THE COMBAT EDGE

OCTOBER 1992

THE COMBAT EDGE

Air Combat Command
Safety Magazine

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ABOUT THE COVER

The B-1B is a multirole, long-range bomber able to fly intercontinental missions without refueling. The B-1B currently holds 36 world records for speed, payload and distance.

OCT92

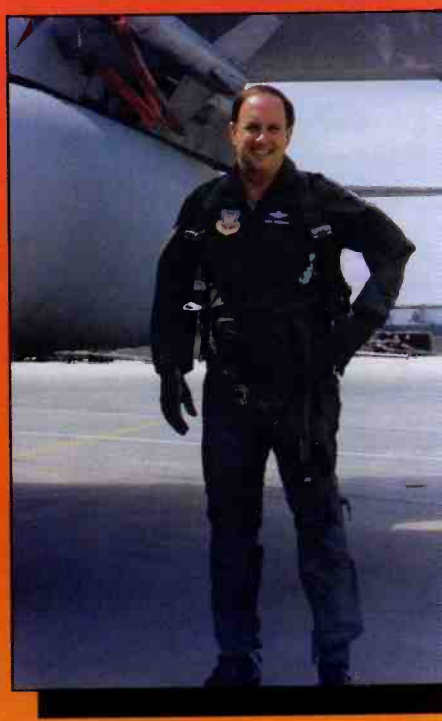
ACC SP 127-1 VOLUME 1 ISSUE 5

ACCent on Safety

Another summer, another fiscal year and another flight safety conference are behind us. My sincere thanks and appreciation to all who attended the first ACC Flight Safety Conference here at Langley AFB. I hope everyone who attended benefitted as much from the conference as I did. As evidenced throughout the conference, there are lots of ideas on how to conduct our mission and do it safely. We need to continuously search for better ways to do our job. We must continue asking the hard questions and, when necessary, giving the hard answers. However, when asking those questions or giving those answers, we must ensure that our efforts are straight-forward, honest attempts at making our culture of safety stronger, better and more encompassing. Now that we're starting a new fiscal year, we need to reemphasize and publicize our safety culture. We should incorporate safety into everything we do so that we can indeed accomplish our mission safely. As Major General Dula says in his article (Pg. 4), "... safety is the biggest of all the factors which will lead to mission accomplishment."

In ground safety, our "101 Critical Days" Class A mishap rate was slightly below the 4-year SAC/TAC combined average but the Class B rate was nearly double the combined 4-year average. As disturbing as the statistics are, the really tragic part is the human suffering and loss that they portray. We sometimes lose sight of the fact that these "numbers" represent people; fellow workers and friends who are injured or killed -- needlessly. We can do better. Now is a good time to review our performance over the summer with an eye towards improvement.

It won't be long until we start into the holiday season (Thanksgiving through New Year's), historically another critical time of the year. It's not too early to start preparing our people for a safe holiday season. Each of us should review our part in the "We Care" initiative and resolve to make it the best program possible. We owe it to ourselves and our workers.



A new fiscal year provides each of us the opportunity to renew our commitment to safely accomplishing the mission. Our attitude establishes the foundation for our commitment. Positive attitude, positive commitment; negative attitude, no commitment. Whether we believe it or not, our attitude is actually under our voluntary control. Even in difficult situations, we can mentally step back and remind ourselves that a positive attitude is one of choice and, in the long run, is better for us, our quality efforts and continuous improvement. Resolve to choose a positive attitude -- accomplish the mission -- and do it safely!

Colonel Bodie R. Bodenheim
Chief of Safety

Safety Isn't Pa

What IS paramount in today's Air Force, and indeed in every fighting force that ever took the field, is mission accomplishment.

Major General Brett M. Dula
Commander, 2 AF
Beale AFB CA

For as long as I can recall in the flying business, flight briefings almost always ended with the platitude, "... remember, safety **IS** paramount!" Many mass aircrew briefings today embrace these same overused words. In my judgment, however, safety **ISN'T** paramount. If it was, we would never turn a wheel on an AWACS, a tanker, or a Recce bird. Instead, we'd sit around playing poker or chess all day, being very careful not to fall off of our chairs! But the taxpayers don't pay us to play poker or chess -- they entrust us with the responsibility to maintain, operate and support weapon systems and equipment so that we will be prepared to defend our country. What **IS** paramount in today's Air Force, and indeed in every fighting force that ever took the field, is mission accomplishment.

Our mission in wartime is to win; in peacetime it is to be prepared to win. There are many factors that influence which side will prevail in a conflict (don't forget that mission accomplishment is paramount for the other side, too!). Leadership, resource management, logistics, industrial capability and individual courage are all factors that bear directly on how we accomplish our mission, be it peacetime or wartime.

But there is one other factor which might be considered the granddaddy of mission factors because it touches on all the rest -- safety. Leaders and warriors who only pay lip service to safety are wasteful of people and materiel and may one day lose a battle for want of one person or a piece of equipment that was lost because of unsafe practices.

One of our country's greatest military leaders, General of the Army Douglas MacArthur, boasted the lowest casualty rate of any theater commander in World War II. Rather than attacking Japanese strong points head-on, he frequently bypassed them entirely in his "island hopping" strategy in the South Pacific. By simply going around them, the enemy strong points were

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isolated and eventually withered from lack of supplies. MacArthur, on the other hand, kept his forces strong for use where battle was truly necessary. He clearly saw the value of safely husbanding the scarce resources of both men and equipment.

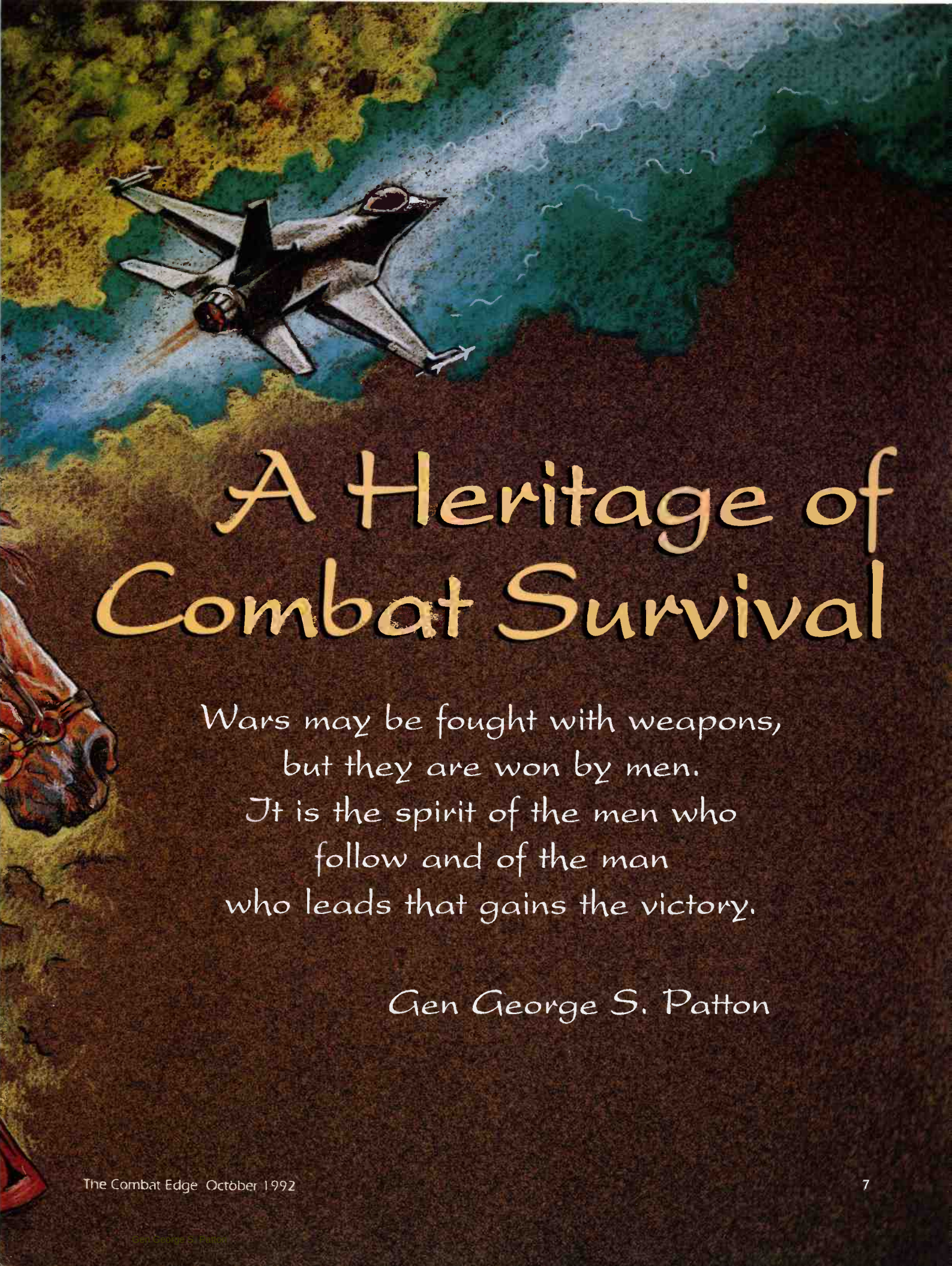
The men and women of Second Air Force, in conjunction with their weapon systems, act as the eyes and ears of the theater commanders during war and peace. because of the unique natures of recce and battle management businesses, it's sometimes difficult to differentiate between our wartime and peacetime tasking. This war/peace overlap may give many the idea that the mission must go at all costs. This sometimes leads us to "press the limits" due to the perceived "national importance" that is normally associated with many of our missions. This is not an unhealthy attitude but one which must be tempered by that granddaddy planning factor, safety. If one can **positively** do the job safely, then press on! Although there are undoubtedly rare occasions in battle where heroic courage can be pivotal, the fact remains that if we all die gloriously on the field of battle then the other side wins! We need professionals, not heroes.

The concept of safety in peacetime is no less valid. Every man and woman, every aircraft and every typewriter, is contributing in one way or another to the accomplishment of our mission. We can't afford to lose equipment and we can't afford to lose you. So, when you're briefing tomorrow's mission, ask yourself if you are totally prepared to accomplish your mission. Have you cut any corners in preparation? Will you take unnecessary chances in execution? Mission accomplishment is your paramount consideration, but safety is the biggest of all the factors which will lead to mission accomplishment.

Every man and woman, every aircraft and every typewriter, is contributing in one way or another to the accomplishment of our mission.

Therefore, in our Command, doing the job safely is the top priority. There isn't a mission, a tasking, or a job that requires you to compromise this priority. If you can't do it safely, then stop, ask questions, get help, but above everything else, be careful. As resources become scarcer the temptation to cut corners becomes greater; **DON'T!** As expensive as our equipment is and as important as our missions are, they are nothing when compared to human life. Do your job and accomplish the mission; but do it safely! ■

Illustration by
Sgt Mark Bailey



A Heritage of Combat Survival

Wars may be fought with weapons,
but they are won by men.
It is the spirit of the men who
follow and of the man
who leads that gains the victory.

Gen George S. Patton

A Heritage of Combat Survival

O-dark thirty, the warrior walks out across the pavement, buckles and hardware jingle in rhythm with each step, a breeze hits him. He thinks, "Some protective suit! I'm cold now, but by noon I'll be sweating in this thing." Only this warrior and one other on this dawn patrol.

Left foot up, then the right one. As he sits and adjusts himself the thought crosses his mind, "This seat sure wasn't made for comfort." Indeed it wasn't, it was made for fighting. "Here you are, Sir"; as his helmet is handed up. He puts it on, visor up for now. On with the long gloves. The armorers finish checking the weapons, all is ready. This is no practice ride, no wooden targets to play with, no matching wits and moves with a friend and then swapping stories later. With everything checked and ready, the two depart. As they go, these well-trained warriors communicate with little more than a raised hand or a sequence of finger movements. Time wears on, eyes scan the horizon for the foe. Finally, it's time to go back. It's not like you can stop just anywhere; and after all you can stand only so much fun. The two return with no enemy sighted, but their very presence may have been the reason. The armorers secure the weapons; then it's off with the helmet and climb down. The buckles and hardware jingle with each step as they go back to waiting comrades. No enemy, but there are still the stories.

Was this a fighter pilot or a knight? The modern fighter pilot has inherited the knight's professional warrior legacy. A legacy of combat survival based on well maintained equipment handled by a highly trained, disciplined warrior. The warrior spirit, the ideals, the concepts of warrior professionalism, even some of the equipment, are the same today. The knight's military spirit passed to the modern fighter pilot in a circuitous way. Knights or heavy cavalry gave way to light cavalry and massed armies due to technology, costs and politics. Light cavalry was subjugated to the commanders of massed armies. The light cavalry advantages of speed and mobility combined with their small numbers separated them from those masses. The light cavalry was used for covering the ground troops, harassment, flanking actions, scouting (recce) and relaying messages. That was the 16th century. Things stayed more or less the same until technology stepped in again with the airplane. The Army saw the airplane's advantage in speed and mobility. Being few in numbers, the Army naturally relegated it to covering the troops, harassment, flanking actions, scouting

(recce) and relaying messages. Thus the signal corps got it, but it was cavalry officers who flew it. The 1912 flying regulations included, "Do not wear spurs in the airmachine, it tears the fabric, "carry a pair of wire cutters to free yourself in case of a crash," and "be sure to look where you are landing so as not to land on top of another airmachine." Flight safety was a natural part of flying from the very beginning. The knight's concept of individual responsibility to excel began to emerge again.

Knights were warriors, no matter what country they served. They were directly commissioned by the chief executive of the land to defend against all foes, external and internal. They served at the chief executive's discretion. The knight did not enlist masses of troops and send them out to fight, he rode and fought. Like today's fighter pilot, he was dependent on many others: the ones who put him up on the horse, gave him the weapon and sent him out to fight. The knight, like the fighter pilot, was a fighting unit. When two knights fought, it was a battle, not a fist fight. It was important to make sure each knight was ready for battle. To lose one in training was to lose valuable combat capability. A knight took care of himself, his equipment and his horse. This was probably not called "knight safety" -- it was called smart. The knights were true professionals. They trained hard to do well. They often tested themselves against each other with a fierce pride and competitiveness. They were not reckless nor careless for they knew the deadly seriousness of even the slightest incapacitation.

The business side of a knight's life had many of the same things a fighter pilot would understand. The armor was not for looks; it was to protect the man from injury. It was cold in the morning, an oven in the noon day sun and he wore it with pride. With it came boots, long gloves or gauntlets and a visored helmet. They wore scarves and symbols that identified their allegiance. Our patches are still heraldic symbols. His weapons were prepared and maintained by armorers and were some of the highest technology of the time. He employed them starting with the enemy at a distance. The spear or javelin first, then a lance or long hand-held weapon, and then, in close a sword, mace or hand cannon. The sword was hung from the left hip to be drawn by the right hand. The knight always mounted left foot in the stirrup, then the unencumbered right leg over. We still mount our aircraft mostly from the left for no other reason. When a knight was seated, he found the seat made for the rigors of combat, not comfort. Once all buckled in and checked over, the knight was capable of deftly wielding an array of high technology. He went forth alone, in pairs, or in formations. To communicate they used hand signals or specific movements of the horse. Once out of sight of the castle, he was on his own. A lot of trust went with the knights, both from those who sent him and those who went with him. His discipline, or lack of it, would mean the survival of himself as well as others. All of the knight's training, equipment, weapons, tactics and support were for one end -- combat. He had to survive training to do battle and then survive the battle to be ready to do it again. Equipment and procedures to increase the safety and survivability of the knight were not "extras," they were integral to success.

A knight's skill, courage and loyalty were greatly revered. He was of necessity, independent, self-confident, intelligent and talented. He worked and played hard and the system found him to be very loyal, dependable and necessary.

Today's fighter pilot would have made a fine knight and vice versa. There is a heritage of honor, professionalism and safety that we have been passed. They were the roots of our desire to achieve high levels of ability, dedication, and overall performance. They were not, and still cannot, be achieved carelessly or haphazardly. This rich legacy is within each fighter pilot. The next time you walk out over the pavement, you don't walk alone. The buckles and hardware you hear jingling are not just yours.

■

Maj Raymond "Bear" Thomas, Jr.

SAF Declares Wa

History has proven that more military losses are experienced during peacetime and non-combat actions than those that actually occur during war.

During World War II, just within the borders of the United States, away from actual combat, the Army Air Corp experienced an average of 17, what we now call "Class A" mishaps, per day over the 4-year time span of the war. That was the complete destruction of a piece of equipment or death in each mishap.

In Vietnam, of the 57,000 casualties during the 10-year period of the war, 24,000 were attributed to non-combat causes.

During DESERT STORM, of the 375 Persian Gulf casualties, 229 were non-combat related.

Peacetime or non-combat activities have proven to be just about as costly as war. Why? Here are several possible reasons.

Training. Everyone starts out fresh and inexperienced at one point but statistically most mishaps do not occur at this stage. A new student is more likely to be fully aware of his situation and not let a mishap occur. Training mishaps normally occur when operations are pushed to the limit testing both skill and endurance.

Many flight instructors will tell you that their most frightening rides are when experienced pilots need some sort of up-grade training. Instructors can then see where individuals have made their own rules and developed their habits by pushing established limits over the years through "experience."

Initial training in any skill is where the most important points need to be made. This is why safety training must always be stressed in initial training.

Complacency. Boredom is the number one enemy of anyone in the military. It is easy to forget all of the specifications of a certain piece of equipment if it's not used every day. Since most military equipment

r on Peace

possesses a lot of power and is designed to kill or destroy, it may be fun to see "just what this baby can do." Many Vietnam era vets probably remember the fad of making ashtrays and lamps out of live artillery shells or other explosive devices (a prime example of forgetting just what you may be dealing with).

Equipment failure. Anything mechanical can break. A trained and skilled operator will be able to identify and repair defects. As equipment ages and is used longer and harder than intended, equipment will break. By adding either of the two elements of lack of training or complacency, you really have a mishap looking for a place to happen.

Mishaps. Accidents will happen. There will always be that little situation where something will just go wrong and cause a mishap. The totally unexpected can arise where even the most experienced individual will get caught. However, most mishaps involving humans are due to errors in judgment, operating skills, complacency, or lack of knowledge.

Between 1980 and 1988, 46 military personnel drowned after falling off ships, 51 died in parachute mishaps, 290 died of gunshot wounds or explosives related mishaps, and 1,942 died in military aircraft mishaps. Mishaps that "just happened."

Those who currently die in training are listed as "died on active duty." In most cases, that means the spouse (and survivors) receive the same monthly death benefits and lump-sum insurance payment as a war casualty. And just like a war casualty, the death benefits and insurance paid to the family can never replace the lost loved one.

The loss of personnel or equipment is always tragic but it is even more so when that loss could have been prevented. The purpose of safety is to maintain and preserve the strength of the Air Force through safe operations. The responsibility falls squarely on your shoulders. Only you can control your actions. You are indeed the most important factor in the safety program! ■

MSgt Lawrence E. Stulz
906 FG SEG
Wright-Patterson AFB OH


Illustration by
Sgt Mark Bailey
WINTER
BLUES

It's still warm outside. So, why am I talking about winter now? Well, I am one of the world's best procrastinators. At least my wife thinks so. For example, I know the battery in the car is weak and needs replacing; but while the weather is warm it works just fine. When the first cold morning arrives, it will go dead. Then, there's that slow leak in the radiator that I have been meaning to fix. Well, adding water occasionally isn't a big deal although the antifreeze is weak. Hope we don't have an early freeze. The car should have had a tune-up 10,000 miles ago, but it runs OK. Of course it is using a little more gas. Well, I'll wait a little longer. No use spending money on the tune-up until I absolutely have to. It needs new tires too, but I'll take care of that later.

I hurt my back the other day trying to start the lawnmower. It started on the tenth pull. Doesn't run too well anymore. When I bought it 6 years ago, it started a lot easier. They just don't build them to last any more. I guess I'll have to take the spark plug out and check it; it looks awfully rusty on the outside. But that can wait until the grass needs cutting again.

The hot water heating element burned out the other day and cost $75 to fix. The repairman said it was caused by sediment building up on the bottom of the tank and that I could have saved his fee by draining a cup or two of water out of the tank about every three months. I'll have to remember to do that sometime.

There are several boxes of junk in the garage that my wife has been trying to convince me to get rid of. They're all things I may need someday. Old water hoses, fanbelts, spark plugs, a few books, old military records, etc. Maybe, I'll take them out tomorrow.

Do you procrastinate? I guess we all do. There is an old saying that when something bad happens, it always happens at the worst possible time. When the car breaks down, it's usually in heavy traffic or on a lonely 2-lane road in the middle of the boonies, at night, and no one lives within 5 miles of the area, and it's snowing quarter size snow flakes at 20 degrees F. I could go on and on, but you get the picture. What can you do to prevent it? The answer is good preventive maintenance. Not only can it reduce potential hardships, but it can save you money in the long run. Travelling around on bald tires is asking for trouble, especially if you're doing 65 MPH on the interstate. A blowout and head-on collision can kill you or someone else. Like one TV commercial says, "Pay me now or pay me later." Either way you're going to pay, and sometimes the "later" is a lot more expensive. Winter is not the best time to be fooling around with Mother Nature. If you have a problem with your car, especially if it could affect safety, then get it fixed. Don't wait until tomorrow. If you haven't had your home heating system checked, then have it done. When was the last time you had your chimney cleaned and checked? Plus most homeowner policies require chimney checkups annually, or the insurance companies won't cover losses due to chimney fires. You would be surprised how many homes have been lost due to chimney fires. Plan now, prepare for the winter months and avoid those winter blues. ■

Mr Cal Faile
HQ ACC/SEG
Langley AFB VA

EXPLOSIVES QUANTITY-DISTANCE MYTH

Capt Mark A. Martin
HQ ACC/SEW

Explosives Quantity-Distance is an area that causes much confusion for people unfamiliar with the applicable rules. In dealing with explosives operations, weapons safety personnel open their "book of magic" (AFR 127-100, Explosives Safety), and apply a "K" factor to determine the separation required between explosives locations and everything else. Terms or factors we often hear are: K-11 for separation between explosives loaded aircraft, or K-18 between explosives operations and personnel required to be in the vicinity, or possibly K-40/50 between explosives and the general public. What do these numbers really mean? These factors, K-11, K-18, and K-40/50, relate to various levels of minimum protection accepted by the Air Force. The actual distance these numbers represent takes into consideration the quantity of explosives and the accepted risk. What causes most problems is that people believe, by applying the proper "K" factor to a situation they are providing absolute protection. Not True!

For example: K-11 separation between explosives-loaded aircraft will only prevent simultaneous detonation of explosives on adjacent aircraft, it will not prevent adjacent aircraft destruction. This destruction may or may not be acceptable. In the case of limited resources like the B-2A or F-117A, an explosives mishap in the center of a row of fully loaded aircraft parked at K-11 could mean the complete destruction of three to five aircraft. Acceptable? Related personnel working at K-18 separation to explosives could be killed or seriously injured by fragments. Acceptable? The "general public" located at K-40/50 could experience injury from glass breakage or building debris. Acceptable?

When explosives site plans are developed using minimum distances, commanders must make a conscious decision that only the minimum distances are necessary and the risk of loss is acceptable. If this is not true, then greater distances should be used or compensatory actions taken.

Compensatory actions can and should be used whenever possible to reduce the potential loss from an explosives mishap. For example: In the case of explosives loaded aircraft at K-11, training or inert weapons could be used at all times except in contingency operations. Related personnel at K-18 could

be provided with a protective structure or their activities could be limited during adjacent explosives operations. Public facilities on the edge of clear zones (K-40/50) should be of sufficient strength to withstand the overpressure of an explosion, (i.e., masonry construction, shatterproof glass, etc.).

As you can see from the above, applying the protection factors from the "book" may not provide the protection desired. That's the myth that many people have lived with because they really don't understand the magic world of explosives or the Voodoo formulas from the "book."

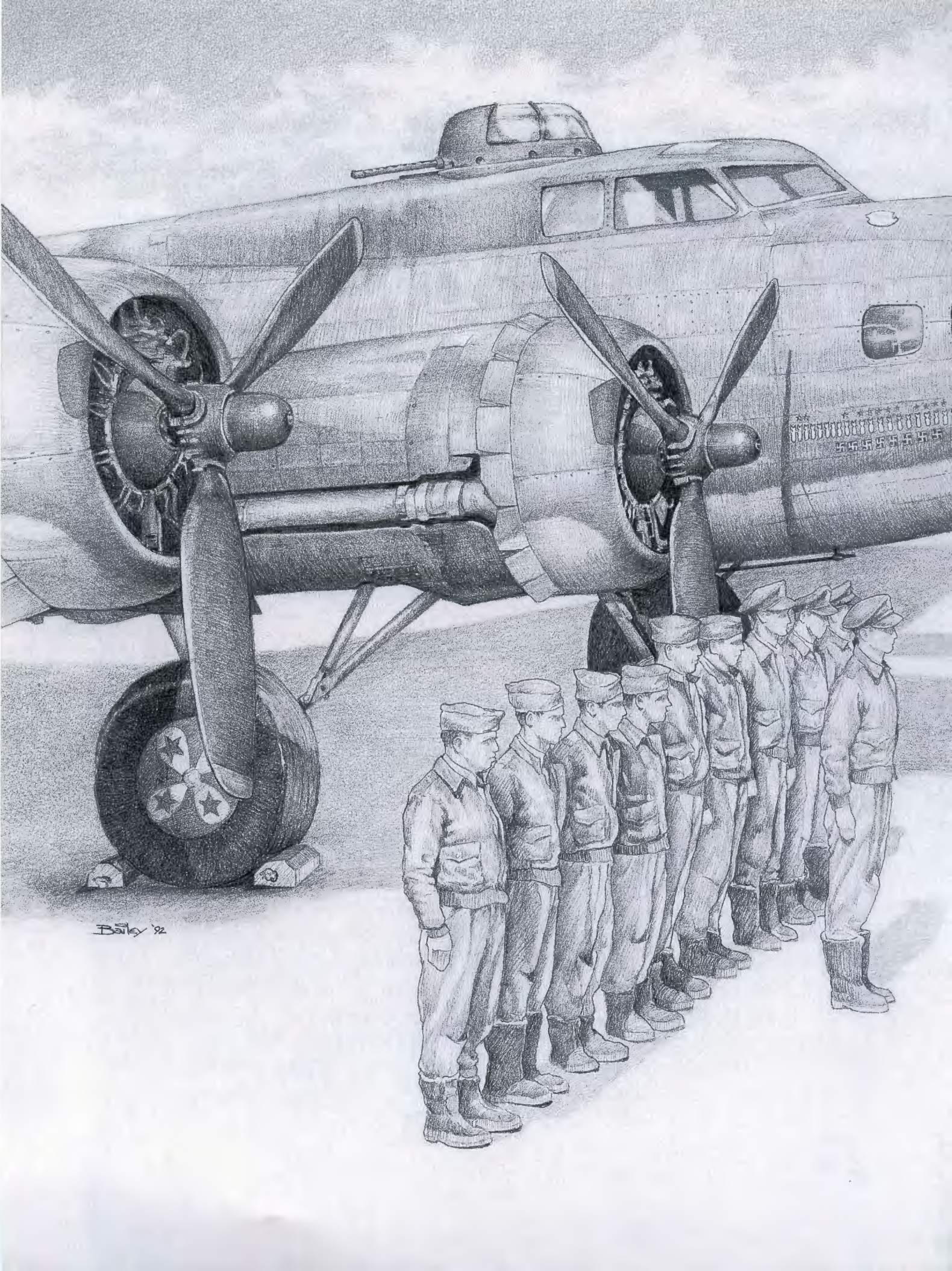
In the design and production of explosives, every effort is made to make them as safe as possible while ensuring they go "BOOM" when they're supposed to. Yet, mishaps continue to happen. Our job is to reduce the consequences of a mishap through planning and risk management. In these days of dwindling defense dollars and limited resources, we cannot afford to lose limited assets like the B-2A or F-117A. To be straight up -- we can't afford to lose **ANY** assets, particularly our people. We need to plan smarter and separate our resources. Then, when required, ensure commanders fully understand and will accept the risk of using the minimum distances. ■

Reminder

of the third clause of the instruction regarding Precautionary procedures in the Handling of all kinds of gunpowder

Dated July 1776

Whosoever is at Labour within or without the Powder Magazines should execute his Commission in such a respectful and reverent Silence as is seemly in such a place where (unless the Almighty, in His Grace, keeps a protective Hand over the Labour) the least lack of care may not alone cause the loss of Life of all present, but may even in a moment transform this Place as well as its surroundings into a heap of stone. Furthermore, All whether employed in the Making of the powder or in the Transport thereof, be it out of Annoyance at Labour or still less out of a lack of Care, are most earnestly beseeched not to let escape from their Mouths, Oaths or Swearwords or other light or obscene language, whereby the Name of Our Lord is dishonored and taken in vain; as those who are themselves guilty thereof shall without Tolerance or Apology, immediately leave their jobs and be delivered unto the Hands of the Sentinel until the labour is ended; whereupon they are to be put under Arrest and in Accordance with the Verdict be sentenced for the crime committed.


Bailey '92

"Memphis Belle"

Anonymous

You Can Get Hurt When You Don't Fly The Jet

Yes, sometimes aircrews forget to fly the jet and, on occasion, meet with disaster. More often, a visit to the laundry and a new war story are the result.

There are multiple reasons why aircrews forget to fly the jet, but most can be grouped under the category of attention problems.

These are usually covered by the term "loss of situational awareness." Example: While looking back to watch number 2's pass on the target, lead flew into the ground. Example: Approaching the merge, lead fired at the adversary, considered him "dead" and turned across the opponent's flight path to engage another aircraft -- midair. Example: While attempting to evade the bandit, lead attempted a high AOA rudder roll at slow airspeed and departed controlled flight.

In these examples, there is a common thread: A

failure to pay attention to the right thing at the right time. In the first example, lead failed to fly the aircraft; i.e., did not pay attention to where he was in relation to the ground, a condition variously known as "misorientation" or unrecognized spatial disorientation. In the second example, lead failed to "see and avoid"; i.e., forgot or did not pay attention to clearing his flight path to avoid the first opponent. In the third, lead's attention was wholly occupied with evading the bandit to the point that he no longer was aware of "flying" his jet. Attention, then, is the Rosetta Stone of situational awareness and deserves some serious discussion.

Attention is defined in Webster's as "close or careful observation or heed; mental concentration." Synonyms are: Consciousness, awareness and knowing. As the conscious mind is a serial processor of information (one thing at a time), attention may be thought of as a series of channelizations of attention over a period of time. The information gained through this series of channelizations is used to build awareness of the environment, the things within it and our relationship to both; in other words, situational awareness. How, then, is situational awareness lost?

As we are used to saying, flying occurs within a highly dynamic environment. While we focus our attention on one aspect, the rest of the environment undergoes change. If we spend too much time on one aspect, the environment may change so radically that we lose awareness of the "real" situation without realizing it. How do we maintain situational awareness?

There is no magic to maintaining situational awareness. It is a matter of devoting an appropriate amount of attention to each aspect of our environment in proper priority and, correspondingly, allocating our attention within the time available. Priority of importance and time allocated is relative to the circumstances and how rapidly the environment is changing. This is the management science of maintaining situational awareness. But, if this is a science, how do we account for the number of operator error mishaps involving problems of attention and subsequent loss of awareness of at least one critical part of the situation?

For example, in a review of Tactical Air Force (TAF) Class A Operator Error Mishaps occurring from 1980 thru 1988, about 55 percent (127/228) involved unrecognized disorientation. Additionally, about 13 percent of the mishaps were loss of

You Can Get Hurt When You Don't Fly The Jet

control which occurred while the focus of attention was on something other than flying the jet. Finally, another 14 percent involved midairs which occurred when the crews were looking at something other than each other, even though they were aware of their close proximity. Together, these events, which share focus of attention problems, account for over 80 percent of all TAF Class A Operator Error mishaps during the nine year period.

In reality, maintaining situational awareness is a "mushy" science. What makes it "mushy" is that deciding the priorities for your attention is a subjective or judgmental call. In addition, once priorities are established, the amount of time you spend focusing your attention on any particular aspect is very difficult to measure.

Priority judgment is so difficult because it depends on your own experiences and training and on your mindset and level of motivation at any given point in time. Time management is even more difficult as our sense of time passage in a dynamic environment is very poor. We may be able to judge time passage pretty well when that is all we have to think about; but when our attention must be distributed among many activities, it is easy to lose "time sense." In other words, it is very easy to focus attention for too long on the wrong thing at the wrong time. The question, then, is: What, if anything, can be done to improve attention management and time sense?

Skill and discipline. We can only begin to address the problem of losing situational awareness through skill development in performance of inflight duties. For this, long hours of practice, supervised and unsupervised, are required. What is needed to make these skills work on a properly integrated basis is a disciplined approach to management of the various tasks and subtasks involved in bringing a modern weapon system to bear. At the heart of this approach is learning to properly divide time available between accomplishment of multiple or complex task sequences, with the largest shares of time going to the most important or highest priority tasks at that time.

Where the breakdown in allocation of time occurs is in misprioritization of tasks. This may result from distraction by an outside event not related to the task at hand, such as a loud noise, or it could come about through a motivational change in priorities, such as a powerful desire to defeat an opponent. Whatever the reason, it must be managed through a tightly disciplined approach. Crews must be sufficiently disciplined to recognize distractions for what they are and to apportion the correct amount of time to their recognition and management in the proper sequence of events. Crews and supervisors must be able to recognize motivational changes in themselves and others and exercise adequate control of excesses. Crews must be sufficiently disciplined to recognize developing dangerous situations and be skilled in methods to gain time for coping.

These are only a few of the aspects of the role of discipline in task management; but the bottom line is that the ultimate responsibility for controlling tasks, time allocation and the resultant maintenance of situational awareness rests solely with the individual.

Situational awareness is a dynamic process which requires constant reallocation of attention to the right priorities. Currently, we practice this as either an art, ("it happens") or a science ("make it happen"). Whichever method you use, remember: An attention lapse of only a few seconds can result in disaster. ■

GIBS

Gibs is a fine figure of a man; he attempts to stay fit -- a lean 160 pounds at 6'3". He's a basketball player and swims 3 miles 3 times a week. Gibs is proud of the way he feels and looks and knows he improves his job performance through his exercise regimen. In fact Gibs feels that there isn't a job he can't do; ALONE.

After a minor mishap, I spoke to him about his involvement. Gibs felt the mishap was a fluke, just one of those things that happen. Maybe even an act of nature. He felt the mishap was caused by gravity, something which he couldn't control!

The mishap unfolded like this: Gibs was dispatched as a member of a team to perform maintenance below ground level. As a part of this maintenance action the team needed to lower approximately 300 pounds of tools, replacement parts and test equipment. While the other team members were below ground level, Gibs prepared the needed equipment, placed it in a container, connected a rope, and started to lower the equipment the 50 or so feet to the rest of the team.

He knew he was in trouble when he placed the equipment over the side. Communicating as strongly as he could, Gibs warned the other team members of the mishap in progress. They stood by helpless, watching the increasing rate of speed of the equipment falling and Gibs' struggle to regain control of the moving 300 pound mass.

Thanks to Gibs' communication technique no one was seriously hurt; however, for a week or so, Gibs would be drinking water using bandaged hands, due to a set of worn gloves and more weight than Gibs could handle alone. A little common sense and teamwork would have precluded this mishap. Doing it alone is not always the smart or best way!

SMSgt Denis Jones
HQ ACC/SEW
Langley AFB VA

ONE LINERS TO LIVE BY! Flying

PLANNING

The Pilot is always responsible.

Always have an alternate plan; never commit yourself to only one course of action.

Don't assume someone else will do the mission planning. Check on it or do it yourself. Always ask how you can help prepare for the mission.

Leave yourself an "OUT" in everything you do. When an impending chain of events will leave you only one option -- don't pursue that course of action. Your situation may not be what you expected when you're down to that last option.

Never walk out the door with a doubt in your mind as to what is supposed to happen.

No question is too stupid to ask; not asking may be too costly.

Always plan to land with excess fuel on board.

Plan your missions so as to land with enough fuel on board to safely divert should the aircraft ahead close the runway.

Common sense and SA will prevail long after cosmic tactics have failed you.

There's no such thing as a "standard" mission.

The planning you ALMOST did can kill you.

JUDGMENT

If there is ever any doubt whether or not you should continue with what you are doing; DON'T! Either start over, continue with a different portion of the mission, or go home.

Murphy's Law is alive and well. Don't allow complacency to set in.

Judgment is the thing which keeps you from being "dead right." If in doubt, knock-it-off early.

Don't assume something is "right" because all the old heads do it.
If a tactic or plan is questionable, ask about it.

The day you think you know it all is the day you should hang up your wings.
This attitude has led to the demise of many a pilot.

Test your limits to see where they are, but never exceed them.

Aircraft problems never get better, so don't take a problem off the ground, and land ASAP once one occurs.

If it doesn't feel like the right thing to do; don't do it. If you don't feel like you can do it, then don't.

Fundamentals

INFLIGHT

Speed is life, but only if the vector is under control.

Never hit the ground or anything attached to it; never hit another formation member; do mission tasks as time allows, but only after insuring the first two are accomplished.

Always maintain aircraft control. Even during an emergency, all of the analyzing and correcting in the world won't do any good, unless you maintain aircraft control.

Never fly lower than the threat forces you.

Always know where the nearest emergency field is. The day you don't is the day you'll wish you did.

Never blindly follow your leader -- he is not infallible.

Altitude deconfliction will keep you alive until you can reacquire the visual.

Never assume the other guy sees you.

Always clear in the direction that you are turning.

When in doubt, climb.

Rocks don't have emotions, but don't hit them -- they're unforgiving.

Other than a large watch, the most useless things for a pilot are runway behind and altitude above.

If it is worth doing in the air, it is worth mentioning and critiquing in the debriefing.

LANDING

Always land on the prepared surface with the wheels down and doublechecked, well before you run out of gas, beyond the approach end, and without running off the departure end.

Don't pass up "good" concrete.

Never land with the landing gear "up"; i.e., "gear check" is not a position report. Always recheck the gear down over the overrun.

FUEL

Always know what your gas is at all times, and what you'll need to recover safely.

Fuel is life. If you project an emergency fuel situation is developing, then declare an "emergency."

Always land before gas becomes critical; always be conservative.

Fall & Pointers

Wood splitting. Fall and winter are ideal months for clearing trees and collecting the wood to burn in fireplaces. Splitting logs not only makes them fit into the fireplace or wood-burning stove, it also helps them to burn better.

Splitting wood can be dangerous, but you can do it safely. Wear gloves, heavy shoes (preferably with steel toes), long pants and safety glasses or a face shield. Keep shirt cuffs buttoned and shirttails tucked in, especially if you're using a motorized splitter.

A miscalculated blow could bury the axe head in the dirt or in your foot.

Make sure you know how to use that motorized, hydraulically powered splitter, and keep up with its maintenance. If you're splitting wood the old fashioned way, inspect your axe or maul for a cracked handle or a loose head, and keep the blade appropriately sharpened.

If you're splitting logs by hand, work away from overhanging branches that can catch the axe or maul as you swing it. Rest the wood on a splitting platform positioned about knee high: a flat-topped stump or the end of a large log that's firmly in the ground. Work on firm, level ground. Don't try to split logs directly on the ground, the earth will absorb some of the force of your blows and make the job harder. Also, a miscalculated blow could bury the axe head in the dirt or in your foot.

Halloween. That same Halloween costume that transforms your angel into a little devil can also turn trick-or-treating into a nightmare. Costumes can be hazardous if they hamper the child's ability to see or be seen. You can help your child have a safer Halloween by taking a few costume safety precautions.

Costumes can be hazardous if they hamper the child's ability to see or be seen.

Paint your child's face rather than covering it with a mask. Makeup is safer and more comfortable for the child. Make sure beards, hats, veils and wigs don't obstruct the child's vision.

Many parents do not allow their children to trick-or-treat after dark. However, if your children venture out after sunset, dress them in light-colored costumes or put reflective tape on all sides of a dark costume. Give each child a flashlight to carry. Be sure to check local ordinances for trick-or-treat times and any restrictions.

The costume your child wears should provide good ventilation and movement. Make sure the costume won't tangle in shrubbery or get caught in doors.

Have your children wear sensible shoes. High heels may cause falls. Don't allow swords, daggers, arrows or other sharp objects as part of a costume.

Winter

Go over the safety rules and time limits for trick-or-treating with your children before they leave home. Encourage them to travel in groups and only in familiar areas. Depending on the children's ages, you may want to accompany them. Instruct your children not to eat any goodies along the way.

When your child gets home, sift through the bag of treats and discard unwrapped or rewrapped candy, and cut up fruit to make sure nothing has been hidden inside.

You can protect other children as well as your own by lighting the path to your door and removing any obstacles along the way. Consider passing out stickers, favors, and other non-candy treats. Other parents will appreciate your concern for their children's safety.

Cold weather is rough on a car, and a car under attack by the elements may be dangerous to your safety.

Winter driving. Batteries falter. Belts harden. Body parts rust. Cold weather is rough on a car, and a car under attack by the elements may be dangerous to your safety.

Your pre-winter maintenance schedule should include getting your car a tune-up. A tune-up is the single most important thing you can do to help your car's engine perform better and more dependably under the stress of cold weather. Most experts advise a tune-up every 12,000 to 18,000 miles under normal driving conditions; but your car may need tuning more often if you do a lot of stop-and-go driving or pull heavy loads, such as a camper or trailer.

Be sure that snow tires have plenty of tread depth -- at least 1/8 inch. For maximum traction, consider a new set of all-season radial tires, snow tires or any tire with an M&S (mud and snow) rating. If you drive frequently on ice and packed snow, you may want to purchase chains or studded snow tires in states that permit them.

Replace wiper blades that are worn or that streak. Fill the windshield washer container with an approved solution that won't freeze.

Have your battery checked to be sure it's fully charged. Cold weather weakens batteries by slowing down the chemical reaction that produces electricity. Even a good battery functions at only 65 percent efficiency when the temperature drops below freezing. Never jump start a frozen battery. Pockets of hydrogen gas may have formed and could explode when the jumper cable is attached.

Equip your vehicle with a mini survival kit: jumper cables, an ice scraper, a working flashlight, flares or reflective triangle, matches, a first aid kit, wool blankets and a steel shovel. In snow country you may want to add some sand, extra warm clothing, water in an expandable container and nonperishable food. ■

Anonymous

SAFETY CREED

I BELIEVE...

That everyone bears the unalterable responsibility for keeping out of harm's way. This I owe to myself, my family, my fellow workers and my job.

That no one lives or works entirely alone. I am involved with everyone, touched by their accomplishments, marked by their failures. If I fail the person beside me, I fail myself, and will share the burden of that loss. The true horror of an accident is the realization that I have failed myself -- and more -- that my fellow workers have failed me.

That accidents are conceived in improper attitudes, and born in moments of action without thought. They will cease to be only when the proper attitude is strong enough to precede the act -- when the right attitude creates the awareness that controls the act.

That the prevention of accidents is an objective which crosses all levels of rank, organization and procedure.

That freedom from harm is not a privilege but a goal to be achieved and perpetuated day by day.

That the elimination of injury and pain through accidents is a moral obligation upon which the final measure of my performance directly depends.

Author Unknown

Safety Professional Spotlight

Sgt Mark Bailey
The Combat Edge
Staff Artist

Usually found with his head bowed over a drawing table at Langley AFB, Sergeant Mark Bailey is the artist for Air Combat Command's premier safety magazine, *The Combat Edge*. As the magazine's staff artist, his work is seen worldwide throughout the Air Force, DOD, allied forces and private industry. In excess of a quarter million people have the opportunity to appreciate Sgt Bailey's magazine covers, center art and story illustrations each and every month.

Raised in Rantoul IL, Sgt Bailey didn't discover his artistic persuasion until well into high school. During his sophomore year at Rantoul Township High School, his art instructor recognized his talents, and with sincere encouragement and extra attention, guided him towards a future in art.

Recognition in a local art contest motivated Sgt Bailey to apply to the Art Institute of Chicago. In his first year there he learned of the vast opportunities available to people with his talent and set his sights on being a magazine illustrator. He transferred to the American Academy of Art in Chicago for his second and third year of college. The smaller school focused more on his interests of commercial illustration and life drawing.

After college, he hit the streets with his Associate's Degree and a portfolio of art samples. It wasn't long before he became frustrated at hearing "inexperienced" or "overqualified" and turned to the Air Force for the opportunity to apply his talent.

Upon completion of basic training at Lackland AFB, where he did more mural painting than marching, he was assigned as a graphics specialist with the 347 MSS at Moody AFB GA. This was his first real exposure to military aircraft, and he soon developed a passion for aviation art. Although viewgraphs, charts and graphs were his daily obligation, during his off-duty time, Sgt Bailey began to illustrate aircraft and paint portraits both to broaden his experience and develop his style. As his artistic reputation spread throughout the command, he was asked to submit a portfolio for a vacancy on the *TAC Attack* magazine staff. Sgt Bailey was selected and soon found himself embarked on a new phase of his art career. There he focused on cartooning and illustrating along with aviation art. Sgt Bailey's dream of being a magazine illustrator and artist had become a reality.

Sgt Bailey was the driving force behind the design and visual creation of *The Combat Edge*. His efforts led to its development as the pacesetter in creatively conveying practical methods of mission accomplishment while preserving critical resources. His paintings, drawings, sketches and cartoons catapult the readers from their chairs right into the heart of the stories. Although they may not agree with the story or its ending, the reader will long remember the lessons learned because of Sgt Bailey's art work. Through his brush and pen, he is able to project the often costly lessons of experience onto the canvas of the reader's mind.

Sgt Bailey's quiet but extensive and talented contributions to the ACC mishap prevention program spotlight him as a Safety Professional and make *The Combat Edge* much more than a collection of stories.


Fleagle
TINY, DO YOU EVER GET TIRED OF FLYING STRAIGHT AN' LEVEL ALL THE TIME?
NO.
DON'T YOU SOMETIMES WANT TO DO A FEW ROLLS AN' TIGHT TURNS AN' FEEL TH' PULL OF ALL THEM "Gs"?
NO.
YOU REALLY DON'T GET BORED JUS' GOING FROM A TO B IN ONE STRAIGHT LINE?
NO.
© STAN HARDISON, 1992
COME ON, TINY, YOU CAN DO THIS.
A LONG, SLOW, EASY LOOP THAT TAKES YOU DOWN CLOSE TO TH'....
HARDISON
CRUNCH!
NO.

I WANT

YOUR ARTICLE

*Remember -- this is **YOUR** magazine! It will only be as good as **YOU** make it through **YOUR** articles, inputs, and feedback. If you aren't seeing a particular type of article -- it's because you haven't written it. We are committed to giving you the best quality product possible, but we can't do it alone -- we need **YOUR** ideas to continually enhance the ACC culture of safety.*

*Send **YOUR** stories to:*

Editor, The Combat Edge
HQ ACC/SEP
Langley AFB, VA 23665-5563

ONLY IN AMERICA

Publicly, it started in 1976 when a televised bungee jump from the Royal Gorge Bridge in Colorado rocked the nation.

MSgt Lawrence E. Stulz
906 FG/SEG
Wright-Patterson AFB OH

Illustration by
Sgt Mark Bailey

Our society has been known to experiment with fads, some of which border on the fringe of insanity. Fads like pet rocks, earth shoes, polyester leisure suits, disco, mood rings, dwarf tossing, velcro jumping and mud wrestling come and go.

Well, not to be outdone, someone who obviously botched an attempt at suicide figured out that if they charged enough for people to jump off bridges, somebody out there would pay the price!

Publicly, it started in 1976 when a televised bungee jump from the Royal Gorge Bridge in Colorado rocked the nation. Today, you can drive a quarter mile from Wright-Patterson AFB or nearly any other base to a bungee jump operation and pay to jump off a platform suspended 150 feet off the ground by a crane.

Bungee jumping is by far the fastest growing fad in the nation. Estimates are that 5,000 jumps are made per week in the country. Since the sport exploded overnight in popularity, many bungee jump operations sprang into existence just to make a fast buck with little concern for safety.

If you remember in the early 1980's, ultralight aircraft were the fad of the moment. Every person that could fit a chain saw engine onto a lawn chair with wings took to the air. The accident statistics for ultralights in that period compiled by the National Transportation Safety Board (NTSB) are as thick as two telephone books. It took the FAA almost 10 years to finally enforce safety requirements for ultralights.

Bungee jumping so far falls under OSHA requirements involving suspended platforms and cranes. No specific rules exist for bungee jumping itself. Some states such as Florida, Michigan and Kentucky wasted little time in writing and enforcing strict laws governing the safety of the sport. Many bungee operations were no more than a roving rented crane and a group of teenagers out to make a buck.

As with everything in life, there is risk. Bungee jumping promotes the risk that takes you to the brink of oblivion. When done correctly, bungee jumping is a relatively safe sport, even though from the looks of things, back and neck problems could be a side-effect of the "body" snapping out of the fall.

It was only a matter of time until the first member of our unit flung themselves to fame. On the second day that the local bungee jumping operation started, the member jumped twice as her 3 children watched. Her comments were that the jumps were the most awesome thing she ever experienced. But, she was glad that nobody from the unit saw her jump. Would she do it again? "NO!"

Not only is there bungee jumping, but a new version of the sport called "catapulting." This is where the person attached to the cord is held to the ground while the crane pulls the cord taut. Then the person is released and shot into the air. An accident in Michigan shot the person right into the bottom of the suspended platform, causing neck and head injuries to the jumper.

What should you look for if you decide to bungee jump? Since most people probably won't search through the crane's maintenance log or check for annual non-destructive inspection (NDI) on the crane's hook, sit back and watch the operation. Is it only geared to make as much money per hour as possible? Do the operators ask for your weight and make adjustments to the cord as necessary? Do the operators on the platform wear safety belts for their own protection? Is there an atmosphere of safety? You must make your own decision, but make sure it is a safe one.

The Air Force has dealt with unusual injuries over the years. We are tapping our toes and drumming our fingers waiting for the first reported bungee jumping related injury. Don't let it be you!

■