000 NADC employees and their families attended the Welfare and Recreation (W&R) Associations' Annual Picnic on July 21 at Allentown's Dorney Park.

Rain lasting until 2:00 p.m. reduced the size of the crowd. About 2500 persons had been expected to attend.

According to Picnic Chairman Elmer Krauser, discount ride tickets sold by W&R members for the picnic were valid only for July 21.

Door prizes at the picnic included a television, cassette recorder and six radios. Respective winners were: Frank Adamonis, Al Matthews, Ed Arvonio, William Law, Richard Finn, Joseph Bessler, Robert Andrews, and William Wirtz.

The Commander salutes:

... The NADC Fire Department, which has received the 1972 National Fire Protection Association's Certi-

ficate of Merit. The department received the award for superior performance in fire prevention efforts during the previous year.

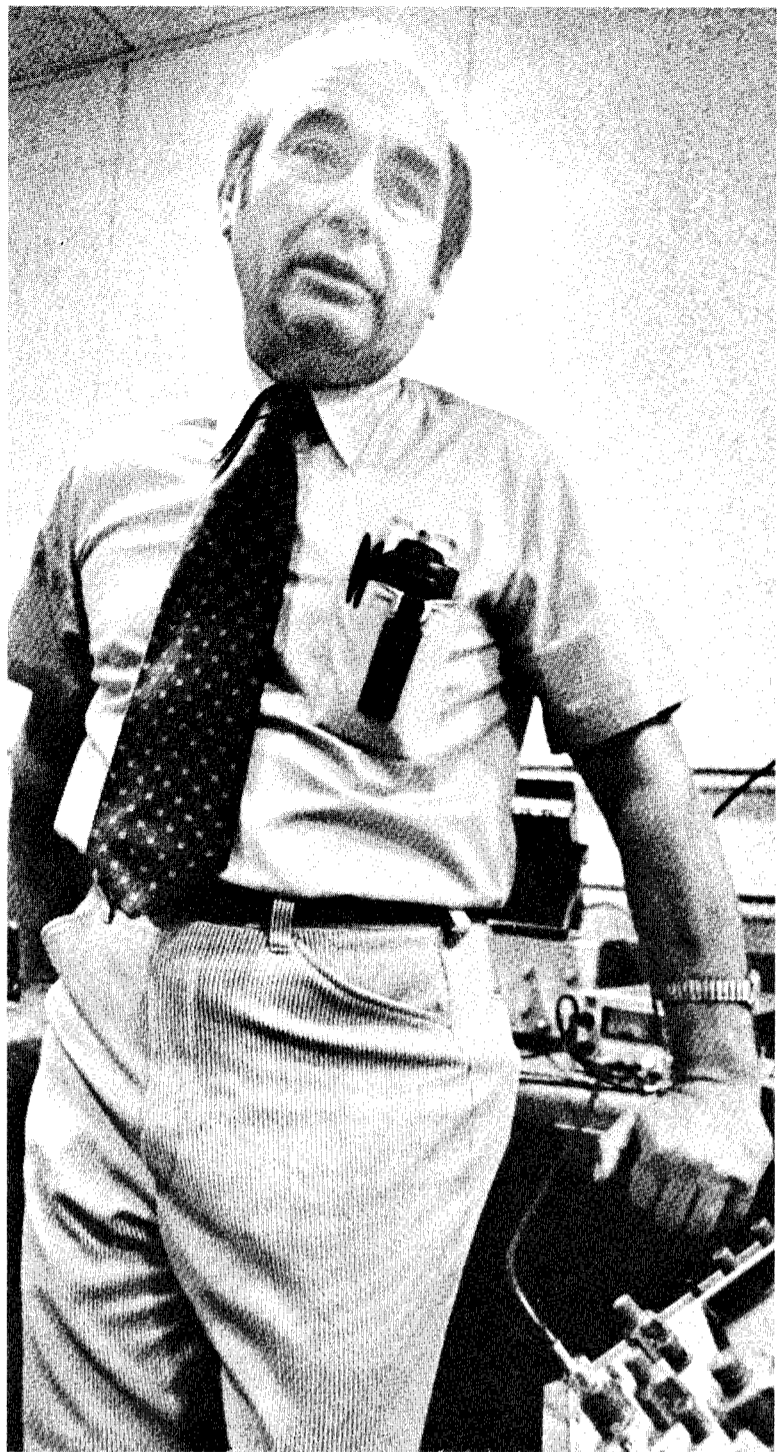
... Dr. E. J. McQuillen and Dr. A.R. Somoroff of AVTD, who have been commended by the Commander, Naval Air Systems Command, for their participation and assistance in recent structures technology apportionment briefings.

... William Fox and Mort Metersky who have been commended for their exceptional performance in assisting the Air Panel of the ASW Assessment Study.

Blood pins awarded

Nine men have received blood donor pins from Captain McCaulley. They are:

Five-gallon pin: Edward Soboleski; Four-gallon pin: Al Spector; Two-gallon pins: Jerome McGlynn, Richard Crosbie, and James Greco; One-gallon pins: Herman Rubin, Paul Moser, Howard Martin and Alfred Gramp.



Eldon Ort talks about the procedures for getting a patent.

Federal Times salutes merit system

The following anniversary salute to the federal civil service system appeared in the Federal Times and is reprinted with permission.

THIS YEAR we mark the 90th anniversary of the merit system in the selection of government workers. We've come a long way since 1883 when it was who, and not what, you knew that mattered.

In this issue we devote a number of pages to recognition of the anniversary. Our emphasis is on where we are going, rather than on where we have been.

Progress to this point has been great. The program can look back on a record of achievement. But, this is not the time for the system to rest on its laurels. Much remains to be done — happily, serious work is in progress in many areas. Let's review a few of them.

Proposals soon are due on a review of the appeals system. They should ultimately produce changes which will make the system more fair and more responsive to employee needs.

They also should make it possible for a case to be resolved in much less time than it now takes.

Also in the review stage is the whole bargaining area. The Civil Service Commission is looking at what the personnel manuals say and what they do not say about the scope of bargaining. Out of this review should come much more realistic policies. The creation of an effective program in which labor and management can work together ultimately could prove almost as important as those changes way back in 1883.

Testing to identify employee capabilities was a keystone of the original program. Testing still is important today, but it is being looked at in a different light. There is a growing awareness that tests of academic ability should be only a part and not all of the determination process. The day this concept is

given full recognition will be another important milestone on the civil service road.

Life itself is a learning experience. It is encouraging to see this experience begin to get some recognition along with formal education and training.

Perhaps the biggest change we will see will be in the area of employee evaluation. For too long we have relied on a rating system limited to "Satisfactory, unsatisfactory, or outstanding." There was little or no effort, for instance, to determine if the worker was happy in the job to which he was assigned; no concern about whether he was satisfied with the progress he was making.

A major step toward streamlining both the evaluation and classification process was reached with completion of the Oliver Task Force report. This was a comprehensive study of the system and a complex plan for revisions designed to make it meet current needs. The report went to the Congress and it still languishes there, waiting for action that may never come.

But, like many ideas considered too "radical" for their time, segments of it still may find their way into the system. The CSC is studying the report and determining if the benchmarks or other parts can be adapted to fit into the current system.

These are just a few of the things happening in the civil service. The next ten years probably will bring more changes than came about in the last 90.

The only way a system can stay alive and efficient is to retain within it the capability for adapting to change. There are healthy signs on the horizon that this system has the ability and the leadership to bring the merit principle to new heights in the public service. At a time when things sometimes look dark for the government worker, this truly could be the light at the end of the tunnel.

Eldon Ort gets patent

by George Marcinkowski
Summer Assistant

Marvin J. Foral received a \$150 Invention Award in 1967. Oscar Shames received \$1350. Yet the two men had one thing in common. They both applied for patents through NADC's Office of Patent Counsel.

The office, under the command of the Office of Naval Research, has processed 572 patentable inventions here since 1952, according to Henry Hansen, NADC's Patent Counsel. The office is located near the rear of Building #2.

A patent grant entitles the inventor or the assignee to exclude others from making, using, or selling the patented invention in the U.S. for 17 years.

Eldon Ort and co-workers recently received Patent #3,649,909 for their "Wide Band Phase Lock Spectral Purity Measuring Apparatus".

The electronic device was developed to help operators better evaluate doppler radar equipment.

Ort's case is typical of how a patent is processed. First he and his co-workers submitted their device to the Office of Patent Counsel. Accompanying drawings, schematics and technical information were revised by a patent counsel to fit a certain format.

A patent examiner, expert in both the subject matter and patent law, then searched already-issued patents and publications to see if the claims were truly patentable. They were, and the patent was granted.

Naturally the process isn't quite that smooth or swift. In fact, the time lag between initial application for a patent and the granting of it has been a sore point with inventors for years. "But", Hansen says, "It's getting shorter." The average time is about 18 months.

NADC employees usually sign over all rights, title and interest in the invention to the government because the work is done on government time and property. As Eldon Ort says: "We're paid to do a job, and the product of our work belongs to the people who pay us".

However, if the employee disputes this, the Patent Counsel then determines his rights according to certain guidelines — namely, when and where did the work take place, and how is it related to the person's job.

NADC's Incentive Awards Committee reviews the actual value and use of an invention. Inventors normally receive \$50 for filing a patent, and \$100 or more when it is issued, depending on its value and use to the government.

Center airplane buff remembers his first flight back in 1928

When Nick D'Apuzzo was six years old, an Army airplane made an emergency landing in a field near his Brooklyn home. It was his first close-up look at an airplane. And he's been fascinated by them ever since.

In fact, D'Apuzzo has designed four aircraft himself, and helped build seven of them. One of his aircraft was selected by the U.S.A. for the 1962 World Aerobatics Contest in Budapest, Hungary, and all four of his designs are listed in "Jane's All the World's Aircraft."

HAD TO SEE AIRPLANES

D'Apuzzo, who retired in July, has been an airplane buff since his earliest days. "My grandfather used to take me out to Fort Hamilton when I was a kid," he says, "because the Navy had seaplanes there. Nothing would do but I had to see the airplanes."

He got his first airplane ride in August, 1928, shortly after Lindbergh crossed the Atlantic. He flew out of New York's Mineola Field in a Razorback Fairchild Monoplane. Fifty-five minutes after take-off, the plane landed on what he says looked like a hole in a swamp. It's now the site of Philadelphia International Airport.

"It was just a dirt field in a hollow," he recalls. "It was usually marshy, except for the runway. That was grass and cinders."

While in high school, Nick ran errands, swept floors, washed airplanes and sold tickets for barnstormers — anything necessary to stay near the airplanes. "The pilots would even give you some flight time," he says, "maybe 15 minutes for working the whole weekend. Anything to keep you happy."

He also began carving out his own model airplanes. He made several hundred, including one exhibited at the 1938 Chicago World's Fair, and another still on display at the Franklin Institute. But he stopped making them when the plastic models became popular.

After getting his Aero Engineering degree from NYU, he began designing aircraft. "I did it out of frustration. It was the only way I could maintain a tie-in with sport airplanes. "Flying was too expensive until I started to earn more money."

22 FLYING

Nick, who is a Vice President and Director of the Na-

tional Association of Sport Aircraft Designers, has been nationally recognized for his designs. Twenty-two of his planes are already flying, and 100 more are under construction. His four planes are: the Denight Special Racer, the PJ 260 Aerobatic Biplane, and the Senior and Junior Aerosport Biplanes. The biplane has enjoyed a recent revival of interest. "It has the open cockpit people go for," Nick says.

Three of his planes won top prizes in the 1968 International Convention of the Experimental Aircraft Association. He also won a prize for best instrument panel design.

People who buy his designs call him from all over the world for advice. "Last night I had a call from a guy in Alaska," he says. "Another one, an American pilot for Japanese Airlines, called me from New York and spoke for one and one-half hours about the airplane."

Now that he's retired, Nick will spend more time with his hobby. He will also continue flying. Nick, who got his pilot's license in 1940, co-founded the Warminster Navy Flying Club here in 1957.



CSD's Al Hellman tells PAO Summer Assistant Julie Sullivan that women aviators' flight suits will be same as men's.

Navy flight suits are sexless

Women in the Navy are being treated just like men. At least as far as flight suits are concerned.

"The story here is there is no story," says CSD's Al Hellman, Program Manager for Fleet Information and Documentation of Life Support Equipment. "We may have to do a little tailoring, but basically, the woman aviator will wear the same flight suit as a man."

ONLY PROBLEM

"The only problem in fitting so far, was that one trainee wore a boot one-half size smaller than regulation.

We just got her a pair of boondockers."

The woman aviator's weight is a key factor, says Ed Gifford of the Human Factors Division. "A person should weigh at least 120 lbs. for the ejection seat to project him properly. An average man suited in full flight gear weighs about 240 lbs.

The sage green flight-suits, made of a close-weave, Nomex blend, come in 16 sizes. To ensure a better fit in the future, designers are planning 20 sizes, ranging from extra small, to extra, extra long, extra, extra large.

"It's important for a person to like the way he looks,"

Hellman says. "It used to be that a pilot wore his flight suit only when he was flying. Now, with the relaxation of some of the dress rules, he or she may be wearing it on base or to the PX for lunch."

CSD's effort runs from designing the suit, all the way up to Fleet Support of the finished product.

MINOR ALTERATIONS

"Minor alterations can be made as problems come up for the aviators," Hellman says. "If a pilot needs to do something, we study the design to make sure it meets the operational requirement."

Pros and cons of summer aid

(Continued from page 2)

and aides with different lifestyles and work habits. "I just don't have time to be a babysitter," says one disgruntled supervisor.

The program's purpose is to put money into the pockets of needy local youths, while introducing them to a work experience and motivating them to stay in school. Most

supervisors agree that it does this.

Harry Lewis may provide the key to success within the program. "It's hard," he says. "You've got to be firm, and mean what you say. They find out you're serious. Learn the kid's background, find out about his home life. Listen to him. You learn a lot by listening."

Naval Air Development Center

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All correspondence should be addressed to: Editor, Reflector, Naval Air Development Center, Warminster, Pa. 18974 (OSborne 2-9000, Ext. 2980).

CAPT. H.B. McCaulley — Commander NADC.

Aris Pasles — Public Affairs Officer; Jim Murphy — Editor

Around Center

NADC film appears

A 20-minute 16 mm color film entitled "NADC: A Navy Laboratory" has reached the Center Auditorium's screen.

The unclassified film is being used to familiarize both military audiences and the general public with work done here.

According to Writer/Producer Bill Valenteen, it's actually a look at NADC's role in solving larger Navy problems. It doesn't just describe Center projects.

The film, begun in June, 1972, contains footage from five or six contractors. "The movie lab here shot some," Valenteen says, "and we put it together. It cost almost nothing."

"It's designed so it can be updated," he says. "It will be a simple matter to insert portions here and there. It should be around for a long time."

Girls to play in N.J.

In a team meeting last May the NADC Girls' Softball Team vowed to play to win. Evidently the strategy worked, because the girls are now competing with Prudential and Honeywell for the Division Championship of the Women's Industrial Softball League.

Some eighteen female employees play on the team. The girls began practicing last March for their weekly Tuesday night games. Home games are played on the new field near the Inertial Navigation Facility.

The girls, attired in navy

blue shorts and tops with gold trim, will play in the Eastern States Championships September 7 and 8 in Paramus, N.J. They also competed in last year's championships at Rochester, N.Y.

Changes announced

Captain McCaulley has announced the following top level changes:

Captain George Klett moves from Director, AVTD, to Director, SAED. Carmen DeCrescente will assist him in day-to-day technical management. Commander Jake McMichael remains as Deputy Director.

Bill Langen Jr. becomes Director, AVTD, and Commander Ted Mead Deputy Director.

Ten complete course

Ten NADC employees have completed the two year National Security Management Course sponsored by the Industrial College of the Armed Forces.

They are: V. A. Freitag-AVTD, W. C. Hallow-AVTD, C. P. Haught-AETD, Capt. G. J. Klett-SAED, M. C. Kreuter-SAED, E. C. Lessor-AETD, W. F. Lipski-AETD, C. E. Neu-AVTD, R. A. Pasquarella-AVTD, and R. F. Scharmann-AETD.

In memoriam

William Nichparenko



Retires

Captain Edwin Stobie congratulates NADC's military personnel after his final inspection. Captain Stobie retired after 30 years of service.



The New Hope-Ivyland Railroad's 62-year old steam engine seems to be running slightly ahead of the more modern vehicle on right.

Kessman gets steamed up over 62-year old engine



"You can drive up to New Hope and suddenly it's 1930 again."

— Rich Kessman

NADC's LT Rich Kessman steps back into history three times each week.

Or, to be more exact, he rides back into it — aboard the New Hope-Ivyland Railroad's 62-year old steam engine.

Kessman, Treasurer of the Commissioned Officer's Mess and a Division Officer in Aircraft Maintenance, is one of about 20 volunteers working to keep the tiny bankrupt railroad alive.

Worth saving

"I think any old railroad still running is worth saving," he says, "particularly this one. That train is like a real live museum piece, something from another era that's still operating today. You can feel it, see it, smell it. You can drive up to New Hope and suddenly it's 1930 again."

Kessman spends three evenings a week repairing and maintaining railroad equipment. The steam engine

needs regular maintenance, just like an airplane. "It's actually a hobby for me," he says. "Much like others like to sail boats or fly. I've had a liking for railroads on a model basis for a long time."

A welder before he joined the Navy, Kessman's knowledge of plumbing, carpentry and pipefitting also helps the railroad. He recently designed and built a special dispenser for spraying weed killer along the tracks.

Kessman's interest in railroading goes back to his childhood. He received his first train set when he was three, and he's been building and collecting them ever since.

Went with grandfather

"When we were kids my grandfather used to take us down to the station near Chicago just to watch the trains," he says. "They always fascinated me."

Kessman didn't know about the New Hope-Ivyland Rail-

road when he first came to NADC in 1971, but it didn't take him long to learn. "I was driving up Route 263 near New Hope when I heard the whistle. A cop told me where it was going, and I guess I found my calling when I drove up there and saw that big dude sitting up there as big as life. Being a photo nut, I immediately attacked it with my camera. Later I found out they needed volunteers."

Built in 1911

Ivyland's steam engine is fairly simple, Kessman says, but quite inefficient by today's standards. Built in 1911, it was used for many years by the Canadian Pacific Railroad. In its prime the engine could do more than 60 miles per hour. Today, because of the deteriorating roadbed, top speed is about 30 miles per hour.

Although most people don't know it, the railroad hauls freight the 17 miles (Please turn to Page 4)



Businesswoman

Muscular Distrophy victim Mrs. Georgiana Hills knits one of the three shawls she makes each week.

Muscular Distrophy victim says: "They make us feel like somebody"

The Bucks County Combined Federal Campaign supports 41 service organizations of the National Health Agencies, International Service Agencies and the Bucks County United Fund.

To show how money raised in the campaign may be used,

The letters M.D. don't mean medical doctor to Mrs. Georgiana Hills. They mean Muscular Distrophy.

Muscular Distrophy is a slow, progressive deterioration of the muscles. It's a disease Mrs. Hills never even heard of until she unexplainedly began falling down in 1956, but it's one she's learned to live with.

And for much of that she credits the paid and volunteer help of the Muscular Distrophy Association, one of 41 agencies included in the Bucks County Combined Federal Campaign.

Really wonderful

"I think they're so great," she says. "They'll call you up, come to see you, spend time with you. They'll get you anything you want. They're really wonderful."

According to Mrs. Hills, the Association has supplied her with special shoes, braces, a wheelchair, and even a ramp to help her get in and out of her trailer.

But her eyes really light up when she talks about Muscular Distrophy's camps

the Reflector interviewed Mrs. Georgiana Hills, a local resident who's been helped by a participating agency.

This is not an endorsement of Muscular Distrophy, but merely an example of the type of help these agencies provide.

held each winter and summer in New York's Adirondack Mountains.

"They pay for everything," she says. "We're treated like queens (or kings) for a week." At camp the patients undergo physical therapy, go on outings, and learn arts and crafts. "I feel like I was put in business," she says. Besides painting and gardening, Mrs. Hills knits shawls and sells them. "I can easily make three a week," she boasts.

Quite discouraged

Many of the patients go up to camp quite discouraged, she says, but change drastically by the end of the week. "You can't believe these same people when they go home. They say, 'We feel like walking off.'"

While she really can't walk, Mrs. Hills can take herself up and down the ramp leading to her trailer. And she can stand for about five or ten minutes a day.

"I think M.D. has tried to keep me out of a wheelchair," she says. "They encourage us. They make us feel like somebody."

Combined Federal Campaign will kick off October 2

NADC's only fund-raising drive of the year will kick off on October 2 in the Center Auditorium.

The goal this year, according to Center Chairman Ed Tankins, is \$47,000. "That's about ten per cent higher than last year," he says. "Considering that inflation is six or seven per cent, it's a modest goal."

The Combined Federal Campaign includes 41 agencies representing the National Health Agencies, International Service Agencies and Bucks County United

Fund. It combines drives previously held here in the Spring and Fall.

"When we support agencies that support people, we're helping mankind," Tankins says. "We're helping people help themselves."

He acknowledges that many employees react negatively to fund-raising efforts. "People that have mixed emotions have erroneous ideas about the campaign," he asserts. "You can't let one or two agencies you've had bad experiences with sway your feelings about the other agencies."

"We'll exceed our goal easily," he says, "if everyone will contribute just \$.50 a week or \$1 per pay period."

CPD's John Ayer will again act as Federal Coordinator for Bucks County. Bucks County Post Offices and Social Security Offices also participate in the Combined Federal Campaign.

Agencies' shares of contributions are determined by individual designations. Undesignated contributions are divided according to previously agreed-upon percentages.

Wanted: An empty 707 for Walt Gourley

By Frank J. Warvolis

Just like the little old woman who lived in a shoe, Walt Gourley of Admin's Aircraft Installation (A/C) Division is always on the lookout for more space. As head of the Fixed Wing Branch, he is responsible for installing new or modified equipment (mainly electrical) in operational naval aircraft.

"Our biggest problem has been the need for more room. We are always limited by the interior dimensions of the plane. We must also remember the crew has to have free access to emergency exits," Gourley says.

Planning session

When a job comes in, personnel from the department responsible for design and development of the package get together with the A/C installation team for a planning session. They discuss location, maximum size and

weight of the proposed package.

"No two planes are alike. So we must really customize everything we put in," says Gourley.

Aircraft expert

Gourley could be classified as an A/C expert. He has been working on aircraft since his service days during World War II. He worked for TWA for a short time before coming to NADC in 1951. Since then he's modified aircraft ranging in size from helicopters to the C-117, the military equivalent of the DC-3.

Each job presents special problems, he says. But the installers also deal with constant requirements.

For example the package they install must be able to withstand shock loading of 30 G's, the force of a crash landing. Also, the electrical consumption of the new equip-

ment must not exceed the power being generated aboard the aircraft.

And the installation mustn't change the aircraft's center of gravity, a critical factor in safe flight.

Another big problem is time. "Every job is a rush job. We have to keep the down time to a minimum so we ask for the aircraft when we are about ready to go," Gourley says.

S-3A shock mounts

Currently, the A/C Division is installing wing-tip shock mounts on the Navy's newest ASW aircraft, the S-3A Viking.

But finding room in a crowded airplane remains the installers' biggest headache. As Walt says, "One day I'd like to see an empty 707 come flying in. Would we fill it up fast!"



Working together

Members of NADC's crash crew learn to work together in realistic training exercises like this one.

Helen Sullivan and POW both have "A nice day"

When Naval Reservist Helen Sullivan picked up the phone at the Naval Air Station, Jacksonville, Fla., recently, she couldn't believe her ears.

Because the caller was none other than Commander William A. Hardman (USN), a man whose family she'd written and whose POW bracelet she'd been wearing for two years.

"It's more than just a coincidence," she says. "It's a miracle. I'll never get over it."

Roundabout meeting

Actually their telephone conversation (and later personal meeting) did come about in a roundabout way.

Jacksonville was Yeoman Second Class (YN2) Sullivan's third choice of places to serve her annual two weeks of active duty, and early September was her second choice of dates.

And Commander Hardman's telephone call at 9:00 a.m. on September 4 was the first one she answered, because it was her first day on the job.

"They had wanted to put me in legal records where I had worked last year," Miss Sullivan recalls. "But, because there was a vacancy in Officers' Records, they put me there, or I would never have known he was aboard."

YN2 Sullivan had corresponded with CDR Hardman's family several times and had received a letter from him in March, 1973, shortly after his release, but had never met him personally.

Telephone exchange

Their telephone exchange went like this:

YN2 Sullivan: Officers' Records, may I help you?

CDR Hardman: Do you have orders for me?

YN2 Sullivan: What is your name, sir?

CDR Hardman: Commander William A. Hardman, USN.

YN2 Sullivan: That can't be.

CDR Hardman (surprised): Why?

YN2 Sullivan: Because I'm Helen Sullivan from Willow Grove.

CDR Hardman: That can't be.

YN2 Sullivan: Yes, sir, I'm here on two weeks active duty.

With that CDR Hardman decided to drive the two hours from his home near Orlando, Florida, to pick up his orders in person.

"When he came in," Miss Sullivan recalls, "I stood at attention and held out my hand. All the wonderful, meaningful things I rehearsed left me. All I could say was: Welcome Home."



Broken bracelet

Helen Sullivan looks at her POW bracelet that broke in half shortly after she met the released prisoner.

"I even showed him the letter he had written to me just to prove I wasn't an imposter. I always carry the letter. I don't know why."

After talking to him for about one hour, Miss Sullivan typed the departing endorsement to CDR Hardman's orders. "Wouldn't you know I made two mistakes. I'm surprised I did any of it right."

In civilian life Miss Sullivan is a clerk-stenographer for the Northern Division, Naval Facilities Engineering Command. She's physically located at NADC.

As a Reservist Miss Sullivan serves with the Naval Air Reserve Division WI at the Willow Grove Naval Air Station.

Miss Sullivan says CDR Hardman asked her to keep the POW bracelet, and that she's going to continue wearing it.

But she can't right now. It snapped in two on her airplane ride back to Philadelphia.

**"All the meaningful things
I rehearsed left me. All I
could say was: Welcome Home."**

"Please keep the bracelet"

26 March 1973

Dear Helen,

Thank you for the wonderful card, and most of all, for your support. I have been re-united with my family, and at long last this P.O.W. has had a "nice day."

Please accept my thanks for wearing the bracelet. I feel that your hope, patience and prayers in my behalf were instrumental in my release from North Vietnam.

It would please me very much if you would keep the bracelet.

Thank you for everything

William M. Hardman
CDR USN

Daouphars gets \$3000 Achievement Award

NADC's Lucien Daouphars has received a \$3000 Special Achievement Award, the largest in the Center's history.

He received it for saving the Government more than \$1,500,000 on the Phoenix Missile System.

Daouphars had recommended eliminating a parametric (low noise level) amplifier in the missile. While the amplifier improved the missile's early detection capability, the improvement was marginal, he says. "The complexity couldn't be logically supported. And the amplifier didn't help the guidance capability, because that information was extracted from a high noise channel."

Daouphars says the amplifier was just too sensitive to maintain, and would have wasted time and money in initial cost, maintenance and support.

The contractor for the missile didn't agree at first, but the Navy's view finally prevailed — at a saving of \$20,000 per missile.

At the time he recommended the change Daouphars was an engineer on-loan to the F-14 office from AETD.

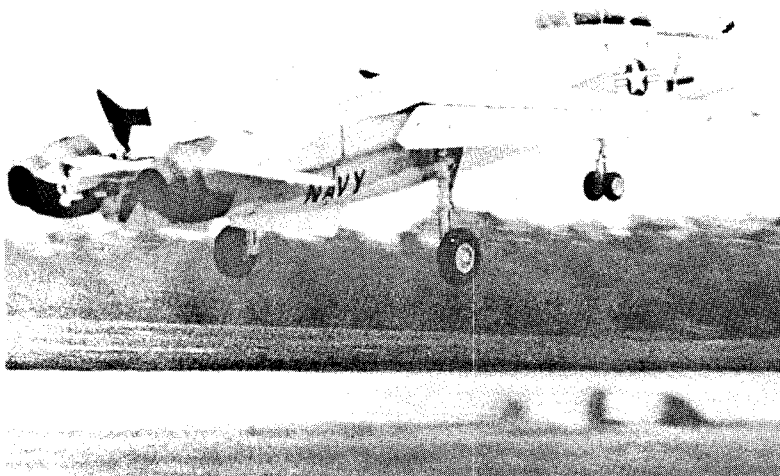
No gloom in sight when whistle blows on Ivyland Railroad

(Continued from Page 1)

from Ivyland to New Hope three times per week. The line is part of an old Reading Railroad spur.

The passenger train makes three or four round trips from New Hope to Buckingham on Saturdays, Sundays and holidays. A mixed train hauls both passengers and freight from New Hope to Ivyland and back again on Tuesday, Thursday and Saturday nights. The steam-powered service is suspended during the winter months because of cold weather.

Kessman says he may arrange a special NADC trip soon if there's enough interest. "I want to help preserve this railroad," he says, "because it's got something for everyone. As we pass grade crossings, you see cars lined up and everyone smiling, particularly the older people. When the whistle blows there's not a glum face in the bunch."



\$3000 richer

Lou Daouphars points out changes he recommended in the Phoenix Missile System that saved the Government \$1,500,000. The missile is carried on the F-14 aircraft.

Around Center

Brickwork begins

NADC's face is being lifted.

Workmen began removing the brick facing of Building #3 on September 19. They'll install white pre-cast concrete brick that simulates split stone.

Cost of the work is \$158,000. It's scheduled for completion by the end of the year. "The brick in Building #3 is almost all original brick," says Public Works Officer CDR Edmund Hughes. "And we had a problem with water getting in behind the joints. It ruined some of the plaster behind it."

"Also, the original white brick contained an unusual amount of sand which lead to surface deterioration."

The new brick should also enhance NADC's appearance, he says. Plans also call for new steps and doors and for concrete areas at the main entrance to be sandblasted. "We are confident that the new appearance will be worth the unavoidable inconvenience associated with the work," CDR Hughes says.

Contractor for the rebricking is Brydel Corporation, Oreland, Pa.

Martin McNamara, of the Regional Office In Charge of Construction, asks employees to cooperate while the work is being done and to stay away from the areas as much as possible.

Reese retires

Captain Walter H. Reese, former Commanding Officer of NAF, has retired from the Navy after 30 years of military service.

Captain Reese, who commanded NAF from 1970 to 1972, has been named Naval Science Instructor in charge of the Junior NROTC Program at Milton High School, Milton, Florida.

Airplanes meet

Some 1500 local model airplane enthusiasts attended the Eastern States Championship Model Airplane Meet on Sunday, September 16, 1973, at NADC. Competition for 200 trophies ran from 9:00 a.m. until 4:00 p.m.

Toastmasters toast

The NADC Toastmasters Club celebrated its 10th anniversary in September.

Newly-elected President Svend Berntsen invited all former club members to attend the September 25th anniversary meeting.

Other newly-installed officers included: Educational Vice President — Mary Swanchak; Administrative Vice President — Robert Caruso; Treasurer — Thomas Barry; Secretary — Kenneth Clegg; Sergeant at Arms — Akira Yoshida.

All-Stars star

The second-place All-Stars beat the front-running Bearcats two straight games in a best-of-three series to win the NADC Men's Intramural Softball Championship.

Manager Walt Beamer's team won 6-4 and 5-4.

In Memoriam

Harry E. Hess, Administration.

Bob Becker returns from Naval War College

By Julie Sullivan

"The times they are a changing." And so, reports SAED's Bob Becker, is the Naval War College. He's just returned to NADC after completing a year of study at the college.

"I can't remember working this hard since graduate school," he says. "Our week ran from Thursday to Wednesday." With a 1500-page weekly reading assignment, daily seminars and papers due on discussion topics, he found that learning how to allot personal time was crucial.

Becker was one of three Naval Lab representatives selected to participate in the 95th annual session of the Naval War College in Newport, Rhode Island, which ran from August '72 through June '73.

The program was divided into three thirteen-week study periods and a four-week research section. In the first thirteen weeks the

group covered History and Strategy of Warfare, Management and Resource Allocation, and Naval Tactics.

In class, Becker took part in simulation games dealing with real problems. In the management and resource allocation section of the course, each member of the group dealt with the national, military, and naval budgets. Each student prepared a brief defending a budgetary request for his assigned department. Becker represented environmental resources in the discussion.

On Center, Becker does logistical work, "I felt at home in the management section of the course," he says. "In retrospect, I probably learned the most from the historical section. We began reading through history of wars, beginning with the Peloponnesian Wars up to World War II, looking at the forces which join in the making of a war."

Navy Birthday is October 13

When the nation celebrates its 200th anniversary in 1976, the Navy will be celebrating its 201st.

The Navy's origins go back to October 13, 1775. Lawmakers, spurred by the burning of the fishing village of Falmouth, Maine, by British warships, voted to establish a committee to handle naval affairs. This was the great grandfather of today's Navy Department.

The first American sea battle, however, had already taken place off the coast of Machias, Maine. In May, 1775, the British sent two sloops and an armed schooner

to commandeer a load of lumber. When they met a lumberman named O'Brien and his 40 loggers waiting on the wharf with muskets, axes and pitchforks, they turned their backs and laughed.

Infuriated, the loggers seized one of the sloops and gave chase to the British. They swarmed aboard one of the ships and tore down the British flag. The first American naval encounter ended in victory.

The Navy, conscious of its origins, will celebrate its 198th birthday on October 13. The theme is: "Navy Birthday: A Family Tradition."

Naval Air Development Center

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CAPT. H.B. McCULLLEY — Commander NADC.
Aris Pasles — Public Affairs Officer; Jim Murphy — Editor

REFLECTOR

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October, 1973



Firefighters (right) and housepainters perform a ballet for Reflector readers. Camera actually catches firefighters during bucket brigade competition in Fireman's Olympics, an event that drew 7000 spectators to NADC. Painters above put finishing touches on new NADC housing units.



"The little radar that couldn't," does

Because AETD engineers wouldn't take no for an answer, pilots may someday breathe easier when trying to land in bad weather.

Marvin Foral and his co-workers in the Radar Division have developed a millimeter, high frequency radar that is extremely precise. Unlike normal radar that merely indicates something is ahead, Foral's narrow-beam radar can distinguish small objects such as tree-tops, wires, ropes, jet aircraft exhaust, and cannon blasts. "I just don't know of any other radar that can do this," Foral says.

Textbooks wrong

But the textbooks said millimeter radar (it's wave length is 3.2 millimeters or about one-eighth of an inch) at such a high frequency (95 Ghz or 95 billion cycles per second) wouldn't operate in foggy or rainy weather. An attenuation curve indicated that the high frequency energy would be absorbed by the air in foggy weather, almost

the way a flashlight beam is absorbed.

Foral and his group decided to try anyway. They tested the radar in a rainy section in Florida, and it worked. In good and bad weather. "We thought rain would have a ruinous effect on a signal at this frequency," Foral says. "We found this isn't true, and that useful signals could still be received through the heaviest rainfalls experienced during the tests. That's the reason for the excitement."

In May, 1973, NADC installed it in a CH-53 helicopter. "I believe this is the first time a 95 Ghz radar has been installed in a helicopter environment," Foral says. "People told me it wouldn't work, because the vibration would distort it at that frequency. But it did work, even though some of the components were not designed for airborne installation."

Besides helping aircraft pilots land in bad weather, the radar should also help low-flying helicopter pilots

avoid trees and dangerous high-tension wires.

To see how the radar would operate in cold weather, Foral tested it in Dartmouth, New Hampshire. As a result, and using NADC's radar as a guide, Johns Hopkins scientists have tested a similar radar for use in arctic exploration. They'll mount it on the front of an air-cushioned vehicle to tell the pilot what obstacles lie ahead as he goes skimming over the ice.

Police aid

The radar may also aid the police. Present police radar systems use a 15 degree wide beam. This makes it almost impossible to detect which car is speeding when several are side by side. Foral's radar should eliminate that problem, since the beam is only one-half a degree wide.

"I think we've got a pretty good piece of gear here," Foral says. "We are testing it for obstacle avoidance, mine detection and as a landing aid. But we are looking for other possible uses as well."

"We all benefit," CFC Chairman says

Isn't it ironic that we have staggered the imagination with our technological advances, yet we can't solve the human care problems that plague our society?

Human beings are the lifeblood of nations. And on the strength, attitudes, skills and behavior of human beings rest the viability of the country they inhabit.

Any nation aspiring to greatness must develop and employ its resources. When a nation has masses of people struggling for survival, a great potential of human resources is lost.

Through the Combined Federal Campaign, which represents 41 agencies, we are helping people become more productive members of our society.

The CFC is not a military or even a Center concern, but it is the concern of citizens in the international community. This voluntary, annual campaign, however imperfect, is the only means our country and community has to meet our social problems.

There are probably better ways of meet-

ing the problems, but it requires a concentrated effort similar to what went into our space program.

The present system is representative of our democratic society, and is all that we have to alleviate our serious social needs. Failure to support the Combined Federal Campaign, for whatever reason, serves to deteriorate this system and causes unnecessary suffering of those that are already more unfortunate than us.

We all benefit when we fight the social problems that plague our society like a cancerous growth and erode the foundation of our community and nation.

It is easy to invent excuses and rationalize for not participating in the CFC. Now is the time to search our consciences. I am positive that then we can all find a way to give more generously to this neglected area of real need through the Combined Federal Campaign. You will be glad you did.

Edwin Tankins
CFC Chairman

NSSNF transfer begins

The first ten people to transfer to NADC from the Naval Strategic Systems Navigation Facility, Brooklyn, will arrive here in late November.

They'll be physically located in the Inertial Navigation Facility, and will form a special division.

According to Al Scarcelli,

Leader of the Relocation Team, the bulk of the people will begin transferring here in late January, February and March.

He says that plans to improve spaces in Buildings #1 and 2 to house the NSSNF personnel are awaiting approval in Washington. A

request for bids on a relocatable office structure has been advertised by the Northern Division, Naval Facilities Engineering Command.

The structure, with about 10,000 square feet of office space, is expected to be ready for occupancy by mid-January.

Mignogna finds field financially fertile



Aware

Joe Mignogna says his awareness of problems of men in the field has helped save government more than \$7 million.

Because he served as both an enlisted man and an officer during his military days, NADC's Joe Mignogna says he knows the problems of the men in the field.

And it's paid off. Mignogna, an electronics engineer in AETD, has saved the government more than \$7 million.

More importantly, he's helped make equipment in the field easier to repair and operate.

Saved \$100,000

For example, one of his suggestions reduced the cost of a signal analyzer in the AN/AWG-10 missile control system from \$130,000 to \$30,000, the weight from 1000 to 37 lbs., and the testing time from four hours to five minutes.

Must be easy

Repairing equipment in the field, he says, is far different from doing it in a laboratory. "You've got to give them equipment that doesn't fail, is easy to repair, and is relatively cheap for the Navy."

Mignogna, a La Salle graduate, served as an Army Air Corps radar operator in World War II, and as an Air Force wing electronics maintenance officer in the Korean Conflict. "Since I've worked with hardware," he says, "I can understand the problems of sailors in the fleet."



Lifesaver

Eve Buchholz says United Fund helped save her son's life.

Two in Buchholz family helped by United Fund

When Eve Buchholz needed a helping hand, she got it. That's why she's a United Fund booster now.

"I feel they saved my son's life," she says.

Her son John, a blue baby, was born with an enlarged thymus gland that pressed on his windpipe. At one month of age he was hospitalized for two weeks and given X-ray treatments every two days to shrink the gland.

Had no money

But Eve didn't have any money to pay for his treatment. Her husband had just returned from Army service with a dehydrated stomach and was already in the hospital.

"When they admitted my son, I told them I couldn't pay for it. They said: 'Don't worry about it. Go see the social service worker.' She took care of it and said it was being paid by United Fund."

Four years later her daughter Betty was born with multiple handicaps. When Betty was six years old, she underwent four brain operations in four days. Blue Cross picked up the tab. But, when she was again hospitalized a few weeks later, and Blue Cross didn't pay for it, United Fund did.

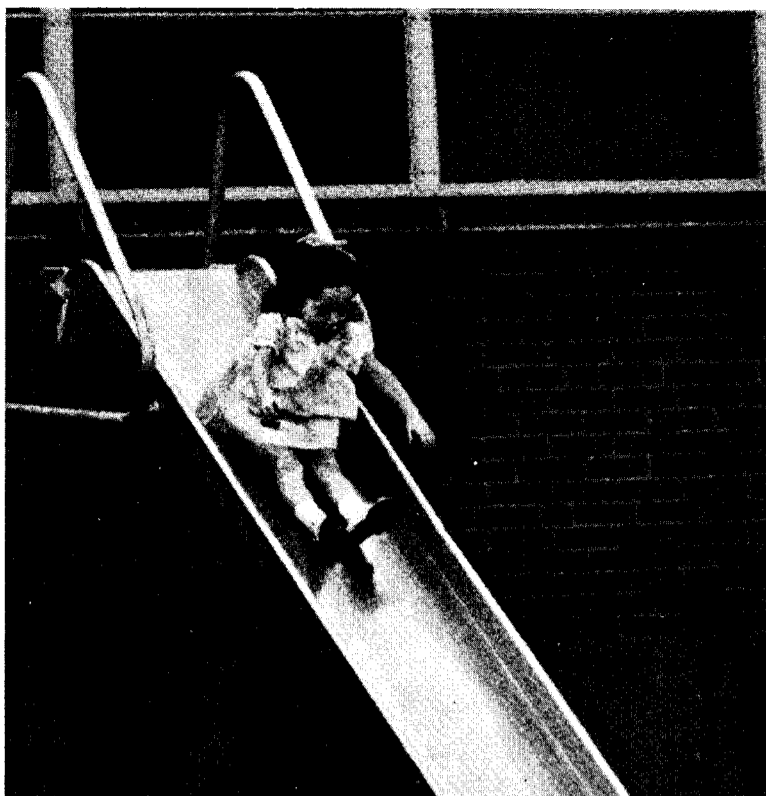
Paid tuition

Later a United Fund agency, the Cerebral Palsy Association, paid Betty's tuition for three months at a rehabilitation center in Chestnut Hill after the center went bankrupt.

"I feel this way," she says. "If there were no United Fund and the hospital had turned me away, my son would have died. And as far as my daughter goes, if they had handed us a bill at that time, we would have been paying for it the rest of our lives."

"If there were no United Fund and the hospital had turned me away, my son would have died."

— Eve Buchholz



Children play during day at NADC nursery

Children at NADC's Day Care Center get plenty of use from their playground equipment. In good weather the children, who are dependents of military personnel, sometimes get out twice each day.



"We're well-pleased"

First tenants applaud new Navy housing units

Roomy. Comfortable. Well-designed. Beautiful.

That's how some of the first 44 tenants describe the new Enlisted Men's Housing at NADC.

"I don't know what they could have forgotten," says Mrs. Wendell Kahler. "We were skeptical at first, but they're great. I'm thrilled with it."

"I have no complaints," says ADJI Stuart Willer. "We're well pleased."

Not cramped

Willow Grove's ACI James Heath says: "I thought they'd be smaller, more cramped like apartments. They're more like townhouses."

The first 44 housing units were turned over for occupancy October 1. Thirty-four more will be turned over November 1.

The only complaint raised by new tenants to the **Reflector** was that they couldn't get in to clean their units before moving day.

The reason for this, says Housing Manager Helen Bergstrom, is that the contractor wasn't out of them yet. "People were breathing down our necks to get in," she says. "They were really anxious. So we decided to let them in as quickly as possible. But in doing that we created some problems for ourselves."

Maintenance Officer Byron Cumberland says that despite some recent maintenance calls, the contractor has done a really good job. "It was the big push at the end that really did us in," he says. "We had people moving in, and contractors working around them. Everything came right down to the wire."

Contact point

NADC's Trouble Desk, Extension 2956, is the contact point for tenants' maintenance problems. "We called about plumbing yesterday," says ACI James Heath, and they had a guy out right away."

Emergency requests will be handled through the Officer of the Day. According to Ensign Cumberland, tenants sometimes stretch the definition of an emergency. "If a family has one bathroom not working, but he has two more, we don't consider that an emergency."

Dust and dirt seem to be the tenants' biggest problem right now. "I just wish the grass would grow," says ADJI Willer, "just to keep the dirt down. It's starting to sprout now." Ensign Cumberland says he expects a good grass cover by late spring.

To answer tenants' questions about what they can and

cannot do in the new housing, Public Works has issued a 38-page handbook.

The most frequently-asked question, says Helen Bergstrom, is "Can they paint"? The answer is no.

Residents are also being asked to postpone fencing the backyards. "We want the landscaping to be completed and the trees in before they start fencing," Ensign Cumberland says. "They want to get everything settled, and some people think we're trying to tell them too much about how to live. But we're considering the whole complex."

The 200-unit complex is divided into 50 separate buildings on six streets. Each house has a range, refrigerator, garbage disposal, and central heating and air conditioning.

Naval aircraft

The street names, selected by Public Works Officer CDR Edmund Hughes, Resident Officer-in-Charge-of-Construction, all represent naval aircraft. They are: Sea King, Viking, Corsair, Orion, Skyhawk and Crusader.

The \$4,639,000 project is scheduled for completion before February. The entrance is on Bristol Road.

The Daniel J. Keating Company, Philadelphia, is the contractor.



Thrilled

Mrs. Wendell Kahler tells Reflector she was skeptical at first about moving into new NADC housing, now is "thrilled."

Center scope

Popular party

About 800 persons attended the Navy Birthday celebration October 12 in the NAF Hangar.

"I was surprised so many people went," one engineer said, "But it was really good. I went over ten minutes after it started to get a finger sandwich, and they were all gone."

Refreshments included cake, cookies, cokes, coffee, and sandwiches.

Bands from William Tennent High School and Archbishop Wood High School performed during the hour-long celebration.

"It was the most human thing I've seen happen here," one girl said. The theme for the 198th anniversary of the Navy's founding was: "Navy Birthday — A Family Tradition."

Talented trio

Three Warminster military personnel participated in All-Navy sports tournaments recently.

They are: LT Ken Wetzel, PH2 Larry Palmer, and AZCM Leonard Brylewski.

Wetzel, an outfielder, was added to the Patuxent River squad after the regional tournament. He played for them in the All-Navy tournament.

Playing varsity sports for the first time this year, Wetzel batted .410 in 32 games. "I just didn't have time to play before," he says.

PH2 Palmer, who averaged 191 in a summer bowling league, placed second in the Fourth Naval District tournament. He was fifth in the regionals and 19th in the All-Navy tournament.

Palmer, who's been bowling five years says: "I could be doing better if I had more time to bowl, but I hold two jobs." He bowls one night per week.

Golfer AZCM Brylewski took second place in the Fourth Naval District tournament, but won the regionals at Great Lakes, Ill., with a course-shattering 68.

"We only have a couple hundred men here," says Special Services Officer Ken Wieder. "So, to have three individuals from here competing in All-Navy tournaments in one year, well, that's terrific."

Party planned

NADC's 25th annual Christmas party for the children of Christ Home will take place December 8.

Sponsored by the Welfare and Recreation Association, the party will last from 10:00 a.m. to 2:00 p.m.

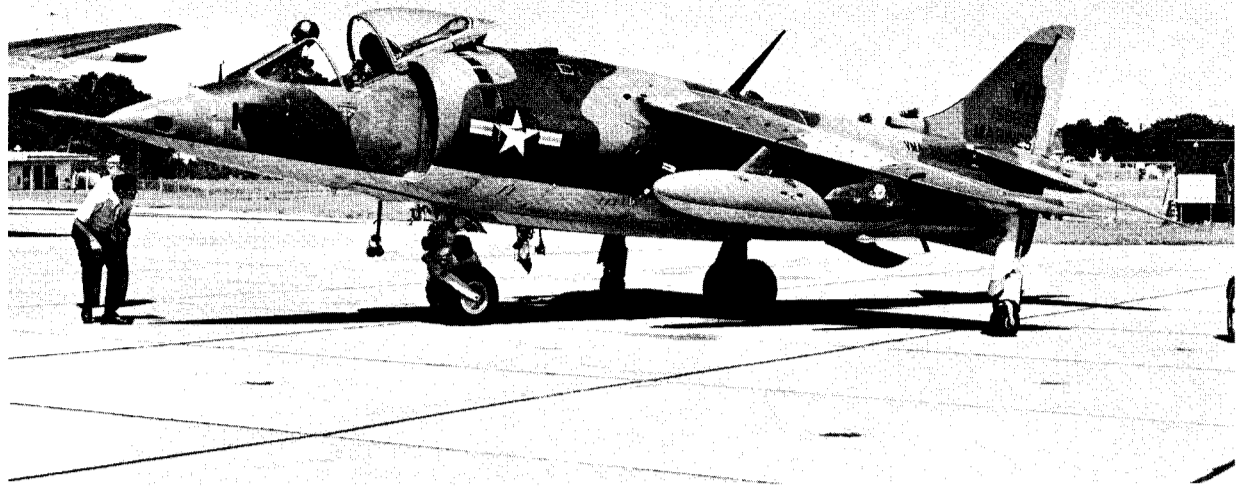
Each of the 105 children expected to attend will receive a gift.

Mary Swanchak, Party Chairman, says she's looking for volunteers to serve food and act as elves.

Patrolman cited

Security Patrolman Clifford Gledhill has been named Fireman of the Year by the Lacey Park Fire Company.

Gledhill, who is Assistant Chief, Treasurer, and Training Officer for the com-



"Harrier"

Visit of Marine "Harrier" to NADC attracts lots of attention. The "Harrier" is a vertical, short take-off and landing (V/STOL) aircraft.

pany, began his firefighting career seven years ago at age 16.

"I enjoy doing it," he says. "I couldn't get it out of my blood now. The whole idea is to respect a fire, not to be afraid of it."

For Brylewski it's par

When Chief Leonard Brylewski's brother visited him at Virginia Beach in 1963, Len caddied because he didn't play golf.

Eleven months later Brylewski parred a golf course for the first time. "Because of baseball I guess I had some natural ability to pick up the game," he says in a mastery of understatement.

Brylewski, who set a course record with a 68 at Hi-Point this year, was Hi-Point club champ and Fourth Naval District champ in 1972.

This year he finished second in the Fourth Naval District tourney, but won the Regional Tournament at Great Lakes, Ill., again shooting a club record 68.

But Brylewski's golf future didn't look particularly bright that first day. "I started playing with my brother after caddying for about three holes," he recalls. "The next day I played 18 holes and shot about 123 or 124."

He credits his quick success to the tutelage of Jack Harvey, who was the pro at Jacksonville for 22 years. In 1966 Brylewski played in the Fourth Naval District tournament for the first time, after only three years of golf. "I think that's an accomplishment in itself," he says.

Even more surprising is the fact that he's been able to keep his scores low while playing relatively little. In 1967 and 1968 he was stationed aboard ship, and "You don't get to play much there," he jokes.

Over the next two years he travelled a great deal, playing only about one day per week.

But he kept shooting great golf. Asked what he does with all his trophies, he says, "They're all at home in Mahanoy City (Pa.)."

Brylewski, an 18-year veteran, has served here since September, 1970.

ADPA attracts

A fall division meeting of the American Defense Preparedness Association attracted 84 persons to NADC October 16-18.

Included among the attendees was Rear Admiral Walter Dedrick of the Naval Ordnance Systems Command.

Banquet and Dinner speakers included: Rear Admiral Jeffrey Metzger, Jr., Director, Undersea and Strategic Warfare

Development in the office of the Chief of Naval Operations; Rear Admiral Roger Elmore Spreen, Commander, Naval Ordnance Systems Command; and David Heebner, Deputy Director (Tactical Warfare Programs) Office of the Director of Defense Research and Engineering, OSD.

King sings

HMC Russ King's vocalist-comedy act has won second place in the Fourth Naval District Talent Contest at the Philadelphia Naval Base.

King sang "Tie A Yellow Ribbon 'Round The Old Oak Tree," and did impressions of Frankie Fontaine, Cary Grant, Jimmy Durante and Bojangles Robinson.

Politicking prohibited

Political activity by Federal employees is governed by what is commonly known as the "Hatch Act."

Its provisions are listed below. For more information, contact the Employee Relations Division, CPD.

YOU MAY:

- register and vote as you choose.
- assist in voter registration drives.
- express your opinion about candidates and issues.
- participate in campaigns where none of the candidates represent a political party.
- contribute money to a political organization or attend a political fund-raising function.

wear or display political badges, buttons, or stickers.

- attend political rallies and meetings.
- join a political club or party.
- sign nominating petitions.

campaign for or against referendum questions, constitutional amendments, municipal ordinances, etc.

YOU MAY NOT:

- campaign for partisan candidates or political parties.
- work to register voters for one party only.

make campaign speeches or engage in other activity to elect a partisan candidate.

be a candidate or work in a campaign if any candidate represents a national or State political party.

collect contributions or sell tickets to political fund-raising functions.

distribute campaign material in a partisan election.

organize or manage political rallies or meetings.

hold office in a political club or party.

circulate nominating petitions.

campaign for or against a candidate or slate of candidates in a partisan election.

Naval Air Development Center

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CAPT. H.B. McCULLLEY — Commander NADC.
Aris Pasles — Public Affairs Officer; Jim Murphy — Editor



Supervisors Howard Archer (top), Chuck Haney (left) and Frank Drummond (right) exchange views during an EEO training session.

EEO sessions spark candid comments

"It is better to hire Black people who present the right image and who can fit in than it would be to maintain an open door policy in employment practices."

This was one of 25 true-false statements answered by 256 NADC supervisors at Equal Employment Opportunity (EEO) training sessions recently. The supervisors' responses revealed widely-differing points of view, and sparked some heated discussion.

"I was pleased with the interaction that took place and with the candidness of the people," says EEO Coordi-

nator Gil Ridley. "I think the sessions have been very successful."

Split into groups

The supervisors met first in Training Room "B." Then they split into smaller groups, answered the quiz, and tried to reach a consensus of opinion on each answer. That's when the real discussion began.

Why do blacks sit together in the Cafeteria? Do they prefer it that way? Does a lack of open conflict between whites and blacks at NADC mean communications is really good? Is there a double hiring standard? Should there be?

Each question generated additional questions. Many didn't agree on the answers, and some didn't even agree on the questions.

"What do these questions mean?" asked one man. "They're meaningless. They're so vague. Like what do we mean by relationships and communications? I don't even think we can talk about these questions. This is a waste of time."

But the group persisted. Whether or not blacks prefer to eat together was a question that generated much response. "I don't even know why people think it is so important," one officer said.

"Okay, suppose you do walk into the Cafeteria and see ten blacks sitting together. What of it? No one ever says, 'Look, all those whites are sitting together. Or, all those women are sitting together. I wonder what they're up to.'"

Substituting the word women for blacks when talking about minority groups sometimes changes attitudes, a woman added.

Three-hour session

The three-hour long training session the "Reflector" attended included 11 persons: four women, one black and six whites.

Predictably, reaction to

the sessions varied. "I found it very interesting," one woman said. "If it accomplished nothing more than letting people see how many different interpretations there are to a question, then it was worthwhile."

"I think it was healthy to have the discussion," another said. "But, I don't know if it accomplished anything. Most of the people I talked to came away with their feelings intact. I don't think it changed anything."

"I can't change attitudes in three hours," Ridley replies. "But at least they know a lot more about why they're doing what they're doing."

Funny-sounding ARP/SLP is no joke to fleet

Item — Vital safety inspection tests of bleed-air ducts on A-6 aircraft used to take 100 hours to perform. Now they take two hours.

Item — The Navy possessed thousands of malfunctioning \$500 brush-type aircraft generators, because no repair technique was available. Now it repairs them in two hours for less than \$30.

These significant breakthroughs in safety of flight demonstrate the impact of NADC's technology on the fleet. Both these money and time-saving advances came from a Center Project Office distinguished by the nature of its work as well as by its peculiar name — ARP/SLP.

ARP/SLP stands for Analytical Rework Program/Service Life Program. The purpose of the ARP/SLP office is to provide quick response to the fleet in scienti-

fic and engineering areas 24 hours a day, seven days a week.

Staffed mainly by AVTD, the ARP/SLP team encompasses wide-ranging disciplines, including: aeronautical, chemical, electrical and mechanical engineering; metallurgy, physics and mathematics.

"Our primary objective," says ARP/SLP Director Marty Devine, "is to maximize fleet readiness in every dimension."

Responds to requests

The office responds to requests for engineering support from Naval Air Rework Facilities across the country.

Typically, aircraft sent to rework facilities are "down" for two to three months. ARP/SLP technology is reducing that time.

By increasing the facili-

ties' ability to detect aircraft structural fatigue, and by reducing the time required to perform periodic inspections, ARP/SLP helps extend aircraft service life and keep the airplanes in the air.

According to Devine, the rework facilities analyze and correct 90 per cent of the problems they encounter. But when it's required, ARP/SLP's expertise is only a phone call away.

Tasks receive priorities based on safety, mission loss, magnitude, and generality of the problem, as well as on the task's potential to minimize rework and aircraft maintenance.

Recent work on the A-6 aircraft is typical of ARP/SLP's efforts. Chronic skin cracking caused by sonic fatigue plagued the aircraft. After investigation by Gladys Hargreaves, ARP/SLP coated the affected struc-

tures with polymeric material. Test results showed the coating drastically reduced crack formation and growth.

For example, an uncoated A-6 with 248 flight hours and 22 catapult launches, had 27 skin cracks. A coated aircraft with 131 more flight hours and 126 more catapult launches, had only five.

On-site demos

The philosophy of the ARP/SLP office is: Get the results of analytical investigations into practice by the fleet as quickly as possible. To achieve this, Devine's team performs on-site demonstrations of new technology at the rework facilities.

Devine says it is ARP/SLP's policy, whenever possible, to leave demonstration equipment and materials at the sites. He says this accelerates use of new developments and techniques, and

eliminates the waiting period for new equipment, materials, and processes.

Simply stated, ARP/SLP's role is to eliminate fleet problems.

To solve the problem of malfunctioning generators mentioned earlier, ARP/SLP personnel applied a new bonding agent to a copper/fiberglass interface that was coming loose.

New technique

For the A-6 bleed-air ducts, they developed a non-destructive eddy current testing technique. Bleed-air ducts are small, directional openings in aircraft engines that direct forced air from the engines to blow over the wing to help control the aircraft. Devine expects the new test to save more than 15,000 man hours.

Asked if ARP/SLP ever fails, Devine says: "Failure is not in the game plan."

Applause is only reward

Sunday is playday for NADC musicians

by Karl Schmidt

With the enthusiasm of the Philadelphia Orchestra, 70 musicians assemble every Sunday evening in the semi-deserted Warminster Township Building. Their only pay is the applause and appreciation of the community they serve.

Since the founding of the Warminster Symphony Society in 1964, the orchestra has grown from the original 25 members to its present 70. NADC has furnished nine people from its ranks to help the symphony develop.

They include Dick Purpura, AETD, Music Director; Norman MacPeck, AETD, Production and Assistant Manager; Joe James, SAED, violin; Charles Frawley, PW, violin; Mark Elfont, SAED, trumpet; Harry B. Grider, AETD, Assistant Music Director and Concert Master; John Sniscak, AETD, clarinet; Jack Pye, AVTD, percussion; and Paul Hafele, Supply, General Manager.

NADC is nucleus

"NADC people have formed the nucleus of the orchestra", says Purpura. Dick, the orchestra's conductor since its founding, feels Center personnel have supported the concerts in a big way. "While performing," he says, "I'll look out into the crowd and it will look like old home week with half the Center in the audience."

"NADC has helped us in other ways", said Dick. "When we first started out, we didn't have any place to practice. The Center offered us the old AETD auditorium

(now the Center auditorium) to practice in. Without their help, we never would have gotten started."

Harry Grider feels the orchestra acts as a "two-way operation." "First, NADC employees can serve in community affairs, and second, it helps to satisfy their musical desires." He continues, "Our people have been a good source of material to the symphony."

Hands are needed

Not all Society members play musical instruments. "There are plenty of other ways to help out", said Norman MacPeck. Most people think you have to play instrument to help out. What we could use most is hands."

"Getting set up before the concert is one-half the problem." MacPeck, the Production and Assistant Manager is responsible for reserving the hall for the concert, making sure the stage is set, and that the lighting and sound systems are in working order. Norm's reason for joining the organization was simple; "I like the music and I feel the orchestra contributes to the culture of the community."

Paul Hafele, General Manager of the orchestra also serves as the Public Relations Director. Paul attended a concert a few years ago, and after the show went back stage. "I just became inter-

ested in what they were trying to do. The area needs more cultural events and the symphony, serves as an answer."

Although the symphony is a non-profit organization, money still presents a problem. Proceeds from the concerts and memberships help defray the costs of hall rentals and instrument repair.

"I'd like to see more memberships sold," continued Paul. "A membership entitles you to two tickets for each one of the concerts, and two special tickets for a coffee recital held on a Sunday afternoon." The coffee recital is open to membership holders only. "I think for the ten-dollar fee, it's a real worthwhile thing. It makes a good family pastime."

First concert

The Warminster Symphony Society will hold its first concert of the year at Log College Junior High School, Saturday evening, December 1, at 8:30 p.m. The orchestra will feature "The Sorcerer's Apprentice," and will be accompanied by the Wonderland Puppets.

Perhaps Norm MacPeck summed up the symphony's hopes the best when he said: "I'd love to put up a standing-room-only sign, and tell the people that they'll have to come back the next evening to hear us play."

"While performing, I'll look out into the audience and it will look like old home week with half the Center in the audience."

— Dick Purpura



Purpura performs

Music Director Dick Purpura leads the Warminster Symphony during a Sunday evening practice session.



Manager-on-the-move

Chief Theodore Wilson stays on the move in the Navy Exchange.

Wilson can't afford unhappy customers

Piles of catalogs, stacks of purchase forms, empty merchandise boxes, and heaps of uniforms clutter his tiny office space. A picture of his last duty ship, monthly sales graphs, clip boards loaded with orders, and photos of his children hang on the paneled walls.

Steady stream

For SHCS Theodore Wilson, Resident Assistant Naval Exchange Officer of NADC-NAF, this office, located in Building #81, is home six days a week, nine and one-half hours a day. From this command post, Wilson handles a steady stream of customers, salesmen, and numerous problems.

Besides the Exchange, Wilson also manages the Enlisted Men's Club, Gas Station, and Exchange Cafeteria.

A career Navyman, Wilson says his home town of Atlantic City, N.J., influenced his decision to join the Navy. "I used to look out at

the ocean and wonder what was on the other side. One day I decided to find out."

Wilson's curiosity launched a career spanning 22 years, 17 of which have been spent at sea. He has served on ten ships, ranging in size from the USS FORRESTAL, a carrier, to the TOM GREENE COUNTY, a landing ship.

Chief Wilson first became interested in the retail exchange system in 1968 while serving with the Submarine Support System in San Diego. "I was the Special Services Officer on base when I decided the retail trade would be a challenge to me," he says.

Chang-Chaung-Kan Air Force Base (C.C.K.), Republic of China, was Wilson's first retail exchange. "C.C.K. was my most interesting duty station. Formosa was such a change from anyplace I had served before," he says. "I was fascinated by the Chinese and their customers."

After completing his tour

at C.C.K. in 1972, Wilson reported to NADC.

Running an Exchange isn't as easy as the Chief often makes it look. "Each base's Exchange represents a completely different set of problems," Wilson says. "The NADC-NAF Exchange is no exception."

"We have limited quantities of stock here and at Willow Grove, because we lack a central warehouse. (The NADC-NAF Exchange is a branch of the NAS Exchange at Willow Grove). With a warehouse we would be able to buy in greater volume, and pass savings onto our customers."

Sound philosophy

With all the problems of managing an Exchange, Wilson has maintained a sound business philosophy. "I try to get the customer what he wants as quickly as I can. Dissatisfied customers don't come back, and that's something I can't afford."

Darker, colder winter forecast for NADC

NADC is going to be a little colder and darker this winter.

Recent measures taken here to conserve energy include: cutting lights in public hallways by 50 per cent, turning thermostats down to 68 degrees, and removing electric heaters.

Also: reducing the speed of government vehicles to 50 m.p.h., eliminating Christmas lights, and even extinguishing the lights on NADC's sign at Street Road.

"We're taking whatever steps we can that are rational and feasible," says Public Works Officer Commander Edmund Hughes. "We really need to get the people behind us to see this thing through," he emphasizes.

Heat will deviate

"Although thermostats have been set to 68 degrees (down from 73), heat in some areas will deviate slightly. "These buildings aren't set up for precise control in each and every area," Hughes says.

Electric heaters have also been removed to conserve energy. Exceptions will be made only with the approval of the department head and the Public Works Officer.

Despite steps being taken to conserve energy, NADC's usage will probably not go down, Hughes says. NADC's electric bill last month was 14 per cent higher than October, 1972.

New special areas are responsible for much of the increase. "We've got computers, air conditioners and heavy power generating equipment in our special facilities like the P-3C Update and

the Tactical Support Center Facility," he says. "These areas draw so much power that turning off lights here and there won't make up the difference. But it will help. And it will show we're trying."

Employees are being asked to keep non-essential lights and equipment turned off. The Security Guards and janitors are also securing all lights wherever possible. "That's where we really need help," Hughes says. "We removed light bulbs from some areas, and when our inspectors returned they found someone had replaced the bulbs."

Biggest heat-wasters

The opening and closing of hangar and vehicle doors is also being restricted. According to Hughes, these doors are the biggest heat wasters of all. "But," he says, "there's so much general traffic, it's hard to assign responsibility."

To conserve fuel, government vehicles are being restricted to a maximum speed of 50 m.p.h. NADC's transportation inventory is also being cut by ten per cent.

Also, Public Works is now reviewing daily transportation requirements to see what can be cut. For example, trips to the Philadelphia Naval Base may be reduced from two to one per day.

"The only way we can achieve anything significant is if it's an All Hands' effort," Hughes says. "Trying to police an area this size with one or two people is impossible."



Public Works' poster

Public Works' employees in the Typewriter/Lock shop have modified this famous poster and are distributing it around Center.

Center scope

Hospital head speaks here

The new Warminster General Hospital will not be the biggest or best in the world. But it will provide good care at a reasonable cost to the community.

So says Dr. Hymen D. Stein, Medical Director of the new hospital.

"It is not going to be all things to all people," Dr. Stein told a luncheon meeting of the Naval Civilian Administrators Association (NCAA) in the Executive Dining Room. "For every hospital in the Philadelphia area to do cardiac surgery is ridiculous," he said.

Citing duplication of facilities as a key factor in rising health care costs, Dr. Stein said the new hospital is one of the first planned to fit into a concept of total community care.

"We're not going to have a pediatrics unit," he said. "But we will see the child and arrange for his admission in a hospital that is geared to deal with him."

Warminster has already formed associations with Children's Hospital of Philadelphia, and with Jefferson Hospital.

The main problem in medical care, Dr. Stein said, is delivering a system that is reasonable, intelligent — and affordable.

By not duplicating facilities, Stein said, "It means we have been able to bring down the cost of medical care considerably."

Costs per day at the new hospital, he said, would be about \$54-\$62 per day. Present costs at some Philadelphia hospitals exceed \$130 per day.

"If any of you use the hospital in the first two months," he told the NCAA, "I hope you'll be tolerant. I say this because I went through this thing at another hospital (Kensington)."

The hospital, when it opens early next year, will have 164 beds, with clearance to expand to 350 beds. It also has what Stein calls "the largest parking area you've ever seen in the world."

"We had to provide three automobile spaces per bed," he said. "When I look around, I say: 'My God, we've got about 15 acres of parking spaces, and the hospital only occupies about one acre and one-half.'"

NAF cites Dykes

ADJ3 Thomas Dykes has been named Sailor of the Quarter at NAF.

Dykes, an Aviation Jet Mechanic, works on the H-2 and H-3 helicopters. He likes his job, he says, because he enjoys working on the whole aircraft.

Dykes, who has extended twice, says he does the best job he can. "It's just me. Ever since I can remember I tried to do the best job I know how. It's something I like to do."

He is a 1969 graduate of Bok Vocational High School in Philadelphia. Dykes, his wife Linda, and daughter Michelle, live in Cornwells Heights.

EM Club to expand

A \$144,000 expansion and alteration project for the Enlisted Men's Club (Bldg. #70), will begin early next month. According to Public Works, the present structure, built in 1942, is not big enough to serve the Center's enlisted personnel and their families.

The existing 2200 sq. ft. building will be more than doubled to 4900 sq. ft., with additions to be constructed on each end of the Club.

A 21 ft. by 49 ft. extension on one side will house

Naval Air Development Center

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CAPT. H.B. McCULLLEY — Commander NADC.
Aris Pasles — Public Affairs Officer; Jim Murphy — Editor; Karl Schmidt — Writer



Dr. Hymen D. Stein (left) addresses the Naval Civilian Administrators Association in the Execu-

an expanded bar and dining room. The other extension will contain a large storage area, an expanded and modernized kitchen, and a utility room.

The additions will also include enlarged rest rooms, a small office, and larger heating and air conditioning systems.

The Navy Resale System is providing \$45,000 for the improvements, as well as new kitchen equipment.

"We're attempting to keep the club in operation until after New Year's," says Commander Edmund Hughes, Public Works Officer. Renovations are scheduled for completion by May, 1974.

CFC exceeds goal

The Bucks County Combined Federal Campaign exceeded its goal of \$47,000, CFC Chairman Ed Tankins has announced. This is \$5500 more than last year's total.

Contributions are still trickling in, Tankins said, and he expects the total to reach \$48,000.

The average gift at NADC was \$20.54, with more than 83 per cent of the personnel contributing.

AVTD topped the departments with a contribution of \$10,413. SAED was the first to reach its goal.

NAF's contributions increased by \$1000, and its participation by 15 per cent.

Final totals will be listed in next month's "Reflector."

CFC Chairman says thanks

As General Chairman of the Bucks County Combined Federal Campaign, I want to say thank you to the 2165 people at NADC and NAF who unselfishly supported our efforts this year. I would like to acknowledge the dedicated efforts of the Department Chairmen, and the 140 key people who are responsible for our meeting our goal.

I am proud of the people at the Center who worked with me, and those of you who so generously contributed to the CFC. May the coming holiday season be as rewarding to you as it will be those that you have helped.

Thank you once again,
Ed Tankins
General Chairman

In memoriam

Nolan Montney, PW

Alaskan call sparks search

When Parke Andersen picked up the phone near quitting time on Friday, October 12, he didn't realize he was beginning a search that would eventually involve one contractor, five engineers, one



Newsmakers

ADJ3 Thomas Dykes has been named Sailor of the Quarter at NAF.

secretary and the supervising switchboard operator.

The telephone call was from a Mr. Messick at the Naval Air Station in Adak, Alaska. To Parke he sounded desperate.

Messick was searching for a schematic to a P-3 electrical component test set. His only clue was a serial number, J1013583, engraved on the test set.

He needed to repair the test set so he could troubleshoot a P-3 downed with electrical problems.

The Naval Air Technical Services Facility in Philadelphia had directed him to NADC. "It was sort of like a last resort call," Parke says.

Parke immediately drew a mental picture of the caller. "I could see him in a remote site with very little maintenance or technical resources, and I knew we had to help."

But, he also knew that it was just about quitting time, and that finding leads would be difficult.

Because the P-3 is made by Lockheed, Parke first contacted Werner Meyer, a Lockheed Representative on-Center. Within a few minutes, Meyer called back to tell him the J101 was an NADC drawing number.

With that clue, Parke contacted AVTD's Doug Liss, who recalled supervising the drawing seven years earlier. Liss knew that the J101 number was a general arrangement number, not a schematic number. He went through his files and came up with the right number, MM14137.

Hitch develops

Things were happening quickly. But a hitch developed. Liss was going on a week's travel.

Admin's Chris Taylor tried to contact Adak to tell them they were looking for the wrong diagram, but she couldn't get through. So, Dottie Dugan, the supervising telephone operator, stayed 45 minutes late to help put the call through. Finally, she used a priority number and bumped someone else off the line.

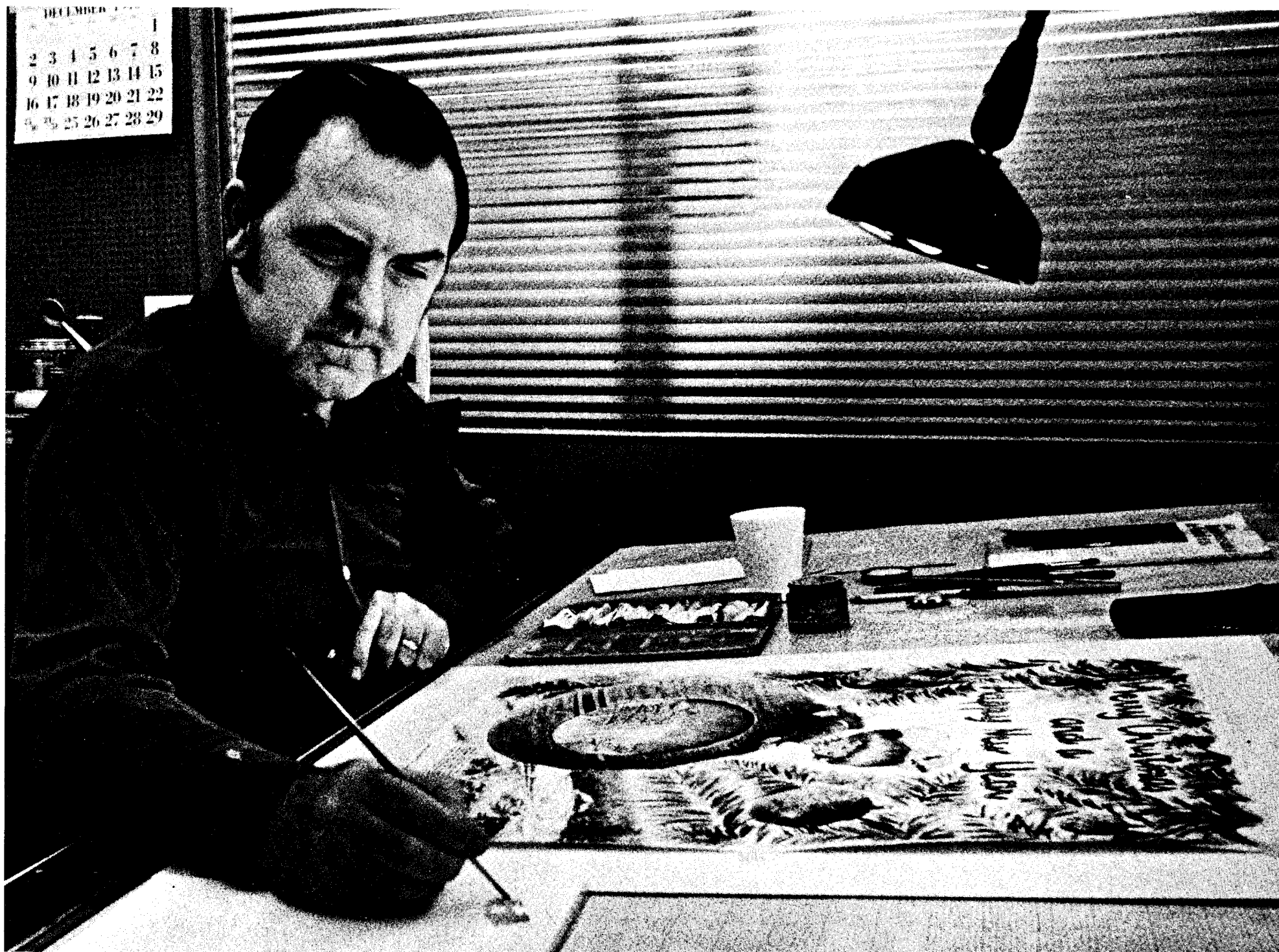
On Monday morning, Parke contacted AVTD's Joe Segrest. "I thought we might as well carry this thing through to the end," Parke says. Joe, and Jim Jamieson began sorting through some old vaults, and found the actual drawing within the hour. Parke mailed it Air Mail Special Delivery that morning.

Calls Adak

He then called Adak. This time, Mr. Messick answered on the first call. "You could tell by his voice that he practically fell out of his chair," Parke says.

"I didn't think we would wind up in a position where we would be of any help. But we try to help the boys out."

Parke speaks highly of the cooperation he received. "It's so easy at this end of the line. For a lot of people this would be a wild-goose-chase," he says. "But I've always felt there were enough people who were concerned."



Imaginative illustrator Druckenmiller's hobby brings him happy holidays

Illustrator John Druckenmiller, who designs NADC's Christmas Posters, is also a commercial success. Two of his drawings will appear as Christmas cards this year.

By Karl Schmidt

Have you ever wondered who designs the winter scenes for Christmas cards? John Druckenmiller found out three years ago when he was approached by a salesman from a major greeting card company. "He told me I should submit samples of my work to his company, as well as other companies, for consideration."

John, a technical illustrator in SAED, was displaying his paintings in weekend art shows around the area. "I became involved in the shows for a hobby," he says. "Traveling around on the weekend circuits from Brandywine to Ocean City gave me a chance to meet a lot of people."

But breaking into the greeting card business isn't

as simple as sending in your work and waiting for the money to roll back in. "For three years I submitted my work to the major companies," he says. "I received lots of encouragement, but I didn't sell anything."

Then last year, two of his seven designs were accepted by a card company in Philadelphia.

Enjoys painting

"I enjoy painting winter scenes," he says. "It seems like you do the best job at something you're really acquainted with."

John has tried other Christmas designs but says "winter scenes are the ones that sell, so I stay with them."

Creating and submitting an illustration to a card company isn't an overnight pro-

cess. The time span from when Druckenmiller first picks up a brush until the card reaches the store shelf is about 18 months.

"I have to start my work in the summer, usually in June or July," says John. "You really have to get yourself psychologically in the mood. To get something done, you have to keep thinking about the winter. I'll also do a lot of research on things that have to do with winter, like other painter's works, and winter photos from nature books."

Once John has an idea of a design, it takes him six to eight weeks to create an acceptable painting for the company. "I do all my work in watercolors. This medium

reproduces better, and the colors seem much more natural."

All designs must be submitted to the company by early January. The cards are printed in the summer and

sent out for review by store purchasing agents. Their selections are delivered to the stores in early November.

John's cards will appear

(Please turn to Page 2)

Holiday greetings

The Naval Air Development Center has experienced another successful year. I am pleased to express my thanks to each member of the NADC team who contributed to that success.

At this very special holiday time of the year, Mr. Hollingsworth and I would like to extend our warmest greetings to you and your family.

H. B. McCaulley
Captain, USN



Plans future

Dino Mancinelli, new Deputy Director of Crew Systems, discusses his plans for the future.

Dino Mancinelli becomes CSD's Deputy Director

Dino Mancinelli, a mechanical engineer who's concerned more about man than the machine, has been appointed Deputy Director of the Crew Systems Department.

He replaces Acting Director Georges Duval who has retired.

"All too often man is not considered in the early stages of design," Mancinelli says. "That's changing as a result of our efforts and others on-Center to include man."

Afterthought

"Man has more or less been an afterthought on all our present day aircraft," he continues. "They're not designed to be very acceptable to the man. For example, cockpits in modern aircraft don't completely accommodate the pilot. But that's changing."

Early inputs

Crew Systems personnel, he says, now make inputs about seating, cockpit geometry, and location of instrumentation and displays at the earliest stages. "There's so much information available to a pilot now that he can not absorb all that is required, resulting in a training and a fatigue problem. Man is part of a system, and we're trying to maximize the inter-

face between man and the machine."

Mancinelli, a 1950 graduate of Drexel University, has been Head of CSD's Life Support Engineering Division for 14 years. He began as a trainee engineer at the Philadelphia Air Crew Equipment Laboratory in 1950, and moved with ACEL to NADC in 1967.

Top civilian

Mancinelli becomes top civilian in a 166-man department that includes physicians, physicists, biologists, psychologists, veterinarians, and engineers. The variety, he says, is part of the challenge.

"We have very distinct educational discipline differences," he says, "each of which carries with it different responsibilities. For example, the medical types need to be more independent in their research."

Summing up his management philosophy, Mancinelli says: "We're paid to do a job, and we should damn well do that job. But you have to be consistent. If you demand the utmost from one man you have to demand it of others. You have to be fair and consistent."

Mancinelli, his wife Marion, and their three children live in Warminster.

YT-2B's profiles are unique

by Jim McDonnell

Have you ever wondered what the orange and white jet at NAF is used for? Well, two programs on Center are currently using the YT-2B Buckeye trainer. Typically, three or four flight tests are conducted in the aircraft each week.

The T-2 is collecting flight time histories on various flight parameters. Such aircraft motion variables as acceleration, aircraft orientation and velocity are precisely measured and recorded as the YT-2B is maneuvered in unique flight profiles. Motion sensors are installed in various locations on the aircraft, including the tail, wingtips, and at the top of the 10-foot boom mounted on the nose.

Two programs

One of the two Center programs that use the T-2 is the Aircraft Dynamics Identification Program (ADIP). ADIP is developing a reliable method for identifying aircraft dynamic parameters. Program engineers are producing high quality flight time histories by operating the T-2 with carefully selected pilot control inputs.

That is, the pilot accurately manipulates the T-2's flight controls to achieve precise flight maneuvers.

Originally started on internal research and development funding, the ADIP is now sponsored by NAVAIR-320D.

The T-2 is instrumented with a flight recorder mounted in the nose of the aircraft. After each flight, the 25 channels of recorded data are played back and analyzed on the Center's CDC 6600 computer. The time histories of the flights are analyzed by several mathematical techniques to determine aircraft dynamic parameters.

40 parameters

Typical of the approximately 40 aircraft parameters that ADIP is identifying are: pitch damping, roll control power, yaw damping, and static longitudinal stability.

By comparing aircraft math model output data with the precise T-2 project flight data, the computer calculates the set of parameters that best describe the dynamic flight characteristics of the modeled aircraft and uses the results to refine the math model.

The engineering skills and computer programs developed during ADIP will enable engineers to make better math models, and consequently better computer simulations of aircraft such as the F-4 and F-14.

The T-2 is used by the Project because it is a safe airplane to fly. Plans for the ongoing research include maneuvering the airplane in high angle-of-attack flight, a flight regime that's frequently dan-

gerous and one for which little is known about the flight aerodynamics.

But the T-2's excellent flight stability and ease of control make recovery from inadvertent spins possible.

During a spinning flight period, the pilot actually loses total control of an aircraft. According to Art Schuetz, lead project engineer on the T-2 program, dramatic increases in the number of military aircraft lost due to loss of control has spurred a national effort by the Navy, Air Force, and NASA to learn more about stall/spin flight characteristics.

Toughest ride

Designing a fighter aircraft is like designing a race car for its toughest ride, says Carmen Mazza, a supervisory engineer in AVTD's Aerodynamics and Propulsion Division.

Besides power and speed, fighter aircraft must have excellent stability as well as effective control systems. Data gathered by the T-2 program will be applicable to the refinement of aircraft design processes.

Potential payoff

A reliable aircraft parameter identification technique could have a "potentially high payoff," according to Carmen Mazza. It would be a very valuable technique which would enhance current aircraft design and test procedures. In addition to being more accurate, it would save money, time, and lives that are currently lost using today's techniques to learn the unknown flight dynamics of aircraft.

Most T-2 test flights are conducted near Atlantic City, N.J., at a speed of .7 MACH. Research is also being conducted at approach airspeeds.

Eleven channels of flight data are transmitted "real time" back to NADC via telemetry from distances of up to 130 miles. Al Piranian,

flight engineer for the T-2 program, says that using telemetry greatly reduces required flight time.

Engineers on the ground, after observing telemetered flight data "on line," can direct the pilot to refine his flight maneuvers as he puts the aircraft through unique flight profiles.

Besides ADIP, the Prototype Variable Stability Trainer Development Program also uses the T-2 aircraft. This program is determining the present stability and control characteristics of the T-2 as well as the full "range" of its stability.

Variable stability

A variable stability aircraft is one in which the pilot can change the dynamic flight characteristics of the aircraft. For example, it's roughly analogous to making the steering and handling characteristics of a Volkswagon "feel" like those of a Corvette.

That is, a simulator based on a Volkswagon could be made to have the steering and handling characteristics of a Corvette. However, the "simulated" Corvette would not have a Corvette's capability for rapid acceleration and high top speed.

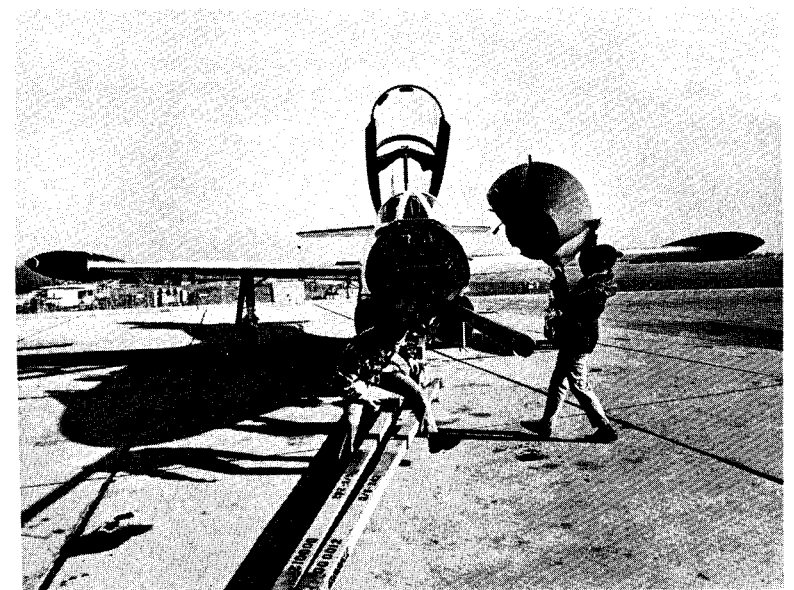
Different characteristics

The flying characteristics of a T-2 aircraft and an F-14 aircraft are quite different, just as the driving characteristics of a Volkswagon and a Corvette are different.

However, an "in-flight simulator," such as a variable stability T-2 aircraft can be programmed to have the stability and control characteristics of high performance aircraft such as an F-14 but would still be limited to T-2 performance capabilities.

The program, in the early stages of developing a prototype of an advanced variable stability trainer aircraft for training, is currently supported by internal research and development funds.

(Please turn to page 6)



Flight recorder

Al Ortiz (left) and Al Piranian prepare to load tape into the YT-2B's flight recorder.

Druckenmiller

(continued from page 1)

either as part of 20-card sets or as a personalized card with the sender's name engraved inside.

"I design cards for several reasons" says John. "It gives me a sense of artistic achievement when I paint. I also enjoy doing it because the competition in the field is so rough. It pits me against people that make this their

livelihood. That gives me a goal to shoot toward. I'll also have to say that the money you get for an acceptable design is really good too."

Samples of John's works can be viewed in Peddler's Village, Lahaska, Pa. "I was commissioned to do a series of scenes around the Village. They are displayed at different shops on the green."



Easy rider Bill Orrick is one of several NADC employees who bike to work. Riders say they feel better and save money.

Will NADC become a pedal-ers village?

By Karl Schmidt

A small band of NADC employees has decided to fight the energy crisis in their own way. The members feel that by riding bicycles to work, they can help to ease the gas shortage, as well as keep in shape.

"I decided to start riding to work when three people I knew died of heart attacks" explains Dave Gould (SAED). "I feel the way to live is to exercise. Bike riding also lets me stay close to the outdoors."

"When you think that we are using 60% of the world's fuel, but we only have 10% of the population, you wonder how long we can go on the way we've been doing," he continues.

Dave is a "half-way" bike commuter to NADC. "Living in Newtown, (about 12 miles from the Center), it's a little

bit too much to ride all the way every day. I put my bike on a bumper-mounted rack on my car, and drive as far as Richboro. After parking at a shopping center, I unload my bike and head for work which only takes me about 20 minutes."

Although he's never had an accident on his way to work, Dave admits that cars are a major threat to him. "Most people driving cars just don't know how to pass bikers. A lot of drivers get really nervous when they pass a cyclist. It seems that drivers just are not use to bike riders."

Dave credits his accident-free record to his use of bike safety equipment. "I try to stay highly visible by using a bike flag and wearing a fluorescent orange jacket."

Bill Orrick (CSD), started his commuting career in a

different way. "I came out of my house one morning and my car wouldn't start, so I hopped on my bicycle and headed for the Center. I've been doing it ever since."

Bill, who lives in Richboro, leaves his house at 7:00 a.m., and reaches NADC by 7:25. "I've figured my average speed to work is about 12 m.p.h." Bill says he draws the line on riding to work some days though. "I don't mind riding in the rain, but when it snows or there is ice on the road, then I take the car."

Bill also believes that safety on a bike is very important. "When riding I wear an orange jacket, a French leg light (a small battery-powered light that is strapped to the leg), and a small mirror that attaches to my glasses so I can see the cars that are behind me."

John Monastra's (SAED) reason for cycling to work is an economical one. "I can't see driving my car to work when I only live a mile and a half away. It only takes me about 10 minutes to get here by bike. This also lets me go home for lunch everyday too," says John. "A bicycle is a practical alternative for me having to buy a second car. It's really saved me a lot of money."

Not all NADC bike riders pedal to work. "I bring my bicycle to work in my car" says Marie Hutchinson (CSD). "Then at lunchtime, I change into slacks and a ski jacket and ride either around the Center, or to Ivyland."

"My main reason for riding is the exercise," continues Marie. "It doesn't tire me at all. As a matter of fact, it's very refreshing once you start moving."

Marie's riding mate during her lunch time trips is Ruth Lynch (CSD). "I don't ride to work because it's too dangerous. I think it's a great sport and I wished I had more time to go riding."

"I think more women would ride to work if they didn't feel so self-conscious about it. We do draw a lot of stares from men drivers," she says.

"I see different ways NADC can encourage bicycle commuting" says Dave Gould. "One of the most serious mistakes that many riders make is to ride on the wrong side of the road. A simple thing the Center could do is hold bike safety classes to help educate riders. I believe that riding is a basically safe, economical means of transportation, and it will become safer as more people begin to ride."

Brooklyn man likes area apartments

Apartment renters get more value for their money here than in New York City.

That's the opinion of Frank Corredine, one of the first members of the Ships Navigation Department (code 60) to arrive here.

"The apartments around here are much larger and a lot nicer for the money," he says. "They give you the little extras like wall-to-wall carpeting and dishwashers. These are hard items to find in New York apartment houses."

Corredine is a member of the Oceanographic and Survey Systems Division that was transferred here from the Naval Ships Systems Navigation Facility (NSSNF), Brooklyn.

Some of the new employees are still travelling a long way to work. For example, Steve Kochanski lives in Kutztown where his daughter goes to school and drives 60 miles each way. "I've bought a house in Warminster," he says, "and will be moving into it sometime early next year. It used to take one

hour from my house in New York to work. From my new house to NADC will only take me about five minutes. I'm really looking forward to that."

Dave Myers, a native New Yorker, praised NADC's Housing Referral Office for helping the NSSNF employees relocate. "The office gave us confidence in making our move to the Delaware Valley," he says. "The Housing Referral people are professionals that run a professional office."

The first ten NSSNF em-

ployees arrived at NADC on November 26. After filling out the necessary personnel forms, they were formally welcomed by Guil Hollingsworth, NADC's Technical Director. Then they moved to their new quarters at the end of Aisle D in Building #2.

Asked what advantage he sees here at NADC, Acting Department Director Stanley Sezaek replies: "The Center has large, well-managed, support groups. We can put their wide expertise to good use."



Overwhelmed

Dave Myers, a former NSSNF employee, seems overwhelmed by his first day at NADC.

Christmas is drinking, eating, and partying — and then going back to the home

(STORY ON PAGE 6)



It's winter, 1973, so it must be Warminster

by Julie Sullivan

It's winter, 1973, so it must be Warminster.

A year ago it was Levittown, before that Comox, British Columbia.

For Major Glenn Goodman, NADC's Canadian Liaison Officer, and his wife Nikki, it's just one move after another. And with 14 changes in 16 years, Nikki has become a moving expert.

Nikki reveals her moving method by describing their most recent trip — a short one from Levittown to Worthington Drive, Warminster. "As soon as I got one room emptied and cleaned, we brought the furniture over. We made four trips with the trailer." The trailer, which occupies the driveway, served as mobile home, van and storage bin during the move.

But the Goodmans don't always move themselves. In the 3000-mile trip from British Columbia to the Philadelphia area, they were packed, transported and unpacked by a major moving company. Nikki has nothing but praise for the movers, saying they put everything in place without even breaking a saucer.

The Goodmans cut moving time to a minimum. In three days they finished cleaning their Levittown home, packed, moved, unpacked, and prepared for company in their new house for the weekend.

Nikki tries to leave no traces when she leaves a house. The new resident of their Levittown house told Nikki it was the first time she had ever been able to move into a house without cleaning it first.

The constant moves have forced Nikki to become a businesswoman. Since major appliances are not included in some Canadian homes, she has bought and sold stoves and freezers more than on one occasion.

She advises people planning to move to box their personal things themselves. "I usually get one corner of the room and put my personal things there," she says. "Then I put up a sign that says 'Don't touch.'"

Moving forces the Goodmans to adjust constantly to new situations, but Nikki is used to that. When she first met Glenn 15 years ago at a dance in Baggetville, she spoke very little English, and he spoke very little French. She says TV and her constant exposure to English-speaking people have helped her speech. Now it is almost impossible to tell that English is not her native tongue.

Two Christmasses in one place is still the all-time record for the Goodmans, so maintaining friendships is difficult. Still, Nikki says she's kept in contact with several friends over the years.

For the children, the moves mean changing schools often. Glenda, a ninth grader, has been in eight different schools.

With their mobility the Goodmans could become



Real mover

Nikki Goodman, wife of NADC's Canadian Forces Liaison Officer, says they've moved 14 times in 16 years.

victims of future shock. But their adaptability seems to prevent this. "I feel at home anywhere I can hang my hat," Nikki says. "As long as it is clean," she adds.

"Right now I'm so used to it that after two years I'm ready to move again."

Fortunately, she enjoys meeting people. As an ambassador of sorts, entertaining people has be-

come part of her lifestyle.

Victoria, British Columbia is the Goodman's favorite place to live, and they plan to settle there when Glenn retires in eight years.

"There's salmon fishing all year long," she says. "It's great. I'm not a good fisherman, but I'm lucky. When we came down here we gave away 26 salmon. That hurts."



"The job of a good secretary is to keep her boss happy," says Millie Klicka, secretary for Captain McCaulley, Commander, NADC.

No secretarial shortage here

While Philadelphia faces a critical secretarial shortage, vacancies at NADC are filled almost as fast as they occur.

Why the contrast? To find out, the "Reflector" interviewed more than 20 NADC secretaries, as well as supervisors and personnel specialists.

One reason there's no shortage is that NADC actually has only 39 secretarial positions. Typically, a secretary is paid at the GS-5 level, and works for just one person.

Most of the employees who look like secretaries are actually classified as clerks. "Because of the abundance of qualified clerical personnel," says Civilian Personnel's Jane Casagrand, "NADC's secretaries are hired from the existing work force."

Another reason there's no shortage here is that vacancies don't occur very frequently. Many secretaries have worked at NADC for five years or more. They find the diversity of the work attractive. "I really don't know what I'll be doing during the day," says Vivian Arrington. "Flexibility is most important in this job."

Secretaries also say they like the challenge of dealing with different personalities. "I enjoy meet-

ing people," says one secretary. "In this job I get the opportunity."

They also prefer working for one person, because they learn how their boss wants things done. Actually this coincides with the original definition of a secretary, "an entrusted one."

Generally, NADC's secretaries live close-by, and like both the convenience to their homes and the liberal leave and retirement benefits of civil service employment. "I can take my son to the dentist without taking a whole day off," one says.

What does a secretary do? According to Millie Klicka, a secretary sets the tone of the office. "If she is cheerful and efficient, that's the way things will go."

Surprisingly, being able to type well and take dictation aren't the most important prerequisites. "People often have the wrong impression about what it means to be a secretary," says Jane Casagrand. "In June we are flooded with applicants. The young girls come in worried about their typing. In truth, accuracy and efficiency are really more important on the job."

"No one knows how fast you typed something," one secretary says. "But a typo glares off the page."

Center scope

Brewster letters keep coming

In mid-November NADC's Civilian Personnel Department received a routine request from a Philadelphia trucking firm to verify a job applicant's employment history.

The only thing not routine was the envelope. It was addressed to Brewster Aircraft, Johnsville, Penna.

Brewster shut down on June 30, 1944, some 29 years ago.

Admin's George Forte gave the letter to Public Affairs, who opened it and in turn gave it to Civilian Personnel.

The job applicant claimed he worked for Brewster in 1943. Evidently he didn't transfer to NADC, because his name doesn't appear on any Navy records. A similar woman's name does, however.

"We don't have too many records on Brewster," says CPD's Lucy Canham, "although we do have a few things. I sent them a note telling them I had nothing on it."

Last year NADC received an advertisement from a British firm in Yorkshire addressed to: Messrs. Brewster Aeronautical Corporation Plant, Johnsville, Pa., U.S.A.

A spokesman at the Warminster Post Office, when complimented on its ability to get misaddressed mail to NADC, said: "Well, we have a lot of old-timers here who remember when NADC used to be Brewster."

Key West does it again

NADC's Key West Field Station personnel, who have rescued others and been rescued themselves in recent months, were at it again in December.

Called out on Saturday morning, December 1, they pulled the Coast Guard Cutter Cape York off a mud bank.

The cutter had run aground on Friday evening, November 30. According to NADC's Rich Mersiowsky, Coast Guard boats couldn't pull it off, and the water was too shallow for Navy tugs.

So, NADC's LCM-8, a 74-foot shallow draft, landing craft, was called into service.

Piloted by ship captain Ron Arriaga, a TRECOR contractor, the flat-bottomed boat moved back and forth in the mud to break the suction. The operation, which took place about two miles from the field station, was completed in one and one-half hours.

Mersiowsky and Jim Kennedy joined Arriaga aboard ship, while Bill Myers manned the radio back at the Field Station.

Key West personnel have taken part in several rescues in the last two years. In March of this year Kennedy and Myers were themselves rescued by a Navy helicopter when a torpedo retriever boat sank in 1000 feet of water.

WCAU is snow shutdown station

If the Center is forced to close because of an emergency snow situation, NADC's name will be announced on WCAU radio, 1210 on the dial. No code word or number will be used.

Centerites gobble gobblers

What was the general reaction to this year's NADC Thanksgiving Dinner served in the Center cafeteria?

"The majority of the comments were very favorable" says Claude Van Horn, Cafeteria Manager, Food Services. "It was the biggest dinner ever



Partygoers

Children of all ages come to the W&R's annual Christmas Party for Christ Home.

held. This year we drew 890 people. That's about 100 more people than last year."

"We tried to keep the lines as short as possible," he says, "with the average serving time about 15 minutes per customer. The biggest crowds were drawn between 11:30 a.m. and 12:00 noon.

NADC employees consumed 15 25-pound turkeys, 26 pans of dressing, 330 pounds of sweet potatoes, 25 pounds of cranberry sauce, 200 pounds of peas and carrots, 54 pumpkin pies, 42 mince pies, 55 apple pies, and 20 gallons of coffee.

"The credit for a successful dinner has to go to my staff," he says. "They handled everything perfectly. When you have these kind of people working for you, it's a lot simpler to have a good dinner."

"The only real problem" according to Van Horn "was with the dishwashing machine having to clean double the amount of dishes it usually has to handle."

Compiling center commences

"If we tell a computer we want a helicopter to find a submarine," the computer doesn't understand," says Mark Elfont, LAMPS Test Director.

With this in mind, the Compiling Center of the new Integration Lab helps the computer understand the LAMPS software program. The lab takes information like navigational, acoustical, and radar data and translates it into computer language.

Opened November 28, the compiling center includes six tape decks, a card reader/printer, and the LAMPS computer, the AN/UYK-7.

NADC is the lead Navy lab for LAMPS (Light

Airborne Multi-Purpose System) linking helicopters with escort ships for ASW fleet support.

The lab, which will include avionics, integration and ship electronics areas, is scheduled for completion in early January. The cost is \$60,000.

When completed, Elfont says, "This lab will enable us to operate all the LAMPS equipment in the same configuration as it will be in the LAMPS MK III development system."

SECNAV cites safety record

NADC has received congratulatory letters from the Secretary of the Navy, Chief of Naval Operations and Chief of Naval Material for winning the Secretary of the Navy Award for Achievement in Safety Ashore for Calendar Year 1972.

"The excellent record attained by personnel under your command is evidence of conscientious implementation of the Navy's accident prevention program, and is one in which you may well take pride," the Secretary of the Navy said.

Before presenting departmental safety awards, Captain McCaulley presented the Safety Award Plaque to retired Safety Officer Dave Orr.

NADC also won the Secretary of the Navy Award in 1969.

39 receive 30-year pins

Thirty-nine persons have received 30-year pins.

They are: **P & FM:** Guy D'Ambrosio; **SAED:** Aaron Bass and William Young; **AVTD:** Vance Daily, Peter Longo, Charles Rodgers, and Theodore Rucci; **AETD:** Edward Arvonio, George Gimber, Walter Grzywacz, Paul Oliveri, Rose Paul, Anthony Sokolowski, and David Zimmerman.

Supply: John Barbour, James Gallagher, Clarke Hilburn, Lenard Hosley, Edward Peck, Rita Sheehan, Bryon Wrigley, and Mario Mateucci; **Public Works:** James Evans, Floyd Johnson, James Luchuck, Randolph Matthews, William McMullen, John Moran, Ralph Rodebaugh, and Robert Van Pelt.

ADMIN: Samuel Campagna, Richard Coppola, Joseph Farrell, Kurt Kuppers, Charles Mitchell, Ida Rosnick, James Ryan, Raymond Shaffer, and Edward Soboleski.

YT-2B is unique (continued from page 2)

When a Naval Aviator is first assigned to a Fleet Squadron after flight school, he usually must learn to fly a more sophisticated aircraft than he trained in.

A variable stability aircraft could be used to demonstrate the more difficult flight characteristics of advanced fighter aircraft to student pilots during basic training.

If a student pilot loses control of the aircraft being simulated in flight, the T-2's variable stability features will disengage automatically, reverting the aircraft back to the basic T-2 configuration. In addition, the pilot or instructor will also be able to disengage those controls manually.

For example, one instant a student pilot could be airborne "actually flying" an out-of-control simulated F-14, and seconds later, after the variable stability features of the T-2 are disengaged, he would be flying the basic T-2 configuration.

According to Carmen Mazza, the basic T-2 configuration is very forgiving to the mistakes of student pilots.

Happiness is 210 hamburgers

Two-hundred and ten platters of hamburgers and french fries, plus hundreds of dixie cups and cookies were consumed on Saturday, December 8, at the Welfare and Recreation Association's 25th annual Christmas Party.

Some 70 children and 40 adults from Christ Home attended the three-hour long party. Entertainment was provided by the Vicky Gray School of Dancing in Hatboro. Hospital Corpsman Russ King, who recently placed second in the Fourth Naval District Talent Contest was M.C.

Everything went smooth," said W&R President Elmer Krauser. "I thought it was good." Mary Swanchak was Party Chairman.

Naval Air Development Center

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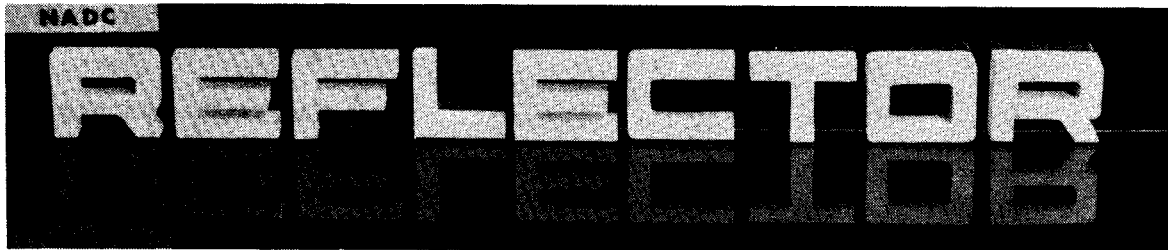
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CAPT. H.B. McCaulley — Commander NADC.
Aris Pasles — Public Affairs Officer; Jim Murphy — Editor; Karl Schmidt — Writer

The Bloodmobile

Is it heading
for oblivion?

See Page 2



Volume 17, Number 7, Naval Air Development Center, Warminster, Pa. January, 1973

Choice of independent panel

Langen appointed AVTD's Deputy Director

William A. Langen, Jr., a former naval aviator who's flown practically everything from bi-planes to blimps and turbo-props to jets, has been named Deputy Director of the Air Vehicle Technology Department.

He was selected from among 167 candidates scattered across the country. The job, which is at the GS-16 level, was advertised nationally in *Aviation Week and Space Technology Magazine*. It was also circulated by the Office of Civilian Manpower Management in Washington.

Langen, who's been acting Deputy Director since January, 1971, was the choice of an independent panel.

THE PANEL, composed of Captain Harold R. Cody, Chairman, of the Naval Air Systems Command; Professor Alan Fuhs, Naval Post Graduate School, Monterey; and Dr. Harvey Chaplin, Naval Ship Research and Development Center, Bethesda, Maryland, met here December 5 and 6, and again on January 4.

The panel screened 37 candidates and interviewed the final five choices. Initial screenings were done by Civilian Personnel, and then by Dr. Harry Krutter, Technical Consultant; William H. Raber, Director of SAED; and Technical Director, Guil Hollingsworth.

DR. JOEL S. LAWSON, the Director of Navy Laboratories, was consulted on the make-up of the panel.

"Basically what we had," says Guil Hollingsworth, "was a panel composed of people for whom we work, and with whom we work, along with an independent technical representative."

Confirmation of Langen as

Deputy Director was made by Captain McCaulley and Guil Hollingsworth. Final approval of the reassignment must be made by the U.S. Civil Service Commission.

Langen, a graduate of the New York University College of Engineering, served on active duty with the U.S. Navy during World War II and the Korean War. "I was originally going to join the Merchant Marine," he says, "but the Germans started sinking lots of ships and I wanted to get into something that shot back, and an airplane gives you that."

HE QUALIFIED as a Naval Aviator at Pensacola, Florida, in 1943, and at Lakehurst, New Jersey, in airships 10 years later.

He was continuously active in the Naval Air Reserve until 1968, and was Commanding Officer of Reserve Unit WEPTU 751 at Lakehurst in 1964 and 1965.

His 23 years of Government Service have been broken by three separate tours with private industry: with Chance-Vought Aircraft, in production control; with Goodyear Aircraft, in preliminary design; and with RCA Astronautics, on the Ranger Moonshot Program.

Langen, who recently returned from the Federal Executive Institute in Charlottesville, Virginia, has done graduate work at the University of Pennsylvania, Pennsylvania State University, and at Rutgers. For the last three years, he has been the Navy Member on the Technical Committee on Structures of the American Institute of Aeronautics and Astronautics.



William A. Langen, Jr.

AVTD entry wins 1972 Poster Contest

A Christmas Card Poster submitted by the Design and Installations Division, AVTD, has won first prize in the 1972 Poster Contest.

Second prize went to Remote Sensors, SAED, and third prize to the Technical Information Division of Administration; Honorable mention went to the Purchase Division, Supply.

Contest judges included: Cliff Tierney, PW; Tom Leary, Admin; Eugene Stohrer, AETD; Carl Jackle, AETD; and G. Arrington, Supply.

Holden to head Administration

At press time Captain McCaulley announced that Fred R. Holden has been named Director of the Administration Department. He replaces Acting Director William C. Renz, who returns to his full-time position as Director of Civilian Personnel.

More information on the appointment will be contained in the February edition of the *Reflector*.

At cost of \$500,000

Contractors hit roof

Area contractors are receiving hundreds of thousands of dollars of work under NADC's recent refurbishing program.

The program includes: reroofing of various buildings; painting of the NAF Hangars, both inside and outside; and replacing broken windows and painting buildings #1 and #2.

REBRICKING and painting of building #3, the Administration building, is also on the drawing board.

The reroofing has been evident for some time because of the smell of tar around the Center. The roof being applied to building #3 is five-ply roofing felt.

Work on the centrifuge building is already completed, and the roof of building #3 is almost done. Work on buildings #1 and #2 is scheduled for completion in about twelve months.

Total cost of the roofing will be about \$500,000.

"AS FAR AS I know, the

roof on most of the buildings is the original roof," says CDR Edmund Hughes, the Public Works Officer. "Every time we had a heavy rain, we had 20 to 30 leaks. We're hitting the worst areas first."

Buildings #1 and #2 are also being repainted, the windows cleaned, and broken glass replaced. "I don't think anyone remembers the last time the building was painted," CDR Hughes says, "and I don't think some of the windows were ever washed." Completion date for that work is July 13.

"I've been dissatisfied with the painting ever since I got here," he says. "Captain McCaulley feels strongly that a good appearance is essential to a good image of the Center, and that this is part of being a good neighbor to the community. He has provided a lot of interest and encouragement."

Rossetti is Fireman of Year

When John Rossetti moved from Northeast Philadelphia to Warrington, Bucks County, 19 years ago, he assumed the township had a paid fire company.

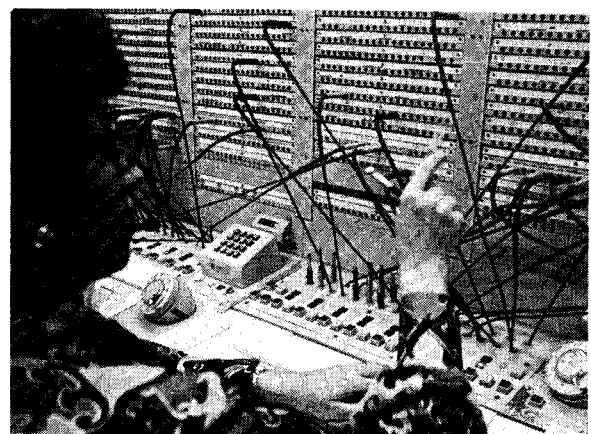
Until lightning struck his house. And the telephone operator didn't know what company to call.

When he finally did get help from volunteer firefighters, he was so appreciative, he became a firefighter himself.

Now he's been named Bucks County's Fireman of the Year for 1972.

Rossetti, an NAF Fire-

fighter, who's been Chief of Warrington Fire Company #1 for nine years, received the award for entering a burning apartment across from where he lives at 1753 Street Road last April. "I started in and saw fire working behind me," he says. "I backed out, grabbed a pressurized water extinguisher in the hall, and knocked the fire down enough to get back in. I didn't know the husband had already lowered his wife and child out the window." The fire occurred about 10:30 a.m. on Sunday, April 16, in the Paul Valley Apartments.



Busy signal? See Page 3

Decrease in donors causes concern here

The drought of blood donors causing concern in Philadelphia hospitals didn't stop at the city limits. It's hit Bucks County as well.

Blood donations at NADC, which have been steadily decreasing for several years, hit a new low last September when only 83 pints were collected.

What are the reasons for the decrease? Are people afraid to give? Do they understand the value of the program? To find out some of the answers to these questions, the *Reflector* interviewed NADC's Joseph D. Finn, whose office administers the program, and Mrs. Florence Lewis, Director of Red Cross's Lower Bucks County Chapter.

MR. FINN SEES several possible reasons for the decrease. "I don't think a lot of employees realize the significance of the program," he says. "And maybe we haven't publicized it enough. We certainly haven't reached everyone. Also, many of the health plans now cover the cost of blood, but I would hate to think that's the reason for the decline."

Under NADC's program,

any employee or member of his immediate family who needs blood can have it replaced at no charge by Red Cross. Otherwise, charges can run as high as \$60 per pint.

To keep the program in force, one pint of blood must be donated each year for every five Center employees. The Bloodmobile visits here each September, February and June. It will come again on February 7.

TO SEE HOW much blood NADC employees and their families use, the *Reflector* selected one month at random and found that 26 pints of blood were used just in July, 1972.

To be eligible to donate, you must be between 18 and 65, weigh at least 110 pounds, and be in good health.

Red Cross's Mrs. Lewis points out that the number of first-time donors is dropping. "Normally, once a person gives the first time, he will donate a second or third because he realizes how easy it is."

"We want to cover everyone we can," she asserts, "but of course we can't do it if we don't have the blood."

CNO looks forward

WASHINGTON, D.C. (NAVNEWS). . . The forward deployment program was established by the Chief of Naval Operations to allow career designated personnel and their families to live in foreign countries. It is intended that these units will be manned as much as possible by volunteers who will be interested in the customs and traditions of the areas in which they are located.

The Navy is deploying ships in many countries now, including Greece, the Philippines, Italy, Spain and Japan. A cost of living allowance is available in those areas where

expenses are greater than U.S. costs for similar items. A housing allowance also may be given when it is found that civilian housing costs are greater than the basic allowance for quarters (BAQ).

Navy men who are top performers are eligible for the forward deployment program. All requests for the program must include a preference of at least two geographic areas - - the Mediterranean, Western Europe, Mid-Pacific or the Western Pacific. The date of birth for all dependents under 18 years of age, and a statement of any special dental or medical problems also must be included.



IT'S TIGHT - - AEAN (Aviation Electrician) Loren S. Miller does a routine check on the tail rotor of an SH-3A helicopter. Miller, who's been at NADC since October, 1971, is the Sailor of the Month.

CU annual meeting takes place Feb. 15

The 22nd Annual NADC Federal Credit Union Meeting will take place on Thursday, February 15 in the Center Cafeteria. Starting time is 8:00 p.m.

The meeting, open to members only, will include election of three Directors and two Credit Committee members to two-year terms.

Any credit union member may be nominated, and nominations will be accepted from the floor. Charles Miserendino, AVTD, is Chairman of the Nominating Committee.

The meeting will be followed by a buffet.

Specials announced by Navy Exchange

The Navy Exchange has announced a number of special sales for the weeks ahead.

Among them are Valentine's Day and Washington's Birthday specials, and fifteen "Appreciation Days" during March.

Winter items, cameras and income tax guides are among hundreds of items available at the Exchange.

Death notices

Robert Osborne, Public Works
Gail Meinhardt, AVTD
Adaline Mulhollen, Admin.
Windsor Hemby, Admin.
George Mills, formerly of SAED

Quotable quote

"This is the foundation of success nine times out of ten - having confidence in yourself and applying yourself with all your might to your work."

—Thomas E. Wilson

Naval Air Development Center

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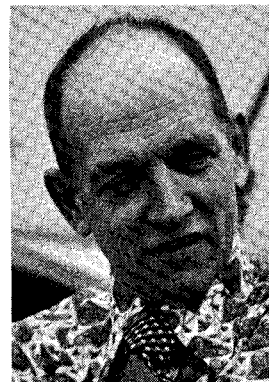
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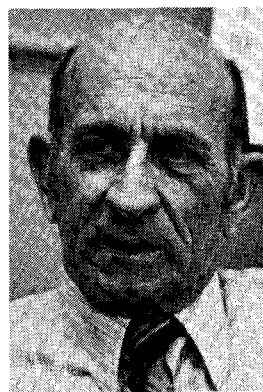
CAPT. H.B. McCULLLEY
Commander NADC
Aris Pasles—Public Affairs Officer
Jim Murphy—Editor

Viewpoint

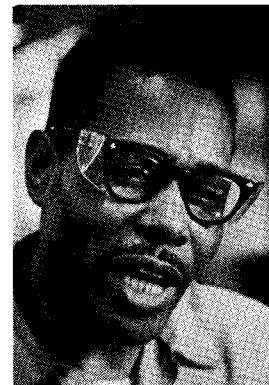
Why do you think NADC's Blood donations are decreasing?



Bernie Dupee, Electronics Engineering Technician, Admin.—"I think the trend today is get what you can and not what you can give."



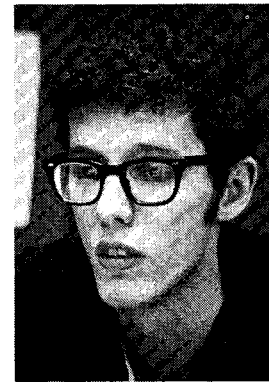
Bud Holland, Transportation Superintendent, Public Works—"We've got quite a few new people around here who aren't familiar with it. Also I don't think people are being informed in time."



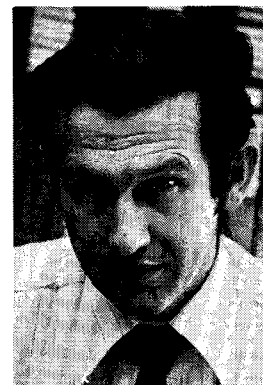
Olious Hightower, Heavy Duty Mechanic, Public Works—"I think the people who donated have retired."



Debbie Best, Clerk-Typist, CPD—"I think a lot of people are scared of a needle. They wouldn't take my blood because I don't weigh enough."



PN2 Bob Setler, NAF—"I know some of the military are willing to give, but you can't donate until you've been back from overseas for at least one year, and we've got quite a few of them."



Bob Pomrink, Position Classification Specialist, CPD—"Probably because it's not as important to the younger people as it is to the older guys, and you're losing a lot of the older ones to retirement."



Dan Schaeffer, Warehouseman, Supply—"A lot of the people that donated are gone. Quite a few of them have retired. It's hard to get the younger people interested in it."

"I want the gedunk"

Operator, will you help me place this call?

"Honey, I'm sorry, did I wake you up?"

That's one of the lines NADC's telephone operators get when the switchboard looks like a Christmas tree and all their cords are in use.

"You've just gotten done answering 15 calls, and they think you're out getting a beer," laughs Chief Operator Dottie Dugan.

But the operators say most of the people they deal with are nice. They just don't understand what it's like to run a switchboard.

DOTTIE IS ONE of seven NADC operators who handle between 2500 and 3000 calls each day for NADC and Willow Grove, between 7:00 a.m. and 8:00 p.m., seven days a week. The other operators are: Madee Young, Shirley

George, Theresa Gobbo, Lillian Parkinson, Kathleen Manning and Nancy Toler. Pat Comer also assists when needed.

The *Reflector* Editor sat next to Dottie at the switchboard on Friday afternoon, January 19, while the operators did their thing.

IN THE SPACE of about eight minutes, Dottie handled 12 to 15 calls, including requests for information, help on AUTOVON lines, and some long distance assistance.

The operators were pleasant and helpful the whole time. "Good afternoon, Naval Air. Can I help you? Will you hold the line a minute, please, and I'll be right with you."

No callers became abusive while the *Reflector* Editor was there, but it happens oc-

asionally. Some of the people become upset when the operators ask questions.

One man asking for "Traffic" recently thought the operator was prying when she tried to pin down whom he wanted. The caller thought he wanted Operations, when he really wanted Supply.

The operators say the biggest problem in handling Willow Grove's calls is deciphering the military abbreviations people use. When they ask for the "Gedunk," they want the canteen at Willow Grove, or the Exchange at NAF. Other expressions the operators hear frequently are razz-ma-taz and razzle dazzle for the Reserve Anti-Submarine Warfare Tactical School or RESASWTAC.

THE BUSIEST TIMES of day for the operators are 10:00 a.m. to noon; 2:00 to 3:00 p.m. and 4:00 to 4:30 p.m. "Lots of people don't realize we close at 4:00," Dottie says.

According to the operators, quick hands and an alert mind are basic qualifications for the job, but patience is most important. A sign conspicuously posted in the middle of the switchboard says: "Always keep your words soft and sweet in case you have to eat them."

The operators say most of the people they deal with are polite, and they get satisfaction out of helping them. "And we're probably familiar with more people here than anyone else," they say.

DURING PEAK HOURS, the most common complaint to the operators is from people who can't get a busy signal. "The lights go on and off so fast," Dottie says, "that if you just hang up for a few minutes you'll be able to get a line."

Each of the operators works with 16 sets of cords, frequently dialing numbers with the right hand while placing cords with the left. Each of the 1500

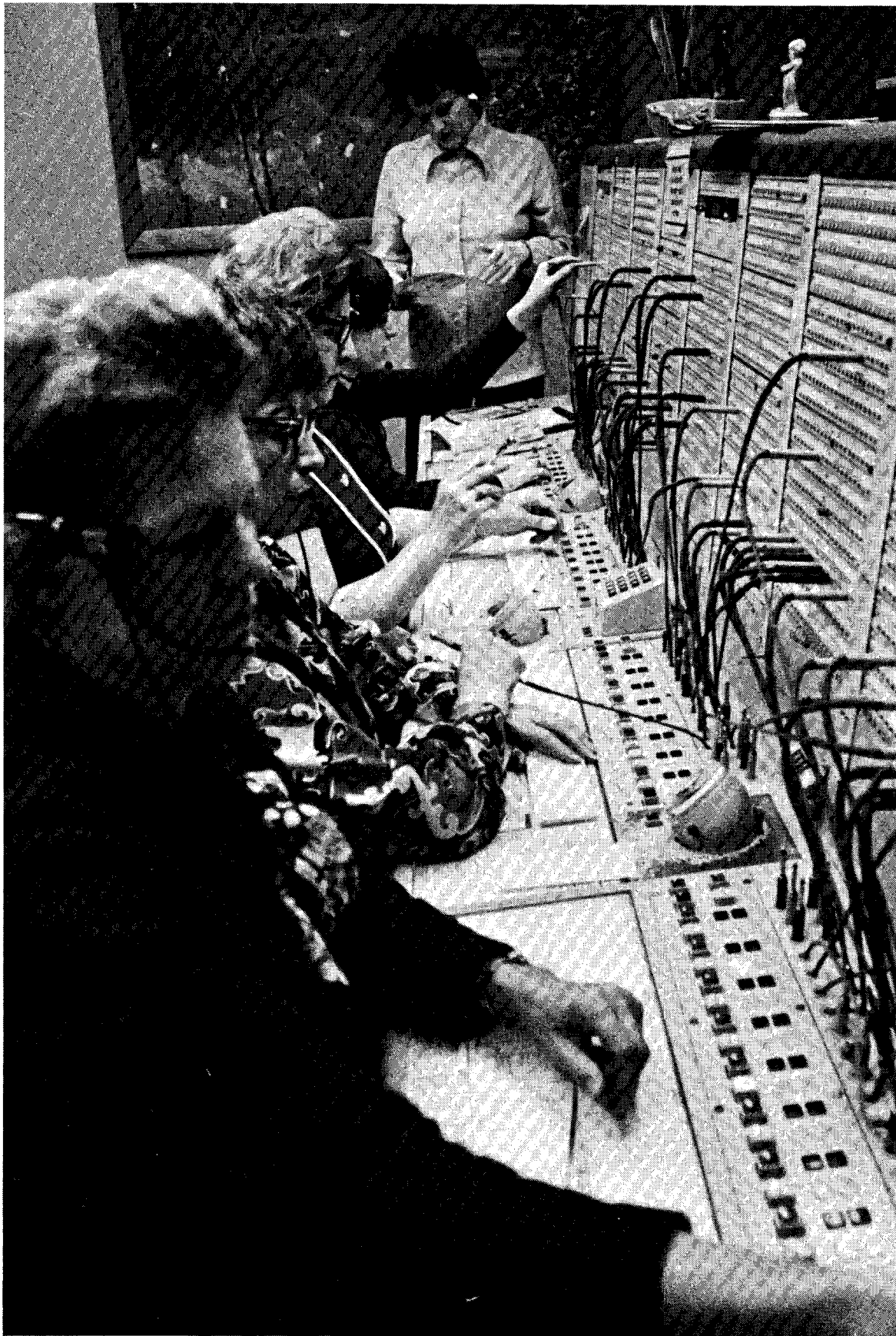
extensions they work with are listed on three different boards.

NADC has 30 incoming lines, and Willow Grove 15. "One of our biggest problems is telling which calls come in first," Dottie says. "We try to take them as fast as we see them."

BESIDES INCOMING CALLS, NADC and Willow Grove have 17 unrestricted lines with a six and nine level capability.

The operators also work with ten tie-lines and 18 AUTOVON lines, "That seems like a lot," Dottie says, "until you consider how many people we have here and at Willow Grove."

Government operators aren't permitted to take messages at the switchboard, and some callers resent it. "One man called after hours," Dottie remembers, and the extension didn't answer. He asked me to take a message. When I told him I couldn't do it, he said, 'the better companies do it.' I told him we're not one of the better companies. We're the best."



NAVAL AIR, MAY I HELP YOU? - - NADC's operators take some of the 2500 to 3000 calls they handle each day.

Turkish harem for operators?

If I ever design a head office, executive row will look like the cubicles of a Trappist monastery, and the telephone switchboard area will look like a Turkish harem. Money spent on offices for the management is largely wasted. If they are any good it will be apparent to anyone after a few minutes no matter how plain or fancy their office is.

On the other hand, how would you like to try doing the telephone operator's job for a day? Remember, you're the company's first contact with the outside world - - you've got to be alert and bright and helpful and quick. You've got to know where everybody is all the time. I'd spend money to make the switchboard girls comfortable. The best operators in the area would be lined up for the job.

from *Up the Organization*
by Robert Townsend

Center men take measurements lightly

By taking light transmission measurements of sea water from a helicopter rather than from a ship, NADC engineers have eliminated some obvious problems, and may have performed a "first".

The engineers, from the Laser Systems Section, AETD, took transmissometer measurements from a hovering SH-3 helicopter about 12 miles off Cape May, N.J. on November 10, 1972.

A transmissometer is an instrument that measures the amount of light transmitted over a one-meter sample path of water.

THE NADC MEN were examining the relationship between water "clarity" and depth. The Navy is investigating the possible use of airborne lasers for anti-submarine warfare (ASW) operations, and needs such optical oceanographic information.

Rough seas, salt spray, ship roll and other surface effects

problems have hampered such measurements in the past. "In November, 1971, while doing such work at Key West, the wave swells were eight to ten feet high," recalls John Shannon who monitored the equipment.

"Due to rough seas, we couldn't even get underway, let alone take measurements over the ship's side. From the helicopter we don't have that problem."

THE ENGINEERS ALSO see the possibility of obtaining data quicker and more economically by helicopter.

The Cape May measurements were made with a newly-developed transmissometer system. It consists of a deck control unit, two different tape recorders, and a 40-lb. underwater sensor that interfaces with a dipping sonar winch and cable. It can be lowered to a depth of 500 feet.

The system was developed under contract with Scripps Institution of Oceanography in San Diego.

From math to management

Bill Spencer's career develops



REASSIGNED - - Bill Spencer has moved to the Technical Program Manager's Office.

Technical Director Guil Hollingsworth has announced the first personnel re-assignment under the Center's recently-established Career Development Program.

AVTD's Bill Spencer has been reassigned to the Technical Program Manager's Office in the Planning and Financial Management Department.

It's the first step in a program designed to expose employees with high potential to varying job assignments and responsibilities throughout the Center.

Spencer, a Mathematician in AVTD, was selected by a three-man panel from among nine candidates.

"We were extremely pleased with the caliber of the nominees," says Technical

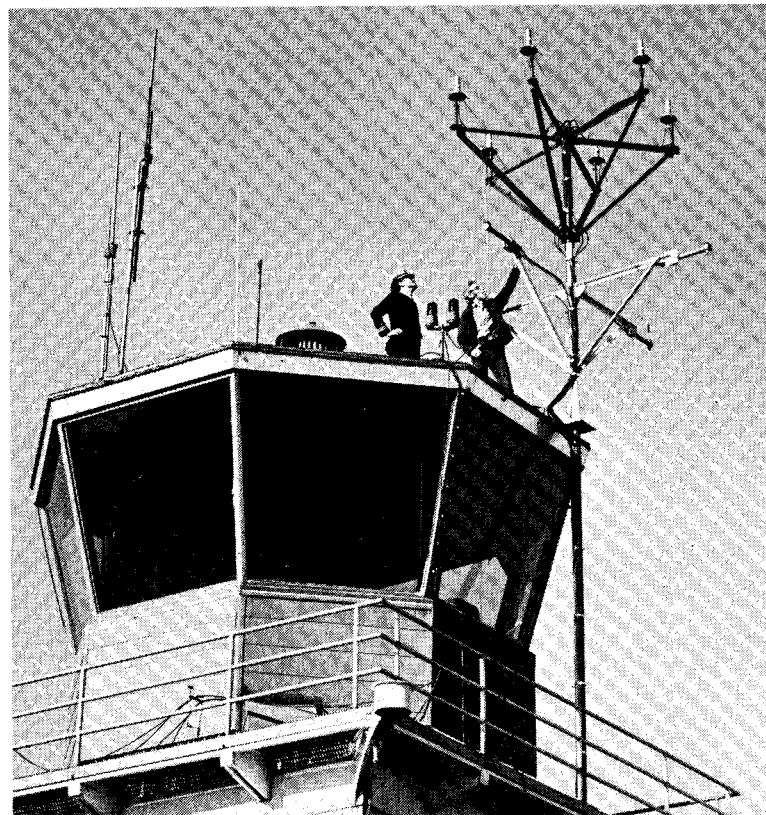
Programs Manager, Bill Lyons. "And those who were considered should be flattered."

The reassignment is for one year.

Spencer, Vice President of the Johnsville Toastmasters, has a B.S. degree in Mathematics from Morgan State, and an M.A. from Temple. He is currently enrolled in a Ph.D program at Temple.

A former teacher in the Philadelphia School System, he has been an EEO Counselor for four years, and Chairman of the EEO Committee since March, 1972.

In his new position, Spencer will deal with personnel in departments throughout the Center, as well as with other Navy representatives in Washington.



NEW ANTENNA - - ET1 (Electronic Technician) Bob Brown shows LT Jim Burkholder NAF's new tower communications antenna. Brown helped design and install the antenna, which rotates, and is easier to fix than the former one.

Warminster club says:

Fly me - it's cheaper

The Warminster Navy Flying Club doesn't call its aircraft Nancy, or Jill or Maureen the way some airlines do. They just fly them whenever and wherever they can.

"I love to fly," says AETD's Walt Graf, echoing other members' sentiments. "And this is a much more reasonable way to fly."

CLUB MEMBERS PAY a fee of \$100 to join, half of which is returned when they leave. They also pay \$8 per month dues. In return, they get to use a recently-acquired \$11,000 Cherokee 180 aircraft, and two Navy T-34's.

All club members are licensed pilots. Membership is open to Department of Defense personnel, active duty military and their dependents, members of the armed forces reserves and retired military personnel.

The club presently has 36 members and is looking for more. "We set an arbitrary figure of 15 pilots per plane," Graf says. "So we can go up to 45 members now."

OF THE PRESENT MEMBERS, seven are active duty military personnel, and four are ex-military pilots. Eleven of the pilots are also rated for instrument flying. "That's amazing," says Bill Shepard, who's been in the club since it began in 1959. "For years we only had 11 members, and none of them were instrument-rated."

The club, which keeps its aircraft at Turner Field near Ambler, can use NAF when the field is open.

At one time the club provided training for student pilots, but found it too time-consuming and expensive. Chartered in 1959, the flying

club recently received an award from the Federal Aviation Agency for its safety record.

CLUB MEMBERS attribute much of that record to their Maintenance Officer, Clarence West, an aerospace engineering technician in Administration. "He really mothers those planes," one club member says. "He's a crackerjack mechanic. I don't think we'd have a club without him."

Members have taken club aircraft to such places as the Bahamas, Ontario, Wichita and Milwaukee. They pay a flat rate of \$16 per hour for the Cherokee and \$12 per hour for the T-34's. This includes gas and oil, but not incidental costs.

"Because we have three aircraft, availability isn't normally a problem," says Francis Reinert, Club President since 1970.

Walt Graf explains the benefits of club membership this way: "If you rent a plane at a private field, you really don't know that aircraft. This way you can worry about them all the time," he jokes.



CIVILIAN OFFICER - - Admin.'s Clarence West is Maintenance Officer of the Warminster Navy Flying Club.

Antoine remembers Hurricane Betsy

In his Navy career, Chief Tony Antoine has photographed President and Mrs. Nixon, Melvin Laird, and South Vietnamese President Thieu.

But his most exciting subject was probably Betsy.

Betsy was one of the most devastating hurricanes ever to hit the U.S. mainland, and Antoine was literally right in the middle of it.

HE PHOTOGRAPHED IT while serving with the VW 4, a squadron better known as the "Hurricane Hunters."

"We made two penetrations," he recalls. "The sensation is like that of hitting an air pocket, only it's 50 or 60 times greater."

Photographic assignments later took him to the Pentagon, and then to Vietnam, where he served as Senior Photographer for the Network News Branch of the American Forces Television Network in Vietnam.

"I thought the work would be challenging and give me an insight into what was going on," he says, "so I volunteered."

I wanted to be right there where things were happening."

And he was. Everywhere from the Delta to the DMZ. "We had seven motion picture cameras," he says, "and we did a feature story on every major unit in Vietnam."

ACCORDING TO ANTOINE, the VIP's he photographed were not difficult to deal with. Everyone was eager to give information and was very polite, he says. Of course, the Vietnamese officials were sometimes hard to get to because of security.

Antoine, who became familiar with the Navy's Drug and Alcohol rehabilitation programs while filming command information spots for AFVN, is involved with them here as NAF's Career Counselor.

I'm really glad to see all the progress being made in the Navy's people programs," he says. "I think they all aim at making it a better Navy. All I can say is Thank God for Admiral 'Z'."

New program looks at Navy career patterns

WASHINGTON, D. C. (NAVNEWS). . . In past years, certain ratings in the Navy have been drastically overmanned to the point of stagnation, while there have been shortages in many other ratings. These situations created wasted manpower. Now there is a new program, the Career Reenlistment Objectives (CREO) program, established by the Chief of Naval Personnel, to provide a viable and more attractive career pattern for all Navymen.



"West Side Story" featured Feb. 10

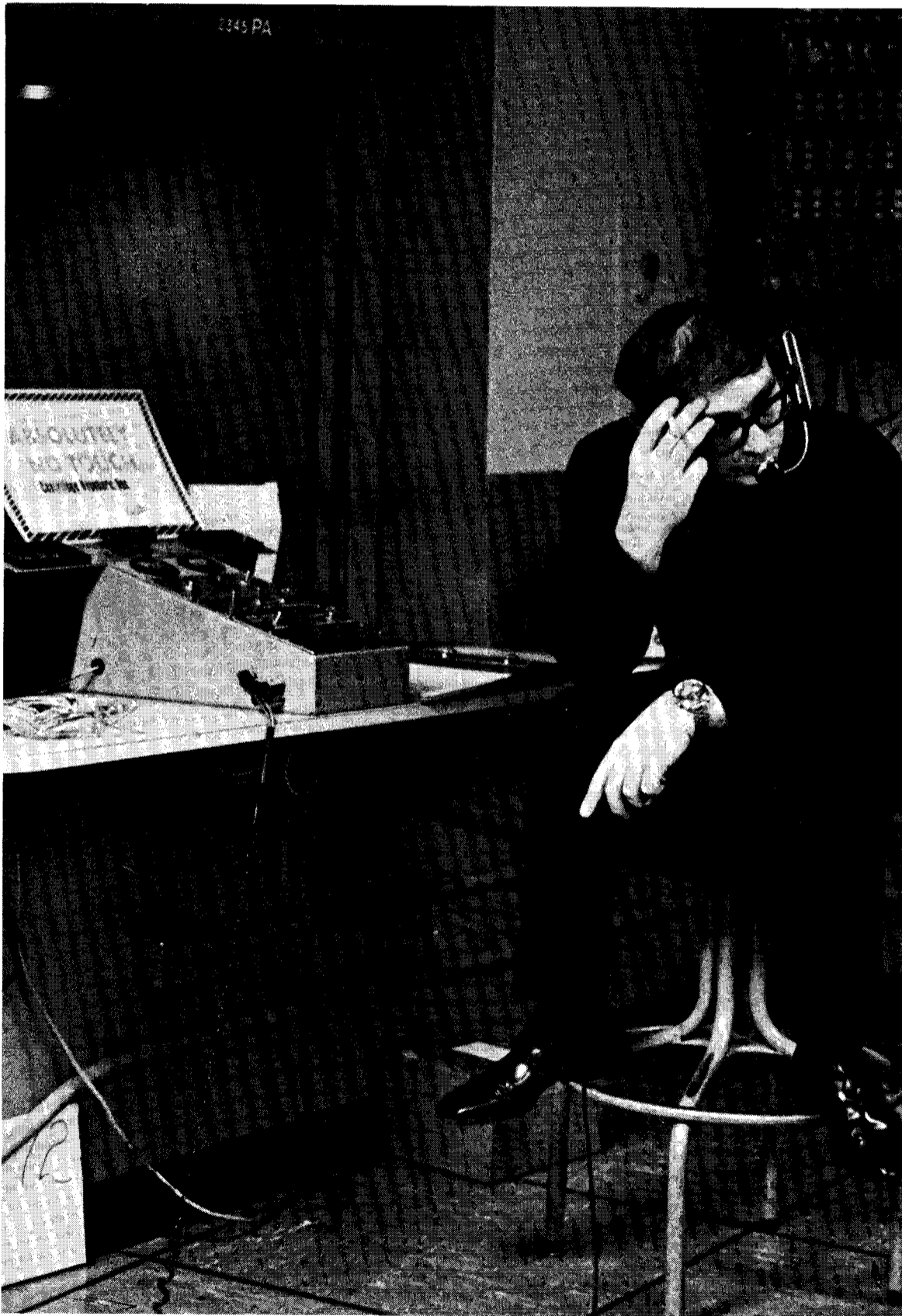
Selections from "West Side Story" and ballet music from "El Cid" will highlight a concert by the Warminster Symphony Orchestra on Saturday, February 10 at Log College Jr. High School.

Starting time is 8:30 p.m. AETD's Dick Purpura will be conducting.

For ticket information, contact Sal Picard (2814).

REFLECTOR

Centrifuge Countdown: A study in Contrasts



The tension builds for Centrifuge Flight Director Don Morway as he waits for the run to begin.

"Preventive measures are most important. In this context you work pretty hard to prevent any dangerous situations."



LCDR Ray Bogden, the subject for the 13th run, and inside observer HMC Russ King, relax before the "flight."

It's 1985 and you're cruising along at 2000 miles per hour in a huge swept-wing jet about 65,000 feet above the Atlantic Ocean.

Suddenly, a window blows out, the cabin depressurizes, and you need oxygen quickly. The pilot immediately goes into a roll and dive to get down to a lower altitude.

Will the oxygen mask drop where you can reach it? Will the force of gravity pull it away from you? Will you get it on before you pass out?

These and other questions were examined last December in an extensive study con-

ducted by the Crew Systems Department for the Office of Aviation Medicine of the Federal Aviation Agency.

Different types of oxygen masks, their placement and various seat locations were also examined in the study.

The study itself was unprecedented. By reproducing the cabin's internal pressure changes and the external acceleration forces simultaneously, the Crew Systems personnel did something unique.

"Doing this doesn't just dou-

(continued on Page 2)

Amesby

Watching and waiting: the tension mounts



And suddenly, the mask drops



The subject's reactions are captured on tv and film.

(continued from Page 1)

ble your problem," says Director of Medical Research, Dr. Harald von Beckh, project officer of the study. "It quadruples them."

"Many places have pressure chambers, and there are other centrifuges in operation, but no one in the world has ever varied the pressure while the centrifuge was running."

The problem was compounded by the fact that if any emergency did occur, rescue personnel could not immediately open the door because of the vacuum inside.

"That's why we took so many precautions, and developed a special safety procedure for these low pressure (Hypobaric) operations," says Centrifuge Flight Director, Don Morway.

Each subject was accompanied by a trained medical observer. Each person wore a fire-resistant Nomex flight suit, and special dry-charge chemical fire extinguishers were placed inside and outside the capsule.

"Every possible precaution was taken," Morway says. "Preventive measures are most important. In this context, you work pretty hard to prevent any dangerous situations."

Nine different emergency modes of stopping and depressurizing the centrifuge were included in the safety procedures established for the study.

Two new duty stations were also added: the inside observer who was trained as an aerospace physiologist technician; and a pressure monitor.

"The fact that the study went so well is a tribute to the effort of all the people involved," Morway says.

Personnel manning the flight deck near Morway during the runs included: Centrifuge Operator, Paul Edwards; Computer Operator, Bob Hall; Project Officer, Dr. von Beckh; Instrumentation Monitor, Bill Calkin; Performance Monitor, Bill Miller; Pressure Monitors, HM2 Bob Bobbett and HMC Russ King;

Assistant Project Officer, LT William Baas; Medical Monitor, LCDR Gene Williams; and Duty Corpsman, HM2 Harold Herskovitz.

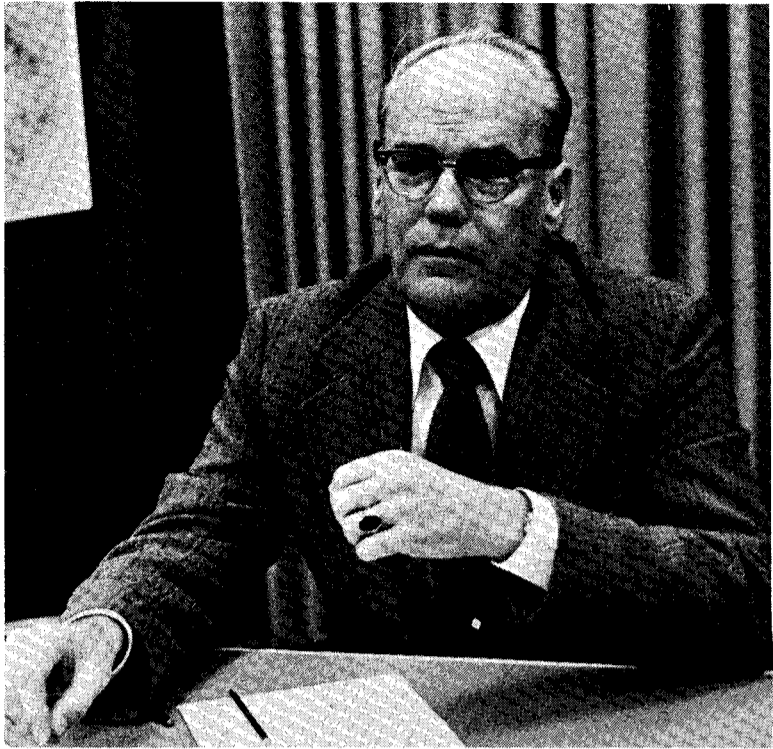
Sixteen subjects and observers rode in the simulator. Each subject received pre- and post-flight medical exams and performance briefings, as well as pre-flight low-pressure training at the Philadelphia Navy Yard.

"I was very pleased," Morway says. "Everyone took his responsibility very seriously."

As for what its like to ride in simulator, LCDR Ray Bogden, who flew the 13th run, reports: "It's remarkable the way they simulate the feeling of diving."

The subjects who performed the experiment were singled out for special appreciation by Dr. von Beckh. They included many of the duty personnel mentioned above, and HM2 Leroy Andersen, HM3 Richard Bresnahan, Captain Laurence Blackburn, LT Thomas

Cooper, HM2 William Hatley, HM2 Richard Hoover, HM1 John MacCoy, Air Force LT COL Hubert McKinney, HM3 James Reed, HM3 David Remsen, and HM3 Larry Wiles.



Fred Holden is the new Director of the Administration Department.

Transition:

By Chief Antoine

TRANSITION is one of the most misunderstood programs in the Navy.

Some people think it is a reward for faithful naval service, or a program for lower rated personnel who aren't recommended for re-enlistment. It isn't.

The purpose of the TRANSITION Program is to provide maximum guidance, and training and educational opportunities to service personnel during their last six months of duty. It's designed to help them prepare for a productive re-entry into civilian life.

TRANSITION offers four services: counseling, vocational training, educational assistance, and job placement and referral services. Of the four, counseling is most important.

During individual counseling sessions, immediate needs and long range goals are determined and discussed. Avenues that satisfy these needs and goals are explored, and a course of action determined.

TRANSITION is available to all officers and enlisted personnel who are within the last six months of an honorable separation from the Navy. Officers are eligible for all the services except vocational training.

For some reason, vocational training has become synonymous with TRANSITION in many minds. But training is only one of the four elements that make up the TRANSITION package. In most cases, training is neither needed nor offered. When it is provided, permission must be obtained from the individual's commanding officer.

Military training and skills learned in the Navy are often closely related to civilian occupational descriptions. But, the transition from military service to civilian employment does present a maze of uncertainty involving decisions on occupations, job availability, and training and educational benefits earned during military service.

Those career personnel

who, through educational achievement, previous experience, service-acquired skills, or natural abilities, have a readily-marketable skill, are in excellent position to negotiate civilian employment. Most will not require additional training.

Their participation in TRANSITION will consist of counseling directed at furthering their educational goals and/or assisting them in obtaining suitable employment.

Those men and women who have not been successful in the Navy, either through lack of ability or motivation, are the ones who have the greatest need for assistance.

It is the Navy's responsibility to these less fortunate individuals, and the Nation, that we offer them every opportunity to become productive, self-reliant members of society. This is the basic intent of TRANSITION's training and education program.

Priority in the program, particularly in respect to entry into training courses, is given in the order below to enlisted personnel who:

- are disabled;
- are ineligible to reenlist;
- entered the Navy with no civilian job experience and who did not acquire civilian-related skills during their period of active duty;
- served almost exclusively in the combat specialties;
- have low educational achievement;
- desire to upgrade military skills that are civilian-related;
- require refresher training in civilian skills acquired before military service;
- are retiring and desire to obtain a useful civilian skill;
- desire assistance in gaining civilian job information concerning the use of their military-acquired skills;
- are not proficient enough in their service skills to be readily able to obtain civilian jobs;
- were trained in a skill with limited marketability in their home communities.

For more detailed information on the TRANSITION Program, see your TRANSITION Officer or your Career Counselor.

Holden believes in 3 P's

The new Director of the Administration Department believes in the three P's of managing: Get good people, put them in the right place, and give them the power to get the job done.

And that's the way Fred Holden says he's going to run his department.

Holden, who was reassigned to the position by Captain McCaulley in January, is no stranger to management. For the last two years he's been Director of the Special Projects Office that helped develop the "electronic curtain" in Vietnam. In the early 60's he was Project Manager on the Manned Orbiting Laboratory/(MOL). "That program was ahead of its time," he says. "Things we learned there are showing up in SPACELAB."

Holden's six years in the Special Projects Office brought him into contact with most of the Center's technical areas. "We were everyone's enemy," he says, "because we had a top priority. But we tried as hard as we could to keep from bumping other people's projects. Just because you have a top priority doesn't mean everything has to be done fast. It can also waste money."

His objectives now are to develop better liaison with the shops, and to get real communication going with Admin's customers — the departments creating the work.

He also wants to develop more managers. "I think we've got a lot of bright, young, technical people who have never even thought of management as a career," he says,

"and I'd like to change that."

Holden admits that the Administration Department is a strange mixture of clerical and shop personnel. "It's diversified," he says, "but the more I'm in it, the more I'm convinced the principles of good management will work in any situation."

"I've been fortunate. The people I've worked with have always grown in their jobs. But you have to be as aware of rewarding as you are of giving instructions."

Holden, a graduate of the University of Minnesota, began working at the Naval Aircraft Factory in Philadelphia as an Engineering Aid in 1941. He moved to the Naval Aircraft Modification Unit at Johnsville in 1944.

What have you done for the fleet today?

Structures' fingers do the walking

By John Shannon

Navy structural experts are letting their fingers do the walking.

By using a telephone hooked up to remote computer terminals, naval activities will soon have immediate access to NADC's structural fatigue data on all fleet aircraft.

The data, retrieved by applying the MRI System 2000 software package, is stored in NADC's CDC 6600 computer. Outside activities will also be able to make telephone inputs to update the data base. Before, they did this by mail.

The newly-computerized data base is vital to the Naval Aircraft Structural Fatigue Life Evaluation Program.

Presently, this program maintains information on more than 2000 naval fleet aircraft, and includes such items as flight hours, landing and catapult history, and percentage of structural life expended. This information helps the Navy determine aircraft use, rotation and maintenance schedules, and rework and inspection requirements.

The computerized program will replace quarterly reports published by NADC. The data will then be updated monthly, weekly, or on a situation basis.

During a demonstration on February 12 in Captain Klett's office, the computer retrieved and displayed information on the number of catapults, and

the structural fatigue life expended of Naval RA-5C aircraft (Vigilante).

"This is what years of desktop slavery have produced," one observed said. Now, a person needing structural data on an aircraft can sit at his computer terminal, call NADC on the telephone, and get the information.

Certain passwords will get the operator into the CDC 6600 computer, and then into the structural fatigue data base. The information will then be displayed on a cathode ray tube at his terminal.

Joe Caristo, from the Structures Division says, "The user doesn't even have to be trained in computer language."



AVTD's Joe Caristo queries NADC's CDC 6600 computer on aircraft structural fatigue data from a remote terminal.

Car Batteries: Handle With Care



"I GUESS I FORGOT SOMETHING"

Jumping car batteries in cold weather is extremely dangerous, warns the National Safety Council. Most people do it hurriedly, not realizing the hazards involved.

The danger is caused by hydrogen gas that builds up inside the battery. The danger increases if battery water is low, because it creates space for the hydrogen gas to accumulate.

Since hydrogen gas is generated whenever a battery is charged, any spark near the battery can detonate the explosive gas.

To minimize the danger, the National Safety Council recommends this step-by-step procedure:

- Remove the cell caps from both batteries to vent the trapped gas. Leave the caps off during the jumping process. As an added precaution, cover the battery with some heavy material, like carpeting, while the connections are being made.

- Determine whether the car to be aided has a positive or negative grounded electrical system. (A positive grounded electrical system has the positive terminal of the battery connected to the engine block or chassis).

- Connect both cables to the "live" battery.

- Connect the proper cable to the "dead" battery terminal that is not grounded. Make sure you connect positive to positive and negative to negative, or you can damage your electrical system.

- Connect the last cable to a convenient chassis or engine block location. Pick a spot that is not close to the dead battery, so that if it does spark, it won't detonate the gas.

Navy Investigates Health Care

The Navy is constantly investigating ways to improve the medical care it provides for its men and women, and for their dependents.

The Naval Hospital at Pensacola, Fla., is one site of some of this testing and experimentation. A new and unique type of health care service is being established. Here, a model family practice unit featuring family physician service for military personnel and their dependents is in operation.

This concept provides for certain physicians to be responsible for the entire fami-

ly unit, large or small, 24 hours a day. Families have a specific doctor to call on for assistance. Objectives of the single medical command include improvement in health care, greater patient convenience and more satisfaction for all concerned.

Another advancement made recently was the invention of a device which can make a "fingerprint" of the entire circulatory system with the touch of a finger. With this device, the pulse rate, pulse amplitude, blood chemistry, pressure, elasticity and action of the heart is made available.

Blood Donors: Near - Record Turnout

NADC donors turned out in near-record numbers when the Red Cross Bloodmobile visited here on February 7. One hundred and forty-one people donated blood, and 21 more were rejected.

"That's the best turnout I've seen in five years," said CPD's Joseph D. Finn. "And I was really pleased by the number of young donors."

The donors were:

AVTD — Charles Neu, Irving Custis, Thomas Neu, Edward Deesing, William Weber, William Garwood, Franklin Perry, Russell Gombos, William Langen, Lawrence Pearson, Harry Schmidt, David Hornick, Kenneth Clark, Theodore Herring, Peter Kiproff, Gordon Woods, Diodoro Minuti, Robert Orr, Kalmen Leikach, Joseph Caristo, Anthony Manno, Marvin Walters, Fred Kuster, John Keishner, Moise DeVillier, Edward Schmidt, J. Henderson, Kathy Gorman, Ralph McGiboney, W. Becker, Edward Olson and Capt. George Klett.

AETD — Jerry Guarini, Richard Lewis, Emery Utterback, David Davis, Dennis Friedman, Owen Moll, Charles Carr, John Pape, Paul Cahill, Lee Allen, Joseph Farace, Thomas Kothstein, Charles Halko, Charles Collins, Walter Grzywacz, Stanley Greenberg, Nicholas Fitti, Roman Fedorak, Robert Melby, Robert F. Smith, Otto Kessler, Edward Mebus, John Harris, Richard Thomas, Harry Ricca, Morris Barron, John Rubisch, Eugene Macur, Thomas Scannapieco, James Grego, Thomas Castaldi and Stanley Dunn.

SAED — Alfred Gramp, James Jagodzinski, Margaret Conlin, Douglas Bellis, Albert McGlynn, Alphonso Pittman, Michael Williams, Roland Hall, David Moyer, William Hartman, David Benninghove, Neil Kreshover, John Monastra, George Lange, Elmo Buono, Paul Gasuk, Neal Orkin, Anthony Szumila, Edward Arnold, Wesley Sheridan, Francis Lorenz, Robert Miller, Tom Merkel and Dennis Baker.

P & FM — William McDonald, Robert Hughes, Casimir Yanish, Blaine Price, David Weisel, Thomas Torpey, Richard Golling, Norma Sheehan, Jerry Yarenko, Christine Nozisko, Dianne Zenobi, Marlene Cholerton, James White.

ADMIN — Vanice Betterly, Joseph Tither, Frank Pace, John Felix, Edward Soboleski, Ralph Basciano.

PW — Owen Medd, Raymond Kohl, Frank Wakefield, Houston Shaw, William Hogarth, William Etter, Robert McFetridge and Willard Yoder.

CSD — Dennis Herbert, Richard Crosbie, Edward Sinamon, William Daymon, John McDonnell, Walter Werner.

CPD — Theodore Ford, Doris Reilly, Eva Lindsey, Robert Pomrunk.

SUPPLY — Ann Dietrich, Robert Clegg, Dennis Stadler.

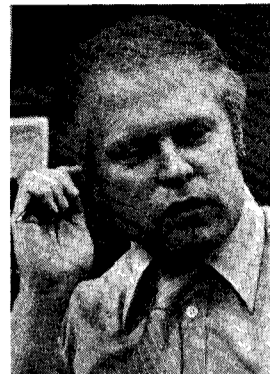
CREDIT UNION — Beverly Weigle, Elizabeth Zaks.

OPERATIONS — John Fuller.

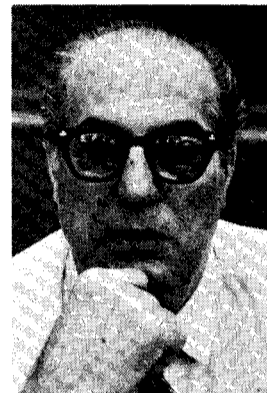
OTHER — Erwin Roeser, Lenwood Broomer, Vicki Kiproff, Jill Schmidt, Helen Sullivan, Cecelia Stewart, Paul Cotter, John Swardstrom and Capt. Edwin Stobie.

Viewpoint

Should Public Employees Have The Right To Strike?



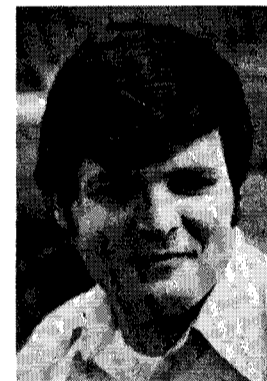
Paul Devlin, Contract Negotiator, Supply - "I think it depends on what the issue is, what causes the strike, and what recourse they have if they do strike. I think they should have the prerogative, but there should be guidelines."



Anthony Yannucci, Equipment Specialist, AVTD - "I think they should, but with legal arbitration first."



AXAN Harold Edwards, NAF - "No, I don't think so. They should be able to negotiate without striking."



John Powers, Mail Clerk, Admin - "I think teachers should and we shouldn't. I think it's inherent in the bargaining process that we can't strike. But I think teachers are in a whole different ball game."



Marian Coia, Clerk-Typist, SAED - "No. They have a responsibility to serve the public because they're paid by our tax dollars."



Chris Althouse, Planning and Estimator, Public Works - "Well there's an if and an on that as far as I'm concerned. I think there should be more arbitration. I don't think strikes get anyone anywhere."



Bob Payne, Photographer, Admin - "Yes, and no. In the case of teachers, policemen and air traffic controllers, they're service jobs, and only people who are truly devoted should consider working in them. But I think other public employees should have the right to strike."

In Memoriam

Harold Chadwick, formerly of Supply

Naval Air Development Center

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All correspondence should be addressed to: Editor, Reflector, Naval Air Development Center, Warminster, Pa. 18974 (OSborne 2-9000, Ext. 2980).

CAPT. H.B. McCauley
Commander NADC
Aris Pasles—Public Affairs Officer
Jim Murphy—Editor



The grand opening of NADC's new Child Care Center took place on Friday, February 9 at 1:00 p.m. Located on the first deck in the northeast corner of Building #2, it will provide child care and nursery service for the families of both the stations' active duty military personnel and other active duty and retired servicemen in the immediate area.

The Nursery, conceived and run jointly by the Enlisted Men's and Officers' Wives Clubs, began to materialize in November 1972. Mrs. Esther Day, President of the Officers' Wives Club, says, "The need had long been apparent, but the trick was to find the necessary space. So one day Captain McCaulley just toured the station and chose this spot."

The location is secluded from the rest of Building #2 near Gate 12.

The Nursery, with a maximum capacity of about 30 children, (ages six months through 10 years) consists of a large playroom with reception counter, an adjoining room with baby cribs, a coat room and a rest room. Toys were donated by the two Wives Clubs and by the NAS Willow Grove Child Care Center.

Nursery hours are 9:00 a.m. to 4:00 p.m., Monday through Friday. Hourly rates for officer's children are \$.50, \$.60 and \$.70 for one, two, or three or more, respectively. Rates for children of enlisted personnel are \$.10 less. Weekly rates are also available.

One full-time and two part-time attendants will staff the Nursery. It will be run as a self-sufficient, non-profit organization.

The Nursery will provide convenient baby-sitting service for Navy mothers. Sandy Wagoner, wife of the Assistant Public Works Officer, says: "It'll be great to be able to just drop the kids off for a few hours to go to the market."

Now open seven hours a day, the Nursery's hours may be extended to accommodate full-time working mothers.

"The location was a natural," says Staff's George Wilcox. The rest room facilities were already there, as were the two outside doors. Since it's near Gate 12, the wives can get in on their Dependent passes."

The doors also open onto a small grassy area that will be fenced in as a play yard.

The area was being used by the Crew Systems Department as a flight-sewing room. Before that it was a barber shop, dispensary and services store.



Child care center: A place to learn and play together

Around the Center

Security moves

The Security Department of NAF has been transferred to NADC's Administration Department as an NADC Security Division. It includes the Classified Material Control activities for the Center.

"The move is in keeping with the Center policy of centralizing activities that cross departmental lines," says LCDR Bill Spencer, the new Security Officer.

Thirty-two permanent and one temporary employee were affected by the change.

Security's new code is 815. The Security Officer's code is 012.

NCAA elects

The Navy Civilian Administrators Association at NADC has elected its slate of officers for 1973. They are: President, Stu Lee; Vice-President, Al Scarcelli; Secretary, Tom Willey; and Treasurer, Dan Shields.

The purpose of the NCAA is to promote the efficiency of the Naval Shore Establishment. The NCAA also cooperates with other organizations concerned with advancing the science of management.

NADC's chapter received its charter last year.

Firemen honored

NADC's Fire Department has received Honorable Mention in the 1972 National Fire Protection Association Contest.

It's the eighth time in nine years the Fire Department has received an award.

The contest is held annually to recognize excellence in fire safety education and performance.

Points are given for organization, training, fire prevention week activities and fire prevention publicity.

NADC's entry was one of 64 military activities competing in Group II of the military division. This included activities employing 1500 to 3500 personnel.

Other major divisions were: municipal, industrial and government.

The Commander salutes:

...AVTD's Bill Langen, who has been commended by Dr. Joel S. Lawson, Jr., the Director of Navy Laboratories.

Dr. Lawson praised Langen for his outstanding leadership as Chairman of the East Coast Interlaboratory Committee on Personnel Administration.

"The Navy is fortunate to have able and dedicated people such as you who are willing to give their time and talents to such activities as the ILCPA," the letter said.

...SAED's John Wrigley, who has been commended for outstanding performance by Rear Admiral N. O. Wittman of the Naval Air Systems Command.

Admiral Wittmann commended Wrigley for his ability to analyze and solve problems, as well as for his administrative talents and ability to instill enthusiasm among his co-workers.

...SAED's Joe Wetzel, who has received a letter of appreciation from the Naval Ship Systems Command.

He was commended for helping expedite material urgently needed at the Long Beach Naval Shipyard.

80 attend

More than 80 persons attended the Prayer Breakfast held February 1 in the Executive Dining Room.

Commenting that the idea of a prayer breakfast was relatively new here, Captain Farley, Commanding Officer of NAF, called it "an informal gathering together to strengthen relations with ourselves."

Taped remarks by President Nixon and outgoing Secretary of Defense Melvin Laird were also played.

It was held in conjunction with the National Prayer Breakfast.

2nd directory out

NADC's second computer-generated telephone directory has been distributed to all departments, and work has already begun on the next one.

"So far we've gotten mostly good comments on the computerized books," says Administrative Services Manager George Forte. "Many people seem to like the fact that we're including column numbers. Now they can find the work stations of people listed."

The next directory will be distributed in May.

"We'll be giving the departments a card containing the current data. It will be up to the clerical personnel in the departments to verify the information," he said. "We can update on a daily basis."

When an employee transfers or separates, his card will be forwarded to Administration, code 811.

"We'll be issuing a notice when the updating procedures are more clearly defined," Forte said.

Extra copies of the directory are available in the Administration Department (code 8112).

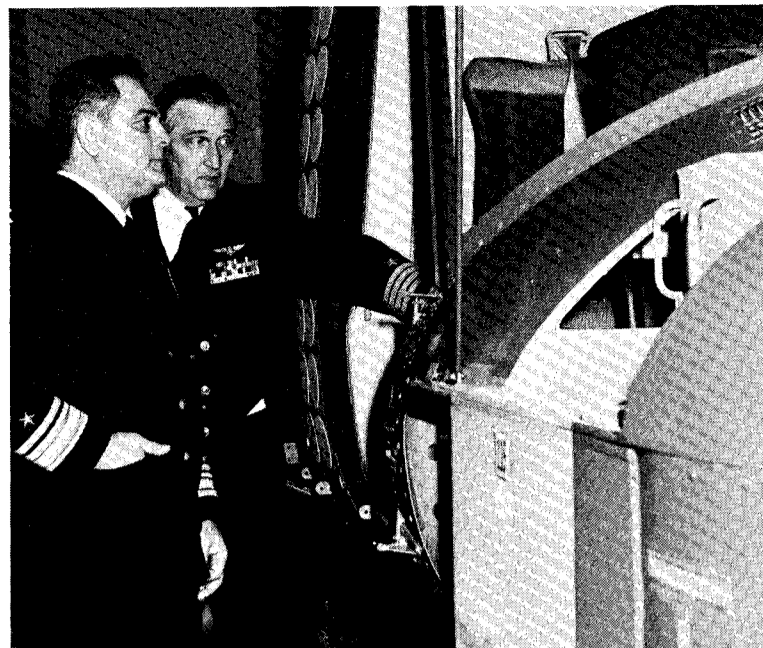
28 meet here

Twenty-eight Navy scientists met here on January 31 and February 1 to review Navy research programs on environmental quality protection and to propose plans for future efforts.

The meeting was one of a continuing series initiated by B.L. Poppert of the Naval Air Systems Command to examine progress and coordinate the Naval Air Environmental Quality Protection Program.

It included reports by the Navy Photographic Center on its re-use of photo materials and treatment of photographic wastes, and by the Naval Air Propulsion Test Center on measuring effluents from aircraft engines.

The Naval Air Engineering Center also presented programs on abating air and noise pollution of ground support equipment. The Naval Weapons Center at China Lake, the Naval Weapons Station at Yorktown, Va., and the Naval Weapons Laboratory at Dahlgren, Virginia, also presented programs on safe testing and disposal of ordnance.



RADM Joseph L. Coleman (left), new Commandant of the Fourth Naval District, and Captain McCaulley visit the LAMPS Mock-up facility.

Three elected at CU Meeting

Mel Wayns, Owen Medd and Elmer Krauser were re-elected to the Board of Directors at the NADC Federal Credit Union's 22nd Annual Meeting on February 15. More than 170 persons attended the evening meeting in the Cafeteria.

In his report to the members, President Joseph D. Finn revealed Credit Union plans to build a walk-in bank vault at NADC. "It will give us much better protection of our records and other valuables," he said. Last year the Credit Union installed a new security system here and at the Willow Grove office.

Credit Union Manager Mrs. Bettie Zaks said NADC's Credit Union experienced its greatest growth period ever during 1972, with record increases in shares, assets and loans. "We not only hit, but passed all our goals," she told the REFLECTOR.

"The goal now is just to keep on growing and to continue to grow at a steady, healthy pace."

She also told the members that NADC is one step ahead of legislation requiring duplicate sets of records. "We've microfilmed every record on file since 1951 to the present. One copy goes to the Credit Union Headquarters' vault in Kansas City and the other stays here. We also have a computer tape as a back-up."

Highlights of her Financial report:

Assets increased \$1,114,236 to \$5,889,797; Shares jumped \$1,153,961 to \$5,527,981; Loans went up by \$586,109 to \$5,024,638.

The number of accounts increased to 5440; and Dividends for the year totalled \$246,236.34, an increase of \$54,621.94.

Habitability is new Navy word

"Habitability" is a new word in the vocabulary of the 5000 man crew of the Navy's newest attack aircraft carrier, the USS John F. Kennedy.

It means vastly improved living and working conditions for the Navyman.

The life of men at sea has traditionally been rugged. The sailor has become accustomed to drab surroundings, crowded living conditions, and a com-

plete lack of privacy. But things have changed on the Kennedy.

Kennedy men will soon have access to a new ship's library with a seating capacity for 60 men. This space will be further enhanced with thick red carpeting and soft, comfortable chairs. In addition, there will be soundproofing. This hush will be broken only by the soft music piped into the library.

Shannon detailed to PAO

Avis and NADC's John Shannon have one thing in common. They're both Number Two.

Shannon, a Mechanical Engineer in AETD, is the second employee to be reassigned under NADC's Career Development Program. He'll work in public information, community relations and internal relations in the Public Affairs Office for four months.

"What we're trying to do," says Aris Pasles, the Public Affairs Officer, "is give

professional employees a broader knowledge of NADC's technical areas, and an opportunity to work with the top managers. We also don't mind having more people around here who are public-affairs-oriented."

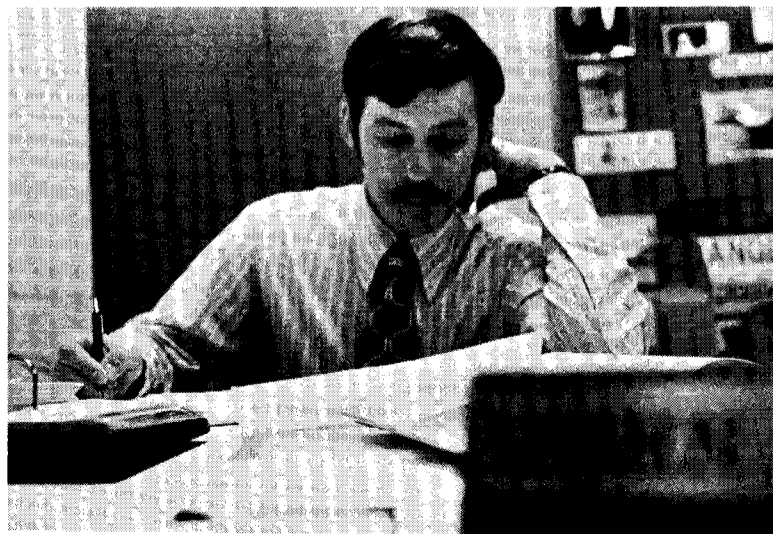
Shannon says as soon as he understood the program he was enthusiastic about it. "I knew very little about what was going on outside AETD. Now I'm getting the opportunity to learn about programs

in the other technical departments."

"What I've liked most so far is the personal tour of the Naval Air Facility I got with Captain Farley. That was great."

Shannon, who has a B.S. from Villanova, and an M. E. in Mechanical Engineering from Cornell, was Public Works Maintenance Officer here in 1969.

He will be detailed to the Public Affairs Office until May.



Mechanical Engineer John Shannon is now writing technical articles in the Public Affairs Office.

REFLECTOR

Volume 17, Number 9, 1973

Naval Air Development Center, Warminster, Pa.

March, 1973

Color broadcasting begins here

Color TV has come to NADC. Not just a TV set, but a complete television studio.

Located in Building 1 near the ASCAC spaces, the new studio is equipped with two Magnavox color TV cameras, a Sony black and white Porta Pak for video taping at remote locations, and a complete Colortrans lighting system.

And it's now in operation. "I hope we're overwhelmed with work," says Ed Fields. "This is just a beginning."

Already the crew of Fields, Bill Faith and Karl Schmidt has videotaped two technical presentations, including one for LAMPS (Light Airborne Multi-Purpose System) on two hours notice.

"We're also doing a presentation on tape that will show people the capabilities we have here," says Bill Faith.

The idea of videotaping technical reports and presentations has been suggested here in past years and dropped for one reason or another.

After Ed Fields attended a closed-circuit TV seminar in New York, he again mentioned it to Bill Renz, then Acting Director of Administration. "He told me to find out about it and give him the facts," Field says. "I did, and management bought it."

The studio resembles the NBC peacock, only it's bigger. "There's a reason for the pink, blue, green and yellow walls," Fields admits. "They'll be used as backdrops for taping."

The TV facility, under the cognizance of the Presentations Branch of Administration, will be used to tape project status reports, management messages, "how to" instructions, and the like.

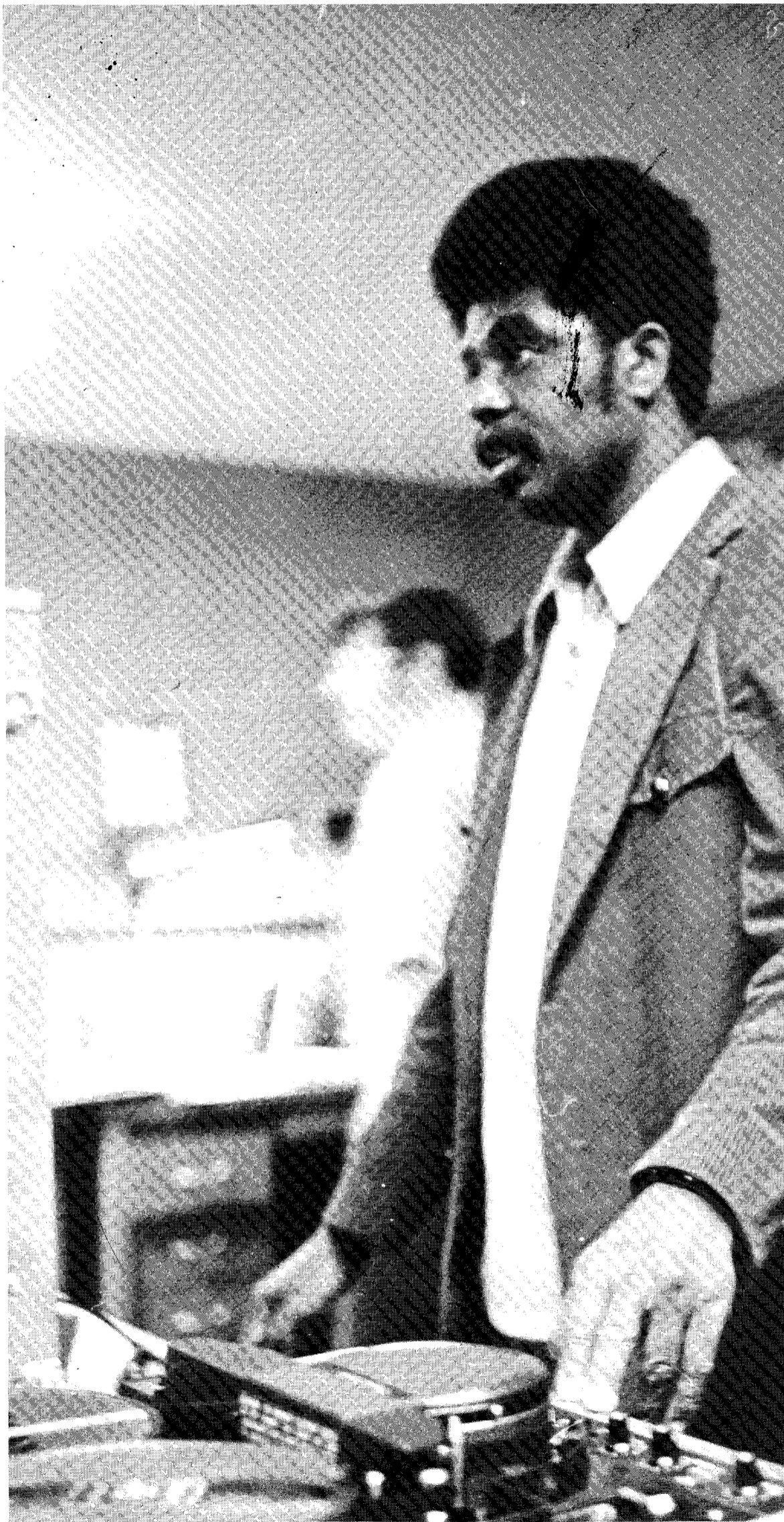
It's not a toy, Fields emphasizes. "We're going to use the studio's capabilities to tell NADC's story as best we can." He's also quick to point out that the television facility is not competing with the NADC's movie lab.

"There are some things done best on film, and some on videotape," Fields says. "If something must be done right away, we can do it. The major asset is immediacy. We're just increasing NADC's capabilities."

SAED's Bill Mulley, who recently taped a presentation on the AIMIS (Advanced Integrated Modular Instrumentation System) Project, likes the video tape capability. "It's nice, because if you make a mistake, you can erase it and start over. I think it will be a big thing. I don't think you get as nervous, because you know you're not wasting film."

NADC's TV facility is using one-half inch video tape, because it's compatible with fleet equipment. Other components include a special-effects console, two video tape player-recorders, four microphones and three monitors. One of the monitors will be used by the Training Division of CPD.

Asked why color TV is necessary, Field says: "Everything today is in color. We'd have wasted money if we bought black and white equipment, and had to switch later. Also, many charts and graphs are color coded, so you need color TV to communicate them effectively."



Ed Fields works the videotape player-recorder in NADC's new color tv studio.

Van Horn Struggles To Keep Food Prices Down, Quality Up



Cafeteria Manager Claude Van Horn says food prices are erratic. "I don't know what they're doing."

How does a cafeteria manager keep prices down when the cost of food keeps going up?

With difficulty, says NADC Manager Claude Van Horn. And it's getting more difficult every day.

"It used to be that some foods would go up on a seasonal basis, like at Thanksgiving and Christmas," he says. "Now, I don't know what they're doing. It's so erratic."

Food prices, he says, have jumped five to 25% in less than six months. The cost of one meat item alone has gone from

\$.94 a lb. to \$1.45 since October.

To keep in step with the rising costs, the Cafeteria recently increased the price of sandwiches and bread five cents across the board. "We didn't like to do it," Van Horn says. "But, we're trying to keep at a subsistence level. We can't keep running in the red."

The Cafeteria, run with non-appropriated funds, is supposed to be self-supporting. Last year it lost \$2000. Losses in January of this year totaled \$1000. Part of that loss, Van Horn says, was due to the unexpected holiday after President Johnson's death.

As Cafeteria Manager, Van Horn can't raise prices on his own accord. Increases must be approved by an eight-member board that normally meets once a month.

"We've had to operate on a rule of thumb basis on price increases lately," says Board Chairman Matt Soennichsen. "If we waited until the end of the month on some items, we'd be so far in the red we'd never catch up."

In the past six months, the prices that NADC pays on bread and donuts have risen twice. "And that's only a break-even item," Van Horn says.

Coffee has also jumped \$.10 a lb., fish has gone from \$.95 to \$1.25 per lb., and on some other items NADC is paying almost as much as a typical consumer.

The key to keeping prices down, Van Horn feels, is for patronage to go up. "I feel everyone here is working on an efficient level. We've got a good crew, and there's very little waste. The efficiency and the consistency is here, and we can handle more people with the basic crew we've got."

As it is, NADC's patronage seems to be amazingly consistent. About 250 persons, give

or take 25, go through the lunch hot line every day. Breakfast hot line figures for one recent period were: 110, 102, 119 and 110.

About 2200 to 2500 people pass through the Cafeteria lines daily. The canteen also serves 500 per day. "If it gets much busier there, we may put in a second window," he says.

NADC's Cafeteria has impressed some outside visitors.

One consulting engineer who visited here recently, says, "I'd like to come here every day. Prices are really good."

Warminster Agrees To Reroute Jacksonville Road

The Warminster Township Board of Supervisors, in a letter released to Captain McCaulley on March 12, confirmed Township concurrence with a long-standing Navy proposal to reroute Jacksonville Road.

The letter climaxed several weeks of informal discussion among the Pennsylvania Department of Transportation, SEPTA, Warminster, and the Navy on the impact of the new SEPTA station now being constructed in Warminster.

The rerouting of Jacksonville Road will improve access to the new station and relieve congestion at the present intersection of Jacksonville and Street Roads, the letter said. "We understand that the

rerouting will also improve security at your Center," the Supervisors told Captain McCaulley.

The project will also eliminate several other operational problems at NADC.

The project will be completely federally-funded. Based on a 1967 cost estimate of \$639,000, the preliminary estimate at this time is \$800,000 to \$900,000.

Work will begin when the money becomes available. Completion is expected in 12 to 24 months.

The road, which currently bisects NADC, will be rerouted near Don's Den southwest of Street Road. It will continue past the new SEPTA station, run parallel to the present railroad tracks, and cut across the

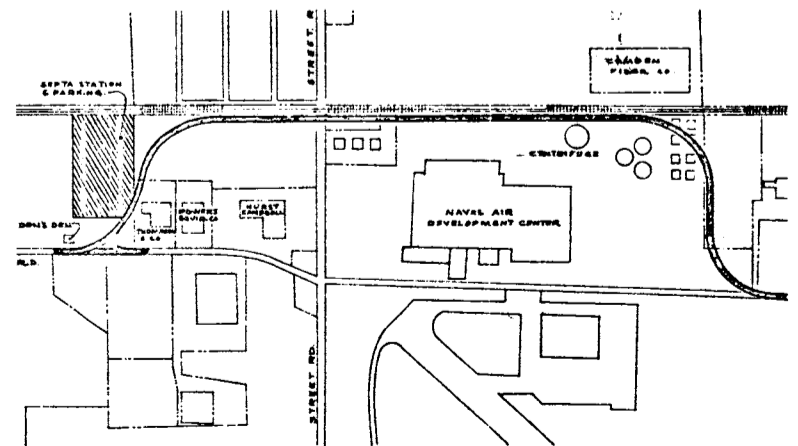
northwestern edge of NADC's property. It will rejoin the present road northeast of the Center.

Informal discussions between the Township and the Navy on mutual problems and the impact of the new SEPTA station led to the revival of the rerouting plans.

The new road, designed to handle projected 1990 traffic, will include two 13-foot lanes, with 10 foot shoulders on both sides.

It will widen to three lanes at a new eastern entrance to the Center and will be four lanes wide at the Street Road intersection.

The present road is a narrow, 18-foot wide, two-lane oil bound, macadam-surfaced road with three and one-half feet wide dirt and gravel shoulders.



PLAN FOR REROUTING JACKSONVILLE ROAD

New road will be designed to handle projected 1990 traffic.

P-3C Update Program Increases Aircraft's Brain By About 400,000 Words

By John Shannon

The P-3C (Anti-Submarine Warfare) patrol aircraft is a flying workhorse with a brain. And thanks to NADC, that brain is getting bigger every day.

Under NADC's P-3C UPDATE Project, the memory capacity of the aircraft's central digital computer processing system is being increased from 65,000 words to almost 465,000 words. In addition, the hardware and software used to process, analyze, and display navigation, acoustic and tactical data is being upgraded.

The end result, scheduled for fleet introduction in 1975, will be an improved aircraft "brain" that will enable future P-3C crews to perform their ASW missions much more effectively.

A unique feature of the UPDATE Project is that much of the work is being done "in-house" rather than being bought as a complete package from an outside contractor. This way, Navy officials feel they can control the project more efficiently and at less cost. NADC will not only manage the project for the Navy, but also develop the actual fleet operational software programs to be used in the updated P-3C ASW weapon system. This pioneer approach may be used to develop other future large-scale software programs of this type.

The memory capacity in the aircraft's computer is being expanded by adding a new storage drum. This drum contains functional software "modules"; each module represents a program that performs a specified real-time (that is, while the event is occurring) analysis. A control program within the computer supervises the drum modules

and "calls them up" as required to solve tactical, navigation, and acoustic problems.

Some of these are periodically called up on an "as needed" basis, while others, due to their high priority, run continuously in the central computer.

For example, the aircraft's tactical coordinator (TACCO) may want to maintain track of a "contact" picked up by a sonobuoy field. By pushing the appropriate buttons, the TACCO can order the control program to retrieve the acoustic analysis module from the memory drum. Instantly, this program module, along with continuously running tactical and navigation modules, processes the acoustic data received from the sonobuoys and solves for the location of the contact. The solution is then displayed on the TACCO's console to help him make an appropriate decision, such as having the aircraft fly a pre-planned maneuver for tracking the contact.

About 25 SAED technical personnel are directly involved in developing the hardware and software for the UPDATE Project. This technology group is part of a closely coordinated program involving many outside contractors.

Public Works and Administration's Model Shops are also providing extensive support in establishing specialized computer-type laboratory facilities. Public Works is now renovating spaces in the rear, west corner of Building #1. These spaces were formerly used by project A-NEW (the precursor to the P-3C UPDATE Project).

The Model Shops are fabricating and installing all the consoles and display panels required for the UPDATE Project laboratory facilities.



Design engineer Henry Carey (right), helps George Pozesky fit molding onto consoles in the P-3C UPDATE software computer facility.

Probably the most unique of these laboratories is the Software Development Facility. This room contains actual P-3C avionics equipment housed in custom-built consoles, plus various hardware and software simulation equipment. Through simulation inputs, a "flying" tactical aircraft environment can be duplicated here so that the functional software program modules can be integrated and debugged.

LCDR Bob Ballew, Project

Officer, calls this facility... "the prime tool to develop the operational software by integrating existing and new avionics equipment with newly developed computer software. Performing this integration and debugging in a laboratory environment is easier and less costly than checking out system operations in the aircraft."

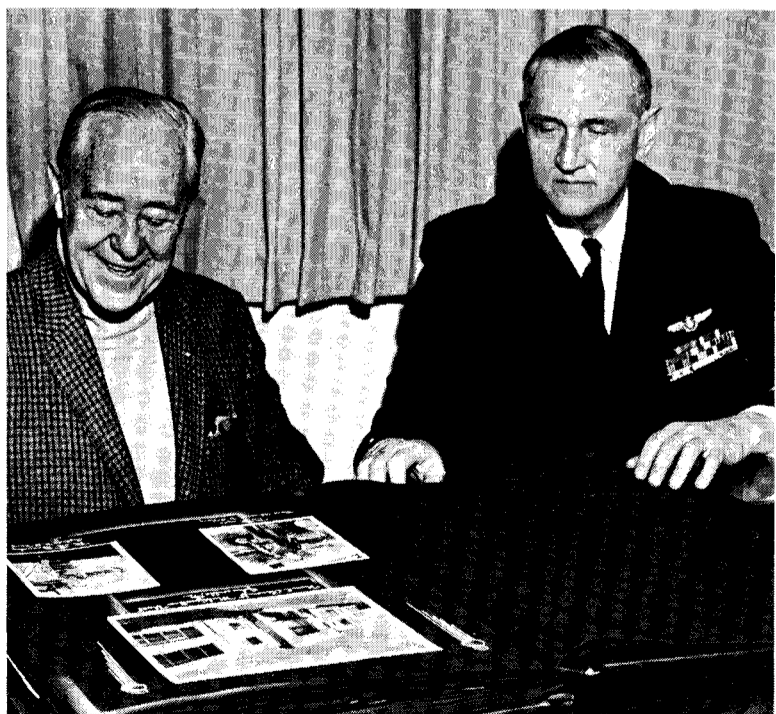
A second major UPDATE laboratory is the Program Generation Center. This con-

sists of compiler facilities and support software tools that take the "people" language of the functional program modules and convert it into the machine language of the computer.

A third unique UPDATE Project facility is the Schedule Control Center. This is a separate room with wall-sized charts and graphs on every side. These display all the schedules necessary to main-

(continued on page 4)

First CO Reminisces About Early Days Here



Captain Ralph Barnaby (Ret.), the first Commanding Officer at Johnsville, and Captain McCaulley, the present Commander, review press clippings from the early Navy days here.

The man who took control of Brewster Aeronautical Corporation's failing Johnsville plant for the Navy during the troubled days of 1944 paid a return visit here recently.

Captain Ralph E. Barnaby (Ret.), the first Center commander, fit and trim and weighing the same 126 lbs. as he entered the Navy in 1917, toured NADC with Captain McCaulley.

"There's been a gradual change since I was here five years ago," he says, "especially a change from factory space to more laboratory space."

Captain Barnaby took command of the Naval Aircraft Modification Unit on July 1, 1944, at the direction of the President. Labor troubles and production problems had plagued the Brewster plant for several years before the takeover.

"It was a hot spot," he concedes, "and we had some labor troubles. We had to educate

the union president that he couldn't impose his will on a military facility. Membership in the union was okay, but we had to make the union realize it wasn't a prerequisite for employment."

"We re-hired all the Brewster people we could. We set up a hiring office at the gate on Jacksonville Road where the Security shack is now and took them as they came in."

Captain Barnaby came up with a skeleton staff from the Naval Aircraft Factory in Philadelphia. Later he had 120 officers, 450 enlisted men and 2500 to 3000 civilian employees under his command.

"They were all aircraft people," he recalls, "machinists, metalsmiths and the like."

The Naval Aircraft Modification Unit, the forerunner of the present NADC, was a new concept at the time. The production of aircraft was frequently delayed by modifications and changes. "Someone hit on the idea that

the aircraft should go through the factory, and then go to a modification unit where any new equipment would be installed."

"It was also better from a security standpoint. All carrier-based aircraft that could be flown from the factories came in here. Rocket launchers and radar equipment was installed, and they were flown to the west coast."

Captain Barnaby, who now works as Exhibits Consultant to the Director of the Science Museum at the Franklin Institute, also witnessed the first centrifuge experiments here.

"Dr. Jack Popham, who was the department Director, told me that they had started running the centrifuge with a monkey inside. They subjected him to 40 G's, and he had walked away from it."

"I told him, if I was a monkey and able to walk away from it, I would have too. In fact, I'd have probably run."

Around the Center

Eight are rescued

Two NADC men were among eight persons rescued by a Navy helicopter after a 73-foot torpedo retriever boat sank near Key West on March 14.

NADC Field Station Personnel Bill Myers and Student-Trainee Jim Kennedy were aboard the craft when it went down in 1000 feet of water about 20 miles south of Key West.

"Sure we were scared," Myers says, "but very fortunate. As we went out we noticed some sharks and a group of Portugese Men of War. Luckily none of them were around when we sank."

After donning life jackets, they grabbed onto a 10' by 10' plywood platform and hung on. They were in the water about one hour before being rescued by an SH-3 Navy helicopter.

"I had the greatest faith in the world in VX-1," Myers said about the personnel at the nearby Naval Air Station at Bocca Chica. "Also, we knew two Johnsville planes were in the area."

The men were treated at the Naval Air Station Dispensary and released.

The Commander salutes:

...Mort Metersky, SAED, who's received a letter of appreciation from the Commander, Antisubmarine Warfare Forces, U.S. Atlantic Fleet.

"Mr. Metersky's performance, enthusiasm and devotion to duty led to the development of an approach to the (ASW) problem that is unique and successful," the letter said. "His resourcefulness and superior professional performance were in keeping with the highest tradition of the government service."

...Ted Trilling, Nicholas Fitti, Robert Langdale, Frederick Kotz, Charles Petersen and Glen Jadney. They've been commended for work they performed for the Naval

Oceanographic Office.

...Leo Rogin, SAED, who's received a letter of appreciation for his "excellent effort" in work done for the Naval Civil Engineering Laboratory, Port Hueneme, Cal.

...LCDR Joseph Kiel, Eugene Macur, Akira Yoshida and John Tate, for their assistance in evaluating the Acoustic Sensors in the S3A aircraft.

...Tom Brennan, AVTD, who's been commended by the Commanding Officer of the Naval Air Propulsion Test Center in Trenton for his work as a consultant in evaluating turbine engine proposals.

...Dr. Jack Harris, who's been commended by the Vice Chief of Naval Operations and the Chief of Naval Material, for his work on a Navy System of Artillery Location.

...Seventeen NADC men whose "ebullient participation and professional effort" were responsible for the timely development of a tactical support center.

They are: LCDR Richard Fidler, Mathew Berenato, Richard DeFrancesco, Jack Hirsch, John Kichula, Wilbur Knerr, George Lange, John McCullough, Robert Minder, Charles Powell, Jr., John Rush, Michael Saitta, Phillip Sapovitz, Ronald Walter, Francis Winterer, Robert Wolfe, and Isadore Zaslow.

The Commander of the Naval Air Systems cited them for their "outstanding leadership and teamwork."

List computerized

Each year NADC is required to submit a detailed manpower listing of all personnel to the Chief of Naval Operations.

This year, for the first time, the Center generated a computerized listing for the report.

"It took a lot of hard work on the part of the departments," says CPD's Jim Moran, who is coordinating the development of the personnel data base. He singles out Administration's Martha Brooks and Control Data's Jim McDonnell and Mark Anderson for special praise.

The problem in generating the report, Moran says, was that since it was a year-end report, work couldn't really begin on it until the first of the year. And it had to be in Washington by the middle of February.

Much of the information was available in different locations on-Center. The problem was getting it together in one place.

Now NADC should be able to respond to departmental requests for information more quickly, he says, since the information is contained in the personnel data base.

The manpower information will be kept current, and won't require a crash program to gather it in future years.

"We're taking the burden off the departments," he says. "Instead of asking them to give us listings, we're going to be able to supply them."

The data base now includes basic information, such as name and address, telephone directory information, and the new manpower information.

Moran says plans are now

being made to gather additional data on skills and education that will assist management in decision-making.

W&R drive begins

The annual membership drive of the Welfare and Recreation Association is now underway, and will continue until payday, April 13.

According to drive chairman Al Lewis, the goal this year is "just to get as many as we can."

Last year's drive netted \$1300.

The money is used to provide ill employees and their families with hospital beds, wheel chairs, crutches and television sets.

Recreational activities include theatre trips, tours, a Christmas party, and an annual picnic, that will be held this year on July 21 at Dorney Park.

The W&R also supports various athletic teams.

The membership table will be set up at noon each day near the Credit Union Lobby.

CDR appointed

Commander John C. McMichael, Jr., USN, has been appointed Deputy Director of the Systems Analysis and Engineering Department.

He replaces Commander Wendell Powell, who is the new Commanding Officer at the Naval Air Technical Services Facility in Philadelphia.

C-5A visits

A C-5A, the world's largest cargo aircraft, flew into Warminster for the third time on March 9.

It came to pick up an H-2 helicopter that was modified here and delivered it to the Naval Air Station, North Island, California.

The aircraft, which attracted a crowd along Street Road, was on the ground for about four hours.

Navy League meets

Seventy-five members of the Southeastern Council of the Navy League of the United States held their February meeting at NADC on Washington's Birthday.

The four-hour affair included dinner, a Center film and a tour of the facilities.

Office established

A new office to house NADC's EEO Coordinator has been established on the second floor of Building 1 near the ASW Conference Room.

CDP's John Ayer, who is the Acting EEO Coordinator, is now occupying these spaces.

The office is centrally located so it is close to both Captain McCaulley and to the lab and shop areas.



Ray Andress (left) and Elmer Krauser check the day's receipts in the Welfare and Recreation Association's current membership drive.

Navy housing designed with women in mind

The new Navy Enlisted Men's Housing units were designed with "the wife in mind," according to a Public Works spokesman. Last year, representatives of the Enlisted Men's Wives Club were invited to review the engineering design proposals. Their evaluation, reactions, and recommendations contributed to the present design selection.

The townhouse-style homes, presently under construction near the NADC picnic grove, will provide Navy families with many modern conveniences. The 150 three-bedroom and 50 four-bedroom units will be proportionally divided between NADC and NAS, Willow Grove enlisted families.

A spacious, fully-equipped kitchen will include a dishwasher, garbage disposal, 14-cu. ft. refrigerator/freezer with automatic defroster, and gas range and oven.

Plans call for a large combination dining and family room, adjacent to the kitchen. Sliding glass doors will lead to a concrete 8 x 10-foot terrace.

The front door entrance leads to the living room through a foyer that contains a clothes closet. A TV outlet, hooked up to a master antenna system, will be located in each family room.

The ground level also contains a one-car garage, a

utility/laundry room, and a powder room. The garage contains an extra electrical outlet for a freezer hook-up.

Hook-ups for a clothes washer and dryer will be located in the utility/laundry room. This room also contains a hot water heater and gas furnace. Along with a separate air conditioning unit, the entire home will have thermostatically-controlled forced air central heating and cooling. 150 AMP, 60 Hz power is provided for all the homes.

A linen closet, a bulk storage closet, and curtain rods and shades for the windows are all built into the homes to provide extra convenience.

The upstairs contains a main bathroom with tub and a second bathroom with shower, off the master bedroom.

Hardwood flooring will be installed in all the rooms except the kitchen, bathrooms, and family/dining room.

Scattered tot-lots and play equipment areas will also surround the units. The exteriors will be constructed of a color-coordinated combination of 3 different types of brick and 3 different color sidings.

The first of these new homes is expected to be completed by July 1973. For more information, call the NADC Housing Referral Office on extension 2786.

P-3C UPDATE

(continued from page 3)

tain project coordination and control, and provide the latest information on project status.

With these and other supporting laboratory facilities, NADC will have the most modern tools available to give the Navy a timely, cost effective and technically sound method of producing large scale airborne software programs. Through a balance of in-house personnel and contractor resources, NADC is acting as the prime technical ad-

visor and contractor for NAVAIRSYSCOM's overall P-3C UPDATE Program. This assures the maintenance of a sound technological base in-house.

Furthermore, the Navy is assured of a high quality "user-oriented" product by using recent P-3C experienced NFO's (Naval Flight Officers) as key project personnel. They provide first-hand fleet inputs for update requirements.

Naval Air Development Center

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All correspondence should be addressed to: Editor, Reflector, Naval Air Development Center, Warminster, Pa. 18974 (OSborne 2-9000, Ext. 2980).

CAPT. H.B. MCCAULLEY

Commander NADC

Aris Pasles—Public Affairs Officer
Jim Murphy—Editor

ARMED FORCES DAY--MAY 19

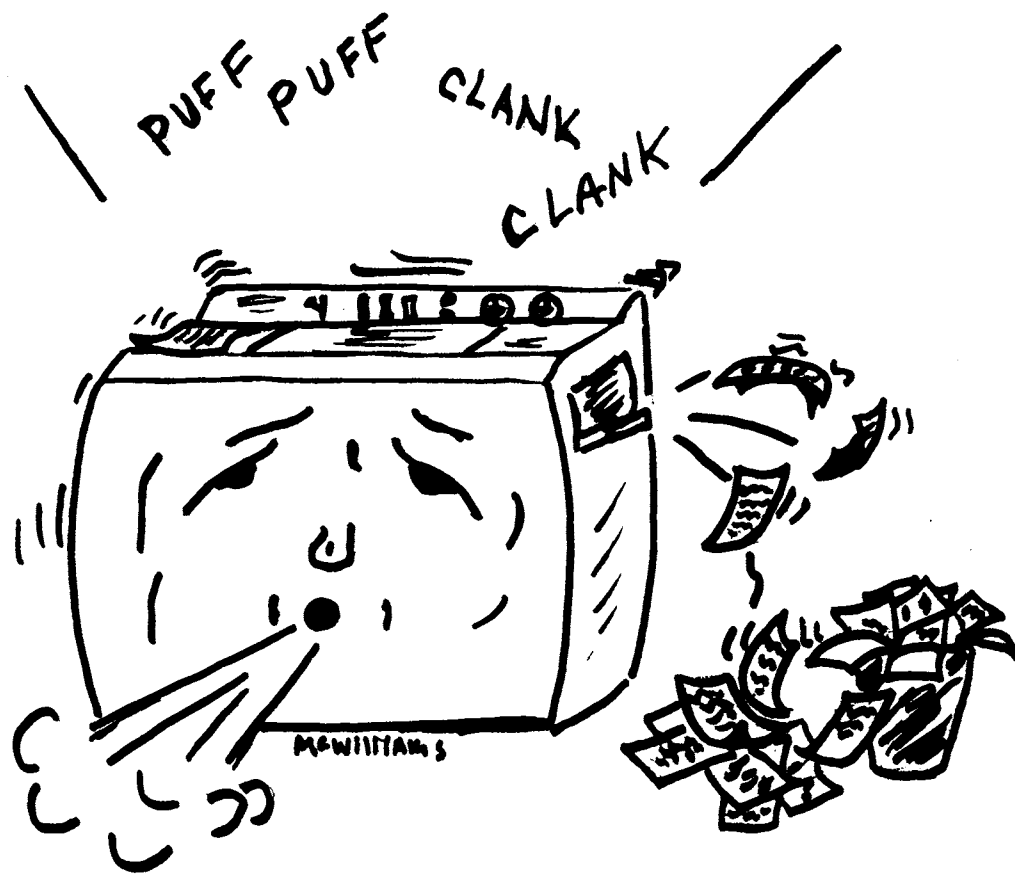
NADC

REFLECTOR

Volume 17, No. 10

Naval Air Development Center, Warminster, Pa.

April, 1973



Quick copiers quickly reproduce and multiply

If all the quick copy machines in the country stopped working at one time, would business and government operations come grinding to a halt?

Probably no one knows for sure. One thing is certain, however. The quick copy machine is an essential part of modern business, and NADC is no exception.

In the last fiscal year, 15 quick copying machines on-Center churned out 2,431,597 copies of material. That's an average of about 162,000 copies per machine, or more than 1000 copies per year per employee.

What does it cost NADC to provide this service? Where do most of the copies go?

To answer these questions, the Reflector interviewed Printing Specialist Larry Salmon of the Administration Department.

"The subject of copiers can drive you crazy," Salmon says, holding up the latest guide to office copiers and toners. "This includes 11 pages just of specifications. There are over 200 different machines on the market, each having its own characteristics and pricing plan."

Last year it cost NADC more than \$68,000 to copy material on its quick copy machines, at an

average cost of 2.8 cents a copy. Salmon attributes the large volume of copying to the information explosion being experienced by people in every field of interest. "Today's quick copying equipment provides expedient distribution of information both on and off-Center." But he feels most copies are not retained in permanent files.

Because of many factors, including the high demand for copies and possible shortages in the manufacture of paper, he predicts that microfilm may resolve part of the problem, particularly in the area of automatic data processing hard copy print out.

He is also quick to point out that he's not against copying things. "As taxpayers, though," he says, "we're certainly against waste."

The Navy Inspector General recently pointed out some of the more common abuses and misuses of copiers. Among them: using a copier instead of making one or two carbons; copying blank forms, classified material or stocked publications; making more copies than necessary; and copying things that should be done in a central duplicating facility.

Salmon says it is difficult to determine how many people are using copiers for personal material. But he tells about one New York company that tried to find out. They stationed a man in a business suit next to one of their more productive machines, without telling anyone who he was or why he was there. The number of copies reproduced on that machine went down by 50% in one week.

The quick copiers used on-Center are manufactured by seven different companies. Volume on the machines range from one in SAED that regurgitated 56,000 copies last month, to a small one in Supply that reproduced only 400.

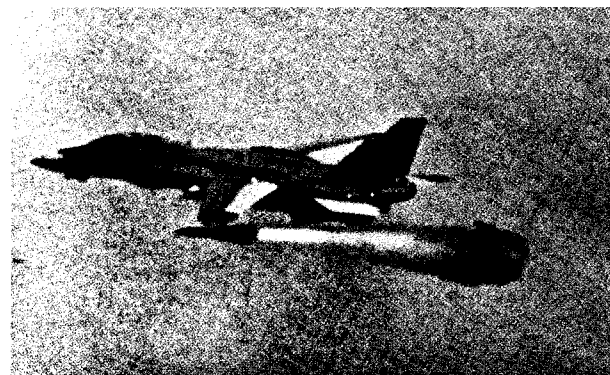
One of the major problems with copiers, Salmon says, is that everyone wants to use one, but no one wants responsibility for it. "They say, don't put it in my office, but put it over there where I can use it."

"But we have cooperative people in most locations," he says. "And the younger girls seem more than willing to be key operators."



Jerry Magill operates the KIWI simulator.

Single F-14 tracks four targets, launches four missiles, gets four hits



By John Shannon

The Navy's F-14/AWG-9/Phoenix Missile Weapon System made military history recently over the Point Mugu (CAL.) Pacific Missile Range.

The AWG-9 weapon control system of a single F-14 tracked four separate jet drone targets, launched four Phoenix air-to-air missiles at a range of over 30 miles, and guided each to successful hits.

The firing tested the multiple launch capability of the F-14's weapon control system.

The test however, was not really the Navy's first. The entire test profile was previously conducted on NADC's F-14/AWG-9 simulator called KIWI.

The simulator is located near the computer facility. It's named KIWI because, like the bird, it does not fly.

KIWI is a two-seat simulator closely duplicating a real F-14 cockpit, with controls and displays tied into the Center's computers. Using human operators and actual AWG-9

hardware and software, it can simulate the functional performance of practically every aspect of the real world AWG-9 system.

Jerry Magill, who supervises KIWI simulation runs, says that. . . "it should not be considered merely a trainer. Its computerized sophistication with real feedback capabilities makes it much more than a simple trainer with fake control knobs and displays."

KIWI, like many modern simulators, is run by real-time computer programs. Its computer usage is so extensive that, while it is operating, one of NADC's two main CDC 6600 Digital Computers is reserved exclusively for it.

It also requires the use of many of the computer center's other digital and analog computers, plus conversion equipment to translate from digital to analog or vice versa.

A master control station adjacent to the KIWI cockpit is used to communicate with the computer programs, to in-

meanwhile...

Gil Ridley arrives:

Gilbert Ridley, a personnel man with a long history of community activities, has been named NADC's Equal Employment Opportunity Coordinator.

He will be responsible for monitoring the Centers' EEO Program for Captain McCaulley, especially the newly-published Affirmative Action Plan for 1973.

"My immediate job as coordinator," he says, "is to evaluate NADC's program and make sure its in accordance with Public Law 92-261, the EEO Act of 1972."

Ridley comes to NADC as a GS-12 in a lateral transfer from the Navy Ships Parts Control Center in Mechanicsburg, Pa., where he also served as EEO Coordinator.

"The job there was different," he says, "because I was working with 5000 employees in six different commands. It was very complex. But we were very innovative. We usually took action before we were directed to."

"I accepted this position

because it offers me a new challenge to do a thorough job. It's also close to my home in New Jersey."

Ridley who is an elder and a deacon in the Presbyterian Church and a member of the Governor's Committee on Alcohol and Drug Abuse, has been involved in community activities since he was 16 years old.

He has served as a Recreation Supervisor and President of the Greenbrook Park Neighborhood Association, in Scotch Plains, N.J., as well as President of a Human Rights Council there.

In Carlisle, Pa. he was advisor to a teen center, Chairman of an Ad Hoc Committee to the Board of Education, and Vice President of an Advisory Board to the Opportunities Industrialization Center.

Ridley, whose office is on the second floor of Building 3, will have an open door policy for all employees.

But, he explains, his role is to administer and monitor the total program for Captain McCaulley, and not get bogged down with individual

problems. The EEO Counselors will handle informal complaints.

"The key to any EEO Program," he says, "is being able to relate with people and problems at all levels. I can't tell a guy this is your problem. It's our problem."

The Navy objective, he points out, is to have minorities and women represented at all levels and occupations by 1981.

"But, this is to be done within the confines of the merit systems," he stresses, "You can't put people in jobs who aren't qualified. But the job standards and requirements must be realistic."

Asked if the EEO Act was an attempt to legislate morality, he replied. "Our whole system is legislated. Everything within the Civils Service Commission, like salaries, and working hours is legislated. We can't legislate what you think morally. But we can legislate how you behave on the job, especially as a supervisor. That's all we're trying to do."

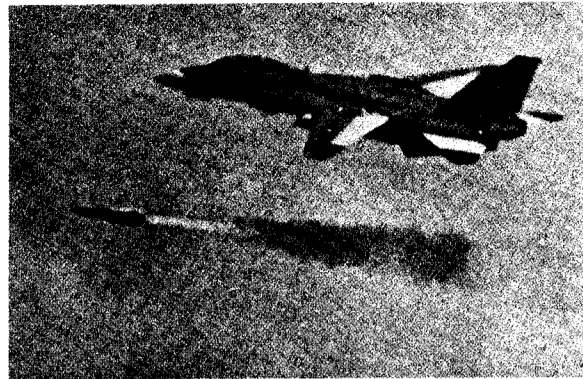
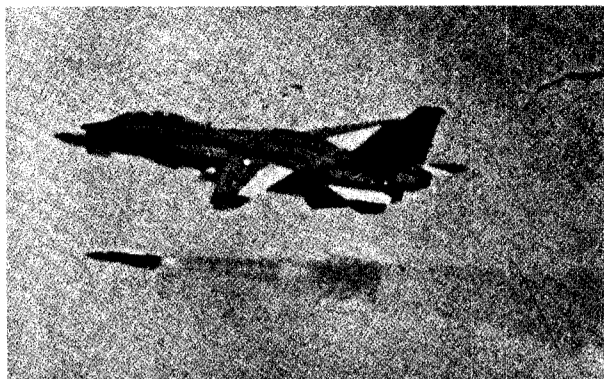


Gil Ridley, NADC's new EEO Coordinator, attends his first EEO meeting here.

KIWI

Or how a b

F-14 to target



Sequence shot shows F-14 "Tomcat" firing Phoenix Missile last December over Pt. Mugu, Cal.

that doesn't fly helps those that do

roduce pre-defined test parameters, and to monitor simulation progress.

The KIWI cockpit, like the actual F-14 cockpit, is manned by two crewmen: a Naval Flight Officer (NFO) and a pilot.

The NFO, located in the rear seat, monitors the target tracking sensors and the Airborne Missile Control System (AMCS). He analyzes and interprets any information related to a potential enemy threat, and performs the attack functions necessary for successful engagement and missile launch.

The pilot in the front seat flies the aircraft. He maneuvers it for effective missile firing according to AMCS steering commands and his own interpretation of the engagement.

In the KIWI simulation, the tracking radar and sensor information displayed in the cockpit is generated by the computers, rather than by ac-

tual radar receiver inputs.

The KIWI simulator enables engineers and aircrews to investigate the AWG-9 weapon control system procedures, capabilities, and problem areas inexpensively, yet efficiently. To date they have evaluated the AWG-9 Tactical Software Program and the avionic controls and displays.

Presently, KIWI is being used to validate F-14/AWG-9 flight test plans and to predict results of live tests such as at Pt. Mugu.

An F-14/AWG-9 flight test on the KIWI simulator begins with the receipt of a test profile that defines a given tactical situation to be evaluated. This profile spells out initial test geometry such as the altitude, speed, range, course and number of target aircraft, and similar initial parameters for the F-14 interceptor.

At the Master Control Station the target geometry is set up for the computers. This is done on analog equipment by using appropriate scaling factors.

The test profile is then "flown" on the KIWI simulator. With the guidance of the real-time Tactical Software Program, the crew "engages" the multiple targets, "flies" KIWI into an optimum weapon delivery position, establishes a firing order priority, and then "fires" the missiles. Auxiliary computer programs evaluate the missile trajectories using the parameters at launch.

The KIWI run helps predict the test outcome for an actual F-14/AWG-9 flight test. Jerry Magill states that... "the performance results of actual test flights have been almost identical to the predictions made from KIWI "flights", indicating that KIWI is a very realistic and accurate simulator."

The KIWI run also helps to minimize expensive failures or re-runs in the actual flight tests. These runs screen the planned test profiles to insure that the desired live test objectives can be accomplished. If changes or improvements are

required in the profiles, they can be made before the actual flight.

After the live test, the profile is run on KIWI again for post flight analysis.

KIWI engineers say that simulation is an effective tool in the hardware and software development of complex aircraft systems. It can provide very meaningful data at much less cost than through real flight tests.

For instance, it costs less than one twentieth as much per hour and requires much less supporting manpower to "fly" the KIWI simulator, than to make a comparable live F-14 flight.

KIWI simulation runs are one of the major elements in NADC's overall F-14 project work, directed by Cdr. R. Thompson. They involve the efforts and talents of about 8 people in Ed Sweeny's Tactical Air Simulation Group within SAED's Systems Engineering Analysis Division. In addition, a group of 4 computer programmers headed by

Bob Jones handles the software programming in KIWI.

KIWI's origins go back to 1965 when Carmine De Crescente, now SAED's Associate Director for Advanced Concept Program Development, was Project Engineer on the F-111 Project. At that time a 2-seat, side-by-side simulator was developed. After 1969, when the F-14 project began, this simulator was re-configured into a front and back seat format, eventually evolving into the present F-14 KIWI. SAED's Bill Ogden was responsible for much of the present cockpit design and fabrication.

New Exec for NAF

The Naval Air Facility has announced that CDR D. Benjie, USN, will be Acting Executive Officer until further notice. LCDR J. Pinto, Jr., USN, will be Acting Project Support Officer.



Retiree Sid Allen describes his recent trips to Europe and Mexico.

And Sid Allen travels:

Sid Allen didn't join the Navy and see the world. He retired from NADC and is doing it now.

In fact, on the day he officially retired from the Government in May, 1972, he and his wife Edith were on a plane bound for Europe. And they've barely stopped moving since.

First, they toured Spain, France, Germany and Italy, driving 4000 miles in seven weeks. Then they took a 14,000 mile round-trip across the U.S. and into Mexico, where they lived for two months. And now they're buying a condominium in Florida. "Somehow we seem to keep pretty busy," Sid says in a mastery of understatement.

Sid, who was an Aerospace Engineer in SAED, began making travel plans about one year before he retired. "I left with a good feeling. I was happy doing what I was doing," he says, "and the people at NADC were real nice. But I had other things I wanted to do."

And doing Europe was one of

them. The Allens leased a Renault 12 sedan in Paris and headed south. But they weren't prepared for the weather. "It was so cold in Europe," Edith says, "much colder than here. We saw 12 foot high snow drifts by the side of the road in the Pyrenees, and that was in May."

Although neither one of them is fluent in a foreign language, the Allens had little difficulty making their way known. "You become very good at sign language," Sid says. "Of course, if they asked me where my grandmother's umbrella is, I could probably have answered that." According to Sid, the people they met all over Europe were terrific. "Having a sense of humor helps," he says. "People are very quick to laugh. The only person we had any trouble with in Europe was a girl at American Express. She was a grump. But she got us the best seats in the house for the ballet."

(continued on Page 4)

Around the Center

Mess honored

The NAF mess is one of 19 shore messes named to compete in the 1973 Ney Awards contest to find the Navy's best feeders.

Twenty-nine afloat messes have also been nominated.

Named for the late Capt. Edward F. Ney (SC), the awards program is co-sponsored by the Secretary of the Navy and the Food Service Executives Association, an international organization of specialists in the field of food procurement, preparation and service.

The twelve finalists will be selected in April, with the winner and runner-up being announced in July.

NADC appreciated

NADC has received a certificate of appreciation from the Bristol Township School District for its work in helping further the education of 300 Bristol students.

Dr. Jacob E. Dailey, Superintendent of Bucks County Schools, made the presentation at the Bristol Motor Inn. Bill Canning, Employment Superintendent, accepted the award for NADC.

Also attending were: Jim Moran, Dick Chern, and Livia Seidel, all of Civilian Personnel.

Since cooperative efforts with school officials began five years ago, NADC has employed more than 300 Bristol youths as Summer Aids. About 50 more will be hired this Summer.

Many of the youths have also received training at Bucks County Community College as part of a unique pilot program.

Adams cited

NAF's Bill Adams has been named Fireman of the Year in Essington (Delaware County).

He also received an award plaque for responding to 174

calls last year, second highest in the company.

Adams, a ten-year veteran with the Essington Company, was officer-in-charge when a five-alarm blaze swept the Governor Printz Marina on November 18.

He received the award April 7 at the Fire Company's Annual Banquet.

The Commander

salutes:

... CDR Ted Mead, Vincent Cutilli, Aron Davidson and about 80 other Center personnel for their work on Project END SWEEP.

Captain McCaulley singled out these three for their project leadership and their long hours of individual effort in guiding the Center's support and assisting the fleet on-site with installation and instructions.

... Hank Naubereit, AETD, who's received a Letter of Appreciation from the Commander, Naval Electronics Systems Command, for his work on an Advanced UHF Communications System.

Naubereit was praised for his "outstanding performance in a difficult assignment."

... Paul Moser, AETD, who's been appointed a U.S. member of the Technical Cooperation Program (TTCP). Your appointment to this important position of leadership at the National level reflects favorably upon the technical expertise of NADC, Captain McCaulley said.

... Ten members of Public Works' Transportation Division for their exceptional performance in supporting a high priority project.

They are: Matthew Kearney, John Hannon, Charles Jack, Edward Scott, James Queenan, Herbert Camper, William Taylor, Lister Ransom, James Whitman, and William Weyhmler.

90 prepare

About 90 persons from NADC/NAF and 40 from NAS Willow Grove attended a Disaster Preparedness Training Program here in April.

A two-day general program was followed by two days of intensive training for a rescue team, shelter management team and control center team.

The NBC (Nuclear, Biological, and Chemical) Mobile Training Unit operating out of Davisville, Rhode Island, conducted the training. Max Schwartz, NADC's Disaster Preparedness Officer, coordinated the program.

Schwartz said members of the training team reported they were favorably impressed by the command attention the program received here.

Programs reviewed

Forty-three persons representing 14 different naval activities met here April 10-12 to

review the Analytical Rework Program and Service Life Program (ARP/SLP).

During the meeting, three new NADC processes developed under the ARP/SLP Program were demonstrated. New approaches to materials and processes were also reviewed.

In addition, about 12 different materials contributing to environmental pollution were eliminated from procedures used by Naval Rework Facilities.

The purpose of the meeting was to review new NADC technology for aircraft maintenance.

Program Chairman was A.J. Koury of the Naval Air Systems Command, sponsor of the meeting. NADC's Marty Devine was Director.

Lasers looked at

Seven leaders in optical oceanography met here on March 28 and 29 to review the Center's ORIC Program.

ORIC stands for Optical Ranging, Identification and Communication.

The men represented various scientific agencies, including: Naval Research Laboratory, Naval Ordnance Laboratory, Naval Underwater Center, Naval Postgraduate School, Stanford Research Institute, and Scripps Institute of Oceanography.

The purpose of the meeting was to establish guidelines for obtaining experimental data for future ORIC tests.

ORIC is studying the feasibility of using an airborne laser for subsurface target detection and other anti-submarine warfare applications.

Reps visit

Representatives from the National Science Foundation, Pa. Office of Science and Technology, the Pa. Technical Assistance Program and Philadelphia '76 visited NADC for a briefing on March 22.

Guil Hollingsworth described NADC's technical programs and activities, and Jerry Bortman summarized the Center's Technology Transfer efforts.

Discussion centered on the possibility of using Center resources for domestic programs.

Firemen train

Two hundred and thirty-four Bucks County firefighters gathered at NAF for a two-hour training session on April 8.

They viewed films on fighting large fires with super-pumpers, and an ABC-TV film on the Fire Olympics.

The Bucks County Fire Marshal was co-host for the program.

In Memoriam

Roslo Molella, AVTD
James Sweeney, AVTD



Even Smokey the Bear's appearance in the Cafeteria doesn't disturb this man's reading habits.

TM promises better life

Would you like to reduce anxiety and stress, and live a more enriching life?

If so, TM might be an answer, says NADC's Phil Rothenberg. TM stands for Transcendental Meditation. To make more people aware of its benefits, Phil and the ESP Club on-Center are sponsoring two free lectures on the subject in May.

Lectures #1 and 2 of the TM Series will take place in the Center Auditorium on May 17 and 18 at 11:30 a.m. Attendance at Lecture #1 is a prerequisite for the second.

TM, As Rothenberg explains it, is the art of putting yourself in a state of restful alertness. The mind is completely alert

and active, while the body is in a state of rest, he says.

"I was as skeptical as anybody about it," he says. "I looked at the scientific sources before I really got into it."

Lancet, Scientific American, the American Journal of Physiology and other scientific journals report that oxygen consumption and metabolic rates decrease during TM, while skin resistance increases.

Asked if people remain meditators once they become involved with it, Rothenberg gives an emphatic yes. "When you meditate," he says, "you get to know yourself more intimately. And no one wants to drop out from himself."

Sid Allen is a travelling man

(continued from Page 3)

The Allens traveled without a pre-arranged schedule, stopping whenever and wherever they pleased. They stopped unexpectedly one day in Holland when the windshield of their Renault exploded. "The people at the factory didn't think it was unusual at all," Sid says. "In fact, the Renault dealer in the little town had replaced three that day. After that, whenever I reached into the back seat, I picked up slivers of glass."

In November, shortly after returning from Europe, they headed across country and into Mexico. That isn't the best time of year to travel, according to Mrs. Allen. "So many things are closed. And the Grand Canyon was just so bitter and desolate." But she loved Mexico, and wants to go back, especially to the Yucatan region. "To me it's a country that's really just beginning," she says.

Mrs. Allen, who is a Psychologist with the Pennsbury School District, took a year's sabbatical in

order to make the Mexican trip. She visited a number of educational workshops in their travels. "That was part of the plan," she says. "Sid really went along for the ride on that one."

Americans they met in Guadalajara cautioned the Allens about Mexico's peculiar driving laws. "If you're involved in an accident and there is property damage, you automatically go to jail for a few days," Sid says. "And if you're an American, you are presumed guilty."

The advice the people give is, "Leave the car and run. Worry about getting the car back later. It sounds funny, but it's really horrible."

Now that they're back in Levittown, the Allens play a lot of golf together, and do lots of reading. "We're up by nine every day," Sid says.

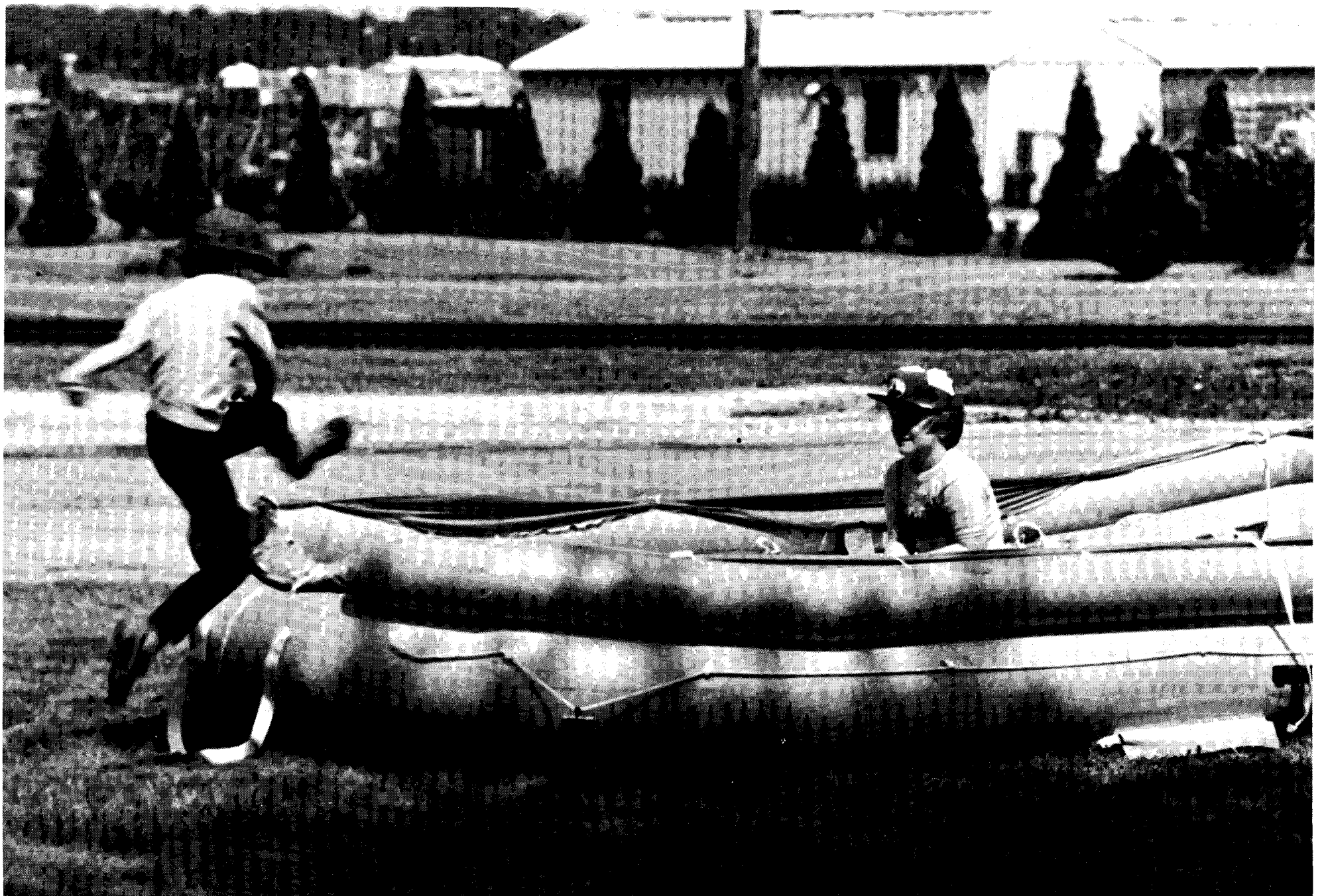
The condominium they are buying in Hollywood, Florida will be their home five or six months a year. "It's in the citrus grove and ranch area," Mrs. Allen says. "It's just like Levittown used to be."

Naval Air Development Center
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CAPT. H.B. McCaulley
Commander NADC
Aris Pasles—Public Affairs Officer
Jim Murphy—Editor

REFLECTOR



**Open House 1973: A Day
Of Sun, "Snoopy" Calendars,
- - And Somersaults!**



May 19--A Day To Smile,

To Ride,



And To Play With Balloons,



--And It Dre

"Today Was Most Enjoyable"

Mrs. Jim Grover
525 Hallowell
Warminster, Pa. 18974

Dear Everyone,

Today was a most enjoyable day for both my children and me. We were engrossed by your "Open House."

It was a learning experience for me as well as my children. You are all to be commended for your organization and kindness to the guests.

As a resident for six years, passing by Johnsville so often and wanting to tour- -today was so nice!

Hopefully you will open your doors in the near future to let us visit your fantastic facility.

Again, I just wanted everyone to know that the long hours of preparation were really enjoyed and appreciated.

Good Luck,

Mrs. James Grover

Being Hardnosed Is No-No For Negotiator

But You Must Be Firm

If nothing else, a contract negotiator must be hardnosed. Right?

Wrong, according to Frank Drummond head of NADC's Purchasing Division. "Being hardnosed is a bad quality in a negotiator," he says. "That means you're taking an unyielding position, and saying there's no way this guy can be right. Being firm is frequently necessary, but being hardnosed seldom results in a good contract."

And contracting is the business of the Purchase Division. They negotiated about 1000 contracts in the last fiscal year to the tune of \$65 million. And that figure will probably jump to about \$75 million this year.

"What we spend on contracts represents about 50 per cent of the Center's budget," Drummond says, and the contracts let at NADC run the whole range from Cost-Plus-Fixed-Fee to Firm-Fixed Price.

The Center's contracts are especially complex because they involve so much research and development effort. These differ from supply-type contracts in which the purchases are repetitive and specifications firmly established.

An R&D negotiator, since he's dealing with something that hasn't been developed yet, often has a difficult time determining exactly what it will take to produce the finished product or system. That's the reason for issuing a Cost-Plus-Fixed-Fee Contract.

That is, you pay the contractor for the number of hours he expends in performing the contract tasks. "The problem here, though," Drummond says, "is you give him no incentive to spend less than the estimated cost of the contract, resulting in cost growth situations."

In a Fixed-Price Contract, the contractor receives the

same price whether it takes 2000 or 2500 hours to perform the task.

As the number and dollar volume of NADC's contracts has increased, so has the size of the staff, but much more slowly. Last year Drummond's people did nine times the dollar volume of 1959 with only twice as many people.

"When I arrived at NADC five years ago," Drummond says, "each senior negotiator carried about 8 major negotiations at any one time. They now carry 13 to 15 major actions."

The increased workload has created some strain on the staff, he admits. "We simply can't spend as much time with each contract as we'd like to, and as a result we get burned occasionally."

"One of our biggest problems is that every engineer on-center thinks he's got the hottest project going. When you're handling a couple of hundred requisitions, you have to establish priorities. But, of course, you can't keep the routine job on the shelf forever either."

The time required to let a contract at NADC can vary from one week for an extremely urgent job (with support from the right parties), to 26 weeks for one requiring extensive handling. "We do have a quick response capability," Drummond says, "when the situation warrants."

The cycle begins when the Purchase Division receives a stub requisition from the Control Division. When it gets to Drummond, it is assigned to a negotiator. A request for proposal is then sent to eligible contractors and advertised in Commerce Business Daily.

Then, when proposals are received, the negotiator must do a complete cost or price analysis, looking at such things as material, overhead and labor rates, estimated

labor hours, delivery dates and the like. The negotiator, if he disagrees with the terms of the offers, must sit down with the contractor and thrash out a mutually-acceptable contract.

"You can never let a contract at higher than what you consider a reasonable price," Drummond says. "We don't object to going up from our starting position, as long as we know why we're going up."

Contracts over \$1 million must go to the Chief of Naval Material for Pre and Post Negotiation Business Clearance. Contracts under \$1 million must be approved by NADC's Contract Review Board.

NADC's procurement authority comes from the Naval Supply Systems Command. Before 1956 the Center had to submit all contracts above \$2500 to the Aviation Supply Office in Philadelphia.

"We're very fortunate in having the cream of the crop in negotiators," Drummond says. "We had a good foundation of experienced people here, and then we recruited from ASO and the Defense Industrial Supply Center." "R&D contracting is especially tough," Drummond says, "because it's so dynamic. If you don't keep up with the regulations and the daily decisions of the General Accounting Office, you can get into a lot of trouble."

"What many people at NADC tend to forget is that we are in a fishbowl when we spend taxpayers' money, and we better do it in accordance with the books."

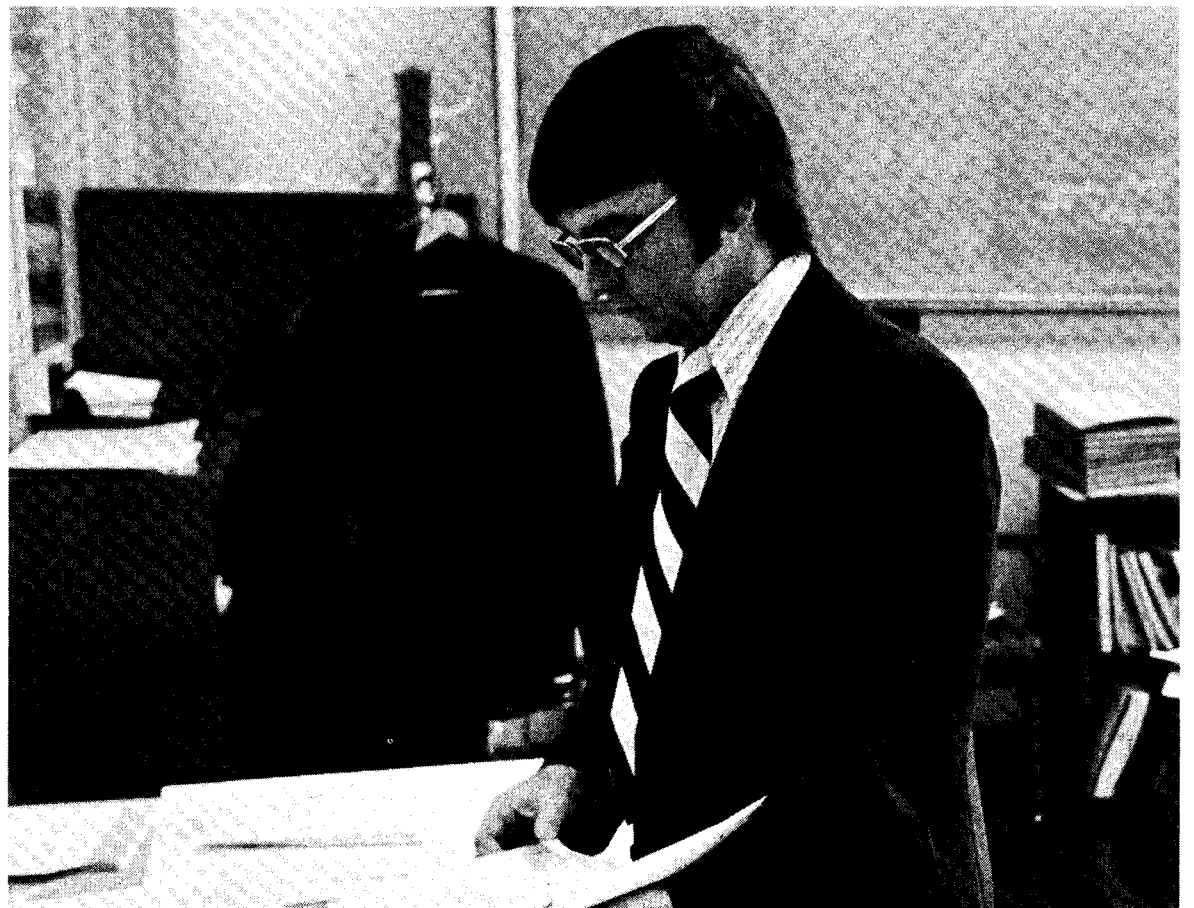
Drummond breaks down one popular misconception when he says R&D contracts don't necessarily have to go to the lowest bidder. "You give your contract to the one who will perform the work to the best overall advantage of the Government," he says, "price and other factors considered."



Kudos From

The Public

**"The Long Hours Of
Preparation Were Really
Enjoyed And Appreciated"**



Supply's Frank Drummond separates contracts before going into a Contract Review Board Meeting.

Around The Center

Bikathon Raises \$2627.50

One hundred and twenty-five persons pedalled 1937 miles on NADC's runway during a fund-raising bikathon on April 29.

The event was sponsored by the Bucks County Association for Retarded Children.

One-half of the \$2627.50 raised by the bike riders went to the state, and one-half to the county.

The money will be used to enlarge an existing sheltered workshop and to open an activities center for the retarded.

Distance leaders for the day included a young boy who pedalled 43 miles, and a girl who travelled 23.

Six Aid Students

Six NADC men fielded questions from students about their specialized fields of interest during career day

programs held at Central Bucks-East and West High Schools in April.

The program, called VIEW Day (Vital Information for Education and Work), was sponsored by the Central Bucks County Chamber of Commerce.

NADC's contingent, which was the largest at both the schools, included: William Becker, Robert Fortenbaugh, and Robert Taylor, Aerospace Engineering; Dave Hornick, Chemical Engineering; Edwin Tankins, Metallurgy; and LCDR Frank Formeller, Biology.

NADC Wins First Prize

"News and Views," the NADC Federal Credit Union's quarterly newsletter, has been awarded first prize in the Pa. Credit Union League's Annual Publications Contest.

The newsletter took the award for credit unions with assets of \$1 million or more.

The award was presented to Mrs. Elinore Kochman, the "News and Views" Editor, at the Credit Union League's 1973 meeting April 28 at the Pittsburgh Hilton. Mrs. Kochman is a Technical Publications Editor in the Administration Department.

A panel of publications' experts judged the contest.

Center Gets New Dept.

Captain McCaulley has announced that the Computer Services Facility has been redesignated as the Computer Services Department.

An NADC Notice published May 17 said Computer Services is expected to perform more effectively as a separate department because of its service-type functions.

Mr. H.G. Tremblay will continue as Director of Computer Services. CDR J. Redington, USN, has been assigned as Deputy Director.

Navy Wives Installed

Installation of new officers of the Navy Enlisted Wives Club took place April 16 at the Crow and Chevron Club. The new officers are: President — Eileen Plank; Vice President — Beatrice Estrada; Recording Secretary — Linda Smith; Corresponding Secretary — Jean Gorlow; Treasurer — Jacquelyn Northrup; Chaplain — Shirley Timblin; Parliamentarian — Jan Miller.

Certificates of Appreciation were also presented to: Tony Robilatto, Reproduction, Kenneth Weider, Special Services, and Chief Wilson, Navy Exchange.

Bloodmobile To Visit

The Red Cross Bloodmobile will visit NADC again on Wednesday, June 27. It will be set up in the CPD Training Rooms from 9:30 a.m. to 2:30 p.m.

Free juice, coffee and donuts will be provided for all donors.

A near-record turnout of 141 donors visited the Bloodmobile on February 7. In September only 83 persons donated. At least 120 donors are needed this time if NADC is to reach its quota.

Donors must be between 18 and 65 years of age, weigh at least 110 lbs, and be in good health.

The Bloodmobile visits here September, February and June of each Fiscal Year.

Under NADC's program, any employee or member of his family who needs blood can have it replaced at no charge by Red Cross. Otherwise charges can run as high as \$60 per pint.

In Memoriam

James Sweeney, AVTD

Four-Year Old Knows David From Donald Duck

At an age when most children are just learning about Donald Duck or Sesame Street, Roy Preston's four-year old son recognizes Michaelangelo's famous statue of David when he sees it.

But that's not too surprising, since he's spent the last two years of his young life living with his family in Italy.

Roy Preston is NADC's representative to the Staff of the Commander, Fleet Air, Mediterranean, and Anti-Submarine Warfare Forces, U.S. Sixth Fleet. He's been stationed in Naples, Italy, since the Summer of 1971. He's due to come back to NADC in July.

His position is part of the Department of Navy Labs Naval Science Assistance Program. The purpose is to provide quick, low budget fixes to problem areas in the operating forces.

"There are a lot of intangibles in the job," Roy says, "I think it's quite productive, but you have to be flexible. If you are the type of guy who has to knock off 15 specific goals each day, you won't like it. Staff work can be frustrating, because it's time consuming."

Besides Naples, the NADC rep normally visits Rota, Spain and Siganelle, Italy.

"Actually, I travelled less officially over there than when I was here in Warminster," Roy says, "but that's pretty much up to the man in the job."

The Prestons did do a lot of travelling on their own in a Volkswagon camper. Ireland was the high point, Roy says.

However, he admits he made what could have been a fatal error there. He attended Mass in a crowded church in Cork on St. Patrick's Day wearing an orange shirt. "I didn't even realize it until later in the day. Whew!"

Navy Relief Began In Philadelphia

Each year the Navy Relief Society holds an annual fund-raising drive between May 4 and June 6 to commemorate the Battle of the Coral Sea and the Battle of Midway.

What is the Navy Relief Society? What does it do with the money it collects?

The Navy Relief Society is the Navy's own organization to provide assistance to Navy and Marine Corps personnel and their families. It is entirely supported by voluntary contributions; none of the money is used for administrative expenses, and none is shared with any other organization.

Its origins go back to 1903 and a Philadelphia physician, Dr. Wilbur White. He

suggested that rather than passing the hat around the wardrobe to get funds for the widows and children of naval personnel (the custom at the time), that the proceeds of the Army-Navy game should be used for both services. The idea gained acceptance, and \$18,000 was divided the first year.

Besides loans and grants, Navy Relief also has an educational fund. In addition, Society volunteers make layettes for new babies, operate thrift shops and nurseries, and provide counseling.

NADC's drive will end June 6 with a sports extravaganza at the Air Field.

Naval Air Development Center

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All correspondence should be addressed to: Editor, Reflector, Naval Air Development Center, Warminster, Pa. 18974 (OSborne 2-9000, Ext. 2980).

CAPT. H.B. McCAULLEY
Commander NADC
Aris Pasles—Public Affairs Officer
Jim Murphy—Editor

Twelve Girls Vie For Navy Relief Queen Title

Highest Money-Raiser Will Be Winner



Linda Farrell



Maureen Scanlan



Elaine Wilson



Suzie Muller



Beverly Weigle



Debbie Loughery



Denise Di Toro



Debbie Keen



Cathy Toler



Ann Dietrich



Maureen Ballard



Fran Schuck



Rescue mission

NADC's 52-foot turbine boat, the LCSR-1313, speeds across the Atlantic Ocean near Key West, Fla. The boat, which cruises at 35 knots, took part in Navy attempts to free four men trapped in a minisub off Key West on June 17 and 18. See story below.

NADC men aid Key West rescue attempt

Time ran out on the Navy's attempts to rescue two of the four scientists trapped in a minisub in 360 feet of water off Key West, Florida, on June 17.

But the rescue efforts were eye-opening.

"I was really impressed," says Dan Probert, Superintendent of NADC's Key West Field Station, who was on the scene. "The cooperation was tremendous. I think the whole operation would make a terrific movie or television special."

Probert, Rich Mersiowsky, Bill Myers and Paul Loomis did their part, ferrying rescue teams, diving equipment, mixed gas cylinders and newsmen back and forth to the Sub Rescue Ship, the USS Tringa, for 36 hours.

NADC's 52-foot turbine boat, the LCSR-1313, was used, Probert says, "because it was operational, and it was fast."

The boat, used for fleet tests, can cruise at 35 knots.

It's assigned to NADC by the Naval Ships Systems Command.

Nicknamed "Double Trouble" because of its double 13 serial number, the boat joined two others at the scene, the Tringa, and the Coast Guard Cutter Cape York. The Coast Guard kept all other craft out of the area.

First call

NADC's first call came at noon on Sunday, Father's Day, and by 3:30 p.m. the boat was ready to go. NADC's crew, sailors from the Tringa, Navy photographers, and newsmen arrived at the sub's location about 20 miles from the Field Station at 7:15 p.m. Travel time one way was about 45 minutes.

At 11:00 p.m. the boat returned with a second group

of divers flown in from San Diego. At 3:00 a.m. Monday, Field Station personnel ferried out scientists from the Smithsonian Institution. At 9:00 p.m. that night they transported 36 cylinders of mixed gas flown in from New Orleans to aid in decompression.

"The minimum crew is two," Probert explains. "We took four because we were going at night."

After the first alert, things happened quickly, Probert says. By 3:00 a.m. Monday, a Sub Rescue Team from San Diego, complete with a 2700 lb. diving bell, had been flown in by Air Force transport and was aboard the Tringa. "That's pretty good turnaround time," Probert says.

Evidently Rear Admiral John H. Maurer, the Navy Rescue Coordinator, agreed. In a message on June 19 he cited everyone who contributed to the effort for their "magnificent response" and a

"superlative job."

"We regret that time was not with us to permit complete success, and all share in the sorrow in the loss of two men," he said.

"That we were partially successful is a tribute to those who responded so expeditiously and worked untiringly. . . . Please accept my personal thanks and well done," he concluded.

Abbasi receives teaching award at Villanova

Mr. Aslam Abbasi, a part-time Electronics Engineer here, has been chosen to receive the Distinguished Teaching Award at Villanova University.

The Lindback Awards Committee made the selection. Only two such awards are given each year.

NADC engineers turn night into day

By John Shannon

Would you believe it's possible to see as well at night as in the day?

You would if you saw the amazingly-sharp, long-range, pictures of ships taken in complete darkness by the "Helicopter Night Classification System" being developed at NADC.

Not only can the system counteract a pilot's nighttime "blindness," but it can also outperform a human's daytime visual acuity in range and resolution.

The system is designed to overcome a helicopter crewman's basic limitations in classifying sea surface contacts at night. These contacts can range in size from the tip of an enemy submarine's periscope to a large merchant ship.

Presently, engineers in the Electro-Optics Branch, Applied Research Division, AETD, are comparing and evaluating two different types of night imaging systems: Forward Looking Infrared (FLIR), and Active Low Light Level Television (ALLLTV). One of the two will probably be accepted for fleet use.

FLIR is a night imaging system that uses an infrared sensor to detect heat patterns, and converts them into visible pictures. Infrared (IR) is electromagnetic radiation with a wavelength between visible light and microwaves. All

warm objects give off IR radiation; the hotter the object, the more IR energy it radiates.

Since a ship with its machinery is usually warmer than the surrounding water, it presents a "thermal contrast." The FLIR system detects the thermal radiation pattern. By an image conversion process, it transforms the pattern into a visible picture, outlining the ship and its features in varying shades of light and dark. The greater the temperature difference between the ship and background water, the sharper the contrast.

TV camera

LLLTV is a sensitive television camera system that can detect objects at low light levels. A passive LLLTV system employs large receiver optics to collect light from dim objects, but it is ineffective at extremely low light levels. So NADC engineers are using an active LLLTV system instead.

Since it uses an artificial light source to illuminate the viewed scene, the system isn't limited by extremely low light levels. "It's sort of like carrying the moon with you," says Project Engineer Franz Bohn.

Actually the illuminator emits a non-visible, pulsed "light" beam. The system is

range-gated; that is, the illuminator emits pulsed beams that are synchronized with the receiver in such a way that the receiver picks up only the portion of the beam reflected off the target. This eliminates undesirable back-scattered light that can "wash-out" the image of the viewed scene.

Both systems have ranges of many miles, but their effectiveness varies according to atmospheric conditions and the degree of target-to-background contrast. For example, FLIR normally performs best where the water is cool and the atmosphere is dry.

The major difference between the two night imaging systems is that FLIR detects a thermal image while LLLTV detects a visual image. In both systems, however, the detected target is displayed on a television-type screen.

FLIR is also covert, since it is totally passive. Active LLLTV on the other hand, can be detected because of its illuminating beam. Its range-gating quality, however, allows the operator to determine target distance, which FLIR can't do.

In order to make airborne comparisons of FLIR and ALLLTV, NADC personnel have mounted the sensors in spherical housings on opposite sides of a CH-53 helicopter. The sensors can rotate freely in

any direction within a lower hemisphere.

A sensor evaluation station, usually manned by John Lommock (FLIR) and Jack Figgles (ALLLTV), is located inside the helo. Franz Bohn, stationed between the two, acts as mission coordinator.

Since both sensors are affected by atmospheric conditions, a Weather Data Station, operated by Russel Rud, records atmospheric data.

The systems, as Franz Bohn points out, are not designed for target search, but rather for target classification. Their narrow field of view and high resolution capability are more like a telescope than a wide-angle lens system.

Side-by-side basis

Historically, FLIR and LLLTV have been developed on a comparative basis. During 1969-70, Project "Compare I" evaluated FLIR and passive LLLTV (without an illuminator) on a side-by-side basis in a P-2 fixed wing aircraft.

Neither sensor demonstrated a decided superiority over the other. Performance varied depending on the equipment, the targets, the application, and the atmospheric conditions.

The tests, however, did

point out the respective advantages and limitations of each for nighttime, airborne, ocean surveillance.

New components

The development of new electro-optical components have significantly improved both systems. NADC's Electro-Optics Branch, with its facilities to measure optical, IR and TV components, has been a leader in this development work.

In Project "Compare II-Phase I," (1971-73), NADC conducted further comparative evaluations of the two systems, using state-of-the-art components. At that time the sensors were switched from the P-2 to the CH-53.

From a performance standpoint, FLIR and ALLLTV tend to be complementary. Because of money and weight considerations, however, probably only one will be chosen to go into service test model development "Compare II-Phase II."

The goal of the current evaluations is to determine which sensor work best under given atmospheric and environmental conditions; also, to determine the location, frequency, and duration of these conditions in geographical areas of interest.

New composite wing may be just Wright

By Frank Warvolis

NADC engineers took a step forward recently by looking backward.

AVTD personnel, 70 years after the Wright Brothers flew a fabric and wood aircraft at Kitty Hawk, N.C., have again begun using fiber for aircraft structures.

And for good reason. The composite fiber wing they've developed for the BQM-34E Firebee II is 54 per cent lighter in weight than a metal wing, and 40 per cent cheaper to manufacture. It should also be more resistant to corrosion and fatigue.

Dr. Edward McQuillen, Head of the Structures Research Branch, estimates that 80 per cent of the Firebee II drone (a remotely-controlled vehicle), could effectively be made of organic composite material.

Tested in June

AVTD tested the composite wing on June 15 to 100 per cent of its design load successfully, the first time this has been done on a composite wing. The wing contains several unique design features, according to AVTD personnel, and is among the most advanced in the application of composite technology.

The wing itself is composed

of a graphite fiber and epoxy resin. Graphite is a relatively new fiber. It's produced by heating raw fibers such as rayon at extremely high temperatures under stress.

The individual fibers are lined up side by side in three-inch widths, and then coated with epoxy resin, forming a tape. The tapes are laid layer by layer into desired shapes and then cured (set) by heat and pressure.

Commander Charles C. Cromer, the Naval Air Systems Command sponsor of the project, witnessed the successful static-proof test. The test enables engineers to simulate the stresses an aircraft undergoes during various flight maneuvers.

Dr. S.L. Huang, Head of the Advanced Technology Section, who was responsible for the final design and in-house fabrication of the wing, expects it to be flight-tested in an actual drone within one month. NADC will build one more prototype, then contract the work out.

According to Dr. McQuillen, the drone was selected for flight testing because of the safety factor. "We don't have to worry about losing a pilot," he says.

"Also," CDR Cromer points out, "since the drone wing is relatively small, it was easier to develop and handle at a low cost."



It's ok, we're ok

CDR Charles Cromer (left), Dr. S. L. Huang (center), and Dr. Edward McQuillen discuss successful test of composite wing developed at NADC.



Newly-arrived at NADC are Dr. Rudy Stampfl (left), Deputy Director of AETD, and CDR Peter Flood, the new Supply Officer.

New managers arrive at Warminster

Dr. Rudy Stampfl:

The new Deputy Director of AETD believes in using negative thinking to get positive results.

Dr. Rudy Stampfl, who came here in late May from the Goddard Space Center, isn't really a negative thinker. But he does take the negative side sometimes. "I do it to encourage debate," he says, "even to the point of soliciting arguments."

"In technical discussions, what people say on first contact is rarely what they really mean. Illumination from many angles is the only approach that can bring insight in depth. I believe the worst thing a man can do is lock himself out from sources of information."

Dr. Stampfl has been involved in communications of one sort or another most of his life. Born in Vienna, Austria, he attended the Institute of Technology in that city, obtaining a Ph.D. degree in Electronics and Communications.

Worked in N. J.

He came to the U.S. in 1953 and joined the U.S. Army Research and Development Laboratory at Fort Monmouth, N.J. Later he worked as one of the senior members of the team that designed, built and launched the Vanguard II cloud cover satellite, a forerunner of today's meteorological satellites.

He also built the tape

recorder for the world's first communication satellite from which President Eisenhower broadcast his Christmas message to the world in 1958. "This was my most satisfying experience," he says. "Although you always feel satisfied when you have accomplished something significant."

Later he devised the Automatic Picture Transmission Camera (APT) for Nimbus I, used for operations by the National Oceanographic and Atmospheric Administration for the past 10 years.

It's diversified

Although he was acquainted with NADC's work before he came here, he wasn't completely prepared for what he's seen.

"It's probably a lot more diversified than I knew before I came here, he says. It will take fast learning."

He says he's impressed by the close relationship between generation of original ideas and their application to fleet use. "This is probably unique to NADC," he says.

Asked about his goals here, he says, "I've always tried for excellence in everything I've started. And I'll try again."

Dr. Stampfl, his wife Ursula, and their two children will live in Maple Glen.

Besides holding numerous patents, Dr. Stampfl has written a number of papers on

Aerospace Systems and Instrumentation. In 1966 he received the Henry Diamond Memorial Prize Award for 1967 for "his outstanding technical contribution and his able direction of a highly complex engineering organization that has contributed greatly to the exploration of space."

Standards of Conduct govern DOD employees

You're a Government employee on official business at a contractor's plant when he offers to take you to lunch. Can you go? Will you violate the Department of Defense (DOD) Standards of Conduct if you accept?

The answer is—it depends. Basically, the Standards say you are forbidden to solicit or accept any gift, gratuity, favor, entertainment, loan or anything else of monetary value from anyone doing or attempting to do business with the DOD.

Government employees are also required to avoid any conflict of interest, or even the appearance of such a conflict.

For more information, and for exceptions to these Standards, see NADC Instruction 5371.3D of August 20, 1968 or contact the Employee Relations Officer on Extension 2527.

CDR Peter Flood:

CDR Peter Flood, a native Philadelphian who had just about given up hope of returning to this area, is NADC's new Supply Officer.

He comes here from the Naval Ships Systems Command in Washington, D.C.

CDR Flood, an 18-year Navy veteran, is a graduate of the Philadelphia College of Textiles and Science. He also has an M.B.A. degree from New York University, and an M.S. degree in Textiles Technology from North Carolina State University.

CDR Flood, whose specialty is procurement, believes in

decentralized management. "I think decisions should be made at the lowest possible level," he says. "That's the way it's supposed to be."

As he sees it, a Supply Officer's biggest problem is "getting contractors to do what they contracted for in the first place." His greatest satisfaction comes, he says, "when you don't hear any complaints."

According to CDR Flood, the NADC Supply Officer's job is unique. "It's about 50 per cent Supply and about 50 per cent procurement," he says. "Usually it's about 80-20."

CDR Flood and his wife Alice are living in Hatboro.

Color badges

will be distributed soon

NADC employees will soon be receiving new badges—this time with color photos on them.

It's part of a program to update the entire badge/pass system at NADC, and to make them more easily and rapidly identifiable.

The new badges will contain just a photograph, name and badge number on the front, according to LCDR Bill Spencer, NADC's Security Officer. "They'll just contain the vital information needed for identification," he says.

Employees will also be

issued Government ID cards. These will be good at any Government Facility, not just Navy, he says, and should also allow employees to use the DOD bus system in Washington, D.C.

Issuance of the new badges will begin about the Fourth of July, and should be completed in about three months. "We'll probably start with the technical departments," Spencer says.

"Most of the other badges were old and had to be updated anyway, so we decided to incorporate these changes at the same time."

Around The Center

July 21 is picnic date

The Welfare and Recreation Association's annual picnic will take place in the Green and Lake Groves of Allentown's Dorney Park on Saturday, July 21.

"This will be our fourth year in a row at Dorney Park," says W & R Chairman Elmer Krauser, "and we've never had fewer than 1900 people." About 2400 attended last year.

NADC personnel and their immediate families will be admitted free. Guests pay \$1.

Free beer, soda, ice cream and peanuts will be available; so will balloons donated by the Credit Union, and door prizes. "Bring your own pitcher," Krauser warns. "Otherwise the park will charge you \$2."

The park will be open from 10:00 a.m. to 11:00 p.m. Parking fee is \$.25.

Discount ride tickets will be sold by W & R members near the Safety Office. More information will be in "The Log."

Most of the groves are covered, Krauser says, in case it rains.

Two win scholarships

Two electronics engineers at NADC have won graduate study scholarships for the 1973-74 academic year.

They are: Howard J. Cattie, of SAED and Alan Zorn, of AVTD.

They were among ten Navy scientists from across the country selected to participate in this year's Weapons Control Systems Engineering (WEPCOSE) Program.

The full-salary, full-tuition program helps the Navy meet an ever-increasing need for engineers in Systems Engineering and Operations Research.

Both men will study Systems Engineering with an Electronics Option at the University of Michigan.

Cattie, who has a B.S. degree in Physics from St. Joseph's College in Philadelphia, began working as a cooperative education student at NADC in 1968.

Zorn, an NADC employee since 1971, has a B.S. degree in Electrical Engineering from Lehigh University.

The Commander salutes:

...Nine NADC personnel who have been commended by the Assistant Commander for Research and Technology of the Naval Air Systems Command for their work on the Integrated Tactical Navigation System (ITNS).

They are: CDR Lucius Day, Jr., LCDR Arthur Kislack, Ronald Vaughn, Louis DeDomenicis, Robert Tafel, Charles Olson, Edward Dinter, and Barbara Herman.

...Twelve NADC personnel who have been commended by the Assistant Commander for Research and Technology, Naval Air Systems Command.

They are: CDR James Foresman III, Salvatore Picard, Donald Lundvall, Chester Nowicki, James Bonnano, James Roach, Thomas Polaneczky, William LaBarge, Arthur Brand III, Patrick Harkin, Roland Bender and George Grey.

A letter of appreciation cited NADC for its unusual initiative and responsiveness. "From initial configuration definition to very close technical control and integration of contractors, the program was offered the best efforts of a dedicated and proficient team," the letter said.

...Martin Devine, Gwynn McConnell, John Carlyle, Richard Munger and John Erthal who have been commended by the Commander, Naval Air Force, U.S. Atlantic Fleet, for their rapid, effective responses to fleet needs.

Using non-destructive inspection techniques to determine the wall thickness of a bleed air duct, the NADC team reduced the number of inspection manhours per air-

craft from 100 to 2 with continuing 100% accuracy.

Program moves up

Low grade employees who demonstrate potential and motivation will soon have an opportunity to move up the pay scale ladder.

They'll do so under an Upward Mobility Program established by the Civil Service Commission. The purpose of the program is to help individuals in dead-end positions or with limited career possibilities to improve themselves.

Sarah Ketcham, NADC's Federal Women's Coordinator, has been detailed to the Training Division of CPD for four months to help set up the program.

"We have a lot of sharp people around here who deadended at the GS-5 level," she says. "With some training they might be able to move into another field as technicians, or into computer work."

The departments are now analyzing and forecasting personnel and skill needs for the next two years, and are being asked to list those they can designate as upward mobility positions.

All positions will be advertised and filled initially as trainee-type positions under the Merit Promotion Program.

Dr. Hendler cited

Dr. Edwin Hendler, a Supervisory Physiologist in CSD has received the "Paul Bert Award" from the Aerospace Physiology Section of the Aerospace Medical Association.

The award is presented annually for "Outstanding Contributions in Aerospace Physiology."

Dr. Hendler accepted the award at the Association's 44th annual meeting at the

Hilton Hotel in Las Vegas, Nev.

"Your dedication to science and the welfare of men who fly in the atmosphere and beyond is deeply appreciated," the award plaque said.

Dr. Hendler's recent work has included the study of the effects of temperature extremes, atmospheric pressure changes, ejection seat operations, and experiments with automatic restraint systems for both the Navy and the Department of Transportation.

He has worked for the Navy Department since 1946. His laboratory is located at the Philadelphia Naval Base.

And that's the tooth

One in eight has none

Despite modern knowledge, dental disease is on the rise. In this country alone, about 97 per cent of the population suffers from dental decay or diseases of the gums and other supporting tissues of the teeth.

Yet dentists tell us that most tooth loss can be prevented, and that most dental disease can be stopped before it starts.

To help you improve your dental health, the Reflector, in cooperation with NAF's Dental Department, will be running a series of articles on the subject. Below is the first installment.

Members of ancient tribes often wore teeth around their necks as a mark of beauty. We moderns like to wear them in our mouths.

But it has only been in recent centuries that man has considered his teeth to be important. Until the major killing diseases were brought under control, man had other things to concern him. His life expectancy was only 35 or 40

Two go to school

Two scientists at NADC have been awarded scholarships for the 1973-1974 academic year.

They are: Gerald E. Seidel, Jr., of AVTD and John J. O'Donnell, of SAED.

Both will receive full salary and tuition under NADC's Advanced Graduate Study Award Program.

In memoriam

Willard Yoder, Public Works

John Kershner, AVTD

Walt Moses, AVTD

Naval Air Development Center

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CAPT. H.B. McCauley
Commander NADC
Aris Pasles—Public Affairs Officer
Jim Murphy—Editor

Navy Relief drive raises \$9000

The 1973 Navy Relief Drive grossed about \$9000, according to NADC/NAF Coordinator CDR John C. McMichael.

He cited the Navy Relief Queen Candidates for raising more than \$7200 of this total. Net for the entire drive was \$6301.24.

Collecting the most money in the Queen Contest were: Suzie Muller, Fran Schuck, Maureen Ballard and Maureen Scanlan.

Winners in the Grand Prize Drawings were: John J. Perpiglia—\$1000 Savings Bond; LT B. L. Hykes—\$500 Savings Bond; Captain G. Klett—RCA Color TV; Richard Miller—10-Speed Bicycle.



Battering this old car helps relieve frustration and raise money for Navy Relief at the same time.



Credit Union Head Teller Danalle (Danny) Van Istandal begins a busy day.

**Payday isn't
only busy day
for CU tellers**

Page 3

Canadian broadcaster sings praises of U.S.

Canadian broadcaster Gordon Sinclair's widely-publicized tribute to America was first aired last June. It appears here in response to readers' requests, and is reprinted with permission.

**As originally broadcast on CFRB Radio, Toronto, Canada
Copyright 1973 by Conestoga Music, 2 St. Clair West, Toronto, Can.**

by Gordon Sinclair.

The United States dollar took another pounding on German, French and British exchanges this morning, hitting the lowest point ever known in West Germany. It has declined there by 41 per cent since 1971 and this Canadian thinks it is time to speak up for the Americans as the most generous and possibly the least-appreciated people in all the earth.

As long as 60 years ago, when I first started to read newspapers, I read of floods on the Yellow River and the Yangtze. Who rushed in with

men and money to help? The Americans did.

They have helped control floods on the Nile, the Amazon, the Ganges and the Niger. Today, the rich bottomland of the Mississippi is under water and no foreign land has sent a dollar to help. Germany, Japan and, to a lesser extent, Britain and Italy were lifted out of the debris of war by the Americans who poured in billions of dollars and forgave other billions in debts. None of those countries is today paying even the interest on its remaining debts to the U.S.

When the franc was in danger of collapsing in 1956, it was the Americans who propped it up and their reward was to be insulted and swindled on the streets of Paris. I was there. I saw it.

When distant cities are hit by earthquake, it is the United States that hurries in to help. . . Managua Nicaragua is one of the most recent examples. So far this spring, 59 American communities have been

flattened by tornadoes. Nobody has helped.

The Marshall Plan, the Truman Policy, all pumped billions upon billions of dollars into discouraged countries. Now newspapers in those countries are writing about the decadent war-mongering Americans.

I'd like to see just one of those countries that is gloating over the erosion of the U.S. dollar build its own airplanes.

Aircraft expertise

Come on . . . let's hear it! Does any other country in the world have a plane to equal the Boeing Jumbo Jet, the Lockheed Tristar or the Douglas 10? If so, why don't they fly them? Why do all international lines except Russia fly American planes? Why does no other land on earth even consider putting a man or woman on the moon?

You talk about Japanese technocracy and you get radios. You talk about German technocracy and you get automobiles. You talk about

American technocracy and you find men on the moon, not once, but several times . . . and safely home again. You talk about scandals and the Americans put their right in the store window for everybody to look at. Even the draft dodgers are not pursued and hounded. They are here on our streets, most of them . . . unless they are breaking Canadian laws . . . are getting American dollars from Ma and Pa at home to spend here.

When the Americans get out of this bind . . . as they will . . . who could blame them if they said 'the Hell with the rest of the world.' Let someone else buy the Israel bonds. Let someone else build or repair foreign dams or design foreign buildings that won't shake apart in earthquakes.

When the railways of France, Germany and India were breaking down through age, it was the Americans who rebuilt them. When the Pennsylvania Railroad and the New York Central went broke, nobody loaned them

an old caboose. Both are still broke. I can name to you 5,000 times when the Americans raced to the help of other people in trouble.

Can you name me even one time when someone else raced to the Americans in trouble? I don't think there was outside help even during the San Francisco earthquake.

Our neighbors have faced it alone and I'm one Canadian who is damned tired of hearing them kicked around. They will come out of this thing with their flag high. And when they do, they are entitled to thumb their nose at the lands that are gloating over their present troubles.

I hope Canada is not one of these. But there are many smug, self-righteous Canadians. And finally, the American Red Cross was told at its 48th Annual Meeting in New Orleans this morning that it was broke.

This year's disasters — with the year less than half over — have taken it all and nobody — but nobody — has helped.

MIG's meet NADC girls at Russian border

Supply's Alberta Palladino and Margie Gettings decided to spend Thanksgiving vacation in a different way this year.

From November 15th to the 23rd the girls vacationed in the Soviet Union as part of a charter group from a Willow Grove travel club. "I wanted to see what Russia and its people were like, so when the trip was offered, I decided to go," says Alberta.

Four MIG's

They knew the journey would be an experience from the start. When the chartered Pan Am flight entered Soviet air space, it strayed out of its assigned air corridor. "We had four MIGs meet us and instruct us to turn around and make a new entrance," Margie says.

Arriving in Moscow, the

group was assigned a tour guide from, Intourist, the Russian Tourist Agency, to answer questions, translate, and show the group the city.

Not restricted

"We weren't restricted on traveling on our own at all," says Margie. "We were allowed to take pictures any place in the city, of anything we wanted."

"Other than taking the tours during the day, we found very little to do at night. Russian night life really lacks a lot. Our hotel in Moscow was the center of what seemed to be the only thing happening after dark. The Russian people don't seem to believe in night spots," says Margie. "It was impossible to find anything that we would know as a night club."

Both girls noticed a lack of consumer goods in the Russian stores. "We found the clothes and food very expensive," Alberta says. "Eggs, were 18¢ apiece, a ladies slip was \$30.00, and a woman's pants suit was nearly \$130.00. Probably what we missed the most was the traffic we were use to. Even in the center of Moscow, we never saw more than a few cars at one time."

Flew to Leningrad

From Moscow, Margie and Alberta flew to Leningrad on the Soviet State Airline, Aeroflot. "Leningrad was a beautiful city, full of old buildings and churches," Margie says. "We toured the Winter Palace and the Palace of Katherine the Great."

Both girls felt Leningrad was another poor shopping spot. "We went into the largest department store in the

city, and when we would find something we wanted, it was either too expensive, or extremely poor quality," says Alberta. "Even our guide admitted there was a lack of consumer goods, but she said with the next 5-year plan, the government hoped to provide the consumer with more products."

Lots of fish

Adjusting to the food posed still another problem. "The Russians eat a lot of fish dishes," says Margie. "The majority of the dishes we ate during our stay couldn't be identified by any of us."

"Most of the meat dishes we had were overcooked and there was a lack of vegetables with the meals. Probably the best thing I had on the trip was the Russian ice cream."

It was so creamy and had a very unusual flavor," adds Alberta.

When leaving Russia, the girls were surprised how easily they were passed through customs. "I thought we would have everything opened and pulled apart," says Margie, "but to our surprise they never even asked us to open our bags. The customs people in New York checked us much closer."

Great to be home

What were the girl's overall impressions of the Soviet Union? "I'd like to go back in five or 10 years to see how far the people have advanced in their living standards," says Alberta. Margie concludes by saying, "It was an interesting place to visit, but its great to be home."

Lasers light the way for AETD men

By Jim McDonnell

Lasers are normally thought of as fictional weapons in the context of Star Trek or Buck Rogers. Although lasers do exist today that actually cut through metal with an intense beam of light, they have many other industrial, scientific, medical, and military applications.

The term laser is an acronym for *light amplification by the stimulated emission of radiation*.

Basically, a laser is an electro-optical device that emits "intense" monochromatic (single wavelength) light in an extremely "narrow" beam that spreads very little with distance.

Narrow beam

For example, the beam of light emitted by a directional laser is so narrow that in clear air it spreads only a few inches with little loss of power when traveling a distance of one mile. However, by comparison, the light from a typical household flashlight spreads to a diameter of about 10,000 feet when traveling the same distance, and becomes extremely dim.

The NADC laser effort is principally concentrated in AETD's Laser Systems Branch where work currently is being performed on four programs. The largest of these is ORICS (Optical Ranging, IFF, and Communications System), which is an exploratory development program funded by NAVAIR-370.

ORICS is an airborne multi-purpose laser system that has both aircraft/subsurface and aircraft/surface applications. The aircraft/subsur-

face functions of ORICS include: detection and tracking of underwater objects, detection of the thermocline, mapping of the ocean bottom and air/underwater communications. The aircraft/surface functions of ORICS include: surface target illumination, and air/ship secure communications. A two-way laser communications link between aircraft and ship would be "secure" due to the high directionality of the laser beam.

Most wavelengths of light will not propagate through water. However, light with a wavelength between 4500 and 5500 Angstrom units (the blue-green region of the electromagnetic spectrum) will do so. Therefore, when considering subsurface applications of lasers, it's necessary to choose a wavelength in the blue-green region of the electromagnetic spectrum. The wavelength of the blue-green light emitted by the ORICS laser is 5300 Angstrom units, that is, approximately 21 millionths of an inch long.

The laser used in the ORICS system is pulsed, having an output power of one Megawatt (1 million watts). However, the output pulse length is only 10 nanoseconds (ten billionths of a second) and thus the energy per pulse is small, particularly when compared to industrial lasers used for cutting and welding which can have energy outputs 1000 times greater than the ORICS laser.

The primary application of the ORICS system is to detect underwater objects. As a possible alternative to MAD (Magnetic Anomaly Detection) the ORICS system eliminates low-altitude flight

requirements for the detection or localization of underwater objects.

Larry Ott, head of AETD's laser branch, says that operational factors such as high sea states do not appear to affect the performance of the ORICS system. Although it performs most efficiently in the dark, the system also operates in bright sunlight because spectral filters reduce the background light level while still transmitting reflected laser radiation.

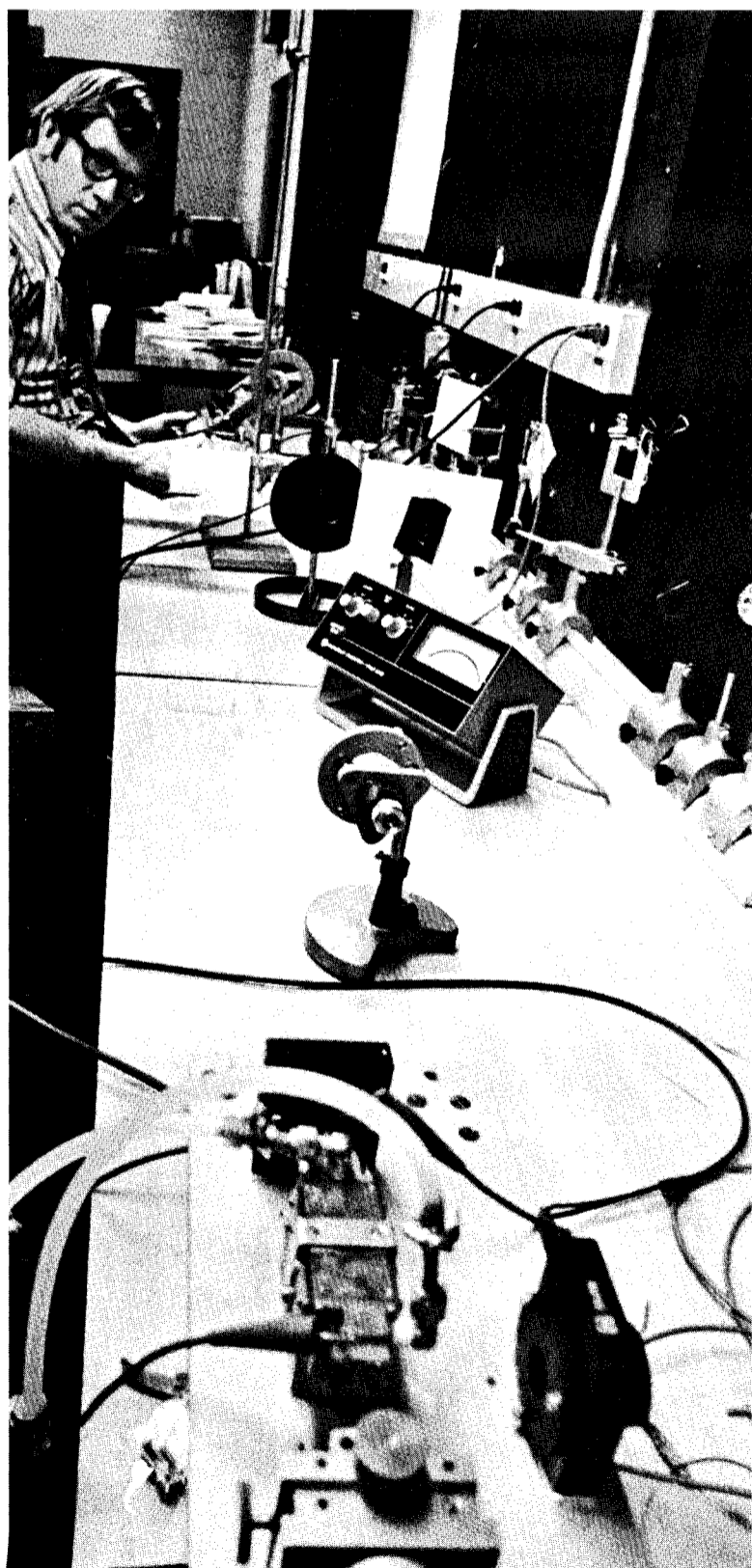
Precise measurements

Extensive oceanographic measurements are made from a ship concurrently with each ORICS laser test from an aircraft. These measurements are made in order to determine light transmission characteristics of the sea water in the particular test area. Oceanographic properties such as water temperature and beam transmission are measured precisely at various depths by instrumentation lowered from surface ships.

Recent ORICS tests have been conducted in waters off Cape May, New Jersey; Norfolk, Virginia; and Key West, Florida. John Shannon, who is primarily responsible for the oceanographic measurements, says that "NADC's Field Station at Key West has given us excellent support during various ORICS tests."

Candidate aircraft for the ORICS laser system are the VPX and HSX aircraft. VPX is a future long-range ASW (Anti-Submarine Warfare) fixed-wing aircraft. HSX is a future advanced helicopter.

(Please turn to page 6)



New Laser

Gerry Ferguson tests out a new laser in AETD.

"Danny" is a lady who keeps her cool

Danalle Van Istendal handles money quickly and efficiently. But that's not what makes her a good head teller.

She also supervises four people. But that's not what makes her a good head teller either.

She keeps her cool with members. And that, according to Credit Union Manager Bettie Zaks, is what does make her an excellent head teller. "That's the most important thing of all," Bettie emphasizes.

Dealing with people is also the most interesting part of her job, Danalle (Danny for short) says. "There are frustrating times," she says, "But I enjoy it. You get to meet a lot of different people."

Getting upset doesn't pay, she says. "When you get upset with someone with a problem, you really don't get anything straightened out, so you try not to. We take the member inside the office where it's quieter, and look at the problem. You can almost see the idea click in their eyes when they start to understand. A little bit of patience goes a long way."

The tellers demonstrated this patience for the Reflector on payday, January 10. Because the check cashing line didn't move fast enough to suit him, one man at the rear started yelling out loud. But the tellers didn't lose their cool. They don't even pay attention.

"You try not to get angry," Danny says. "I think that's why we have such a good relationship with our members."

Most of the people are great. It's completely different from any other place I've known."

Opened in September, 1951, NADC's Federal Credit Union is now one of the top 20 in the state, with assets exceeding \$7 million. Manager Bettie Zaks cites NADC's wide variety of services as the cause of its spectacular growth. "We're a full service credit union," she says. "That's exactly the reason."

The wide range of services keep the credit union personnel busy. "Some people think payday is the only day we're busy," Danny says. "But it isn't."

The teller's day starts at 7:45, and doesn't end till 4:30 or later. Each night the tellers must settle their accounts, and then Danny does a combined settlement on shares, loans, money orders, travellers checks and bulk and loose cash.

Normally she can settle in 40 to 90 minutes. But if there's an error, it takes longer. On Halloween night, Danny didn't leave till 8:30 p.m. "My husband doesn't like it when I work a lot of overtime," she says. "But of course that's part of any job."

Sometimes the computer delays the tellers. NADC ties into a regional credit union computer in North Carolina. Several times ice storms in the south have knocked down telephone lines, making the computer inaccessible.

"People don't realize we like

it less than they do when the computer's down," Danny says. "When it's out we have to stay late to work with it. But this computer is a good one."

The computer also causes some misunderstanding among members who aren't yet used to it. "Some people prefer the book," Danny says, "because the numbers are right there in front of them all the time."

Besides working the window and distributing money, Danny prepares bank notes, wires for money, makes deposits, opens the vaults counts money shipments that come in, and trains other tellers.

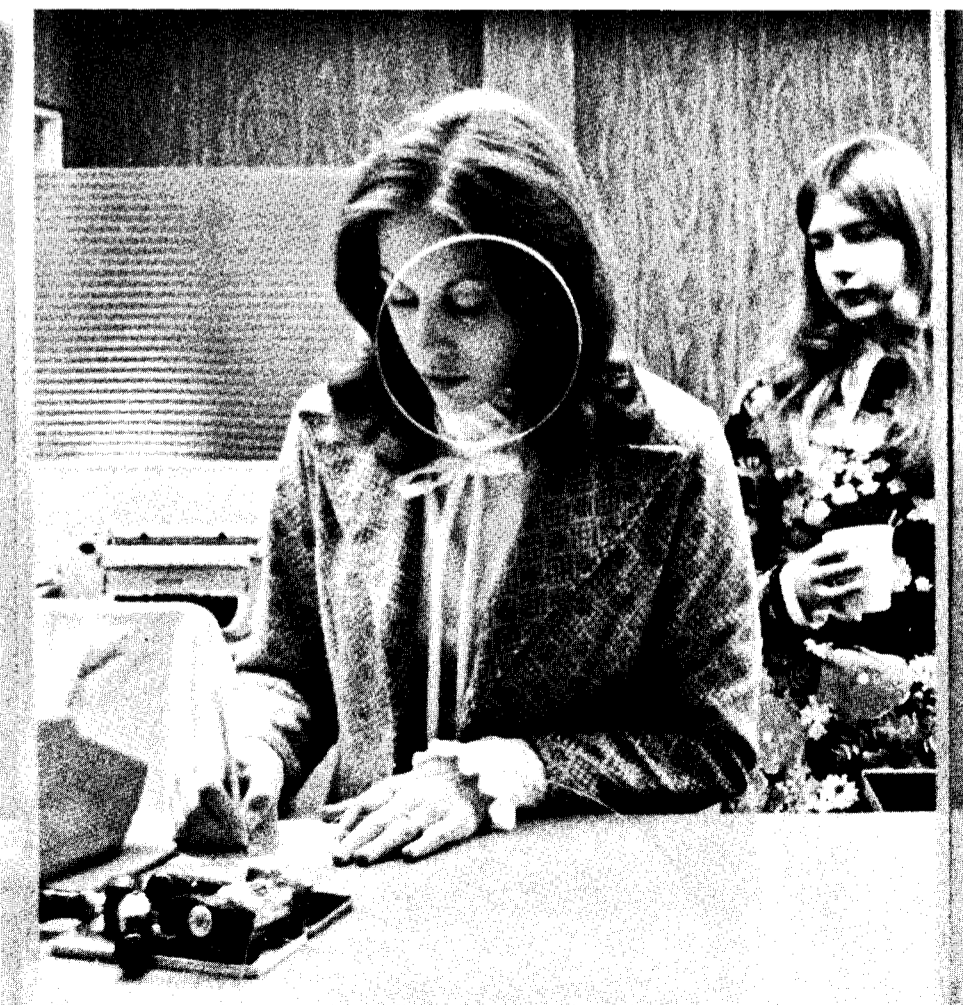
She enjoys training people, because she's basically a teacher at heart.

Began as loan clerk

She originally began working as a loan clerk at the Willow Grove office while waiting for a teaching job that never came. Later she transferred here as a teller, becoming head teller last January.

"I enjoy training people," she says. "I miss teaching, and when I train somebody, it gives me a chance to be a teacher again."

Looking back at her time here, Danny says: "I've learned more here in two and one-half years than I did in four years at college. I've learned office procedures, and especially about personal finances. I've learned to see all the pitfalls."



Danny's Day

Counting money, training tellers and making deposits are all part of Danny's day.

The Commander salutes:

... CDR Lucius Day, Jr., LTJG Arthur Carter, Clelland Green and Donald Spangenberg, who have been commended by the Chief of Naval Material for their work on Project LINEBACKER.

... Anthony Madera, who's been commended by Vice Admiral W.T. Rapp, Commander of the THIRD Fleet, for his work as a Naval Science Advisor. "Madera is a true professional, dedicated to his work, and is well-liked and greatly respected by all with whom he has had contact," Admiral Rapp said.

... Roy Preston, who's been commended by Admiral P. Charbonnet, the Commander, ASW Forces, SIXTH Fleet, for his two years of service as Air Systems Engineer.

... Charles Haney, for his "excellent" assistance to the Aviation Supply Office on an Armed Services Board of Contract Appeal.

... Malcolm Dickinson and Edwin Gernant, for their assistance to Naval Air Systems Command in the CASS/DICASS R&D test program.

Performance was outstanding

... Thomas Guarini, who's been commended by Rear Admiral L. A. Hopkins, of the Naval Air Systems Command, for his work with the Advanced Acoustic Search Sensor Program. "Mr. Guarini's performance, as a key member of the project team, has been outstanding," the letter said.

... Joseph Kacergis, for his outstanding performance in acting as procurement coordinator for the LAMPS MK I processor.

... CDR James McGill, Robert Fosko, John Strobel, Richard Brookes, Alan Victor, Raanan Shames, Anthony Mickus, and Thomas Willey. The men have received a Letter of Appreciation from the Program Coordinator, Surface Ship, Aviation Integration for their excellent performance, and for the contributions to the LAMPS program they've made over the last several years.

"The future of the LAMPS program today looks bright indeed," Rear Admiral Cox said, "thanks in no small measure to the efforts of this group."

... Lucius Blount, who's been commended by the Chief of Naval Operations for his work on the CV-TSC program.

Commended by SECNAV

... Clelland Green, who's been commended by John Warner, Secretary of the Navy, for his efforts in helping the Bureau of Customs combat smuggling under Project Linebacker.

... William Sipes and Marty Devine, for supporting the Scanning Electron Microscope Symposium held at the Naval Air Rework Facility, Alameda.

... CDR James McGill, LCDR Charles Curtis, LCDR Steward McGowan, Joseph Handschu, John Stabilito and Edward Yannuzzi. They've been commended by the Project Manager of SASI for helping prepare a Request for Quotation document.

According to the commendation, "Feedback from a number of contractors ... has indicated the RFQ is well written and is excellent in describing the effort to be accomplished."

... Henry Naubereit, for his work with the Naval Electronic Systems Command in helping develop a Navy plan of action for future UHF communications and technology.

... Michael Stellabotte, for serving the past year as a member of the Steering Committee for the 22nd Defense Conference on Non-Destructive Testing; also, for his election as Chairman of the Steering Committee for the 23rd conference.

... Joseph Triolo, who's been commended by the Commander, Naval Air Systems Command, for his contributions to the development of the Solid State Electric Logic (SOSTEL) system.

Exceeded small business goals

... Frank Drummond and John Miller, who have been commended by the Naval Supply Systems Command for their contributions to the Small Business Program. The Center exceeded its goal by awarding 25.5% of the dollar value of Fiscal Year 1973 procurements to small business concerns.

"The success of the Small Business Program at this command is a definite reflection of the interest and cooperation maintained between the Small Business Specialist and Supply Department's Purchase Division," the letter said.



German engineer Hans Hirsch says New York wines are some the best he's ever tasted.

NADC is long hike for Hans Hirsch

By Karl Schmidt

Hans Hirsch came 4,000 miles to work at NADC knowing he would only be here for one year.

Hans is a German engineer working at NADC under an exchange program between the Department of Defense and the German Ministry of Defense.

For the next 12 months the 37-year-old Hirsch will study the Navy's advanced sonobuoy and sonar development techniques to gain better understanding of its research and development program.

"I asked to come to NADC as part of the exchange program," he says. "It enables me to meet different people, as well as increase my personal knowledge in my field."

"In Germany my job with the Armament Division of the Ministry of Defense is a managerial type, more of a steering function," says Hans. "I am responsible for developing the specifications needed for contracts, giving the work orders to industry and evaluating test data when it is returned by industry. I deal with the software phase of the research. Most of my contacts with the research are on paper," Hans continues.

"At NADC it is a completely different experience for me. I'm able to do work connected with the hardware phase of the project."

In Germany, all defense research is conducted by the Ministry of Defense in research stations much like NADC, only on a much smaller scale.

Development contracted out

The development phase of the project is then contracted out to private industry. The government sponsors the contracts and tests the hardware that is developed by industry.

"This method works well in our country because it creates jobs in industry by giving them contracts," says Hirsch.

"There are two companies in Germany that deal with sonar development. Our companies are much smaller and our programs do not receive as much funding as your projects because our Navy is much smaller, only about 40,000 men, with our biggest ships being destroyers."

"I like your country's method of research and development much better. You have a constant source of manpower and funding. Many times our contracts are not of the highest priority in an industry that may be consumer oriented. We have

slack periods of research and development because our funding runs hot and cold."

Hirsch, who holds an electrical engineering degree from the Technical University of Hanover, admits his job in Germany carries some unusual responsibilities. "Many times it bothers me about the contracts that I handle. The fact that I might put thousands of people out of work by not issuing a contract to a certain company is never easy to forget."

Hans has been to the United States eight times before and to NADC twice. "My project office in Germany has been involved with three data exchange programs with the Department of Defense, which entailed my travels to your country," says Hans.

Hirsch is not the only exchange engineer to work at a DOD facility. Fifty other Germans are presently serving one year tours at Air Force, Navy and Army research and development centers across the country.

Family isn't homesick

"I feel that this trip to the United States is a good experience for my family. It is a one-in-the-century chance for them," says Hans. "My family is not homesick in the least. We are always five minutes within calling Germany and speaking to our family and friends. My family and I have been received well by everyone we have met. Everyone has been very friendly and treated us with the utmost concern," he says.

"The thing I miss about Germany would have to be the hiking trails. We Germans walk for hours and hours for recreation as well as physical fitness. Just outside our house in Bonn there is a network of hiking trails. Where we are living now, the only place to walk is alongside the road on the shoulder and that is very dangerous," Hirsch continues.

"I was pleasantly surprised with your American wines. They are very good for the money. I think your New York State wines are some of the best I've ever had," Hans says.

Hans will complete his one-year program in October and return to Germany to resume his work there. "I feel the exchange program is very worthwhile. The people I have worked with at NADC have been very good to me. The exchange program is giving me invaluable experience in seeing the overall research program from another angle."

Belting youths will solve problems, Marine says

Marine Staff Sergeant Rudolph Singleton has his own personal solution to the problems of today's youth. A belt.

Not a leather belt, but a brown or black belt signifying prowess in judo. And Singleton, who's a second degree black belt himself, is starting judo classes at NAS Willow Grove to help both young people and adults obtain these degrees.

According to Singleton, the main reason kids go on drugs is because they're confused. "They've got no direction," he says, "and they've got idle time on their hands. Judo gives them a goal to work for."

He also stresses judo's value as mental and physical training. "It increases your coordination," he says, "and gives you self-confidence. It also teaches you teamwork."

Singleton's classes will begin February 4 at Willow Grove. Classes are open to active duty and retired military personnel and their dependents, and to civilians employed by the Department of Defense. The minimum age for children is nine years.

Singleton's Kodokan Judo classes will run from 6 to 7:30 p.m. on Monday and Wednesday evenings. Civilians wishing to join must contact Willow Grove's Special Services Officer (4-381) and sign a Hold Harmless Agreement. Cost for everyone is \$5 per month.

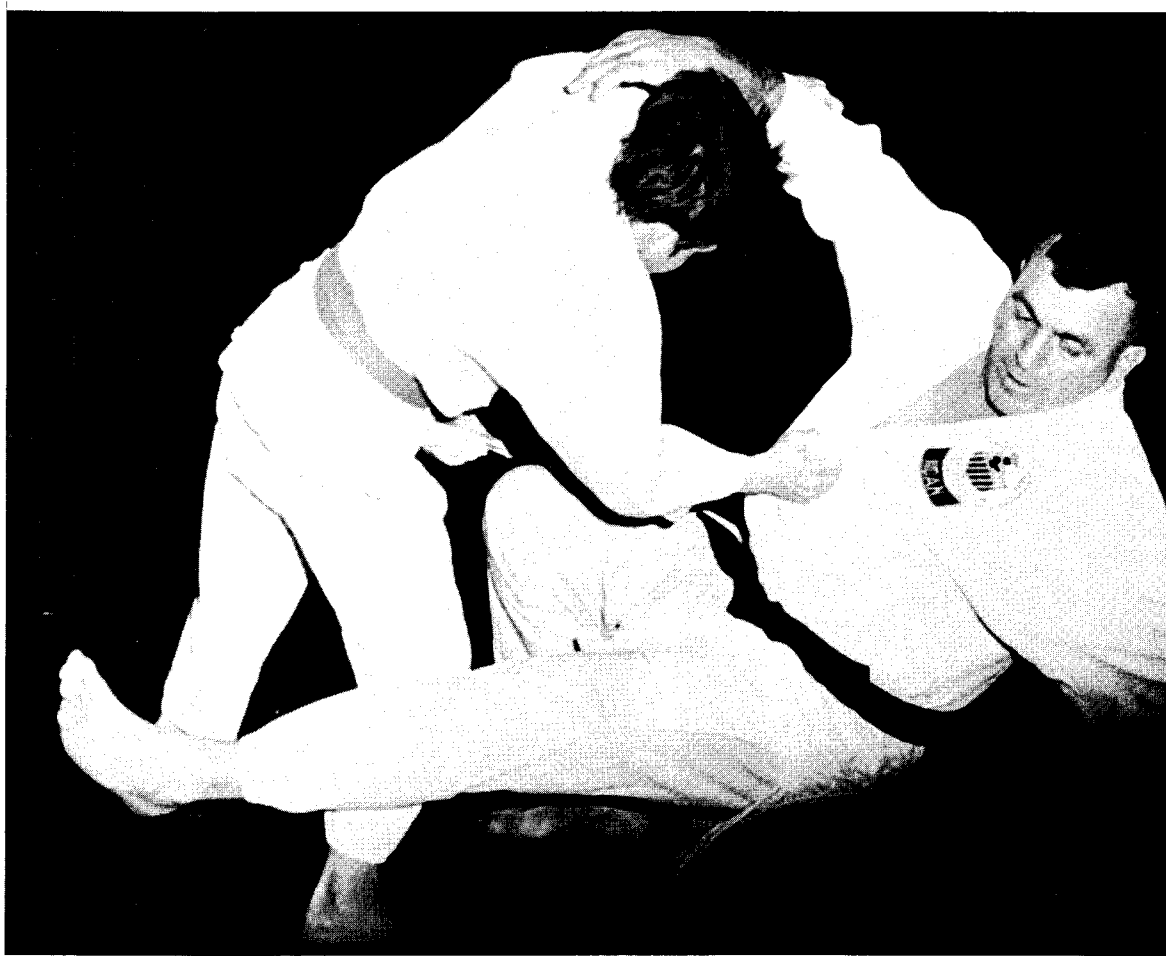
Singleton reports to Willow Grove from Jacksonville Naval Air Station where he ran the largest military judo club in the U.S.

He began judo training seven years ago because he was overseas and "had nothing to do." "I had no idea at all how involved I'd become," he says.

Once he did begin, he wanted to quit. "I thought I'd never be able to do it. I stuck with it, and I'm glad I did."

Singleton says he's never had a major injury in seven years of competition. "It's a relatively safe sport," he says, "and I try to present it in a palatable form."

His specialty is working with children and teenagers. "I enjoy working with young people and seeing them develop," he says. "Judo gives me a chance to work with my kids and other kids."



Falling down on job

Marine Staff Sergeant Rudolph Singleton teaches his son a little judo.

(Photo by Karl Schmidt)



Female flight surgeon

NADC's Dr. Victoria Voge is one of the Navy's first two female flight surgeons.

Speed is way of life to Dr. Voge

By Karl Schmidt

NADC has a new flight surgeon on board. What's unusual about this is that Lt. Victoria Voge is one of the first two female flight surgeons in Navy history.

Lt. Voge's graduation from the Naval Aerospace Medical Institute, Pensacola, marked the first time in the school's 51-year history that a woman completed the rigorous 26-week Naval Flight Surgeon's course.

Why did she choose a medical career? "Medicine has always been interesting to me," she says. "I've always wanted to be free, to go wherever I want and to do something unusual and different. Medicine gave me the chance to do that. It also offers so many fields to go into. You can specialize in whatever you want."

Father was barnstormer

Dr. Voge's interest in aviation began when she was a child. Her father was a barnstormer who went around the country performing in air shows. Later he owned and operated a drag strip outside Minneapolis, Minnesota. "I was brought up around airplanes and speed. They were just a way of life for me," she says.

After receiving her Bachelor of Arts degree from the University of Minnesota, Dr. Voge attended medical school at the National Autonomous University of Mexico. "Medi-

cal school in Mexico is what you make it. You really have to have initiative and drive," she says. "You set your own pace and learn what you want to."

After graduating from medical school, Dr. Voge went to Mount Sinai Hospital, in Hartford, Connecticut. While there she saw the differences between Mexico's socialized medical program and the U.S.'s medical system.

So much red tape

"With a socialized system as in Mexico, everyone receives the medical care they need and deserve," she says. "The state pays for the hospital bills rather than the individual having to provide his own insurance."

"I saw the worth of the socialized medicine when I was working at Mount Sinai," she says. "A person could be bleeding to death and all the hospital could be worried about is getting paid. There was just so much red tape."

Dr. Voge's experiences at Mount Sinai turned her toward the Navy's medical program. "The Navy is a form of socialized medicine," she says. "Everyone receives the treatment, the medicine and the hospital care they need without any question of them having to pay for it."

After serving her residency at the Philadelphia Naval Hospital, Dr. Voge was assigned to Pensacola to receive her flight surgeons'

training. Her courses included two weeks of sea survival at Pensacola, and jungle survival at Eglin Air Force Base, as well as six weeks of flight indoctrination in a T-34 aircraft.

"The hardest part of school was the swimming course. I didn't know how to swim and it took me two weeks longer than anyone else to get through the course. I was really afraid of the water. It was really embarrassing."

After completing Flight Surgeon's school, Dr. Voge reported to NADC where she is assigned to aeromedical research at the Crew Systems Department.

You become specialized

"Being a flight surgeon makes you a super G.M.O. (General Medical Officer)," she says. "You become specialized in certain aspects of aeromedical problems. About 50% of our work deals with the psychology of pilots. The pilot carries a lot of responsibilities and sometimes this can start to cause problems. It's part of our job to find out ways to alleviate or cure problems that can be caused by flying," says Dr. Voge.

Dr. Voge has received mixed reactions in this formerly all-male field. "In working with the patients, I've had no trouble. They accept me as a doctor," says Dr. Voge.

"I've had the most trouble with other Navy flight sur-

(Please turn to page 6)

Center scope

Credit Union meeting set

The 23rd annual meeting of the NADC Federal Credit Union will begin at 8:00 p.m. on Thursday, February 14, in the Center Cafeteria.

Open to members only, the meeting will include elections of four Directors and two Credit Committee members. The Directors will serve two-year terms; the Credit Committee members will serve two and one-year terms respectively.

Any credit union member may be nominated, and nominations will be accepted from the floor. More information on nominations will appear in the Log. Chairman of the Nominating Committee is Owen Medd, Public Works.

The meeting will be followed by a buffet. Last year more than 170 persons attended the meeting.

Donors needed for Bloodmobile

Some 125 donors will be needed when the Red Cross Bloodmobile stops here on Wednesday, February 6.

The Bloodmobile will be set up in the CPD Training Rooms from 9:30 a.m. to 2:30 p.m. Free coffee, juice and donuts will be provided for all donors.

Donors must be between 18 and 65 years old, weigh at least 110 lbs., and be in good health.

Under NADC's program, any employee or member of his immediate family who needs blood can have it replaced at no charge by Red Cross. Otherwise, charges can run as high as \$60 per pint.

To keep the program in force, one pint of blood must be donated each year for every five Center employees. The Bloodmobile visits here in September, February and June of each fiscal year.

Oops!

A caption on page one of December's Reflector citing John Druckenmiller as the designer of NADC's Christmas Card Posters was incorrect. Through the years a number of NADC employees have helped design the posters.

CFC results set record

The Bucks County Combined Federal Campaign netted \$49,241.66, the highest in NADC's history, CFC Chairman Ed Tankins has announced.

The once-a-year drive includes NADC, Bucks County Post Offices, and Bucks County Social Security Offices.

NADC's portion of the total was \$45,533.66; the Post Office contributed \$3236, and Social Security \$472.

More than 85% of NADC's employees contributed to the campaign, compared to 71.8% for Social Security, and 27.17% for the Post Offices.

NADC's average contribution was \$20.58; Social Security's was \$20.52, and the Post Office's \$3.79.

Eleven employees retire

Eleven NADC employees retired near the end of the year. They are:

George Wilcox, Elton Lindsey, Michael Andress, Paul Brady, Harry Eckert, Alfred Eddowes, Miles Greenland, Benjamin Katz, Chris Koochembere, Gilbert Muir and Frederick Osgood.

Deadline nears for grad study programs

CPD's Training Division is now accepting applications for the Graduate Study Program and Advanced Graduate Study Program.

The deadline is February 15.

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. H.B. McCULLLEY — Commander NADC.
Aris Pasles — Public Affairs Officer; Jim Murphy — Editor; Karl Schmidt — Writer



Snow job

Even some P-3's have to come in from the cold when ice storms strike.

Lasers measure wave heights

(Continued from page 2)

In support of ORICS, NADC engineers are conducting research on the development of blue-green lasers. This work, supported by internal research and development funds, is developing new materials and techniques for improving laser performance and reliability, and thus increasing the operational performance of ORICS.

In addition to ORICS, engineers in AETD's Laser System Branch are also working on the AOS (Airborne Oceanographic Surveillance) program for the purpose of developing a laser system for measuring wave height and wind velocity from reconnaissance type aircraft.

There is currently no technique for "remotely" measuring sea surface wind velocity and wave height. However, recent AOS project tests have established the feasibility of doing so with a laser. According to Ken Petri, AOS project engineer, the technique potentially offers vast improvements over today's sea state forecasting techniques.

Another Center program working with lasers is the Sonobuoy Location System project. Its program objective is to develop a laser system that will provide for the "pinpoint" localization of deployed sonobuoys. This project is sponsored by the Office of Naval Research.

WCAU is snow shutdown station

If the Center is forced to close because of an emergency snow situation, NADC's name will be announced on WCAU radio, 1210 on the dial. No code word or number will be used.

Female flight surgeon

(Continued from page 5)

geons at Pensacola. They seemed to be very resentful that a woman was encroaching on their home grounds. I want to be treated as a doctor, without regard to sex," she continues.

Choosing medicine as a career has affected Dr. Voge's life style in several ways. "Being a doctor is a full time job. You have to make a choice between marriage or medicine. If you remain in medicine, I feel that you should be a nun of sorts," she says.

"If I ever got married, I would give up my career altogether. The combination of the two just don't mix," she continues.

The Navy hasn't forced Dr. Voge to relinquish any of her femininity. "I wear earrings and long hair. I dress like a woman and feel like a woman. The day the Navy asks me to give that up is the day that I leave the service," she says.

Dr. Voge hopes that her two-year tour at NADC will lead her to advanced fields of medicine. "The Navy lets you specialize in whatever turns you on. I'd like to get into aerospace medicine, and eventually into space medicine," she says.

"So far the Navy has been marvelous and if it stays this way, I just might make it a career," says Dr. Voge.

In memoriam

Ann Woodward, AETD
Thomas Davis, Jr., AVTD
Roseann Goodman, formerly of Supply

Final results for Combined Federal Campaign

Department	Amount	Average Contribution	Per Cent Contributing
AVTD	\$10,489.00	\$26.53	96%
ASW	\$ 235.00	\$29.38	100%
SAED	\$ 9,509.25	\$26.64	79.8%
NAF	\$ 3,442.31	\$16.55	66%
CSD	\$ 3,128.00	\$20.31	84%
Computer	\$ 236.50	\$14.78	100%
PF & Staff	\$ 1,479.00	\$17.82	96%
PW	\$ 1,778.50	\$10.65	85.6%
Supply	\$ 1,448.00	\$11.14	84.9%
CPD	\$ 353.50	\$10.71	100%
Admin.	\$ 3,283.00	\$12.20	95.7%
AETD	\$ 9,855.10	\$24.45	83%
CU	46.50	\$ 3.58	100%



NADC is currently displaying the Colonel Franklin C. Wolfe Memorial Trophy in the main lobby.

To LCDR James Rappe, receiving the Daedalian trophy means recognition of the Center's diversity.

Phoenix system wins Daedalian trophy

"A brain trust that won't quit," is how LCDR James D. Rappe, the Center's F-14 Project Officer, characterizes the team responsible for the Phoenix Weapons System, which won this year's Colonel Franklin C. Wolfe Memorial Trophy from the Order of Daedalians.

The Order of Daedalians gives the award annually to one of the armed services for developing or enhancing the operational effectiveness of a significant weapons system.

The citation says in part: "This system is the world's only air-to-air system capable of simultaneous tracking of 24 targets and the near-simultaneous launch of six long-range missiles at six different targets.

"The high reliability of the Phoenix missile, outstanding for a weapon containing 15,000 components, coupled with a high degree of built-in fault isolation permits a long captive

flight life before extensive testing is required.

"This capability permits long deployments with no requirements for complex missile support equipment on the aircraft carrier."

This year the system went operational as the first F-14's entered the Fleet.

NADC played a key role in designing both the weapons system and the airframe, the F-14A Tomcat, supporting it.

"We did a lot of the early design work," LCDR Rappe says, "we also helped Hughes Aircraft Co. [the manufacturer] set up the production lines."

The Center's involvement today, LCDR Rappe says, is Fleet support — providing rapid response to any problems encountered in operating and maintaining the system. "We are the only accepted authorities for

these answers," he says.

One of the Center's major contributions to the whole Phoenix effort has been using a very foresighted systems approach. "When you think of a systems approach," LCDR Rappe says, "you think beyond your immediate area of concern."

The specialists in different areas worked together to see how each of their contributions affected the system as a whole. In that way a lot of bugs were ironed out before they even surfaced.

Because of the Phoenix team's involvement throughout the life of the project, they have developed what LCDR Rappe calls corporate memory. "We are the only source of corporate memory in this area," he says.

Corporate memory is the combined memories of the people who have worked on all the different

aspects of the project. Together they know all the in's and out's from the beginning.

(The team members were cited for their efforts by the Naval Air Systems Command, which chose NADC as the lead laboratory for the project. See the "Commander salutes" column on page 4.)

Receiving the opportunity to display the Colonel Wolfe trophy means a lot to LCDR Rappe and the Phoenix team. Chiefly, it means recognition for their many years of work.

"The thing I love about this trophy," LCDR Rappe says, "is that when people outside the Center speak about NADC, they talk about the P-3 and land-based anti-submarine warfare. Many of them tend to overlook the Center's other accomplishments. This significant award demonstrates to the outside world that we can do other things and are not strictly parochial."

The Colonel Wolfe trophy annually goes to the most outstanding air-launched weapon system developed by one of the Armed Forces.

For Gil Ridley, "EEO is an all-win proposition"



Gil Ridley credits his staff and CAPT Yowell, NADC's EEO Officer, for helping him become the Outstanding Deputy EEO Officer in the Naval Material Command.

When Gil Ridley took over management of the Center's Equal Employment Opportunity (EEO) program in the spring of 1972, he said, "I accepted this position because it offers me a new challenge to do a thorough job."

This September the Navy rewarded him for the job he has been doing by selecting him as the Outstanding Deputy EEO Officer in the Naval Material Command.

Exceptionally proud of the honor, which brought with it the Navy Superior Civilian Service Award — the Navy's second highest civilian award — Mr. Ridley says, "I don't think it's possible for anyone to win such an award unless they have a good EEO Officer and EEO staff."

Receives inspiration

He adds that receiving the award inspires him to keep on working in spite of the high level of frustration found in EEO work.

Mr. Ridley feels the strongest thing EEO has going on Center is the cooperation he finds with top management. "A couple of the greatest things I see coming out of management," he says, "are the official position management board and the official career development ladders."

Both programs are a result of coming down the EEO road, he says, but not direct results of his EEO program.

His number one goal in EEO is to help people obtain the opportunity to achieve up to the level of their ability by developing career ladders for different jobs. Mr. Ridley stresses that he's talking about opportunities not guarantees.

On the other hand his biggest complaint concerns people who feel they have an EEO problem but will not use the formal complaint system. Administering and monitoring the system is his job and it's the only way he can help people who have legitimate complaints.

Hired ten

Mr. Ridley's selection as Outstanding Deputy EEO Officer was based on four main areas of achievement, one of which is recruiting. He has recruited and hired ten professional minority personnel since coming to NADC when none had been recruited prior to 1961.

Secondly, under his leadership the Center established 30 Upward Mobility positions, all of which should be filled by December 15, 1975.

Mr. Ridley also assists the Commanding Officer, NAF, as Military EEO advisor and counsels local high school students, trying to direct them towards suitable career goals.

Mr. Ridley sums up his dedication to the EEO program with what he says is his favorite phrase, "EEO is an all-win proposition."

Combined Federal Campaign supports a variety of services in many agencies

The Bucks County Combined Federal Campaign supports 48 service organizations of the National Health Agencies, International Service Agencies and the Bucks County United Fund.

To show how money raised in the campaign may be used, the Reflector visited a day care center run by the Bucks County Coordinated Child Care Council, Inc., a local agency that will receive support from the Bucks County United Fund for the first time this year.

This is not an endorsement of the Bucks County Coordinated Child Care Council, Inc., but merely an example of the type of help these agencies provide.

Bucks County Coordinated Child Care Council, Inc., also known as BC4C's, is a non-profit, public service corporation devoted to the coordination of educational child development activities in Bucks County, with special emphasis given to services for pre-school children.

The organization got started about 19 months ago. One of its primary

responsibilities is administering the federally funded Head Start program.

Up through this year, BC4C's has had to limit its aid to children whose families met federal poverty guidelines. Funding received from the Combined Federal Campaign will enable the Council to set up a sliding fee program for children whose parents are above the poverty level but who cannot afford private day care.

At the present time, Merle Leak, Director of BC4C's, says he doesn't know how many additional children they'll serve because he doesn't know how much money will be appropriated. He's hoping for enough to bring at least an additional 20-25 children into the program.

Right now, BC4C's has 300 children enrolled in Head Start and another 170 in other day care programs.

The goal of the 1976 Combined Federal Campaign, which began October 7 and will run through November 18, is \$60,000. Edward Valdez, TSD, is general chairman of the drive.



This youngster attends a BC4C's day care center located in Willow Dale School, Warminster.

CFC October 7—November 18

Cooperation on Center impresses new CPD Director

One month after George Steinhauer took over as Director of the Civilian Personnel Department, he found himself faced with one of the hardest tasks someone in his position ever faces—implementing the Center's recently announced personnel ceiling reduction.

Mr. Steinhauer began working at NADC on September 9, 1975. Before that he served as Head of Personnel Service Division #2 at the Naval Weapons Center (NWC), China Lake, Calif. A native of Stroudsburg, Pa., Mr. Steinhauer says the move to Warminster was a homecoming.

Following graduation from East Stroudsburg State College, Mr. Steinhauer entered the Navy, serving with Commander Fleet Air Wing Staff in Brunswick, Maine, and aboard the USS DAHLGREN (DLG-12) and the USS TRUTTA (SS-421). At the time he left the Navy, he held the rank of lieutenant.

Begins career

Mr. Steinhauer then went directly into personnel work, taking a job as a classification specialist with the Naval Underwater Sound Laboratory in New London, Conn. In 1971, he transferred to NWC, serving two years as a personnel management advisor before becoming the Head of Personnel Service Division #2.

His basic philosophy, he says, is to not interfere with line managers' business of managing as much as possible. "However," he says, "personnel management is integral to that business, and personnel department 'support' often ends up looking more like interference."

So far, Mr. Steinhauer admits to being very impressed with NADC, especially in two areas. One is the good and unusual working relationship among the top managers.

Work together

He has noticed that they work with each other and are trying to look at things from a Center rather than only from an individual department standpoint.

The other area that impresses him is a much better integration of military and civilian line management personnel than he has seen at other organizations.

The Center's main personnel problems, as Mr. Steinhauer sees them, are the ceiling and grade level controls imposed by Washington. "The threat that we'll be cut further is like the sword of Damocles hanging over our neck," he says.

Faces problem

"Now, in the face of an increased workload and increased availability of money, we have to do more with less people and less ability to adequately compensate the best talent." Mr. Steinhauer sees this situation as a continuing problem.

"I really think the personnel system takes a lot of raps it doesn't deserve," he says. "I think the personnel department is seen as having much more authority to initiate action than is really the case."



George Steinhauer says CPD has real authority only in two areas—appointing and classifying.

Actually he says, the department only has real authority in two areas—appointing and classifying. In most other cases, CPD only implements actions initiated by line management.

"On the other hand," Mr. Steinhauer says, "we do tend to get too involved in paper requirements that serve only to meet personnel system needs. To use a somewhat overworked phrase, we need to be more concerned about the relevance of these requirements to management's and people's needs."

"We could also use a crash course in public relations," he says.

"Now in the face of an increased workload and increased availability of money, we have to do more with less people."

Center scope

Firefighters aid at ARCO blaze

"We were all there for one purpose — to put the fire out." That's how NADC crash captain John Fuller describes the working relationship between firefighters at the October 12 fire at the Arco refinery in South Philadelphia.

Mr. Fuller, driver/operator Donald Meadows and the Center's MB-1 foam truck arrived at the fire about 10:00 p.m. Sunday night following a call from the Commandant, Fourth Naval District.

It was an exciting, if dangerous, night. Messrs. Fuller and Meadows received police escorts all the way from Warminster to the fire at 26th Street and Passyunk Avenue.

"Any fireman that goes into a fire like that and tells you he's not afraid is a damn fool," Mr. Fuller says.

At one time, he says, the Center used to be called on for a lot more aid. Now most of the local fire companies have purchased more equipment, increased manpower, and can handle most of their own needs.

One of the reasons NADC was called to this fire, Mr. Fuller says, is the maneuverability of our crash type foam truck. Other foam trucks were on the scene, but they were mostly the type that cannot move once they're hooked up and operating.

Charles Gindele, area fire marshal for Northern Division Naval Facilities Engineering Command, says the city of Philadelphia's foam trucks were wiped out in the first Gulf fire which killed eight firemen.

Messrs. Fuller and Meadows were on the scene from 10:00 Sunday night till about 9:30 the next morning, when they were relieved by a second NADC team. The second team, firefighters Joseph Paciello and James Wolfgang, stayed till 1:00 p.m. and brought the truck back to the Center.

On Tuesday afternoon, Mr. Fuller admitted to being very tired, but said, "If they had another one, I'd only be too willing to go through it again."

W & R seeks volunteers

The Welfare and Recreation Association (W & R) is planning its annual Christmas party and is seeking volunteers for a variety of tasks.

The party, scheduled for December 13, will benefit the children of Christ and Bethanna homes. It will take place in the Center cafeteria from 9:30 a.m. to 1:30 p.m.

W & R urges anyone who enjoys performing to entertain at the party. The organization also needs volunteers to serve refreshments and sponsors to contribute \$4 each towards the \$10 gifts given to the children.

Sponsors may contribute any payday at the W & R table in the Credit Union lobby.

To volunteer, or for more information, contact Mary Swanchak x2473, Diane Corr x2463, or Lois Savage x2541.

26 play golf

The September W & R golf tournament was held at Montgomeryville Golf Club with 26 golfers present.

The winner with a low net score of 66 was Gordon Woods, AVTD, with AVTD retiree Bob Moore second, and Walt Blizard, TSD, third. Closest-to-the-pin prize winners were Chuck MacKenzie, NNL, and YN2 Jim Gibson, NAF.

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CAPT Grover M. Yowell — Commander NADC.
Aris Pasles — Public Affairs Officer.
Linda Battistini — Editor.



Hats of different nations—These hats belong to some of the military personnel who participated in the recent two-week Symposium on Sonobuoy Technology, which the Center hosted. The hats on the top are from Canada, left, and the U.S., right; on the bottom, the United Kingdom, left, and Canada, right. In all five countries—Australia, Canada, New Zealand, the United Kingdom, and the U.S.—were represented. The symposium provided an international information exchange focusing on sonobuoy development and related antisubmarine warfare problems.

CAPT Yowell receives award

During his recent visit to the Center, RADM Claude P. Ekas, the Deputy Chief of Naval Material (Development), presented two awards.

One was the Navy Distinguished Civilian Service Award, which he gave to Russell I. Mason. (See September 1975 Reflector.)

The other, the Navy Cost Reduction Program Award, went to CAPT Grover M. Yowell, Commander, NADC, for his outstanding achievement in the Navy Cost Reduction Program while at the Naval Plant Representative Office, Burbank, Calif.

In his job prior to taking command of the Center, he was a member of a team whose actions during fiscal year 1974 saved the Navy \$10,600,000.

CAPT Yowell was one of seven individuals from the Naval Air Systems Command to receive this award.

2 attend War College

Two Center engineers are studying management, strategy and decision-making at the Naval War College, Newport, R.I.

George Eck, Deputy Program Director for ASW, is enrolled in the school's senior division, the College of Naval Warfare. Charles Halko, a general engineer in P&FMD, attends the junior division, the college of Naval Command and Staff.

The Naval War College, founded in 1884, is the Navy's senior educational institution. Its goal is to enhance its students decision-making ability and to conduct research to develop advanced naval strategic and tactical concepts.

The ten-month course is comprised of three elements, Strategy and Policy, Defense Economics and Decision-making, and Employment of Naval Forces.

Four Center engineers graduated from the Naval War College in the Class of 1975. (See the "Commander salutes" column, this page.)

The Commander salutes:

... Ed Fields and the other TSD personnel who assisted the Aviation Supply Office in converting video tapes to tape cassettes.

... Lee G. Morris, AETD, for his assistance in developing the necessary rationale regarding the mix of UHF Growth Radio and J-TIDS for the Fleet.

... CAPT Laurence H. Blackburn and LCDR Frank J. Formeller, CSD, for their work on the recent visit of the Student Flight Surgeon Class 75-2

and the Student Aerospace Physiologist Class 75-2 from the Naval Aerospace Medical Institute.

... George F. Eck, ASW, Gary L. Averill and Robert F. Fosko, SAED, for their presentations to the 14th Annual Undersea Warfare Seminar.

... Roman Fedorak, AETD, for his participation in the on-site review of the Sperry Univac Defense Systems Division's Independent Research and Development Program.

... Bernard Pollack, SAED, and Lucien Daouphars, TAW, for their fine performance while assigned as S3A/TSC Analyst and F-14/Phoenix Analyst, respectively, aboard the USS JOHN F. KENNEDY during the Sixth Fleet exercise, "National Week XVIII."

... Martin J. Devine and Arthur J. Schuetz, AVTD, and Jonathan Harding and Joseph T. Micciche, CSD, for their successful completion of course work at the Naval War College.

... The 20-man Center team who worked on the Phoenix Missile System, which has been awarded the Colonel Franklin C. Wolfe Trophy by the Order of Daedalians.

The team members are: CDR Larry B. Nofziger, TAW, LCDR James D. Rappe, Edward B. Baskin, John C. Lockhart, Robert M. Lutz, Jerry M. Magill, Howard B. Martin, John J. Mulhern, Marc S. Ross, Marvin Schwartz and Edward P. Sweeney, SAED; Fred T. Adams, Richard H. Barnhart, Tor Jansen, Alvin Spector and Leonard F. Tomko, AVTD; Walter C. Beamer and Dr. John K. Smith, AETD; Lucien B. Daouphars, TAW; and Robert N. Taylor, P&FMD.

39 receive service pins

CPD reports that 39 Center employees recently observed 20 and 30-year service anniversaries.

Those receiving 30-year pins were: Andrew Bogusky, Robert Devlin, Francis Douglass, Hayward House, Frank Smith, Edwin Tinder, and Robert Wiggins—AETD; Francis Doyle—AVTD.

And, Jack Eiler, Desmond Preedy, Franklin Westcott, and Leo Williams—PWD; James Brennan, Gloria Bundy, William Howell, and Andrew Tolen—SD; Edwin Hendler—CSD; Harold Wehrung—NAF; and Mary Messner—Staff.

Pins for 20 years of service went to: George Domm and Anthony Panaro—AETD; Ralph Carson, George Costantino, Valentine Freitag, William Mawhinney, and Marshall Thomas—AVTD; Jerry Guarini, Bernard McHugh, and John Wrigley—SAED.

Also, George Pozesky—TSD; Glenn Leeson and William Urban—PWD; Ronald Pepka—SD; Nancy Ballew and Audrey Fennell—CD; Robert Angiolillo—NAF; and Anthony Ruggiero, Ronald Vaughn, and James White—NNL.



Zung Pham, right, and her daughter, Phi Oanh, are two members of a family of 12 that Bill Wiesemann sponsors.

There's always room for one more (or even 12!)

by Mary Frawley

Mary Frawley, the daughter of Charles Frawley, a maintenance general foreman in PWD, is a graduate student in journalism at Temple University. She wrote the following article as a journalism assignment. It is printed here with permission.

Tor Jansen says it's a love of mankind. Bill Wiesemann says it's just something that had to be done.

Mr. Jansen, a supervisory aeronautical engineer, AVTD, and his wife, May, and Mr. Wiesemann, a mechanical engineer, AVTD, are sponsoring refugee families from Vietnam. The basic requirement of

sponsorship is to provide shelter and food for the refugees until they become self-sufficient.

On August 25, 1975, Mr. and Mrs. Van Nuyen, six of their children and Mr. Nuyen's sister arrived at the Jansen home in Southampton, Pa. They had been at Fort Indiantown Gap for three months. At the time, the Jansens already had eight children, four of them adopted from various ethnic and racial backgrounds, in their home.

"We got a call on Friday night asking if we could take this family on Monday," Mr. Jansen says. "A lot of young people helped over the weekend with painting and paneling our basement."

The Jansens put in bunk beds and set up a "dormitory style" apartment for the Nuyen family. Because of the limited space, the 19 people in the house eat in shifts and alternate between Vietnamese and American food.

Mr. Jansen is the director of a task force of the Northeast District of the United Methodist Church which finds sponsors for refugee families. The Nuyens are serving as an ambassador family, encouraging other churches and organizations to sponsor families.

The Nuyens had no choice but to leave Vietnam. "It was a political decision," Mr. Jansen says. "They would have been killed if they had

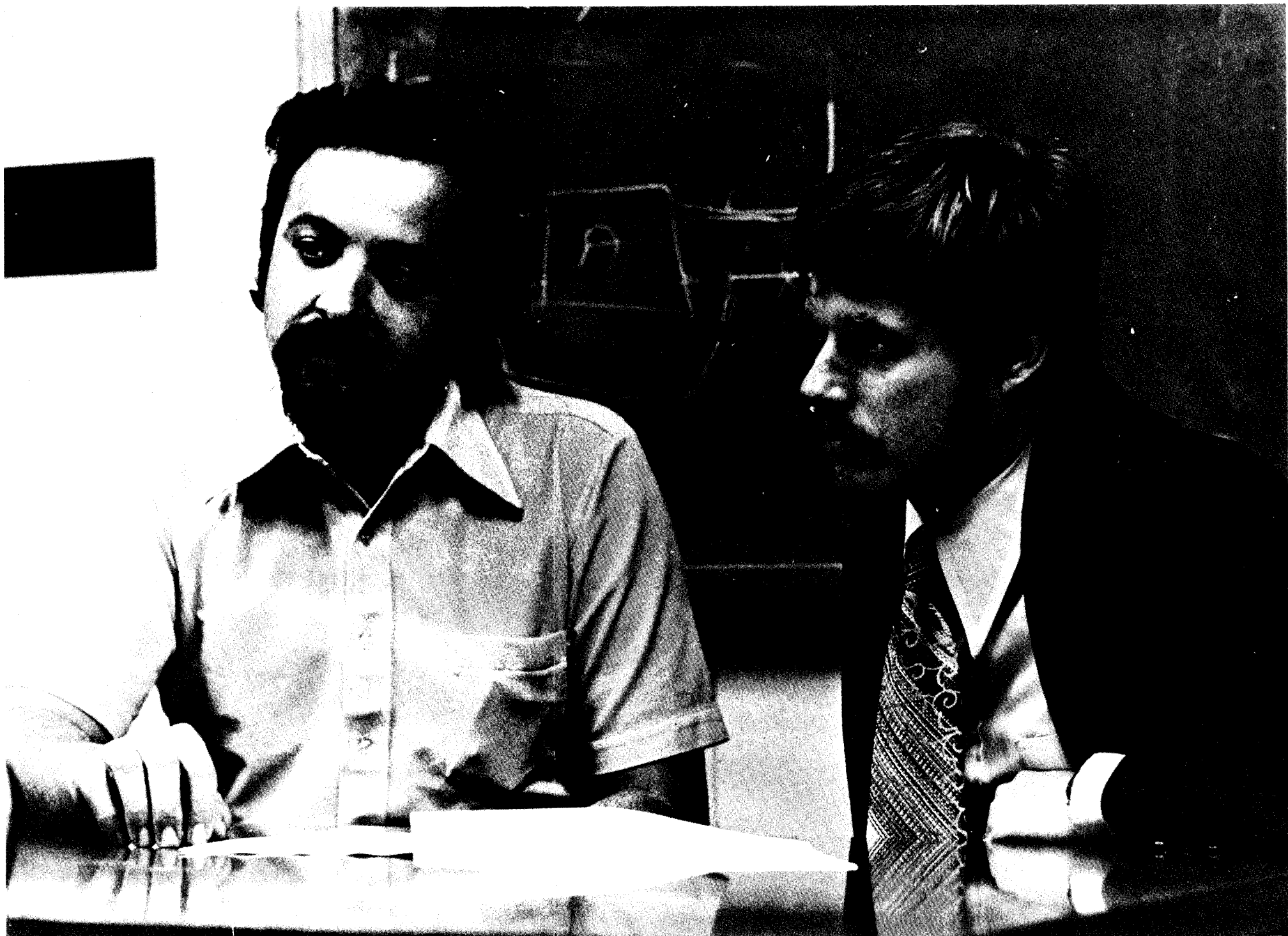
stayed." Originally from North Vietnam, the Nuyens moved to South Vietnam where the father served in the army.

Recently four more people joined the Jansen household. The Nuyen's daughter and her family arrived and moved in.

Bill Wiesemann lives in a four-bedroom house outside of Doylestown, Pa. For the past two months, he has shared it with the Pham family: husband and wife, eight children, a niece, and the wife's male cousin.

Mr. Wiesemann went to Fort Indiantown Gap originally intending to bring home a smaller family. Once he

(Continued on page 5.)



John Satriano, left, and John Auerbach are among a group of NNL engineers involved in next year's ocean bottom mapping project.

Navigation system set for ocean mapping project

by Joann Wright

Next year, a group of scientists will begin exploration of one of the ocean's deepest canyons, the Cayman Trough. Right now a team of engineers from the Oceanographic Survey Systems Division of the Naval Navigation Lab are helping to prepare for this investigation.

John Satriano and John Auerbach, both navigational systems engineers, and over twenty others from the division, have been involved in developing, installing and testing the navigational system that will provide the detailed ocean bottom maps needed for the exploration of the Cayman Trough.

Collect new data

Sponsored jointly by the Navy, the National Science Foundation and the National Oceanographic and Atmospheric Association, the trough exploration will collect new data on the earth's geological structure.

"There's a theory that the continents are moving apart. It's known that the crusts or mantle of the earth are in constant motion," Mr. Auerbach explains. "Scientists are studying the interface between two crusts or plates. They look at the area and rock samples, find the ages of various material and take pictures; all of which gives more evidence to the theory."

From 1972 to 1974, French and U.S. scientists conducted a similar study of the mobility of the earth's crust in Project FAMOUS (French-American Mid-Ocean Undersea Study). This project successfully probed the North Atlantic Ridge located near the Azores. The Cayman Trough exploration is a follow on effort, the second major deep sea expedition to study the junction of the earth's plates.

The Cayman Trough is at the intersection of the North American Continental Plate and the Caribbean Plate. "The Cayman Trough, we think, is a case where the plates are spreading," Mr. Auerbach says.

Trieste participates

Exploration will be done at close range by the Navy's famous Trieste bathyscath and the Alvin submersible from Woods Hole Oceanographic Institution. These submersibles will be manned by oceanographers and geophysicists, who will explore the canyon, believed to be 20,000 feet below sea level.

Only the Trieste will reach the deepest part of the trough but its involvement will not start for over a year. Before the Trieste joins the exploration, the Alvin will study the area to a 12,000-foot depth, taking photographs and collecting rock samples.

NADC's role is to provide detailed maps of the trough, "so they will know what they're basically looking at

in large scale," Mr. Satriano explains. "We're developing the mapping system and the map will be used as one of the oceanographer's tools. It will point out the most promising areas for close up study. It will be used to guide them safely on the ocean's bottom, avoiding mountains and other obstacles."

The system that will do this job is called BASS (Bathymetric Survey System) and is installed on the Navy survey ship, the USNS WYMAN, presently stationed at Port Canaveral, Florida. Starting next month it will begin the precision plotting of the Cayman Trough.

BASS is really two subsystems: the navigational subsystem and the echo ranging sonar subsystem.

Uses satellites

The navigational subsystem uses inertial, satellite and land based radio (LORAN) fixes for geodetic positioning, speed and attitude information.

BOTOSS, or Bottom Topographic Sonar System is a multi-beam sonar subsystem that makes possible the simultaneous measurement of many depth points across a wide path. BOTOSS is more sophisticated and accurate than past systems which could only track a single point. This reduces the time it will take to map the Cayman Trough area.

Through software links, the information from each subsystem will be integrated to generate an essentially

real time shipboard plot of the ocean bottom beneath the ship. These maps will be the foundation of the exploration of the Cayman Trough by the submersibles, scheduled to start next year.

Throughout the development of the navigation system, NADC has had prime responsibility for the design investigation and development of the navigational hardware and software. For the past year, the NNL team has been installing and testing the system, and training the equipment operators.

Conduct sea tests

"Since June, the system has been in Port Canaveral and we've been taking it out to sea every other week," Mr. Satriano says. "We've been grooming it and getting it ready piece by piece, testing it piece by piece, testing it as a subsystem, then testing it as a system."

Now Mr. Satriano is anxious for the real mapping task to begin. "The navigation system has been tested and it is ready."

Early next year, the USNS WYMAN, with National Oceanographic Organization personnel operating BASS, will start a two to three-week mission to provide the road map for the Cayman Trough. NADC will then move into technical management of the system — monitoring and updating the equipment and training as needed.

Admiral Holloway requests complete compliance with standards of conduct

Admiral J.L. Holloway, III, Chief of Naval Operations, asks all Navy personnel, both civilian and military, to pay immediate attention to the urgent need to become familiar with the standards of conduct and the current prohibitions they entail.

The standards of conduct, outlined in DOD Directive 5500.7 of 8 August 1967 and SECNAVINST 5370.2E of 29 November 1967, require that Navy personnel must refrain from any activity, or from having any financial interest which would place them in a position where there is a conflict between that activity or interest and the public interest of the United States.

Although DOD Directive 5500.7 lists a number of specific prohibitions, many of which are readily understood and some recognized, such as commercial solicitation, bribery, and graft; some equally important restrictions relate to financial activities or relationships which are more subtle and less clearly defined.

Can't accept gifts

In this regard, particular emphasis must be placed on the acceptance of gifts and gratuities or personal favors from anyone doing or seeking to do business with the Navy or the Department of Defense.

All Naval personnel should review at least semi-annually the requirements contained in DOD Directive 5500.7 and SECNAVINST 5370.2E. As set forth in DOD Directive 5500.7, DOD personnel will not: "...solicit or accept any gift, gratuity, favor, entertainment, loan or any other thing of monetary value whether directly or indirectly from any person, firm, corporation or other entity which is engaged or is endeavoring to engage in procurement activities or business or financial transaction of any sort with any agency of the DOD..."

Gifts, gratuities, favors, entertainment, etc., include, but are not limited to, any tangible item, intangible benefit, discounts, tickets, passes, transportation, and accommodations or hospitality. There are no exceptions to these prohibitions relating to gratuities and gifts, other than those specific and limited exceptions listed in paragraph VI.B. of DOD Directive 5500.7.

Resolve doubts

Furthermore, if any doubt exists as to the propriety of accepting any favor, that doubt must be resolved in favor of declining the offer. It must be emphasized that the prohibitions relating to the acceptance of gifts and gratuities as noted above are not a matter of degree.

There will be absolutely no relationship with defense contractors or other entities seeking to do business with the DOD which violates or appears to violate the provisions of DOD Directive 5500.7 and SECNAVINST 5370.2E.

No matter how innocently rendered and received from those who have or seek to have business with the DOD, acceptance may well be a violation of the standards of conduct.

Paragraph VI.B. of DOD Directive 5500.7 states that the restrictions outlined above do not apply to the following: instances in which the interests of the government are served by participation of DOD personnel in

widely attended luncheons, dinners, and similar gatherings sponsored by industrial, technical, and professional associations for the discussion of matters of mutual interest to government and industry.

Participation by DOD personnel is appropriate when the host is the association and not an individual contractor. Acceptance of gratuities, or hospitality from private companies in connection with such association's activities is prohibited. (This prohibition is interpreted to include visits to hospitality suites maintained by contractors.)

—Situations in which the interests of the government are served by participation of DOD personnel in activities at the expense of individual defense contractors when the invitation is addressed to and approved by the employing agency of DOD.

Exempt public ceremonies

These activities include public ceremonies of mutual interest to industry, local communities, and the department, such as the launching of ships or the unveiling of new weapons systems, industrial activities which are sponsored by or encouraged by the government as a matter of United States defense or economic policy, such as sales meetings to promote off-shore sales involving foreign industrial groups or governments.

—Luncheons or dinners at a contractor's plant on an infrequent basis, when the conduct of official business within the plant will be facilitated and when no provision can be made for individual payment.

—Situations in which, in the judgment of the individual concerned, the government's interest will be served by participation by DOD personnel in activities at the expense of a defense contractor.

Report acceptances

In any such case in which DOD personnel accept any gratuity, favor, entertainment, etc., either directly or indirectly from any person, firm, corporation, or any other entity which is engaged or is endeavoring to engage in business transactions of any sort with the department, a report of the circumstances will be made within 48 hours by the individual to the designee of the Secretary of the Military Department concerned or the designee of the Secretary of Defense in the case of DOD personnel not within any of the military departments.

—Specialty advertising items of trivial intrinsic value; customary exchange of social amenities between personal friends and relatives when motivated by such relationship and extended on a personal basis.

(Note: This is interpreted to mean that the exchange will be at the personal expense of the friend or relative and not, in any manner, at the expense of a contractor doing or seeking to do business with the DOD.)

—Things available impersonally to the general public or classes of the general public such as a free exhibition by a defense contractor at a World's Fair.

—Trophies, entertainment, rewards, prizes, given to competitors in contests which are open to the public generally or which are officially approved for participation in by DOD personnel.



Joseph Mignogna hopes his award will inspire others to look for ways to save money.

NADC cost saver receives Presidential certificate

Joseph Mignogna, an electronics engineer, AETD, says he takes pride in his work and likes to be recognized for his accomplishments. He recently received one of the highest forms of recognition available: a Presidential Management Improvement Certificate.

This certificate, signed by President Ford, commends Mr. Mignogna "For excellence in improvement of Government operations. The noteworthy efforts and intense dedication required for this achievement exemplify the high performance needed to keep our country strong."

Mr. Mignogna, acting head of AETD's Radar Division, received the

award based on his major cost effective performance, reliability, and maintainability improvements for the air-to-air Sparrow Missile System and related avionics.

These improvements resulted in validated tangible cost savings in excess of \$9,000,000 and in intangible savings in excess of \$25,000,000 per year for the Navy.

Besides the personal pride he feels from receiving the award, Mr. Mignogna values it because he says he hopes it will help motivate other people to look for ways to save money. "There's a wealth of areas around you could save money in," he says.

—Transactions between and among relatives which are personal and consistent with the relationship.

—The acceptance of loans from banks or other financial institutions on customary terms to finance proper and usual activities of employees such as home mortgage loans.

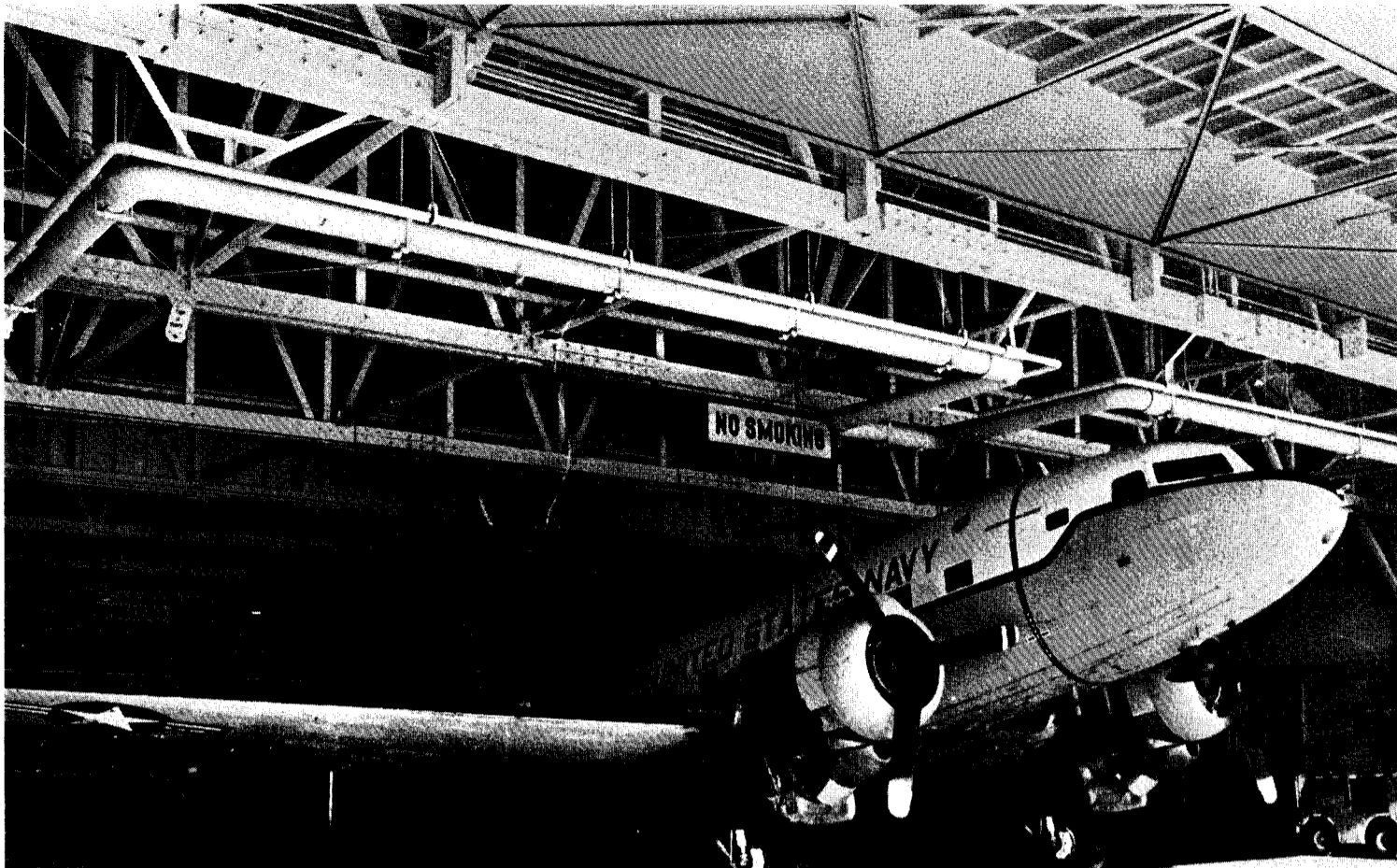
—Social activities engaged in by officials of the department and officers in command or their representative with local civilian leaders as part of community relations programs.

—Contractor-provided local transportation when on official business and when alternative arrangements are clearly impracticable.

—Participation in civic and community activities by DOD personnel when the relationship with the defense contractor can reasonably be characterized as remote.

The acceptance of accommodations, subsistence, or services furnished in kind in connection with

(Continued on page 4.)



NADC's oldest aircraft, the C-117, left the Center November 12.

Hair-raising experiences and all,

C-117 was a favorite of Center personnel

by Charles Olson

NADC's oldest aircraft, the C-117, recently left the Center on its final flight, a trip to dead storage at Davis-Monthan Air Force Base in Arizona.

Charles Olson, a mechanical engineer, NNL, describes the C-117's history and his experiences while flying projects in it.

Aircraft number 12431, alias the C-117D, was manufactured for the Navy by Douglas Aircraft in 1943. After World War II, the airframe was extensively modified to provide increased performance and carry a larger payload, which made it ideal for a T & E (test and evaluation) aircraft.

It was assigned to the Naval Air Engineering Center, Mustin Field, Philadelphia, and accepted there in April 1953. It was further modified by the Aircraft Installation Group of the Aeronautical Instruments Laboratory to provide supplementary electrical power and independent sensors to meet T & E requirements.

3 remain

Only three members of the original group which came to NADC with the C-117 in December 1954 remain. They are: Tom Griffey and Ken Mosby, TSD, and Lou DeDominicis, NNL. Mr. DeDominicis had the unique distinction of also serving as a project flight evaluation team member, amassing over 100 flight hours in 1972.

The C-117 has been "the workhorse" of naval airborne navigation development for nearly a quarter of a century! It has been used to flight test and develop compass transmitters, compass systems, doppler systems, gyro compasses, inertial systems, attitude heading reference systems, altitude warning devices, collision avoidance systems (CAS), laser gyros, hybrid navigation systems (ITNS) and navigation sensors. Just about every engineer

assigned to the lab has flown in this aircraft.

It is a rugged aircraft with lots of room to install project equipment, comfortable to fly in, with excellent range and low altitude comfort against turbulence, but very difficult to taxi in crosswinds. It has been a favorite of many Naval Navigation Laboratory engineers.

Just about anyone who has flown in the C-117 will remember the ride and can usually recall some unusual event. In recent years, the aircraft has had electrical fires, holes punched in her skin by tree tops, severed oil lines and prop governor cable problems.

I recall returning from Key West in February 1972 with the aircraft heavily loaded with CAS and doppler and other project equipment, when a 45-knot gust of wind caught CDR Bud Jourden and co-pilot LCDR Bob Dannacker by surprise just as they were about to touch down for landing.

Didn't feel right

The aircraft started to lift, and to regain control, CDR Jourden hit the power to climb out, but received little response from the engines! You can tell when something is wrong by the "feel" of an aircraft after several flights.

When I saw the plane captain, ADR1 Higgins, strap in, I knew we were in trouble and prepared to accept the fact that we were probably going to "cream" the noodle factory (LaRosa's) at County Line and Jacksonville Roads.

However, Bud Jourden and Bob Dannacker coaxed it up and around, and by the time they were on the final approach, things were under control and they set it down on three points smooth as silk! CDR Jourden later confessed that was one of his close ones.

The next problem developed late in 1972 on the way to Key West around 2100 hours. We were ready to start the over-water leg from Fort Myers to Key West, when CDR Lou

Day (now CAPT Day, former Director of NNL) ordered project power secured upon discovering that the red glow he had noticed wasn't emergency lighting but a fire in the electrical wiring.

At this point, Warren Clausnitzer, another project engineer, and I shut up and strapped in. All but essential power was extinguished and the aircraft was in complete darkness—no running lights, just the very comforting sound of those twin engines turning.

Emergency landing procedures were executed for a straight-in approach to Fort Myers. On a dark night with no lights to warn other aircraft of our approach, and for all I knew, no radio either, we blew right into Fort Myers, shut down and secured just like nothing had happened. The biggest problem that night turned out to be finding berthing and transportation.

Repair wiring

It took both crew members, C.B. Daniels and Bill Busek, three days to piece the burnt wires together. You wouldn't believe the mess!

That aircraft continued to fly to Key West and performed over 100 hours project flying before Jack Pettit almost lost it for good! On a return trip from Key West on final approach at NADC, Jack hit a tree—but that's his story to tell.

I only know that I had taken my bags off that aircraft before it left Key West in a spur of the moment decision. When I saw the results of the mishap a week later, it looked like somebody had gone over the aircraft with an axe. It took six months to straighten the old bird out, but I found myself flying in it again, and somehow feeling comfortable.

The C-117 departed the Naval Air Facility at 1440 hours on November 12, 1975—destination Davis-Monthan, Tucson, Arizona.

May it rest in peace!

Jack Pettit's story... 10 seconds of pure terror

Jack Pettit, AETD, the Center's only civilian test pilot (see April 1975 Reflector) has over 500-hours flight time in the C-117, more than anyone else at NADC.

"Of all the airplanes I've flown," he says, "this plane is the only one with a personality. To me, it's a real lady, just a sweet old lady that always comes through for you."

Of the 1972 accident, which Charles Olson refers to, he says, "It was the shortest project flight in history—ten seconds of pure terror."

Flying back from Key West, he had what he calls "a close brush with nature." Humorously, he says he attempted to defoliate some trees at the end of the landing strip with the propellers. He finally landed without injuring the crew, but it took six months to repair the C-117.

To many people on Center: pilots, crewmen, and project personnel, seeing the C-117 depart was like losing an old friend. Many of them agree with Mr. Pettit when he says, "I'm very sorry to see it go."

Standards of conduct (Continued from page 3.)

official travel, from other than defense contractors, when authorized by the order-issuing authority as in the overall government interest.

When accommodations, subsistence, or services in kind are furnished to DOD personnel by private sources, appropriate deductions shall be made in the travel, per diem, and other allowances otherwise payable to the personnel.

DOD personnel may not accept personal reimbursement from a private source for expenses incident to official travel, unless authorized pursuant to 5 U.S.C. 4111 or other express statutory authority. Rather, any reimbursement must be made to the government by check payable to the Treasurer of the United States.

Personnel will be reimbursed by the government in accordance with regulations relating to reimbursement. In no case shall DOD personnel accept—either in kind or on a reimbursable basis—benefits which are under prudent standards extravagant or excessive in nature.

Decline offers

Except as provided in above paragraphs, personnel on official business may not accept contractor-provided transportation, meals or overnight accommodations in connection with such official business so long as government or commercial quarters are reasonably available. Where, however, the over-all government interest would be served by acceptance by DOD members of such transportation or accommodations in specific cases, the order issuing authority may authorize it.

The guidance provided above is in addition to any further specific guidance provided in DOD Directive 5500.7 and SECNAVINST 5370.2E. All personnel will comply completely, both in fact and with the spirit of this guidance, pending the publication of an OPNAV Instruction on this subject.



Khuong Pham, too young to go to school, eats a Vietnamese meal his mother prepared from ingredients she found in local grocery stores.

There's always room for more

(Continued from page 1.)

arrived there, he found that family was being sponsored by someone else, due to a mix-up.

Mr. Wiesemann is sponsoring the Phams with the help of the Doylestown United Methodist Church. "The church members take care of the everyday things I can't do since I'm at work," he says. They have supplied the Phams with donated clothing and arrange to drive them wherever they need to go.

The Wiesemann/Pham household also eats in shifts. Mrs. Pham does the cooking, all Vietnamese dishes. "Her culture teaches her that cooking is one of her jobs, and she is most content working in the kitchen," Mr. Wiesemann says.

Find employment

One of the major tasks of sponsorship is finding employment for the adults and enrolling the children in school. Mr. Nuyen has done carpentry work in the Jansen home. The Nuyen children attend various schools in the Centennial School District. They have three hours of English instruction every day.

"There is a teacher who works with the younger children in the morning, the high school children in the afternoon, and then helps the adults in the evening in the adult education classes," Mr. Jansen says. Mr. Nuyen speaks English well. His wife communicates with sign language.

Study English

Seven of the Pham children are in the Central Bucks School District. The schools are just starting special programs for them, Mr. Wiesemann says. While the other students are learning Spanish or German, the Vietnamese children study English. The two older children had previously studied English in Vietnam.

Mr. Pham has a job as a stock clerk in Willow Grove, and Mrs. Pham's cousin is working as a janitor. "The oldest girl is 15," Mr. Wiesemann says. "She wanted to get a job to help the family out, but we

told them that she must go to school."

The Vietnamese families are very close-knit. Unlike an American family made up primarily of husband, wife, and children, their family unit extends to aunts, uncles, grandparents and the families of sons and daughters.

The size of their families stems from what Mr. Wiesemann calls "a different set of values." "Unlike Americans who might value a two-car garage," he says, "to the Vietnamese, their wealth lies in their children."

Notice quietness

Both Messrs. Jansen and Wiesemann commented on the quiet demeanor of the families and, in particular, the children. Mr. Wiesemann says he is amazed to see nine children around a television set and not hear a sound. "Except," he says, "when the Three Stooges are on. They go crazy over them."

The children are very obedient. They do exactly as they are told and never ask questions about orders.

Mr. Jansen has noticed a change in his own children and feels some of the Vietnamese example "has rubbed off on them." He says they are a bit more quiet and responsible.

Rent house

The Jansens have bought a house down the street from their house, which they will rent to the Nuyens. Churches in the area have offered to furnish the whole house, including buying a washer and dryer.

Mr. Wiesemann thinks it will be three or four months before he will be able to find a house for the Phams.

Both sponsorships were arranged through the Church World Service. Messrs. Jansen and Wiesemann, like other prospective sponsors, had to meet certain criteria before being accepted. However, these standards are not as stringent as those used in choosing adoptive parents. Mr. Jansen says the reason for this is that, "This is not a legal commitment, it is a moral commitment."

Open season offers chance to change health plans

Changes in premium rates and benefits offered by plans participating in the Federal Employees Health Benefits program in 1976 were announced recently by the Civil Service Commission.

In addition, the Commission announced that the open season originally scheduled for November 15-30 will be extended until December 31.

Premium rates for most participating plans will be significantly higher than present rates, mainly because of increases in the cost of health care.

Costs rise

Health care costs have risen substantially since price controls were lifted in 1974. In the last year alone, average hospital charges have increased by 18 percent, and average physician's fees have increased by 11 percent.

In addition to normal economic pressures, health care costs reflect a substantial increase in the use of medical care, a doubling and tripling of malpractice insurance premiums, and the high cost of new health care technology.

Expect deficits

These cost increases are expected to lead to large operating deficits for most FEHB contracts in 1975. The Commission and the two government-wide plans (Aetna and Blue Cross-Blue Shield) estimate that in total the two plans will have deficits of more than \$100 million in 1975 operations. In view of this situation and the need to meet anticipated costs of operations in 1976, substantial rate increases were requested by most carriers.

The Government-wide plans initially requested increases of 38 to 54 percent. After Commission review of their proposals and independent data, and extensive negotiations with them, both government-wide plans agreed to aggregate rate increases of about 35 percent, based on an assumed continuation of the present coordination of FEHB benefits with Medicare benefits.

Estimate costs

The Commission estimates that the average annual cost per enrollee in 1976 will be 35 to 40 percent higher than in 1974, the latest date for which cost data is available.

The open season, which begins November 15, is a period in which eligible employees may enroll for the first time, and in which employees and retirees already enrolled may change from one plan or option to another, or from self-only to family coverage. Any change made during the open season will take effect in January 1976.

For annuitants and non-Postal employees, the Government's contribution will be 60 percent of the

average high option premium rate for the 6 largest plans in the Federal program (Aetna, Blue Cross-Blue Shield, the National Association of Letter Carriers, the American Postal Workers Union, the Kaiser Foundation Health Plan of Southern California, and the Kaiser Foundation Health Plan of Northern California). For Postal employees, whose pay and benefits are subject to negotiation, the contribution will be 75 percent of the same average.

Propose benefits

Because of the sharp increase in health care costs, the Commission did not accept proposed benefit increases for 1976 with additional cost unless the increased cost would be offset by cost reduction within the plan.

Most of the accepted changes in benefits were minor changes of a perfecting nature.

The Commission did accept dental benefits for children as offered by Aetna, APWU, and NALC. The cost of the new dental benefits was offset by increasing the high option deductible from \$50 to \$75 for Aetna and by combining the high and low options of APWU and NALC.

Elect changes

Employees and annuitants now enrolled in the low option of either the APWU or NALC plans who do not elect to change during the open season will automatically be enrolled in the remaining option of the respective plan.

While this is the first time that any of the 6 largest plans have offered dental benefits, they have been offered or are being added in 1976 by 3 other employee organization plans and 6 comprehensive medical plans. Because the coverage and benefits of each dental package varies considerably, employees and annuitants are advised to consult the individual brochures for specific information.

Increase benefits

In addition to the benefit changes indicated, Aetna increased its lifetime maximum benefits for both options and eliminated the deductible from its benefit for hospital inpatient expenses (the full deductible will apply to hospital outpatient and other covered expenses). Blue Cross and Blue Shield added benefits for home health care and inpatient newborn care. Blue Cross and Blue Shield also eliminated Supplemental Benefits coverage for the difference between the total charge of a nonmember hospital and the 80 percent paid under Basic Hospital Benefits coverage (this is a reduction in benefits). The Blue Cross and Blue Shield benefit changes had negligible impact on the rate increase.

For more information, contact CPD's Employee Management Relations Division, X2527/2944.

Center scope

NCAA presents Barnaby awards

When the NADC chapter of the Naval Civilian Administrators Association (NCAA) decided to establish an award for outstanding technological, scientific and managerial contributions to the Naval mission, they named it the Ralph S. Barnaby award.

This award honors Captain Barnaby, the man who brought the Navy to Warminster. In July 1944, he took control of Brewster Aeronautical Corp.'s failing Johnsville plant, which was then designated the Naval Aircraft Modification Unit (NADC's predecessor).

By the time he left in November 1946, CAPT Barnaby had built the original skeleton staff up to include approximately 120 officers, 450 enlisted men and 3000 civilians.

CAPT Barnaby, who now works as Exhibits Consultant to the Director of the Science Museum at the Franklin Institute in Philadelphia, was on hand when the NCAA made its first presentation of the Ralph S. Barnaby Award on October 22.

The NCAA presented two Barnaby Awards, one to Bill Lyons, Associate Technical Director, for research and development and technological management, and one to Bill Renz, former Director of the Civilian Personnel Department, for administrative management.

In his acceptance remarks, Mr. Lyons said he hopes other supervisors will give their people the opportunities he received to do the kinds of work that qualified him for the award.

Mr. Renz, who's now on special assignment with the Office of Civilian Manpower Management in Washington, D.C., thanked the NCAA for the award and said the honor meant a lot to him.

Group organizes FEW chapter

Center personnel are currently organizing a local chapter of Federally Employed Women, Inc., (FEW).

The organization's main goals are to further the potential of all women in the government, to increase job opportunities for women in government service, and to take action to end sex discrimination in government service.

At the October meeting, charter members elected interim officers. They are: President-Sally Ketcham, AVTD; Vice President-Linda Battistini, PAO; Recording Secretary-Freda Larkin, EEO; Corresponding Secretary-Eleanor Vadala, AVTD; and treasurer-Norma Sheehan, P&FMD.

The chapter will meet at lunchtime on the first Tuesday of each month, beginning December 2. Annual dues are \$15.

Everyone is invited to attend. For more information, call Sally Ketcham, x2826/2827, or Linda Battistini, x2483/2980.

Energy program saves \$218,000

During fiscal year 1975, NADC saved over \$218,000 due to the energy conservation program. This figure means the Center achieved a 17.4% energy reduction compared to fiscal year 1973, the base year. In fiscal year 1975, NADC placed fourth in energy reduction among all the Navy laboratories. In fiscal year 1976 the Center hopes to be number one.

Oscal Erickson, Utilities Conservation Officer, thanks all Center personnel for their splendid cooperation in the past and reminds them that he needs it even more now with winter coming on with its increased demands for lighting and fuel oil consumption.

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Naval Air Development Center

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CAPT Grover M. Yowell — Commander NADC.

Aris Pasles — Public Affairs Officer.

Linda Battistini — Editor.

Make leave plans soon

The 1975 leave year ends during the first half of January, for the majority January 3. Employees whose projected accumulation of annual leave exceeds the maximum allowable for carryover into the 1976 leave year (generally 240 hours) should be making plans to reduce the excess to avoid having to forfeit it.

Any part of such annual leave to be taken after November 22, 1975, should be approved in writing on the appropriate leave form or memo. This would be needed in the event the leave is canceled because of illness or the exigencies of work and cannot be rescheduled in the 1975 leave year.

Under Federal law, application can be made to the employing agency for restoration of annual leave unavoidably lost because of either of the above reasons. If approved, the restored leave is carried for the employee in a separate account and must be used within two calendar years.

The Commander salutes:

... Jerome S. Bortman, SAED, for his outstanding presentation on Technology Transfer at a Princeton University seminar on Technology and Society.

... CDR Frank H. Brown, ASW, for his direction of the recent international symposium on sonobuoy technology.

... Joseph Mignogna, AETD, for receiving the Presidential Management Improvement Certificate. (See story on page 3.)

Veterans Day date changes

The official Federal observance of Veterans Day has been returned to November 11, beginning in 1978.

Recent Federal law changed Veterans Day back to its original November date. Thus from 1978 on, it will no longer be observed on the fourth Monday in October as it has been since a 1968 law.

A statement by President Ford noted, "Americans have greatly appreciated and wish to retain the historic significance of November 11 as the day set aside each year by a grateful nation to remember and honor those, living and dead, who fought to win and preserve our freedom."

Is defense price too high?

Secretary of the Navy J. William Middendorf says he has a ready answer to the oft-asked question these days — are we pricing ourselves out of national defense?

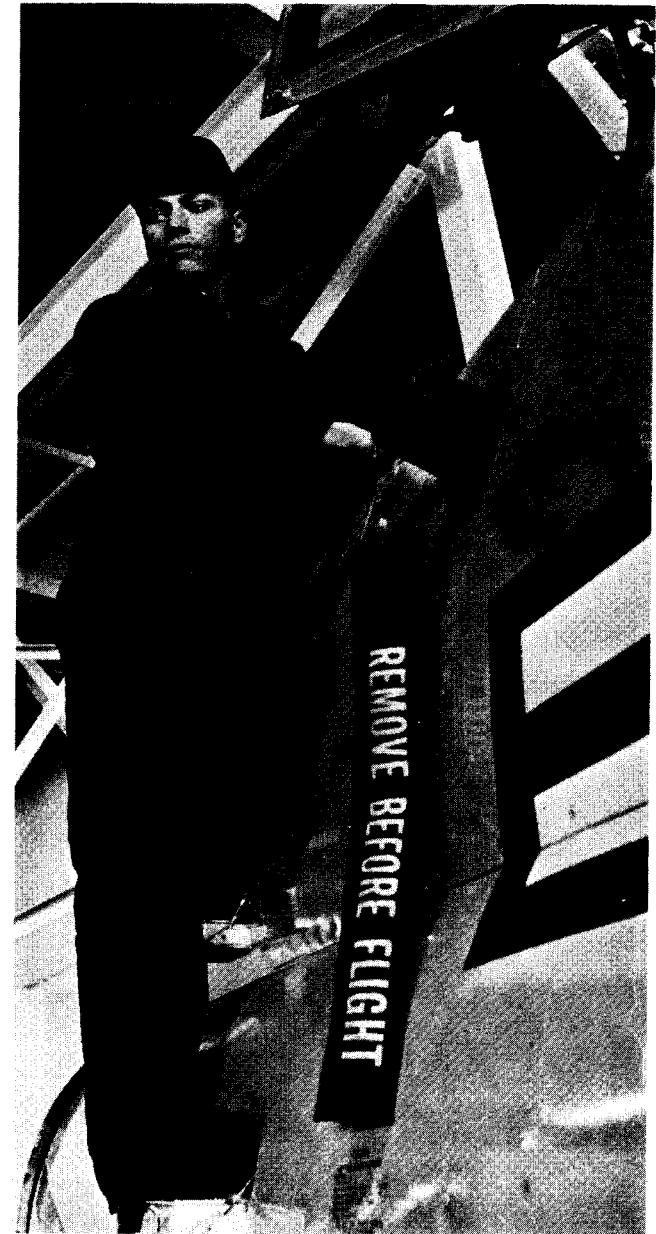
His answer is that there is only one thing more expensive to the American taxpayer — to be in prison, to be enslaved. As he sees it, "We're operating in a real world where there's a guy out there (Soviet Navy) who's putting hardware out on the field in vastly greater quantities than he needs to protect his shores. Unless we adopt the head-in-the-sand philosophy, we had better get going or punt on first down — quit right now." (AFPS)

Golf season ends

W&R's October windup golf tournament was held under ideal weather conditions at the Bucks County Country Club with 59 golfers participating.

Vince Formica took first place with a net score of 70. Nick Trovato was second and Milt Sleeter third. In all, 25 prizes were awarded, including closest-to-the-pin prizes to Bob Lutz, Bob Richey, Joe Dap and Al Bingley.

Total participation for this year's six tournaments was 279, or an average of 47 golfers per tournament. A new tournament chairman is needed for next year: someone with new ideas and enthusiasm. Please contact Gordon Woods, x2896, to submit nominations.



NAF commended ADJAN Workman for his service as plane captain on the A-7.

Workman is Sailor of Quarter

A plane captain is an enlisted man who inspects and services an aircraft before each flight. Aviation Machinist's Mate William M. Workman, III, serves as plane captain for both the A-7 Corsair and the T-2 Buckeye. Recently he was selected NAF's Sailor of the Quarter.

His citation reads in part: "You have been performing duties as plane captain on the A-7 aircraft. In this capacity, your professionalism and adaptability to changing requirements and your dedication to assigned tasks, large or small, has contributed immeasurably to the completion of assigned project, logistics and training flights.

"Your willingness to work long hours and accept responsibility, generally associated with men in higher ratings, marks you as a valuable asset to the Navy team. Your excellent military bearing and poise, together with the above traits, are the basis for this award."

ADJAN Workman reported to NAF a little over a year ago, fresh out of "A" school. He works in the Line Division of the Aircraft Maintenance Department. Originally from Stewartstown, Pa., ADJAN Workman and his wife, Maria, live in Hatfield, Pa.

Committee offers scholarships

The John McKee Scholarship Committee, appointed by the Orphans' Court of Philadelphia, offers full college or vocational training scholarships with a maximum value of \$1500 per year for four years to high school seniors who meet the eligibility requirements.

To be eligible for a John McKee Scholarship, the applicant must be a male orphan in need of assistance. (Father must be dead or have been declared legally dead or missing by the Court.)

Also, he must be a native to the Philadelphia area in Pennsylvania, be unmarried and never have been married and be a high school senior not over 18 years of age at the time of this application.

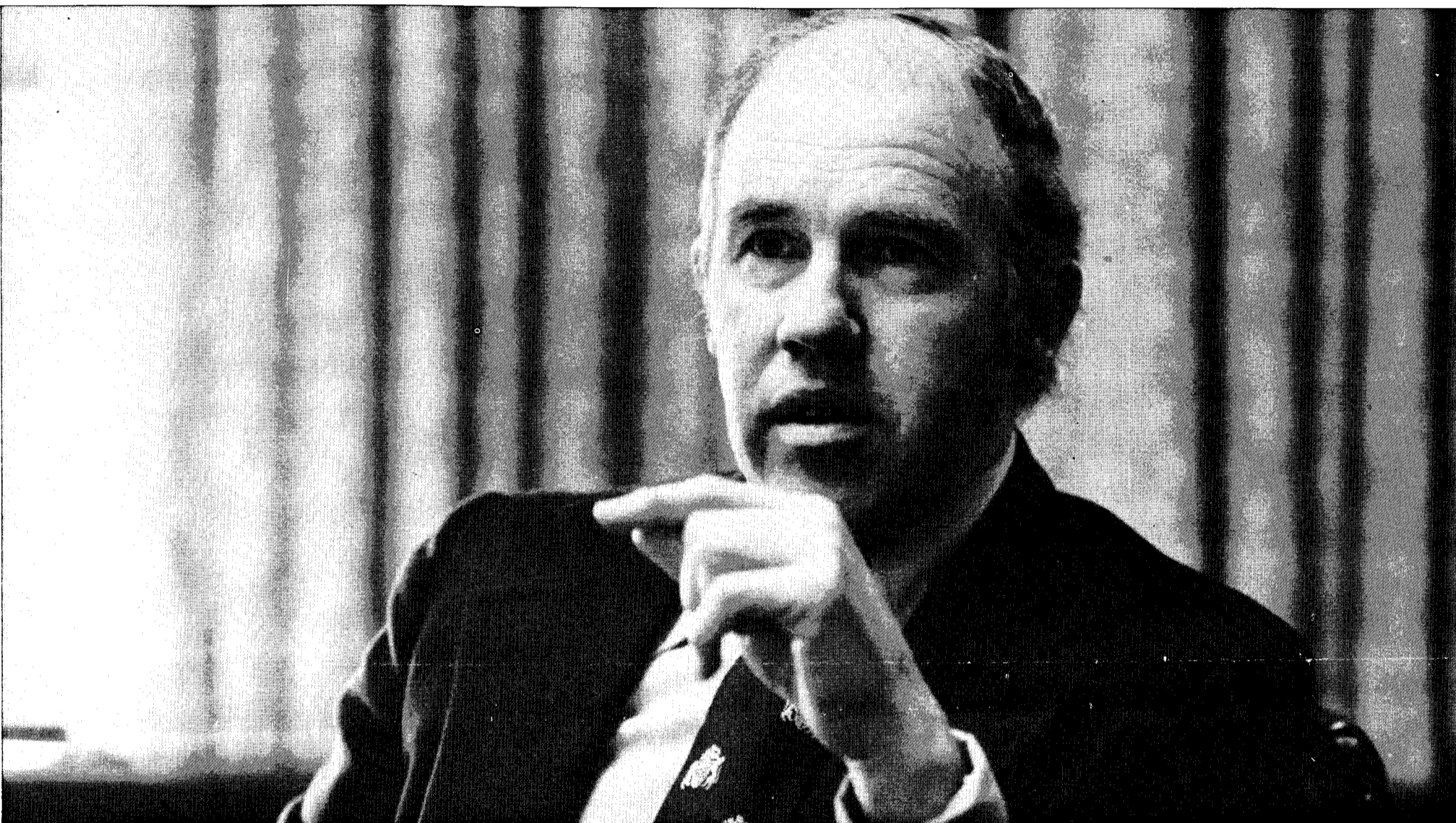
Preference will be given to those desirous of obtaining Naval education and training. For further information, contact PAO, x2483/2980.

REFLECTOR

Volume 19, Number 7

Naval Air Development Center, Warminster, Pa.

January, 1975



Dr. R. Kenneth Lobb wants to see the NAVAIRDEVCON as a full spectrum facility

LOBB named Technical Director at NADC

BY DEBORAH LAMBERT

Dr. R. Kenneth Lobb, a scientist whose major goal is to help make NADC the very best research and development facility in the entire Navy community, has been named Technical Director of that Center.

Selected from nation-wide competition, Lobb's appointment was announced by Admiral Isaac C. Kidd, Jr., Chief of Naval Material. Lobb becomes the fifth Technical Director in the Center's 30-year history.

He succeeds Mr. Guilford L. Hollingsworth who served in the post two years before announcing his decision to accept the Technical Directorship of the Naval Weapons Center, China Lake, California.

20 years at NOL

The affable, articulate Lobb comes to NADC with over twenty years of technical management experience in research and development at the Naval Ordnance Laboratory (now the Naval Surface Weapons Center), White Oak, Maryland.

Lobb held the prestigious position of Associate Technical Director and Head, Aero and Hydroballistics. His

responsibilities at the NOL included the technical direction of programs in the fields of aeroballistics, hydroballistics, mathematics, high-energy laser and strategic systems support.

As part of this effort, he was responsible for the design and development of many of the major military construction facilities at NOL White Oak. In still another area, Dr. Lobb was involved in the project management of several large weapons systems engineered at White Oak.

Numerous study teams

Because of his broad background on research and development, Dr. Lobb has served on numerous Navy and Department of Defense system study teams. These include the SSPO Polaris Re-Entry Body Committee, the SSPO Steering Task Group, the SP Sea-Bed Study (improved SOSUS and missile performance calculations), the DDR&E PEN-X Study, the DDR&E STRAT-X Study, the Navy Inertial Guidance Study, the ABRES Review Committee, and the DDR&E Tri-Service Missile Materials Study. He was also Chairman of the recent Strategic Systems Study Group.

"Since arriving onboard a few weeks ago, I've become very impressed not only with the technical talent at

NADC, but also with the technical programs that reside at the Center," says Lobb.

Lobb feels that the Center should improve its image at other installations and private industry. "People on the outside often don't have a full appreciation of the technical capability resident here," he says. "It's an incomplete picture which we need to fill in for them," he continues.

Although Dr. Lobb plans no sweeping changes in the immediate future, he feels that "as I get to know the organization, I'll work closely with Captain Yowell to increase the efficiency of the Center to a greater extent."

Full spectrum facility

Lobb would like to see NADC as a "full spectrum facility" from two points of view. "Full spectrum in the sense that the Center will have work all the way from basic research," explains Lobb "right through to engineering development and including in-service fleet work."

Secondly, Lobb believes the Center should work in all areas of aircraft development including crew systems and navigation. "Then, too, we must continue to support and enhance

our ASW programs which have really placed NADC on the map."

Private consultant

Dr. Lobb was born in Edmonton, Alberta, Canada. He received his B.S. in Engineering Physics at the University of Alberta in 1947, his M.S. in Aeronautical Engineering at the University of Toronto in 1948, and his PhD at the University of Toronto in 1950. He became a citizen of the United States in 1956.

For several years Dr. Lobb was engaged in private consulting on airframe design, optics and hardened structural design. In addition, he has lectured at the Graduate School of the University of Maryland and Catholic University of America. Dr. Lobb is a member of the American Institute of Aeronautics and Astronautics (retired Associate Editor of the AIAA Journal) and American Physical Society.

Although Dr. Lobb lives in Rockville, Maryland with his wife and two daughters, he is familiar with the Pennsylvania area. "One of my great loves is skiing," he says. "When you live in eastern Maryland and like to ski you become acquainted with the Pocono Mountains very quickly," he adds.



Far North East A. A. (in the dark uniforms), scrambles for a touchdown

Every Saturday is a Super Bowl for Rooney

The score was 7 to 6 with 26 seconds left in the last quarter. Al Rooney paced nervously up and down the sidelines praying the opposing team, who was now on the 4 yard line, could be held there by his defensive squad.

The scene of this battle of titans was not Tulane Stadium in New Orleans, but an empty lot at Thornton & Comly Rds. in Northeast Philadelphia. But the way Rooney's team played you might think each player was fighting for his \$15,000 in prize money.

Rooney had good cause to worry; the heaviest man on his defensive squad weighed 70 pounds — with full football equipment.

An illustrator in Technical Publications (ATSD), Rooney is a part-time coach, maintenance man, grounds keeper, and full-time fund raiser for the Far North East Athletic Association (FNEAA).

Fifteen hours a week, including all day Saturday, Rooney takes time out of his busy schedule to work with this neighborhood youth group. The sole purpose of the FNEAA is to promote athletic activities for boys and girls, ages 6 to 17 in the hopes this will serve as a constructive means for youth to spend their time.

"I got started with FNEAA when my kids decided they wanted to play on the football team," says Rooney. "I went to the field one Saturday to watch practice. One of the fathers asked me if I'd be interested in sparing a couple of hours during the week to do some coaching," he continues.

That was in 1962. Now Rooney not only coaches football, but has expanded to baseball, basketball, and yes, even to girls softball. "Three of my sons played the three major sports, and my daughter played softball and was also a cheerleader," Rooney says.

Although the other sports play an important part in the FNEAA's program, Rooney admits football has the biggest following of parents and attracts the greatest number of youth trying out for the team.

"Football is just the game that has the glamour to it," says Rooney. "About 60% of the kids who play football for our club go on to high school varsity and 20% end up playing college ball."

Rooney points out that a number of players who have grown up and have families now have come back to coach their own children. "We like to think of the FNEAA as a family affair," he says.

But equipping a team of even 70 pound players can be an expensive task. Every year equipment wears out and has to be replaced. Helmets cost \$15 each, jerseys \$10 and pants \$12. Although a family membership

costs \$15 (this enables as many children in one family to play as many sports as they want), this is only a token contribution and the bulk of the money must be raised from local merchants sponsoring teams, individual contributions at games, and get-togethers thrown for parents. "No child has ever been turned down because his parents didn't have the money," says Rooney. "That would defeat our purpose."

Rooney emphasizes the fact that the FNEAA not only uses the ground the team plays on, but puts capital improvements into it. The AA rents the 3 acre tract from the Department of Recreation of Philadelphia County for a nominal fee, with the understanding the ground will be used only for athletics.

To spur further investments in the club, the members decided to build a clubhouse. "The lowest estimate we received from a contractor was \$20,000," says Rooney, "so we decided to build our own." When they had finished this volunteer project, it had cost them only \$6,000 for building supplies.

Recently the club had a chance to acquire spectator stands from J.F.K. Stadium in Philadelphia. The city was dismantling them and planned to destroy them. The only catch was the club had to cut them apart (they were solid steel welded together), load them on a truck manually, and transport them through center city on a rented 40-foot flatbed truck.

"Each section weighed 1000 pounds and although we had 12 club members helping, we didn't get finished till 7:00 p.m. that night," says Rooney.

Why does Al Rooney put so much of his own time and trouble into something that pays off only in the smiles of the kids playing the game?

"I believe that if a youngster has a place to go and something creative to do," he says, "he won't end up hanging on the street corners and getting into trouble like a lot of the kids I grew up with did."

"It's just something I hope will pay off to make the place I live in better for all of us."

Vaughn to head NNL

Ronald S. Vaughn has been named department director of the Naval Navigation Laboratory (NNL) at NADC.

The Naval Navigation Laboratory, which consists of 160 people, has the responsibility of developing, testing, and evaluating naval navigation systems, including airborne, surface, and subsurface systems, associated equipment, and related fields of science and engineering. The laboratory is the Navy's principal engineering center for navigation systems development, and includes the unique Inertial Guidance Facility, where many new inertial navigation systems originate.

A native of Tampa, Florida, he has a Bachelor of Science degree in Physics and Mathematics from the University of Florida (Gainesville) and a Masters degree in Physics from Temple University, Philadelphia. He also completed pre-doctoral work in Physics at Temple.

Vaughn came to NADC in 1955 to work in the Aeronautical Instruments Laboratory. He has worked extensively with different types of navigational systems while in the

Air Vehicle Technology and Aero Electronic Technology Departments. In 1974, he joined the newly formed Naval Navigation Laboratory.

"The Naval Navigation Laboratory represents an excellent opportunity to solve the Navy's needs in navigation technology," says Mr. Vaughn. "This department has a fine history of responsiveness to the navigation needs of airborne, surface, and subsurface platforms."

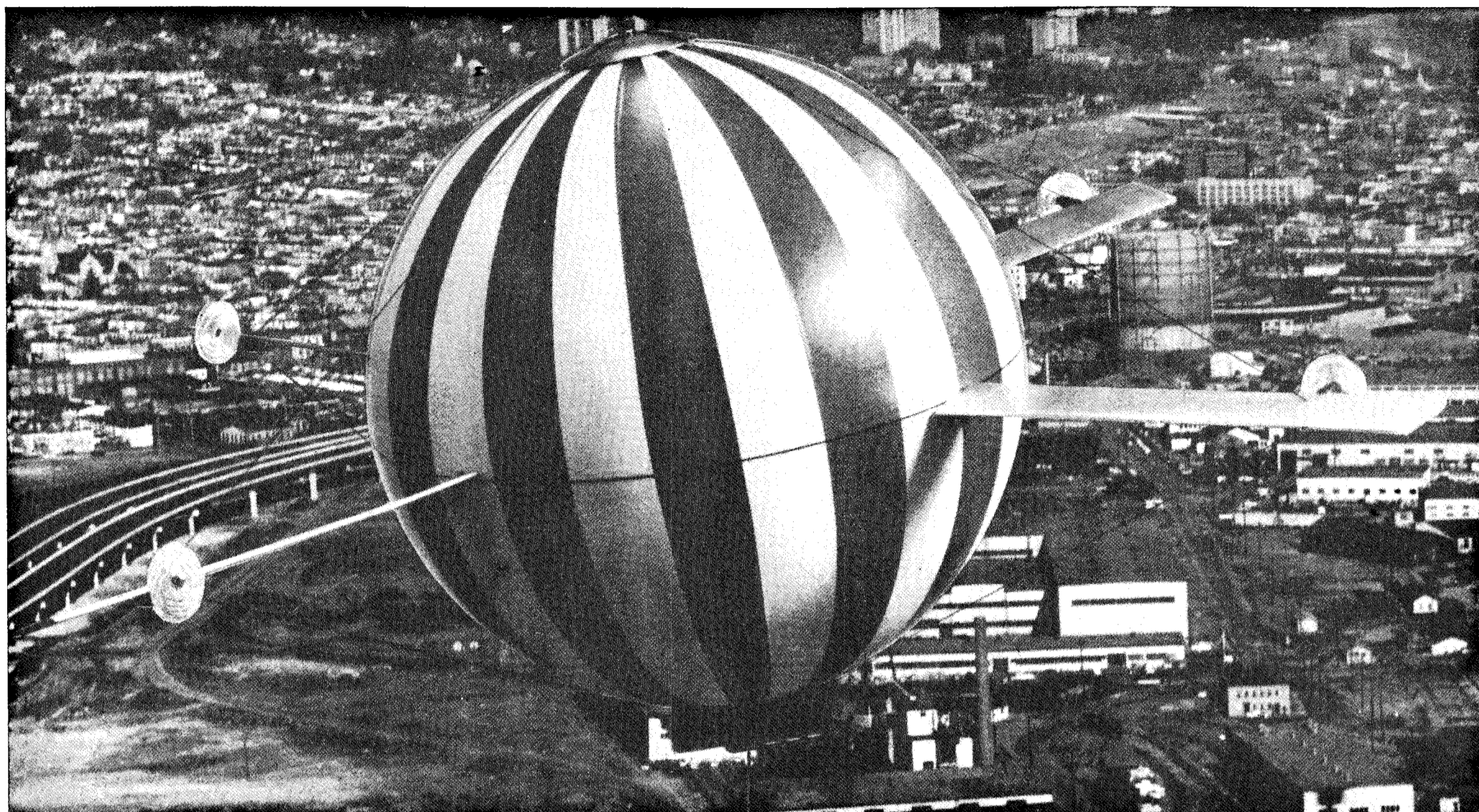
"The most rewarding part of my job is watching Naval officers in the fleet discover the potential of systems the laboratory may have on trial at sea or in the air," says the 40-year-old-department head. "It is exciting to see the Navy users explore the increased potential that such a new system gives them. To all of our engineers, the ultimate reward is having our work put to practical use."

More than 60% of all research and development in the NNL deals with navigation for surface ships and submarines, with the remaining 40% concentrating on airborne navigational systems.

He and his wife Johnnie have two children.



Ron Vaughn feels NNL has a place to grow at a growing NADC



An artist's conception of an Aerocrane. This hybrid LTA vehicle could be used for heavy lift missions.

Lighter Than Air rebirth is goal for Navy

BY MARV WALTERS

The blimp and dirigible era of the 30's may be returning as renewed interest is being shown in LTA (Lighter Than Air) vehicles. Recently-funded studies by industry and the military, and a recently-held workshop co-sponsored by NASA, the Navy, DOT, and FAA devoted to LTA vehicles are indicative of the emerging interest.

Airships have long been attractive to the Navy as Anti-Submarine Warfare (ASW) platforms. Long endurance and considerable payload capabilities combined with an impressive safety record of Naval airships during their operation in the 40's and 50's proved its usefulness and effectiveness. However, low speed maneuverability, vulnerability and avionics for all-weather performance have always been problem areas. But the present interest being shown deals with application of today's modern technologies toward these problem areas and improving the present effectiveness to take advantage of its potential for sustained and effective surveillance and cargo transport capabilities.

Three categories

Airships are classified into three categories: (1) non-rigid, containing no main internal structure; (2) semi-rigid, containing a rigid keel to carry control cars and other attachments but with no additional supporting framework; (3) rigid, containing a complete internal supporting framework which shapes the airship. Blimps, such as the Goodyear blimps, are examples of non-rigid airships, whereas the famous Hindenburg and the Graf Zeppelin were examples of rigid airships.

Since an airship flies by floating in the air, it must be filled with gases lighter than air. The two most readily available and economical to use are hydrogen and helium, which traditionally have been the gases used to inflate airships. Because hydrogen was slightly lighter than helium, German airships of the 30's were mostly hydrogen-filled. However, following the crash and burning of the Hindenburg, helium has been the main gas used because of its inflammability.

Navy a leader

The Navy has been associated with airships since the close of World War I when it received a German airship in reparation. The U. S. built its first rigid airship, the Shenandoah, in 1923 and continued building rigid airships into the 1930's. During this development stage, lack of avionics sophistication, inadequate meteorological forecasting, and operational experience, plagued the safe operation of airships. As a result, the Shenandoah and two airships built in the 1930's, the Akron and the Macon, crashed, resulting in a stigma being unnecessarily placed upon the safety of all airships. However, the German Graf Zeppelin logged over one million miles during commercial passenger service over a nine year span to South America without a single injury. No further rigid airships were built since the 1930's, but the Navy continued building blimps and used them for fleet escort and surveillance until 1962 when the last Airborne Early Warning squadron was phased out.

NADC study

NADC's participation in the increased investigation into airships was initiated in 1968 when SAED funded a parametric study of airships investigating various pay-

loads, speeds, and vehicle sizes for future Naval missions. This study indicated the technical feasibility and operational attractiveness of the modern LTA (Lighter Than Air) vehicle. But it also pointed out the need for further research and development to achieve more operationally effective airships.

In 1973, Carmen Mazza, AVTD, became interested in the potential Naval use of airships. AVTD and SAED then combined their capabilities in technology and systems analysis forming an LTA group including Mazza, Dave Bailey, Tom Neu, Pete Kiproff, and Ed Tankins from AVTD and Frank Scheetz from SAED. This design group provides expertise in flight dynamics, advanced composite structures, propulsion, materials and mission analysis.

NADC was subsequently funded to conduct a feasibility study into the possible Naval applications of LTA vehicles. According to Dave Bailey, AVTD, the study will involve synthesizing LTA systems by SAED to satisfy various missions such as Anti-Submarine Warfare (ASW), Airborne Early Warning (AEW), Surface Surveillance, and Material Transport.

Modern technologies

AVTD will then use these various mission profiles to develop LTA design criteria to include the application of modern technologies to obtain viable vehicle designs. These technologies include advanced composite construction, modern structural design techniques, aerodynamic improvements, various propulsion systems and updated stability and control methods.

"We hope to establish a baseline design by initially studying rigid airships of conventional shape," says Bailey, "and then obtain a parametric data base by determining the effect on performance of various applied modern technologies."

Performance effects will be determined by investigating such things as a complete monocoque composite frame to reduce weight, nuclear generated steam turbine propulsion, and automatic and computerized control management for more effective stability and control.

By combining the mission analysis and the technology assessment, design criteria for LTA vehicles will be generated designating standards of design and those technology improvements most suitable for a particular mission.

Hybrid lift vehicle

NADC is also working on advanced design LTA vehicles called hybrid lift vehicles. This type LTA vehicle involves the use of secondary lift devices such as auxiliary propulsion in addition to the buoyant gas. Such vehicles provide heavy lift capability with a small increase in speed but sacrifice the hover and endurance capabilities of conventional LTA vehicles. As a result, they are considered for missions other than those of the conventional LTA vehicles such as short haul transport of heavy cargo. NADC recently funded a feasibility study of a hybrid lift LTA called the Helistat, which augments a conventional LTA vehicle with four attached helicopters. Another concept which is being studied is the Aerocrane, a large balloon containing four wings with wing-mounted propulsion which rotates the balloon and wings creating secondary lift on the wings.

In addition to the already noted technical expertise available on Center, Bill Langen, Director of AVTD, provides a background of preliminary design and operational experience with airships having been in preliminary airship design at Goodyear and having flown Navy ASW airships for more than six years.

Center scope

Credit Union meeting set

The 24th annual meeting of the NADC Federal Credit Union will begin at 8:00 p.m. on Thursday, February 13, in the Center Cafeteria.

Open to members only, the meeting will include elections of three Directors and two Credit Union Committee members. The Directors and Credit Committee members will serve two-year terms.

Any credit union member may be nominated, and nominations will be accepted from the floor. More information on nominations will appear in the Log. Chairman of the Nominating Committee is John Chaffrey, of AVTD.

The meeting will be followed by a buffet. Last year more than 160 persons attended the meeting.

Credit Union has record year

Dividends paid to members during 1974 totalled \$4,443,000 the NADC Federal Credit Union has announced. This was an increase of \$138,000 over 1973.

All goals set for 1974 were surpassed, Bettie Zaks, the credit union manager reported. Assets in 1974 reached a record high of \$9,478,684. Dividends increased from 5.75 per cent to 6.25 per cent per annum, payable quarterly. The number of active accounts increased 808 to 6,792.

NADC members also purchased a \$357,000 in travelers checks and \$629,000 in money orders.

The credit union processed 3,543 loans in 1974 for a total of \$7,827,168 lent to members.

"Considering the economic situation in the past year we've done extremely well," says Bettie Zaks.

Snow closing station

If the Center is forced to close because of an emergency snow situation, NADC's name will be announced on WCAU radio, 1210 on the dial. No code word or number will be used.

Public Works Officer retires

Commander Edmund Hughes, Public Works Officer at NADC, retired on December 31 after 22 years of naval service.

Hughes has been the Public Works Officer at NADC and the Officer-in-Charge of Construction, as well as the Resident Officer-in-Charge of Construction for the East Pennsylvania Area since August 1970.

Hughes was commissioned as an Ensign at the Officer Candidate School in Newport, Rhode Island in March 1953 and graduated from the Navy's Civil Engineer Corps Officers School in Port Huemene, California in May of 1953.

From 1953 to 1955, he served as the Assistant Special Programs Officer and Resident Officer-in-Charge of Construction for the Seattle, Washington area.

In 1955 Hughes served as the Project Manager at the Naval Public Works Center in Pearl Harbor, Hawaii.

From 1957 to 1960 he served as the Public Works Officer at the Naval Station, Washington, D. C. and in 1960 he became the Public Works Officer at the Naval Training Devices Center, Port Washington, New York.

In 1962, Hughes was assigned as Executive Officer of Mobile Construction Battalion SEVEN and saw duty at Guantanamo Bay, Cuba, where he constructed fortifications during the Cuban Missile Crisis in 1962.

After a tour in Washington, D. C., which ended in 1967, Hughes reported to Adak, Alaska to become Public Works Officer of the Adak Naval Air Station. Hughes saw duty from 1969 to 1970 in the Republic of Vietnam as Assistant Deputy Officer-in-Charge of Construction.

Commander Hughes has a Bachelor of Civil Engineering degree and a Masters of Engineering Administration degree from George Washington University.

Hughes' immediate plans are to remain in the Warminster area. "I've thoroughly enjoyed my tour at NADC and would have to say it was one of the best that I served during my career," says Hughes. "My family and I have made many good friends in the area and we now think of this as our home."

Hughes and his wife, Patricia, have four children: Wendy, Keith, Paula and Claudia. They live on Bellemead Drive, Warminster.

Seventeen employees retire

Seventeen NADC employees retired at the end of 1974. They were:

Harold J. Mack, AVTD; Harold Korbel, NNL; George H. Marsh, AETD; Edward J. Wagner, AVTD; John R. Hess, AVTD; Edward A. Jonaitis, AVTD; Matthew E. Soennichsen, AVTD; Martin N. Goldfuss, CSD; William S. Lee, AETD; Edward H. Hartel, CSD; Ralph G. Abbott, AETD; Richard Friedman, AVTD; John Burns, PW; Harold M. Troxell, SAED; Daniel A. La Monica, AETD; Max Frenbach, AETD; and John Erthal, AVTD.

Two Lieutenants frocked

Captain R. G. Aldrich, Chief Staff Officer, recently frocked Lieutenant Victoria M. Voge and Lieutenant Charles J. Sutherland.

Frocking means that they can assume the title and wear the uniform of a Lieutenant Commander, but without receiving increased pay or disciplinary powers. The frocking was in recognition of their serving in billets which require an officer of the rank of Lieutenant Commander.

LCDR Voge is a Flight Surgeon with CSD, and LCDR Sutherland is a Flight Surgeon attached to the Navy Regional Medical Center.

Thirteen receive awards

The following people in ATSD received special achievement incentive awards. They were: Michael Cipriano, for Sustained Superior Performance; Roy Fay, for Sustained Superior Performance; Frederick Wiggs, for Sustained Superior Performance; Joseph Cissorsky, for Superior Achievement; Joseph Belzer and Golden Morral, for Superior Achievement; William Boyd, Henry Rahmer, and William Wusterhausen, for Superior Achievement; John Gerace, John Hagstrom, Robert Lindsey, and Joseph Thompson, for Superior Achievement.

The Commander salutes

... Frank J. Smith, ATSD, for his contributions to the recent Radio Technical Commission for Aeronautics joint meeting with the European Organization for Civil Aviation Electronics.

... Squadron Leader Patrick J. Edworthy, RAF, for his work as visit coordinator during the visit of Air Commodore Rogers and the Staff and members of the RAF General Duties Aero Systems Course.

... James A. Moran, CPD, for his services while acting as the Executive Secretary of the Advisory Selection Board for a new Technical Director for NADC.

... The personnel of Oceanographic and Survey Systems Division, NNL, particularly Norm Melling, for the time and effort spent in assisting representatives of Naval Guided Missiles School on a recent visit to NADC.

... Douglas C. Bellis, SAED, for his outstanding performance of duty as a member of the Mediterranean ASW Augmentation Program Support Team in Naples.

... Gwynn K. McConnell, AVTD, for his fine cooperation in the conduct and technical content of the recent Second Symposium on Nondestructive Testing of Tires at Atlanta, Georgia.

... McConnell was also cited for his assistance at the Naval Air Station, Imperial Beach, California. McConnell's expertise in non-destructive testing was especially helpful in the ultrasonic inspection of H-2 helicopter main landing gear struts.

... Joseph F. Miller and John M. Cunningham, AETD, for their outstanding reaction to solving a problem posed by a faulty emitter in the closing hours of the Electronic Warfare Joint Test.

... William G. Slowik, SAED, for his outstanding work with the visibility and management of Support Costs study team.

... Michael L. Stellabotte, AVTD, for his unstinted efforts and persuasive ability in motivating as well as maintaining management discipline during the 23rd Defense Conference on Nondestructive Testing. Stellabotte served as chairman during the last conference.

... Robert Snyder and Jules J. Lewycky both of CSD, for their work in the life support problems of 57th Fighter Interceptor Squadron, USAF.

NCAA elects new officers

The Navy Civilian Administrators Association (NCAA) has elected new officers for 1975.

They are: President — Albert F. Scarcelli; Vice-President — Thomas E. Willey; Secretary — Aris Pasles; and Treasurer — Henry Hansen.

The purpose of the NCAA is to promote the efficiency of the Naval Shore Establishment. The NCAA also cooperates with other organizations concerned with advancing the science of management.

Guest speakers at recent NCAA luncheons have included: Mr. Milton I. Sharon, Director to the Civil Service Commission, Philadelphia Region, and Mr. Richard S. Hoffmann, Chairman of the Warminster Township Board of Supervisors.

In Memoriam

Theodore Werdingof, ATSD
Stanley Johnson, ATSD

Final results for Combined Federal Campaign

Department	Amount	Average Contribution	Per Cent Contribution
AETD	\$ 9,436	\$25.30	86.0%
Admin	4,002	14.71	88.6
NAF	2,792	14.69	74.8
AVTD	10,094	27.88	91.0
CSD	3,012	20.75	81.4
SAED	10,343	27.36	83.0
CPD	607	18.96	100.0
Supply	1,509	11.79	79.0
NNL	3,282	22.00	77.0
PW	2,144	12.34	94.0
PF-ASW-Staff	1,921	17.34	96.5
Patent Office	112	28.00	80.0
Computer	370	12.76	96.7
Lockheed Employees } Bucks-of-the-Month } Club }	295		

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Naval Air Development Center

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CAPT Grover M. Yowell — Commander NADC.

Aris Pasles — Public Affairs Officer; Harry K. Schmidt — Editor

Much of Bortman's work is technological matchmaking

In a cubbyhole of an office located under a staircase leading to two busy restrooms, Jerry Bortman, accompanied by the continuous clicking of a telephone switching system, looks for ways to adapt NADC's military technology for non-military uses.

The broad umbrella called technology transfer covers the many ways in which NADC works to share its technological developments, expertise, and unique facilities with other federal, state, and local agencies. Bortman, the Center's technology transfer coordinator, has been with the program since its beginning.

In 1974, NADC's technical departments worked on 19 programs funded by other government agencies. Among these were the National Science Foundation's ice measuring project in Antarctica (Nov. '74 Reflector) and the Department of Transportation's series of seatbelt tests (Sep. '74 Reflector).

Information requested

Numerous local, state, and federal agencies requested information on possible applications of 22 different NADC technologies in 1974.

"Almost half my work," Bortman says, "has evolved into being a technology broker." He tries to answer questions and provide contacts for people with technological problems.

In some cases, military technology is directly transferred to a non-military application. More often a particular technology needs some adaptation before another agency may use it. NADC also works jointly with other agencies to develop specific technologies.

The technology transfer program started at NADC in April 1971. "It started here before it became an official policy of the Department of Defense (DOD)," says Bortman. In February 1972, an instruction from the Secretary of the Navy urged all the Navy labs to take an active and organized approach to technology transfer.

Active involvement

There are now about 33 DOD laboratories involved in active technology transfer programs.

DOD laboratories possess many technologies that can easily be adapted. This adaptation saves other agencies from spending taxpayers' money to develop what already exists.

Approximately 50% of research and development (R and D) funds are spent on military research," Bortman says. "The public should get its maximum return on those R and D funds."

Bortman often works closely with local communities, the city of Philadelphia, and the state of Pennsylvania. "We've been useful to them

and stirred up a lot of interest in the Center," he says.

"Most of the work I'm involved in," he says, "is an unfunded type of assistance." One type of task is responding to special requests for loans of equipment.

"One of the more interesting loans we arranged," Bortman says, "was a loan of a hand-held infrared imager to the Pennsylvania Bureau of Forestry." With the help of AETD's Electro-Optics Development Division, Bortman located the imager at the Army's Night Vision Laboratory at Fort Belvoir, Va.

Helps firefighters

While the Pa. Forestry Bureau had the imager, they received a call from the U. S. Forestry Service. A big fire had broken out in Minnesota near the Canadian border. The imager was rushed to the scene, where it saved the firefighters a lot of time and effort in locating underground fires and lingering, smoldering fires. "Before," Bortman says, "a group of people went around and actually felt the ground to see if it was hot."

After a year of negotiations, Bortman recently met with success in his efforts to work out a fire protection pact between the U. S. Coast Guard and the Philadelphia Fire Department.

Rescue nets

The Coast Guard, which possesses numerous helicopters equipped with rescue nets, has agreed to use its helicopters, which are on a 24-hour alert, for fires in high rise buildings in Philadelphia.

NADC's Crew Systems Department worked on the development of similar rescue nets, which were designed for rescuing Navy aviators downed in the ocean. With such nets, a helicopter can hover over a high rise building and lower the net to pick up people from the roofs or side windows of the burning building.

"A couple of our helicopters here have these nets," Bortman says. However, they're not on 24-hour alert and the equipment is not always on the helicopters because of in-house project requirements.

Some helicopter pilots aren't too happy about the idea of using the nets in a fire. "They don't like flying over the heat surges in the building," Bortman says. The heat updrafts cause the helicopters to lose lifting power, which puts all concerned in a very dangerous situation.

Net owners

Several large cities, including Los Angeles, Chicago, and New Orleans, have purchased these nets for use by their fire departments.

In carrying out its technology transfer program, NADC and the other laboratories can never be in a com-



Jerry Bortman spends much of his time locating contacts for people with technological problems.

petitive position with industry. When Bortman receives a request that industry can handle, he refers it to the proper source.

"By direction, we are not permitted to utilize more than 3% of our professional manpower on non-DOD programs," he says. If any funds are involved, the requesting agency must reimburse NADC.

"We're getting more requests for help as the word begins to spread that DOD can be helpful in solving general technological problems,"

Bortman says.

Each of the technical departments has a technology transfer representative. They are Jim Glenn—CSD, Don Spangenberg—AETD, Bill Sipes—AVTD, and, of course, Jerry Bortman—SAED. NNL is in the process of choosing a representative. Dave Birnbaum of SAED works with Bortman as a technology transfer coordinator.

Bortman urges anyone with ideas on how any NADC technology can be applied elsewhere to contact him or a department representative.



Dr. von Beckh has spent the last half of his medical career working only in research.

Once Europe's youngest M.D., Dr. von Beckh celebrates 35th anniversary

Thirty-five years ago, on February 3, 1940, Harald J. von Beckh received his M.D. degree from the University of Vienna, Austria. He was then 22 years old, the youngest M.D. ever received in Europe.

To commemorate the occasion, Dr. von Beckh invited over 50 associates and friends to a reception and dinner at the Executive Dining Room.

Dr. von Beckh is the Director of Medical Research in the Crew Systems Department.

At the party, some of the more than 100 congratulatory letters and telegrams he received from all over the world were read. Among them were messages from Dr. F. Seitelberger, who graduated with Dr. von Beckh and is now Professor of Neurology and Dean of the Medical School at the University of Vienna; Dr. Wernher Von Braun; Brigadier General Hubert Grunhofer, Commander of the Institute of Aviation Medicine of the German Air Force in Fuerstenfeldbruck, West Germany — Dr. von Beckh was his Commanding Officer when General Grunhofer was a cadet at the Medical Academy of the Air Force; and from Mr. Otto Roesch, the Austrian Minister of the Interior, "an old high school mate" of Dr. von Beckh.

During his career in aviation medicine, Dr. von Beckh has held faculty positions at the Aeromedical Academy in Berlin and the National Institute of Aviation Medicine in

Buenos Aires, Argentina. In Argentina, he pioneered work in airborne experiments with human and animal subjects under weightless conditions.

In 1963, he became Chief Scientist at the Aeromedical Research Laboratory at Holloman Air Force Base, Alamogordo, New Mexico. In 1970, he assumed his present position at NADC.

He has received many awards for his work, among them the Aerospace Medical Association's Arnold D. Tuttle Award "for original research that has made annually the most significant contribution to a challenging problem in Aerospace Medicine"; the Claude Bernard Medal of the Association for Astronautical Research "for outstanding contributions to Aerospace Medicine"; and the M. W. Boynton Award of the American Astronautical Society "for significant research contributions to space flight safety."

Dr. von Beckh's major project at NADC now is his patented PALE (Pelvis and Legs Elevating) G-Protective Aircrew Seat. This seat allows a pilot to withstand high gravity (G) loads without reclining his head and thus limiting his field of vision.

For the first half of his career, Dr. von Beckh combined teaching, research, and working with patients. The second half has been devoted entirely to research. Looking ahead, he says, "I think I will stay in my work in aviation medicine research."

Reserve unit travels from near and far to support NADC

For the past seven months, six NADC employees have been playing a double role in supporting the Center. Besides their regular jobs, they are all members of Naval Air Systems Reserve Unit (NASRU) T & E (TEST AND EVALUATION) 204.

NAS T & E 204, one of 22 NASRU's in the U. S., functions specifically to support NADC, says CDR Bob Taylor, Commanding Officer of the group.

The Naval Air Systems Command (NAVAIR) sponsors the reserve units, each of which is aligned with a naval air activity.

Besides Taylor, AVTD's Plans and Programs Manager, the other NASRU members from NADC are LCDR Jim Duke, AETD, CDR John Felix, A&TSD, LCDR Bob Beesburg, SAED, CDR John Pettit, AETD, and LCDR Jay Goldfarb, AETD.

The unit's remaining 11 officers work in industry or other government agencies. They travel to drill from as far as Bar Harbor, Me., Rochester, N. Y., Pittsburgh, and Harrisburg areas.

Each officer has a highly technical background and specializes in either Aeronautical Engineering Duty or Aeronautical Maintenance Duty.

Recently NAS T & E 204 earned the Noel Davis Trophy. This award was for work accomplished during the period January 1, 1973, through June 30, 1974. This honor marks NAS T & E 204 as the most outstanding unit of its kind in the country, says LCDR Duke. This is the second consecutive time the unit has won the award. All the other NASRU units across the country competed for the trophy.

The Noel Davis Trophy commemorates LCDR Noel Davis, who died during flight trials while preparing for the first trans-Atlantic crossing. The award goes to the Naval Air Reserve squadrons and units which achieve the highest level of mobilization capability for that type of squadron or unit.

Among the unit's accomplishments were the completion of 39 projects and 100% participation by all members of the unit.

Although NAS T & E 204 only began work at NADC last July, the NASRU program has been in existence for 25 years, CDR Taylor says. Before it was NASRU, it was WEPTU and before that BARTU. "We're always

following the Navy's organizational changes," CDR Taylor says. He's been in the program since 1960.

The group plans to tackle a mix of management and technical problems on Center. "This particular unit," CDR Taylor says, "was the first NASRU to work under the concept of doing project work. Now the whole NASRU program is primarily project oriented."

CDR Dean Curtiss, the unit's Executive Officer, received Navy recognition for his avionics repair project work for the Turkish government.

For the past three years, CDR Taylor says, the Department of Defense (DOD) has come to the NASRU's for help on cost reduction programs. CDR Felix and LCDR Beesburg received high praise from DOD for their cost reduction work on the Chaparral missile fusing and guidance system.

"Before we were full time at NADC, we helped other Navy activities," CDR Taylor says. Other activities we were associated with were the Naval Air Engineering Center, Lakehurst, N. J., Naval Air Technical Services Facility, Philadelphia, and the Naval

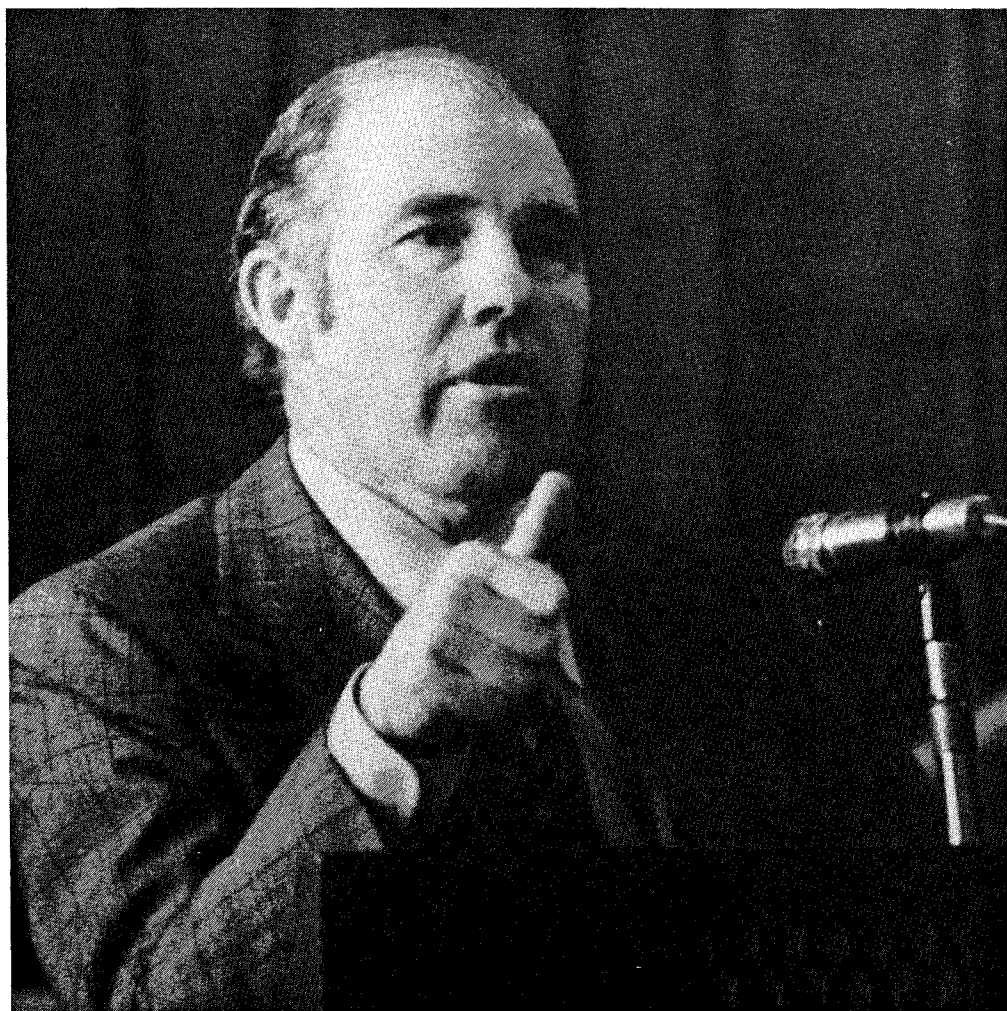
Air Propulsion Test Center, Trenton, N. J.

"Part of our basic mission," he says, "is being immediately available to step into a job." Each member of the unit has an assigned mobilization billet. Most of the mobilization billets are in NAVAIR, NAVAIR field activities and Naval plant representative offices in industry.

On a three-year cycle, one year is spent in the mobilization billet and the other two in support of project efforts.

The unit meets two days each month, usually on the second weekend. One day is primarily devoted to project effort. The second day is not a required drill date, however the Unit has decided to meet voluntarily to meet project milestones and accomplish other administrative duties. Each member serves two weeks active duty in his mobilization billet or on project work.

Among the projects being worked on at NADC are: technical capabilities brochures, V/STOL landing aids, improvements to Management Information Systems, and a "project manager's" guide.



Dr. Lobb thinks NADC should look and act first class in every way.

Letters

To the Editor:

This letter is sent in the belief that it could aid in the fight to avoid gasoline rationing if at all possible.

I think this letter supplies limited but dramatic statistical evidence that gasoline rationing can be avoided if the existing speed laws are enforced.

About every two weeks I have found it necessary to drive from my home in Doylestown, Pennsylvania, to Glens Falls, New York. This is a 300 mile (one-way) trip over Pennsylvania, New Jersey, and New York State highways, mainly superhighways. In addition, my business has required frequent automobile trips to Massachusetts, Connecticut, and occasionally to Washington, D. C.

This inclusive driving has afforded an unusual opportunity to observe the manner in which traffic is observing the 55 m.p.h. posted speed limits and the enforcement efforts of all those states.

Personal observation

I now know from personal observation that practically no attempt is being made by many states to make traffic flow at the gasoline saving posted speeds of 55 m.p.h. or less. Over this last weekend, I decided to get quantitative facts to support my previous qualitative, subjective observations.

Personal business required a trip from Doylestown, Pennsylvania, via Cooperstown, New York, to Glens Falls, New York, and then to Boston, Massachusetts, with return through Massachusetts and Connecticut.

The car is equipped with "cruise control" set at all possible times at 55 m.p.h. Therefore I know that never, at any time, did we exceed this 55 m.p.h. speed. Furthermore, this afforded a positive calibration of the driving habits of all the traffic, and the enforcement practices of the State Police.

This trip took us through hundreds of miles of highways in Pennsylvania, New York, Massachusetts, Connecticut, and New Jersey. My wife and I kept an exact tally, on the open

highways, of all traffic that passed us and a precise count of all traffic that we passed. The tally was astounding and disturbing.

A brief summary reveals that on this entire trip through five states, under generally light traffic conditions, 503 cars and trucks passed us and we, rigorously observing the 55 m.p.h. (or posted slower) speed limit, passed eight cars and nine trucks!

I know that my car at 55 m.p.h. (15+ m.p.g.) gives at least three miles more per gallon than it does at 60 (12 m.p.g.). I know now that all of these cars in these states are consuming gasoline at an unnecessary, unreasonable, and unpatriotic rate. At the same time I note from the press that Massachusetts and Connecticut are screaming for more gasoline allocation.

Force rationing

I believe that this fast driving, if continued, will perhaps force rationing and restrict my driving. I need, and I want to continue use of my automobile. Hopefully I can continue driving, providing the states enforce a speed regulation preferably of 50 m.p.h. and certainly not more than 55.

Enforcement of 50 m.p.h. speed limits is easy and almost automatic once the word gets around that violators will indeed be caught and fined. Then sensible driving practices will be "voluntary." Furthermore, accident occurrence and death carnage will drop and insurance rates should become lower.

Above all I prefer being able to drive at 50 m.p.h. to being prevented from driving at all.

Respectfully,
RUSSELL I. MASON

Please address all letters for this column to Editor, Reflector, Code 011, Naval Air Development Center, Warminster, Pa., 18974.

Only signed letters can be considered. (You may, of course, request your name be withheld.) The editor reserves the right to edit for publication.

Dr. Lobb calls a strong technical staff, the key to the Center's future

Dr. R. Kenneth Lobb, NADC's Technical Director, likes to go first class. He told the Naval Civilian Administrators Association at their February luncheon meeting that "if we [NADC] don't think of ourselves as first class, nobody else is going to."

He wants NADC to act and look first class in every way — from the management of the technical programs to the way visitors are treated.

Dr. Lobb said that a recent key study showed that there is a definite need within the Navy for a centralized air development center. But, he added, "we're not out of the woods yet. There's a tendency to ask for a drawdown in the whole DOD laboratory community."

The key to the Center's future, he said, is a strong technical staff. "We have to work damn hard to make sure NADC comes through with flying colors in any further evaluation," Dr. Lobb said.

Another thing he feels strongly about is recognizing the people who make contributions. "I feel at NADC," Dr. Lobb said, "that we have not made enough effort to recognize

the people who have made the contributions."

As for those who don't make contributions, Dr. Lobb said an effort should be made to find out why they don't. "If they're just coasting," he said, "I don't have any use for them, and I don't think NADC has any use for them."

As far as specific management techniques go, Dr. Lobb said he believes in taking the best of them and using them where appropriate. "I do believe very, very strongly in milestones," he said. Project managers, he said, should set milestones and try to meet the dates.

Dr. Lobb wants NADC to survive. He named two ingredients necessary for survival — one, to do first class work and two, to make the right people aware of it.

"When I came on board as Technical Director," he said, "it was my full intention not just to be a chief scientist. It's absolutely essential to look and work with the people in Washington."

He urges everyone with personal contacts to tell them about NADC and what we can do.



Driving his dog sled team, Matthew A. Henson worked with CDR Robert Peary in exploring the North Pole.

Was Henson first man at North Pole?

Commander Robert E. Peary was not alone on the final leg of his monumental trek to the North Pole at the turn of the century. With him was Matthew A. Henson, his assistant of 23 years, who shared in Peary's achievement but not his triumph. Henson, a black, is rarely recognized for his contribution to his mentor's claim as the first man to reach the North Pole.

Henson's affiliation with Peary began in 1886 when he first travelled north with him to Greenland. Before long Henson became indispensable to the commander as an expert sled driver, dog handler and Eskimo recruiter.

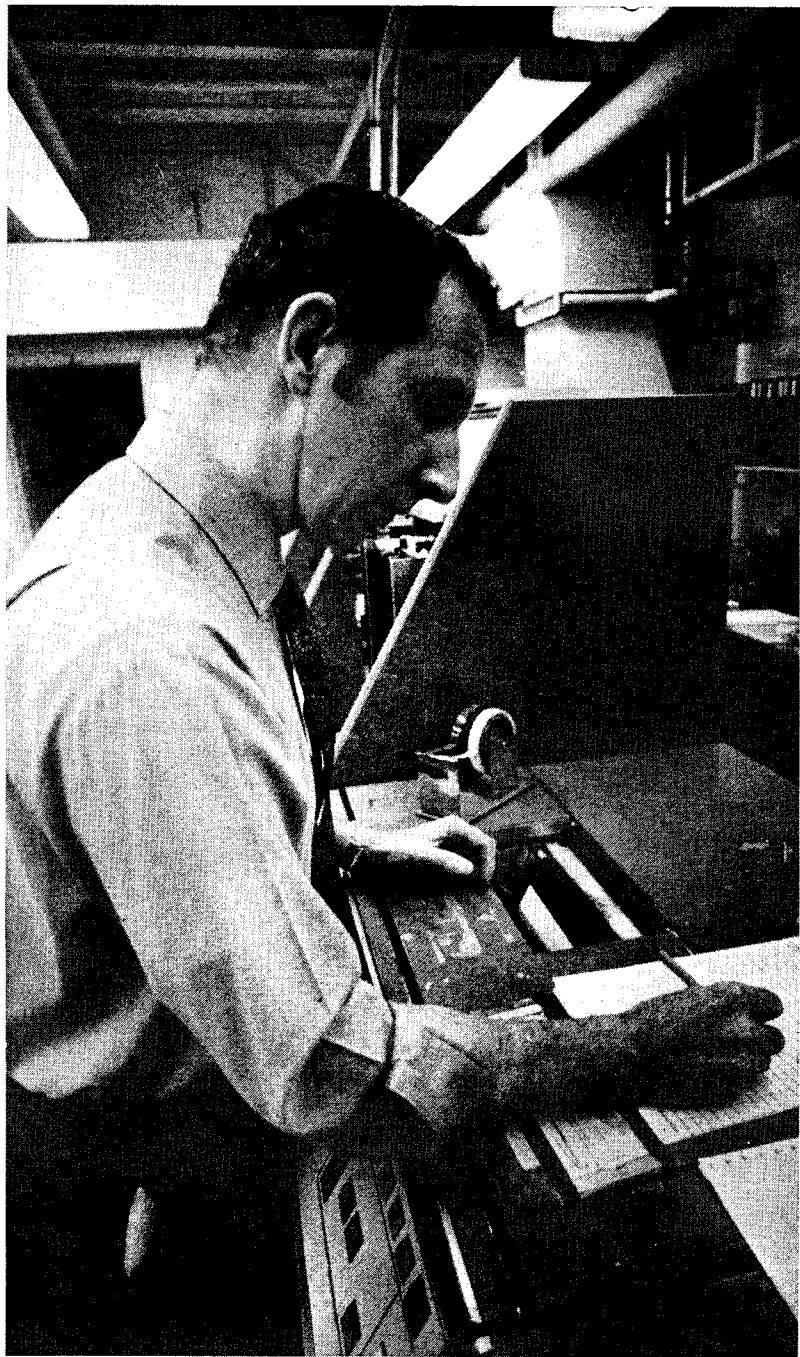
During their long association Henson proved to be more than indispensable. He saved Peary's life twice, once from a charging musk ox and again when he helped amputate Peary's frozen toes. Peary, naturally, had a deep, abiding affection for his right-hand assistant.

Peary chose Henson above all others in his party to make the dash to the Pole in April 1909 because he was the most capable sled driver and the most physically fit of the entire exploring party of 50 men.

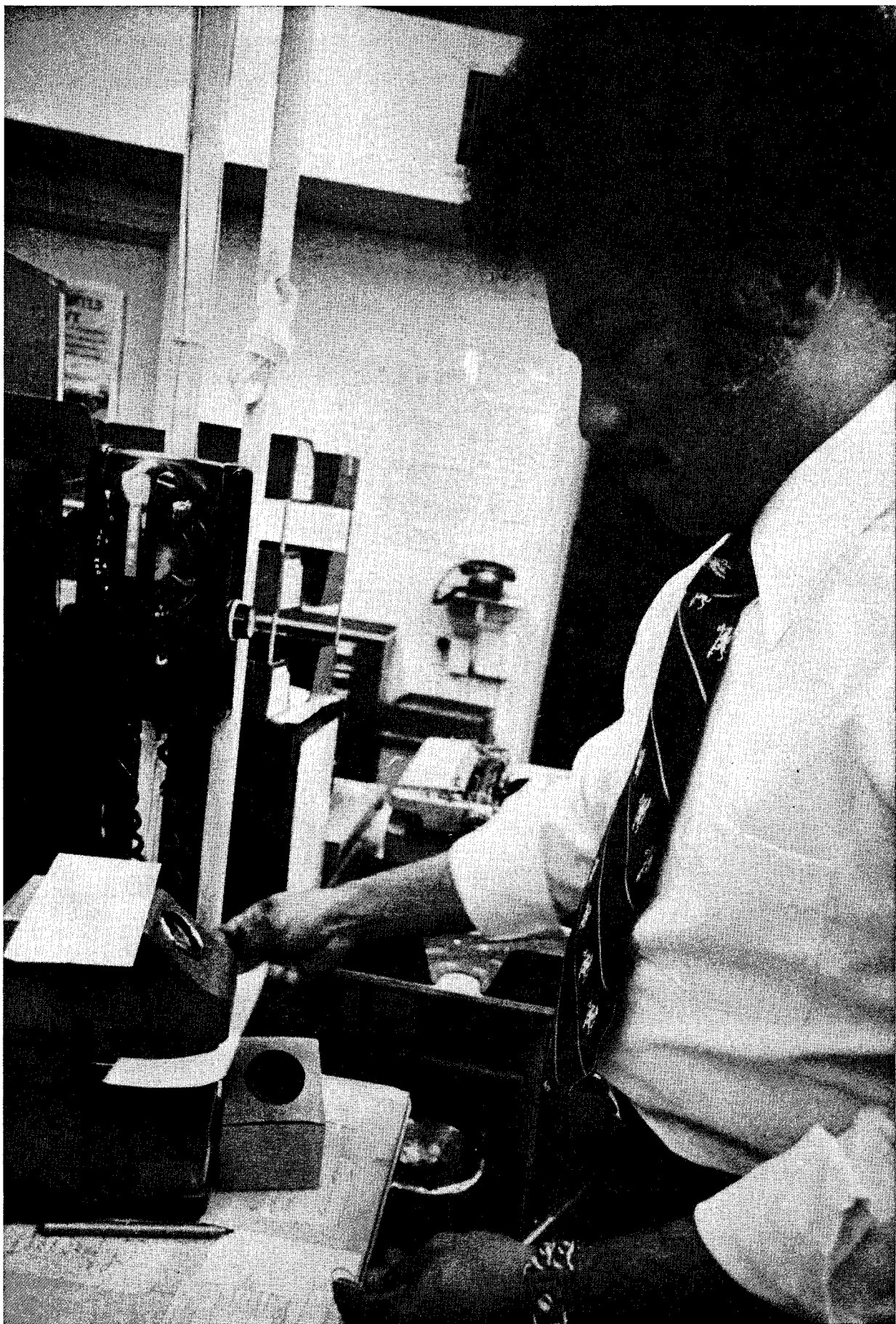
Henson claimed that he, not Peary, was actually the first to reach the North Pole. "I think I'm the first man to sit on top of the world," Henson said.

By a mistake he made on April 6, Henson, the leading sled driver, overshot the mark by two miles. Peary, true to the role of any expedition's commanders, had requested that he stop short of their destination so the commander could have the distinction of reaching the Pole first.

Because of Henson's slight misjudgment of distance on the final leg of the trip, it is a black man who now is believed to be the first "to sit on top of the world."



Russell McWilliams, above, logs incoming message traffic in the communications center. Donald Dobbins, right, stamps the time on incoming data cards.



Behind the locked door, Communications center works on Zulu time

By DEBORAH LAMBERT

When you go to "pick up the messages" from that small anteroom with the combination lock on the door, do you ever wonder what is behind that door?

What it is is NAF's highly complex and technologically sophisticated communications center.

All message traffic at NADC/NAF passes through the communications center. The center contains digital equipment for transmitting and receiving naval messages.

Each member of the 12-person staff has undergone much detailed training in the operation of the various types of devices. They are all qualified to handle messages and operate the equipment.

With the exception of Jean Garber, each of the staff members has a background or prior military experience as a communications operator. Garber, the only woman in the center, received on-the-job training. "I go

through the same training and do the same work as the men," she says. "I'm a little proud of that."

Because there are so many technological changes occurring in the field, training is always an on-going process.

When the center receives an outgoing message from one of the departments, the staff first makes sure that it is properly addressed and classified. A staff member then types it out on the teletype machine. The message travels by telephone to a Philadelphia relay, where it is sent by radio waves to the main relay terminal at Fort Detrick, Md., and from there on to its destination.

The DSTE (digital subscriber terminal equipment) automatically receives all incoming messages for NADC/NAF. The staff notes the time of receipt on the message and routes it to action and information addresses. Many of the messages carry different levels of classification. The staff must handle each classified

message with great care in line with the proper security procedures.

Despite the complex operation of sending and receiving messages, everything runs smoothly. "The people out there are really interested in their work," says Bob Angiolillo, communications manager. "They all get along well and do excellent work."

The communications center works around the clock, 24 hours a day, 7 days a week.

The center operates on Zulu time, which is the same as Greenwich Mean Time. Military installations use Zulu time to avoid confusion with the world's many time zones. For example when NADC sends a message to England using Zulu time, the recorded time for the message is the same at both ends, although England is 5 hours ahead under standard time.

Another responsibility of the communications center is providing telephone service to NADC, NAF, NAS Willow Grove, and two reserve

units. Each month, Angiolillo says, the bill comes to approximately \$41,000. Of this, \$18,000 results from toll calls. NADC is currently waging a campaign to cut off all unofficial and unnecessary calls.

Jointly, the Fourth Naval District and the communications center are looking into the possibility of installing direct dialing telephones at NADC in one or two years.

Under this system, there is a separate bill for each extension at the end of each month. Angiolillo says that this system would be a more effective way of analyzing the needs throughout the Center and eliminating telephone abuses.

Angiolillo anticipates that by 1979 the communications center will have the most advanced equipment available. Proposed additions include a switch from paper to magnetic tape, use of data cards, and the possibility of an interface with NADC's automatic data processing systems.

Naval Facilities team up to test sonobuoys

By MARV WALTERS

THE NAVY TO THE RESCUE — Certainly an old and worn phrase, but one which could describe the Navy's effort on its own behalf at the Production Sonobuoy Testing Facility.

Located at St. Croix, Virgin Islands, this facility conducts performance tests of the Navy's sonobuoys. These tests involve the dropping, monitoring, and retrieving of approximately 17,000 sonobuoys yearly.

The Navy conducts acceptance tests of its sonobuoys, which are produced by three major manufacturers.

Samples tested

Representative samples from each lot produced by the three manufacturers are tested to demonstrate the sonobuoy performance capability compared to the performance specifications. This testing was previously conducted at the NIRP (Naval Industrial Reserve Plant), South Bristol, Maine, and the St. Croix facility.

Because of the computerized monitoring equipment, deep water in the St. Croix area, and staffing requirements, the Navy selected this location for all of the production acceptance tests.

The actual testing of the sonobuoys requires a coordinated effort among the personnel and facilities used. Navy aircraft transport the sonobuoys selected for acceptance testing to a warehouse at the St. Croix airport. There they are identified with a contract and manufacturer's number, date of delivery and test, and a serial number used during the test to identify the sonobuoy and the RF (radio/frequency) channel being monitored.

Sonobuoys inspected

The sonobuoys are also inspected for any physical damage incurred during transport. The sonobuoys are stored at the warehouse until the day before the planned drop when they are loaded on the drop aircraft.

On the day of the drop, the aircraft and retrieval boat rendezvous at the drop site. The aircraft drops the sonobuoys according to a scheduled sequence which specifies the sonobuoy serial number, the order in which they are to be dropped, and the RF channel to be tested.

Five buoys are usually dropped during one pass, with the retrieval boat crew observing the sonobuoy deployment and descent for possible malfunctions.

Once the buoy is in the water, it is checked for mechanical operations such as antennae, hydrophone and floatation bag deployment. In addition, the RF channel and signal are monitored by a computer located on St. Croix.

The computer compares the signal and data received from the sonobuoy with the input performance requirements and provides a real time display of the performance of any selected sonobuoy. Any malfunctions or performance deviations are automatically displayed for investigation.

Upon completion of the test, the sonobuoys are retrieved with special care given to those buoys which malfunctioned so that post-test inspections can attempt to locate the malfunction without the possibility of handling damage.

The sonobuoys are returned to the dock where they are thoroughly rinsed with fresh water, repacked, and sent back to the warehouse. The buoys which passed the test are then refurbished and used by the Navy in training exercises.

Formidable logistics

Since this testing is conducted every day except during bad weather, the logistics problem is a formidable one. A continuous, even flow of sonobuoys coming in, being tested, and going out must be maintained to eliminate backlogs or lost time due to lack of lots to be tested.

In addition, each sonobuoy must be identified and accounted for so that a particular sonobuoy is tested for the proper RF channel operation. This testing process all has to be accomplished with the least handling possible to reduce the chance of causing a malfunction through handling.

This entire process must be completed within 60 days of designation of the sonobuoy sample, or the entire lot from which the sonobuoys were selected must be accepted by default. Limited communications facilities on the island tend to compound this problem.

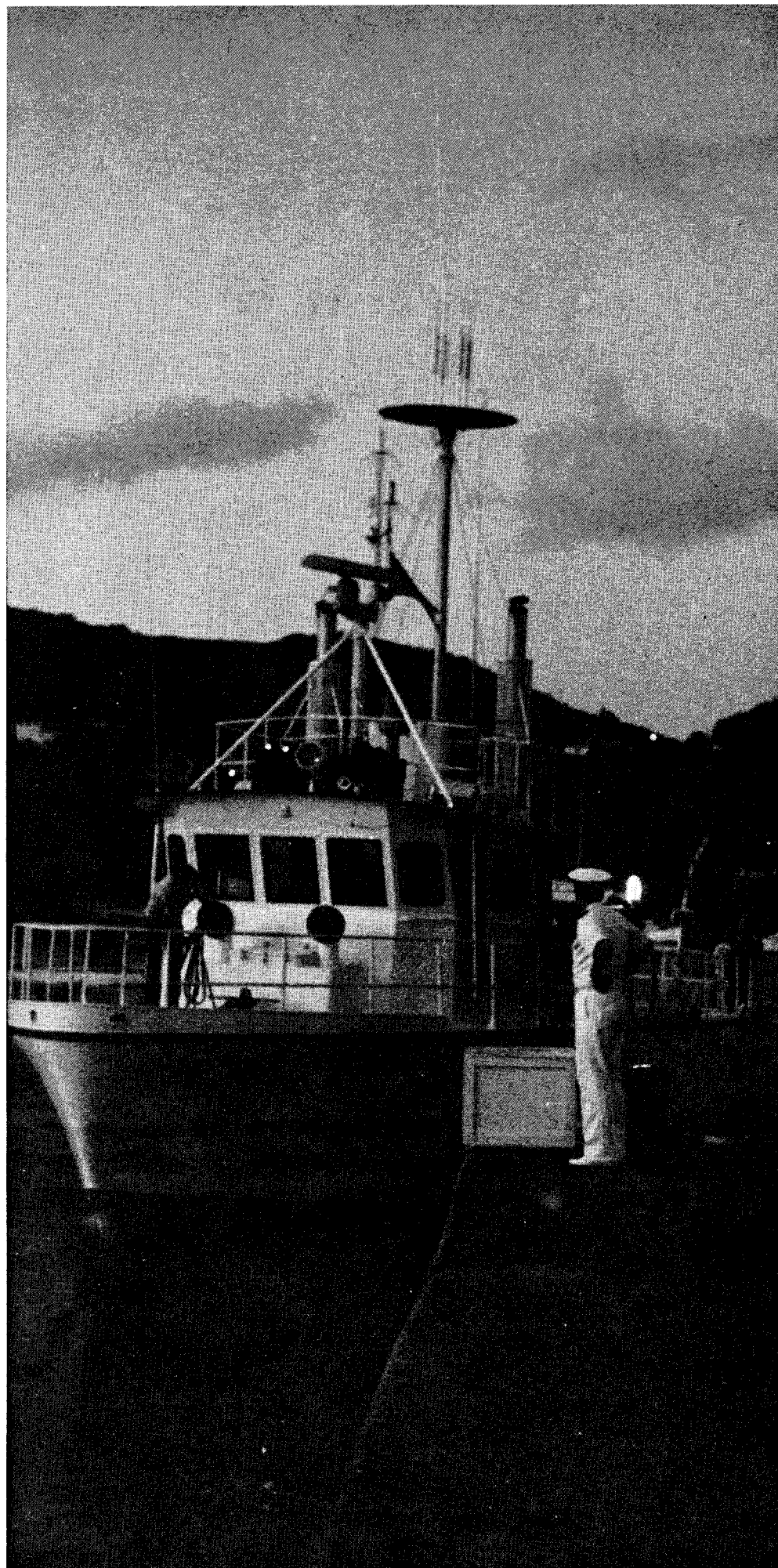
Contractor changes

For the past 15 years, this testing was accomplished by a commercial contractor under contract from the Naval Air Systems Command (NAVAIRSYSCOM). Attempts to procure a contract for this year's testing resulted in an impasse, halting all contractor testing on January 22, 1975.

Foreseeing this termination, NAVAIRSYSCOM initiated an effort to maintain the test schedule to preclude acceptance of the sonobuoys by default. This effort involved NAVAIRSYSCOM, NADC Warminster, NADC ASW Field Station, Key West, and NAD (Naval Ammunition Depot) Crane, Indiana.

NAVAIRSYSCOM "buys" the sonobuoys and is responsible for the production tests, with NADC supporting NAVAIR by coordinating and scheduling the tests.

To acquire control of the sonobuoy testing program, NADC di-



Crew members prepare the Torpedo Retrieval Boat for another day's work picking up sonobuoys.

verted all sonobuoy shipments previously destined for the South Bristol facility to NADC Warminster for subsequent transport to St. Croix by NADC aircraft. Test scheduling and sonobuoy logistics were then assigned to LCDR Dave Ives, NAF. NADC then used its TRB (Torpedo Retrieval Boat), stationed at St. Croix, for the sonobuoy retrieval boat and manned it with personnel from NADC, Key West. In addition, NADC S-2 and P-3 aircraft and crews are performing the duties of drop aircraft on a rotating basis.

Personnel from NAD, Crane, then dismantled the computer monitoring facility, which was on loan from the Navy to the contractor, and relocated and reassembled it at Ham's

Bluff, a Coast Guard Station overlooking the drop area. These same personnel now operate and maintain the monitoring equipment.

Working days of 10 to 12 hours duration and processing sonobuoys at night with light from car headlights indicates the type of sincere dedication shown by the personnel involved.

This coordination and cooperation among installations and personnel has paid off with continuous sonobuoy testing maintained without backlog.

JOB WELL DONE — An old and worn phrase that should be addressed to the Navy personnel involved with the Production Sonobuoy Testing Facility.

Center scope

Credit Union elects officers

Members of the NADC Federal Credit Union elected five officers at the Credit Union's 24th annual meeting on February 13.

Elmer Krauser, Owen Medd and Melvin Wayns were re-elected to the Board of Directors. James Bonanno and Catherine Aydelotte, who both ran uncontested, were re-elected to the Credit Committee.

Danalle Vanlstendal read ailing credit union manager Bettie Zaks' report. Looking at the past year, Zaks noted that "Our members are not pulling out of the credit union in response to the siren call of high-interest, long-term, minimum deposit certificates.

"They are putting more money in, and, what's more, our membership is increasing at a rate close to 15% a year."

Credit committee chairman John Caffrey said he and his committee expect a crucial year ahead. They will be carefully examining all loan applications. Caffrey said he foresees slow growth if any for the credit union in 1975.

More than 175 persons attended this year's meeting and buffet.

The Commander salutes:

... CDR Allen Kruger, SASI, for his service as Commanding Officer, Helicopter Anti-Submarine Squadron FIVE, during which period the squadron received the Naval Air Force, U. S. Atlantic Fleet Battle Readiness Efficiency Award.

... The crew of the turbine boat "Cloud 13" from NADC, Key West, for their immediate response to the Coast Guard's request for assistance during the September 12, 1974, fire on board the Cunard Ambassador.

... CDR Frank H. Brown, ASW, for his presentation at the FOURTH Naval District's NJROTC Seminar.

... Dr. Jack Ohr and Kenneth Clark, both of AVTD, for their fast response in meeting the Naval Air Systems Command's request for determining the suitability of an additive material for the Navy's deicing fluids.

... Douglas Bellis, SAED, for his significant contributions to the success of the Mediterranean ASW Augmentation Program.

Toastmasters clubs elect

NADC's two chapters of Toastmasters International have elected new officers for 1975.

Jerry Barry Polin heads up the roster as President of the Johnsville Toastmasters Club #2437. Other officers include William Spencer, who serves as both Educational Vice President and Bulletin Editor; Irv Shaffer, Administrative Vice President; Larry M. Smith, who serves as both Secretary and Treasurer, and Julius Piland, Sergeant At Arms.

Officers for the NADC Toastmasters Club #1153, which elects semi-annually, include Robert B. Caruso, President; Kenneth A. Clegg, Educational Vice President; Thomas J. Barry, Administrative Vice President; Akira Yoshida, Secretary; Svend A. Berntsen, Treasurer; and John J. Vincent, Sergeant At Arms.

Both clubs offer NADC employees an opportunity to participate with their peers in a program developed to improve their communications skills and develop their leadership and executive potential.

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Naval Air Development Center

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CAPT Grover M. Yowell — Commander NADC.

Aris Pasles — Public Affairs Officer.

Linda Battistini — Editor.

Bloodmobile attracts 54

The Red Cross collected 54 pints of blood when its Bloodmobile visited NADC on February 12.

The donors were:

A&TSD — Edwin Sinnamon, Lawrence Miller, Frank Pace, Remo Buono, and Robert Urban.

AETD — Lawrence Judge, Walter Schoppe, William McMillen, David Davis, Robert Melby, John Sniscak, Owen Moll, John Harris, Robert Pesavento, Louis Rakszawski, and Stanley Greenberg.

AVTD — David Pulley, Edward Schmidt, Leonid Markushewski, John Stewart, Peter Kiproff, William Becker, Theodore Herring, Carolyn Bergey, Fred Kuster, Robert Richey, and Ellen Kelly.

CD — John Santini.

CSD — Marie Handzus, William Daymon, John McDonnell, Christian Skriver, Lloyd Crumley, and Edmund Gifford.

NAF — Franklin Parke.

P&FMD — Sylvia Fiumara.

PWD — Helen Sullivan, John Chmielewski, and Robert McFetridge.

REMOTE SENSORS — Joseph Leavens and Edward Olson.

SAED — Robert Smith, Leonard Kravitz, Roland Hall, Lawrence Johnston, Richard Fitzell, Tom Merkel, Larry Smith, Dennie Baker, Douglas Bellis, Gale Katz and Richard Brookes.

SD — Dickson Alley and Robert Birrane.

Avoid conflicts of interest

If a contractor offers to buy you a dinner, can you let him? What if he's a personal friend? Does that change things any?

Or, can a contractor pay your expenses at a public ceremony, such as the unveiling of a new weapons system?

These and other questions are answered in the Department of Defense's Standards of Conduct. The standards are also contained in NADC Instruction 5371.3D.

Basically, a Government employee is forbidden to solicit or accept any gratuity, favor, entertainment, loan or anything else of monetary value from anyone doing or attempting to do business with the Department of Defense.

In fact, Government employees are required to avoid any conflict of interest, or even the appearance of such a conflict.

Government employees on duty are also forbidden to participate in any gambling activity while on Government-owned or leased property.

Violators of the standards may be subject to disciplinary action, in addition to penalties provided by law.

For more information on the Standards of Conduct, contact the Employee Relations Division (2944), Civilian Personnel Department.

Life insurance rates go up

Premium rates for regular life insurance provided to Federal civilian employees covered under the Federal Employees Group Life Insurance program will increase by 8 cents per \$1,000 of coverage per biweekly pay period to meet increased costs, the U. S. Civil Service Commission announced recently. Agency contributions will rise from 13.75 to 17.75 cents per thousand per biweekly pay period.

An actuarial valuation of the life insurance program, completed in December, found that total premiums (employee and employer contributions combined) must be increased from 41.25 cents to 53.25 cents per \$1,000 of regular insurance coverage. Rates for the additional \$10,000 optional life insurance will not change.

The new regular insurance rates will become effective at the beginning of the first pay period after February 28.

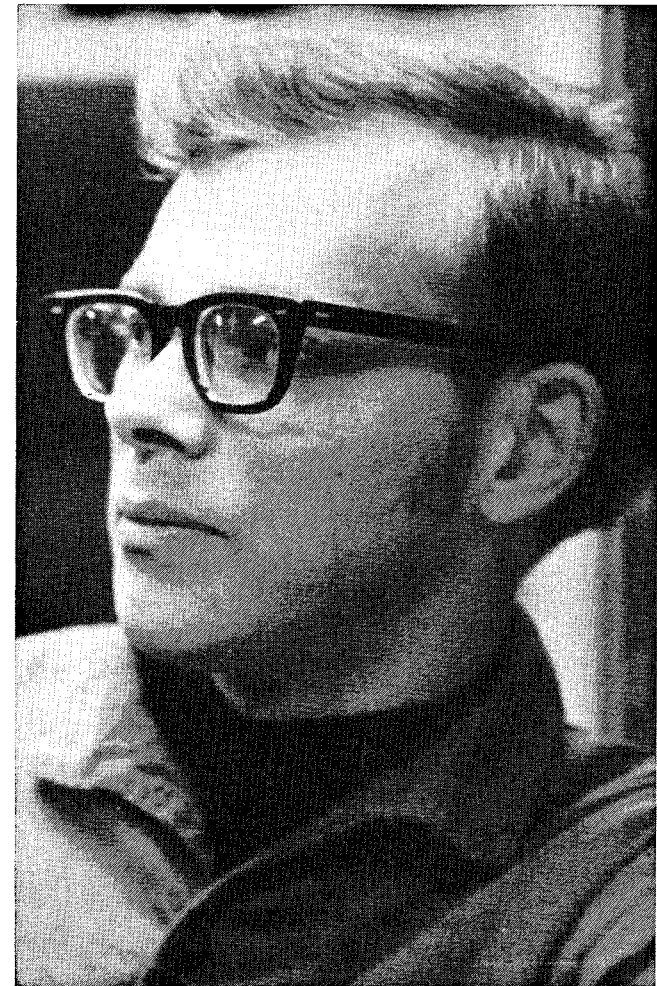
The primary reason for the increase in cost is that more employees are retiring at an earlier age than in the past, which means that paying subscribers are contributing to the cost of life insurance for a shorter period of time. Since regular life insurance is provided free to retirees, it is necessary to increase premium rates over the shorter period that employees work.

There are currently 2,448,000 Federal employees covered by the regular life insurance program, with an average face amount of insurance coverage of almost \$16,000. This means that the average employee will have an additional \$1.28 withheld from his or her biweekly pay check, with the increases ranging from \$0.80 biweekly for employees with the minimum \$10,000 coverage to \$3.60 biweekly for those entitled to the maximum coverage of \$45,000.

In addition to the 2.4 million active duty employees covered under the regular life insurance program, there are more than 800,000 former employees who have retired with the right to carry their insurance as annuitants without paying premiums.

There are 563,000 employees and 42,000 annuitants who carry \$10,000 of the optional insurance in addition to regular life insurance coverage.

All contributions to the Federal Employees Group Life Insurance fund are used exclusively to pay benefits and related costs. Costs at present consist of about 2.5 percent of each dollar for taxes and 0.6 percent for administrative costs, with the remaining 96.9 percent being used to pay benefits.



Allen is Sailor of Quarter

AE2 Robert Allen has been named Sailor of the Quarter at NAF.

He was cited for his consistent professional performance in his work in the Aircraft Maintenance Department's electrical shop.

His efforts and technical knowledge were instrumental in the successful rewiring of the main electrical system in the C-117 aircraft. He has also developed improved fault isolation practices for his division.

"I like my work," Allen says. "I wouldn't want any other job."

Allen serves collateral duty as Safety Petty Officer and Quality Assurance Collateral Duty Inspector.

He lives in Quakertown, Pa.

Navy League tours Center

For the fourth consecutive year, the Southeastern Pennsylvania Council of the Navy League of the United States held a general membership meeting at NADC.

Over 80 members and guests attended the February 19 meeting and dinner.

While on Center, the group toured the Advanced Integrated Modular Instrumentation System, the Air Combat Simulator, the Light Airborne Multi-Purpose System Integration Lab and the Photo Reconnaissance Lab.

The Navy League is a civilian organization which seeks to develop and maintain public interest in the Department of the Navy and its missions, and to offer cooperation and assistance in all matters tending to enhance naval efficiency.

The Southeastern Pa. Council contributes a \$25 savings bond to each of NAF's Sailors of the Quarter.

In Memoriam

Dr. Martin Trawick, former Technical Director of the Aeronautical Instruments Laboratory.

NADC

Reflector

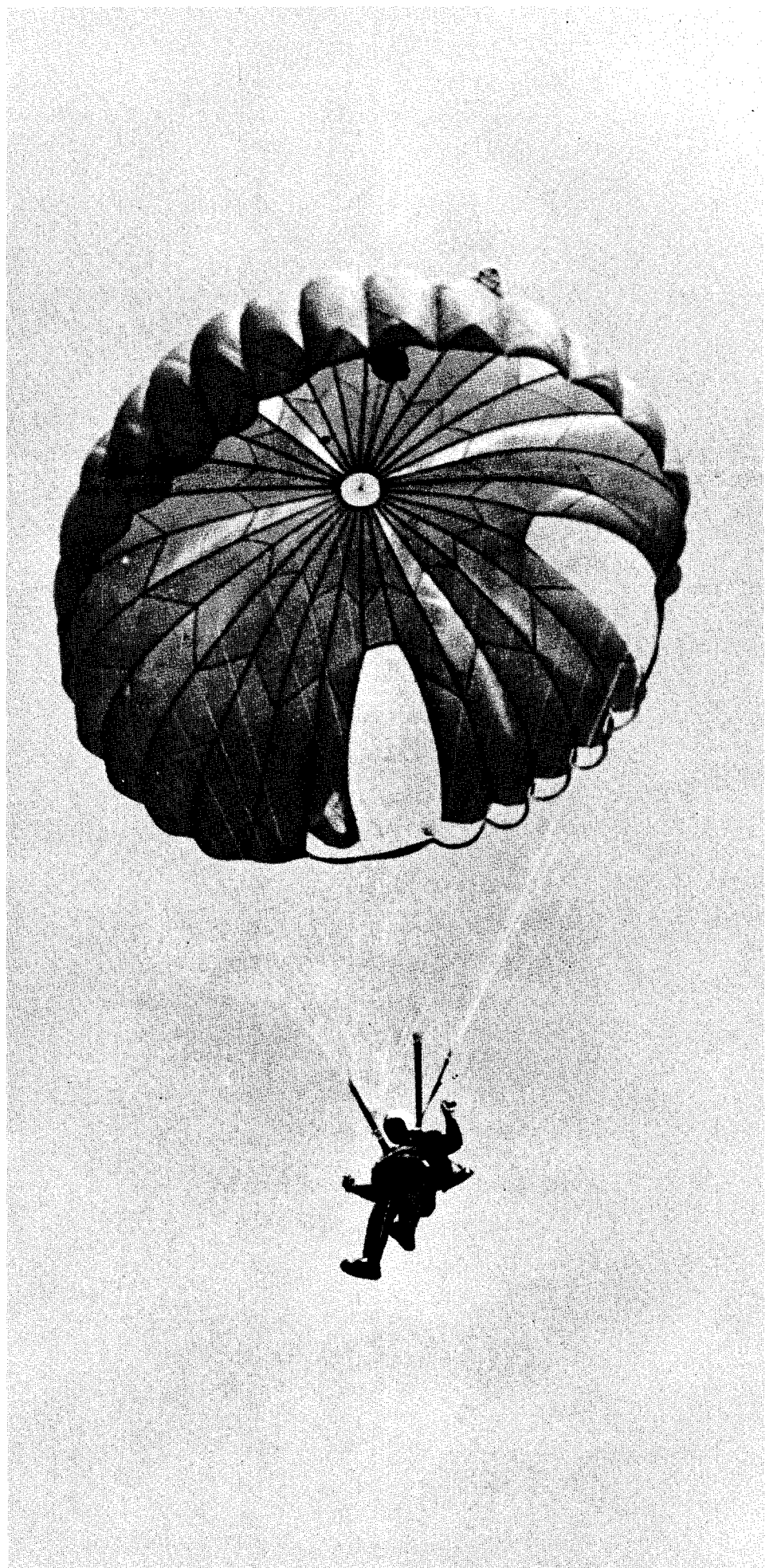
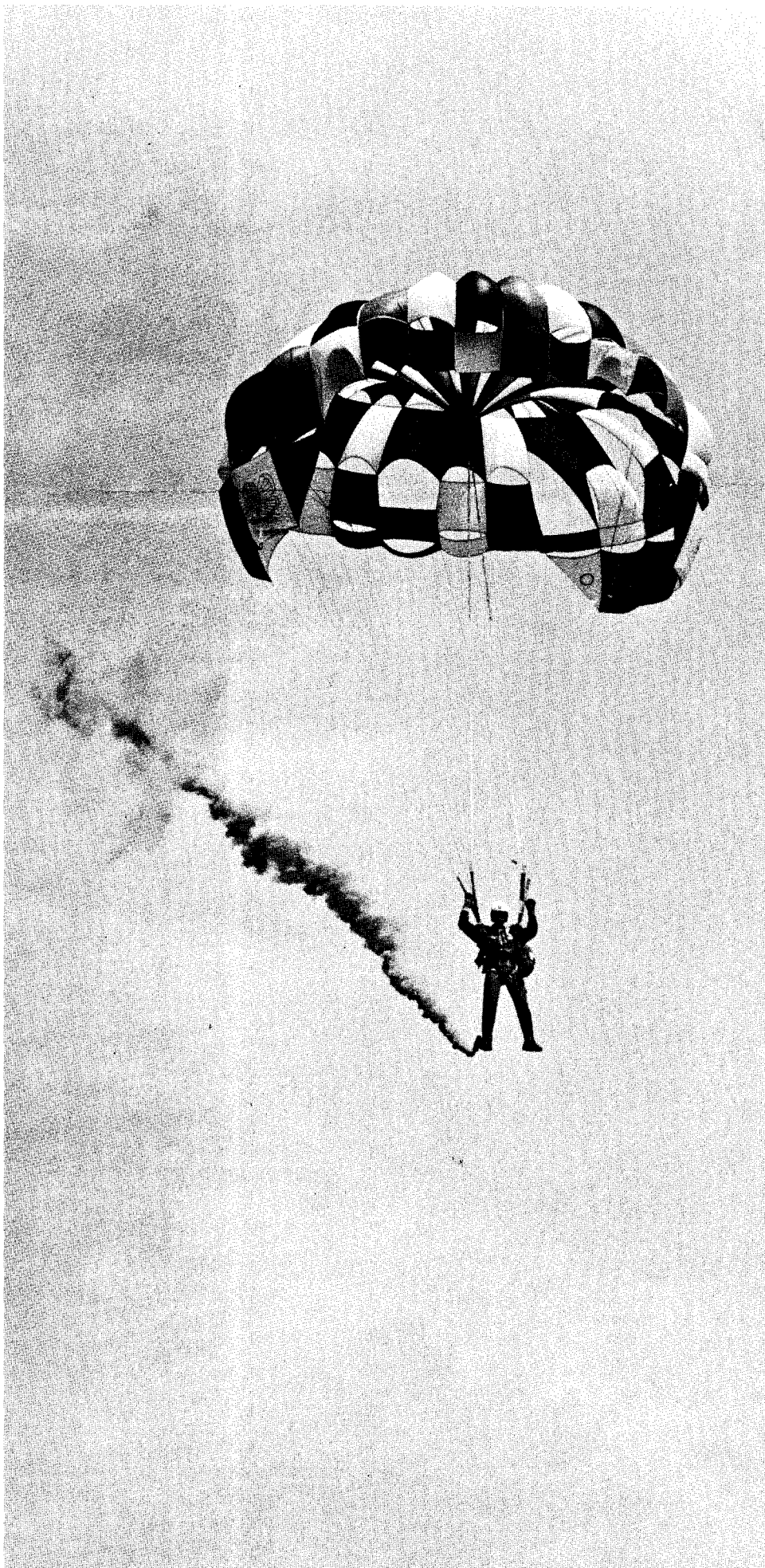
Volume 21, Number 2

Naval Air Development Center, Warminster, Pa.

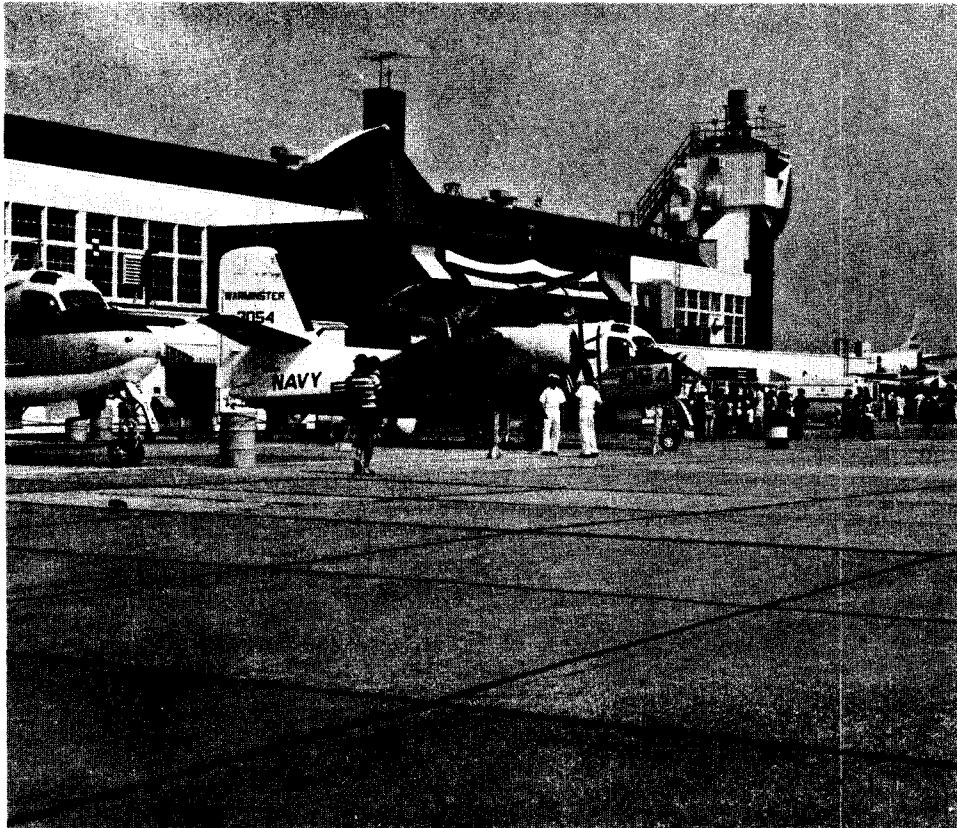
August 1976

"Honor America"

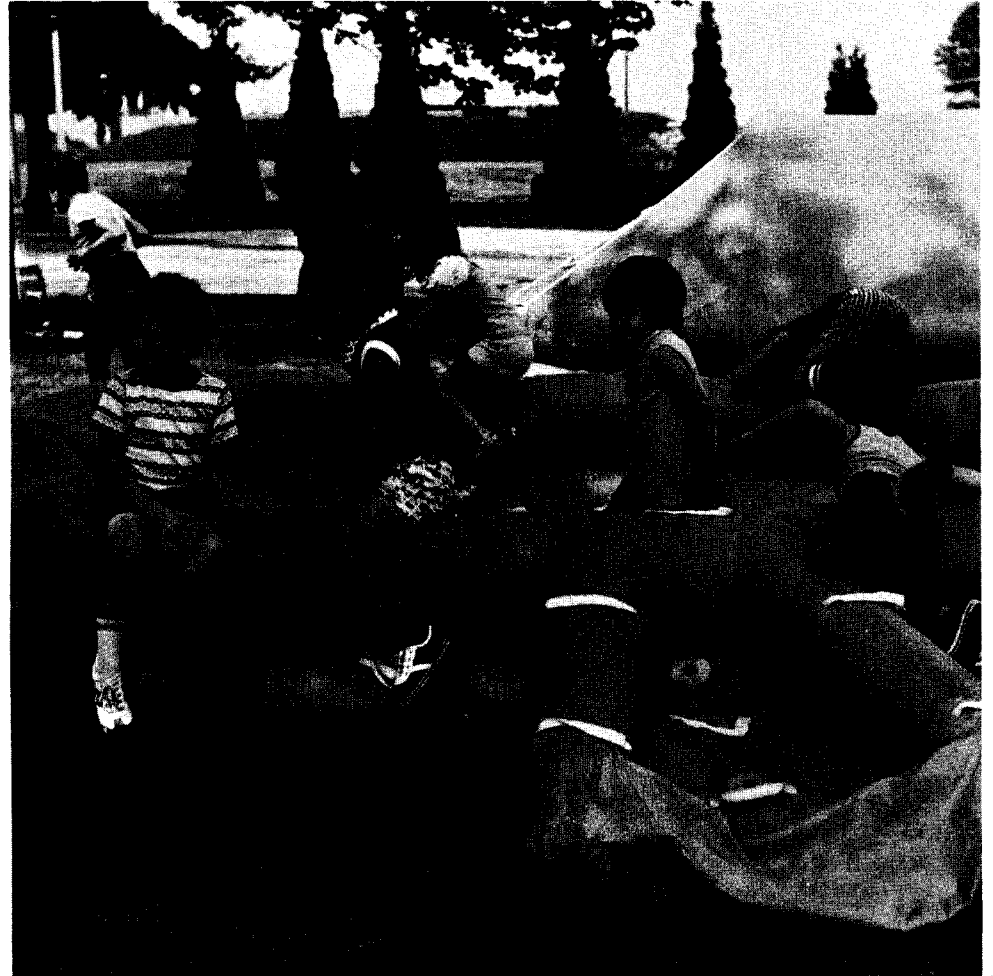
Bicentennial Open House featured paratroopers



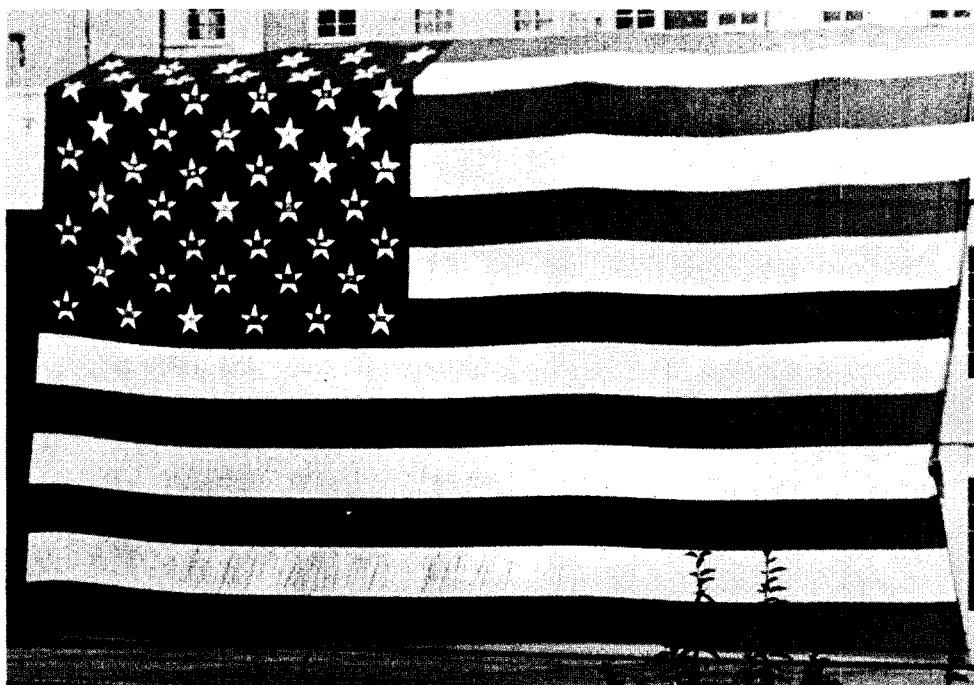
Members of the Naval Air Technical Training Center, Lakehurst, N.J., Parachute Team demonstrated their skills at the August 14 Open House. The 15-man team, led by M. Sgt. John E. Whalen, made four jumps, ranging in height from 3500 to 7200 feet.



NAF lined its aircraft up outside the hangar, displaying the unusual variety of types assigned here.



Inflated life rafts, supplied by CSD, proved to be a popular attraction with the youngsters.



This 39 by 71 foot flag was made by a group of volunteers at the Naval Air Station, Patuxent River, MD, as a bicentennial project.



Nic Lanzetta, CPD, (left), a member of the Warminster Ambulance Corps, took free blood pressure readings, including that of David Duhaime, son of Arthur Duhaime, TSD.

Open House:

by Steve Parris

If you and your family did not make it to NADC's/NAF's "Bicentennial Open House," held Saturday August 14, you sure missed a day jam-packed with fun and excitement for children as well as adults. As the day started, I could feel the excitement mounting. All over the Center there was activity. Things were happening that told me this was not to be a normal day.

Along with other early arrivers, I got to see workmen making last minute preparations for hanging a huge flag. As I drove north on Jacksonville Road toward the entrance gate, just before reaching the pedestrian bridge, I could see the workmen maneuvering the flag into place

Made giant flag

The flag, 39 by 71 feet, was made by Seaman Mary Fourcade, of NAS Patuxent River, as a bicentennial project. Mounting the flag proved to be more difficult than I first thought. It was a good thing there wasn't a strong wind that day, because if there had been, we might have all seen the world's largest kite, with a tail of three or four Center workmen trailing behind it.

My first stop was the Crew Systems Department, where the Ejection Tower was demonstrated four times that day. As the tower lifted a dummy in an ejection seat to 40 feet, I was able to get an idea of the sensation of a man sitting in that seat, rocketing skyward at tremendous speeds. It was scary to say the least.

Right across from the tower stands the Crew Systems building, within which is located the world's largest human centrifuge. As I entered the brightly decorated building, I glimpsed a crowd of people. But be-

fore I could turn around to leave, I saw in the background, behind the crowd, a dynamite visual display called the Motiva. The Motiva told CSD's story through a combination of flashing pictures coordinated with rock music. As I watched attentively I was whisked away with a group of people to tour the building.

Before I could regain my orientation I was standing beneath the giant arm of the centrifuge, at the end of which I could see a sphere called the gondola. In front of my group stood a man, explaining "G" forces and how the centrifuge worked. And then it started, the gondola began to move. I didn't know if I should duck or run, so I stood there frozen.

Experiences centrifuge

As the centrifuge spun above my head, I imagined I was deep in space, heading for the moon. I could feel the wind, it was all around me. The centrifuge spun with enough force to cause actual winds inside the chamber. As it came to a stop, the narrator, Paul Edwards, said that if the centrifuge was moving as fast as it could, this group would not be able to stand firm in the chamber, we would all be spinning too. So I took a deep breath and departed.

The next stop was the Naval Navigation Lab. There I got a personal drawing from a Calcomp Plotter and computer just by telling the operator what my birth date was. By telling an operator my name, sex, height, and weight, another computer would print out my perfect date. The line was long, so I didn't wait but some of the others got hooked up with the Hunchback of Notre Dame, or Father or Mother Time. Aside from the fun and games, there were also



The 155-member Archbishop Wood High School Marching Band, directed by Gary Zimmaro, performed a modified field show at the Open House.

A day jam-packed with excitement

exhibits of the serious work done by NNL.

From there I went to the Systems Department, which had two main exhibit areas. In the P-3C Update Lab people were playing war games on the computer and having another computer print out their personal horoscopes. They were even talking to a computer, and listening to it talk back. The other Systems exhibit area was the Flight Simulation Lab. Among the attractions in this Lab were simulated flight demonstrations controlled from the inside of two sphere-shaped simulators, each outfitted with an airplane cockpit.

Computers play chess

My next stop was the Computer Department. There they gave away free Snoopy calendars, which were printed by a computer. I could see people playing baseball and chess with the computers. As I left the Computer Department, I realized I was weary if not tired. As I walked on and collected myself, I noticed the Welfare and Recreation Association's refreshment stand. The many cheerful volunteers stood ready to serve hot pretzels, hot dogs and soda. After eating, I was somewhat refreshed and now ready to continue the tour.

Down the corridor outside the Technical Support Department's TV Studio stood a TV camera and screen, allowing people to see themselves on TV. The Public Affairs Office was showing movies in the auditorium located across the hall. Among the features were a comedy called "Old Flying Machines," and a naval bicentennial salute film called "Not for Ourselves Alone". They were shown continuously.

As I stood there watching the TV screen, I heard an announcement

over the address system. It said that the Archbishop Wood High School Band would appear in fifteen minutes. As I hurried across to the Naval Air Facility, I noticed the huge flag once again.

Over at NAF, I saw a marvel of exhibits. There were children in line waiting to get their pictures taken in a jet. I saw all kinds of Naval aircraft including the Harrier, the Marine vertical (VSTOL) take-off jet.

The hangars themselves were brightly decorated with a display of historical flags, on loan from the Pennsylvania Sons of the Revolution Color Guard Unit, hung high above the ground to add to the bicentennial flavor.

As I watched the band march around the hangar, I picked up a souvenir balloon and munched on another hot dog from a near-by stand.

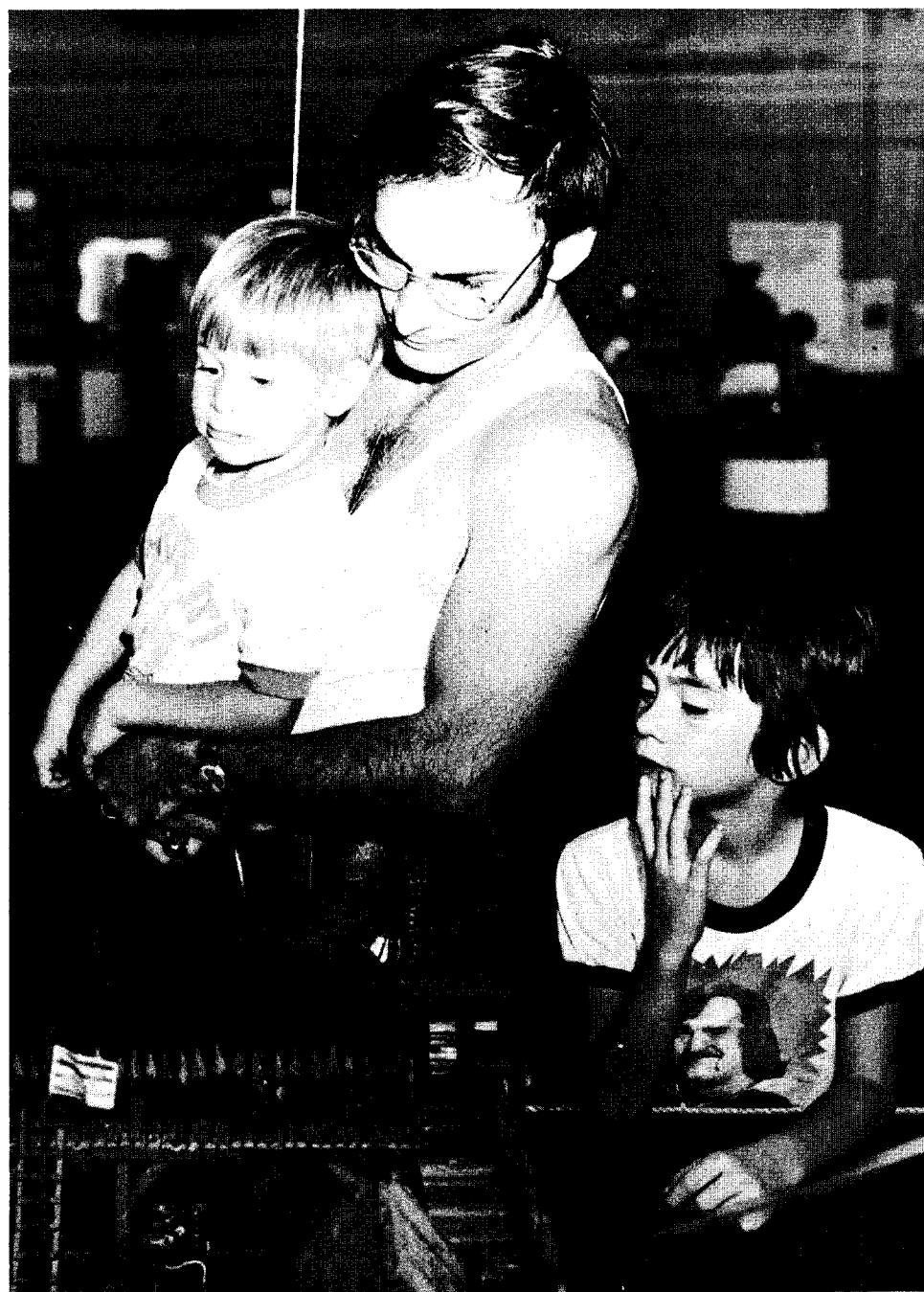
Skydivers perform

The culmination of the day was reached when four skydivers from the Naval Air Technical Training Center, Lakehurst, NJ, left the NAF Helicopter and started their 10 second free-fall from 3,500 feet. The performance included four jumps, each higher than the last.

Afterwards I watched an exciting fire-fighting demonstration by the NADC Fire Department.

As I walked back to see the things I had missed, I realized what a nice time I was having and gave a silent thank you to all the people who volunteered their services to make it possible.

I along with the rest of the Public Affairs Office staff, join with the Center Commander in saying thanks a lot, we'll be looking for you at the next open house.



A miniature fort was one of the exhibits with a distinct bicentennial flavor, reminding visitors of how far military installations have progressed in both purpose and appearance.



Debbie Wurst, who worked in AVTD, voiced her appreciation of the chance to work at NADC this summer.



CAPT Riggsbee received a replica of the Liberty Bell from the summer aids.

Summer aids hold Recognition program

By all accounts, this year's summer aid program was one of the best ever. Supervisors comments range from the one-word accolade, "Outstanding," to statements stressing the program's mutual benefit, such as, "Not only have I derived satisfaction from being able to help someone else learn, I have also learned. In teaching, I have discovered areas in my own job performance which can be improved."

This year is the 10th that the Center has participated in the national program. Of the 56 summer aids on board, 35 came from the Bristol Township School District and 21 from the Centennial School District. The aids, all financially disadvantaged youth, received the minimum wage of \$2.30 an hour.

TSD employed 13

In the first years of the program, the majority of the aids were assigned to Public Works. This year, TSD employed the largest number of summer aids, 13. Supply was second with 12. For the other departments, the breakdown was: PWD-8; AVTD-5; SD, AETD, CSD, and NAF-3; PFMD and CSD-2; and>NNL and CD-1.

The Center also employed three summer counselors to assist CPD in administering the program: John Baginski from Centennial School District, and Joe Boles and Larry Grebe, both from Bristol Township School District. Mr. Boles worked directly with the aids assigned to PWD. Mr. Baginski and Mr. Grebe handled the administrative and general counseling details.

The summer aids arrived at NADC in two groups. Those from Centennial reported on June 14 and those from Bristol on June 21. They worked through August 27. This year there

has been a significant number of supervisors who have requested having their aids extended until the beginning of the school year.

The process of selecting aids begins early each spring when high school counselors survey interested students. Possible candidates then undergo the scrutiny of their school officials and the Pennsylvania State Employment Office to certify their fitness and financial eligibility for participation. The final selection comes once the Center announces how many aids it can place.

Held ceremony

On August 19, the aids held a ceremony to thank their supervisors and the Center for the chance to work this summer. Joseph De Franco, Coordinator of the District Work Experience Program for the Bristol Township School District and Dr. John Brabazon, Principal of William Tennent High School, Centennial School District, were on hand to help pass out the recognition certificates to the supervisors. Both administrators expressed their thanks to the Center for hosting the program and praised the supervisors and the youngsters for their hard work.

Dr. Gary Winderman, Admissions Counselor for Bucks County Community College, presented certificates to the 52 aids who completed the college's two-week reading, counseling and recreation program. This was the seventh year that the college has offered the program.

In return, Debbie Slavin, an aid from Centennial, gave Dr. Winderman a plaque as a token of the aids' appreciation for the opportunity to participate in the program.

Each year, the Welfare and Recreation Association gives a \$25 savings

"The fact that the summer aids were able to integrate into the work force to the point where they were almost invisible is an indication of the acceptance and the success of the program."

Gilbert Ridley

Deputy Equal Employment
Opportunity Officer

Pay tribute to NADC And their supervisors

bond to the aid who submits the best suggestion for improving the summer aid program. This year, Elmer Krauser, W & R Chairman, presented the bond to John McGowan, Bristol Township, for his suggestion that the aids be given the opportunity to learn more about their respective departments and how each functions at NADC. He also suggested that supervisors spend time at the beginning of the summer instructing the aids in specific skills to enable them to perform more complicated jobs. Mr. Krauser noted that CPD is considering instituting a program of this type.

Debbie Wurst, Bristol Township, expressed both her personal appreciation of the program and the feeling of many of the aids when she said, "It's been a really pleasurable experience. I've been exposed to a lot of things I wouldn't have known about otherwise. It's

been a really special summer for me and I know I'll take a big chunk of the people who've helped me when I leave."

James McCoy, Bristol Township, told the audience of over 100 that it has been a very rewarding summer for him, too. On behalf of the summer aids, he presented CAPT Rigsbee with a miniaturized replica of the Liberty Bell in thanks for providing the aids with the opportunity to work at NADC.

CAPT Rigsbee, visibly impressed with the gift and the entire program, said, "It's very meaningful to me. I was moved by what Debbie said and I can assure you that the program's going to be here next year." He added a personal note of thanks to the supervisors for taking the time and caring enough to make the program work.

CSD evaluates anti-exposure suits To help pilots make best choice

by Bob Leko

The Crew Systems Department is now engaged in the evaluation of anti-exposure suits for tactical jet pilots. The purpose of the suits is to protect pilots in both freezing air and cold water environments.

At the present time the Navy has several different types of suits. By and large these suits are unsatisfactory for one reason or another — discomfort, immobility, or body heat build-up or loss.

Early this spring the Center made a commitment to provide the Fleet sufficient information so that they might make rational decisions on exposure suit use and choices before the 1976/1977 winter season. Additionally, NADC desired to provide the best possible suit to the Fleet by winter.

Since that time, CSD has been evaluating five anti-exposure suits. These are: a Ventile Assembly (CWU-21/P); Divers Wet Suit Assembly;

Flight Coverall Assembly; VWS Assembly (CWU-33/P); and a modified VWS Assembly (CWU-33/P Mod). In this context CWU stands for Constant Wear Unit, VWS stands for Ventilated Wet Suit.

There were three main aspects to the program. In one, CSD obtained subjective/objective data on the exposure protection given to aviators in the various suit alternatives.

A CSD team studied the performance of human volunteers wearing these five suits. They were submerged in cold water at two temperatures, 45° and 60°F. The evaluation was on the dual basis of comfort and exposure protection.

Secondly, the group gathered subjective data on the suits' flight comfort. This data included both pre and post flight comfort of the suits. Lastly, CSD obtained Air Force data on the thermal build-up of the suits on instrumented copper dummies.

Established data bank

From the information, CSD established a data bank of the suits' characteristics. This data bank contains the essential information needed for the final recommendation.

The effort was directed by Jon Harding, Engineering Division Head, and George Hildebrand, the project coordinator. Mr. Hildebrand says "a 'Tiger Team' was assembled whose mission was to look at all the garments to establish that no major problems existed. They ran subjective user tests, and they conducted the cold water tank immersion tests."

One member of this team, Craig Jencks, modified the CWU-33/P suit to give it more mobility. Richard Bell and Major Wally Boeck, NADC's Marine Corps liaison officer, designed a mini-ventilation system to make the Divers Wet Suit Assembly more comfortable.

Tested suits' comfort

Stan Winsko was assigned to the Marine Corps Air Station (MCAS) at Beaufort, SC, where Marine aircrews tested the suits for two weeks on the ground for subjective comfort and utility. The ground simulation covered all aspects of the suits' functions. Major Boeck personally flight tested all the suits in an A-4L aircraft. Other team members are: Lou Santa Maria, Gene Coliacicco, Al Hellman, Rosalie Gilles, George Gillespie, and Bill Zarkowski.

Major Boeck says the Fleet will receive the results of the testing in an article in the November issue of "Approach" magazine. This decision constrained the team with a 9 August 1976 deadline. A date which was met. Of course having met the target date for the information does not solve the exposure problem, though it does directly help the Fleet. CSD is continuing in its exposure protection efforts.



George Hopely (left) Audio-Visual Director, Bristol Township School District, and Joseph DeFranco, Coordinator of Bristol's District Work Experience Program, helped pass out recognition certificates to Center supervisors.

"Thank you for sending us such cooperative and conscientious workers,

they were a great help."-- a summer aid supervisor

Center scope



CAPT Rigsbee used an issue of the "Reflector" to illustrate a point at the NCAA luncheon.

CAPT Rigsbee addresses NCAA

Looking into what the future holds for NADC, CAPT Clifford M. Rigsbee, Commander, NADC says, "Emphasis will be placed on quality productivity, software, and community relations."

CAPT Rigsbee spoke to the Naval Civilian Administrators Association (NCAA) at their August luncheon meeting.

On the subject of quality productivity, CAPT Rigsbee says that since we have become the product-oriented organization we visualized in the past, we must now focus on the quality of the product and "get quality out the door." He says, "Pleasing the customer is the name of the game. If we don't please our customers, they may go elsewhere."

"Understanding the importance of software and software engineering is also an important factor in the future of NADC," says CAPT Rigsbee. "The development of life cycle equipment, computers and other software equipment will be strongly incorporated in our working plans in the coming years."

"We must also build visibility in community relations. This is the responsibility of everyone at NADC." CAPT Rigsbee says we need the community as much as the community needs us. "We will cooperate with the community in as many ways as possible to build a better relationship between NADC and the community at large."

CAPT Rigsbee would like to see the NADC Follies happen again. The NADC Follies was a comedy and talent variety show held annually for the benefit of Navy Relief and the Welfare and Recreation Association. CAPT Rigsbee says, "The Follies was a good way to boost the spirit of personnel at NADC. After all, people are the spice to the recipe of living." **Dot Clooney**

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Naval Air Development Center

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CAPT Clifford M. Rigsbee — Commander, NADC.
Joseph P. Cody — Public Affairs Officer.
Linda S. Battistini — Editor.

Federal Women's Week date set

The Center will sponsor a variety of programs during Federal Women's Week, September 13-17. The highlight of the week will be a luncheon on Wednesday, September 15, featuring Janie B. Taylor, the Federal Women's Program Coordinator for the Naval Material Command. At this luncheon, the Buxmont Chapter of Federally Employed Women, Inc. (FEW) will present its first Personal Achievement Award. FEW and the Center's Women's Advisory Committee are co-sponsoring the luncheon.

Other programs planned include presentations by Anne Garrett, the Director of the Bucks County YWCA, and Kathleen Riordan, Program Development Specialist for the U.S. Department of Labor's Women's Bureau. Mrs. Garrett and Ms. Riordan will speak at 1:00 p.m. in the Center auditorium on September 13 and 14, respectively.

For more information on Federal Women's Week activities, contact Madeline Hughes, NADC's Federal Women's Program Coordinator, x2515.

9 pursue full-time studies

Nine NADC employees have been selected to attend courses of higher education during the coming school year under four different Navy and Center programs.

Thomas Castaldi and John Shannon, both of AETD, will attend the Naval War College's senior and junior divisions, respectively. The Naval War College, Newport, R.I., was founded in 1884 and is the Navy's senior educational institution. Its goal is to enhance its students decision-making ability and to conduct research to develop advanced naval strategic and tactical concepts.

Four Center engineers will attend various universities under the Weapon Control Systems Engineering Post-Graduate Training Program. This program was set up to meet the continuing need for qualified personnel in the physical sciences and in the field of weapon control systems engineering.

Barry Knouse, SD, will attend the Naval Postgraduate School, Monterey, CA; Daniel Becker, AETD, and James Verdi, SD, will attend the University of Michigan, Ann Arbor, MI; and William Hahn, SD, will attend Rensselaer Polytechnic Institute, Troy, NY.

Fredrick Kuster, AVTD, will attend Princeton University, Princeton, NJ, and Eugene Macur, AETD, will attend Drexel University, Philadelphia, under the NADC Advanced Graduate Study Award Program. Thomas Glavich, AETD, will attend the University of Arizona, Tucson, AZ, under the NADC Graduate Study Award Program.

These last two programs, which differ in the candidate requirements and the amount of Center funding furnished, were established to ensure a supply of competent individuals in various vital work areas.

4 win at W&R golf tourney

The August W & R golf tournament was held at the Jeffersonville Golf Club with a light turnout of 24 due to rain.

The winner and second place finisher, both retirees, were Bert Munroe and Bob Moore with net scores of 68 and 69 respectively. Larry Dempsey, TSD, and Jeff Dixon, NAF, won the closest-to-the-pin prizes.

The September 14 tournament will be held at the Montgomeryville Golf Club. **Gordon Woods**

Bearcats top softball league

The Bearcats defeated the 8th Inning to win the Men's Intramural Softball League championship. Second-half standings were: Bearcats, 7-0; Swingers, 6-1; Allstars, 4-3; Charlie Horses, 3-4; Supersonics, 3-4; 8th Inning 3-4; Phantoms, 2-5; and NNL, 0-7.

Jack Kenton

The Commander salutes:

...CAPT Laurence H. Blackburn and the CSD personnel responsible for the success of the recent orientation field trip by the Student Flight Surgeon Class from the Naval Aerospace Medical Institute.

...Rose G. Mandrack, Small Business Specialist, and William N. Turner, AVTD, for their contributions to the success of the Northern New Jersey Business Opportunity Conference.

...William F. Lyons, Associate Technical Director, for his outstanding performance as Chairman of the Director of Navy Laboratories' Ad Hoc Committee to study the high grade position structure in the Chief of Naval Material Laboratories.

...Dr. Rudolph A. Stampfl, Director AETD, Eileen M. Healy, William N. Norr, Chester M. Nowicki, Rose Paul and Phillis Romanski, all of AETD, and LCDR Peter O'Connor, Director, PWD, and the responsible personnel for the success of the recent IEEE Computer Society Workshop.

...AT2 Robert W. Anderson, AX3 Donald R. Blevins, AXAN Keith E. Ebel, OS2 Joel F. Leckron, STG2 Robert E. O'Hara, AX2 Gary P. Shaw, STG2 Joseph E. Suchochi, EMC Harry C. Walton and AT1 Dennis D. Woodard, all of NAF, for their contributions to the LAMPS MK-III H-2/SR Developmental Test Program.

...LCDR Charles J. Theisen, Dr. Lloyd Hitchcock and Dr. Lloyd M. Crumley, all of CSD, for their assistance to LT William E. Baumgartner, a Naval Postgraduate School student, during his experience tour at NADC.

...Edward E. Harper and Charles K. McGill, both of ASW, for their work on the marine test support equipment during the recent DAQS-13D dipped sonar field testing for the Federal Republic of Germany.

...George F. Eck, ASW, and Charles E. Halko, AETD, on their graduation and excellent academic record at the senior and junior divisions respectively of the Naval War College.



Stan Griscavage (left) and Elmer Krauser handled peanut distribution at the W&R picnic. (Photo courtesy of Shirley Howard.)

Prizes highlight W&R picnic

The Welfare and Recreation Association (W&R) held its annual picnic in July. Approximately 2200 people attended the event. Elmer Krauser, W & R Chairman, says, "The picnic committee would like to thank all those who helped in making the day complete."

The recreation committee, headed by Jean Berdick and Rebecca Gray, organized a series of races and games for all ages.

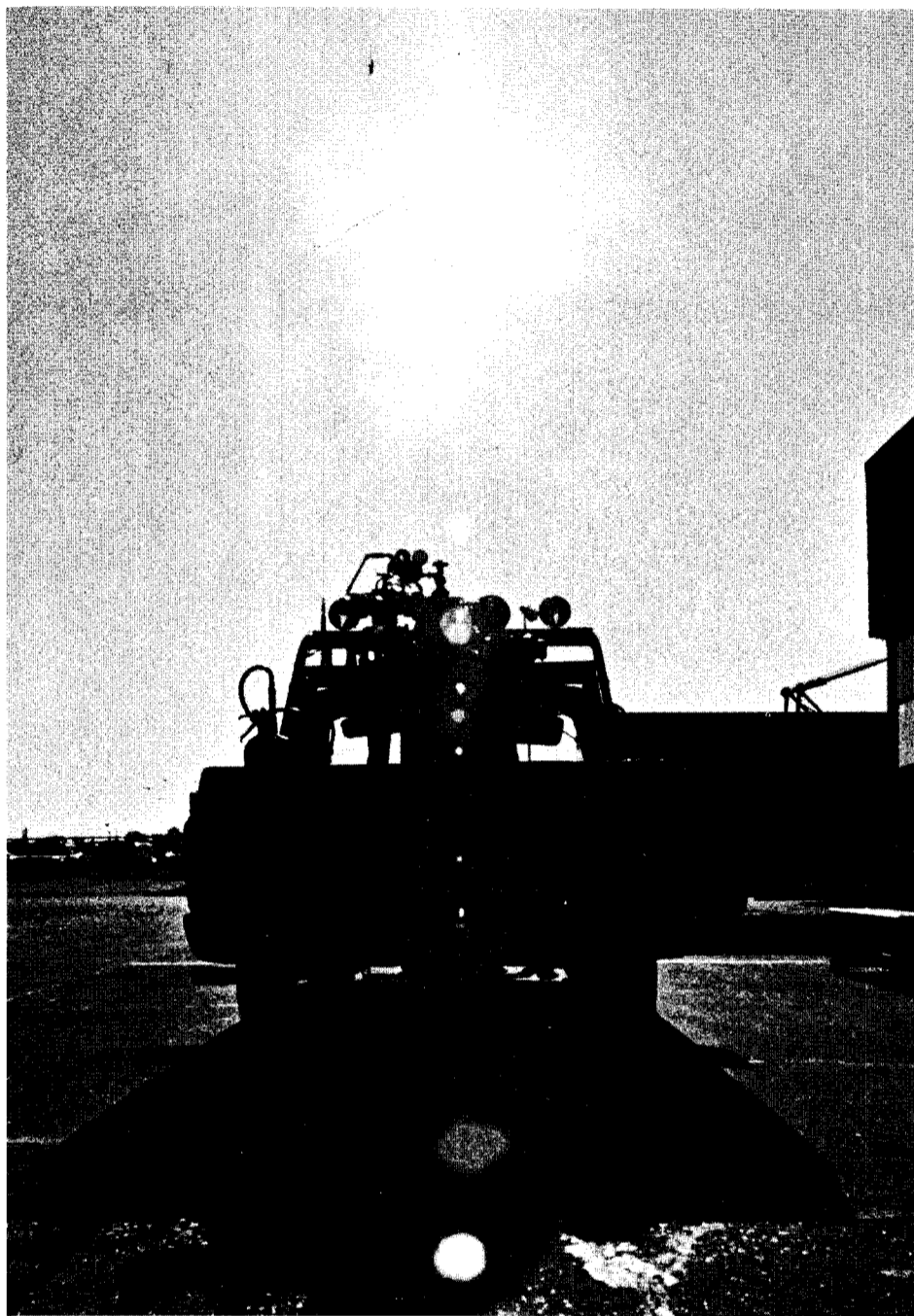
There was also a drawing for door prizes. The winners were: Emil Paulovitz, TSD, a television; Debbie Wurst, summer aid, AVTD, a ladies' watch; AT3 Frank Vesel, NAF, a radio; Judy Honig, summer aid, TSD, oven ware; Lester Ransom, PWD, an electric drill; and Donna Fallo and William Geissler, both of Supply, Al Bates, AETD, and Shirley Howard, NAF, all received tote bags. **Elmer Krauser**

NADC Reflector

Volume 21, Number 4

Naval Air Development Center, Warminster, Pa.

October 1976



The morning sun silhouettes the fire chief's pickup truck.



Fire Captain William J. Adams says all fires on Center should be reported, even those that are successfully extinguished without the fire department's aid.

Firefighters ready to respond On less than a minute's notice

The Center's firefighters, like firefighters everywhere, work at two speeds: one, a day-to-day speed for maintenance, training and inspecting activities and the other, top speed for responding to emergencies.

According to William J. Adams, a captain in the fire department, it takes approximately 45 seconds to get the fire trucks moving once the personnel are notified of an alarm.

Besides fire calls, the department responds to calls on gas leaks, aircraft and field emergencies, fuel spills, smoke reports and requests to stand by for such things as welders working in a hazardous area. Mr. Adams says the fire department responds to approximately 310 situations a year.

Divide responsibilities

At NADC, there are 42 firefighters in the department, headed by Fire Chief Gilbert L. Bohn. Firefighting duties are divided between the Structural Fire Division and the Crash Crew. As their names imply, the Structural Fire Division has primary responsibility for all Center buildings, including the officers' quarters and Shenandoah Woods, the enlisted housing area.

The Crash Crew, which is located next to the airfield, handles all aircraft and airfield related matters. Of course, both divisions work together whenever the need arises.

Two fires in one day

On October 23, there were two unrelated fires in Shenandoah Woods. The Structural Fire Division responded to both and succeeded in bringing them under control and putting them out. A total of three families were affected by the incidents.

One of the occupants of one of the homes that suffered a fire received minor burns as did Fire Captain Adams. Four firefighters suffered smoke inhalation at the scene. At both fires the firefighters were assisted by the Warminster Fire Department.

NADC has mutual aid agreements with ten fire companies in the surrounding areas. About 80 percent of the Center's firefighters serve in volunteer fire companies in their communities.

On duty 24-hours-a-day, the firefighters have many tasks besides responding to alarms. They inspect the base once each month. They check fire hydrants, sprinklers, fire phones, call boxes, coffee messes, extension cords and general housekeeping.

An example of the problems they find in inspecting the base is the improper use of timers in coffee messes. Past experience has proven that many of these timers are faulty. Except for timers that are part of the original coffee equipment, they are considered a fire hazard and have to be removed.

In the firehouse, the firefighters routinely inspect and service their equipment. They also recharge dry chemical and pressurized water fire extinguishers.

Recently, the department installed preconnected hoses on the fire trucks. According to Firefighter Vincent Crusco, these hoses are ready to be immediately attached to fire hydrants. It takes less than 30 seconds to put these into service versus the one and a half to two minutes it takes if the hoses have to be connected at the scene.

Always report fires

One problem Mr. Adams has encountered is that occasionally when people notice a fire, they attempt to put it out themselves. Sometimes they succeed, however, other times they do not. The problem lies in the delay in reporting the fire while trying to extinguish it. This delay can allow a fire to build up and cause greater damage than it would have if the fire department were notified immediately.

There are several ways to report a fire on Center. One is to dial extension 2333. The red stickers on all NADC telephones carry this number. There are also fire boxes and red fire phones located throughout the Center. Housing and the Crash House have direct lines to the fire department. All these devices ring either the switchboard or one of the direct lines in the fire house.

The Center's two-piece engine company consists of two pumpers, a 2000-gallon tanker and the Chief's pickup truck. The pumpers, commonly referred to as fire trucks, can each pump 750 gallons of water per minute and can support four hoses at once.

In operation, each truck carries a driver and a fire officer in the cab and three firefighters on the back.

The tanker, Mr. Adams says, is a "nurse truck." It services the pumpers or the crash trucks in areas with no ready water supply.

The department recently acquired yellow coats and helmets like those

(Continued on page 2)

Viewpoint

What do you think of the trial flexitime program? How has it affected you?



Jerome S. Bortman,
Technology Transfer
Coordinator, SD

"I think it's a good idea and improves people's general morale to know they have a little flexibility in their working hours. I use it, particularly in late afternoon for meetings and phone calls to the West Coast."



Bettie F. Simpson,
Clerk, NNL

"It's really great for me. It saves my leave. When I have something I want to do, I can do it and then work the extra time."



Jeanne M. Birrane,
Clerk-Typist, CPD

"I use flexitime. I just wanted to come in earlier so I could get home earlier."



Robert W. Leko,
Aerospace Engineer, AVTD

"I don't like it for myself. The regular hours are convenient and I like a regular schedule."



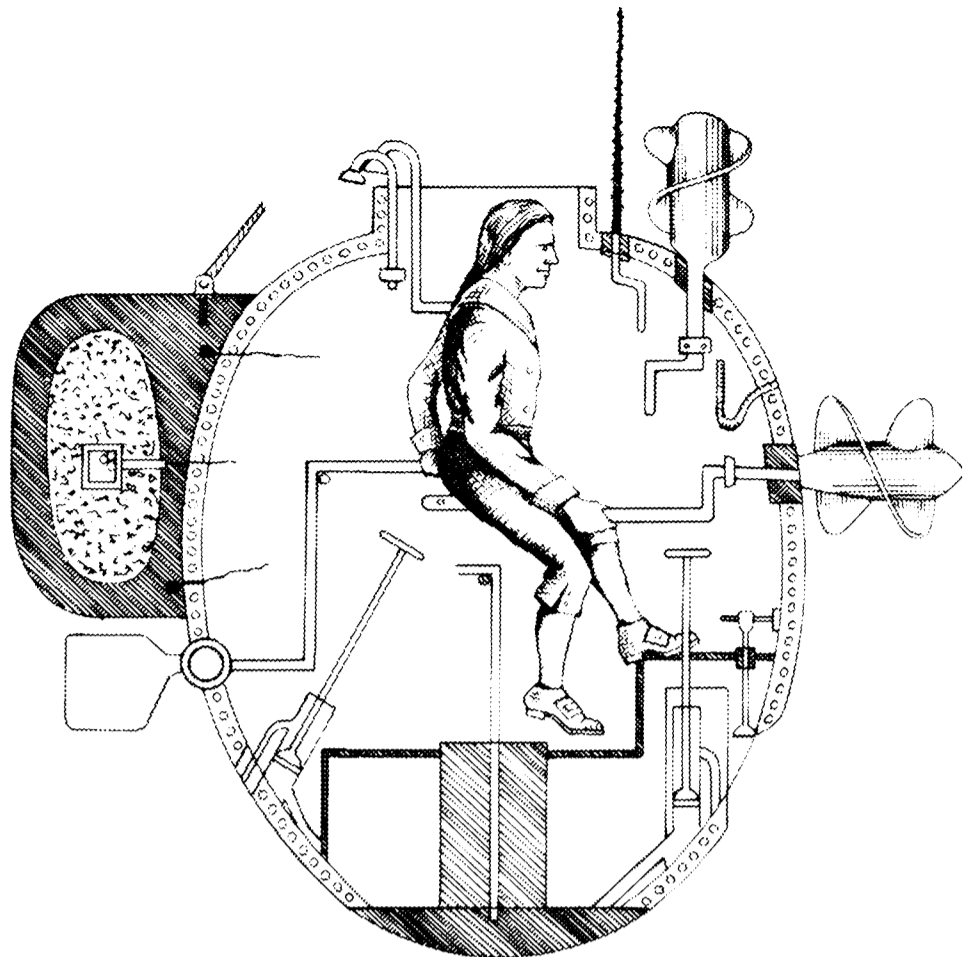
SGT John M. Kupetz,
Guard Supervisor, TSD

"The guards' schedules do not permit flexitime. Flexitime affects us because traffic comes in earlier and we have to send people out to open doors or check out keys to early arrivers."



Deborah L. Schiele,
Clerk-Stenographer, NNL

"I like it. I'd rather come in late and get out late. I can do a lot of things before I come in."



Sergeant Lee--- And the amazing TURTLE attack

Although the United States Navy didn't get its first submarine until 1900, America's submarine service legitimately could celebrate its bicentennial this year. History's first attack by a submarine upon an enemy warship was on September 6, 1776, says the National Geographic Society, when an American submersible manned by SGT Ezra Lee tried to sink the HMS Eagle, a British flagship in the waters of New York Harbor.

Egg-shaped sub

The one-man sub was an egg-shaped craft named Turtle. Its designer, David Bushnell, was ahead of his time. He outfitted his primitive vessel with a conning tower, snorkel breathing device, screw propellers for vertical and horizontal propulsion, ballast tank, and a depth gauge of his own invention. The sub's instruments were illuminated by cold light from pieces of phosphorescent wood.

Bushnell developed his submarine in Connecticut in 1775. Its oaken hull, made in two halves and fitted together, was only seven feet tall and six feet in diameter. Its sole occupant, perched on a sort of bicycle seat, had to be a one-man band to maneuver the novel vessel.

The narrow end of the wooden egg was its keel, weighted with lead ballast to give it stability. With his foot, the crewman could turn a valve to flood the tank below him to sub-

merge, shutting the valve when he attained negative buoyancy. To surface, he worked "two brass forcing pumps" to eject water from the tank.

Underwater, vigorous cranking of a handle directly in front of the operator turned a screw-type propeller that pulled the submarine forward or pushed it backward.

A second crank overhead turned a similar screw that would raise or lower the vessel's operating depth. Lacking a third hand, the crewman steered by holding the tiller in the crook of his arm.

Three hands needed

At the end of a metal rod extending from the submarine was a bit that could be detached after it had been screwed into the hull of the unsuspecting target. A cask with 150 pounds of powder and a timing device was attached to the bit by a line. The submariner was to release this "torpedo" and pull away to safety before the explosion.

SGT Ezra Lee did everything right, but the copper sheathing placed on the hull of the British warship as protection against teredo worms was too tough for his auger. Although unable to sink the 64-gun HMS Eagle, the pioneer Turtle submarine made its escape—pursued by an English longboat whose crew may have been more curious than hostile. (AFPS)

Firefighters respond on short notice

(Continued from page 1)

used by the Philadelphia Fire Department. Their light color offers greater visibility, especially in smoke-filled areas, than the darker colors used in the past.

The Center's firefighters receive a great deal of professional training. Each day each of them undergoes one hour of on-the-job training. They all attend professional fire school, gas school and pumper

school. Each firefighter, Mr. Adams says, is certified for basic and advanced fire school. Three of the firefighters hold Fire Science degrees, two are currently enrolled in degree programs and seven are planning to start.

Because the firefighters receive such extensive schooling, Mr. Crusco says, "Our department is as well if not better trained than the average city fire department."



From left: Sue Skoda, Amy Knapp and Kathy Madison present the cakes they baked for the 1976 Navy Birthday celebration.

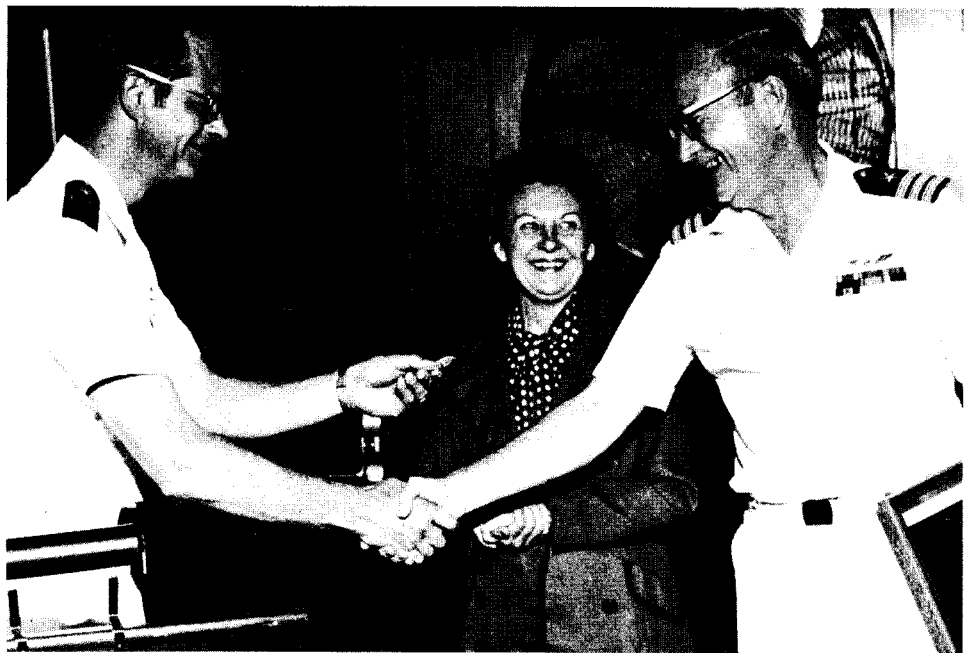
201 years old and still going strong

NADC and NAF celebrated the 201st birthday of the U.S. Navy on October 13.

Highlighting the event were two cakes baked by student bakers at the Middle Bucks Area Vocational Technical School, Jamison, PA. Three students, Sue Skoda, Amy Knapp and Kathy Madison, baked and decorated the two sheet cakes with naval motifs.

CAPT Clifford M. Rigsbee, Commander, NADC, cut one of the cakes and served the first three pieces to the students. The second cake was presented to NAF at Quarters, a formation of all military personnel.

The day's events included a showing of the Navy's bicentennial movie, "Not for Ourselves Alone." The theme for the 1976 Navy birthday was Heritage and Horizons.



CAPT John R. Tuttle, Director, SD, and acting Center Commander, left, presented official retirement papers and a 30-year service pin to CDR Frank Brown. CDR Brown's wife Patricia participated in the retirement ceremonies.

CDR Brown, former ASW Director, retires

CDR Frank H. Brown, Director of Antisubmarine Warfare (ASW) Programs retired from the Navy on September 30, 1976. At the time of his retirement, he had 29½ years of active duty to his credit.

Entering the Navy as an enlisted recruit in 1947, he rose through the ranks and was selected for Officers Candidate School. Following graduation from the school, he was commissioned an ensign in 1958.

In 1968, CDR Brown reported to NADC as Antisubmarine and Analysis Center Project Officer. He became the ASW Programs Officer in 1969.

He was awarded the Navy Achievement Medal in 1971 for his significant contributions to the In-

tegrated Mediterranean Plan operations. CDR Brown was instrumental in establishing the Director of Navy Technology's Air ASW Strategy Panel and in developing the initial technical strategies.

He sponsored the "Technology Y" Study, from which evolved a new concept of technology management now embodied in the Center's recently established Technology Management Office.

In his farewell letter to CDR Brown, CAPT Clifford M. Rigsbee, Commander, NADC, said, "Your greatest forte was your ability to work with people, to inspire, lead, direct and persuade in the accomplishment of objectives. Your per-



by Bob Leko

The 1976 Combined Federal Campaign currently being conducted at NADC collects funds for three major organizational groups: the International Service Agencies, the National Health Agencies, and the United Way Agencies.

There are six International Service Agencies which provide help to needy people on a world-wide basis.

The ten National Health Agencies are societies, associations, and foundations, each of which are predominantly concerned with one major illness or disease. New to this category this year is the Arthritis Foundation (Eastern PA Chapter).

The United Way Agency group includes 34 organizations, the majority of which are based in Bucks County. New to the United Way this year are Aid for Girls of Bucks County, the Bucks County Council on Alcoholism, and the Children's Developmental Program for the Handicapped.

Chairpersons coordinate

The CFC effort in each department is coordinated by the chairperson, who is assisted by keypersons. Keypersons working on the CFC this year are: AETD — John L. Figgles, Warren H. Payton, Michael E. Mocerter, Richard D. Nussbaum, Lawrence Edwards, Marvin J. Foral, John Mankelwicz, Peter K. Bruno, Thomas B. Gabrielson, Thomas Bahnck, John M. Tralies, Frederick J. Alford, Frank J. Hirsch, David A. Poehner and Deborah A. Sztubinski.

And, AVTD — Joseph W. Frisco, Denise Byrnes, Agnes B. Dougherty, Ellen M. Kelly, Raymond N. Piro, Madee Young, Edward W. Kenkelen, George E. Poorman, Jacob Eyth, Marlene A. Ieradi, Ronald L. Nave, David A. Lutz, Mary M. Sanderson, Robert B. Spotts and Helen V. Clappier.

Also, CD — D. Joan Mackenzie and Christine F. Stewart. And, CSD — John G. Nelson, Phyllis E. Morway, Craig S. Jenks, Suzanne M. Reeps, Louis A. D'Aulerio, TD1 Robert Reinwald and Eleanor J. Walsh.

Also, NAF — LT Franz H. Porter, SR Jean L. Moss, AC2 Gregory D. Buhler, John J. Fuller, John J. Rossetti, ADJ2 Dennis L. Baum, AT3 Vincent M. Detrick, AE3 James Dillaman, ADJ2 Michael Bell, AMS2 Franklin Pilla, PF1 Danny Young and AZ1 William J. Norton.

And, NNL — William L. Bristol, Berenice Condron, Morris I. Engler, John B. Kearney, F. Robert Miller, Deborah L. Schiele, Joseph A. Violante and Debra L. Yentzer. Also, P&FMD — Rose G. Mandrack, Barbara J. Kempf, Joseph F. Dugan and William C. Hallow. And, PWD — Kermit E. Peters, Helen A. Sullivan, Joseph W. Tarvin, Benjamin Drexler and Meredith Radloff.

Additional keypersons

Also, SD — Jeanne C. Yoder, Blanche M. Amacker, Esther M. Stackhouse, Melanie Frey, Neil L. Douglas, John M. Tate, William W. Brown, Robert C. Polaneczky, Lee B. Frantz, Michael S. Raitman, William H. Bailey, Andrew F. Pavelchek, David Smith and Terese A. Smuszkiwicz.

And, SUPPLY — Lillian Love, Susan L. Schopf, Irene Kauker, Mary A. Kane and John D. Scott. Also, RIOCC — LT Michael Marker.

And, TSD — Christine L. Taylor, Barbara A. Wiley, John Swan, Cynthia L. Yanoff, Benjamin F. Williams, Remo Buono, Richard J. Coppola, Gerald M. Gibbon, Kenneth Mosby and Joseph J. Thompson.

Department chairpersons not listed in the September 1976 issue of the "Reflector" are Carol Dorsey of Patent Counsel and John Scott of Supply.

Three ways to give

There are three ways to give to CFC — cash, check or payroll deduction. Payroll deduction provides a convenient way to give without having to come up with a large amount at one time. For example, a pledge of \$1 per day period costs less than two packs of cigarettes. If all 2607 persons on Center pledged \$1 per pay period, the amount collected would exceed the \$63,000 goal by \$4782.

Money given to CFC is distributed among all 50 participating agencies according to established percentages unless the donor designates how the contribution is to be distributed. The U.S. Civil Service Commission recently confirmed the fact that all designated money goes to the sources named in the amounts requested.

sonal stamp is firmly placed upon the Center and upon the people with whom you have worked."

At his retirement ceremony, CDR Brown officially bid farewell to his service as a Naval officer and said, "If I had it to do all over again, I'd do it all over again."

To our many friends:

Pat and I wish to thank you for all of the many thoughtful and warm kindnesses afforded us on the occasion of my retirement from the U.S. Navy.

Regards,

F. H. BROWN
CDR (RET)

Center scope

Annual contest entries due

The U.S. Naval Institute annually sponsors two contests which offer cash prizes up to \$1500. The General Prize Essay Contest seeks essays on topics related to the mission of the Naval Institute, "the advancement of professional, literary and scientific knowledge in the naval and maritime services." The writer of the winning essay will receive \$1500. First and Second Honorable Mention winners will receive \$1000 and \$750 respectively. Deadline for submitting entries is December 1, 1976.

The Naval and Maritime Photo Contest offers ten \$100 prizes for photos of naval and maritime subjects. The deadline for this contest is December 31, 1976.

Both contests are open to the public. For more information, contact the Naval Institute, Annapolis, MD 21402.

NAS offers Navy Relief course

The Naval Air Station, Willow Grove is offering a Navy Relief course for military personnel and their spouses, November 30 – December 10, from 9:30 a.m. to 1:00 p.m.

The course will include information on military pay and allowances, health benefits, survivor benefits, college loans, CHAMPUS, budgeting and other Navy Relief Society services and programs.

Call 441-1357 for registration information. Nursery services will be available.

The Commander salutes:

... LCDR Albert M. Bingley, CF, for his meritorious service and achievement while serving as LAMPS Technical Advisor.

... Albert J. McGlynn, SD, for his outstanding performance while assigned to the Commander THIRD Fleet under the Naval Science Assistance Program.

... Dr. Paul E. Rubin, SD, for his invaluable assistance to the NAVAIRSYSCOM Inspector General in conducting the command inspection of MSDO, North Island.

... Parke E. Andersen, TSD, for his outstanding performance in his duties in the certification effort for the YSH-3J helicopter.

... Richard A. James, SD, for his outstanding service as ship's coordinator aboard the USS MOUNT BAKER, during the installation of the LAMPS MK III H-3/EM equipment.

... Squire D. Thomas, SD, for his invaluable assistance as coordinator for integration and testing of the LAMPS MK III H-3/EM avionics and shipboard electronics aboard the USS MOUNT BAKER.

... LT William F. Burdick, Jr., SD, for his noteworthy performance in support of the Integrated Acoustic Communications System application in the NATO Live Exercise Teamwork-76.

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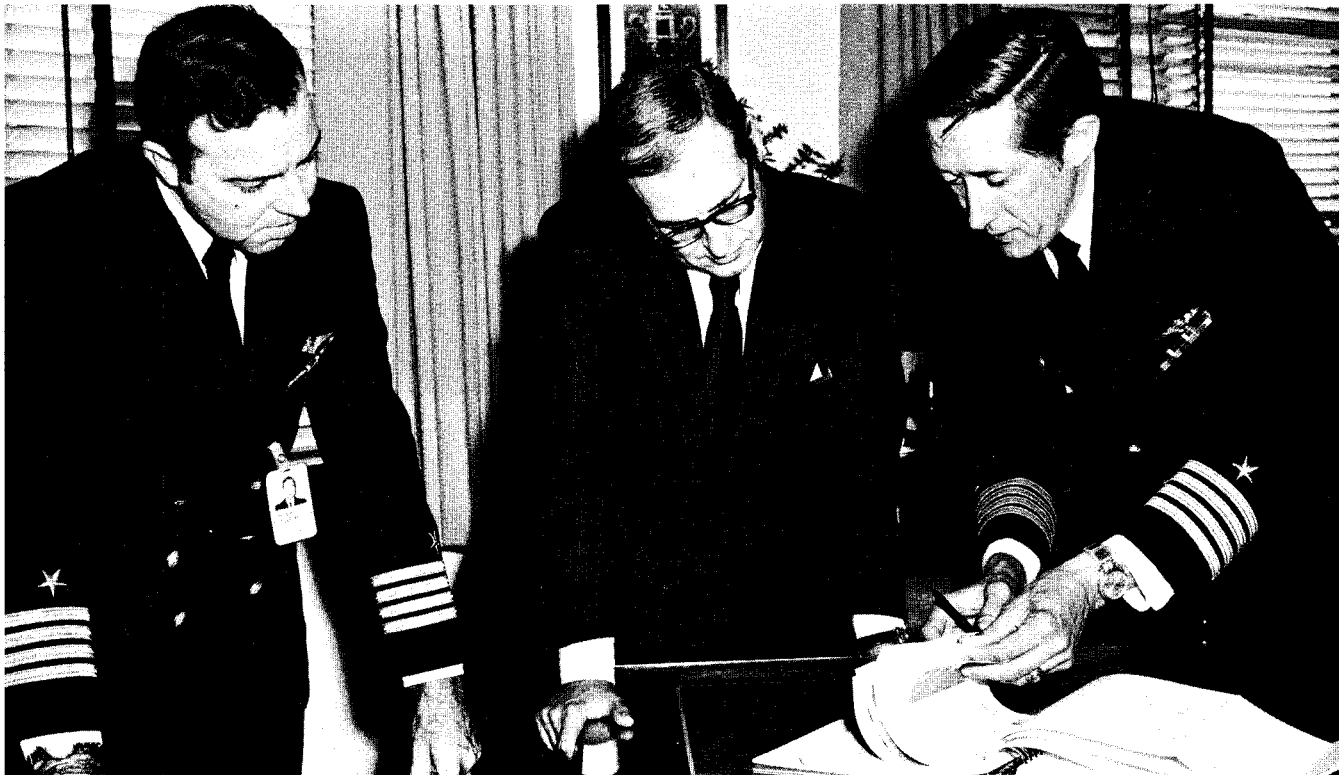
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All correspondence should be addressed to: Editor, Reflector, Code 011, Naval Air Development Center, Warminster, Pa. 18974 (441-2980).

CAPT Clifford M. Rigsbee — Commander, NADC.
Joseph P. Cody — Public Affairs Officer.
Linda S. Battistini — Editor.



Congressman Biester visits

From left: CAPT Raymond D. Slingerland, Chief Staff Officer, the Honorable Edward G. Biester, Jr., U.S. Congressman from Pennsylvania's eighth district, and CAPT Clifford M. Rigsbee, Commander, NADC. Congressman Biester visited NADC in October for a review of the Center's community relations programs. While at the Center, he received a presentation on the Air Installation Compatible Use Zone Study and toured Shenandoah Woods, the housing area for enlisted personnel.

Bloodmobile collects 117 pints

The American Red Cross Bloodmobile collected 117 pints on its September 8 visit to the Center.

The donors were: AETD — Lee D. Allen, Roland A. Bender, Andrew Bogusky, Arthur Brand, Peter K. Bruno, Catherine A. Burian, Stephen B. Campana, Lawrence F. Coar, Trudy, A DeGraff, Richard G. DeSipio, Robert G. Gindhart, James Grego, Patricia A. Grey, Carl E. Grove, Robert G. Houser, Roger W. Hontz, Glen J. Jadney, Joseph L. Leavens, Walter F. Lipski, Edward A. Mebus, Robert D. Melby, Lawrence J. Miller, Owen J. Moll, Paul M. Moser, Robert J. Pesavento, Alphonso Pittman, Louis M. Rakszawski, Walter J. Schoppe, John S. Sniscak, and John M. Tralies.

And, AVTD — Gene L. Barndt, John W. Clark, Kenneth A. Green, Charles R. Hegedus, Alan M. Kaniss, Peter Kiproff, Frederick A. Kuster, David A. Lutz, Henry D. Lystad, Edward G. Olson, John F. Ohlson, Gabriel J. Pilla, Carl O. Reitz, Robert J. Richey, Peter L. Song, Alvin Spector, and Marvin M. Walters.

Also, CPD — Robert F. Pomrunk and George P. Steinhauer. And, CSD — Karen V. Buckheit, Richard J. Crosbie, Marie T. Handzus, James C. Henderson and Joann B. Wright. Also, CD — John A. Olson, John L. Santini, Daniel R. Tarrant, and Stanley P. Yavoroski.

And, NNL — William E. Bradley. Also, P&FMD — Robert J. Carrol, Richard M. Golling, William A. McDonald, David J. Weisel and James J. White.

And, PWD — Leroy G. Eckbold, William G. Hogarth, Albert Kletzman, Raymond J. Kohl, Adam P. Krisko, Robert G. McFetridge, Joseph J. Quigley, Helen A. Sullivan, Clifford E. Tierney and William A. Zar.

Also, SD — Glen C. Carter, Patricia D. Diodati, John A. Freeman, Felix Gonzalez, Jerry F. Guarini, Roland S. Hall, Martin A. Leonardo, Robert H. Machler, John J. McFadden, Albert J. McGlynn, Bernard J. McHugh, John S. Mudryk, Donald W. Palmer, Richard B. Sensenig, Wesley M. Sheridan, Robert F. Smith, Richard L. Thomas, Joseph Tither and Carl W. VanWyk.

And, Supply — Richard J. Justice and Byron W. Wrigley. Also TSD — Vanice W. Betterly, John J. Bowes, Doris E. Canoe, John L. Felix, David Moore, Frank J. Pace, Franklin E. Parke, Carl P. Plantarich, Ervin E. Rothmel, Edwin G. Sinnamon, Joseph J. Thompson and Joseph A. Zito.

And, NAS, Willow Grove — Judy L. Campbell and Herbert C. King. Others — Judith A. Bowman, Otello Costanza, Edward A. Reece, Barbara Robbins, Ursula M. Stampfl, Johnnie C. Vaughn, Kathleen G. Ward and Deborah A. Wurst.

Search out training courses

Receiving proper training is an important element in most career planning. Rose Mandrack, NADC's Small Business Specialist, told members of the Buxmont Chapter of Federally Employed Women, Inc. (FEW), that she viewed training as both a chance to learn and a chance to review goals and priorities.

Mrs. Mandrack spoke to the FEW Chapter at their October program meeting. She stressed the importance of searching out relevant training opportunities and cited the U.S. Civil Service Commission's Management and Career Seminar About Women, which she recently attended, as an excellent training resource.

W & R Golf season ends

The September W & R golf tournament was held at the Montgomeryville Golf Club with 43 golfers participating. The October windup tournament was held at the Bucks County Golf Club with 33 playing.

The September winners were Ed Spencer, a retiree, with a low net score of 64, Bill Mulley, SD, second, and Cliff Tierney, PWD, third. Closest-to-the-pin winners were Bob Moore, a retiree, and Walt Jendsen, TSD.

The October winners were Walt Blizzard, TSD, with a low net score of 66, Jim Boto, SD, second, and Gordon Woods, AVTD, third. Closest-to-the-pin winners were Cliff Tierney, PWD, Fred DeLarso, PWD, Bob Lutz, SD, and Ron Walter, SD. Of the 33 golfers in the October tournament, 22 received prizes.

Total participation in the six tournaments this year was 233, somewhat lower than usual. Anyone who would like to assist in planning or running next year's tournaments, contact Gordon Woods, Chairman, x2896, Code 30321.

Gordon Woods

In Memoriam

Donald W. Green, NNL

Cafeteria will change operating systems January 3 Plans call for kitchen remodeling to begin soon after



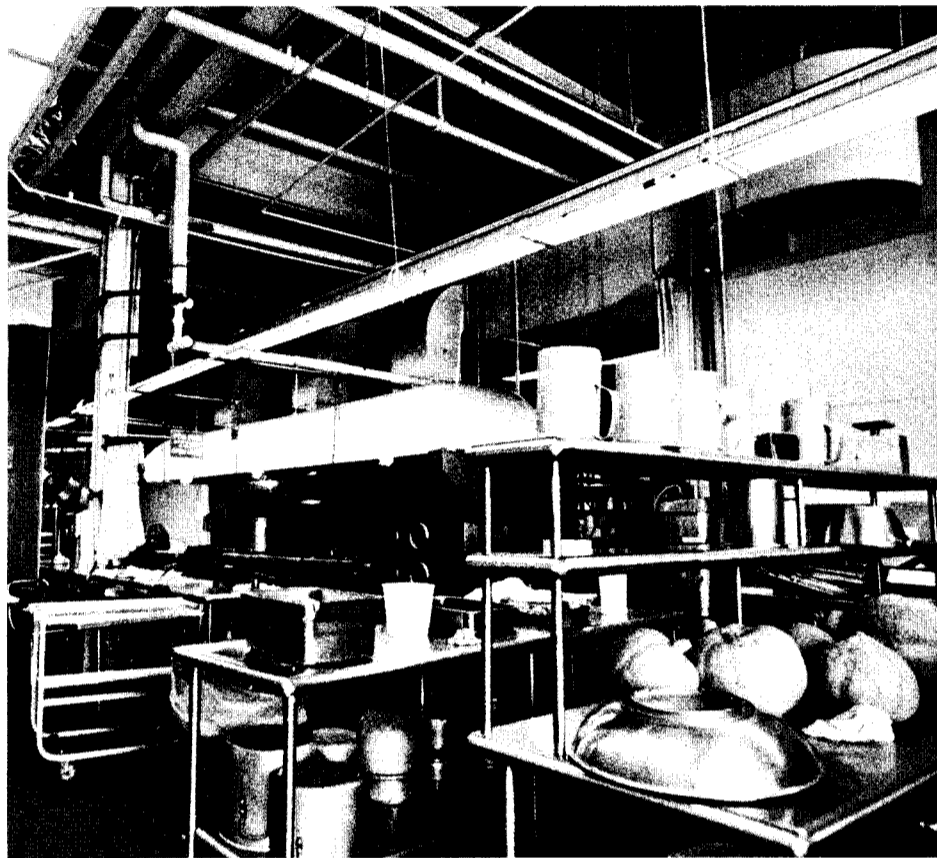
Agnes Risko, acting cafeteria manager, heads up the current staff of 28. She has worked on the cafeteria staff for over 25 years and has served several stints as acting manager between appointments of full-time managers.

Rumors have been buzzing around the Center for the past six months about the fate of the cafeteria. According to William Hazlett, Chairman of the Food Services Board, the story behind all the conjecture is that the kitchen will be modernized and the present system, which is run with nonappropriated funds will be converted to a contractor-run operation. The changeover is scheduled to begin January 3.

Approximately three and a half years ago, the Food Services Board authorized and approved a design for

the renovation. The first phase of the renovation process, the modernization of the kitchen, is scheduled to begin March 1. "The present kitchen will be torn out. A new concrete floor will be installed and all utilities will be located underground," Mr. Hazlett says.

The current kitchen was installed by Brewster Aeronautical Corporation during the 1940's. "Some of the original equipment is very antiquated," Mr. Hazlett says. "We have had difficulty meeting modern sanitation standards." One particular



The cafeteria kitchen, installed in the 1940's, will soon be renovated to meet modern food preparation and sanitation standards.

trouble spot is the freezer, which cannot maintain the required zero-degree temperature.

The entire kitchen and serving area will be replaced. The walls will be tiled for easy cleaning and a drop ceiling will be installed.

The renovation process should take seven months, Mr. Hazlett says, during which time the kitchen will be closed. One of the key items in the request for bid proposals requires prospective contractors to detail how they would meet interim food service needs. Mr. Hazlett says, "While the kitchen is being renovated, the eating area will be kept open. We're going to try to provide as much service as possible."

Mr. Hazlett expects the executive dining room will be closed during the renovation period since the dumbwaiters, which transport the food upstairs, are involved in the remodeling process. "We expect to be back in the full food service business in October," he says.

The Food Services Board's plans also call for a renovation of the dining area, which is as yet unscheduled, but is projected for 1978 or 1979.

Besides the cafeteria and the executive dining room, the contractor selected will be responsible for the canteen and vending machine operation.

The contract will be issued for one year of full service and seven months of interim service. If satisfactory to both parties, the contract will be renewable on an annual basis for up to five years.

Mr. Hazlett says one of the most important considerations in issuing the contract will be the prospective contractors' plans for retaining as many of the current 28 cafeteria employees as possible.

With a switch to a contractor-run operation will come the addition of the six percent state sales tax on food. Mr. Hazlett says he also expects to see about a 15 percent increase in food prices.

The Food Services Board will carefully monitor the contractor's performance. The board meets monthly to discuss services provided, review requests for price increases and handle complaints. Members are appointed by the Center Commander on the recommendation of CPD.

Besides Mr. Hazlett, board members include Edward Peterson and Robert Swierczynski, both of PFMD, William Mooney, AVTD, Rosalie Gilles, CSD, Felix Gonzalez, SD, Edwin Sinnamon, TSD, John Vincent, representative for Local 1928, American Federation of Government Employees, CDR Peter Flood, Director, Supply and the Command representative, and Angelo D'Amico, CPD advisor.

Viewpoint

If you were writing a story for the "Reflector," what subject would you choose?



Eleanor T. Vadala
Materials Engineer,
AVTD

"Since we are a technical center, I think I'd write about some of the work that's going on like the Lighter-Than-Air Project Office or LAMPS."



Marvin M. Walters
Aerospace Engineer,
AVTD

"My choice would be a periodic interview with the Center Commander and/or the Technical Director covering all aspects of the Center's state of health, not only significant technical accomplishments, but personnel actions, reviews from outside agencies, funding levels, community relations and other significant Center-wide events and actions."



Richard A. Imhof
Electronics Engineer,
AETD

"I'd write about the sports teams around here; golf, tennis, and so forth."



AE2 Louis Richie
Aviation Electrician, NAF

"I'd write about the future of NAF/NADC and try to find out what's going to become of this place."



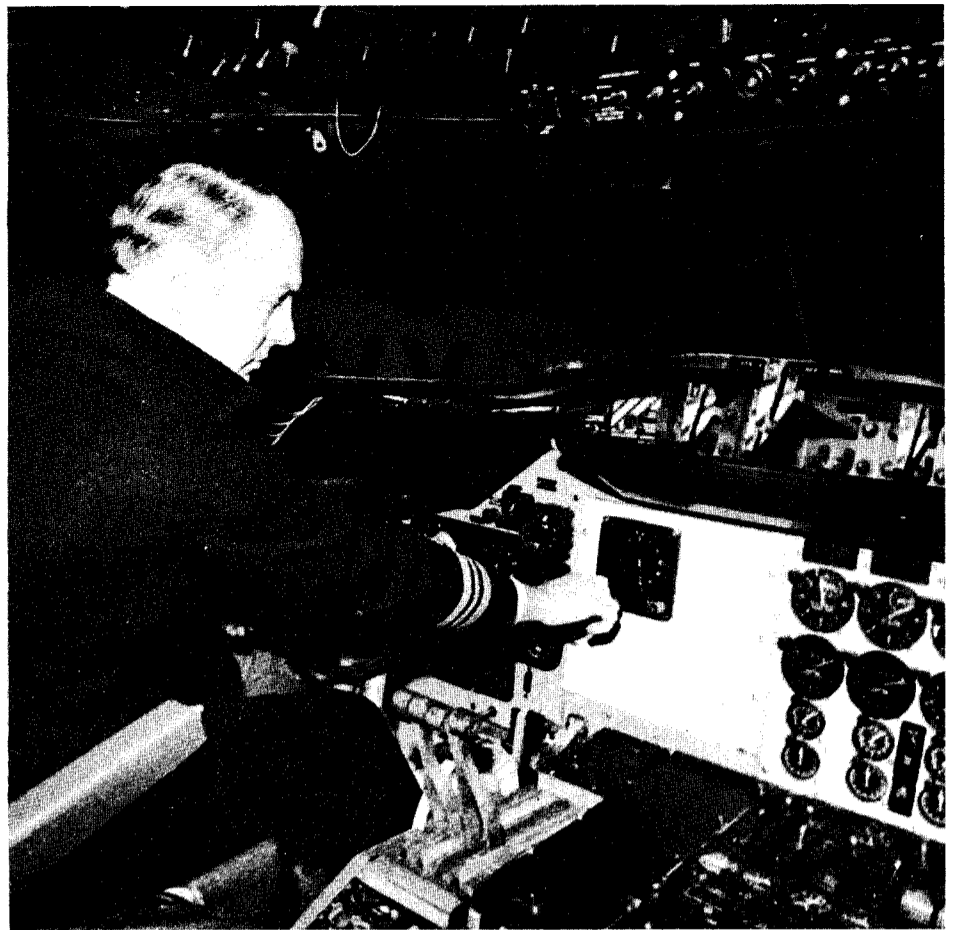
Dorothy Case
Computer Technician,
PFMD

"I'd write about sports. I think sports are rather interesting, especially baseball."



Earl C. Bair
Supervisory Electronics
Engineer, AETD

"Right now, I would write about politics. The recent election didn't go too well as far as I'm concerned."



LCDR Joseph Stewart, co-pilot on the largely automatic flight, made a post-flight examination of the P-3A's cockpit.

Navy's oldest P-3 pioneers new technique

by Bob Leko

Warminster, PA — 26 October 1976

On this date the Navy's oldest P-3A flew a crew of fifteen NADC/NAF flight personnel from Warminster to Sigonella, Sicily, using an auto-pilot coupled to an inertial navigation system. Using this technique relieved the pilots of most of their navigational work.

The aircraft was the first P-3 accepted by the Navy back in 1961 by the Chief of Naval Training on behalf of Patrol Squadron (VP)-30. At that time, VP-30 was located at the Naval Air Test Center, Patuxent River, MD, and was engaged in training P-2 pilots to fly P-3's.

Over the years the interior of this particular aircraft has been changed to accommodate various projects until today it bears little resemblance

to a Fleet P-3. It has retained its automatic pilot, however.

During the summer of 1976, a Litton 51 Inertial Navigation System was installed in the aircraft to give it a better navigation system.

The unique aspect of the flight on October 26 was that the inertial navigation system was coupled to the automatic pilot to enable hands-off flight of the aircraft. In other words, the aircraft virtually flew itself.

Other P-3's have these same two elements, i.e., the auto-pilot and inertial navigation system, but they are not tied together.

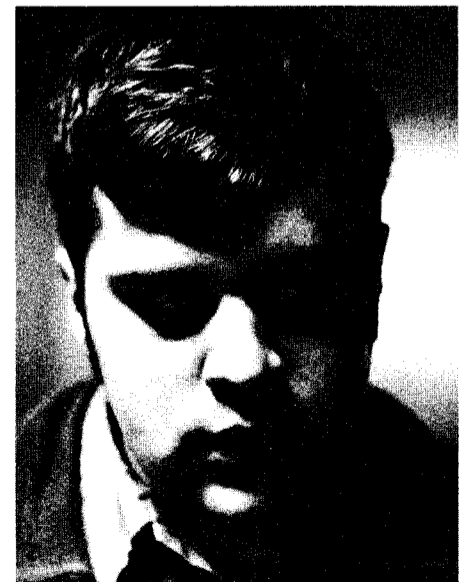
During this flight, the aircraft departed Warminster under normal procedures and was flown to the East Coast where the auto-pilot/inertial navigation system was activated. For the remainder of the 11½-hour flight, the aircraft was

(Continued on page 4)



Nancy E. Mac Meekin
Electronics Engineer,
AETD

"I would write about what some of the technical programs on Center are doing and about what the Carter administration is going to do that will affect the Department of Defense."



HM3 Jeremy L. Torr
Aviation Physiology
Technician, CSD

"I'd write something about the enlisted people here in CSD and what they do. For example, they serve as medical monitors, prepare subjects for experiments and serve as subjects themselves."

Center briefs community officials on AICUZ study

A Center team, headed by CAPT Clifford M. Rigsbee, Commander, has recently been meeting with local township officials to discuss the results of NADC's AICUZ study. AICUZ, an acronym for Air Installation Compatible Use Zone, investigates the effects of NADC's airfield operations on the community which surrounds it and suggests land use zoning which is compatible with the mission of the Center and community plans for future growth.

According to the report by R. Dixon Speas Associates, Inc., a leading aviation consultant, "The purpose of preparing an AICUZ is to insure compatible development in high noise exposure areas, to minimize public exposure to potential safety hazards associated with aircraft operations and to protect the operational capability of the air installation."

NADC occupies 735 acres of land. The airfield runway is 8000-foot-long, which is large enough to accommodate commercial 747's and the military C-5A.

Agricultural in 1944

When the Navy acquired the facility from Brewster Aeronautical Corporation in 1944, the surrounding area was almost completely agricultural. During the 1960-1970 period, there was a tremendous amount of residential growth in the area, which is continuing, but at a lower rate, today.

While there is still time to plan compatible development, NADC is distributing the AICUZ study to inform local governments about recommended land uses in high noise areas, to minimize safety hazards associated with aircraft operations and to protect the Center's operational capability.

Identifies noise zone

The AICUZ study identified the noise zone associated with the Center's strictly controlled aircraft flight pattern and divided it into three sections. Of these sections, one has no serious noise impact, one has a moderate impact and one has a serious impact. The AICUZ study provides guidelines for compatible land use development in each of these areas. Recommended uses for high noise areas include agriculture, parks and recreational areas, commercial and industrial development.

During the period, 1970-1974, NADC received only 67 noise complaints, an average of less than 14 per year.

The potential for future aircraft accidents at and around the Center is another major AICUZ consideration. Since 1954, there have been only six accidents involving aircraft operations at NADC. The AICUZ study developed an accident potential zone based on Department of Defense guidelines, which recommends appropriate zoning for the area.

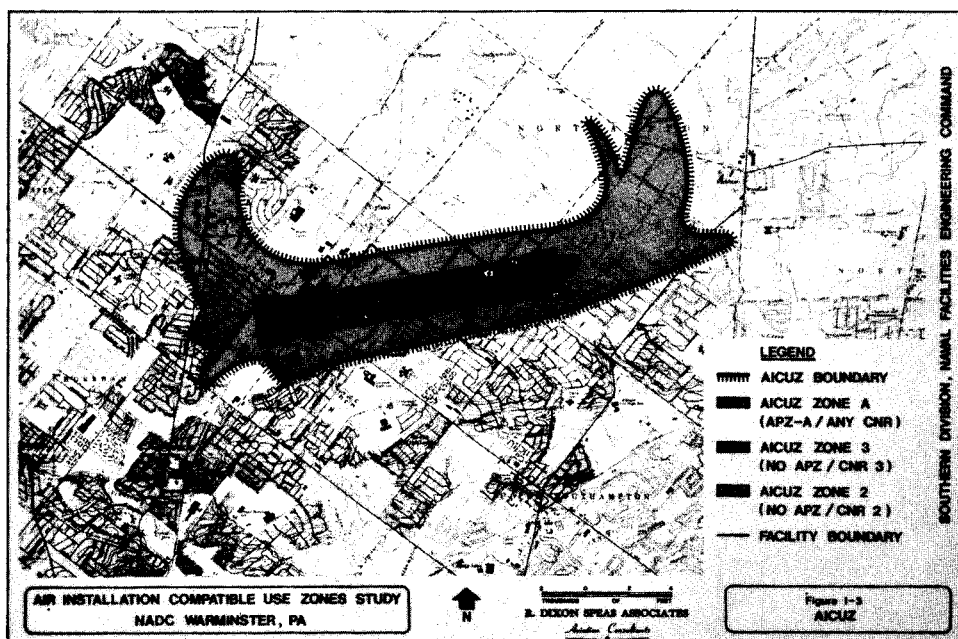
In order to maintain the utmost in air operation safety, unobstructed runway approach paths and other navigable airspace must be preserved. The AICUZ study also determined how high buildings and other structures could be erected in the surrounding area without interfering with flight operations.

The results of the noise, accident potential, and height obstruction studies were combined to develop the final Air Installation Compatible Use Zone Study for NADC/NAF Warminster. This report has been received and studied by all local township planning officials. The results of the study have been incorporated, wherever possible, into the proposed Northampton Township Comprehensive Plan and Zoning Ordinances scheduled for adoption this month.

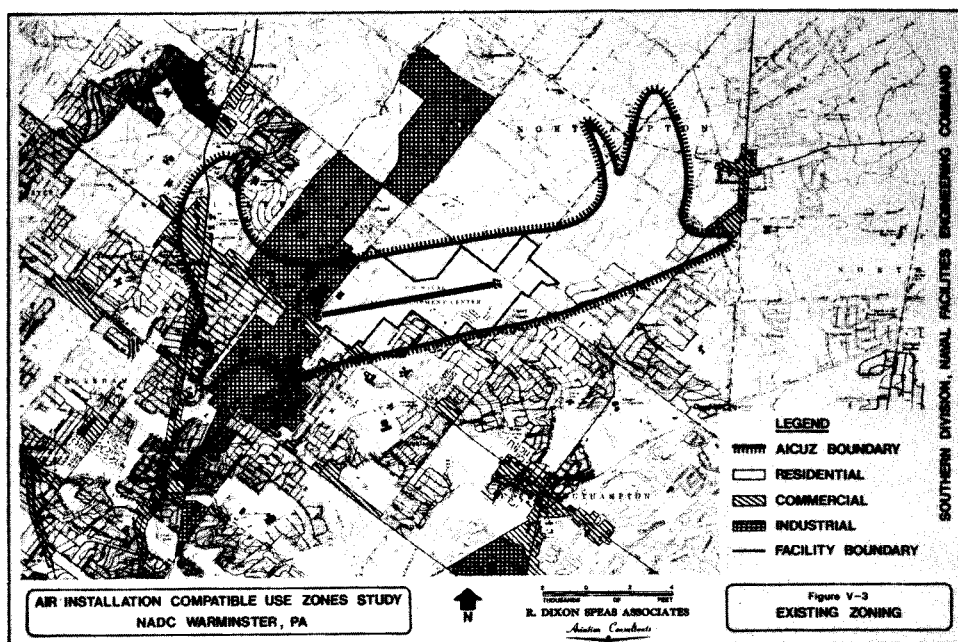
Assure compatibility

The continuation of current Center programs of reducing noise exposure and maximum flight safety, combined with the implementation of a community program of controlling land use, can assure compatible development in the AICUZ.

Achieving compatible development would help serve the interests of both the Center and the community. It would assure that a national investment be protected, that NADC continue to operate with maximum efficiency, that the operation of a major regional employer continue unencumbered, that land uses compatible with each other be located together, that precious environmental resources be maintained, and that residential housing be located in areas more conducive to the desired atmosphere of tranquility.



This chart shows the AICUZ zone superimposed on a map of the local area.



This chart shows how the areas inside and outside the AICUZ area are currently zoned.



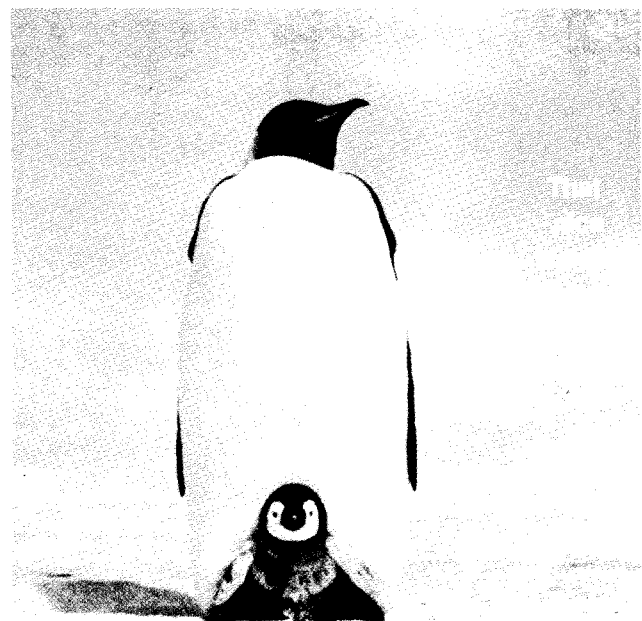
Aerial view shows the extent of development outside NADC's boundaries (outlined in white).

Center scope

AESS elects Dr. Stampfl

Dr. Rudolf A. Stampfl, Director, AETD, was recently elected the 1977 Executive Vice President of the Aerospace and Electronics Systems Society of the Institute of Electrical and Electronics Engineers. During 1976, Dr. Stampfl served as chairman of the Society's planning committee.

The Aerospace and Electronics Systems Society fosters the exchange of technical information in the avionics, space and military aerospace system field. In promoting the professional interest of engineers, it draws its members from the Department of Defense-National Aeronautics and Space Administration and related contractors community.



W & R seeks suggestions

The Welfare and Recreation (W & R) Association's recreation panel is currently reviewing its past and future programs and looking for ways to involve more Center personnel in the decision-making process.

The panel ran a successful trip to London this November. In October, a rescheduled trip to Williamsburg, VA, and Busch Gardens' "Old Country" was run. The Williamsburg trip, scheduled in response to last year's W & R questionnaire, did not have the participation expected. After being postponed from the summer, it was run in conjunction with another group to avoid a second cancellation.

The racetrack trips have worked out well, while the attempt at a group evening at a dinner theater did not.

Present programs include reduced price tickets for the Shipstads and Johnson Ice Follies, sale of holiday candy, a Christmas party for Christ and Bethanna Homes, and skiing weekends in February and March. Programs tentatively planned include a week trip to Switzerland, a four-day weekend in Bermuda, a day trip to the Smithsonian Institute and a weekend trip to Washington, D.C.

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Naval Air Development Center

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CAPT Clifford M. Rigsbee - Commander, NADC.

Joseph P. Cody - Public Affairs Officer.

Linda S. Battistini - Editor.

Long range plans now under consideration include a week trip to Rio de Janeiro during the holiday season, a week trip to Mardi Gras in New Orleans, a week trip to Greece, a week trip to Costa Rica, El Salvador and Cancun, Mexico, and a trip to Williamsburg and the "Old Country" amusement park.

In order to plan activities which are of interest to NADC personnel and their families, W & R would like to hear from prospective participants. Comments on proposed activities and suggestions for additional ones are particularly welcome. All comments can be forwarded by placing them in an envelope marked "W & R Recreation Panel," and sending them through the inter-office mail.

Jack Kenton

The Commander salutes:

... Harry F. Koper, AETD, for his presentation on "Future Design Consideration for Airborne Panoramic Cameras, Using Traditional Silver Halide and Electro-Optical Devices as a Recording Medium," at the Electro-Optics/Laser 76 Conference.

... The NADC team who finalized specifications and prepared a Request for Quotation for the development of a Navy Standard Airborne Computer, AN/AYK-14(V).

Team members are: Roman Fedorak, Christof H. Heithecker, Carl T. Joeckel, Edward M. Marinchak, Carl F. Mattes, Louis A. Naglak, Robert L. Samtmann and Frank D. Supsic, all of AETD, and Conrad S. Czaplicki and Richard J. Pariseau, both of SD.

... The AVTD team who worked with the Marine Corps to determine the feasibility of applying aviation corrosion/wear technology to the Marine Corps ground equipment.

Team members are: William N. Capece, Joseph E. Carroll, Diodoro V. Minuti, Neal D. Rebeck and Rocco N. Ricci.

... Victor A. Caddick, Jasper Caro, Paul Terpeluk and Harold Yaffe, all of SD, for their outstanding performance in NADC's Beartrap Project Office, which marked a major milestone when the fourth of a series of advanced signal processor systems was delivered to the Fleet on August 2, 1976.

... Albert F. Scarcelli, Director, TSD and the personnel of the Security Division for their outstanding handling of security procedures during and following the recent fires in the Shenandoah Woods Housing area.

... Agnes M. Risko, acting cafeteria manager, and the cafeteria staff for their outstanding work on the annual Thanksgiving luncheon.

... William Hart, TSD, for his work in successfully investigating burglary incidents in the Shenandoah Woods housing area.

... LCDR William L. McCracken, William J. Becker and John M. Kichula, all of SD, for planning and coordinating the recent P-3C UP-DATE I.2 Program training at Moffet Field.

Chess Club names champion

The NADC Chess Club ran a four-round Swiss Type Tournament for the club championship in September. Robert A. Leonards, NNL, took first place with a 4-0 score. Second place went to Eugene E. Werner, NNL, with a score of 3½-½. Sixteen members participated in the tournament.

Joseph L. Caristo

Oldest P-3 still pioneering

(Continued from page 2)

flown in the hands-off mode covering a distance in excess of 3300 miles to Sigonella, Sicily.

The aircraft flew to the Mediterranean area for project work in support of SVLA (Steered Vertical Line Array) sonobuoys.

CDR Charles D. Kimble, Deputy Director, AETD, was the senior officer on board for this flight. The aircraft commander was LCDR William S. Arner, Aviation Safety Officer, NAF. The

co-pilot was LCDR Joseph S. Stewart, II, Deputy Director, Remotely Piloted Vehicle Project, AVTD.

"From the pilots' standpoint," said LCDR Stewart, "the system allowed us to concentrate on the operation of the engines in conformance with flight plan climb profiles, rather than pilotage, to optimize their performance and to thereby minimize fuel consumption."

"Furthermore, the system meant less fatigue for the pilots. The system is a great confidence builder when all you can see is ocean for miles in all directions," he continued.

LT Peter Weed, SD, was the navigator on this flight. LT Weed said, "The essential ingredient to this system's high degree of accuracy is a feature known as auto-biasing. This means the system retains all data relevant to the flight at shut-down. When power is reapplied, the system compares the old position to the new position inputs and automatically applies the necessary corrections."

A very rigorous flight schedule was conducted at Sigonella involving four flights over a five-day period during the October/November mission. At the end of each flight, the aircraft had a less than six-mile navigational error in a total flight exceeding 3000 miles without mid-course updating.

Future plans call for more project flights using this unique system.



A scene from last year's ski club trip to the Rocky Mountains. (Photo courtesy of Arthur Horbach, AETD.)

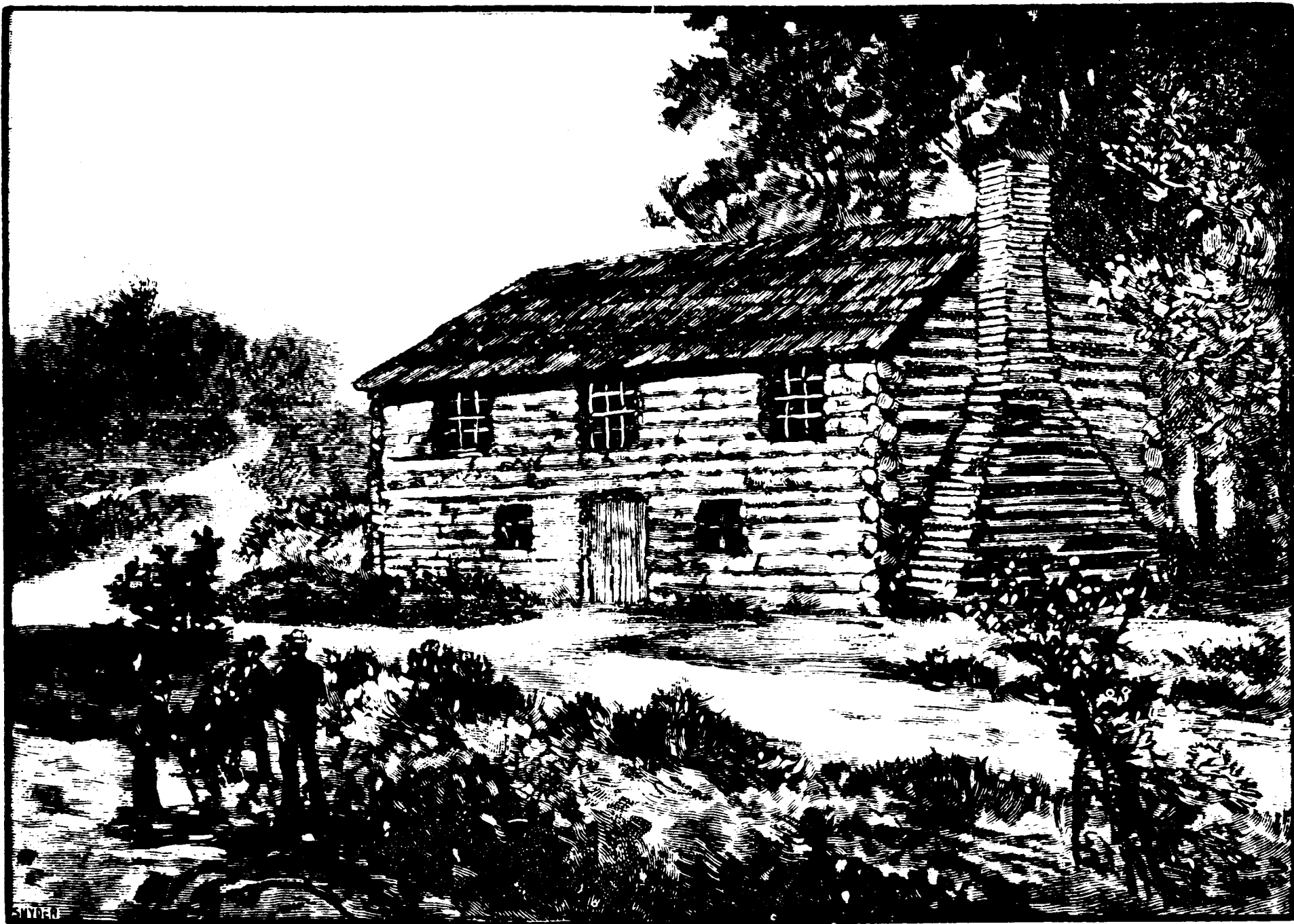
Ski Club schedules 3 trips

"Skiing is the anticipation of the day's first lift ride, the thrill of shussing the fall line and carving a turn, the enjoyment of the wind blowing in your face and the snow flying under your feet, the satisfaction of practiced coordination when you arrive at the bottom of the hill, controlled and upright, simply the enjoyment offered in the wonderful world of winter snow," says Joe Kelly, publicity chairman of the NADC Ski Club.

Skiers and soon-to-be-skiers who wish to ski, to ski with friends, and maybe, but not always, even ski less expensively, are welcome to join the NADC Welfare and Recreation Association Ski Club. The organization is currently sponsoring a membership drive. All civilian and military personnel and members of their immediate family are eligible for membership. Membership is also open to full-time contractor personnel. For more information, contact Frank Chiodo, extension 2217, or Carl Reitz, extension 2591.

The club held its first meeting on October 18 to preview the season's three planned ski trips and discuss club policy. At the meeting, 41 members signed up for the trip to St. Agathe in Canada, January 23-29, 1977. There are still a few openings available. Contact Jack Eiler, extension 3113, to sign up for the trip. Other trips planned include one to Stratton, VT, February 11-13, and one to Killington, VT, March 11-13.

Joe Kelly



This is the original Log College building, where men who would go on to found numerous colleges and universities studied under Reverend William Tennent in the early 1700's.

In 1976, Warminster is 265 years old

When Paul Bailey announced he was writing a history of Warminster for the township's 250th anniversary in 1961, one comment he heard repeated was, "How can you write a history of an area that has no history?"

In the course of a year's research, he turned up more historical information than he had ever expected. In fact, Mr. Bailey had to cut out some sections of the material to meet his publisher's specifications.

Mr. Bailey, an electronics technician in AETD's Laser/Magnetics Branch, began the project after his wife volunteered his services. "The first thing I did," he says, "was to talk to some of the older people in the community."

Many of the people he talked to were descendents of some of the original Warminster families. From

them, he gathered facts and uncovered leads to a wealth of information.

"It was not long," he says, "before I became so completely fascinated by the 'chore' that other activities and home duties were sadly neglected."

Warminster occupies part of a parcel of land William Penn bought from the Lenni Lenapes in June 1683. The area gained official township status in March 1711.

"Warminster was one of the earliest townships settled and most of the land was taken up by 1684," Mr. Bailey says.

One of the area's most famous citizens was William Tennent, the Presbyterian minister who founded Log College. In this rough structure, located on York Road north of Street Road, Rev. Tennent taught men who later went on to found other colleges

and universities, Princeton being the most prominent among them.

Before he started his investigations, Mr. Bailey says, "I never realized the extent of Log College. By the time he finished, he found that at least 64 educational institutions across the country trace their history back to William Tennent's school."

Another prestigious local resident was John Fitch, who built the first steamboat. Mr. Bailey says, "Fulton, who came into the field at a later date, reluctantly admitted that he borrowed some of his ideas from Fitch. As a matter of fact, Fulton's boat, the 'Clermont,' was not as efficient as the later models of Fitch's vessel."

Because of business and personal problems, Fitch was never able to make a success out of his invention. He did build several models of his

design, which he tested on the Davisville pond and the Delaware River.

During the Revolutionary War, Warminster was the site of the Battle of the Billet. "The Billet" was a popular name for the town of Hatboro. The name was borrowed from Hatboro's Crooked Billet Tavern, where General George Washington occasionally met with his officers.

"The Battle of the Billet was fought on the morning of May 1, 1778," Mr. Bailey says. "The battle was the culminating event in a six-month campaign to prevent the British from receiving food and other supplies from the rich farming district north and northwest of their Philadelphia headquarters."

"The campaign had been entrusted to the Pennsylvania Militia
(Continued on page 2.)

"Dr. Allen, with you on our side, I'm glad I'm a woman"

Dr. Ethel D. Allen, Philadelphia's Fifth District Councilwoman, was the guest speaker at the Third Annual Equal Employment Opportunity (EEO) Honorary Recognition Program.

A member of the International Women's Year Commission, Dr. Allen discussed her view of the status of women in the U.S. today. As a councilwoman, she is using her position to help give women equal access to available jobs.

Dr. Allen is a firm supporter of the Equal Rights Amendment, which is currently going through the ratification process. "I can assure you it will be ratified," she says.

At the ceremony, Captain Grover M. Yowell, Commander, NADC, presented EEO Honorary Recognition Awards to four individuals and two departments. Those receiving

awards were: James J. Leshner, electronics engineer, SAED; Henry D. Wiener, electronics engineer, NNL; Charles J. Williams, supervisory supply clerk, SD; and Byron W. Wrigley, supervisory general supply specialist, SD.

Both the Computer Department and the Naval Navigation Laboratory received Honorary Recognition Awards for their departments' successful EEO programs.

At the ceremony, CAPT Yowell expressed his appreciation to Dr. Allen for her inspiring presentation and said he is interested in a real EEO program at NADC, not just window dressing.

EEO counselor Eleanor Vadala voiced the feelings of many women in the audience when she said, "Dr. Allen, I must say, with you on our side, I'm glad I'm a woman."



Dr. Ethel D. Allen told the audience at the EEO awards ceremony about her commitment to helping women gain equal access to jobs.

Warminster is 265 years old (continued from page 1)



Paul Bailey spent a year researching Warminster's history. Quite an accomplishment for a man who failed history in tenth grade.

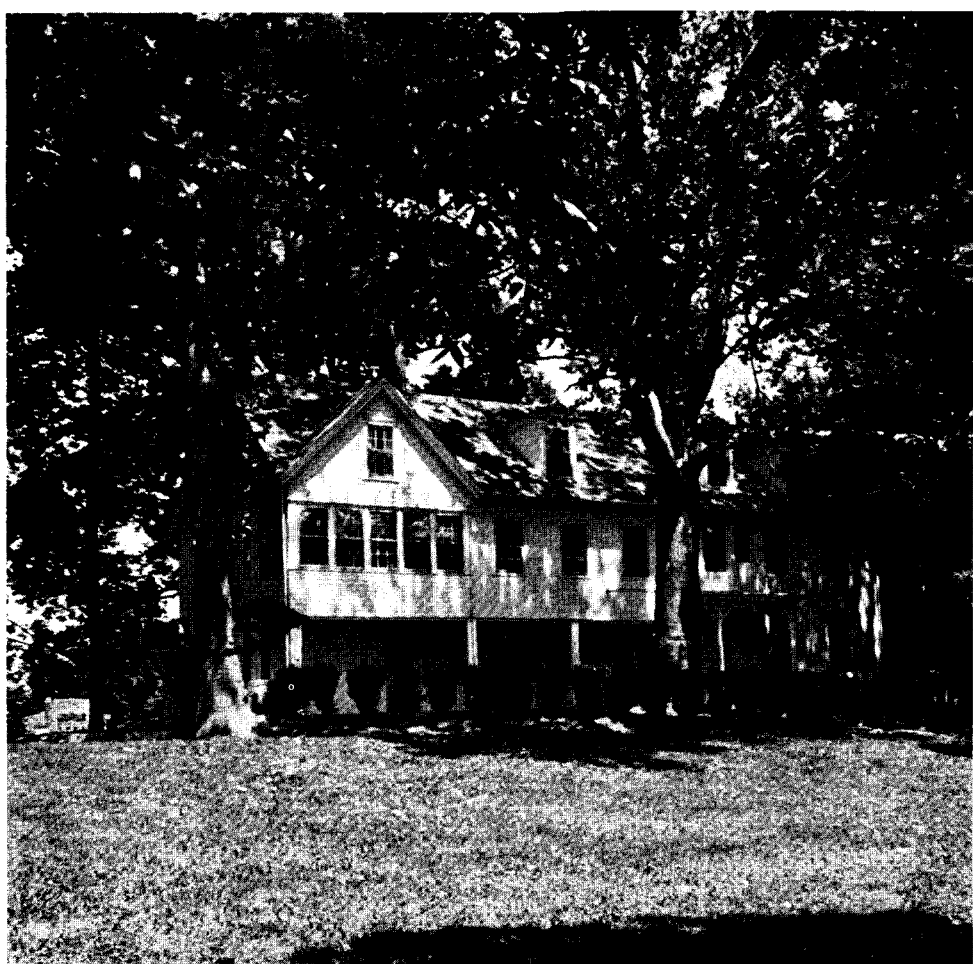
and its commander, Brigadier General John Lacey, Jr. It was the only independent campaign assigned to the State Militia during the Revolution, and it demonstrated the futility of putting untrained civilian conscripts against seasoned veterans.

"Lacey's casualty list totalled 92 men, almost one third of his command. The British claimed that their losses were seven men wounded and a few horses killed."

"Although it served no military purpose," Mr. Bailey says, "the battle deserves a place in our history as a

noteworthy local event and as a reminder of the minute scale on which operations were conducted during the Revolution and the deplorable lack of staff work and individual efficiency on both sides, when compared to modern military standards."

Warminster is four miles long and two miles wide. It is bounded on the north by Bristol Road, on the south by County Line Road, on the east by Davisville Road, and on the west by Valley Road.



Quarters 'A,' the home of the Commander, NADC, is reported to have been a stop on the Underground Railroad.

The township contains 6099 acres and Mr. Bailey says that his fervent hope is that some day a benevolent soul in one of the neighboring townships will contribute one acre to Warminster to make it an even 6100. "Odd numbers are annoying," he says.

Among the places of historical interest in the area is the former home of John Hart III, now known as Quarters 'A,' the home of the Commander, NADC. The stone section of this house was built in 1817, with the frame section added later.

This house, located on Kirk Road, contains a narrow tunnel leading from the main basement to a sub-basement and is believed to have been a stop on the Underground Railroad during the Civil War era.

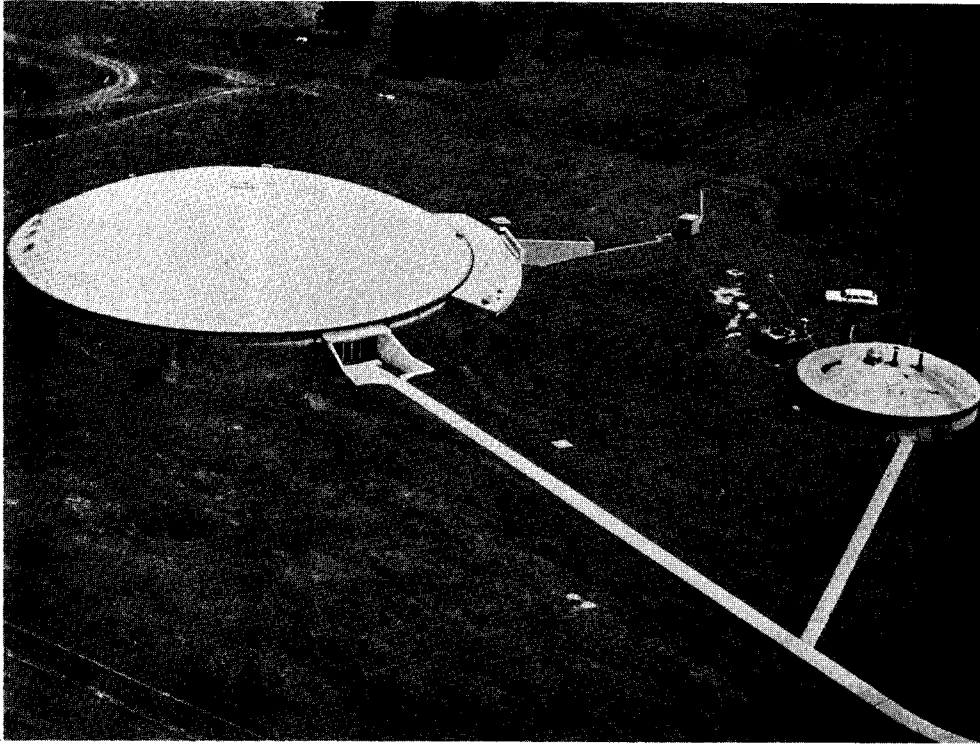
One of the primary products of Mr. Bailey's research was the increased appreciation he gained for the

township and its history. "The people of Warminster can be proud, in any event, of the fact that they live in a township having so much of the kind of background that has made a world power from a wilderness in the short space of less than three centuries," he says.

"Today we take for granted the freedom, luxury and pleasant living that are ours, forgetting that these gifts were bestowed on us by those early pioneers who fought the wilderness, the English, the French, and the Indians for the right to survive as a nation.

"We are wont to proudly proclaim that 'we' surmounted and overcame those early tests of our national 'guts.' Let's just keep in mind that it was our forebears who did the surmounting, and hope that we somewhat approach being their equals."

Built on bedrock, Inertial Navigation Facility is unique to Navy



The Inertial Navigation Facility was specially designed to isolate the precision instruments from as much vibration as possible.

by Joann Wright

In a remote corner of the NAF airfield is a low round building, 155 feet in diameter. This unique structure houses the Navy's only Inertial Navigation Facility (INFAC). Organizationally, the facility is linked to NADC's Navy Navigation Lab.

The building was specifically designed to house the Inertial Sensors Lab — used for inertial component research, development and evaluation. Inertial instruments, gyros and accelerometers, provide basic motion sensing information for self-contained inertial navigation systems.

Very sensitive

The sensitivity of these instruments requires a very stable, low vibrational disturbance laboratory where engineers can collect data on instrument performance.

The goal of construction of the INFAC was to isolate cultural noise from the sensors lab so that the vibration sensed is no higher than the vibration level in bedrock. Thus the building has several unique characteristics.

Unique shape

The shape of the building, the dual foundation and the domed wood roof were designed to decrease building vibrations. A separate mechanical building houses utilities that serve the facility including air conditioning and heating units.

Within the sensor lab itself, 12 granite piers bonded to the underlying bedrock provide stability for work with the inertial instruments. A seismograph on one of the piers continually monitors the level of background noise on the piers.

Most important, the rock structure at the site has a very low vibration level. "The background noise level in this area is low enough we have picked up earthquakes as far away as Japan on our seismograph," says Tom Sanders, head of the Airborne Navigation Division.

The consolidation of work done at the Naval Strategic Systems Navigation Facility from Brooklyn with NADC

gave this facility a unique function in the Navy. "NADC develops navigational systems for vehicles ranging from submarines to aircraft," Mr. Sanders explains. "This facility responds to a total technical picture rather than being limited by application within specific vehicles."

The diversity in the application of technology by this lab is reflected in some of the projects.

Mr. Sanders has worked on the development of sensors for a Carrier Aircraft Inertial Navigation System (CAINS) that is used in several carrier based aircraft today, including the S-3A, F-14 and E-2C. This was the first government furnished inertial system in any aircraft.

Noise problem

"It was almost an impossible requirement," Mr. Sanders says. The goal in the development of the system was to reduce the time required to warm up the system and initialize navigation information before take off from a carrier. The initialization problem is compounded by noise in the navigation reference information supplied by the carrier's inertial navigation system.

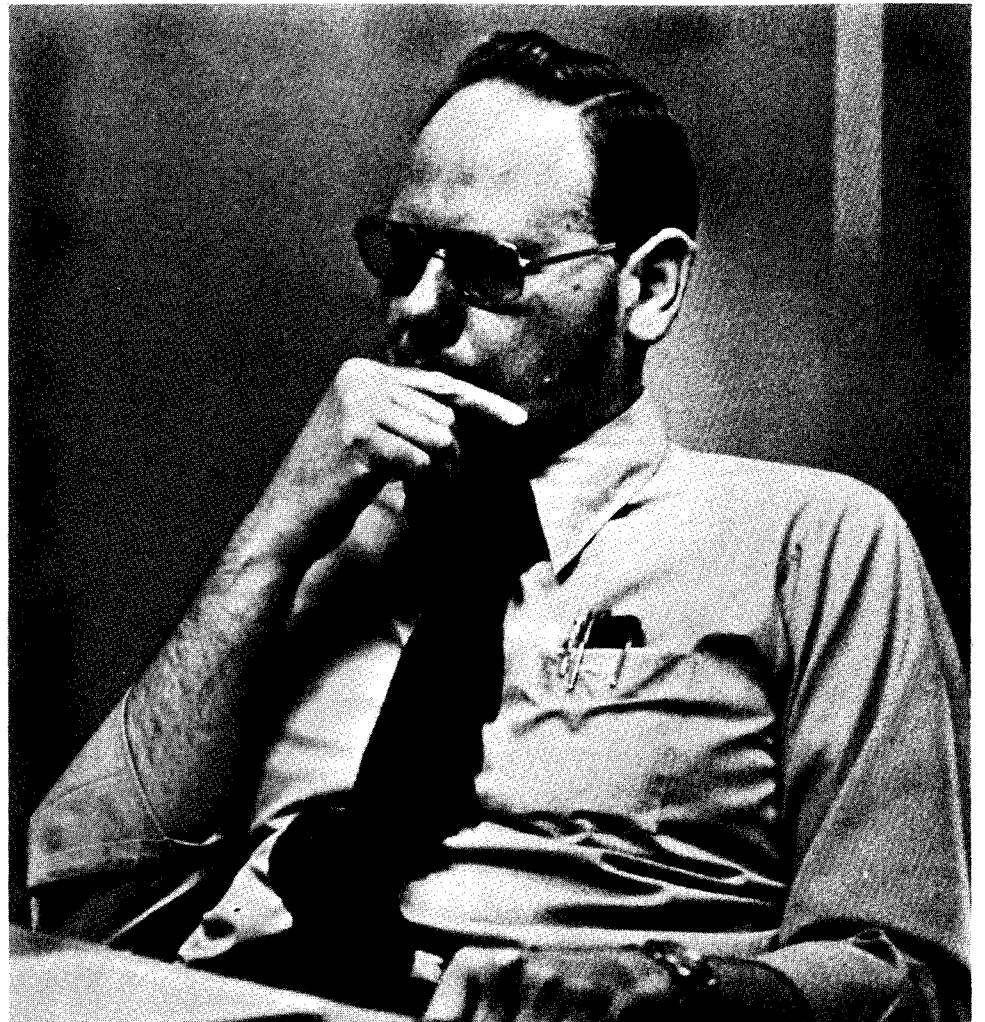
"NADC had a major impact with regard to the research and development of the basic instruments that provided these capabilities," Mr. Sanders says.

Begin investigation

This year Julius Drelick, head of the Inertial Sensors Branch, will begin investigating different inertial instruments to be incorporated in an Electrically Suspended Gyro Navigator (ESGN) for use in attack submarines. The inertial navigation system would provide position information during an entire patrol, minimizing the need for an external reference fix, thus allowing the submarine to operate in a significantly more covert manner.

In the test program, two electrically suspended gyros and three accelerometers will be evaluated under operational system conditions of the navigation equipment.

"It will be a unique testing program," Mr. Drelick says. "All of



Tom Sanders heads up NNL's Airborne Navigation Division, which runs many projects in the Inertial Navigation Facility.

the instruments will be tested simultaneously, similarly to the way they operate in the system. To this date most inertial sensor facilities tested either the gyro or accelerometer independently. We will get a more realistic total environment. It is essentially the first time this has ever been done."

A current project is the development of a Ring Laser Gyro supporting the Ring Laser Gyro Navigation system. This gyro differs from the conventional electro-mechanical gyro because it is an optical sensor,

using light beams to sense a wide range of rate inputs. It is a strap down inertial system that uses a computer for data processing and will replace the more costly and less reliable platform gimbal systems.

The inertial facility at NADC provides the Navy with the most advanced facilities available for the research, development, test and evaluation of inertial systems and components. Mr. Drelick summarizes, "The Center is in the forefront of navigational systems for the future — for both ships and air."

Female admiral predicts change in women's roles

Washington, D.C. (NES) ... The Navy's only female admiral, Rear Admiral Maxine Conder, Director of the Navy Nurse Corps, said recently that she thinks there are many roles in combat areas that women can perform, but first the armed forces need to redefine what is meant by combat.

RADM Conder recently attended a meeting in London with senior women of other NATO Alliance Nations and a statement was issued to the effect that they did not see women in combat roles except in a national emergency. The admiral believes that eventually, however, women's roles will change. According to the 25-year Navy veteran, a woman can sit in a silo and push a button as well as a man.

"I think that women can be very tough fighters," RADM Conder remarked, "but unless we are in an all-out emergency, I don't think the time is right for women to go into combat."

The admiral, however, expressed no concern about women going to sea, but would like for them to have the opportunity for promotion that is earned in the Navy only by going to

sea. "I believe women should receive what they are capable of earning," she said.

The military is not losing its appeal to women the admiral said, rather their interest is increasing. "There are currently about 75,000 women in the military on active duty and I expect this figure to grow to 100,000 by 1977." She cited the security the military offers and the fact that young people consider the military challenging and interesting as a career as reasons for the growth.

The Navy's senior nurse believes that women entering the Naval Academy this year will cause some men in the Navy concern, but she endorses the great deal of effort being expended to make the combining of sexes at the Academy a success.

Mentioning briefly the equal opportunity program of the armed forces, RADM Conder said, "Women's liberation has made everyone aware of what women can do and the military, as a result, is receiving more applications from women because of the many different roles they are playing."

Center scope

Ed Koos receives award

Edward E. Koos, an electronics engineer in AETD's Radar Division, recently received the Department of the Navy Meritorious Civilian Service Award.

He received the award in recognition of his outstanding technical and managerial achievements in the development of the APS-116 radar now operational in the S-3A aircraft.

His citation reads in part, "Mr. Koos' sustained and outstanding leadership throughout the entire period from the initiation of exploratory development to the culmination of production and installation of this vital equipment has materially strengthened the nation's defenses."

For the last year and a half, Mr. Koos has served as Science Adviser to the Marine Corps Tactical Systems Support Activity at Camp Pendleton, CA. In late January, 1976, he began serving as Head of the Airborne Tactical Electronic Warfare Systems Branch at the Naval Research Laboratory in Washington, D.C.

W & R elects officers

The Welfare and Recreation Association elected officers of the board of directors in January. The new officers are: Chairperson—Elmer Krauser, Vice Chairperson—Stan Griscavage, Treasurer—Robert Caruso, Bookkeeper—Lois Savage, and Secretary—Diane Corr.

CSD hosts aeromedical panel

The Crew Systems Department recently hosted the charter meeting of the Panel for Tri-Service Aeromedical Research. This panel, set up by the Surgeon Generals of the Army, Navy, and Air Force, includes four members from each service.

Captain Laurence H. Blackburn, Director, CSD, has been chosen to serve on the panel.

At the initial meeting, the panel discussed plans for implementing the charter and ways that CSD's life sciences and crew systems engineering programs could interact with those at other laboratories.

The panel members and their associates received presentations on the work done by CSD under the sponsorship of the Naval Medical Research and Development Command and the Naval Air Systems Command.

One comment the other panel members addressed to CAPT Blackburn was, "We never realized that you had such facilities and capabilities in the department and on the Center."

31 civilians retire

CPD reports that 31 civilian employees have retired between July 1975 and January 1976.

They are: Raymond Fonash, Philip Fischer, Leo E. Holland, Frank P. Cyganowski, Walter J. Lemek, James H. Lamb, Dorothy H. Convery, Leo V. Williams, William M. Markley, Anthony N. D'Angiolini, James J. Ryan, Martin J. Geary, Charles J. Mallon, Nancy L. Scarpill, John Gerace, and Rita M. Sheehan.

Also, Francis W. Douglass, William J. Bollinger, Thomas R. Griffey, Samuel T. Hadden, Clarence Brown, William Kaliser, Martin L. Lehn, Oscar Shames, David R. Zimmerman, James L. Hinds, Jr., Richard Insinger, Jr., F. Wallace Tobin, John W. Ayer, Horace B. Welk, Jr., and Joseph Salkin.

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CAPT Grover M. Yowell — Commander NADC.
Aris Pasles — Public Affairs Officer.
Linda Battistini — Editor.



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Treasury Department will issue \$2 bills in April

Beginning April 13, 1976, Thomas Jefferson's birthday, the Department of the Treasury will issue \$2 bills as Federal Reserve Notes, Series 1976. The new notes will feature an engraving of Thomas Jefferson from a portrait painted in the early 1800's by Gilbert Stuart. The back of the note will incorporate a rendition of the "The Signing of the Declaration of Independence," painted by John Trumbull during the post-Revolutionary War period.

James Conlon, Director of the Treasury's Bureau of Engraving and Printing, estimates the new \$2 note will result in a savings of \$4-7 million per year in printing of \$1 notes.

An average of 1.6 billion one dollar notes are printed per year, which accounts for 55-60 percent of the total volume of currency printed. The new \$2 note is expected to replace about one-half of the

"ones" in circulation over a period of the next several years. Conlon emphasizes that the new note will be printed in sufficient volume, 400 million per year, to assure wide availability. This production volume is sixty times greater than the average annual production of the previous \$2 U.S. note, last issued in 1966.

The two-dollar bill was first issued as U.S. currency in 1862, and in subsequent years the bills were issued under a variety of authorities as U.S. Notes, Silver Certificates, Treasury Notes, and National Currency, using a number of different portraits. A relatively small number of \$2 notes were produced annually until August 10, 1966, when the Treasury Department announced that the printing of the bill would be discontinued.

The Commander salutes:

... CDR Paul Sturm, Flora C. Cathell, Maria L. De Rita, Cathy Toler, Kathy Gorman, all of AVTD, and Arthur R. Du Haime, TSD, for the outstanding job they did while hosting the Bidders' Conference.

... Thomas J. Brennan, John L. Birkler and Lyonel T. Finizie, all of AVTD, for their significant contributions in aircraft engine cost research.

... Peter Van Schuyler and Thomas Castaldi, both of AETD, and their team for their outstanding work on the Moored Surveillance Systems Field Validation Test.

The team members are: Lee D. Allen, Peter Bruno, George M. Domm, Thomas B. Gabrielson, Paul S. Haas, Eugene A. Macur, and Robert J. Pesavento, all of AETD, and Michael Rose and Glenn Savage, both of NNL.

... Donald A. Hoyt, AETD, for his outstanding contribution to international standardization efforts in aerial reconnaissance.

... LCDR Albert M. Bingley, CF, SAED, and LCDR Arthur W. Nelson, SASI, for their contributions to the successful testing of the LAMPS MK-III H2/SR.

... Edward Valdez, TSD, General Chairman of the 1976 Combined Federal Campaign, and the Department Chairmen for the success of the drive, which raised \$55,286.41, the largest amount ever at NADC.

The Department Chairmen are: Nicholas Lanzetta, CPD, Carol Dorsey, Patent Office, Robert Leko, AVTD, LT Franz Porter, NAF, Louis Kramer, NNL, Theresa Miller, SD, Desmond Preedy, PWD, Kathleen Whitman, TSD, Emanuel Asness, SAED, Kevin Bracken, CSD, William Spencer, AVTD, Edward Lucas, PFMD, John Mankelwicz, AETD, Charles A. Sjostedt, CD, and Thomas Jadico, ASW.

... Harvey D. Jaffe, SD, on receiving the "Professional Designation in Contract Management" from the School of Systems and Logistics at the Air Force Institute of Technology.

... Ben M. Birchfield, NNL, for his expertise, cooperation and hard work in improving the AN/APN-153(V) Doppler Navigation Set.

... LT Jeffry S. Bowman, CSD, for his coordination of the visit of the Student Flight Surgeon Class 75-3 of the Naval Aerospace Medical Institute.

... Bruce Steinberg, AETD, for his professionalism and outstanding services while serving in the Office of the Director of Defense Research and Engineering.

LCDR Ballew receives medal

LCDR Robert D. Ballew, the Center's Project Officer for P-3C Update from December 1971 to January 1975, has been awarded the Navy Commendation Medal.

The award was based on his performance in the successful development of a totally new computer program for the P-3C Update aircraft.

His citation reads in part, "He devised guidelines for a new control program along with all the corresponding application program modules. He also was the prime moving force in the creation of a unique set of software development tools and facilities that became a hallmark in U.S. Navy software development methodology."

W & R seeks suggestions

The Welfare and Recreation Association's Recreation Committee wants to know how they can better serve Center personnel.

Some of the activities the committee is considering include: skating parties, dinner dances, picnics, trips to Washington, D.C., Reading, Pa., Williamsburg, Va., Hershey Park, Pa., and area race tracks, and sporting events, such as baseball, hockey, football and golf.

A minimum of 40 people is necessary to schedule an event.

Please send your suggestions to Bob Miller, code 6050.

CSC outlines attack plan

The U.S. Civil Service Commission has a registration system to locate and mobilize Federal employees in the event of an enemy attack.

If there should be an attack and you can't report to work at NADC, go to the nearest Post Office and fill out a Federal Employee Emergency Registration Card. Address the card to NADC and mail it.

If possible, you'll be put to work at NADC or another Federal agency. Your name will be on a roster of active employees, and your pay will be forwarded. If you change your address after sending in a card, get a new one and send it in.



NADC's first Marine Corps liaison officer, MAJ Walter Boeck, sees his position as a point of cross-fertilization between the Center and the Corps.

Center's 1st Marine begins liaison duties

Major Walter G. Boeck, the Center's first Marine Corps liaison officer, characterizes his first few months here as an adventure in enlightenment. In familiarizing himself with NADC's programs and accomplishments, he has stumbled on answers to some longstanding Marine Corps problems.

Having someone in the position to ferret out information that would not reach the Marines through regular channels is one of the reasons behind the establishment of the liaison office.

As part of the information gathering process, MAJ Boeck receives quarterly reports from the technical departments on significant accomplishments and plans. He reads all of the Center's technical reports and attends all of the technical and program briefings that he can. He does all this, he says, because, "It's my job to inform the Marine Corps as to what the Center is doing."

As an aid to the Center and its personnel, MAJ Boeck is building an extensive library. In it are current Marine Corps tactical manuals, required operational capability documents, developmental work directives and Marine Corps Development and Education Center orders and bulletins.

These documents, along with MAJ Boeck's personal background, represent a considerable information bank, all of which "will be available to anyone who wants to use it," he says.

MAJ Boeck notes that this cross-fertilization should be beneficial to both the Center and the Corps. It is at other Navy laboratories. Although he is the first Marine liaison officer at NADC, the position is well established elsewhere.

His office, decorated with recruiting posters and Marine Corps insignia, contains a prominent chart listing the Center projects which he feels are

most important to the Marines. Inscribed on the blackboard is a motto, "Combat readiness is paramount, if it won't contribute, forget it."

Some of the items he is most interested in are aircrew flight equipments, the F-18, reliability and maintainability concepts, and VSTOL.

"Marine Corps aviation represents one-third of total Naval aviation," MAJ Boeck says. Of the total Navy Research and Development budget, he says, the Marines receive between 10 and 20%. Since the Corps has no R&D facilities of its own, liaison with Navy R&D is especially important.

MAJ Boeck's background, while extremely varied, is strictly Marine. "I've spent more of my life in the Marine Corps than out," he says. He enlisted in the Corps in Albuquerque, N.M., in 1958. In 1962, at the completion of flight training, he received his wings.

He spent three years in an F-8 squadron on and off carriers and 18 months in Vietnam flying KC-130's. Since 1968, MAJ Boeck has spent most of his cockpit time in fighters, but "It's easier to count the Marine aircraft I haven't flown than to tally the ones I have," he says.

He holds a BBA in economics and statistics and a MS in information and computer science, both from the University of Hawaii.

Before the Corps cancelled its participation in the F-14 program, MAJ Boeck served it as a pilot instructor and a project manager.

To help keep the Marine Corps informed of what the Center is doing, he plans to put out a quarterly newsletter, similar to the current Technical Review. This newsletter, coupled with his free line of communication to the total Marine force and his high level of activity at NADC, should enable MAJ Boeck to effectively fulfill his liaison duties.



Shirley Shaffer's career is proof that federal employees can advance through a combination of hard work and education.

The reason behind Shirley Shaffer's success: Mix equal parts of hard work and education

Shirley Shaffer, who says she "just kept plugging away," has worked her way up the career ladder from a GS-2 clerk-typist to a GS-9 systems accountant at NADC. And, as far as she's concerned, there is still room for her to move up.

Mrs. Shaffer began working for P&FMD at the Center in 1953. Looking for ways to get ahead, she started a night school program at Trenton State in 1960. At first she studied education. Missing a few terms here and there, she found her interests changing and began studying accounting at Bucks County Community College.

Received degree

In December 1975, Mrs. Shaffer received a B.S. degree in Business Administration with an accounting major from Trenton State.

"I was going to college when I got out of high school," she says. "Then, near the end of World War II, I joined the Navy." Mrs. Shaffer spent two years in the Navy, serving as a Transport Airman. The job, she says, was the military equivalent of an airline stewardess. Stationed in Seattle, WA, she flew within the U.S.

She has worked in the Program and Financial Management Department since she came to NADC. "I

really enjoy what I do," she says.

Recently, Mrs. Shaffer was re-assigned from accounting technician to systems accountant. In her new position, she works with a programmer designing accounting jobs to be run on the computer. She sets each job up in the proper format to meet the needs of several users, both on Center and in Washington.

Eventually, she says, "I'd like to learn how to program, to be able to handle the whole process. Computers are an entirely new technique in accounting." To help meet her goals, Mrs. Shaffer is now taking a correspondence course. "I got a little weary of night school," she says.

Credits supervisor

Much of her success, Mrs. Shaffer says, is due to her schooling. She also says she could never have handled her coursework demands without the cooperation of her supervisor, William McDonald, Accounting Officer. He gave her both encouragement and aid in completing her studies.

Homer Huey, Director, P&FMD, says, "She's worked hard for a long time." Mrs. Shaffer agrees, and says it's been worth it for she works in the "best, the most interesting field."

Cake-cutting caps Armed Forces Week



MS3 Phillip R. Walker, NAF, left, sliced the cake and Dot Clooney, PAO, helped distribute it at the Armed Forces Week ceremony.

The highlight of NADC's Armed Forces Week 1976 celebration was a Cake-Cutting Ceremony on May 14. CAPT Gilbert F. Murphy, Commanding Officer, NAF, cut the first piece of cake and welcomed community representatives and Center personnel to the event.

Approximately 70 people attended the ceremony, which included a Command Presentation by CAPT Raymond D. Slingerland, Chief Staff Officer, and ended with a tour of the Computer Department, the Centrifuge and a P-3C aircraft for the visitors.

NAF's Color Guard took part in the ceremony and served as a visual representation of this year's Armed Forces Week theme, "Honor America."

The Nation's first Armed Forces Day was proclaimed in 1950 by President Harry S. Truman. It evolved from the desire to consolidate the four separate service days.

Since that first year, each succeeding President has reaffirmed the third Saturday in May as Armed Forces Day.

During the Nation's Bicentennial, the observance was extended to Armed Forces Week, May 8-15.

Center's Navy Relief fund drive Nears June completion date

The Center's Navy Relief Society fund drive is going into its final stages. The King and Queen candidates are tallying the contributions they collected as the ending date of June 11 draws near.

A Philadelphia physician, Dr. William White, was the motivating influence in the founding of the Society. Until 1903, it was common practice to pass a hat around the wardroom table to obtain funds to assist in caring for the widows and children of Navy personnel. Instead of this, Dr. White suggested the net receipts of that year's Army-Navy football game be made available for the relief of the widows and orphans of servicemen of both the Army and Navy. The idea gained quick acceptance and proceeds amounting to \$18,000 were divided equally between the two services.

Established fund

The Navy lost the game 40 to 5, but it gained an organization to provide for its widows and orphans when the Navy Relief Society was incorporated two months later in January 1904. During that first year, seven auxiliaries were established. By 1924, branches were located at twenty-four major Naval stations and Marine Corps bases.

As more funds became available over the years, the Society

began making emergency grants to additional types of dependents and also began expanding its services. Dependent mothers of deceased Navy personnel became eligible in 1910. In 1922 regular Navy and Marine Corps personnel became eligible, along with members of their families.

Officially recognized

In 1942, a year before the Society became an officially recognized part of the Navy community, Clarence Dillon, a New York City banker, organized a National Citizens Committee to secure the funds needed by the Society during wartime. A lasting benefit resulting from Mr. Dillon's successful campaign has been the Reserve Fund. All administrative and overhead expenses of the Society are now supported by the income from this invested Reserve Fund, so that every cent of every dollar contributed during the annual fund drive is available for direct assistance to Navy and Marine Corps personnel, their families, or their widows.

Financial assistance can be either a loan without interest or an outright grant, or a combination of the two. The type of aid depends on the circumstances in each case and the degree of hardship that may be involved in the repayment of a loan.

The Commander salutes:

...CAPT Gilbert F. Murphy, Commanding Officer, and personnel of NAF, CDR Allen L. Kruger, NNL, LCDR Maurice Clark, ASW, and LCDR Adam L. Litka, SD, for their outstanding support of the recent Moored Surveillance System field validation test.

...LCDR Donald W. Avery, Jr., AETD, for his exceptional performance in both the scientific and management aspects of his job as Deputy Project Manager for the Moored Surveillance System.

...Cyrus Beck, STILO, Isadore Zaslow, Staff, Louis A. Naglak, AETD, Theodore C. Herring and Sara J. Ketcham, AVTD, Dr. Gloria T. Chisum and Dr. George H. Kydd, CSD, and Bernard J. McHugh, SD, for their work as members of the Training Advisory Committee.

Supports small business

...Rose G. Mandrack, Small Business Specialist, for her support of the Minority Business Opportunity Subcommittee for Procurement Assistance and for her effective direction of the Center's Small Business Program.

...Richard E. DeFrancesco, Jack Hirsh, Alphonso Pittman, and Edward J. Wendell, all of AETD, for their outstanding cooperation in the development and production of the Interim S-3A Acoustic SENSO Training Tapes.

...LT Allen B. Schwartz and Paul D. Hand, both of Supply Department, for their outstanding effort in negotiating a contract with United Airlines.

...CAPT Laurence H. Blackburn, Director, CSD, for his support of the F-18 program as shown in the Work Unit Plan "Aviation Crew Systems Support for the F/TF-18 Project."

Delivers software

...The P-3C Update I team for their dedicated effort which led to the recent delivery of the P-3C Update I software program to the Pacific Fleet.

The team members are: CAPT Gilbert F. Murphy, Commanding Officer, and personnel of NAF, CDR A. Courtney Yelle, CDR James E. Wood, II, MAJ Dennis G. Leslie, CF, Keith H. Hawkes, William J. Becker, Doris H. Bessler, David Birnbaum, James V. Botto, Henry S. Carey, Frederick J. Casagrand, Richard Close, James A. Coggins, Ralph R. Collins, John Currie, Gary J. Davies, Ivars Dregers, Stanley E. Dunn, Karl C. Geist, Miriam Goldstrach, Gerard A. Goulet, John W. Heap, Theodore Kopp, Robert L. Londer, Francis G. Lorenz, Robert H. Machler, James F. McDonnell, William A. McMahon, Stephen S. McMillen, Thomas B. Merkel, Richard O. Mitchell, Gerald A. Mullen, Ruth W. Pickering, Larry

R. Reich, Robert Rigolizzo, Esther Rubinstein, Michael L. Schultz, Warren G. Shaedle, Larry M. Smith, Frank Somma, Richard L. Thomas, Francis J. Walter, William R. Wentz, Joseph M. Wetzal, and Marlene E. Worden, all of SD.

...William M. Norr, AETD, for his outstanding assistance to the School of Engineering at the University of Connecticut.

...William J. Adams, Jr., Dennis L. Bellevou, Joseph R. Byers, Bernard L. Coxhead, and Robert J. Hayes, Jr., all members of NAF's Crash Crew, whose emergency efforts averted a serious fire at a neighboring civilian residence.

Aids business ass'n

...George P. Steinhauer, Director, CPD, and William J. Faith and S. Edward Fields, both of TSD, for their fine support of the Federal Business Association.

...CAPT Raymond D. Slingerland, Chief Staff Officer, CDR Frank H. Brown, Director, ASW Program, MAJ Clarence J. Brooker, CF, and MAJ Dennis G. Leslie, CF, for their coordination of the recent visit of the members of the Canadian Forces Aerospace Systems Course 28.

...Dr. Richard A. Bromberger, CSD, and Walter L. Dowell and Ralph E. Hungerford, both of SD, for their outstanding efforts in support of operator training for the LAMPS MK III H-3 Extended Mission.

...PR1 Leroy O. Timblin on his nomination for the FY 76 Shore Sailor of the Year.

...Frank L. Scheetz, SD, for his assistance and support of the CVNX Characteristics Study Group.

Briefs reserve group

...LCDR Theodore P. Connor, SD, for his briefings to the Reserve ASW Tactical School at NAS Willow Grove.

...Dr. Harald J. von Beckh, CSD, for his presentation on "Methods to Increase Human Tolerance to Acceleration" given to the Naval Reserve Research Company 4-1.

...James E. McNamara, AVTD, for his outstanding performance on the F-18 Weapon System Program.

...John J. Tyburski, CSD, for successfully completing the Crash Survival Investigators School at Arizona State University.

...the LINEBACKER Project Team for their significant contribution to the development of the prototype LINEBACKER interdiction aircraft. Team members are: Robert J. Gallagher, Lawrence B. Judge, Otto Kessler, John G. Lanagan, Lewis G. Lippel, James N. Weikert, and William J. Wirtz, all of AETD, John J. Cary, Vincent A. Palagruto, and Donald F. Werb, all of AVTD, and William F. McCarty, NNL.



At NAF, AT2 Gerald Cormier works on the electronics systems of the A-4, T-2 and P-3 aircraft.

8-year Navy veteran selected Sailor of Quarter at NAF

AT2 Gerald B. Cormier has been selected Sailor of the Quarter at NAF. An eight-year veteran of Naval service, he has been at NAF since March 1975.

Working in a civilian atmosphere for the first time, AT2 Cormier says he notices many differences. One of them is that he is not familiar with many of the technical projects he services equipment for.

He chose his rate, aviation electronics technician, because, he says, "I like to work on airplanes." AT2 Cormier works on airplanes' electronics systems, communication and navigation equipment. At NAF, he handles A-4's, T-2's and P-3's.

His citation reads in part: "Your division [Avionics/Weapons] was tasked with the installation of communication/navigation equipment in facility S-2 aircraft. You played a dynamic role in the installation of those electronics systems . . .

You have consistently performed your duties in an outstanding and highly productive manner... You have repeatedly demonstrated sound judgement and employed leadership techniques normally exhibited by more senior personnel."

Before reporting to NAF, he served two periods of sea duty. Attached to Cecil Field, FL, he was part of an A-7 squadron aboard both the USS INDEPENDENCE and the USS FORRESTAL. He then served with VP-23 in Brunswick, ME.

While at Cecil Field, AT2 Cormier made two deployments to the Mediterranean. "It was fun," he says, "especially on a boat, because you move around a lot and you're never in one place very long."

The most outstanding aspect of Fleet work to him is the fast paced, life or death action frame. "Nobody had to pat you on the back, you could see what kind of job you did," he says.

Center scope



The award Dr. von Beckh received was named for a man who once was his teacher.

Dr. von Beckh receives award

Dr. Harald J. von Beckh, CSD's Director of Medical Research, recently received the Hubertus Strughold Award from the Aerospace Medical Association.

The award was presented to Dr. von Beckh for "distinguished contributions to the science and art of space medicine and manned space flight" at the Association's recent convention.

Among the accomplishments cited in his 36-year career were his airborne weightlessness experiments, his rapid decompression experiments and his work to protect pilots and astronauts against high-gravity force accelerations.

Professor Hubertus Strughold, considered the "Father of Space Medicine," was Dr. von Beckh's teacher at the Institute of Aviation Medicine in Berlin. Professor Strughold gave the first academic lecture on aviation medicine in 1929. Before his retirement, he worked for the Aerospace Medical Division of the U.S. Air Force.

Pilot training for women expanded

(AFPS) — All three Military Departments — Army, Navy, and Air Force — now offer pilot training to women. The Department of the Air Force announced in mid-April that 26 Air Force women officers will be selected to train as pilots and navigators beginning this summer.

The Navy has had women pilots since 1973 when eight women were designated naval aviators. At present, another four women are undergoing Navy pilot training, and another eight are scheduled to begin training this fall.

The Army has 13 women, eight officers and five warrant officers, in flying training at Ft. Rucker, Alabama.

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CAPT Grover M. Yowell — Commander NADC.
Aris Pasles — Public Affairs Officer.

Linda Battistini — Editor.

FEW chapter hosts speakers

In furthering its goal of keeping its members informed of important Center policies and programs, the Buxmont Chapter of Federally Employed Women, Inc., (FEW), holds monthly meetings featuring informal presentations.

Bruno J. Sposato, President of the American Federation of Government Employees Local 1928, spoke to the chapter in April. He outlined the union's area of responsibility, its programs and plans. There are approximately 400 AFGE members at NADC, he said.

At the May meeting, Bettie Zaks, Manager of the NADC Federal Credit Union, explained the Credit Union's pilot share draft program. There are 150 people participating in the pilot program which offers services similar to those of bank checking accounts. The pilot period began on May 17.

FEW is an organization which seeks to promote opportunity and equality for women in Federal Government. The Buxmont Chapter meets at 11:30 a.m., the first Tuesday of each month, usually in Training Room 'B.' For more information, contact Sally J. Ketcham x2826 or Linda S. Battistini x2980.

NAF serves as Bike-A-Thon site

The Bucks County Association for Retarded Children held its fourth annual Bike-A-Thon on May 2. One of this year's seven locations was once again the airstrip at NAF.

At NAF, 107 riders participated, bringing the pledge total to \$3406.34. A 14-year-old boy rode the longest distance—60 miles.

Guy Morriss of the Philadelphia Eagles was on hand to autograph photos and talk to the riders and spectators.

NCAA holds national conference

The Naval Civilian Administrators Association (NCAA) held its 30th national conference at the Bellevue-Stratford Hotel in Philadelphia, May 10-12. The NADC chapter hosted the conference, assisted by the other Philadelphia area chapters.

Two NADC chapter members held national offices during 1975-76: Albert F. Scarcelli, Director, TSD—National President, and Aris Pasles, Deputy Director, TSD, and Public Affairs Officer—National Secretary.

Guest speakers at the convention included the Honorable Joseph T. McCullen, Jr., Assistant Secretary of the Navy (Manpower and Reserve Affairs); RADM W.D. Toole, Jr., Commandant FOURTH Naval District and Commander, Naval Base, Philadelphia; CAPT Raymond D. Slingerland, Chief Staff Officer, NADC; Dr. R. Kenneth Lobb, Technical Director, NADC; Dr. Ross A. Webber, Associate Professor of Management, Wharton School, University of Pennsylvania; and Dr. Harold H. Frank, Assistant Professor of Management, Wharton School, and Assistant Professor of Group Dynamics at the University of Pennsylvania's School of Medicine.

The theme for the conference was "Leadership, Today and Tomorrow."

Ending his year as National President, Mr. Scarcelli says, "I thought the conference went very well. I was very pleased by the amount of dialogue discussing opposing points of view, which was evidence of the delegates' genuine interest. There was a lot of constructive criticism, which I think is a healthy thing. I was also pleased to see the amount of competition that existed for the national offices."

SAED becomes SD

To better reflect the process of the systems approach, the name of the Systems Analysis and Engineering Department (SAED) was recently changed to Systems Department (SD).

The former title separated the Department's functions when in reality the work of the Department is concentrated on complete systems efforts.

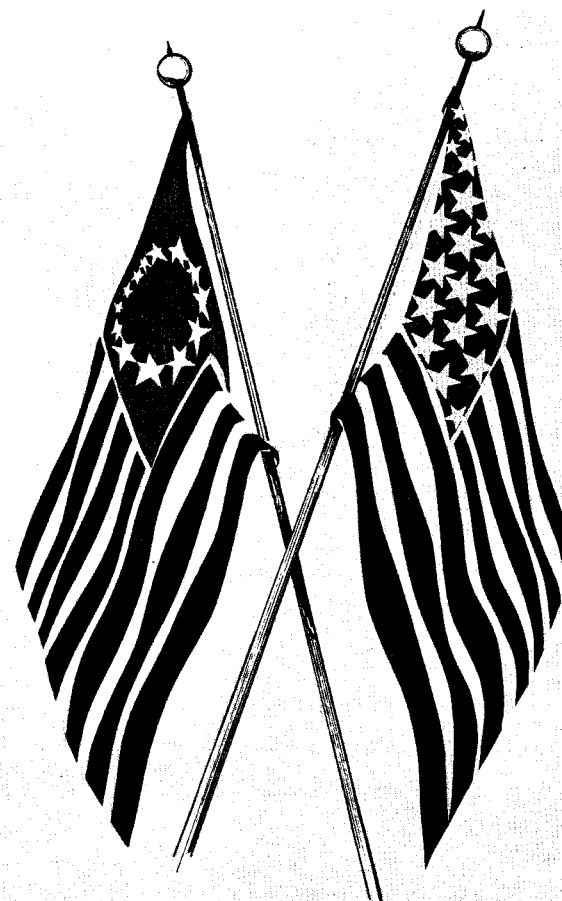
Reflector accepts club news

Official NADC/NAF clubs, teams, and associations may submit monthly summaries of events for publication in the Reflector. Submissions should be no longer than 100 words.

Send all articles to: Editor, Reflector, Code 011, NADC, Warminster, Pa. 18974. News must be received no later than the 15th of each month for publication that month.

The Editor reserves the right to edit for publication. Submitters should include their name and extension on each article.

First Flew in Freedom, 1776.



Take stock in America. Buy U.S. Savings Bonds.

Savings Bond drive underway

NADC'S 1976 U.S. Savings Bond Campaign began May 17 and will run through June 17. Ed Fields, TSD, is serving as Center chairman. AZCM Leonard A. Brylewski, NAF, is special assistant for military personnel.

Savings Bonds now pay 6% interest when held to maturity (five years). The interest continues to accumulate as long as the bonds are held. They may be purchased through both the Payroll Savings and Military Bond Allotment Plans.

This year's goal is to increase employee participation by at least 10% and to persuade 25% of the present buyers to increase their allotments. Representatives will personally contact all Center personnel.

In Memoriam

CAPT Frank W. Ewald, USN (Ret.), former Commander, NADC
Richard Bartram, TSD
Roy Johnson, AVTD
Benjamin Harrison, SD