# AIRMAN

May 1984

## Nuts, Bolts, and Bucks

Putting the Squeeze on Spare Parts Prices

**Miracle Over King Mountain**

Flying From the Back Seat

# Buying Spare Parts

When the old push lawn mower breaks down, there's usually no problem getting it repaired. Parts are available almost everywhere, even in drug stores and supermarkets.

Not necessarily so when it comes to, say, a fastener for an F-15. An airplane part is often a one-of-a-kind item manufactured by a firm that is a subcontractor to the aircraft manufacturing company.

The Air Force, which does business primarily with the principal contractor, has had to order spare parts through that source, which obtains them from the subcontractor. The smaller firm may be dependent on the larger company to market its special parts and, indeed, to stay in business.

Now, as a result of Air Force efforts to reduce purchase prices for such parts, the service is looking at the possibilities of doing business directly with the parts makers. There is, naturally, some reluctance by such firms to bypass the larger firms that originally contracted with them for the manufacture and supply of parts on a regular basis.

The spare parts availability and pricing situation is much more complex than many have been led to believe. And the Air Force has struggled for years to reduce its spares costs, through special contracting arrangements. Service members pay taxes, too; and the service doesn't have an unlimited budget that enables it to pay any price for what it needs.

That's the gist of a discussion AIRMAN recently had with Lt. Gen. Leo Marquez, deputy chief of staff for Logistics and Engineering at Air Force headquarters.

The resultant article, "Nuts, Bolts, and Bucks," which begins on page 8, looks at the spare parts pricing issue from a variety of perspectives.

As Lt. Gen. Marquez explains, the spares problem is a complex one, rooted in a tangle of restrictive regulations, insufficient competition and manpower, and even geriatric computers that inventory and order such parts for the service.

There are no simple, easy, or quick fixes. But Department of Defense personnel, not media investigative reporters, were responsible for the revelations that the Air Force has overpaid for some parts. And eagle-eyed members who use the parts—and question their prices—are responsible in no small measure for ensuring that those who buy and fly the airplanes get a fair shake.

There's a lot more to this story than what has often appeared on page 1 of the dailies, or in a lead story on TV news. We feel sure you'll want to learn more about it by reading "Nuts, Bolts, and Bucks" and the companion pieces in this issue.


FRONT COVER: Initiatives by the Air Force surfaced the problems of pricing abuses for spare parts, and the Air Force is working to solve the problems. For an in-depth look at the spare parts issue, turn to page 8. Cover art by TSgt. Edwin A. Davis.

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# On Final

## Current News of Special Interest to Air Force Members

**GENERAL GABRIEL DISCUSSES PEOPLE, POLICIES**

People programs, leadership, and the leakage of American technology were some of the issues recently discussed by Gen. Charles A. Gabriel, Air Force chief of staff. Gen. Gabriel made the comments during a recent interview with Air Force Weekly, a radio news program broadcast overseas by the Armed Forces Radio and Television Service.

GEN. GABRIEL

**—— PEOPLE PROGRAMS**

Speaking of programs for Air Force people, Gen. Gabriel talked about policies that do not consider individual needs. "I receive letters from all over the world, but the ones I hate to get most," he said, "are those indicating we have people in the Air Force who say policies and regulations are inflexible." Citing cases where policy should have been flexible, Gen. Gabriel told of a wife who had to return her husband's pay when he died. He explained that because the airman died before actually earning the money, the rules said she wasn't entitled to it. "Rules are not inflexible," said Gen. Gabriel. "We make the policies and rules and we can change them." He said the wife recovered the money four months later, but it was wrong that she wasn't considered beforehand. In another example, Gen. Gabriel told how an airman had to repay bonus money he had received for cross-training into a specialty field when health problems forced him to cross-train again one year later. "If you look at the rules, that's the way it is," said Gen. Gabriel. "If you don't stay in the field, you can't keep the money." But the rules don't say anything about a person with physical problems, he noted. Although the airman's situation has been resolved, Air Force members have to look at the people involved, not just the policies, the general said.

**—— RETIREMENT BENEFITS**

Still discussing people programs, Gen. Gabriel talked about today's retirement system. He said even with all the changes in pay and compensation over the years, the retirement system had been the one constant. "We think people count on this [current system] as part of their military contract," he said. "It's a known system and any serious changes in it could disturb the momentum we have in recruitment, retention, and the quality of force." Gen. Gabriel assured that he and other top officials will do everything possible to keep the current system intact.

compiled by MSgt. Lon Pollard,
chief, Air Force News Service

**—— EFFECTIVENESS OF LEADERSHIP**

In addressing leadership, the general said it's what makes the Air Force great. He said the 1982 and 1983 safety records are a good indication of the effectiveness of Air Force leadership. "We had the best flying safety record in 1982 with only 2.33 mishaps per 100,000 flying hours. No one thought it could be done, but last year, we improved that record to 1.73 mishaps per 100,000 flying hours." According to the general, this is happening because Air Force leaders better understand their people and their capacities. "We have to realize that personal or family stress affects the way aircrews and maintenance people perform, and not to overtax them during these periods," he said. Gen. Gabriel added that today's aircraft also helped to reduce the number of mishaps. "People tend to bad-mouth today's complex and sophisticated aircraft, but they are more reliable and safer," he said. "They require less maintenance per flying hours and they make it possible to achieve surge rates not possible before." The general credits not only the aircraft and the people who fly and maintain them for the safety records, but also the aircraft developers, contractors, and people who acquired the jets.

**—— INTERNATIONAL TERRORISM**

Addressing overseas personnel, Gen. Gabriel cautioned them to be aware of international terrorism. "We see it [terrorism] happening all over the world," he said, "and the military is the target in one-third of the cases. I caution and encourage everyone to be aware that there are people out there waiting to harm us." Gen. Gabriel added, however, that Air Force members should not allow that fact to blind them to the friends they have in host nations.

**—— U.S. TECHNOLOGY BEST IN WORLD**

Along the same lines, Gen. Gabriel said today's fighters--specifically the F-15 and F-16--are the best in the world because of America's technology. "But what concerns me is that this technology is being leaked to the other side," he said. He added that America cannot afford to lose this technology either through legal or illegal means. "We haven't been able to stop the hemorrhage very well, and the 10- to 20-year lead we had in computers and radars has been cut to 10 years, and less in some cases."

**'WIN WITH WELLNESS' IN MAY**

May has been designated as Consumer Health Education Month in the Air Force Medical Service by Lt. Gen. Max B. Bralliar, Air Force Surgeon General. The purpose is to encourage Air Force members and their families to improve their health and to promote awareness of what's available to help them become more health conscious. In support of the "Win With Wellness" slogan, medical facilities will host special events, provide briefings, present exhibits, or support similar activities to emphasize the importance of good health. Base exchanges will have health and fitness items on sale during May. In conjunction with the observance, commissaries will begin promoting the sale of healthy foods as part of an Air Force-wide Healthy Heart Program. The purpose is to educate people about foods that reduce the risk of heart attack, high blood pressure, and other problems. Commissaries will display posters and fact sheets about nutritional foods and use healthy heart logos to mark foods low in calories, saturated fats, cholesterol, and sodium. Each medical facility has a health education coordinator who is working with base organizations on health-related projects.

# Short Bursts

## Events and Items of Interest to Air Force People

### Escape and Evasion

The mosquitoes, frogs, and snakes in the swamp at Westover AFB, Mass., have recently had a lot of company. Since last summer, Air Force Reserve aircrews of the 439th Tactical Airlift Wing have been put through a new escape and evasion course. The course, part of the wing's combat survival continuation training, is conducted by members of the 337th Tactical Airlift Squadron life support section, the 905th Weapons System Security Flight, and the local Marine Corps detachment.

"In the past, we just taught the crews to survive," MSgt. Paul LaRochelle, life support NCOIC, said. "Now we're teaching them to survive, escape, and evade."

The two-day survival course consists of classroom and field training and is conducted every two years. The E&E portion is four hours, three of which are spent in the swamp area trying to avoid capture by "aggressor" forces. Class size is limited to 10.

The students are taught map and compass reading, radio techniques, and how to move through enemy lines.

"We teach them to think on the move, not just survive in one area," said TSgt. Sharon Kirkham, an E&E instructor. "We present a very demanding high-threat situation that requires the students to be creative."

"The aggressors do a great job adding realism to the training" MSgt. LaRochelle added. "They change their tactics constantly, creating confusion among the students and helping them become more flexible in their escapes."

—Maj. Robert Carroll

photo by Maj. Robert Carroll

### Zuckert Award

Last February, Secretary of the Air Force Verne Orr presented the Eugene M. Zuckert Management Award to Maj. Gen. John B. Conaway, director of the Air National Guard. It was the first time a member of the Air National Guard or Air Force Reserve had received the award.

Maj. Gen. Conaway, the 18th recipient, was selected for his superior management of force modernization and mission readiness for the Air National Guard. His efforts were cited as dramatically increasing the combat readiness and sustainability of ANG units nationwide, and as leading to the highest state of equipment modernization ever attained in the history of the Air National Guard.

"Receiving the Zuckert award is not only a great honor to me personally," the general said, "it is, more importantly, a reflection on the outstanding efforts of both Air Guard and active Air Force staff members at the National Guard Bureau and in the states and territories. We are a Total Force team and I believe this award is proof of that fact."

The Zuckert Award is presented yearly to an Air Force general officer or equivalent level civilian for outstanding management contributions. It was established in 1965 as a tribute to former Assistant Secretary (Management) and later Secretary of the Air Force, Eugene M. Zuckert, for his long-time contributions to Air Force management.

—Donna Ragan

## Order of the Sword

They came from as far away as Iceland and as close as across the street. Some had worn the Air Force blue for only a few months while others were nearing the 30-year mark. Still others were retired.

They gathered at the Langley AFB, Va., NCO club to honor Gen. W. L. Creech, commander of Tactical Air Command, with the TAC Order of the Sword.

The award is the highest honor noncommissioned officers can bestow on those whom they hold in utmost esteem.

Upon receiving the honor, Gen. Creech—once an enlisted person—shown with CMSgt. Rich Cook, TAC senior enlisted adviser, said, "It's not where you're going or how high you climb, but what you contribute to our nation and the Air Force that's important.

"The privilege of serving with you has been the highlight of my career. I'm proud of what you've accomplished, and I know you're going on to bigger and better things. I shall be eternally indebted to you and thank you from the bottom of my heart."

—TSgt. Suzanne Raines

photo by TSgt. Terry Watson

## The 'Wright' Stuff

The niece and nephew of the Wright brothers recently visited the Aeronautical Systems Division, Wright-Patterson AFB, Ohio, in recognition of the 80th anniversary of powered flight and to see how airplanes are being designed today.

Ivonette Wright Miller and Horace Wright got some insight into computer graphics from 2nd Lt. Mark H. Goodman, an ASD aerospace engineer.

At age 15, Mrs. Miller flew with Orville Wright and today is the sole living claimant to that distinction.

photo by Ed Fields

## Women's Corridor

A permanent display has been dedicated in honor of contributions to national defense made by women in the military. Secretary of Defense Caspar W. Weinberger unveiled the display in ceremonies at the Pentagon. The Military Women's Corridor traces the history of military women since the Revolutionary War.

"The corridor is a fitting tribute to those women who have defended America," the secretary said. "It symbolizes the changing nature of the military services." Secretary Weinberger said the dedication ceremony honored "a very rich and long-neglected history which is finally getting the attention it deserves."

## Sobotas 3 at ASD

The odds of two members of the same family being assigned together may not tempt someone who places an occasional bet. But the chances of three brothers getting the same base of assignment certainly would get attention.

The odds happened for the Sobotas (left to right)—First Lt. Mark, and Second Lieutenants Richard and David. All three are assigned to the Aeronautical Systems Division, Wright-Patterson AFB, Ohio.

—SSgt. Robert L. Mathews

photo by SSgt. Robert L. Mathews

# Our Family Matters

## News and Views That Affect the Air Force Family

### WRITE TO PENTAGON ABOUT VOTING PROBLEMS OVERSEAS

During this election year thousands of U.S. citizens overseas may be robbed of their opportunity to vote. The problem stems from state absentee voting laws. Some states do not allow enough time for ballots to be mailed out and returned. Other states cause problems with their requirements for an oath or notary—procedures that may be hard to comply with, or expensive, for voters. Henry Valentino, director of the Federal Voting Assistance Program Office, said his office is working to streamline absentee voting laws. "To help state legislators understand our problems, I am asking Air Force members to provide me with examples. If people have problems, they can write to me. Then I can bring it to the attention of the states," he said. Mr. Valentino said letters can be used as supporting evidence. Address letters to the Director, Federal Voting Assistance Program, Pentagon 1B457, Washington DC 20301.

### FIRST WORLDWIDE FAMILY HOUSING CONFERENCE HELD

The first worldwide Air Force family housing conference was held in March at Williamsburg, Va. Some 170 housing managers who are, in effect, landlords for the Air Force's 140,000 family housing units, met to discuss funding breakthroughs that signal the beginning of construction at some bases and improvements to housing facilities at others. More than 2,400 new housing units are proposed for construction in fiscal 1985. Another 5,000 existing units are marked for renovation. "We are making tremendous strides," said Jim Millican, chief of the Housing Management and Programs Branch in Logistics and Engineering at the Pentagon. "Air Force family housing offices are becoming more professional. Improvements are a front-burner item at Air Force headquarters. This business is really coming of age, and that means better homes for the Air Force family."

### NATIONAL SPOUSE ORGANIZATION CHANGES NAME

The 15-year-old National Military Wives Association recently changed its name to the National Military Family Association. Chairman of the Joint Chiefs of Staff, Gen. John W. Vessey Jr., became the association's first member under the new name. NMFA officials said the name change better reflects the family focus of the association. The NMFA is a non-profit, volunteer organization of military spouses of officer, enlisted, active, reserve, and retired members of the uniformed services. Further information is available from the National Military Family Association, Inc., 2666 Military Road, Arlington VA 22207, telephone (703) 841-0462.

### SOME TEACHERS MAY EMOTIONALLY ABUSE CHILDREN

Some children may hate school because they are being emotionally abused by their teachers, according to a report in the *American Journal of Diseases of Children*, one of nine specialty journals published by the American Medical Association. In a study done in Denver, 17 third- and fourth-grade children displayed marked behavior and personality changes after assignment to a new teacher. Changes included excessive worry about school performance, moves from positive to negative self-perceptions, nightmares, and withdrawal. "As the weeks progressed, the children's symptoms did not lessen," researchers said. "If their behavior had been related solely to initial school adjustment, symptoms should have shown improvement over time," they added. It was determined that the teacher was emotionally abusive to the students. After the teacher was removed, the symptoms of 15 of the 17 children disappeared within two weeks. The other two children required psychiatric therapy to help rebuild self-esteem.

compiled by Mynda McGuire, chief, family affairs, AFSINC

## TRAVEL BARGAINS FOR MILITARY FAMILIES

The 16th annual edition of the *Military Travel Guide* is now available and includes a guide to approximately 300 U.S. military installations where temporary billets are available. In addition, the 210-page book includes a list of civilian hotels and motels offering military discounts ranging from 10 to 25 percent, with some up to 50 percent. The special discounts are also available to government employees. Single copies are $2.95 mailed third-class. Add $1.55 for air mail. Write to MTG, P.O. Box 9654, Washington DC 20016.

## U.S. CUSTOMS SERVICE OFFERS TRAVEL TIPS

The U.S. Customs Service reminds travelers to register their foreign-made cameras before traveling overseas. Customs officers at airports can provide registration forms, which should be filled out and kept until luggage is inspected on return to the United States. Travelers also can speed up the return inspection by placing all purchases and sales slips in one bag. Other bags, however, may be inspected.

## HELP YOURSELF TO A MIDLIFE CAREER CHANGE

Military families approaching retirement may find a new U.S. Department of Labor booklet useful if they are planning a second civilian career. Called *Help Yourself to a Midlife Career Change*, it helps assess your skills and interests and possibly direct you to a professional vocational guidance couselor. The booklet also suggests that people contemplating a major career change should first volunteer or work part-time in the field. Other questions it recommends considering include: What are the benefits? What retraining or additional education is required? And can you or your spouse comfortably spend some time at an entry-level position again? For a copy send $2.25 to the Consumer Information Center, Dept. 78, Pueblo CO 81009.

## MAY 23 TO BE PROCLAIMED MILITARY SPOUSE DAY

May 23 has been announced as National Military Spouse Day to recognize the contributions and sacrifices made by military spouses. President Reagan is scheduled to sign a proclamation in late April marking the Department of Defense observance. A number of suggestions have been made for celebrating Spouse Day, according to Maj. John P. Redigan, chief of the Air Force Family Policy Section at the Pentagon. Some of these include luncheons, base and unit open houses, job exchanges with spouses, static displays, awards ceremonies, specials at the base exchange and commissary activities. Special events may be scheduled at Morale, Welfare, and Recreation facilities. Chapel activities will focus on the critical role of military spouses.

## CAR RENTAL DISCOUNTS EXPANDED TO INCLUDE FAMILIES

The Military Traffic Management Command has negotiated a discount with Hertz Rent A Car for active duty and retired military personnel and their families to rent cars for personal use. The discount rates are the same as those for Department of Defense travelers on official business. To obtain the special rates eligible members must show either a valid military or dependent ID card. Family members do not have to travel with their sponsor. All renters must, however, meet Hertz' standard driver qualifications at time of rental.

# Nuts, Bolts,

**High prices for spare parts sparked a national debate. But headlines don't tell it all. The Air Force has been working hard to solve the problem.**

The three-inch steel bolt looks ordinary enough. A battleship-gray shaft of cold, utilitarian metal. Nothing special.

But this bolt has an unusual feature most others don't: a whopping $58 price tag.

Chemically hardened, heat-treated, and forged out of a high-tech alloy, it is also a critical spare part strategically inserted into the landing gear of a T-39 *Sabreliner*—a sleek executive jet that whistles down onto runways at 140 mph during landing.

"It's not exactly a part you'd find on your lawnmower," Lt. Gen. Leo Marquez, deputy chief of staff, Logistics and Engineering, Headquarters USAF, told AIRMAN in an exclusive interview. "The first question I had when I saw it was—why does it cost so much? But later I discovered that the lives of seven or eight people ride on that bolt's ability to withstand the full weight of the 17,000-pound T-39 upon landing."

Few people would argue the need for carefully manufacturing that part, which must meet precise micro-tolerances for safe and reliable functioning—even at $58 apiece.

What is more difficult to understand—and, logisticians and contracting officials say, nearly impossible to justify—are the astronomical prices occasionally cropping up among the other 834,000 items in the Air Force's $38 billion spare parts inventory.

Horror stories of the Air Force paying $2,000 for a pair of pliers, $9,000 for an allen wrench, and $1,100 for a tiny plastic stool cap saturated the news media throughout much of last year.

The pricing abuses sparked a national furor. Some critics were quick to trumpet the disclosures as classic examples of fat in what they termed an already obese defense budget.

Air Force logisticians and contracting officials tell a different story. Theirs is one of undermanned procurement offices, archaic computer systems, and cost accounting methodologies that allocate overhead costs not proportional to the intrinsic value of individual parts. They say

# and Bucks

by Capt. Brian Hoey
AIRMAN Associate Editor

budgetary restrictions frequently force spare parts to be bought in small, uneconomical quantities, driving prices sky high.

"We have uncovered some fundamental flaws in the way we do business," said Lt. Gen. Marquez. "The problem is there; we recognize it. But," he cautioned, "it's not as simple and clear-cut as some newspaper articles would have you believe."

Those working the spare parts issue like to emphasize that the Air Force—not the news media—took the initiative in bringing the problem before appropriate government officials, who in turn explained the situation to the American public.

**"The word is out that the Defense Department is looking more carefully—and more skeptically—at the bills it receives from defense contractors."**

Historically, spare parts buying has defied simple solutions. It has frustrated service secretaries, senior officers, and Congress for decades. But seldom has the controversy raged so fiercely as it did when a Department of Defense Inspector General draft report on spare parts overpricing was leaked to the press last summer.

Secretary of Defense Caspar W. Weinberger reacted strongly to the instances of overpricing, issuing two plans to improve military spare parts procurement.

"The word is out," he told the National Press Club in Washington, D.C., last June, "that the Defense Department is looking more carefully—and more skeptically—at the bills it receives from defense contractors."

Secretary of the Air Force Verne Orr responded by sending letters to 35 chief executive officers and presidents of major aerospace companies, stating that "they [horror stories] do tremendous damage to our credibility with the Congress and the American people.

"We [the Air Force] have concentrated our limited resources on large acquisitions because the pay off has been higher. But it is apparent we need to look much more carefully at the pricing of even low-value spare parts," he wrote. "We will continue to closely scrutinize large acquisitions, but the 'horror cases' must and will be stopped."

Lt. Gen. Marquez acknowledges a shared responsibility for the problem.

"The aerospace industry is not a den of thieves," he said. "We need these people; we cannot run an Air Force without them. They, too, are victims of some of the same things that have hurt us."

Secretary Orr and Chief of Staff Gen. Charles A. Gabriel decided to take a top-down look at the problem through the Air Force Management Analysis Group (AFMAG), a task force directed to evaluate spare parts problems and recommend solutions.

The AFMAG brought together about 60 top military and civilian experts in contracting and logistics from throughout the Air Force. Based in Washington, D.C., under the direction of Maj. Gen. Dewey K.K. Lowe, commander of the Sacramento Air Logistics Center, the AFMAG members fanned out over the country, surveying dozens of government agencies and industry sources during last summer before issuing an inch-thick final report in October.

Another contracting expert, Brig. Gen. Bernard L. Weiss, director of Contracting and Manufacturing Policy, Air Force Headquarters,

**Lt. Gen. Leo Marquez: "We have uncovered some fundamental flaws in the way we do business." As deputy chief of staff, Logistics and Engineering, he oversees 834,000 spare parts worth $38 billion. The spares problem, he says, "is not as simple and clear-cut as some newspaper articles would have you believe."**

photo by Mickey Sanborn, AAVS

**"Our largest problem is trying to get more competition into the spare parts business."**

claimed most of the pricing abuses have occurred with "low value" items generally costing less than $1,000. Until recently, only items costing more than $10,000 were screened by contracting personnel.

A new policy introduced by Secretary Orr calls for every single item bought non-competitively to be subjected to a "cost-value analysis," meaning that each part will be individually "scrubbed" to ensure it is fairly priced, Brig. Gen. Weiss said.

Low-value spare parts were not previously scrutinized because there simply weren't enough people available. Air Force Logistics Command records show that air logistics centers alone were reduced 31 percent in civilian personnel during the 1970s. Since 1975, AFLC has been reduced by more than 11,000 people in most of the very agencies that handle spare parts.

To begin correcting this shortfall, the Air Force is hiring 1,000 people this year with plans to add another 2,000 over the next few years. The new people will be allocated to fill positions created to handle pricing and procurement actions in AFLC and Air Force Systems Command. These include contract negotiators, price analysts, engineers, and technicians, who will do the day-to-day contracting job.

Two important distinctions exist in overpriced spare parts.

"There's an overpriced spare part, and there's an unrealistically priced spare part," said Brig. Gen. Weiss. "In many cases, the unrealistically priced part doesn't necessarily mean that somebody is ripping us off, but that we've poorly priced the part in our allocation of costs.

"Now, believe me, we do have overpriced spare parts," he hastened to add. "We have had contractors who have added digits to the left of the decimal. That's ripping off the government. Company officials who have done that have been indicted, fined, suspended from doing business with the government and, sometimes, put in prison."

The Air Force debarred or suspended 51 individuals and companies in 1983 for just such offenses, he said—more than double the number blacklisted the previous year.

"Our largest problem is trying to get more competition into the spare parts business," said Lt. Gen. Marquez, who also heads a general officer panel that oversees implementation of the AFMAG's recommendations.

**"We have a continuing competition between Aerojet and Honeywell that keeps the ammunition's price down and the companies productive and efficient."**

Only 34 percent of the parts bought undergo competitive bidding. That represents just 22 percent of the total money spent.

This problem is primarily caused by two factors, the general said.

"One is the lack of accurate engineering data so we can make a procurement-reprocurement data package to go out and find someone else interested in competing for the job of making that part," he said.

The data package includes engineering drawings, specifications, tolerances, manufacturing processes, and types of materials used. Typically, it represents 5-10 percent of the total cost of a major weapon system buy.

Since the data costs so much, the Air Force may not buy it at the beginning of a contract, particularly because it costs money up front and the program may be very tightly budgeted, Lt. Gen. Marquez said.

The other side of the competition coin concerns proprietary data—trade secrets held by a company. A firm that uses any of its own money to develop a part can claim exclusive rights to that data, similar to a copyright or patent.

Since October 1, 1983, the Air Force has inserted a new clause in contracts that requires proprietary rights to end five years from the delivery of the first item. It will also expect manufacturers to furnish the same guarantees on products they sell to the Air Force that they provide to other purchasers.

Buying conditions that bring smiles to the faces of contract negotiators occur when two or more companies vie for a sale. One example is the contest for contracts to produce ammunition for the 30mm cannon on the A-10.

"We have a continuing competition between Aerojet and Honeywell that keeps the ammunition's price down and the companies productive and efficient," Brig. Gen. Weiss said. "That's what we're looking for."

Similar arrangements have been established

## The AFMAG Report

The Air Force Management Analysis Group (AFMAG) was formed in May 1983 to provide answers to the complex problems of buying spare parts.

After a long summer of 60-hour work weeks and hundreds of thousands of air miles traveled in search of solutions from industry and government experts, the panel issued its final report in October.

The 178 recommendations include near- and long-term proposals. Near-term recommendations, intended to improve spares procurement in 1984, are:

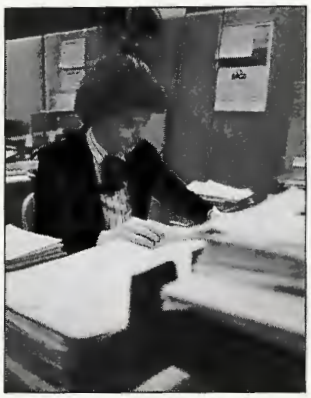
- review the price of every item for fairness
- increase competition among manufacturers
- buy parts less frequently, but in greater quantities to obtain lower prices
- work with industry to improve buying practices
- bolster incentive programs such as Zero Overpricing that reward personnel for ferreting out pricing abuses.

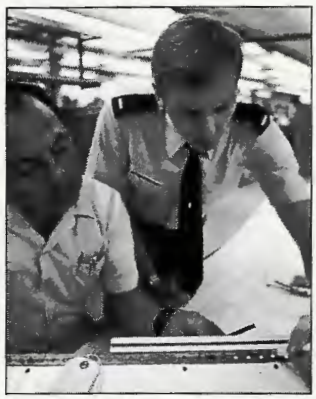
The long-term objectives are intended to "institutionalize the fix," said AFMAG director Maj. Gen. Dewey K.K. Lowe, in an interview with Government Executive magazine. They include:

- limit proprietary rights ('trade secrets' that stifle competition) to five years
- ensure contractor's costs are properly allocated to reflect the true value of the part ordered
- modernize AFLC's computer systems
- change current regulations that result in restrictive financial policies in buying spares
- increase the responsibility and authority of managers who handle new weapon systems to include a plan for buying spares.

—Capt. Brian Hoey

**BELOW (left to right): Stacks of purchase requests await contract negotiator Marion Palaza. Aerospace engineers such as Mike Garcia (left) and 2nd Lt. Jim Dendis provide technical expertise on spares at San Antonio Air Logistics Center, Kelly AFB, Texas.**
**BOTTOM: Inventory manager Sam Johnson monitors more than 500 spares.**





Photos by TSgt. Bill Thompson
AIRMAN Chief of Photography

for fighter engines between General Electric and Pratt and Whitney (see "Doing Business Dr. Cooper's Way," page 16).

Another initiative to reduce prices is to "break out" parts by buying direct from the actual manufacturer rather than purchasing from the prime contractor. Each tier of industry adds its own surcharge for services performed, such as quality assurance, engineering support, the cost of buying the item, and, in some cases, material handling.

But if a part can be purchased directly without sacrificing quality, the Air Force can, and does in many cases, save up to 40 percent on that part.

Many horror stories result from the way the Air Force and industry have agreed to spread out the expense of production, engineering, and support overheads among the parts manufactured.

"Let's say it costs $1 million in overhead to produce 1,000 different spare parts," Brig. Gen. Weiss explained. "If that total is a fair and reasonable price for making all those parts, then you would just take the 1,000 parts and divide them into the $1 million. You come up with the allocation of $1,000 of overhead charged per spare part."

Sounds simple, right? Take the cost of all that indirect labor, packaging, lighting, heating,

## Zeroing in on Overpricing

On a January afternoon in 1983, SSgt. Charles R. Kessler Jr., was working inside a hangar at Tinker AFB, Okla., when a supply clerk brought him a small brown paper bag with a requisition form stapled to it.

As SSgt. Kessler opened the bag, a tiny plastic stool cap fell into his hand. The test equipment custodian for the 552nd Airborne Warning and Control Division glanced at the cap, then at the price on the form. He blinked in disbelief.

The half-ounce white nylon cap, which fits on the end of the navigator's stool in the E-3A Airborne Warning and Control System aircraft, was listed at $1,118.26—more than the base pay the former crew chief would take home that month.

"I looked at it and said, 'No way can this cost that much,' " he recalled.

**" . . . the problem stems directly from what, pretty clearly, was a breakdown in the way we in the government used the free enterprise system."**

equipment, facilities, and administrative paper work, and evenly dole it out rather than consuming manhours figuring exactly how much time and effort should be assigned to each part.

But the legacy of this simplicity is that parts bearing a disproportionate share of the overhead burden can reflect outrageous prices—figures that give the appearance of a military that can't control its purse strings.

The AFMAG study outlined how this cost allocation method inflated the price of a 4-cent diode to $110.34. Bought on a parts order that included six more expensive power supply units, the diode received its prorated share of material handling costs and overhead—*equal to that charged to the much costlier power supply units.*

After profit margins had been added based on the individual totals, the diode's price appeared to have skyrocketed almost 300,000 percent. Conversely, the power supply units were underpriced by more than 20 percent. But the government's total bill was the same as if costs had been allocated to each item according to its cost of production.

Brig. Gen. Weiss added, "We've taken the easy approach and found very simple ways of allocating costs to these spare parts. The problem is that they do not have a causal relationship between the value of the part and the indirect costs that are associated with the buying, making, producing, and testing of that part."

The central manager of spare parts within the Air Force is AFLC, headquartered at Wright-Patterson AFB, Ohio. In fiscal 1984 it expects to buy around 88,000 different spare parts, spending approximately $8.7 billion.

Gen. James P. Mullins, commander of AFLC, told the Utah Air Force Association last August that "the problem stems directly from what, pretty clearly, was a breakdown in the way we in the government used the free enterprise

Three months later, in the flight simulator maintenance section at Randolph AFB, Texas, MSgt. Bob Burford was preparing to go off shift when a co-worker asked about a computer disc pack just delivered.

While inspecting the disc's container, MSgt. Burford's eye caught the price—$644.84.

"Just from experience, I knew that was too much money," said the 20-year veteran, an aircrew training devices maintenance superintendent.

Both SSgt. Kessler and MSgt. Burford challenged the prices, and won. The price of the stool cap was dropped to 31 cents, while the computer disc packs were subsequently bought elsewhere for just $67.

How they discovered, reported, and were rewarded for correcting these excessive prices demonstrates the way the Air Force Zero Overpricing program is turning spare parts horror stories into success stories.

Zero Overpricing is a grass-roots program begun in 1979 to prevent paying unreasonable prices for spare parts. Since then, more than 18,000 pricing challenges have poured into the Zero Overpricing monitors, located in each base supply unit.

"Zero Overpricing affords a convenient avenue for the person at the end of the logistics pipeline who perceives he's been issued a grossly overpriced item to do something about it," said Olen Sheperd, the program manager in the Directorate of Maintenance and Supply, Air Force headquarters.

About a quarter of the more than 6,300 challenges submitted in 1983 were verified cases of overpricing. Of those, only about half turned out to be actual overcharges where the Air Force paid too much. The remainder were due to stocklist, bookkeeping and computer errors.

Along with its vigorous implementation of the Air Force Zero Overpricing program, Air Force

system." He noted that the Air Force "violated a cardinal rule of free enterprise economics" when it decided years ago to buy spares in small quantities, which, as opposed to buying apples by the bag or motor oil by the case, raises cost.

Tommy Jordan, a contract negotiator supervisor at the San Antonio Air Logistics Center, Kelly AFB, Texas, explains it this way: "Assume you're only buying one or two of an item, and the company has to turn on a multi-million dollar, computer-controlled, multi-axial milling machine to make it. The cost of starting that machine up, amortizing it over that very small buy, forces the unit price up drastically."

The reasons for spares becoming a budgetary stepchild were twofold. First, due to budgeting constraints, the Air Force elected to put rubber on the ramp instead of spares on the shelf by purchasing new weapon systems such as the F-15 and F-16.

Second, Congress approves federal budgets on an annual, not multi-year, basis. This means the Air Force must buy parts more often, thus ordering in smaller quantities.

Compounding the problem were other factors, such as underfunding and the loss of skilled professionals in government service suffered during the 1970s—the "decade of neglect." Modern military technology demanded more specialized materials and manufacturing processes. At the same time, older weapon systems required more maintenance to keep operating.

**"The aerospace industry is composed of legitimate, hard-working men and women . . . . But, as in every segment of society, there are a few opportunists."**

New technology is also to blame for an inflation rate of 20 percent in the aerospace industry over recent years, according to Gen. Mullins. Beset by the high costs of advanced research and development, specialized tooling, and sophisticated training, the industry's inflation rate has been double that of the general economy.

Industry suffered other losses during the 1970s. Nearly half of all defense suppliers fold-

Logistics Command has another campaign to weed out factors contributing to overpricing of spare parts. Called Pacer Price, the program examines each item bought non-competitively at AFLC's air logistics centers for fair and reasonable pricing.

A challenge typically begins with a telephone call from the user to the Zero Overpricing monitor, usually located in the customer liaison section of base supply. Using the information provided by the challenger, Zero Overpricing complaints are forwarded to logistics experts for evaluation.

The program can also be profitable: nearly $40,000 in cash awards was paid to 55 sharp-eyed watchers in 1983. For their efforts, SSgt. Kessler and MSgt. Burford received $1,100 and $750, respectively.

An award of $10,000 was presented to Bob Hancock, a contracting specialist at the Oklahoma City Air Logistics Center at Tinker AFB. Although the award came from outside Zero Overpricing channels, the recognition carried the same intent.

Mr. Hancock objected to the prices paid for jet engine spare parts by sending a letter detailing the problem to the Air Force contracting representative at the engine plant. His actions drew national attention when the letter was subsequently released to the news media, sparking much of the spare parts controversy.

Although the process is straightforward, challenging overpricing doesn't mean simply complaining to the monitor.

"The most important ingredient is that the challenge needs to show an alternate way to go," said Mr. Sheperd. "People have to do their homework. The monitor needs such things as an alternate part number, manufacturer, proposed source of supply—as much information as possible about why the item is overpriced."

MSgt. Burford, who does much of his

ed or moved to purely commercial business. The number of aerospace contractors alone dropped by almost 42 percent, from 6,000 in 1967 to just over 3,000 in 1980.

Fewer suppliers means longer lead times for both military and commercial orders. And in peacetime, the military is just another customer. First come, first served.

How the logistics and contracting communities come together to buy spare parts can be illustrated at the San Antonio Air Logistics Center.

Sam Johnson is a GS-9 inventory manager in the Directorate of Materiel Management. He is responsible for monitoring the stock levels of more than 500 spare parts that include everything from T-38 canopies to common nuts and bolts.

When the stock level of an item runs low, Mr. Johnson receives a computer printout telling him it's time to buy more of that item. This "buy notice" includes the part's stock number, name, and other pertinent information.

He then fills out a form called a purchase request and sends it over to the procurement specialist, or buyer.

Marion Palaza is such a buyer. A GS-9 contract negotiator, she is responsible for analyzing and justifying the price paid by the Air Force to contractors. Juggling 150 purchase requests at any given time, she says that the workload faced by her and other buyers is increased because of an inadequate automatic data processing system.

Computers are the nerve system of AFLC. They monitor many aspects of spare parts contracts, but are old and sluggish, according to contracting personnel.

"You can't tell what exactly you're buying based on the description with the purchase request," Ms. Palaza said. "We're having to work with a computer system that's out of date and can't give us the information we need.

"So when I get a big contract to negotiate, I call an engineer and ask, 'What can you tell me about this?' " she said.

Lt. Gen. Marquez agrees that the computer problem is a serious one.

"One of the biggest problems we have in AFLC is that the computers are antiquated. We're talking about batch-processing technology that's basically early 1950s vintage," he said.

The batch processing system uses IBM data cards to input information—a tedious process that often requires users to wait days for a simple request. Waiting a year for a complex report is not unheard of.

AFLC's appetite for data processing is enormous: A stack of the IBM cards used in a single day would top a 10-story building.

research by thumbing through electronics and electrical supplier catalogs available in supply, said those who lodge complaints should first investigate the possibilities of obtaining the same part from a local source, or having it manufactured on base.

"I did a little phone calling around and found a local source for the computer disc pack right here in San Antonio," he explained. "I told the sales representative I could not involve the Air Force in any binding negotiations, but wanted to know how much a disc pack would cost.

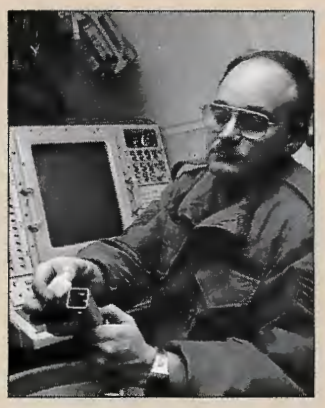
"I got his name and phone number, then took his price information along with my old price costs and all the research I'd done to my supply customer liaison representative. She worked it from there," he said.

SSgt. Kessler initiated his challenge by sending a letter through supply channels after refusing to accept the stool cap.

MSgt. Burford's advice to would-be pricefighters is to be persistent. He also urges supervisors to make their people more cost-conscious.

"A lot of airmen are interested in the program, but they're new and don't know how to challenge an item that's overpriced. So it's up to the supervisors to guide these young people and make them aware of their responsibility for how we spend our money," he said.

—Capt. Brian Hoey



**SSgt. Charles R. Kessler Jr. prepares to attach the infamous $1,118.26 plastic cap to the leg of the navigator's stool in the E-3A AWACS. The price was later reduced to 31 cents.**

Corona Require, an Air Force task force established by the Air Force Chief of Staff in 1982 to examine this problem, reported that "without question, the single most significant problem is the totally ineffective computer system now available to generate requirements forecasts and control the execution process" involved in spare parts procurement.

One of the short-term solutions recommended by Corona Require and the AFMAG is upgrading the computer systems to track and forecast spare parts costs. Distribution of new systems with terminals for every 3-4 buyers is expected to begin this year.

Although the public uproar over spare parts pricing has embarrassed various defense contractors, Air Force officials stress that very little overpricing is intentional.

**Solving the spare parts problem will require combining improvements in the way we do business with imagination on the job.**

"There's no motivation for companies like Boeing, McDonnell Douglas, or General Electric to gouge the government on these low-value items," said Mr. Jordan. "There are too many billions of dollars at stake in the major weapon systems contracts for them to get a bad reputation."

Lt. Gen. Marquez agreed, saying, "The aerospace industry is composed of legitimate, hard-working men and women who are not out to steal from the government, or you and me.

"But, as in every segment of society, there are a few opportunists," he cautioned. "So we need to remain vigilant."

Solving the spare parts problem, he said, will require combining improvements in the way we do business with imagination on the job.

"We're in the listening mode. So if you come up with a good idea, let us know.

"It's our Air Force. What it is now and what it becomes tomorrow will be due to the efforts that all of us are putting into the job today."

## Doing Business Dr. Cooper's Way

*"I get a kick sometimes when people say the taxpayers are outraged. I pay a lot of taxes myself. I'm not interested either in seeing us pay more than is absolutely necessary for spare parts."*

The taxpayer eyeing price tags on those spare parts is Dr. Thomas Cooper, assistant secretary of the Air Force for Research, Development, and Logistics. It is the last word in his title—logistics—that charges him with the overall responsibility of bargain hunting for the approximately $8.7 billion worth of spare parts the Air Force will buy this year.

Dr. Cooper's role in acquiring spares has been highlighted by the controversy surrounding highly publicized stories involving pricing abuses by some defense contractors. But now, from a position bolstered by solid Air Force commitments to remedy procurement system shortcomings and curb excessive prices, he's intensified his efforts.

"I think the two areas where we're going to find the largest return are trying to bring more competition to bear, and buying more intelligently. What I mean by that is, rather than buying an item multiple times each year, we'll combine the orders and buy a larger quantity once a year so we get the economy price," he said during a recent visit to the San Antonio Air Logistics Center, Kelly AFB, Texas.

The kind of competition the Air Force wants was illustrated during the recent face-off between General Electric Co. and United Technologies Corp.'s Pratt and Whitney unit over who would build a new generation of engines for the F-15 and F-16. Dr. Cooper noted that each company, accustomed to being selected as a sole source supplier, was placed in the position of vying against the other for the contract.

The bidding war produced offers and concessions previously unheard of, and could save the Air Force as much as $2.5 to $3 billion over the next 20 years. The dual-source competition will also result in improved engines, better warranties, an enlarged industrial base, and protection against production shut-downs.

After a hard-fought six-year duel, General Electric was awarded three-fourths of a one-year, firm fixed-price contract in February. The Air Force will re-evaluate the contract split between the companies for future years based on many variables, including contractor responsiveness.

"I'm really enthusiastic about it," Dr. Cooper said, noting that many in the defense industry looked on from the sidelines with great interest. "The whole procurement world was watching this particular competition. We set our competitive goals extremely high, and I believe we've even exceeded those goals."

Air Force Systems Command, whose responsibilities include the initial spare parts that support newly acquired weapon systems, has joined Air Force Logistics Command's attack on overpricing. Both commands have established competition advocacy programs designed to increase bidding among contractors for Air Force business. The advocates work to ensure fair pricing while removing bottlenecks that prevent competition.

Changing the way the Air Force deals with contractors also means improving the way it conducts its internal business—especially with regard to its outdated AFLC computers, Dr. Cooper said. It is these computers that track the millions of spare parts used each year by the Air Force.

"The Air Force is on the cutting edge of technology in virtually everything else we do, but I'm sad to say we have antiquated automated data processing (ADP) in AFLC," he said.

This means that the Air Force must hire more people to man the logistics system, an expensive interim solution to an inevitable—and essential—equipment upgrade.

"It's absolutely imperative to modernize the ADP system as soon as possible," he said. "Otherwise, we'll end up continuing to throw manpower at the problem, and we can't afford to do that in the long run."

What the Air Force can afford, he said, are more discoveries of better ways to perform the mission. The primary reason for Dr. Cooper's visit to the San Antonio Air Logistics Center was to present awards to 21 employees whose suggestions will save nearly $100 million. He has made similar trips to other air logistics centers.

"I'm proud of the people working the procurement system for the Air Force," he said. "It's a Total Force effort—both active duty military and civilian. With the civilians making up 90 percent of the people in AFLC, however, they become a real key to success."

Dr. Cooper believes the spares problem has been "blown somewhat out of proportion," but maintains that restoring taxpayers' confidence by ferreting out overpricing is crucial.

"It's kind of a Catch-22: The harder we push to uncover overpricing issues, the worse the public perception may become. But we're not going to back off. We are committed to making a good system even better," he said.

—Capt. Brian Hoey


**Meeting the press: Dr. Thomas Cooper explains efforts to solve the spare parts problem. The assistant secretary of the Air Force for Research, Development, and Logistics says that restoring taxpayer confidence by ferreting out overpricing is crucial.**

They buy the fashionable clothing available at your base exchange.

# Buying for You

by Lt. Col. Garry Mitchelmore, USAFR
AIRMAN Contributing Editor

photos by TSgt. Bill Thompson, AIRMAN Chief of Photography

Wondering what kind of clothes to buy this summer to be fashionable as well as comfortable?

Check your BX. Base exchanges are in step with the latest fashion trends, according to Jacqueline "Jackie" Waelde. As a clothing buyer for the Army and Air Force Exchange Service, she should know!

"We're going back to traditional clothing," Ms. Waelde said. "Look for oxford shirts and button-down collars . . . shetland sweaters. The layered look will be important, and look for a great deal of mixing in fabrics, such as tweeds with corduroy. Argyles are going to be big this year." Ms. Waelde buys sportswear and coordinates in junior sizes.

Fashion apparel has probably seen the most explosive growth in the exchange system. Less than 10 years ago, the AAFES Fashion Distribution Center shipped only about $25 million worth of clothing to base exchanges. This year's projections are to move approximately 24 million fashion clothing items, with sales in the vicinity of $315 million!

Fashion clothing includes those items that are subject to change for a particular season. Changes may involve style, color, fabric, or any combination of the three.

But keep in mind the seasonality of fashion clothing. AAFES buyers keep basic apparel—hosiery, undergarments, men's jeans, and the like—available on BX shelves and racks year-round.

To provide its customers the proper selection of fashion and basic clothing, AAFES employs more than 30 apparel buyers dedicated to obtaining the best clothing available at the right price for BX customers.

"We operate on 'push and pull' systems," says Bernard J. "Bernie" Gillett, chief of the AAFES Apparel/Accessories Branch in the Merchandising Division. "The seasonal, fashion apparel is 'pushed' through our Fashion Distribution Center, whereas the basic items can be reordered or 'pulled' by a requisition, determined by need. We project approximately $650 million in clothing and footwear sales this year."

The image of a buyer attending fashion shows, sipping champagne, and calling everyone "dahling" just doesn't fit AAFES buyers. They're professionals who are in the *business* of buying. They estimate that 7 to 20 percent of their time is spent on actual "buying." The remainder is spent on fiscal and logistical functions required to get the merchandise to BX customers.

Their biggest challenge? "Being everything to everybody," said Jo Lunsford, merchandise manager for the childrens wear section, who has been buying for 24 years with AAFES. "It's an impossible goal," she said. "We have to know the market, our customer mix, and then make good judgments to place the right merchandise on the right shelves at the right time and place. There is less glamour than anyone would think, and a great deal of detailed work involved."

Buyers may attend as many as five seasonal markets—holiday/early spring; spring; summer; back to school; and fall/winter. Within AAFES, buyers are given specific categories of garments to purchase for the entire exchange system and though one specific category may only be purchased for one season, they have enough categories assigned to keep them busy during the entire year.

Buyers, who may have responsibilities for nearly 30 categories or for a broad category such as "maternity wear," begin each year with a merchandising plan for each of their responsibilities. The plan establishes philosophies, strategies, buying increases and decreases, and pertinent financial data. Buyers will review basic and fashion merchandise requirements, then go to the clothing markets.

Once the markets have been reviewed, the buyers submit proposed buying plans and ask for approval to order specific quantities and dollar amounts. After review by merchandise managers and Mr. Gillett, modifications may be made, but eventually they are given a "go" to purchase the merchandise for distribution in the worldwide AAFES system. At the end of the year, buyers will recap their procurement actions.

The considerations buyers must make are awesome. They must understand climatic conditions, for example; there's not much of a market for coats in Hawaii. Other merchan-

**Pat Klouse (left), an actress who plays in the "Love Boat" TV series, leads models down the ramp at the Dallas Fashion Mart. Buyers spend 7 to 20 percent of their time buying, with the rest spent on the fiscal and logistical matters of getting merchandise to customers.**

**Fashion shows offer buyers a chance to study trends and choose what they believe customers want.**

**Bernard J. "Bernie" Gillett (right), chief of the Apparel Accessories Branch of the Merchandising Division, and clothing buyers, Jacqueline "Jackie" Waelde, and George Miller, look over a catalog showing the latest fashions. Buyers are given specific categories of garments to purchase for all base exchanges. Tonya Campanozzi (below, right) works at the Fashion Distribution Center and helps ship apparel to base exchanges around the world.**

dise restrictions apply, as well. For instance, 40 percent of the childrens wear is budget priced. The buyers in that section must shop for outstanding value at lower prices in clothing that may be outgrown, but not necessarily worn out.

Special trends must also be a part of the overall merchandising. When the third movie in the Star Wars series was released, for example, AAFES buyers had planned months ahead to get the appropriate children's apparel in the stores to coincide with the movie's major run. Extensive plans were also made in support of the 1984 Summer Olympics.

"We operate in a professional environment in direct competition with the world's largest commercial retailers," said Joe De Rossi, merchandise manager for the mens wear section. "We've got to be in sync with the manufacturing industry. I buy men's suits and sports coats, and the manufacturers work with the mills, six to eight months ahead of production release. They then 'pre-line' or call in the biggest users five to six months in advance of release. Based on the initial responses of the largest buyers, the manufacturers will add or delete merchandise from the lines well before the trade shows.

"Following this pre-lining, the manufacturers get early orders or commitments for large amounts of goods and set up their production for the season. We at AAFES are now getting the same opportunity to select from the *entire* line. This is important to the AAFES pipeline, and we have the opportunity to give our customers what is available in better stores downtown—at substantially better prices," Mr. De Rossi said.

George Miller, another mens wear senior buyer, said AAFES buyers must be astute in committing to buying the right merchandise early. "We've seen a big change in the industry in the past three years," he said. "Manufacturers don't have the backup capital to maintain large inventories. They're in a very tight money situation. They have to find where the consumer interest lies, and if there is no interest for a garment, they don't produce."

In such a purchasing environment, the buyers still strive to please everyone, a difficult task at best. The retailer in any city doesn't have a clientele mix like AAFES. The businessman can buy for a specific audience—old, young, conservative, flashy, and low-, medium-, or high-dollar.

AAFES attempts to meet the needs of men and women from lower enlisted grades through general officers, plus retirees and some Department of Defense civilians who have the privilege of shopping at a base exchange.

"In addition, limited sales space in AAFES stores frequently impacts on the variety and depth of stock of men's clothing," said Mr. De Rossi. "The typical exchange has a corner for men's clothing; some retail department stores have an entire floor.

"We have a controlled markup and must provide a cross section of labels, fabrics, fashion, and sizes to meet all tastes. If BX shoppers will take a good look, they'll usually find a stock assortment comparable

to that of a commercial store. And we're still aiming for the best quality at the lowest possible price."

To provide variety, value, and price, AAFES has built a Fashion Distribution Center (FDC) that moves fashion apparel to exchanges worldwide without storage. Basic garments may be stocked in a warehouse, but all seasonal merchandise moves through a complex system in which AAFES never stores the garments.

The center is a mammoth, 276,000 square-foot facility adjoining the AAFES headquarters in southwest Dallas. Built in 1979-80 at a cost of

A model from the Kim Dawson Agency shows one of the spring ensembles during a show at the Dallas Fashion Mart.

$8.3 million, it moves fashion clothing to 325 AAFES exchanges on a weekly basis, in season, at a low unit cost to the airman and soldier.

"The clothing is moved through within a week or less at an average cost of 27 cents per garment," said Clayburn Williams, chief of the center. "Before it was built, we had a contractor who moved the merchandise for us. Not only did it take more time, but the cost was averaging 57 cents a garment."

Using up-to-date technology, the center receives the garments from the manufacturer via tractor-trailer trucks,

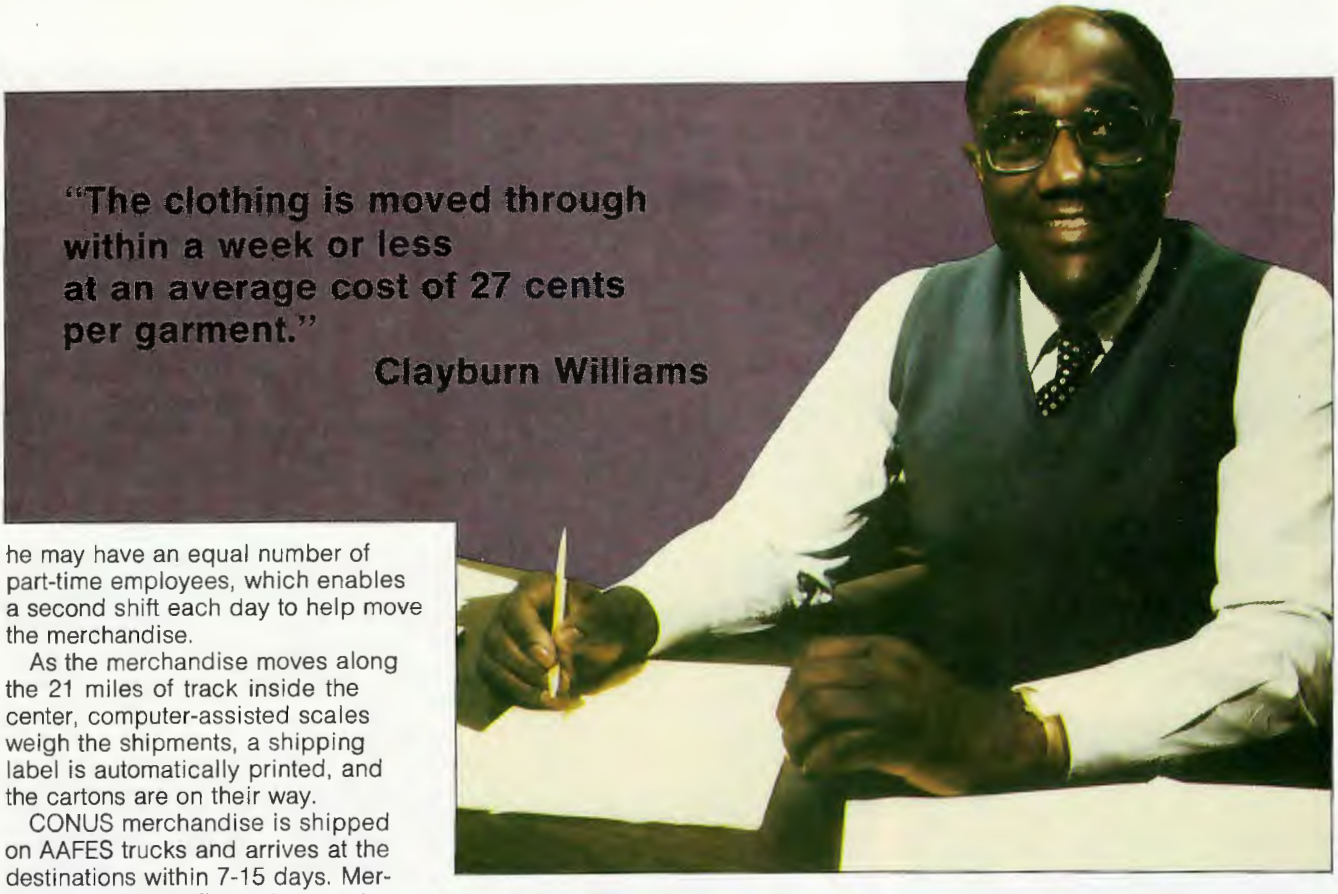
**Charlott Keller packs merchandise for shipping from the Fashion Distribution Center to base exchanges. Approximately 24 million fashion clothing items are expected to be moved this year.**


and under strict security. The shipment is checked to ensure that it is complete. There is a half-mile run through the FDC to prepare apparel for shipping to exchanges worldwide. Garments are sorted, inspected by quality assurance specialists, priced, and packaged for shipment.

The employees, using information supplied by the buyers and stores, are responsible for getting the right mix of merchandise to the stores. If a particular exchange is to get only 10 units of a particular women's skirt, distribution will be made to vary the sizes and colors to provide variety.

"We can get the merchandise to CONUS outlets in a matter of days, but we have to work further ahead for overseas outlets," Mr. Williams said. He has an average of 145 full-time employees throughout the year. However, during the peak seasons, or roughly seven months of the year,

**Jean Roberts shows a current line of buttons and belts.**




he may have an equal number of part-time employees, which enables a second shift each day to help move the merchandise.

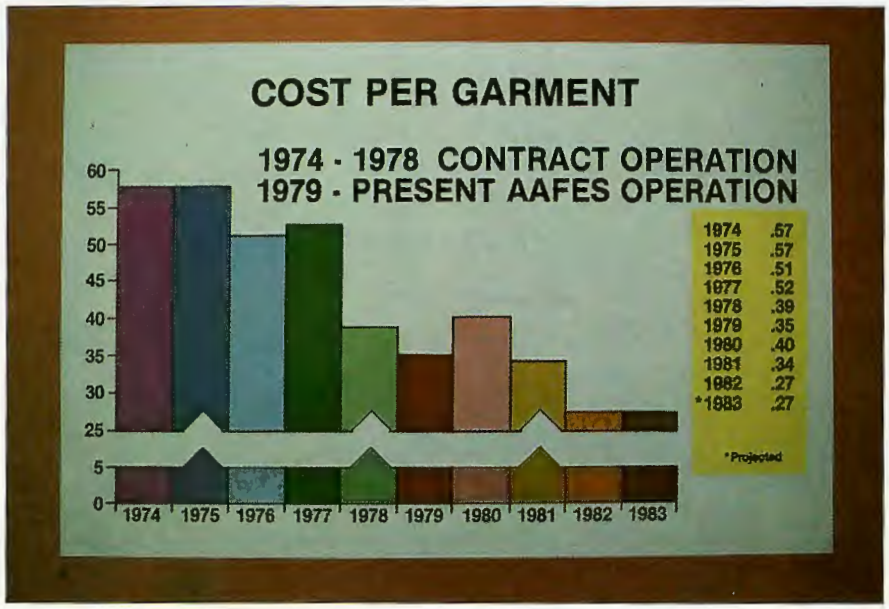
As the merchandise moves along the 21 miles of track inside the center, computer-assisted scales weigh the shipments, a shipping label is automatically printed, and the cartons are on their way.

CONUS merchandise is shipped on AAFES trucks and arrives at the destinations within 7-15 days. Merchandise for Pacific exchanges is trucked to Tinker AFB, Okla., where it is air-shipped aboard Military Airlift Command aircraft. Although some European-bound merchandise is airlifted, the majority is shipped in containers, by sea, from Houston to Giessen, Germany, for European distribution.

AAFES buyers are enthusiastic about the distribution center. George Miller, mens wear senior buyer, said, "it enables us to get fashion clothing into our retail outlets at the correct time for purchase by the customers."

It has had amazing success. For example, even with the 30-day lead needed to get clothing to Europe, the center, along with good buying practices, has enabled back-to-school merchandise to be in all European exchanges by the first week in July. It had already been price-tagged at the FDC, so all the clerks had to do in Europe was put the garments on the floor for sale.

As goods move through the peak of a "season," AAFES buyers are already well into the upcoming season. They may spend up to two weeks at a major market, such as New York, Dallas, or Los Angeles, or only a few days at Miami or Las Vegas, studying trends and choosing what they feel exchange customers will want and need. The markets




are important, but also important is what store managers want for their customers. Store management is an important cog in the buying process.

At the retail store level, the manager knows local customer needs and wants. Based on store sales and customer requests, the manager prepares a "profile" for each season. That information flows directly to buyers to assist them in developing a buy plan.

AAFES buyers are also on the lookout for "price point" merchandise that offers exceptional value to the exchange customer. For instance, if a manufacturer of "name brand" fashion jeans over-anticipated demand, the exchange service is a likely customer to purchase a portion of the overrun at a reduced cost. This provides BX customers with "name" merchandise at prices substantially


**Clothing items are kept moving (above) along 21 miles of overhead track at the Fashion Distribution Center. Packed clothing (right) for overseas base exchanges is pre-sorted prior to shipment.**

below that of the civilian market—with additional savings averaging 35 percent.

"Manufacturers naturally try to sell us everything they have," said Therese Garman, associate buyer of childrens wear. "But, we weed out less desirable items and stay within the buying budgets already established." Ms. Garman, a graduate of Tennessee Tech University who majored in fashion merchandising, has been in training with AAFES for a year. She will continue training under an AAFES plan to hire new buying talent.

"Eventually, we expect all our buyers to be trained in certain commodities," said Mr. Gillett. "We want them to become buying authorities. If a buyer has responsibilities for buying men's sports shirts, then we want to be able to rely on his or her good judgment."

This expertise also extends to buying the more basic items of apparel. The buyer's product and marketing knowledge, plus the centralized exchange service purchasing, leads to better value for the customer in basic merchandise stocked on a continuing basis.

Russell Teague buys not only designer dress shirts, but the more common dress shirts available on BX shelves year-round.

"We have a great deal of clout with the big three manufacturers of dress shirts—specifically Arrow, Van Heusen, and Manhattan," he said. "When we review the basic shirt market and go to New York, we talk with the comptrollers, presidents, and chairmen of the boards of these companies. They're astute business people and want to beat their competitors."

The extensive negotiations provide dividends for BX customers. Comparison shopping between the BX and retail men's stores can astound the customer as far as the price differences are concerned for exactly the same shirt.

Although the basic items are almost always on shelves in base exchanges and available on reorder, the exchange customer may sometimes experience frustration if "fashion" merchandise can't be special ordered or restocked.

"We experience that in footwear," said Ron Norrell, footwear section merchandise manager. "Shoes are basically a two-season fashion item—spring and summer, fall and winter. And, they are actually accessories to clothing. The styling, colors, and fabrication are determined by what is happening in the apparel market. When seasonal shoes are manufactured and the final run is complete, that's it!"

In buying for exchange customers, the buyers must first understand their customers to make correct choices. Sharon Brown, a buyer in the ladies wear section, said, "Our average shopper is in the 20s, although that varies some from region to region. She comes from mid-America, and reads fashion magazines. She shops downtown and knows the prices there as well as the prices at the BX. Our woman shopper is extremely quality conscious and inspects the garments on the spot to see how well they're made.

"I find buying an exciting job," Ms. Brown said. "It's continually full of surprises, both good and bad. The good ones come when you get a letter from a store manager who tells you a particular shipment sold out in only a matter of hours. The bad ones are when a vendor calls and says 'I can't ship the merchandise! Do you want a substitute?' We may also get a call from quality assurance saying we've got to send back a run of 2,400 garments that are defective."

It's a long time from a designer's first drawing of a garment to manufacture. It's also a long way from a production line in New York to Dallas, and to an exchange store in Guam. Buying is complicated in both fashion and basic clothing, and it takes professionals who know what they are doing to make it work for AAFES.

Mr. Miller sums it up:

"We're getting the reputation in the industry of being super tough about getting value to the airman and soldier. Every single decision a buyer makes is controlled by 'Does this garment meet what the customer wants, needs, and will buy?'"

The AAFES buyers face a difficult task in trying to please everyone. But that doesn't stop them from trying.

Consultants from the
Leadership Management and Development Center
help unit commanders develop a . . .

# MAP for the

**Col. John E. Emmons, commander of the Leadership and Management Development Center, says one of the biggest factors causing leadership and management problems is lack of effective communications. Not talking one-on-one "is our number one problem."**

Col. John E. Emmons still remembers from several years ago, one commander's theory of leadership. "I don't tell 'em what to do," he told the colonel. "I let 'em guess. Then, at OER time, the good guessers rise to the top."

Fortunately, as the commander of the Leadership and Management Development Center, at Maxwell AFB, Ala., Col. Emmons is in a position to change such perceptions and the problems they can cause.

The center's directorate of Management Strategies and Education provides an on-site leadership and management consultant service to Air Force units—usually at the group level or above. It assists supervisors at all levels to improve personal and unit effectiveness.

"Air Force people believe strongly in practicing effective leadership and management," the colonel observed, "but sometimes they don't put the principles fully into practice because of the pressure of daily business."

The consultation service, explained Col. Emmons, helps change that by focusing on improving Air Force effectiveness through increased motivation and productivity. Said Col. Emmons: "We want to make a good Air Force even better by helping people become more effective in their jobs."

The message the team carries to customers is that Air Force leaders are equally concerned about both mission effectiveness and the resolution of the many "people problems" and quality of life issues that affect service members. The two are so closely connected that, together, they have a major impact on mission accomplishment.

Such concerns of Air Force leadership are based, in part, on a survey conducted just before the Leadership and Management Development Center was formed in 1975.

When 38,000 randomly selected Air Force members were asked what they thought about the importance of good leadership and effective supervision, a clear majority—81 percent—said it was highly important. But 71 percent of those responding to another question said they felt the quality of Air Force leadership was only average at best.

The Air Force did something about those numbers by forming an organization that would concern itself solely with improving leadership and management among commanders and supervisors at all levels in all commands. That organization is LMDC.

The center's management teams provide assistance by invitation only. "We can't help someone if they don't want it," explained Lt. Col. Jerry P. Snow, chief of one of the management consultant teams.

Help is the key word. Since the consultants aren't inspectors, when they arrive at a unit, people know they really *are* there to help. And they fund their own trips!

"We like to view our work as another tool available to commanders to improve their organizations and combat effectiveness," said Col. Emmons.

Commanders can receive this service simply by asking for it in writing to Col. Emmons. But, there is a wait. The teams visit about 21 units each year, and are usually booked months in advance. When the consultants arrive, they give a unit a thorough examination, in several phases that normally span several months.

The process starts with a two-to three-day pre-visit. "We explain our procedures to the commander and his or her staff, discuss their concerns, and allay any doubts or fears," said Lt. Col. Richard E. Lampman, chief of the center's Plans and Scheduling Division. "We also examine the commander's expectations; then, we determine if we can meet those expectations, and if a full visit is appropriate."

About a month later, a full team of consultants arrives to gather information about the unit. "We try to visit a unit at what would be a 'normal' time for them, so our results will be valid," explained Lt. Col. Snow. "Our visit will only

# Future

by MSgt. Alan Prochoroff, AIRMAN Contributing Editor

**Lt. Col. Laurence D. Bachman, left, and Lt. Col. Jerry P. Snow are two members of the center's management consultant teams who are ready, when invited, to help Air Force people improve leadership and management qualities.**

tell us about that organization at that particular point in time, but we want that moment to accurately represent what the unit is like on an everyday basis."

The consultants aren't there to examine functional areas—the technical aspects of a job. They leave that to experts in other fields. Instead, they get down in the trenches to focus on leadership and management issues, making personal observations, interviewing key people, and asking a random sampling of about 70 percent of the unit to complete an organizational assessment survey.

The survey is the core of the team's effort. Its 109 questions focus on the backgrounds of the people, job satisfaction, how they do their jobs, characteristics they would like to have in their jobs, attitudes and perceptions about how they are supervised, and the general climate of the organization.

Anonymity is strictly maintained at all times, Lt. Col. Lampman said. "No individual is ever identified with a specific response, either on the survey or while being interviewed." To further protect privacy, supervisors who have fewer than four people surveyed will not receive specific survey results on that work group.

Once the information is gathered, it is processed, using computers at Maxwell/Gunter, and analyzed and interpreted by the consultants. This gives the team a picture of the organization's strengths and weaknesses as viewed by the unit's people.

How the workers see things is important because, as Lt. Col. Lampman explained, perceived problems can be as important as actual issues to the people who are affected by them. Some supervisors have learned that lesson the hard way.

For example, there was an organization with heavy travel commitments that suffered from a lack of recognition. The commander, who made it a point to send out letters of appreciation after each deployment, couldn't believe it.

"We discovered that everyone who deployed got a letter, but many considered it only a letter of participation," Lt. Col. Snow said. "The fault lay with the supervisors, who didn't differentiate between those who just went along and those who did more than their share. Once that adjustment was made, morale improved."

Another wing was named tops in its command, but its morale hit the skids six months later for no apparent reason. An LMDC team traced the cause to a wing-wide celebration of being named the best.

"The operations and maintenance workers were thanked publicly, but the support troops were forgotten," said Lt. Col. Snow. "They developed an attitude of 'Oh yeah? Just try and do your job without us.' The wing discovered it couldn't."

Problems like that can be reflected in low scores from the surveys, but numbers alone don't always paint an accurate picture of an organization.

"We once had every worker give one particular supervisor straight '1s', the lowest score possible," said Lt. Col. Lampman. In cases like this, he said, the survey becomes a jumping-off point to get more specific information about the possible problem.

"We always investigate to discover the reasons why people answered the survey as they did," he said. "We need concrete examples to show the supervisors so we can help correct any problems that may exist or so we can uncover an abuse of the survey."

In this instance, he said, the workers weren't particularly dissatisfied with the supervisor's techniques; it seems they wanted to punish him for giving one of them an Article 15, and the low scores represented an attempt to get revenge.

In that and other cases, scores have to be viewed in their proper context. "Low scores for task autonomy [having the freedom to

*"We want to make a good Air Force even better by helping people become more effective in their jobs."*

**Any improvement that results from a team's visit to a base is due to the efforts of the individuals involved, insists Maj. Lee Johnson, a former consultant who now works in the Pentagon, and Lt. Col. Richard E. Lampman, far left, chief of LMDC's Plans and Scheduling Division.**

perform a task as the worker wants to do it] may not necessarily reflect a problem if those being surveyed are aircrews, munitions loaders, or others who must use checklists," he added.

To aid in that analysis, survey results are compared with statistics in the center's data base—figures stored in its computer's memory from all its previous surveys.

Because the center's teams have visited such a wide variety of organizations since 1975, they're able to compare ongoing survey results with data from organizations with a similar mission. This allows an aircraft maintenance unit's figures to be compared with the average for other aircraft maintenance units that have a similar mission, jobs, and, presumably, the same kinds of problems.

That gives the center's analysts a more accurate appraisal of a unit—like comparing apples with apples—than if its surveys were compared with those of, say, a supply squadron—which might be like comparing apples with oranges.

Four to eight weeks after its fact-finding visit, five to eight LMDC consultants return to explain results and to help the unit start corrective actions for problems that might have been discovered.

During this visit, supervisors are given general information culled from the responses of those in their work groups, and are asked to develop a management action plan based on the results.

The consultants note the strengths and weaknesses of the group and, to protect confidentiality, provides only generalized group averages, not individual responses. The results are discussed during meetings that can be one-on-one with individual supervisors, with groups of supervisors, or with the supervisor and the work group.

As is the case with all information obtained by the LMDC team, reports about particular supervisors are confidential and will not be released to anyone else without their consent.

"Even so," said Lt. Col. Laurence D. Bachman, "we encourage supervisors to share the survey's results with subordinates. The workers want to see the results of their inputs, which they see as their expectations of their bosses' performances."

Solving problems—or preventing them—falls on the shoulders of the unit's work group; the team merely identifies the problems and suggests some ways to correct them. "We don't impose a solution for any situation. That's because ours aren't either black or white—in compliance or not," said CMSgt. Jay D. Richey, a senior management consultant.

"There's a lot of 'gray' area in leadership and management, and those who are immediately involved know best where to find a middle ground. We can't make that decision for them," the chief added. "After all, they are the ones who have to live with the solution."

Arriving at a solution to a problem is almost impossible if the boss and the work group aren't talking with—and listening to—each other. That's why establishing lines of communication is a top priority.

"Lack of effective communications is our number one problem," Col. Emmons observed. "We don't do enough one-on-one talking. Supervisors need 'face time' with their subordinates, but many see that as threatening, so they avoid it. Yet, we've heard this is precisely what workers want and need from their supervisors.

"I know this—if we communicated better, our other problems would be a lot easier to deal with."

The teams try to correct any lack of communication by creating an atmosphere in which people aren't afraid to speak their minds. "The supervisor and the workers are going to have to work together to solve whatever problems they may face," said Lt. Col. Snow, "and they'll have to talk with each other to do it.

"We find supervisors are sometimes amazed at the ideas that come from junior-ranking people,"

*"I know this—if we communicated better, our other problems would be a lot easier to deal with."*

**Don't look for consultants to impose their own solutions on problems, says CMSgt. Jay D. Richey, an LMDC consultant. "There's a lot of 'gray' areas in leadership" that dictate finding a middle ground when solving problems.**

photos by Mickey Sanborn, AAVS Arlington, Va.

he continued. "One organization, for example, had a problem with teamwork—the younger people didn't feel they were contributing because their ideas weren't being listened to.

"We held separate brainstorming sessions with the supervisors and the junior workers and asked both groups to rank their ideas in order of importance. In both cases, the top five ideas were identical."

Supervisors with high marks are quick to share survey results. But bosses with low scores may not want to even acknowledge them, at least not at first. Most have their own perceptions of their abilities, so being confronted with what others think about them can be disturbing.

Not surprisingly, some try to discredit the information with excuses like, "That's due to my predecessor," and "That's what my boss wants," or "My workers are all misfits and malcontents," said Maj. Lee Johnson, a former consultant who now works in the Pentagon. "Very few supervisors will admit they're the problem, or part of it."

Eventually, though, even supervisors with low marks want to know why they got them and how they can improve their supervisory skills. "Sometimes it's just a matter of perceptions," said Maj. Johnson. "The workers' perceptions are tremendously important. It isn't just what the supervisors think about themselves; what others think can be just as important—and, in some cases, even more so.

"In the case of low scores, we have to work with the supervisors—first to get them to accept what their subordinates are telling them, then to have them change the way they manage or lead," the major said.

That's where the management action plan (MAP) comes in. "The MAP for the future," as it's called, includes objectives for the work group, actions that will be taken by the supervisors *and* workers, a schedule to meet the objectives, and measurements to determine if the objectives are being met.

"All supervisors, regardless of how they're judged using the survey, are encouraged to develop a plan," Maj. Johnson said.

The team uses a follow-up visit four to six months later to measure progress in the organization. During this final visit, the organizational assessment survey is readministered and a comparative analysis is made with the previous survey results. The team also checks the progress of items on the various management action plans.

One objective the teams follow up on is developing leadership qualities in people. CMSgt. Richey likes to use the example of a chief master sergeant who works for a second lieutenant. Lieutenants are sometimes too timid, and don't always know how to tap a chief's expertise. At the same time, senior NCOs are often too busy to pass on their knowledge to new officers.

That situation is repeated all too often, since superiors tend to go directly to the chief to trouble-shoot a problem instead of going through the lieutenant, CMSgt. Richey said. The problem usually can be traced to overemphasizing day-to-day results.

"They're important," the chief admitted, "but we also need to invest the time it takes to develop new people. That may mean it takes longer to get the job done today, because we go through the inexperienced lieutenants, but it will help develop them into the officers we need for the future."

Helping to develop leaders and managers of the future, of course, will remain the charter of the Leadership and Management Development Center. But the center's people won't accept the credit for successes in that development.

As Maj. Lee Johnson put it, "Don't give credit for any improvement to us. Give it to those who are making the effort to change and improve their unit."

Still, results from LMDC visits show a little help here and there goes a long way.

**The RF-4C crewmembers don't know for certain how they survived the bird strike. One credits training, and the other is convinced of a . . .**

# Miracle Over King Mountain

by TSgt. Dan Allsup
AIRMAN Staff Writer

It was a balmy April evening in 1982 when the RF-4C *Phantom II* jet streaked toward the setting sun, past the stark cliffs skirting Boise, Idaho, and on toward central Oregon.

For Idaho Air National Guard (ANG) pilot Capt. Gregory Engelbreit and his navigator, now-Capt. Fredric Wilson, it was meant to be a routine night training mission.

They had a normal take-off—an uneventful beginning of a flight that would ultimately result in the airmen receiving the 1982 Cheney Award for valor.

Capt. Engelbreit was busy concentrating on keeping the *Phantom* steady at 480 knots, barely 1,000 feet above the ground. Much of the responsibility for the training portions of the mission fell on the shoulders of the stocky backseater, Capt. Wilson. As navigator and weapons system officer, his task on the night radar training mission was to locate and image four pre-arranged targets hidden in the darkness of the horseshoe-shaped training area near Oregon's King Mountain.

"As we approached the low-level route to the training range, I remember thinking it was one of those nights that makes you want to live in Boise," Capt. Wilson said. "When we lifted off from Gowen Field [the Air National Guard base in Boise], the sun was just lingering in the western skies and getting ready to drop below the hills. The evening was crystal clear, with ideal flying conditions."

But the 124th Tactical Reconnaissance Group aviators didn't have time to enjoy the rest of the evening. Suddenly, while nearing a target, the peaceful flight erupted into one of stark terror when a tremendous explosion on the left side of the canopy quickly transformed the mission into a fight for survival.

"I knew instantly what had happened," Capt. Engelbreit said. "I also knew there was something drastically wrong with me—that I didn't have the ability to fly the airplane. The last thing I remember was thinking, 'Fred, it's up to you to fly this thing.'"

The explosion was caused by a bird strike! Later, investigations by a noted ornithologist revealed that the bird was a whistling swan weighing about 20 pounds. The bird slammed through the left front quarter panel of the windscreen, and shards of shattered plexiglass ripped into Capt. Engelbreit. The carcass struck the pilot's left shoulder with the force of a cannon shell, forcing him back and damaging the fiberglass shell encasing his parachute, and was transformed into a mass of sticky-pink goo that coated the entire cockpit and the left side of the canopy.

The pilot's injuries were severe. Like shrapnel, the flying plexiglass cut into his face and neck. His left arm was nearly severed at the shoulder, where he suffered a gaping, softball-size wound to the deltoid muscle. His collarbone and shoulder blade were also splintered.

Doctors said later that the force of the howling wind roaring through the canopy cauterized the wounds and probably kept the pilot from bleeding to death within minutes.

Capt. Engelbreit said his memory of the remainder of the flight is gone, lost somewhere in the shrouded mist of his excruciating pain and the dimness of semi-consciousness.

Capt. Wilson immediately realized the emergency situation they were in, as much from the sudden loss of air pressure as from the explosive impact. His forward vision was obscured by the back of the pilot's seat and his own instrument panel, but the backseater reacted instinctively. He immediately pulled back on

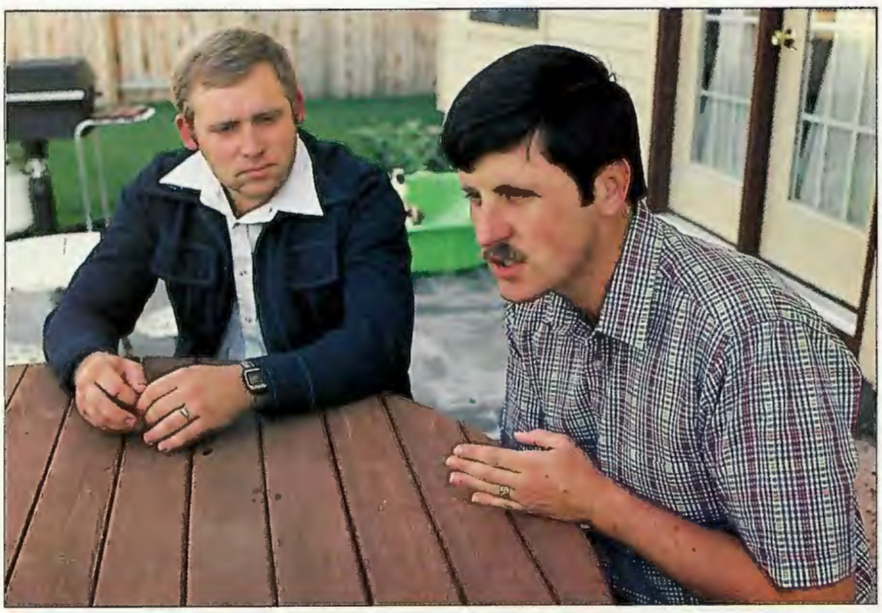


photo by SSgt. Bob Simons, AAVS, Norton AFB, Calif.

**Capt. Fredric Wilson (left) and Gregory Engelbreit, now medically retired, discuss their fight for survival when their aircraft canopy was hit by a swan.**

Illustration by SSgt. Roel W. Wielinga

the control stick and retarded the throttle to stabilize the aircraft, which for a few seconds was hurtling blindly over Oregon.

"I knew we had hit a bird, and were in serious trouble," Capt. Wilson recalled. "I tried to contact Greg through the intercom, but I learned later he couldn't hear me because the impact had pulled some of the wires loose in his helmet. The intercom microphone was working, but his head phones weren't. I could hear Greg moaning, but I couldn't help him. The only thing I could do was set a course back to Boise."

As a navigator, Capt. Wilson had never received formal pilot training, but he had no choice; he would have to fly the aircraft with visibility severely hampered and the limited flight controls available to him in his navigator's cockpit.

"About that time I wondered if the ejection seats would work, as advertised," he continued. "But when I looked around the back of Greg's seat, I saw that his parachute was damaged. It was hanging out of the fiberglass shell. I knew it would never open if we ejected. That's when I decided for sure that I would land the aircraft."

Meanwhile, Maj. Bill Miller and Capt. Michael McGrath, the aircrew of another Idaho ANG RF-4C, heard the emergency radio transmission and soon was vectored in on the left side of the damaged *Phantom*.

"At first, I didn't know Bill and Mike were there, because I couldn't see through the bird goop on the left side of the canopy," Capt. Wilson said. "But when ground control told me that Maj. Miller was there, I directed him to swing around to my right side and I positioned the plane on his."

Flying in night formation—with the other RF-4C just inches away—Capt. Wilson thought ahead to the next problem: how to land the *Phantom* from the back seat. Although he had flight controls similar to the pilot's, he would have to use the emergency system to lower the gear and flaps. Using them would blow the jet's hydraulic system and affect its brakes and steering once it touched down.

Before the navigator could find a solution to the problem, however, a series of events occurred that neither airman can explain.

Slumped semiconscious in the front cockpit, Capt. Engelbreit somehow lowered the landing gear, put the flaps down, turned on the aircraft's landing lights, and switched on the emergency radar transponder, alerting radar operators that the flashing blip on their screens represented an aircraft in danger of crashing.

He also released the emergency landing hook. When a master caution light on the navigator's control panel flashed on ominously with the lowering of the hook, Capt. Engelbreit switched it off. All procedures were performed flawlessly and in correct sequence.

There was no time for the incredulous Capt. Wilson to question how the gravely injured pilot had managed to do these things; the busy navigator still had to make a safe landing.

"I don't remember being afraid," he said. "I was just concentrating on flying. There were so many things to do that I didn't have time to be afraid. That came later.

"On the way back to Boise, those who were supporting us on the ground and in the air, decided we should land at Mountain Home [AFB, Idaho] because the base has a longer runway and medical facilities," Capt. Wilson continued.

"I wasn't even looking for the runway. I was just trying to maintain position on Maj. Miller, but as we approached the base I saw the runway lights through the right window."

Moments later, the crippled *Phantom* touched down on the flight line, which was alive with the flashing lights of emergency vehicles. With visibility only from the right side, Capt. Wilson was unaware of his position on the runway until he felt the bone-jarring wrench of the aircraft hook catching the arresting cable.

The *Phantom* came to a complete halt in less than a thousand feet, but the crisis wasn't over. Capt. Wilson didn't have the controls to shut down the aircraft's engines.

Col. Ernest Coleman, then-commander of Mountain Home's 366th Tactical Fighter Wing, and emergency services technician TSgt. James Gardner scrambled onto the left wing to get close to the airmen.

Risking their own lives, Col. Coleman held onto TSgt. Gardner's belt while the NCO leaned perilously over the still-racing jet intake. One slip and they could both be sucked into the intake by the engine's powerful vacuum.

As TSgt. Gardner reached to assist the pilot, Capt. Engelbreit somehow

photo by SSgt. Bob Simons, AAVS, Norton AFB, Calif.

**Mr. Engelbreit uses a model of an RF-4C to describe the near-fatal bird strike.**

forced his mind out of the grayness of semiconsciousness to release the canopy himself. How he did it raised another question to be answered later.

While waiting for the crash rescue crew to inspect the ejection seats—a safety precaution to prevent additional injuries—the navigator secured the injured pilot's ejection seat with the safety pins from his own seat.

Before being lowered from the aircraft and into a waiting ambulance, the nearly fatally injured airman groggily asked his navigator what had happened. Before Capt. Wilson could explain, however, Capt. Engelbreit slipped into unconsciousness.

Before the fateful flight, the two men had flown together several times, but they were little more than nodding acquaintances. Today, more than two years after the near-tragic flight, the first Air National Guard members ever to receive the Cheney Award are close friends, bonded by their mutual experience of facing—and cheating—death.

Capt. Engelbreit, 37, is dapper and dark-haired; sturdy despite a slight physical build. Although he has since been medically discharged from the Air National Guard, he seems to have recovered from his injuries and the five operations needed to restore partial use of his arm. Today, he is a successful marketing engineer in Boise.

Capt. Wilson, 34, still flies RF-4C reconnaissance missions for the 190th Air National Guard Squadron at

Gowen Field. In civilian life he is a petroleum equipment service manager in Boise. Stocky, with ash-blond hair flecked with gray, he wears miniature pins of an RF-4C *Phantom* and the Distinguished Flying Cross in the lapel of his civilian coat.

Capt. Wilson has retained his sense of humor about the accident. When urged to move closer to Greg Engelbreit for a photograph, the navigator laughed and warned his former pilot, "You better watch out. The last time we sat this close together, we got in trouble!"

But he didn't laugh when asked why he didn't eject from the essentially pilotless aircraft.

"I didn't eject because I knew Greg's parachute was damaged," he said, as though that was the only possible answer. "I'd like to think most people would do the same thing. I believe most of us are willing to take a chance to help someone else. As humans, we often think of other people, even at some risk to ourselves."

But had he made a conscious decision to stay with the airplane?

"Decisions like that aren't made at the time. I think most people mentally project themselves into situations like this when they are younger in order to plan their reactions.

"I think I actually made that decision when I was a child. Such a decision was programmed into my head. If I did react responsibly, I credit it to the way I was raised and to my religious and military training. That so-called split-second decision was actually the sum total of my life experiences."

Capt. Wilson's courage and heroism aside, there are still questions to be answered about the events of that April evening.

How was Capt. Engelbreit able to react during the emergency? How was he able to turn on the radar transponder and landing lights, lower the flaps and landing hook, turn off the master caution light, and otherwise prepare the aircraft for landing?

More importantly, how was he able to hit the switch to lower the landing gear? Even if he had been conscious, how could he have reached the landing gear controls, which are on the extreme left wall of the cockpit?

Tests later proved it is almost physically impossible to reach that switch with the right hand while strapped into the cockpit, and doctors insist he couldn't have done it with his terribly mutilated left arm.

Capt. Wilson believes he has the answer, and he provided it during a church gathering. A Mormon, the guardsman drew a parallel between Capt. Engelbreit's actions that evening and the repetitive manner in which flying and religious lessons are learned.

"Greg did what he had been taught to do in flight training. Before we fly, aircrews always have formal briefings to review emergency procedures. Among the things we discuss are bird strikes.

"We talk about it so much it becomes second nature. Gear down, flaps down, hook down. It's like memorizing scripture—you recite the lessons so often, they stay memorized. It's the value of repetition."

Capt. Engelbreit, a Roman Catholic, has his own opinion about that flight.

He speaks of the accident in the measured tones of a man grown accustomed to repeatedly answering the same questions. He paused only when asked how, when barely conscious, it was possible for him to help land the aircraft.

The veteran of 65 combat missions in Vietnam seemed to ponder how his reply might be accepted by people inherently skeptical of supernatural intervention in the course of daily life. After some hesitation, he said, "Frankly, I don't remember anything after we hit the bird until we were on the ground. I don't recall doing any of the things Fred says I did. I can only take his word for it.

"But I do know one thing—there's no way for those flaps and landing gear to have been lowered without God's intervention. I firmly believe it was a miracle. God was with me that night. It's a given—there's no other way it could have happened."

## The Cheney Award

Established in 1927, the Cheney Award recognizes acts of "valor, extreme fortitude, or self-sacrifice, in a humanitarian interest performed in connection with an aircraft."

The award was established in 1927 as a memorial to 1st. Lt. William A. Cheney, the first American casualty in Italy when he was killed in a midair collision in 1918 during World War I.

photo by SSgt. Bob Simons, AAVS, Norton AFB, Calif.

The Cheney Award consists of a bronze medal, certificate, and cash award. The medal depicts the face of an intrepid aviator riding winged winds, and the name of the recipient is engraved on a shield superimposed on the back.

President Calvin Coolidge presented the first Cheney Award, in 1928, to MSgt. Harry A. Chapman for his heroism in rescuing four companions from a flaming semidirigible. Captains Wilson and Engelbreit are the 55th and 56th recipients of the award, and the first members of the Air National Guard to be so honored.

In addition to the Cheney Award, Capt. Wilson received the Kollegian and Earl T. Ricks Memorial trophies, and the Distinguished Flying Cross. Capt. Engelbreit shared the Ricks Trophy with Capt. Wilson, and also received his fifth oak leaf cluster to the Air Medal.

—TSgt. Dan Allsup

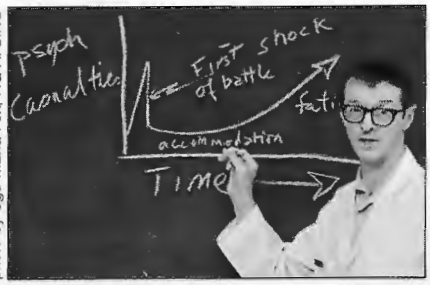



photo by Sgt. Maria Fox, HQ AFSINC

**Could combat fatigue paralyze bases under attack? Yes, says Col. (Dr.) David Jones, an expert on battle stress.**

# Wars of the Mind

by Capt. Brian Hoey
AIRMAN Associate Editor

Somewhere, in everyone's mind, is a borderline that separates fear from panic. Men in combat skirt this boundary daily. And when they have fought the fear, fought down the panic too long, their minds can become brittle. Sometimes the line is crossed. Men can break, becoming casualties without wounds—victims of combat fatigue.

The specter of combat fatigue has haunted warriors throughout history. It sets in when a person mentally crumbles under the unrelenting physical and emotional stresses of war. Suffering from symptoms ranging from extreme agitation to severe depression, victims cannot function normally. Without proper treatment, they can be reduced to psychological cripples.

Ernie Pyle, the World War II correspondent, wrote of the weariness of battle:

"A soldier who has been a long time in the line has a look in his eyes that anyone who knows can discern. It's a look of dullness. Eyes that look without seeing, eyes that see without conveying the image to the mind. It's a look that is a display room for what lies behind it: exhaustion, lack of sleep, tension for too long, weariness that is too great, fear beyond fear, misery to the point of numbness, a look of surpassing indifference to anything that anybody can do."

While Air Force members rarely engage in face-to-face fighting, that very personal kind of war that produces most combat fatigue, air bases could come under direct attack in a future conflict. It's a possibility that worries Col. (Dr.) David Jones, an Air Force top authority in combat psychiatry.

"The Air Force has limited experience in fighting on its own bases," said Dr. Jones, chief of the Neuropsychiatry Branch at Air Force Systems Command's School of Aerospace Medicine, Brooks AFB, Texas. "The Air Force people most typically engaged in fighting have been the fliers, not the support people.

"A fighter or bomber unit may have a tremendous tradition of combat bravery in the skies," the doctor continued. "But the support people, who literally make up 85 percent of most bases, simply aren't psychologically prepared like the aircrews for combat operations."

It's this fact that Dr. Jones wants Air Force people to think about so they can prepare to cope with the emotions of war. In 1980, the Air Force surgeon general charged him with the responsibility of conducting training on the subject. Since then, Dr. Jones has focused on bringing his message to medical professionals and commanders while building a general awareness Air Force-wide through videotaped presentations and base visits.

Through it all he has become even more convinced that understanding the psychological repercussions of intense fighting may save lives if an air base becomes part of the front line.

"Combat fatigue could effectively paralyze a base under assault if its support personnel are unable to withstand the mental pressures," Dr. Jones said. He believes that more unit commanders and medical personnel need to be made aware of the possible havoc that could result on a base hit with numerous psychological casualties.

"In one battle area during Israel's 1973 Yom Kippur War against Egypt, 900 of the first 1,500 Israeli casualties were psychiatric casualties," Dr. Jones said, citing an Israeli Defense Force study. At the end of that three-week conflict, he added, the Israelis had one combat fatigue victim for every three wounded soldiers.

Who are the likely candidates for combat fatigue among U.S. Air Force support personnel?

Security policemen and combat control team members are susceptible because of their exposure to possible hostile ground fire, Dr. Jones said. Maintenance and munitions workers servicing aircraft on an open flight line are also at risk—perhaps more so because they can't shoot back. Administration, supply, medical, and other personnel working indoors are less exposed because they are more protected within buildings. But this blessing is mixed, he added, since buildings are stationary targets whose occupants could have a harder time detecting an attack in time to resist or escape.

Frequent conflicts in the Middle East have provided much of the current information on combat fatigue. Most of the data centers on the performance of ground troops because of their greater numbers and the dangers of their mission.

Some recent statistics on Israeli army casualties come from a U.S. Army report on the war in Lebanon from June to September 1982. It was prepared by Lt. Col. (Dr.) Gre-

**"Wake up, get up, throw up, and go up," joked tense pilots awaiting Vietnam missions. Aircrews haven't faced the hardships endured by Army troops in past wars; as a result, fliers suffered less combat fatigue.**

gory Belenky, a staff psychiatrist at the Walter Reed Army Institute of Research. He gathered the information through numerous interviews with Israeli medical professionals and combat fatigue victims.

According to the report, the Israelis had 465 killed, 2,600 wounded, and suffered 600 psychological casualties. Overall, 23 percent of the wounded casualties (a figure including the 10 percent of psychological casualties who were also wounded) were lost to combat fatigue.

"Rates of combat fatigue are directly tied to the intensity and duration of battle," Dr. Belenky said. Dr. Jones agreed, adding that the high rates during the Israeli conflicts are partially due to that country's warfighting philosophy.

"The Israelis are generally considered to have a superb fighting force," said Dr. Jones, who has discussed the subject with the chief of psychiatry of the Israeli air force. "Their wars tend to be brief, intense, and relentless—100 percent all-out! There's no guarantee that American forces can't be involved in fighting just as intense."

High rates of combat fatigue are a predictable result, Dr. Jones said, because Israeli troops often fight this way for days, without adequate food or water, and with very little sleep.

Drilled in a battle doctrine emphasizing awareness of these hazards, however, Israeli military leaders are sensitive to the needs of their soldiers. "Commanders have been known to delay battlefield advances so their troops could rest," Dr. Jones said.

Military leaders recognized the symptoms of combat fatigue early on. A Greek commander fighting in Persia some 23 centuries ago observed the exhaustion of his soldiers, who were in "a state of deep despondency" but "could not sleep because of their misery." During the American Civil War, Union Army physicians called it "nostalgia—a painful longing for home."

In World War I, combat fatigue was labeled "shell shock" because it was thought to be caused by the concussion of artillery explosions. The terms battle fatigue and combat fatigue were used interchangeably in World War II.

Twenty-three percent of all casualties suffered combat fatigue in World War II, according to the 1981 book, *How To Make War*, by former Department of Defense consultant James F. Dunnigan. Due to improved medical care and shorter tours of duty in later conflicts, this rate dropped to 6 percent in Korea and 3 percent in Vietnam.

Air Force aircrew members have suffered less from combat fatigue in past wars than Army soldiers, according to Dr. Jones. This is mostly because fliers aren't subjected to the same around-the-clock hardships as ground troops who must endure physical discomfort in addition to fighting.

But other factors also come into play. "Air Force fliers are carefully screened and selected," Dr. Jones said. "They're thoroughly trained. This produces confidence in themselves and their fellow fliers." He added that these same traits reduce combat fatigue rates in other elite Air Force units as well as those of sister services, such as the Army Green Berets, paratroopers, and Navy Seals.

Fliers and ground troops encounter fear differently. A rifleman on patrol stalks danger as an unknown, never sure of exactly when or where he will face it. To a flier, danger comes more neatly packaged, bound by the stark precision of numbers: take-off times, fuel loads, target coordinates, amount and type of ordnance.

Col. Bill Stocker knows about fear. On a muggy December morning in 1972, he taxied his B-52 into take-off position on the runway at Andersen AFB, Guam, ready to lead one of the first bombing waves of Operation *Linebacker II* against Hanoi. He remembers the anxiety, the clammy hands, the jumpy stomach.

"I always got that way before football kickoffs, too," said Col. Stocker, now the director of tactics at Strategic Air Command headquarters, Offutt AFB, Neb. "But once I made contact—in this case getting bounced around by surface-to-air missiles instead of players—I was okay."

Col. Stocker said he dampened his fear by keeping busy and studying the mission and enemy capabilities. "You can never get enough intelligence information," he said.

"Pilots who knew that survived."

Combat fatigue results not only from heavy fighting, but also from the constant irritants of the battlefield.

"It's the little things that contribute to the sensory overload," Dr. Jones said. "Bruises from sleeping

photo © SSgt. Don Sutherland, AAVS

on the ground, noise, heat exhaustion, frostbite, bug bites, sweat, dirt, no bathing. It all adds up."

External aggravations aside, the combatant also battles his instincts of self-preservation.

"Every morning he wakes up and goes through this titanic inner struggle between the fear that says run away and the willpower that says stay and do your duty," he said. "Finally, it catches up with him: mental and physical fatigue; unresolved grief; guilt over being alive while others have died; and the general horror over the situation he's in.

"If this continues long enough, it can eventually win out. And, when that happens. he succumbs to combat fatigue," Dr. Jones added.

Combat fatigue strikes universally, the question being not whether , but when. "If you keep people in combat without relief long enough, almost everyone will be affected. The rare exceptions are the psychopaths, who enjoy that sort of thing," he said.

Reaction to combat is a two-step process. The shock of initial engagement is followed by about a week of adjustment. Then true fatigue begins setting in. How long an individual lasts depends on the intensity, duration, and conditions of fighting.

Symptoms are similar to those found during catastrophes or natural disasters. The dominant emotion is fear; the dominant physical factor is exhaustion. Together, their impact on people is unpredictable.

Fear may so overwhelm a person that he or she cannot concentrate, and may suffer amnesia. A victim can also become extremely alert and anxious. Or the reverse may occur: a dulling of the emotions and senses, or mental withdrawal.

Physical signs of combat fatigue can include hyperventilation; heart palpitations; increased pulse or blood pressure; anorexia, nausea, diarrhea, and cramps. There might also be "hysterical" paralysis, blindness, or muteness.

Vomiting is a common symptom. "People vomit from stage fright," Dr. Jones said. "Is it surprising that they vomit going into battle? In Vietnam, a joke among the pilots was 'wake up, get up, throw up, and go up.' It sounds strange, but it's helpful that they could make fun of it. Humor goes a long way toward curbing fear."

Fortunately, most victims can be successfully treated and returned to normalcy within a few days. The treatment for combat fatigue is implied in its name, the doctor said: Rest cures fatigue.

In presentations before medical professionals, Dr. Jones hammers home the importance of prompt and proper treatment of combat fatigue victims. "The people can be returned to duty if handled properly," he advised a group of nurses. "If you don't handle them correctly, they will not only be out of action, they could be down the tubes for the rest of their lives."

Dr. Jones summed up the treatment, which follows the acronym BICEPS:

Brevity: Initial treatment lasts no more than three days.

Immediacy: Identify need for care early and provide it quickly. Don't wait for the consultant to arrive.

Centrality: Treat victims away from a hospital, where they could identify with a "sick" environment. "If you reinforce their belief that they are sick, the subconscious—which wants us to live forever—will jump on it," Dr. Jones advised.

Expectancy: Friends, superiors, and medical staffers can help the victim by giving him clear signals that he'll be returning to duty in a few days. The Israelis heavily emphasize this by allowing the men to keep their weapons and ammunition as a reminder.

Proximity: Treat the victim as close to his unit as possible to allow him to keep in touch with and receive visits from friends.

Simplicity: Focus treatment on combat fatigue. Lend encouragement without, for example, delving into side issues such as why he joined the service.

The treatment is designed to remove the person from the environment that led to his collapse, if only for a short time. Decent food, uninterrupted sleep, and a chance to compare experiences with others are usually enough to put the victim back on his feet.

BICEPS results prove the method works. Army estimates show that about 85 percent of combat fatigue victims return to combat support jobs. The original remaining 15 percent need longer than the three days to recover and are shipped to larger hospitals for further treatment.

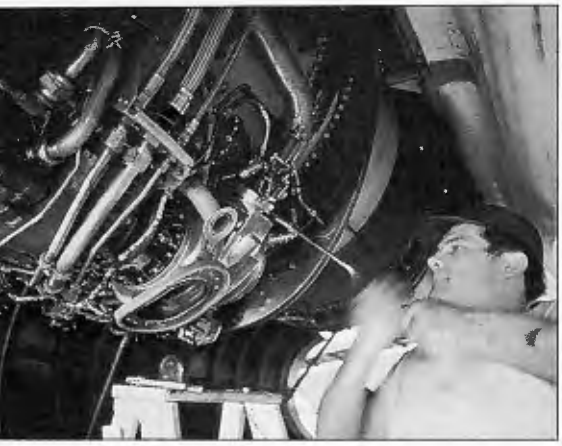
Although BICEPS may sound somewhat harsh, Dr. Jones said the alternatives are much worse.

"First, a decision to replace one person means someone else will have to go in his place. Second, the replacement will be new and won't have the support of friends in the unit. No one knows his capabilities, and he doesn't know theirs. As a result, everyone is more at risk," the doctor said. "Finally, the person being 'helped' may think he's being branded a psychiatric patient. He could use this as an excuse for a lifetime of disability."

BICEPS gives the victim another option. "We're telling him 'You're not a coward; you're not sick; you're just worn out; and you'll be all right in a few days.' Our attitude has to be that it's no big deal. The less the victim makes of it, the better off he'll be," Dr. Jones said.

The doctor said this outlook is especially important when dealing with younger men still maturing. The problem was prevalent in Vietnam, where the average age of soldiers was 19, as opposed to 26 in World War II.

"Fear is a normal reaction to combat," Dr. Jones explained. "This is no disgrace, unless you throw



**Support personnel such as this engine specialist could come under fire if flight lines become front lines. Without relief, combat fatigue strikes universally: The question becomes not whether, but when.**

down your weapon, or stick your head in a hole, or desert." A pounding heart, tension, dry mouth, trembling, and sweating are normal. "These reactions don't imply cowardice or a lack of moral fiber."

Preventing combat fatigue is as important as curing it. This responsibility falls squarely on the shoulders of commanders.

"The best weapons against combat fatigue are esprit de corps and a tightly knit unit," said Dr. Jones. "One of the ways to succeed in treating combat fatigue victims is to send the victim back to the same unit. The message to him is that he's still acceptable. This is terribly important for his mental welfare; he mustn't be rejected."

Is there a typical kind of person who suffers combat fatigue more than others?

"People who don't get along with others," Dr. Jones said, "usually have trouble sooner, and don't recover as rapidly."

The colonel is particularly concerned that commanders who don't understand combat fatigue and its treatment might reject troops who develop psychological problems in battle.

"This reaction could deplete unit strength unnecessarily," he said, warning that commanders also court combat fatigue if they push themselves too hard in battle.

"The British have found that the absolute minimum of uninterrupted sleep required in combat is about four hours," Dr. Jones said. "Even Soviet battle doctrine holds that troops should not be disturbed between 2 a.m. and 5 a.m. if at all possible.

"But the people we really need to watch this are the commanders. They'll do everything everyone else does, then stay up all night planning. Battles have been lost by commanders who couldn't think straight because they hadn't slept."

Since Dr. Jones began his efforts to increase awareness of this danger, the Air Force surgeon general has established mental health teams that would be assigned overseas to help commanders detect and prevent combat fatigue among their units during a conflict.

"You can't rehearse war," Dr. Jones said. "You can't fake it, practice it, or exercise it from an emotional standpoint. Therefore, we've got to be ready to deal with combat fatigue in the same way we have to prepare for war."

The doctor believes strongly that unit leaders should emphasize their unit heritage as a way of instilling pride in its members. Project Warrior is a vital tool in helping younger airmen, NCOs, and officers understand their unit's history in combat, he said.

"It's absolutely vital that we get people who have been in combat talking at commander's calls about their experiences," he said. "Many people I meet have never been asked about what happened to them in combat. They're a valuable source of knowledge that we need to tap before it is lost to us."

But the best prevention for a potential warrior is to simply make friends. "People need others to talk with in combat. Friends can be emotional relief valves.

"People who have been in combat together are joined in a way that cannot be explained to someone who hasn't been there." After every other reason for friendship has been exhausted, he said, the bond between warriors remains.

"There have been numerous instances of men walking away from hospitals where they're being treated for wounds," Dr. Jones said. "They know the unit is moving back into combat, and that their buddies are going into the fight without their being there to look after them. That's the strength of that bond. It's pure gold, and it's what wins wars."

## Running Against the Clock

The big, moon-faced clock perched on a gray metal bookshelf overlooks stacks of research papers and reports rising from the carpeted office floor. As if to invite questions, the 12-inch GE Standard clock sports a fire-engine-red fighter pilot's helmet!

"The helmet is from my unit in Spain, the 353rd Tactical Fighter Squadron," explained Col. (Dr.) David Jones, chief of the Neuropsychiatry Branch at the School of Aerospace Medicine, Brooks AFB, Texas. "I also wore it in Vietnam, with a camouflage paint job. It reminds me of where I've been."

That link to the past keeps fresh the memories of war and its effects for one of the Air Force's top combat psychiatrists. A flight surgeon with nearly 300 of his 2,000 flying hours flown in combat, Dr. Jones spearheads an Air Force-wide program to increase awareness of the dangers of combat fatigue.

The brown-haired, blue-eyed North Carolina native has the horn-rimmed look of a musing academic absorbed in his work. Harvard-educated by way of Duke University School of Medicine, he is spare and animated, a rapid-fire speaker whose words seem to tumble out almost as fast as he can think them.

Approaching 30 years of wearing the blue suit, Dr. Jones realizes that time is running out in his military career. "I think I've got the ball rolling," he said of his combat fatigue education efforts. "But I want to make sure it's got the momentum to keep going after I leave."

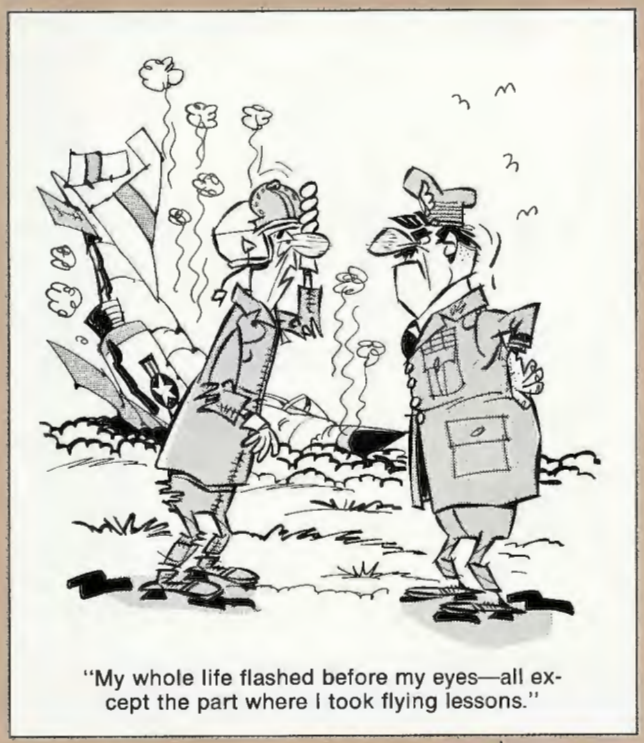
One might think the doctor is a candidate for the condition himself. He criss-crosses the country regularly, delivering presentations to thousands of medical colleagues, commanders, and students. One month he's bivouacing in a leaky tent in the swamps of Camp Lejeune, lecturing to Navy nurses. A few weeks later he's trading ideas at a tri-service conference at the Naval Post-Graduate School in Monterey.

"Understand that you've got to remember what I tell you if your turn comes to go to war," he recently began a presentation to a group of nurses. "Listen now, because you won't have time to read your notes once it starts."

—Capt. Brian Hoey

# Here's Jake

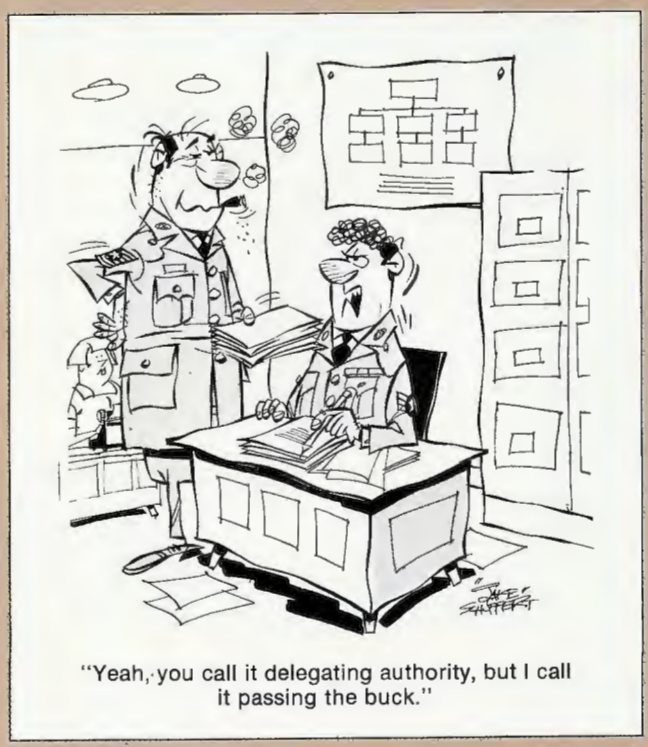
"JAKE" SCHAFFERY



"My whole life flashed before my eyes—all except the part where I took flying lessons."

"Yeah, it's bigger than anything we have down at the Cape, but I'll bet it never gets off the ground!"


"I suggest you leave the keys in the ignition and hope somebody steals it."



"Yeah, you call it delegating authority, but I call it passing the buck."

Controversial?
Maybe, but PALACE BALANCE works.

# Balancing the Work Force

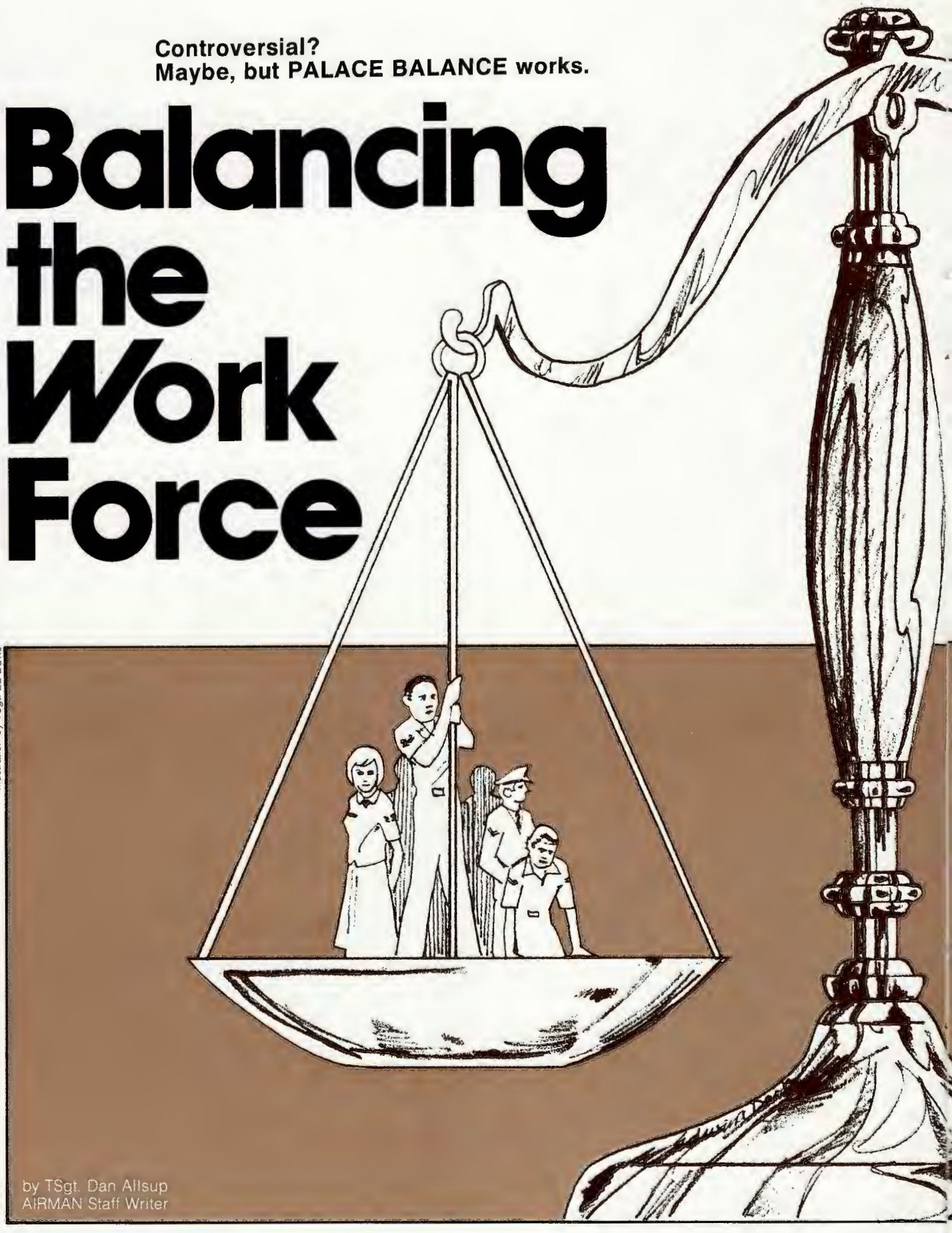
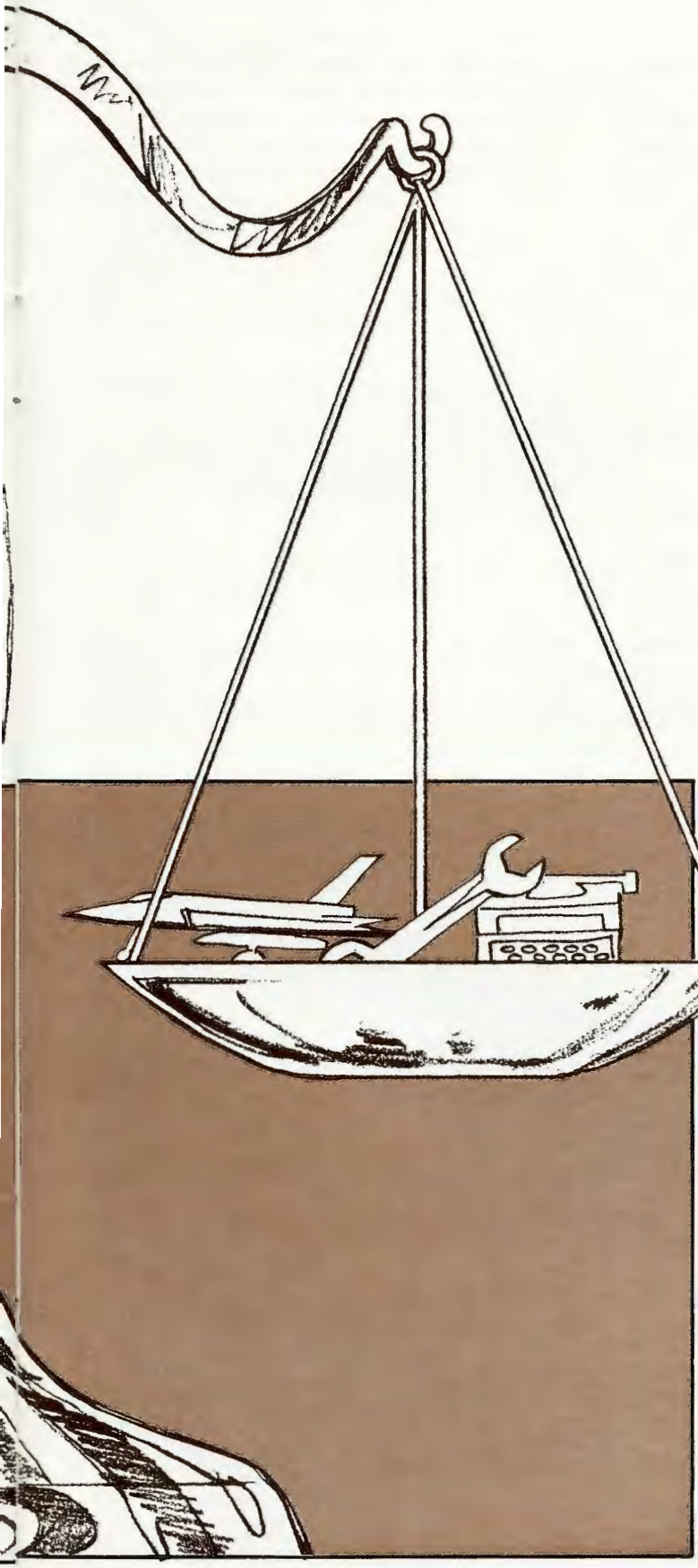


Illustration by TSgt. Ed Davis

by TSgt. Dan Allsup
AIRMAN Staff Writer



PALACE BALANCE is a necessary—but somewhat controversial Air Force personnel program.

Created to improve alignment of grade and skill manning within Air Force enlisted career fields, PALACE BALANCE retrains airmen on second or subsequent enlistments from "overage" specialties—those with too many NCOs—into career fields that have shortages of NCOs in the supervisory grades.

On the surface, it's a program almost beautiful in its simplicity. If one Air Force specialty code (AFSC) has 10 too many staff sergeants, and another career field has 10 too few, the Air Force retrains 10 staff sergeants into the shortage AFSC.

In reality, PALACE BALANCE is anything but simple. It's a far-reaching program that dramatically impacts on the careers of the airmen who are affected by it.

TSgt. Billy Browning is one of them. Now assigned to Charleston AFB, S.C., the NCO was a vehicle dispatcher in Panama, when, in May 1982, he received a letter from the Air Force Manpower and Personnel Center at Randolph AFB, Texas. He still remembers key words of the message, which eventually changed the direction of his career:

*". . . Your AFSC is a target for PALACE BALANCE II retraining. . . . This program has two phases, voluntary and selective. . . . Between now and 31 Oct. 82, 220 NCOs in your career field will be retrained. . . . Please reply by 11 June 82. . . .*

"Why me?" was the NCO's immediate response—and it was a legitimate question. TSgt. Browning considered himself a good airman, and he liked his job. Why should he be forced to change jobs?

He was upset, but decided to make some input to his future career field. TSgt. Browning reluctantly volunteered to retrain into heavy equipment operations. He preferred to do that, rather than take a chance on being involuntarily retrained into a career field he didn't want.

The NCO received another blow when he learned there were no openings in heavy equipment. As an alternative, he volunteered to retrain into aircraft maintenance. This time, the request was granted.

Today, TSgt. Browning has a different view of the then-unwelcome change.

"Yes, I was unhappy at the time," the NCO admitted. "I thought I had more to offer the serv-

**. . . many second-term airmen are hired away from the Air Force by civilian companies.**

ice in my old career field. I was superintendent of my section in Panama, and was progressing nicely. Now I will have to work my way back up the ladder, and it'll take some time. I had been in the Air Force 13 years, and I liked my job. I didn't want to change career fields.

"But now, after working in aircraft maintenance for a while, I am extremely satisfied and look at my new job as a challenge.

"Aircraft maintenance is tough, but the people in my new section are great, and they seem eager to help me because they know I'm just learning," he said.

TSgt. Browning's experience is probably similar to that of many airmen who have retrained under the PALACE BALANCE program. His reactions may even be more the norm: initial unhappiness, followed by an uneasy period of adjustment to the demands of a new job, then the realization that the change may have been the right move after all.

Others, like TSgt. Mark Buydasz, are more philosophical about being required to retrain. A former vehicle operations specialist, TSgt. Buydasz now works with aircraft navigational systems at March AFB, Calif.

"I wanted to retrain anyway, and I like my new career field. I'm still learning the job, but I watch the people in my section, and they help me a lot. I'm willing to learn from anyone who knows more than I do, he said.

According to MSgt. Steve Tuten, NCOIC of AFMPC's PALACE BALANCE team, several factors, such as equal selection opportunity for promotion, grade distribution, new or increased authorizations, and deletion of authorizations, may cause overages or shortages within Air Force Specialty Codes. PALACE BALANCE is one program that helps redistribute the available resource equitably.

"Some career fields, such as food services and vehicle operations, are considered 'labor intensive.' In other words, there are more jobs for airmen in the lower grades than there are at the supervisory levels.

"If too many people were promoted to the higher grades in these jobs, the Air Force would be paying staff and technical sergeants to do the same work they did as airmen. There just aren't enough supervisory jobs available in some fields to go around, so some people must change jobs."

On the other hand, there are specialties considered "supervisory intensive"—where there aren't enough NCOs to fill the authorizations.

Some of the shortages are due to low re-enlistment rates—often not because the fields are unattractive, but because they are too attractive to outside employers.

Because of their specialized training, many second-term airmen are hired away from the Air Force by civilian companies. Aircraft-related jobs such as avionics and maintenance are examples of career fields that, historically, need more people in the supervisory ranks.

In an effort to resolve these career imbalances, PALACE BALANCE moves airmen from the "have's" of the Air Force to the "have-nots."

The Air Force recognized the problem of grade imbalances in the mid-1970s. The Vietnam phase-down affected the number of people needed in some AFSCs and, about the same time, more jobs being performed by Air Force people were awarded to civilian contractors to perform.

Several options were considered to solve the problems that developed. Among them were conditional promotions, and awarding promotion points to those who voluntarily retrained. Another alternative was to involuntarily retrain the number of people needed into a particular field. For various reasons, these options were not implemented.

In 1976, PALACE BALANCE I was created, strictly as a volunteer retraining program. NCOs in the grades of staff sergeant through senior master sergeant were given their choice of AFSCs and bases of assignment, when available, if they voluntarily retrained.

Despite the hopes of Air Force officials, PB I fell short because too few NCOs were willing to retrain into the shortage skills.

Therefore, the retraining program was revised and PALACE BALANCE II was implemented in May 1979.

The program was in two phases—voluntary and selective. Incentives such as choice of career fields (if available), and a guaranteed assignment of two years at the NCO's base of choice were offered. If an insufficient number of NCOs volunteer to retrain into undermanned fields, then a screening process is used to selectively (involuntarily) retrain the remaining number of NCOs needed.

PB II was a success—the Air Force was able to

put the right people in the right jobs with the least amount of pain and turmoil.

Under PALACE BALANCE II, 3,028 airmen were retrained. Only 778 did so involuntarily, but each of them had the initial chance to pick his or her new field and base of assignment. Today's program is essentially unchanged from 1979 except for the target grades, which have been changed to senior airmen through master sergeant.

AFMPC officials point out that not everybody is subject to retraining under PALACE BALANCE.

"We're looking for several things from potential retrainees," said Lt. Col. Gary Rowland, chief of AFMPC's Airmen Retraining Branch. "Selective phase retrainees must be high-quality airmen and in most cases have no more than 15 years in service. We don't want to disrupt the career of a 15-year NCO and make him or her start over. We would rather retrain the younger people, those with six to eight years in the service. In the selective phase, those with the least service are selected first.

"A careful screening process is completed before the selections are made to make sure we


**RIGHT: TSgt. Billy Browning says he was reluctant to cross train, but admits promotion opportunities are better in his new field.**
**BELOW: A former vehicle dispatcher, TSgt. Browning supervises 13 people in the aircraft maintenance career field.**

**"In fiscal 1984, only 550 people will be selectively retrained out of an enlisted force of 500,000. That's only one-tenth of 1 percent of the enlisted force."**

get only qualified people," Lt. Col. Rowland continued. "We only want the qualified individuals—people with no unfavorable information in their files, good performance reports, and the appropriate scores on the Armed Forces Classification Test."

But if only certain qualified individuals are eligible to be retrained under the program, is PALACE BALANCE a case of the most qualified individuals receiving the worst treatment?

**PALACE BALANCE is a "tough, but necessary" personnel program, says Lt. Col. Paul Rowland.**

"That's not the case," Lt. Col. Rowland replied. "We are giving these people an opportunity to advance and broaden their careers and perspective of the Air Force.

"In most cases, they come from skills where career opportunities are limited, and they go into fields that have far greater opportunities for advancement. Some of these career fields offer re-enlistment bonuses and increased promotions, so retraining is an attractive career advancement opportunity.

"The increased breadth of experience people gain by going into another skill is, for most, very good. Usually, once an individual gets into a new skill and learns the job, he or she finds it challenging, fulfilling, and rewarding.

"Although individuals can benefit from PALACE BALANCE, the bottom line is 'the needs of the Air Force.' Sometimes people don't see that immediately," he added. "They either love us or hate us. People tend to support the program until they're affected by it.

"We're not kidding ourselves. PALACE BALANCE is a tough program, and we know it. It may never be a popular program. Most people, if they were interested in retraining, would have volunteered for retraining before being selected by PALACE BALANCE."

But according to Lt. Col. Rowland, the concern over PALACE BALANCE is exaggerated. He said the number of people actually affected by the program is small.

"There is sometimes an unnecessary negative reaction to the program," he explained. "However, if you were a squadron commander, and your people were to be retrained, you'd also be concerned.

"The fact is, the actual number of people retrained is minimal. In fiscal 1984, only 550 people will be selectively [involuntarily] retrained out of an enlisted force of 500,000. That's only about .001, or one-tenth of 1 percent of the enlisted force," he pointed out.

A small percentage, indeed. But that's still 550 people who involuntarily changed jobs because of the needs of the Air Force.

Is PALACE BALANCE harsh? That depends on who is asked the question.

Is it necessary?

"Absolutely," was Lt. Col. Rowland's emphatic reply. "The Air Force just can't afford to pay a tech sergeant to do an airman's job. And it's not really that harsh considering potential alternatives.

"Civilian companies are often confronted with the same kinds of personnel problems, but there's one major difference.

"Civilian firms usually lay off—or let go—workers caught in a manning crunch.

"The Air Force finds other jobs for them and sends them to school to learn the new skill."

# Bridge to Berlin

The legendary Berlin Airlift avoided a possible war with the Soviets and saved a city from starvation.

by Yuen-Gi Yee

Berliners—and people everywhere—breathed a sigh of relief! Thirty-five years ago this month, on May 12, 1949, the Soviet Union officially ended its surface blockade of Berlin.

The Berlin Airlift, nicknamed "Operation Vittles," would continue for another six months, however. Airlift officials wanted to be sure the city's

2½-million people would have enough food and fuel reserves to see them through the winter if the Soviets changed their minds.

The Russians' blockade was designed to escalate tensions between the four powers, each of which occupied a sector of Berlin. The purpose was to force the Western nations to abandon the city, located 110 miles inside Germany.

The world held its breath, fearing a possible outbreak of war if the West decided to use military force to break the blockade, which began in June 1948.

The Soviets were betting that wouldn't happen. They had already tested the waters, in April 1948, with an 11-day miniblockade. They had insisted on inspection of all military stores and equipment being shipped by road and rail through Germany into the West Berlin sectors. America, Britain, and France refused, and the Soviets temporarily halted such shipments.

U.S. and British air force units began resupplying their garrisons by plane. And although the blockade was ended after 11 days, the Soviets apparently were convinced that such an action would not lead to war. In June, they began the blockade that would last for 11 months.

Four days after the borders were closed, Lt. Gen. Curtis E. LeMay, commander of U.S. Air Forces in Europe, was requested to airlift 45 tons of non-military supplies into Berlin to sustain life. The general responded with 80 tons on the following day. A group of officers immediately began gathering available theater aircraft to begin daily flights into the city.

The early missions were flown by twin-engine C-47 *Skytrain* transports. They were limited in cargo capacity and speed, but did the job until the larger and faster C-54 *Skymaster* could be available.

The early airlift was not entirely an American effort. Great Britain also airlifted supplies from the onset of the blockade. Royal Air Force (RAF) flying boats landed on Havel Lake, in West Berlin. The flights were, at first, independent of the American airlift missions.

The airlift mushroomed with the arrival of Maj. Gen. William Tunner, deputy commander for Air Transport of the Military Air Transport Service—now Military Airlift Command—to head the combined airlift task force. He brought along airlift experts who had served with him during the famous World War II "Hump" operations that airlifted supplies into China over the Himalaya Mountains.

It was determined that the 2½-million people in those sections of Berlin affected by the blockade would need 4,500 tons of food and coal daily. The general's task force would need 225 C-54s and enough seasoned aircrews to fly around-the-clock

**The C-54 *Skymaster* (left) became the workhorse of the Berlin Airlift operation, that saw more than 2 million tons of food and supplies flown in to support 2½-million people.**
**A C-54 (bottom) roars past ground control approach units at Rhein-Main AB, Germany, on its way to deliver supplies to Berlin. Capt. Thomas Farmer (right) at Bergstrom AFB, Texas, shortly before his deployment to Germany where he and his crew averaged three round-trip flights during an 8-hour shift. The operation involved airlifters from military units around the world.**

shifts. Experienced people would also be required to handle maintenance, cargo off-loading, weather communications, navigation, airfield facilities, transportation, and supply.

MATS responded with complete C-54 air transport squadrons—entire organizations deployed from bases around the world to Germany. A school for the airlifters was opened in Great Falls, Mont., to provide replacement crews with realistic training in flying the three Berlin corridors.

U.S. Navy *Skymasters* joined the airlift from the Pacific, and the Royal Air Force merged its cargo flights with Maj. Gen. Tunner's operation. The British also offered the use of RAF bases to operate from in addition to the airfields being used in Germany.

Night and day, the skies over England and Germany were alive with aircraft carrying food and supplies to Berlin. Each day approximately 3,061 tons of coal, 646 tons of wheat and flour, 125 tons of cereals, 64 tons of fat, 109 tons of meat and fish, 180 tons of dehydrated potatoes, 85 tons of sugar, 11 tons of coffee, 24 tons of dried milk, 3 tons of yeast, 144 tons of dehydrated vegetables, 38 tons of salt, and 10 tons of cheese were flown into the city.

For Berliners who relied upon the airlift, it was a miracle. For city officials, however, it was a staggering task in distribution management. The city's 2½-million people had to be accounted for daily in order to feed them.

Berlin's food rationing was strict. Persons doing heavy work received large portions; manual workers doing less got less; and white collar workers and the unemployed received a lesser amount. Rations for children were measured according to their age.

The city's industrial effort was geared for maximum production from minimum resources. Bakeries, for example, were required to provide a specific weight and number of loaves of bread for each 100 pounds of coal used to heat their ovens.

For those aircrews flying the missions, there was no room for error in navigating the three air corridors over East Germany into Berlin, air routes that had been negotiated in February 1946 by Maj. Gen. Robert W. Harper.

Sophisticated enroute navigation equipment did not exist in 1948. Aircrews followed radio beacon signals along their intended routes. Turns were made at specific intersections. To check their whereabouts, they watched the arrows of their radio com-

**During a recent open house (below) at West Berlin's Tempelhof Central Airport, Berliners and members of the American community visit the "Candy Bomber," a C-54 that gained notoriety when its crew dropped candy to children waiting under the plane's departure routes from Berlin. A C-5 *Galaxy* (right) dwarfs a circa 1940 C-47 *Skytrain,* one of the first planes used in the Berlin Airlift operation. Today, 20 C-5s, flying six hours, could do the work that, during the airlift, took hundreds of planes flying around-the-clock.**


photo by SMSgt. Don C. Sutherland, A4VS

passes, which pointed in the direction of the beacon signal. Aircraft were assigned different altitudes and spaced minutes apart. Ground-controlled approaches using radar to guide the transports during their final approach into Berlin were perfected in the airlift and remain in use today.

"Flying in the corridors was not easy," recalled retired Air Force pilot Thomas Farmer, then a captain. "Straying into East German airspace was the last thing we wanted to do!"

The northern and southern corridors were used for air traffic headed into the divided city, while the middle corridor was used for returning flights. Due to the lack of airspace, anyone missing an approach into an airfield had to leave Berlin and go all the way around the circuit again.

Capt. Farmer, his co-pilot, and crew chief flew three trips a day from the RAF air base at Fassberg to Tegel in an 8-hour shift. Fassberg's airlift support mission was to provide coal from the nearby Ruhr Valley. Although it was bagged in burlap sacks, coal dust was everywhere and got into everything.

During the first six months of the airlift, Berlin's Tempelhof and Gatow airports were the only available landing sites. In the fall of 1948, Tegel airfield was opened in the French sector, and that dramatically improved the flow of supplies into the city. With aircraft feeding three turn-around points, Maj. Gen. Tunner announced that there was no longer any question about "Operation Vittles" sustaining West Berlin.

"It was a busy time," said Mr. Farmer, who now works as an audiovisual manager in California. "The missions required a great deal of physical stamina, and the pressures were on everyone to get the job done. There were a lot of aircraft flying in a small space—much of it in poor weather. Every day we would fly into Tegel, shut down to unload, start up


photo by George Wegemann, AAVS

again, and fly back to Fassberg for another load. There we would grab a sandwich, refuel, load up, and do it all over again."

With postwar Germany still in rubble, and West Berlin caught in the grips of the Russian blockade, happiness was not a widespread commodity. For the children of the city it was a bleak period.

Touched by the plight of Berlin's children, Frankfurt-based airlift pilot 1st Lt. Gail Halvorsen decided to do something about it. Each time he departed Tempelhof airport he would drop tiny flare parachutes with candy attached as his C-54 cleared the rooftops. When American newspeople learned of the "candy bomber," a nationwide effort began to support him. Candy and handkerchiefs poured into Germany, and German children in the Western zones turned the handkerchiefs into little parachutes for Halvorsen, who used them on subsequent missions.

"Operation Little Vittles"—as the candy drops were called—grew until, by the end of October 1948, 1st Lt. Halvorsen and other aircrews were dropping more than 1,500 candy chutes a day.

In January 1949, the 60,000th landing of the Berlin airlift was made at Gatow airfield. Two weeks later the millionth ton of airlifted supplies also reached Gatow. On April 16, 12,940 tons were delivered aboard 1,398 flights in 24 hours—the airlift's largest single tonnage day. On the average, 94 RAF, 40 British airline, and 200 U.S. Air Force aircraft were operating daily in and out of West Berlin.

By spring, the unparalleled airlift had begun to influence the Soviets into reasoning that their blockade could not serve any useful purpose. Meetings were held among the foreign ministers of the four nations and, on May 9th, the Soviet military governor of East Berlin announced that the blockade would be ended. It did—one minute after midnight on May 12th, 1949.

But the airlift continued! For the next five months aircraft flew in supplies to help build up the city's reserves.

Capt. Farmer's last Berlin airlift mission was in October 1949, as the massive operation wound down. All of the aircraft and crews were eventually either returned to home bases or sent to new assignments. Thomas Farmer got a stateside job flying a new generation of cargo aircraft—the C-119 *Flying Boxcar.*

The final score for the granddaddy airlift was 2,343,301 tons carried in 277,264 flights.

*(Editor's note: Yuen-Gi "Bernie" Yee is the assistant director of operations for the 1361st Audiovisual Squadron, Arlington, Va.)*

**Memorials built along the western side of the Berlin Wall serve as stark reminders of the price many have paid while seeking freedom. This memorial is dedicated to Peter Fechter, a 19-year-old who died while attempting to flee East Germany.**

# Improving the Odds

With high-performance jet aircraft flying faster and lower than ever, the Air Force has found it increasingly hazardous to compete with birds for airspace.

In recent years, three Air Force pilots have died, at least 10 aircraft were lost, and at least 12 aircrew members were injured as a result of bird strikes.

Engineers in the Flight Dynamics Laboratory at Wright-Patterson AFB, Ohio, are extremely busy working the problem. They have determined that although the aircraft cockpit area sustains less than 20 percent of all impacts from bird strikes, the majority of the fatalities resulting from birds and airplanes colliding are due to birds striking the cockpit windshield (canopy).

In 1973, the laboratory developed a program called Bird Impact Resistant (BIRT) Transparency System. The result was a new acrylic and polycarbonate windshield laminated with silicone and polyurethane interlayers for the F/FB-111 that can deflect a four-pound bird at a speed of 500 knots.

The results are impressive: No F-111s have been lost, and at least 10 saves have been recorded, since the windshields were installed in 1976. Later, the system was improved again when the weight of the windshield was lightened.

Steps are now being taken to develop new cockpit windshields for the RF-4, F-4, F-16, and T-38 aircraft.

The production T-38 windshield is capable of resisting a four-pound bird at 220 knots, but the goal is to increase the resistance to 400 knots. The production canopy for the F-16 can deflect a bird at 350 knots, but engineers said the aircraft may require a 500-knot resistance because of the aircraft's low-level, high-speed missions.

Second Lt. Dale Crocker, project manager in the Improved Windshield Protection Program at the Flight Dynamics Laboratory, said four pounds is the standard size bird used during the canopy impact tests because nearly 92 percent of the birds in this country weigh four pounds or less.

He added that no windshield canopy being tested, however, could have prevented injuries suffered by Capt. Gregory Engelbreit when his RF-4C struck a 20-pound whistling swan.

The Idaho Air National Guard pilot and his weapon systems officer, Capt. Frederic Wilson, earned the 1982 Cheney Award for valor.

Their story, "Miracle Over King Mountain," is one you won't want to miss. It begins on page 28.

Luftbrucke (Airbridge) Memorial
Berlin, Germany

**Bridge to Berlin**
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