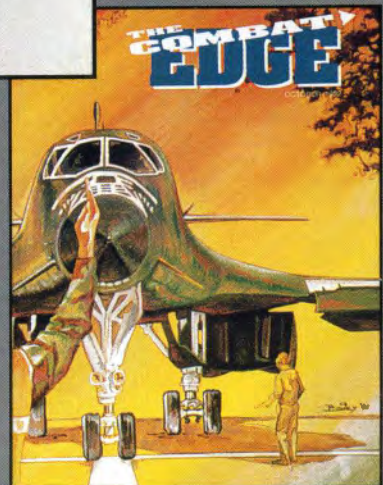
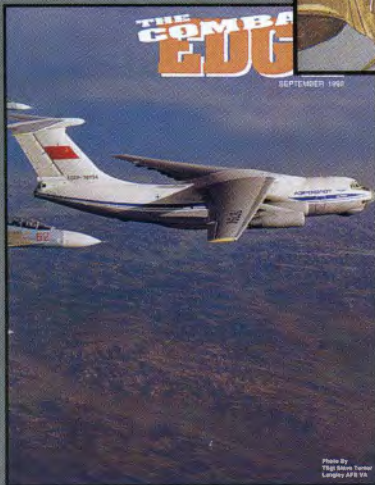
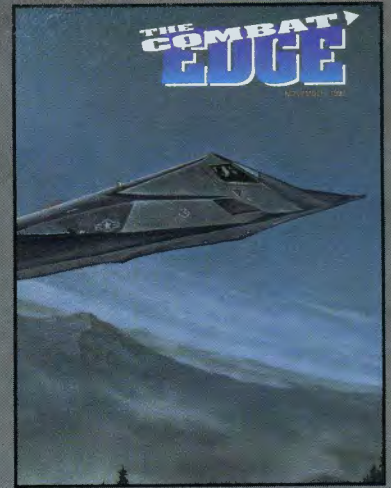
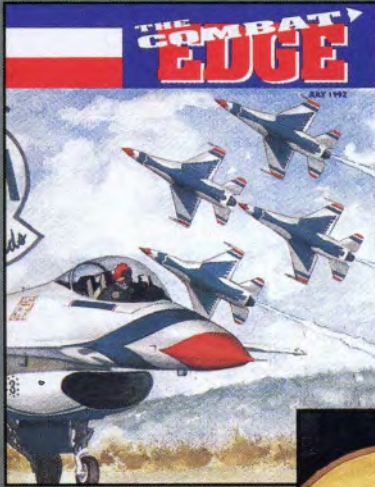


THE COMBAT EDGE

JANUARY 1993





THE COMBAT EDGE

Air Combat Command
Safety Magazine

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Secretary of the Air Force

Gen John M. Loh
Commander

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Page 4



Page 24



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Features

4

SAFETY

IN TODAY'S CHANGING AIR FORCE

Lt Gen Thomas A. Baker
Commander, 12 AF
Bergstrom AFB TX

6

LET FITNESS ENHANCE YOUR LIFE, DON'T JUST PASS THE TEST

*All that is required to have a sound program is 30 minutes,
3 times per week.*

12

SAFETY ENHANCERS YOUR CHAPLAIN

*I have found that a visit to a duty section after a crisis has
often turned up individuals who are hurting and grieving
and need to get thoughts and feelings off their chest.*

24

NEAR MISSES, OR NEAR HITS, YOU DECIDE

*The following is but a small gathering of incidents across
ACC which could just have easily ended up going the
wrong way, resulting in even more aircrews or aircraft
being lost.*

Departments

8

FLIGHT SAFETY

11 14 22 30

GROUND SAFETY

19 28

AWARDS

23

ACCOLADES

15

1992 INDEX

JAN 93

ACC SP 127-1

VOLUME 1

ISSUE 8

ACCent on Safety

Welcome back from the holidays. I sincerely hope that everyone had a fun-filled time with family and friends. Now that we're all ready to settle back into our hectic routines, let me remind you that January is one of our most hazardous months of the year. The holidays afforded many of us the opportunity for extended periods of leave and time off from the job. As a result, there are a lot of subtle differences in our mindsets and abilities that may not be readily apparent when we return to work. For example, do you catch yourself in the "back to work" syndrome, wishing that your time off or leave had lasted just one more day? Whether you realize it or not, you're not as good as you were when you stopped flying before the holidays. Your limitations are not the same as they were. You also have to consider that you're not the only one that may be a little behind. Everyone else is experiencing a gradual return to their normal operating abilities as well.

Another factor that makes January so hazardous is the significant transition to "real" winter weather that occurs. Nearly all ACC bases will move into serious winter conditions this month. What will your response be to that reality? Have you considered the changes that must occur in your normal routine: more clothes to keep you warm, longer preflights, longer time to taxi out to the runway due to ice and snow? Or, do you act as though nothing has changed?

January holds just as many challenges for the non-flyers. All of you working on the flightline, at the missile sites and around the base such as crew chiefs, security police, supply folks and everyone else need to take into account how the hard conditions of winter will affect you. Take a few extra minutes to consider

how weather conditions will impact your daily routine.

As we go about our daily work routine, how often do we see something done that is important to our mishap prevention effort? I would dare say more often than we realize. Our ACC safety awards program was developed to recognize deserving people, groups and units. However, to be successful, we need your inputs. My question to commanders and supervisors is how often do your quality performers go unrecognized? People are constantly working to improve our culture of safety, and yet we have awards with no nominations. Please take the time to recognize your workers -- we'll help in any way we can. There are too many "negatives" for us to pass up opportunities to provide positive recognition. Flood us with award nominations.



Colonel Bodie R. Bodenheim
Chief of Safety

Safety in Today's Changing Air Force

As you know, we are up to our squadron patch in resizing and reshaping today's Air Force to meet the realities of both a reduced threat and a smaller defense budget. Our task is to be prepared to project air power rapidly anywhere in the world -- Global Power for America -- and do it safely and professionally.

The challenges associated with reorganizing and downsizing our Air Force are many, not the least of which is to ensure we maintain the proper balance of resources -- both personnel and machines -- without compromising safety or quality. The good news is that these terms "safety" and "quality" are inextricably tied.

Whatever we do to enhance one will also strengthen the other. Thus, as we change and reorganize, we also need to do it in a way that fosters our new quality culture. Safety, in the air and on the ground, has to be one of the principal supporting pillars of this new culture if we are to be successful.

What are the major safety challenges we face in our new downsized Air Force? One we have to pay attention to is the uncertainty caused by the many changes going on around us, and with these changes, a natural tendency to let them distract us from the mission at hand -- thus setting the stage for an unsafe act or mishap. If a pilot or crew chief becomes too focused on the personal implications of an early-out program or a unit deactivation, then they are natu-



*Lieutenant General Thomas A. Baker
Commander, 12 AF
Bergstrom AFB TX*

... tendency to let them distract us from the mission at hand -- thus setting the stage for an unsafe act or mishap. If a pilot or crew chief becomes too focused on the personal implications of an early-out program or a unit deactivation, then they are natu-

Today's Air Force



rally more susceptible to errors of omission or hazardous acts. And I certainly wouldn't limit the impact of uncertainty to just crew chiefs and pilots -- it affects all career fields and all Air Force personnel, including our families. Commanders and supervisors at all levels need to be particularly sensitive to the unsettling effects change is having in their organizations and be ready to combat any "negative" trends with good communications. Knowing your people and keeping them informed remains in my mind the basis of a successful safety program.

Another factor to consider is that in the Air Force of the future we will have pushed more responsibility, authority, and accountability down further in the organization, and we want leadership at all these lower levels to foster working environments that are characterized by trust and teamwork. However, we need to remember as we institute this quality culture of empowerment that decentralization and delegation of authority doesn't mean that the "old heads" can now abrogate their own responsibility to ensure that common sense and good judgment still prevail. Our Air Force of the future will have fewer field grade officers and senior NCO supervisors assigned to our operational units. The challenge will be to build this quality culture by developing our younger leaders along a track that ensures they keep safety and good judgment integral to mission accomplishment.

We also know that we will be operating our future Air Force with fewer dollars. We know that this smaller budget will impact the size of our forces, but

it should not reduce our operational quality. As General Loh testified before Congress, we need to understand the problems of a "hollow force," especially the difficulty in maintaining combat readiness if we have fewer flying hours and sorties. In such an environment, we would have to concern ourselves with lowered experience levels, maintaining flying proficiency, and the inherent potential for increased numbers of flying accidents. As our Air Force leadership fights off the possibility of a "hollow force," the challenge for the rest of us will be to keep the changing character and size of the Air Force from having any effect on how we do business safely.

No matter how much things change, some things remain the same. Keeping people and resources safe is a professional attitude required of all Air Force leaders from the bottom to the top -- it's been true up to now, and it will be true in our future. We have done remarkably well in recent years in reducing the number of mishaps, saving precious lives and important resources. We accomplished our all-time lowest aircraft mishap rates through quality training, attention to detail, self-discipline, proper risk assessment, and solid leadership. As we transition into the Air Force of the future, let's continue these winning ways and make our concern for the safety of our people a top priority of our mission.



Mr David K. Johnson
28 MSS/MSIX
Ellsworth AFB SD



Let Fitness

Enhance

Your

Life,

Don't

Just

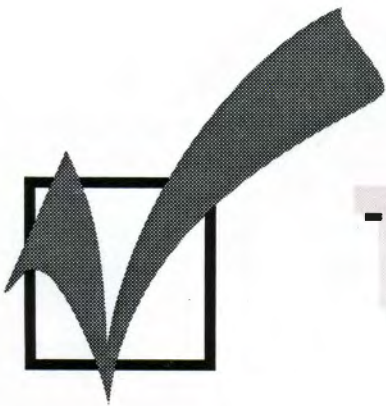
Pass

The

Test

I can pass my aerobics, so I don't need to maintain a physical fitness program, right? Before making this assumption, there are several factors to consider. Some people can pass the military aerobic assessment with very little or no physical conditioning; but by neglecting an exercise program, they are doing themselves a great disservice! No matter what your initial fitness level, everybody has the ability to make significant improvements through regular aerobic conditioning. It seems everyone looks for investments where little is put in and great benefits are received. Exercise is one of the few magic investments where this is true. There are numerous benefits derived from an exercise program which can pay off in very big ways. I classify these into two major categories. The physiological benefits are those that are not readily observable to the individual. Physical benefits are those in which the person is actually aware of the changes.

First, we must clarify the difference between the terms aerobic and anaerobic. Two types of definitions are used. The more common definition states that aerobic is exercise performed for longer periods of time such as jogging and lap swimming. Anaerobic is exercise performed in short bursts like lifting weights and sprinting. Scientifically, aerobic is defined as the metabolic process that utilizes oxygen in the production of energy while the anaerobic process does not use oxygen. Actually, these definitions are saying the same thing. The scientific one is looking at what happens on the cellular level while the other looks at the whole individual. Both types of training have benefits, but I am going to focus on aerobic conditioning.





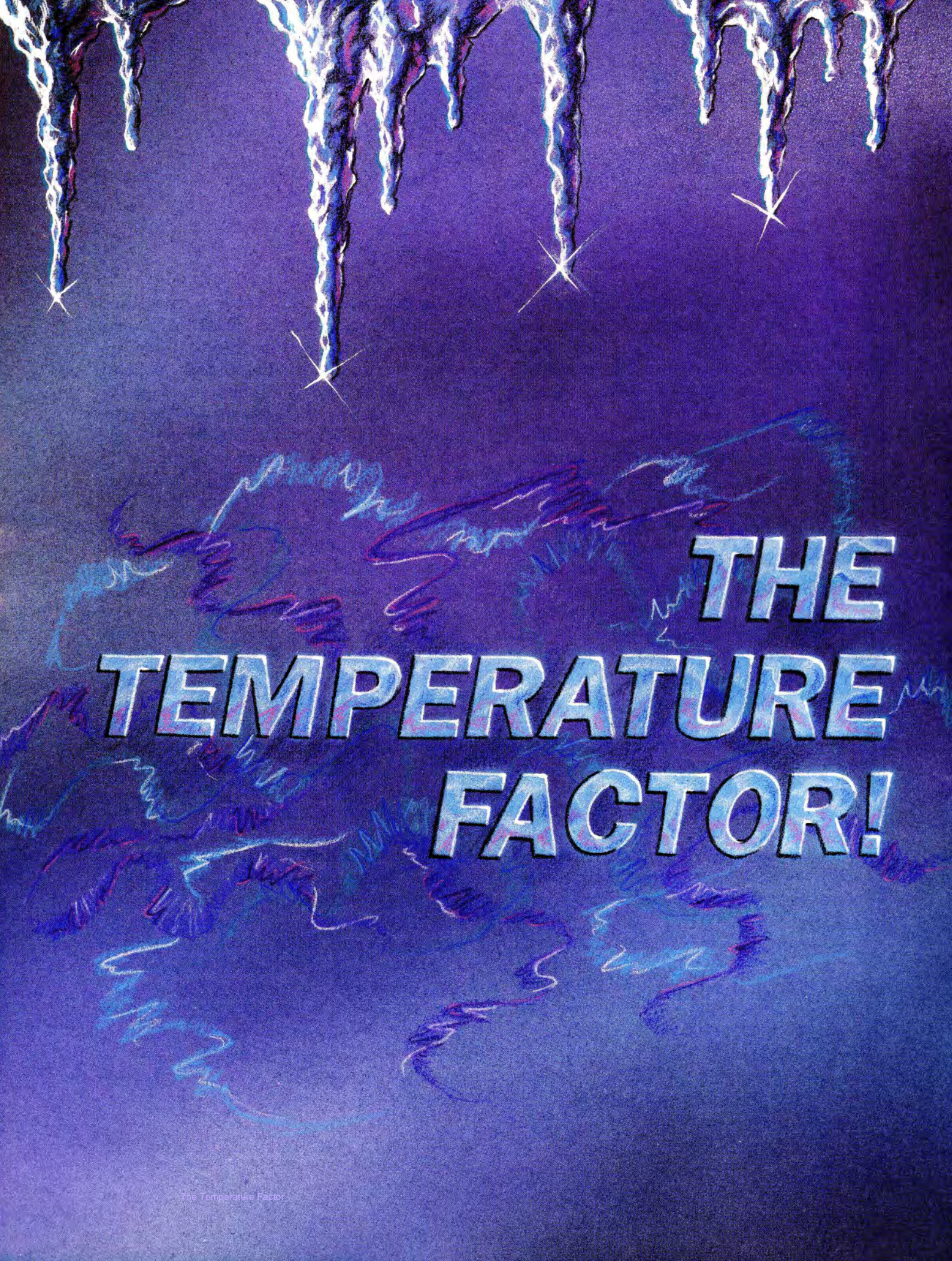
The most fundamental category of benefits from aerobic exercise are the physiological effects. Red blood cells carry oxygen to body tissues. When someone maintains an aerobic program, the number of red blood cells per unit volume of blood increases making the system more efficient. The body's ability to store glycogen, a primary energy source, increases. Low density lipoprotein level decreases. This is also known as the "bad cholesterol" which clings to the sides of blood vessels leading to cardiovascular disease. High density lipoprotein level increases. This is referred to as "good cholesterol" which acts like a team of little pacmen that go around the cardiovascular system eating the bad cholesterol. The resting heart rate decreases. Some people may ask, "Hey, I'm going to do all this work and my heart is only going to get SLOWER? What kind of sense does that make?" This brings us to a phenomenon called stroke volume; the amount of blood the heart moves with each contraction. When the heart is strong, it can move more blood with each contraction meaning it needs fewer contractions per unit of time to get the necessary blood to tissues. In addition to that, each unit of blood is richer in oxygen because of the increase in red blood cells. Fewer total units are needed to sustain tissues at a given activity level or at rest. These are just some of the major physiological effects of a regular aerobic program.

A second category of benefits results directly from the first. These are the rewards derived from aerobic training I call the physical benefits. Studies show people who exercise are more alert, have greater endurance and faster reflexes. They have a higher ratio of lean body mass to fat and a lower incidence of several diseases including infectious disease, cancer and mental illness. They feel better in general, are more energetic, and live longer, more

productive lives. In many instances, these factors combine to produce a tertiary benefit of higher self-esteem. In addition to all this, money is saved by a lower incidence of hospitalization and medical care. You may think, "Well, I'm in the military and don't pay anything for medical care anyway." What you must remember is that life-style decisions you make now may have profound consequences in your life **long after** you are out of the military, perhaps at a time when you are paying for medical care.

The beauty of aerobic exercise is that any activity that puts your heart rate at the proper level for the required time period is equally as good as any other activity that does the same. All you have to do is pick the one you like the best! A few good examples are swimming, bicycling, walking or hiking, climbing, rowing, aerobic classes, dancing, circuit weight training, stair climbing machines, treadmills, chopping wood and water aerobic classes. Just be sure the activity is actually maintaining the appropriate heart rate for the time required. The cardiovascular system cannot distinguish what exercise is working it, only that it is being worked. If you become bored with one, simply change to another with nothing lost.

All that is required to have a sound program is 30 minutes, 3 times per week. As you can see, there is quite a long list of benefits to be derived from such a small investment. Another thing to remember, it's never too late to begin. People in their seventies and eighties have begun exercise programs and shown remarkable results. If you are not exercising now, it is a good idea to consult a physician before beginning. Once the doctor gives you the OK to begin, the only remaining step is yours — get involved and begin your journey to a healthier, happier and more productive life! ■



THE TEMPERATURE FACTOR!

You have just been cleared for the approach and departed Hyson, the IAF for the LOC 1 RWY 5 at Elmendorf AFB, Alaska (Figure 1). You're expecting to circle east of the field for a left base to RWY 15. The weather is above approach minimums, and the checklists are complete. Nothing left to do except land the aircraft. Right? Well, that depends. What's the temperature outside?

The temperature! That's right, the temperature. If the outside air temperature is less than -4 degrees Fahrenheit (not an unusual occurrence at Elmendorf or other northern locations), you **MUST** reference the temperature correction chart on page D-14 in the Flight Information Handbook (FIH), and adjust your HAA/HAT accordingly.

As highlighted in the FIH, "Pressure altimeters are calibrated to indicate true altitudes under International Standard Atmospheric (ISA) conditions. Any deviation from these standard conditions will result in an erroneous reading on the altimeter. This error becomes important when considering obstacle clearances in temperatures lower than standard since the aircraft's altitude is below the figure indicated by the altimeter." For the math majors, the FIH fur-

ther explains: "The error is proportional to the difference between actual and ISA temperature and the height of the aircraft above the altimeter setting source. Height above altimeter source is considered to be published HAT or HAA for the approach. The amount of error is approximately 4 feet per thousand feet for each degree Celsius of difference." A lot to consider when on final approach at 150 KIAS.

Luckily, the FIH has an easy-to-read chart (Figure 2). The left scale is in degrees Celsius, and the bottom scale is either HAA or HAT. The correction values in feet are subdivided into "recommended" and "mandatory" areas. Recommended values may be added to required altitudes; whereas, mandatory values **MUST** be added to required altitudes to **ENSURE REQUIRED**

OBSTACLE CLEARANCE.

These corrections "will only be made for decision heights, minimum, descent altitudes and altitudes inside, but not including, the final approach fix." The lower the temperature or the higher the HAT/HAA, the larger the correction value. The combination of the two factors (low temperature and high HAT/HAA) quickly places you in a mandatory versus recommended situation.

In our example: The HAA is 607, and the outside air temperature of -4 degrees Fahrenheit is equivalent to -20 degrees Celsius (see page D-2 of the FIH). The resulting mandatory correction is +80 feet. Therefore, the new MDA is 900 feet not 820 feet as published on the instrument approach plate.

If all of this information doesn't get your attention, let's use a more

direct and user-friendly approach. If you don't apply the correction, you have used up at least 80 feet of the 300 feet required for obstacle clearance. Don't forget, you can take off with up to 75 feet of known altimeter error. Now that's 155 feet total. Instead of having 300 feet of obstacle clearance, you may now have only 145 feet!

A good habit pattern to develop is to check the FIH when the outside air temperature is below 0 degrees Celsius (32 degrees Fahrenheit). Practice flying the recommended correction values. Expand your airmanship and develop a sense about when the high HAA/HAT and low temperature combinations will require a MAN-

DATORY correction -- then fly it! Fly smart/Fly safe. **AUTHOR'S NOTE:** Generically, Central Air Data Computers (CADCs) only sample outside air temperature to correct True Airspeed, not altitude. Please consult your specific aircraft T.O. ■

FIGURE 1

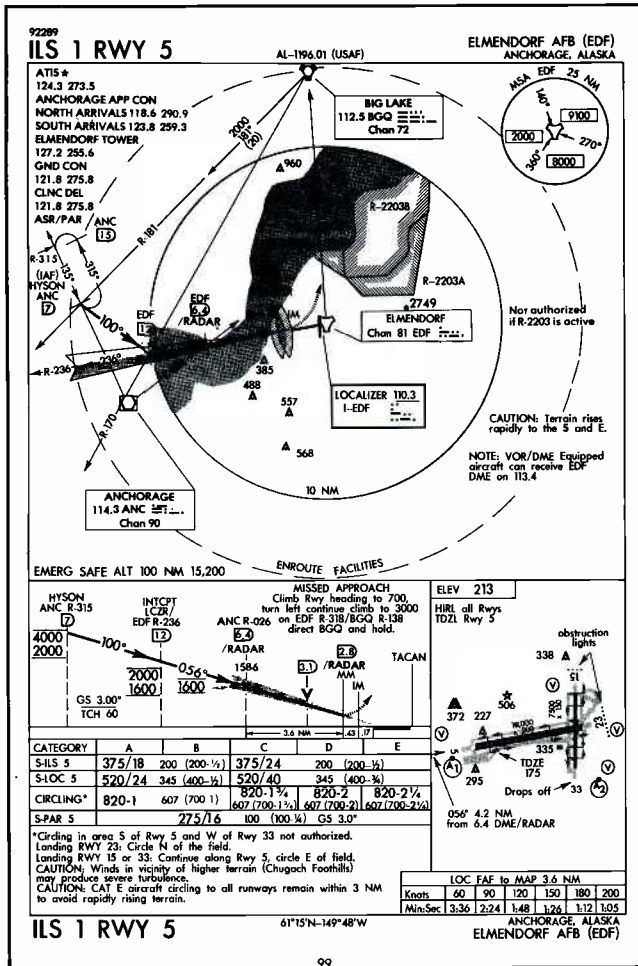
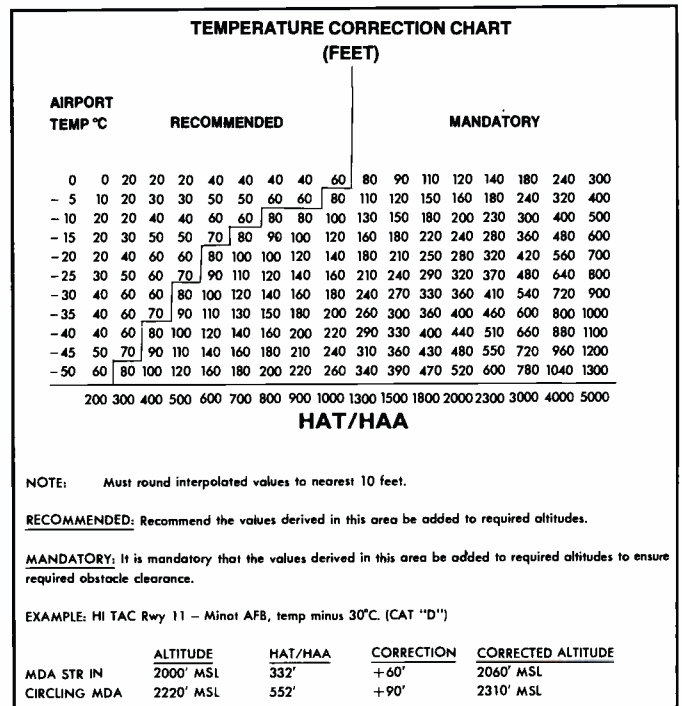


FIGURE 2



Supervising The Safety Attitude

It's 0745 and you've counted heads, completed your morning briefings and assigned personnel to work details. As the morning progresses, you become involved in the usual paperwork routine. As you complete another form, you wonder how everyone is getting along. Are all the jobs being performed correctly and on time, are T.O.s being followed and are proper safety practices being followed? You want to check to see if everything is okay, but you're trapped by paperwork and phone calls. You try to run a safe shop, but you just don't have time to really ensure your personnel are working safely. **Or do you?** Look at it this way, if you don't do it, who will; and if there is an accident, who's responsible? Plus, if you have an accident, you will have to handle it and still do your job.

As a part of normal supervisory practices, you need to monitor the work practices of your personnel. This has two advantages. You can monitor your workers' safety practices while looking at their work performance.

Supervisors actually supervising! A novel idea that may catch on if it's put into practice. It is a surefire technique to find out what is happening inside and outside the shop. By actively supervising your personnel, you can see who needs additional training, what procedures need to be updated and what safety practices need to be stressed at the morning briefings.

On a recent spot inspection in the maintenance hangar, I noticed a maintenance worker without hearing protection using a pneumatic hammer drill. Because the job was producing considerable noise, I went to the worker's supervisor to inform him what was happening. The supervisor asked, "Did you tell the worker to use hearing protection?" I said, "I hadn't." This puzzled the supervisor. I explained it would have been easier for me to do this; but in this case, the worker needed to be instructed by his supervisor. Having the supervisor instruct the worker tells him two things: the supervisor cares about his safety and he wants the job done right--like he was trained to do.

Granted, there are times when the safety person must intervene when there is the immediate danger of severe injury or property loss. But, not in this case. Including the supervisor in the corrective action is not a criticism of his supervising abilities. Going to the supervisor allowed him the opportunity to emphasize safety by word and action. Workers pick up on this and eventually develop a safety conscious attitude. They feel if the boss cares, so should I. This attitude can be reinforced by proper supervision. Remember also, supervision works at all levels--from the pilots to the person who turns the lights off at night. **SUPERVISION**, it's a great way to promote any program, including safety. ■

SAFETY ENHANCERS -

*Chaplain Thomas P. Azar
97 AMW/HC
Altus AFB OK*

The caring and consistent presence of a chaplain helps one perform his or her job more seriously and safely.

A small car carrying a military family went out of control and hit a tree when the driver swerved to avoid a dog running across the street. After the paramedics and rescue truck carried the seriously hurt members to the hospital, the accident response team sat in the conference room of the hospital reviewing their actions. Highly trained in their respective disciplines, each examined their role through their own unique focus forged from years of education and experience. The doctor was concerned about the physical stability of the patients, the lawyer about the final will and testament, the police about the cause of the accident and the chaplain about the spiritual and psychological well-being of each family member.

Each professional focuses on the physical, psychological and spiritual safety and health of each individual from his or her area of expertise. The chaplain deals with the crisis, grief and readjustment of each individual. What then is the correlation between safety and the role of the chaplain?

The presence of a chaplain aboard a plane, on the flight line or in the duty section is an expression of concern by a professional for the personal and work life of those who have dedicated themselves to the principles and ideals of this nation. This demonstrated concern is a safety enhancer. "Being there" is a profound expression of human kindness and enriches the safety of an entire squadron.

When was the last time you encountered a chaplain? DESERT SHIELD and DESERT STORM thrust the chaplains to the forefront both in the Middle East and at home. In the chaplaincy we are trained for "the ministry of presence." This calls for chaplains to participate in, be aware of and support all military personnel, both in the workplace and at home. Presence requires more than ceremonial visibility. Genuine concern and consistent unselfishness are the marrow of being present. When caring, concerned people show an interest in one's efforts, one gets serious about doing his or her best. It is contagious and causes others to be more caring and follow all safety procedures. The chaplain is an officer who reminds others of their oath to preserve and keep safe the people and materials of this nation.

Having a chaplain along on a deployment or refueling mission causes workers to be serious about what might, otherwise, become routine. When a chaplain is attentive and respectful, he or she is afforded the privilege of entering into and reminding military personnel and their dependents that doing the job professionally requires a greater sense of responsibility and

LET YOUR CHAPLAIN

accountability.

A chaplain is a bridge builder between the people and the goals of the Air Force. How does a chaplain do this? First, on a weekly basis, a chaplain visits work units and orderly rooms to keep abreast of the people and programs that might require a chaplain's input. Attending standup teaches the chaplain what the flight line status is and lets the commander and supervisors know that the chaplain is involved and interested which encourages safety. Secondly, participating in squadron staff meetings, commander's call, top three meetings, retirements and other social events, keeps the chaplain's hand on the pulse of critical issues within the squadron. This is an opportunity to catch the various currents of squadron life, and for others to know that their chaplain is real and involved. Finally, visiting the dorms and base housing lets the individuals know that someone cares for them; and they, in turn, get serious because someone has reminded them that they are individuals of value and importance. Being there builds comradery, which reinforces safety.

As an objective professional, well-trained in observation and analysis, the chaplain can relay his or her generic observations on safety concerns to the responsible individuals. Being there continues to be a big morale builder that enriches the process and fulfillment of the mission.

Preaching, teaching and counseling are a chaplain's bread and butter; going the second mile on the flight line and at home provides the presence that strongly states that safety begins with concern, respect and professionalism.

Finally, chaplains combat job hazards. The role of confidentiality allows individuals to unload problems that they normally bring to work with them and, therefore, directly jeopardize safety.

Privileged communication lets individuals know that there is a safe harbor where they can discuss burning personal and interpersonal issues, that if not dealt with, can have a negative impact not only on one's duty performance, but on the entire team and base. An emergency or crisis such as death, accident or suicide, becomes the spiritual flight line that chaplains have the most experience working. I have found that a visit to a duty section after a crisis has often turned up individuals who are hurting and grieving and need to get thoughts and feelings off their chest.

Safety is everyone's responsibility. Failure to work by the standards can breed catastrophe. Motivation comes from one's love of his or her job -- a feeling born out of one's awareness that he or she is respected by others; that is the role of your committed chaplain. ■

Activity

One of the first things a person notices at an Air Combat Command base is the amount of activity going on. Yes, our bases are very busy places, and very busy places are breeding grounds for mishaps. Most mishaps are avoidable. In fact, National Safety Council (NSC) statistics show that nearly 98 percent of all mishaps result from human error. The other two percent will be "Acts of God." As we cannot control the will of God, we must address our attention toward the human error mishaps.

The best way to prevent mishaps is to control the work environment. Supervisors at all levels must provide this controlling factor. The controlling of the work environment begins with training. Supervisors must ensure all workers are fully trained and qualified to perform their required tasks. The next step is to provide the proper equipment to do the job. The equipment must be appropriate for the task at hand and in good working order. You shouldn't expect a worker to hammer a nail with a jack hammer or to pour cement from a coffee cup. Nor should you ask an operator to drive a forklift with

faulty or questionable brakes. The idea is not to slow down to make allowances for bad brakes, but to get the equipment repaired. Do the right thing - the first time. Once a worker is trained, qualified, and equipped to perform the task, the supervisor must ensure the expected workload is legitimate. The key here is that no tasking in peacetime is so important as to place your personnel at undue risk. Set work schedules in such a manner as to provide adequate rest, vary tasks to preclude complacency, and then check up on a worker to ensure compliance with good working practices.

While all mishaps cannot be avoided, supervisors can provide the control required to eliminate many of the mishaps which result from human error. Air Combat Command will continue to be very busy; the question is, will you as a supervisor help make it safer? ■

*MSgt James K. Kivell
HQ ACC/SEG
Langley AFB VA*

THE COMBAT EDGE 1992 INDEX

The following index of articles, artwork and awards is provided in an effort to make it easier for our readers to tap the reservoir of knowledge contained in *The Combat Edge*. We receive numerous requests throughout the year concerning past articles or art work. Many times, the requests are quite vague concerning title, author, subject or issue and often necessitate laborious research through past magazines. This index was compiled so that *The Combat Edge* could continue to be a valuable source of information to our readers.

Index entries are listed alphabetically by title in the following format:

TITLE

Subject synopsis

Author/Artist/Award winner,

Issue, Safety discipline (if applicable)

We solicit your comments and suggestions concerning the index (or *The Combat Edge* in general) so we can better serve our readers. Send us a note or give us a call. Our address and phone number are inside the front cover.

-Ed.

101 CRITICAL DAYS
101 Critical Days Program
CMS Billy Hester
JUN92, GRND

A BETTER IDEA
*NAF/CC perspective,
Quality and Flt Safety*
Maj Gen Lester P. Brown, Jr.
SEP92, FLT

**A HERITAGE OF
COMBAT SURVIVAL**
Fighter pilot heritage, legacy
Maj Raymond Thomas, Jr.
OCT92, FLT

ACCENT ON SAFETY
*Chief of Safety
Introduction to ACC*
Col Bodie R. Bodenheim
JUN92

ACCENT ON SAFETY
*Chief of Safety
article on summer activities*
Col Bodie R. Bodenheim
JUL92

ACCENT ON SAFETY
Complacency
Col Bodie R. Bodenheim
AUG92

ACCENT ON SAFETY
Quality, Commander involvement
Col Bodie R. Bodenheim
SEP92

ACCENT ON SAFETY
*Flight Safety conference,
101 Critical Days*
Col Bodie R. Bodenheim
OCT92

ACCENT ON SAFETY
Fiscal Year statistics, Goals
Col Bodie R. Bodenheim
NOV92

ACCENT ON SAFETY
Christmas message
Col Bodie R. Bodenheim
DEC92

ACCOLADES
Honor Roll/statistics
DEC92, FLT

**ADVANCED INSTRUMENT
FLIGHT COURSE**
AIFC introduction
Maj Paul M. Wolf
NOV92, FLT

**AIR COMBAT COMMAND
THE WAY OF THE FUTURE**

Welcome to ACC
General John M. Loh
JUN92

AIRCREW SAFETY AWARD

Aircrew Safety
Award of Distinction
Capt Bellinger/Capt Face
NOV92, AWD

AIRCREW SAFETY AWARD

Aircrew Safety
Award of Distinction
Col Klungseth/ Capt Dickerson
DEC92, AWD

**AIRSPACE
RECLASSIFICATION**

*FAA Information, Airspace
changes*
Lt Col Alfred E. Stanton
SEP92, FLT

ALTRV'S

Altitude Reservations
AIFC Staff
DEC92, FLT

ATTITUDE

Attitude, Supervision, Discipline
MSgt James Kivell
NOV92, GRND

ACC SAFETY AWARDS

ACC Awards Program
Ms Janet Gaines
SEP92

**BOATING DOING
IT SAFELY**

Boating Safety, PFDs
Mr Mike Mehalko
JUL92, GRND

BUGS & BITES

Insects and bites pictorial
Sgt Mark Bailey
JUL92, GRND

CAN'T DO

*OSHA standard,
Military Unique designations*
MSgt Edwin H. Mobley, Jr.
SEP92, GRND

CENTER ART

HQ ACC Safety
Organizational Chart
Sgt Mark Bailey
SEP92

CENTER ART

Memphis Belle
Sgt Mark Bailey
OCT92

CENTER ART

Niagara Falls F-16
Sgt Mark Bailey
NOV92

CENTER ART

*Command Vision, Style,
Goals, Quality*
Sgt Mark Bailey
JUN92

CENTER ART

SR-71
Mr Joe Plummer
JUL92

CENTER ART

Steve Ritchie and F-4 Tail # 463
Sgt Mark Bailey
AUG92

**COMPETENCY VS
COMPLACENCY**

Complacency
TSgt Nick Trina
AUG92, WPNS

**COMPLACENCY &
ASSUMPTIONS**

Complacency
MSgt Richard P. Sirois
JUN92, WPNS

**CONVENIENCE OR
INTEGRITY**

Weapons container certification
Maj J.J. HEPLER
JUL92, WPNS

**CREW CHIEF
EXCELLENCE AWARD**

ACC Crew Chief Safety Award
SSgt Ricky A. Kaarstad
NOV92, AWD

**CREW CHIEF
EXCELLENCE AWARD**

ACC Crew Chief Safety Award
A1C Christopher Kierzewski
DEC92, AWD

DO THE RIGHT THING

Seatbelts
Lt Col Woody Lamar
SEP92, GRND

DRAWDOWN AND NO PAIN

*Missile operations,
Force drawdown*
Capt Michael A. Best
AUG92, WPNS

**EXERCISE REALISM
AND TRAINING**

Ground burst simulators, exercises
Capt David D. Adolf
JUL92, WPNS

**EXPLOSIVES
QUANTITY-DISTANCE
MYTH**

Quantity distance calculations
Capt Mark A. Martin
OCT92, WPNS

**FALL AND WINTER
POINTERS**

Seasonal preparation, Halloween
Anonymous
OCT92, GRND

FATIGUE MANAGEMENT

Night operations, Fatigue
Lt Col Dick Hoey
SEP92, FLT

FIRST AID KITS

First aid kits
SSgt Steve Vogel
JUN92, GRND

FIRST AID KITS REVISITED

Clarification of previous article
Mr Mike Mehalko
AUG2, GRND

FLEAGLE

Cartoon, New command, Teamwork
Mr Stan Hardison
JUN92

FLEAGLE

Cartoon, 4th of July, Fireworks
Mr Stan Hardison
JUL92

FLEAGLE

Cartoon, Summer, Beach
Mr Stan Hardison
AUG92

FLEAGLE

*Cartoon, Night flying,
get-home-itis*
Mr. Stan Hardison
SEP92

FLEAGLE

*Cartoon, Discipline,
Authorized maneuvers*
Mr Stan Hardison
OCT92

FLEAGLE

*Cartoon, Thanksgiving,
Tiny worries*
Mr Stan Hardison
NOV92

FLEAGLE

Cartoon, Christmas message
Mr Stan Hardison
DEC92

**FLIGHTLINE
SAFETY AWARD**

Flightline Safety Award
TSgt Rodney L. Smith
NOV92, AWD

**FLIGHTLINE
SAFETY AWARD**

Flightline Safety Award
SSgt Hiller/SSgt Moyer/
SSgt Winford/A1C Dagostino
DEC92, AWD

FLY THE AIRCRAFT

B-52, DESERT STORM, Training
Capt Bob Deasy
JUL92, FLT

FLYING FUNDAMENTALS

One-liners to live by, Advice
OCT92, FLT

**FLYING SAFETY THEN
& NOW**

*History, 1943 Pilot
Information File*
Editor, JUN92, FLT

GIBS

Teamwork, Common sense
SMSgt Denis Jones
OCT92, WPNS

GIBS STRIKES AGAIN

Ground burst simulators, Training
SMSgt Denis Jones
JUL92, WPNS

GPO ORDER FORM

Subscription form/service
SEP92

HEAR YE...HEAR YE!

Judgment, Preparation
Col Richard Szafranski
SEP92, FLT

IT'S UP TO YOU

ICBM, Missiles, Procedures
Capt Mike Peel
SEP92, WPNS

**KEEPING THE
STRIKE EAGLE UNDER
CONTROL AT HIGH AOA**

F-15E Handling
Capt Thomas J. Plumb
DEC92, FLT

**KEEPING YOUR HEAD
ON STRAIGHT**

*Attitude, Complacency,
Distraction*
1Lt Robert Drozd
SEP92, WPNS

LEARN NOT TO BURN

Fire, Protective clothing, Training
Capt "Herbie" Hancock
AUG92, FLT

**MAKE YOUR TIME
ON TARGET**

Discipline, Planning,
C.R. Rondstvedt
NOV92, FLT

**MYTHS THAT MAY MAKE
YOU DROWN**

Drowning, Water safety
National Safety Council Reprint
JUL92, GRND

NOTHING HAPPENED

*KC-135, Training,
Mission preparation*
Lt Col Eric K. Holck
JUL92, FLT

**OMNI, OMNI, WHOSE
TRAINING
IS IT ANYWAY**

Single seat training, Thinking
Maj Ralph Gardner
AUG92, FLT

ONCE UPON A TIME

*Distractions, Complacency,
Inexperience*
Maj John Marshall
SEP92, FLT

ONLY IN AMERICA

Bungee jumping
MSgt Lawrence E. Stulz
OCT92, GRND

PILOT SAFETY AWARD

Pilot Safety Award of Distinction
Col Dale K. Snider, Jr.
NOV92, AWD

PILOT SAFETY AWARD

Pilot Safety Award of Distinction
1Lt Mathew J. Mulligan
DEC92, AWD

**PITFALLS IN A
HEAVY COCKPIT**

*KC-10, Habit patterns,
Copilot Syndrome*
Capt Jim Provost
AUG92, FLT

**PREPARATION,
TEAMWORK,
LEADERSHIP**

Interview with an ace
Col Steve Ritchie
AUG92

**PROCEDURES? DON'T
NEED THEM...**

*Procedures, Checklists,
Supervisors*
Anonymous, SEP92, FLT

RESPONSIBILITY

Communication, Responsibility
Capt Matt Phillips
NOV92, FLT

**SAFETY AND COMBAT
CAPABILITY**

*Leadership, Combat capability,
Safety role*
Lt Gen Martin J. Ryan, Jr.
NOV92

**SAFETY AT THE
THRESHOLD**

Welcome to ACC
Brig Gen James L. Cole, Jr.
JUN92

SAFETY CAN BE DANGEROUS

Responsibility, Courage, Discipline
Lt Gen Michael A. Nelson
DEC92

SAFETY CREED

Mishap prevention, Attitude
Unknown, OCT92

SAFETY DECLARES WAR ON PEACE

History, Complacency, Training
MSgt Lawrence E. Stulz
OCT92, GRND

SAFETY FORMULA

Defining safety, Safety components
Lt Col Hans G. Stoll
NOV92

SAFETY ISN'T PARAMOUNT

Leadership, Mission accomplishment
Maj Gen Brett M. Dula
OCT92

SAFETY MEANS SUCCESS TO ME

Missiles, Launch sites
Capt Walt Anderson
JUL92, GRND

SAFETY PROFESSIONAL SPOTLIGHT

Sgt Mark Bailey
OCT92

SAFETY PROFESSIONAL SPOTLIGHT

Ms Janet Gaines
NOV92

SAFETY WHOSE JOB IS IT?

Involvement, Responsibility
Maj Bob Sampson
DEC92, GRND

SANDS OF TIME

Change, We Care initiative
Mr Cal Faile
JUN92, GRND

SEATBELTS

Seatbelt usage
Mr Mike Mehalko
AUG92, GRND

SEATBELTS SAVE LIVES

Seatbelt usage
Capt Michael H. DeMouilly
SEP92, GRND

SITUATIONAL AWARENESS

Situational awareness in the F-15
Maj Pat Tank
JUN92, FLT

STIGMAS THE HARDEST THING TO KILL

Barrier engagement attitudes
Lt Col James D. Teigen
NOV92, FLT

THE BUF & THE BIRD

B-52 Birdstrike
Lt Dennis Conn
JUL92, FLT

THE AIR FORCE IN THE NEW WORLD ORDER

Attitude, New command
Col Howard G. DeWolf
AUG92

TO EJECT OR NOT TO EJECT

Ejection decisions
Maj Zeke Giglio
AUG92, FLT

TWO'S IN

KC-135 tanker formation
Capt Ghevond Hookassian, JUN92, FLT

WE CARE ABOUT YOU INITIATIVE

WE CARE program explained
MSgt James Kivell
NOV92, GRND

WEAPONS SAFETY — A LOOK TO THE FUTURE

Welcome to ACC weapons safety
Maj J.J. Hepler
JUN92, WPNS

WEAVING A COMMON THREAD

Mishap similarities, Common mistakes
Lt Col James D. Teigen
DEC92, FLT

WHAT ABOUT WEAPONS SAFETY

Weapons safety
MSgt Richard P. Sirois
AUG92, WPNS

WHAT YOU SEE ISN'T WHAT YOU GET

Safe lockout procedures
SMSgt Jerry K. Clineman
DEC92, GRND

WHAT'S A NNMSB?

Nonnuclear Munitions Safety Board
Capt Mark A. Martin
NOV92, WPNS

WHERE DO YOU TURN FOR ANSWERS

Flight safety division synopsis
Lt Col James D. Teigen
DEC92, FLT

WHERE'S YOUR FOCUS

KC-135, Safety attitudes
Maj Michael H. McQuinn
JUN92, FLT

WHO'S IN CHARGE

Responsibility, Flight leadership
Maj Ed Brownstein
JUL92, FLT

WINTER BLUES

Winter preparations, procrastination
Mr Cal Faile
OCT92, GRND

WRITING AN ARTICLE FOR THE COMBAT EDGE

How to write and submit articles
Editor, DEC92

YOU CAN GET HURT WHEN YOU DON'T FLY THE AIRCRAFT

Inattention
Anonymous, OCT92, FLT

Pilot Safety Award of Distinction



On 15 October 1992, Maj Shields took off leading four F-16s on a basic surface attack sortie to Grand Bay Range. Forty-five minutes into the flight, while turning from crosswind to downwind at 3,000 feet MSL in the weapons delivery pattern, he heard and felt a loud thump so violent he thought he may have hit something. He immediately recovered to wings level flight and checked his aircraft. The thumps continued. Recognizing the problem as an engine compressor stall, he pulled the throttle to idle in an attempt to clear it. He called a "knock-it-off" and started a climb toward Moody AFB, only five miles away. The engine RPM and temp were within limits, but fluctuating erratically. He then selected SEC (the secondary fuel controller) to see if he could get

the compressor stalls to cease. Unsuccessful, and recognizing that PRI (the primary fuel controller)



***Maj John J. Shields
68 FS, 347 FW
Moody AFB GA***

offers a higher thrust capability, he reselected PRI and used mid-range throttle setting to climb. Reaching the necessary glide ratio to the runway, Maj Shields selected idle to reduce the severity of the engine stalls. He then configured the aircraft for landing and executed a flawless straight-in SFO approach and landing. Total time from the first compressor stall until touchdown was a mere two minutes! Analysis of the aircraft engine confirmed a number four bearing disintegration due to oil starvation and an engine only moments from seizure. Maj Shields' thorough knowledge of DASH-1 procedures and superior airmanship resulted in the quick and successful recovery of a valuable ACC asset.



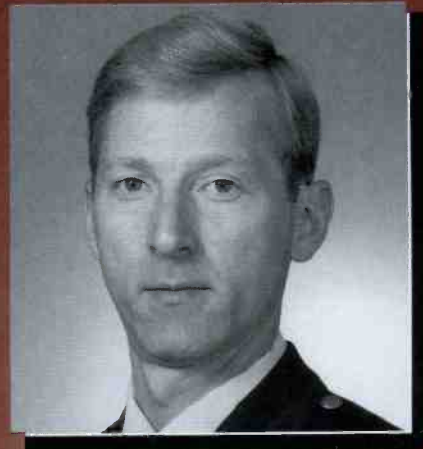
Aircrew Safety Award of Distinction

On 11 Sep 92, Maj Hodgkins, pilot, and Capt Bryner, EWO, were conducting low-level training near Incirlik AB, Turkey, following an Operation Provide Comfort sortie into northern Iraq. While leading a two-ship EF-111 formation flying at 400 ft AGL and 480 KTAS, Maj Hodgkins felt a slight uncommanded forward movement of the control stick. Pulling back on the stick to begin a climb, he discovered the stick would only move one-half inch aft of the neutral position. As they were flying over level terrain, this limited amount of stick movement was sufficient to establish a safe up vector away from the ground. (Had the malfunction occurred over mountainous terrain, ground impact may have been unavoidable.) Maj Hodgkins directed a "knock it off" and called for his wingman to rejoin. Capt Bryner monitored the wingman's position as Maj Hodgkins gradually climbed and slowed the aircraft to 350 KIAS while moving the wings forward to 26 degrees of wing sweep. A close inspection by the wingman revealed no visible problems. There were no warning lights or other abnormal indications inside the cockpit. Although the crew felt recovery of the aircraft was questionable, given the limited amount of stick authority available, they elected to try an approach at Incirlik following a controllability check. Declaring an emergency with Approach Control, Maj Hodgkins and Capt Bryner continued to climb the aircraft to approximately



Major Russell D. Hodgkins, Jr.

*429 ECS, 366 WG
Mt Home AFB ID*



Capt Mark S. Bryner

6,000 ft AGL and maneuvered to a wide downwind position east of the field. There, Capt Bryner ran the "unscheduled pitch maneuver" checklist. Turning the pitch damper off increased the forward pressure on the stick, so the crew turned the damper back on. Other steps in the checklist were unsuccessful as well. Rather than try to "brute force" reposition the control stick, Maj Hodgkins elected to attempt to configure the aircraft for landing with stick "as is". He gradually slowed the aircraft to 250 KIAS and set the wings to landing wing sweep. After lowering the landing gear the nose pitched down, but Maj Hodgkins found he was able to control it with the limited stick authority available. The slats and flaps were incrementally lowered and although Maj Hodgkins was required to hold continuous aft pressure on the stick, he found the aircraft would maintain level flight. As he turned on to an extended

base leg, Capt Bryner coordinated with the supervisor of flying concerning the possibility of a cable engagement. Capt Bryner also ensured all remaining checklist items were accomplished as Maj Hodgkins rolled out on a 16-mile, straight-in approach. Fearing he might not be able to correct a shallow glidepath, Maj Hodgkins flew a slightly steeper than normal approach, skillfully controlling the aircraft's descent with power only. An "on-speed" touchdown was made in the first 1,000 ft of the runway, and although only limited aerobraking was possible, the aircraft was stopped on the runway without the need for departure end cable engagement. Postflight investigations found foreign objects in the control linkages. Maj Hodgkins and Capt Bryner's successful recovery of the EF-111 demonstrated superior airmanship and saved a valuable resource, proving themselves worthy of the ACC Aircrew Safety Award of Distinction.

Flightline Safety Award of Distinction



*SSgt Robert Howsden, SSgt Greg Strate,
SSgt Jim Pineault, SSgt Michael Iarossi
419 FW/MS, Hill AFB UT*

Their shift began just like any other; four air reserve technicians from the 419th Fighter Wing going about their routine duties on the flightline. Meanwhile, at the approach end of the runway, an F-16 Fighting Falcon assigned to the 388 FW, Hill AFB, Utah, was ready for takeoff. From that point on, the events that followed were not routine, either for the crew chiefs or for the pilot who was preparing for takeoff. Moments later, the 388 FW pilot successfully accomplished a heavyweight high-speed abort. He taxied clear at the departure end of the runway and, suspecting hot brakes, started for the Hot Brake parking area. Meanwhile, SSgt Iarossi was working with SSgt Strate on a basic F-16 tow job. Iarossi commented to Strate about the 388 FW F-16 sitting on the taxiway adjacent to the 419 FW parking ramp. They were not aware that the jet had just accomplished a high-speed abort.

The air reserve technicians continued with the tow job, parked their aircraft, and were joined by SSgt Howsden. At about the same time, SSgt Pineault was walking to a nearby aircraft to help with an aircraft refuel. Looking up, he noticed the right brake of the 388 FW aircraft was burning. Instinctively, he yelled, "Hey, that airplane's on fire!" Howsden immediately sprinted to the 388 FW aircraft while Strate, Pineault and Iarossi hooked a flightline halon fire extinguisher to the tow vehicle. Howsden reached the aircraft first, alerting the pilot he had a fire. Once at the scene, Strate armed the fire extinguisher, grabbed the hose, and began dousing the flames. Meanwhile, Iarossi chocked one of the tires as a safety precaution. The aircraft still had its engine running because there was concern as to whether a fuel dump, when the pilot shut down the engine, would fuel the fire. "He was in

no real danger at that point," said Iarossi. "Had the flames gotten worse and engulfed more of the aircraft, we would have opted to shut the engine down and get the pilot out," he said. Pineault noted it only took a couple of minutes to exhaust the extinguisher's halon. "Initially the flames went down, but they just kept coming back. We were barely able to contain it," said Iarossi. Moments later a barrage of fire trucks arrived on the scene. Firefighters from the base fire department, including 419 FW reservists on duty, took command of the situation. In a matter of seconds a bed of foam lay underneath the aircraft and the pilot was told everything was under control. "It could have been worse, but everybody reacted like they were supposed to," said Strate. Capt Mike Goldfein, the 388 FW Chief of Flying Safety, called the incident a "terrific mutual heads-up between the flying operations on base. We appreciate the 419th responding as quickly as they did without regard for their own personal safety," he said. Lt Col Edward A. Askins, 419 FW Chief of Safety, said the response of the crew chiefs was typical of the 419th; "Our crew chiefs have great attitudes -- they're professionals." When asked about fear, Strate -- who has twice won the 419 FW High Flyer Award for top crew chiefs -- said it wasn't at all a part of the scenario. "They don't teach you to be scared, he said; they teach you to do the correct procedures at the right time."

EYE PROTECTION ON THE JOB

Are You Prepared?

*Capt Walter B. King
49 MED GP/MGHGO
Holloman AFB NM*

To some, wearing safety eye wear while at work may be an annoyance or hassle. However, when we consider how much we depend on our eyes, the importance of preserving this precious sense becomes more apparent. It has been said that eyesight allows us to gather more information about the world around us than all our other senses combined.

The first line supervisor is responsible for ensuring that those who work in eye hazardous environments are properly protected. Safety education is essential, yet the responsibility rests ultimately with each individual in the workplace to ensure that he or she is safeguarded.

It is estimated that 2.4 million eye injuries occur each year in the United States. Twenty five percent of all severe injuries occur in the workplace. A recent study was conducted over a 7-year period to better understand the characteristics of serious ocular injuries in which penetration of the eye by foreign objects occurred. The median age was found to be 30 years, and 75 percent were younger than 40 years. So, it is evident that the majority of serious eye injuries involve those in their most productive years. In a different study involving work-related penetrating eye injuries, analysis of the activities at the time of the incident revealed that 88 percent could have been avoided with appropriate eye protection.

Ocular protection comes in many forms. Safety goggles or occupational spectacles are readily available and have been shown to provide sufficient protection in many job settings. Other forms include static shielding of equipment such as that found with grinding equipment and static shielding of personnel like found in the radiology department of a hospital. Yet, the most well maintained high tech protective equipment is ineffective unless it is used properly.

Health and safety promotion programs in the Air Force and Air Combat Command are alive and well. Smoking cessation, exercise regimens, attention to alcohol and drug abuse, use of seat belts and immunization programs are well known and vital to health maintenance and safety. Eye protection must be included. After all, the Air Force's greatest asset is people! ■

ACColades

QUESTIONS OR COMMENTS
CONCERNING DATA ON THIS
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DSN: 574-3814

	TOTAL			ACC			ANG			AFR		
	NOV	THRU NOV		NOV	THRU NOV		NOV	THRU NOV		NOV	THRU NOV	
		FY93	FY92		FY93	FY92		FY93	FY92		FY93	FY92
CLASS A MISHAPS	3	4	6	2	3	2	1	1	3	0	0	1
AIRCREW FATALITIES	0	0	5	0	0	1	0	0	2	0	0	2
* IN THE ENVELOPE EJECTIONS	2/0	3/0	2/1	1/0	2/0	1/0	1/0	1/0	1/1	0/0	0/0	0/0
* OUT OF ENVELOPE EJECTIONS	0	0	0	0	0	0	0	0	0	0	0	0

* (SUCCESSFUL/UNSUCCESSFUL)

CLASS A MISHAP COMPARISON RATE

(CUMULATIVE RATE BASED ON ACCIDENTS PER 100,000 HOURS FLYING)

		FY 92	3.4	1.9	2.0	2.5	2.0	2.0	2.0	2.3	2.5	2.4	2.6
ACC	FY 92	3.4	1.9	2.0	2.5	2.0	2.0	2.0	2.3	2.5	2.4	2.6	2.5
	FY 93	2.0	3.1										
1 AF	FY 92	0	0	0	0	0	0	0	0	0	0	0	0
	FY 93	0	0										
2 AF	FY 92	0	0	0	0	0	0	0	*	29.1	16.4	11.2	7.8
	FY 93	0	0										
8 AF	FY 92	0	0	0	0	0	8.9	7.6	6.6	7.9	5.8	4.4	5.2
	FY 93	0	11.6										
9 AF	FY 92	4.4	2.4	3.4	2.6	2.1	1.7	2.2	2.6	2.4	2.7	2.4	2.0
	FY 93	5.2	5.5										
12 AF	FY 92	0	0	0	1.5	1.3	1.0	.9	.8	1.4	1.3	1.8	2.1
	FY 93	0	0										
ANG	FY 92	0	6.7	6.3	8.8	7.1	6.6	5.6	5.5	4.9	4.9	4.9	4.9
	FY 93	0	2.2										
AFR	FY 92	0	10.9	7.7	5.7	4.7	3.9	6.7	8.7	7.8	7.0	8.4	7.7
	FY 93	0	0										
TOTAL	FY 92	2.3	3.7	3.5	4.3	3.5	3.3	3.3	3.6	3.5	3.4	3.6	3.4
	FY 93	1.3	2.6										
MONTH		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP

* (HOURS NOT AVAILABLE)

*Lt Col James D. Teigen
HQ ACC/SEF
Langley AFB VA*

**NEAR MISSES,
OR
NEAR HITS,
YOU
DECIDE**

The Commander recently asked the ACC Safety staff to examine our recent trends to see if there were any minor incidents (“near misses”) which, without the element of luck, superior airmanship or any other outside force, could have resulted in a large smoking hole. The following is but a small gathering of incidents across ACC which could just have easily ended up going the wrong way, resulting in even more aircrews or aircraft being lost. These appear in no particular order.

The first near miss was an incident in which the mishap pilot (MP) was #2 (Instructor Pilot) on an ACM Flight Lead Upgrade ride for #1. On the second setup, an ACM beam entry, the MP maneuvered to meet the bandit at high aspect. At the high aspect angle pass, the MP rolled the aircraft 120 degrees to the left and began a 7.1 G pull. After 40 degrees of turn, the MP rolled out of the bank and maneuvered the aircraft back to level flight. The aircraft was recovered without incident with the MP suffering from intense back pain. Upon landing the MP stopped the aircraft at the end of the runway and was extracted from the aircraft through the use of a backboard. Medical evaluation revealed a low back muscle strain. The question you must ask yourself is what would have happened if the pain had become incapacitating? In the world of single seats, the answer is clear. The result would have been the loss of an aviator and an aircraft. The near miss list continues.

A mishap aircraft (MA) was operating on a low level route approaching the bomb release point. The MA was in cloud conditions (IMC) near the freezing level when lightning struck the nose radome and exited the right wing tip. Damage in this instance was minor due mostly to the fact that the aircraft was constructed IAW MIL STDs for lightning protection. Some of our assets are not. JP-4 is a volatile fuel above 0 degrees Fahrenheit and can be ignited with energy from a lightning strike (read static discharge, as the aircraft doesn't know the difference - it's all electrical energy to the aircraft). JP-8 is a cure, as long as the fuel isn't used as a heat

sink for avionics or hydraulic fluid or oil cooling, etc. If the aircraft uses its fuel as a heat sink, there is a volatile fuel mixture produced. Bottom line: You should avoid flight within 5 degrees of the freezing level and never fly in or near the path of a thunderstorm. It has already cost us several aircraft; don't add to the list.

The next near miss was, in fact, a hit. During a day, low level, terrain following mission, the MA encountered a flock of birds. The MA initiated a 4G, auto fly-up while simultaneously giving the pilot an “obstacle ahead” warning. During the auto fly-up, the MA impacted 2 or more birds. This resulted in damage to the LANTIRN navigation pod, center fuselage and right auxiliary fuel tank. The MA lost 10,000 pounds of fuel from the ruptured fuel cell before the leak ceased. The MP declared an IFE and performed an uneventful full-stop landing. An interview with the Department of Wildlife revealed that an unusual amount of rainfall in the local flying area increased vegetation and the insect population during the annual bird migration season. This does not increase the number of birds in the area; but it does seem to hold the birds in the feeding area longer, certainly as long as the food supply lasts. In this incident, a bird warning was not in effect. Lessons learned from this near miss are many. First, wetter than normal climates produce more food for the birds and they stay longer which really distorts the Bird Avoidance Model we use to predict bird threats. Lastly, there are some ACC assets which do not have the 500 mile per hour 4 pound bird proof windscreen. If you are an operator of one of those aircraft, please take heed of the bird advisories; it recently cost the life of a fellow aviator.

Here's one near miss that, had it happened nearer to the ground, CNN would have been there to cover the story. While the MA was at a half mile in trail prior to air refueling operations, the MA experienced an uncommanded roll to the right (approximately 20 degrees of roll before the aircrew could stop and correct the rolling moment). Air refueling operations were terminated; and while the

MA was en route to a nearby airfield, the uncommanded rolling occurred twice more. The crew declared an emergency, jettisoned fuel and accomplished the applicable checklists and a controllability check. After landing, the uncommanded roll was determined to be caused by a leaking rudder boost pack. Would it have turned out the same if it had occurred just after liftoff, or during a go-around or even on final, or a LAPES? Three of the most useless things in the world of aviation are: altitude above you, runway behind you, and airspeed you used to have.

Loss-of-control near misses require us to look at a couple of more incidents. The first MA was one with a center line tank on a student syllabus mission for advanced handling which included unusual attitude recoveries. During one of these recoveries, the MA entered a deep stall due largely to the student's slow reaction to the slow speed warning horn. The IP took control of the MA and attempted recovery, but was unsuccessful until he jettisoned the centerline tank. The mishap crew thought they were 10,000' AGL when they broke the stall, but were in fact only 4,500' AGL. Final recovery occurred at 2,000' AGL. The crew was fortunate that: the aircraft did finally recover and their misperception of altitude did not result in ground impact before recovery.

Couple this with another one where the MA had just returned from depot level maintenance and was to be flown in the squadron surge. The MP took off for a planned 1V1 BFM sortie. The first engagement was a 3,000' defensive setup for the MP. While maneuvering, the MA began a slow uncommanded roll to the left with the

Three of the most useless things in the world of aviation are: altitude above you, runway behind you, and airspeed you used to have.

airspeed at 220 knots. The MP neutralized the controls, and the MA recovered within 20 degrees of turn. The MP felt that he had most probably induced the left roll by aggressively maneuvering at slow speed, so he elected to continue the mission. On the second setup (again 3,000' defensive) while maneuvering, the MA quickly began yawing left with the yaw tone going to full double rate. The MP again neutralized the controls, and the MA recovered after yawing 370 degrees and losing 3,100' of altitude. The MP elected to abort the mission and RTB. During the battle damage check, it was discovered that the right rudder was deflected inboard approximately 2 inches. The aircraft was recovered without incident. Troubleshooting discovered that a wire lead, going to the cannon plug for the roll/yaw computer was broken and, subsequently, provided the PRCA with incorrect information. Also, at some unknown time, the right rudder actuator failed. If the aircraft is not flying the way we expect it to, it could be because of some mechanical malfunction as it was in this near miss. Luckily, in this case as in the other the pilots recovered the aircraft after it departed. Recently, we have not been so lucky.

Another area of near misses involves aircraft that have experienced inflight losses of secondary panels; the damage in some cases has resulted in Class A mishaps. Panels have departed aircraft for a variety of reasons: latches not properly closed after inspections, latches worn beyond limits which failed inflight, latching mechanisms not inspected/maintained and lastly, fasteners coming loose and being ingested. While dropped ob-

jects are not new to aviation, with the increased cost of our aircraft, resultant damage drives the mishaps into the Class B or even Class A dollar range. All are preventable, with extra attention to detail. In some of the lost panel mishaps, wing tanks were ruptured with resultant fuel leaks; and in several cases, engine damage occurred which resulted in engine shutdown and loss of power/hydraulic systems. While this might sound like a maintenance problem, the aircrew preflight should have caught some of these latching problems. In most cases, the mission was lost; and in some cases, emergency landings were the result. It pays to be attentive.

Moving on to another near miss category, the MP was on the third defensive engagement of a BFM sortie when the engine stalled and stagnated. The engine was shut down and restarted IAW checklist procedures. The MP diverted to a nearby civilian airfield. In this case, we were all lucky. What would have happened had the engine not responded to the restart attempts? What if there had not been an airfield nearby? We could just as easily have had another smoking hole to go look in.

There have been numerous near misses recently due to the aircraft's inability to stop in the confines of the runway. Some were because of bad judgement: landing long, landing hot, long/excessive flare, landing downwind, wet runway, etc. Some were because of a misunderstanding of the braking system in the aircraft: who has anti-skid, how does anti-skid work, when to let the anti-skid work and when to abandon the anti-skid during a malfunction, and the operation of "carbon" brakes. Whatever the case,

The only question that is really "stupid" is the one that is never asked and leads to a mishap.

aircraft have been lost, and aircrews have been in jeopardy of injury or death. If you have any doubts about your aircraft's braking system, ask Training Flight, an Instructor Pilot, or the Maintenance experts from the brake shop to speak at your next safety meeting. The only question that is really "stupid" is the one that is never asked and leads to a mishap.

The last near miss scenario involves a MP who was in the observation position on a KC-135 when he stated that he had lost his engine. Numerous attempts to restart in both UFC and BUC were unsuccessful. The MP landed engine-out at a civilian airfield just beneath the tanker track. Subsequent investigation revealed the MP had inadvertently shut down the engine with the fuel master switch. Again we were lucky, we had a piece of concrete to set this one down on. Suppose there hadn't been an airfield? This was all caused by the MP failing to adequately analyze his problem. We could have lost another one.

All of these "near misses" and "near hits" could have just as easily gone the other direction. Without the intangible elements of either luck, airmanship, or other outside force(s), we could have had up to 10 or so more smoking holes and a group of lost aviators. We can ill afford the loss of even 1 aircraft or aviator. Don't depend or rely on luck to pull it out of the fire. Use maturity, airmanship, rules of engagement, leadership, and the training you've been given. Don't freewheel; you might not be as lucky as the aviators we've discussed here. These have been near misses or near hits. Would you have been as fortunate as these folks? Maybe, maybe not. The decision is yours. ■

TEAM

The HQ ACC **TEAM SALUTE** recognizes a person, group of people or unit for notable displays of quality performance in the area of mishap prevention. **TEAM SALUTE** recipients are selected by the ACC Safety Awards Board from the monthly nominees for ACC safety awards. Periodically, **TEAM SALUTE** recipients will be featured in *The Combat Edge* magazine. Our congratulations to the first recipients of the **TEAM SALUTE**.

Maj Steven J. Ver Helst
188 FS, 150 FG
Kirtland AFB NM

On 5 April 1992, Maj Ver Helst was leading a four ship of A-7D's on an air-to-ground gunnery mission at Melrose Range NM. He was on downwind at 500 feet Above Ground Level (AGL) and 400 Knots Indicated Airspeed and had just looked down to record his bomb score when he hit a large bird. The bird came through the left quarter panel and struck him in the left shoulder and chest area. Despite being stunned and in pain, Maj Ver Helst was able to maintain control of the aircraft and to direct his wingman to join on him as he began a divert to Cannon AFB, NM. Maj Ver Helst accomplished a wing landing due to high noise levels and difficulty hearing radio calls. Maj Ver Helst completed an uneventful recovery at Cannon AFB despite severe pain and impending shock. His fine airmanship and quick thinking prevented the loss of the aircraft and possible further injury to himself.

SSgt Lewis A. Norris
33 OSS, 33 FW
Eglin AFB FL

On 26 May 1992, an F-15 taxied into the End Of Runway (EOR) area on Eglin AFB FL for final quickcheck and arming before takeoff. As SSgt Norris inspected the aircraft, he discovered a fire inside a screened panel on the underside of the fuselage, between the engine bays, and directly above the centerline external fuel tank. This was a significant discovery since the pilot had no fire indications in the cockpit. SSgt Norris quickly retrieved a nearby fire extinguisher and began fighting the fire, simultaneously instructing other members of his crew to advise the pilot to shut down the engines and egress. While still fighting the fire, SSgt Norris instructed a second crew to evacuate other aircraft in the EOR area to an adjacent taxiway, a safe distance away, and continue operations. Maintenance troubleshooting discovered that a jet fuel starter fuel line had developed a massive leak which was ignited by an adjacent cannon plug. SSgt Norris' swift and decisive actions eliminated the potential for loss of life and aircraft.

SALUTES



HARRISON

WARNING!

Injector Hazard

GAS

21 TABLETS
 PYRIDOSTIGMINE BROMIDE USP
 (Nerve Agent Pre-Treatment Tablets)
 NSN 6505-01-178-7903


Directions for use:
 1. COMMENCE TAKING ONLY WHEN ORDERED BY YOUR COMMANDER
 2. TAKE ONE EVERY 8 HOURS
 3. IT IS DANGEROUS TO EXCEED THE STATED DOSE

 DUPHAR B.V. AMSTERDAM HOLLAND

LOT NO.: 038641
 MFD.: NOV. 1987

Pralidoxime Chloride Injection

FOR USE IN NERVE AGENT POISONING ONLY

 DUPHAR B.V. AMSTERDAM HOLLAND

1 REMOVE GRAY SAFETY CAP

 DUPHAR B.V. AMSTERDAM HOLLAND

Atropine Auto-Injector

Did you decide to keep your OPERATION DESERT STORM Atropine and Pralidoxime injectors and bring them home as souvenirs of the Gulf War? If you did, you may be endangering the lives of your family members!

Control of the injectors wasn't as stringent as it could have been, so it's reasonable to assume that a few injectors may have found their way back to the States and into people's homes as souvenirs. This puts our spouses and children at risk. The risk, while not extreme, is nonetheless serious.

Fourteen atropine injectors and 14 pralidoxime chloride injectors were found in mask carriers and mini C-bags at Loring AFB during an exercise which called for the use of training grade chemical gear. Presumably, the injectors were left in the mask carriers and mini C-bags when they were repackaged for training after their use during DESERT STORM. There have also been stories of individuals who were unable to find anyone who would accept their injectors after the conflict.

The major hazard associated with the injectors is the spring loaded needle. The

needle can penetrate the skull, put out an eye or cause other serious injury if mishandled. A secondary hazard is the medication. There have been 248 cases of children being accidentally injected with atropine. In all cases, healthy children tolerated high doses of the drug with few adverse symptoms. However, this is a risk which we need not expose our children to.

All chemical warfare training equipment should be inspected for any left over injectors. Any injectors found during this inspection, plus all injectors maintained in the possession of Air Force members or their families, should be immediately returned to appropriate medical authorities.

The injectors were designed to save lives, not to cause serious injury or accidental death to those we love. ■

*TSgt Norman E. Stephenson, Jr.
42 BW/SEG
Loring AFB ME*

