
THE COMBAT
EDGE
MARCH 1994

The Combat Edge (ISSN 1063-8970) is published monthly by the Air Combat Command, HQ ACC/SE, 130 Andrews St Ste 301, Langley AFB VA 23665-2786. Second-class postage paid at Hampton VA and additional mailing offices.
POSTMASTER: Send address changes to *The Combat Edge*, HQ ACC/SEP, 130 Andrews St Ste 301, Langley AFB VA 23665-2786.

DISTRIBUTION: F(X). OPR: HQ ACC/SEP. Distribution is controlled through the PDO based on a ratio of one copy per ten persons assigned. Air Force units should contact their servicing PDO to establish or change requirements. Other DOD units have no fixed ratio and should submit their requests to the OPR.
ANNUAL SUBSCRIPTIONS: Available to non-DOD readers for $21 ($26.25 outside the U.S.) from the Superintendent of Documents, PO Box 371954, Pittsburgh PA 15250-7954. All subscription service correspondence should be directed to the Superintendent, not HQ ACC/SEP.
CONTRIBUTIONS: Articles, comments, and criticisms are welcome. Write: Editor, *The Combat Edge*, HQ ACC/SEP, 130 Andrews St Ste 301, Langley AFB VA 23665-2786, or call DSN 574-3658/commercial (804) 764-3658. The editors reserve the right to edit all manuscripts for readability and good taste.
DISCLAIMER: Viewpoints expressed are those of the author and do not necessarily represent the policy of DOD, DAF, ACC or the author's organization. Information contained in any article may not be construed as incriminating under Article 31, UCMJ.

THE COMBAT EDGE

Air Combat Command
Safety Magazine

Features

Departments

ABOUT THE COVER

On 17 December 1993, the 90th anniversary of the Wright brothers' first successful flight at Kitty Hawk NC, the first operational B-2 arrived at Whiteman AFB MO home of ACC's 509th Bomb Wing. Called the "stealth" bomber because of its low observable characteristics, the B-2 is capable of delivering both conventional and nuclear munitions. Its primary mission is to enable a theater commander to hold at risk and, if necessary, attack an enemy's war-making potential. For further information about the cover and center art, contact Steven Moore, the artist, at (404) 427-0190.

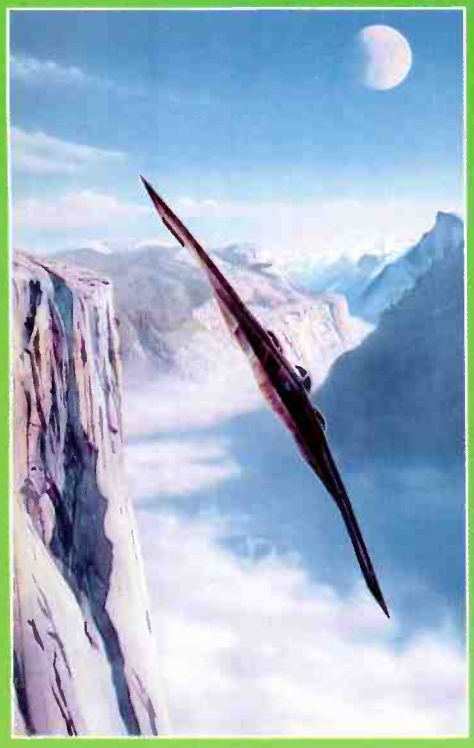
MAR 94

ACC SP 127-1 VOLUME 2 ISSUE 10

ACCent on Safety

Last month I rendered some well-deserved good words on the command's great safety performance in the first quarter of FY 94. Through January, we continued to meet our safety performance objectives; however, in February, the story was somewhat different. During the first six days of the month, the command (including ACC-gained) experienced four Class A flight and one Class A ground mishaps -- definitely an unfavorable turn of events. While the mishap investigation boards are just beginning their work, it is worth reinforcing the message to remain ever vigilant to the risks associated with our way of life. The ops tempo is starting to increase as we enter the period of longer daylight hours and better flying weather (at least at most locales!). Before you enter the more intense summer period, it is well worth your time to refocus efforts and priorities. Adherence to operational directives and technical orders must continue as the guiding principle in our programs. It's smart and also the exact kind of cultural attitude which leads to effective as well as safe operations. Think about your work-associated risks now—don't wait until our Command Safety Day in May to point them out for elimination.

I strongly commend BGen Hodges' great article on Quality in the command. The message is pretty clear — Quality and Safety go hand in hand in promoting a world class performance as well as lifestyle. This should be no surprise to anyone. Both Quality and Safety should be cultures — they should permeate our everyday operations and attitudes. I challenge each and every one of you to make them an integral part of your own work ethic and lifestyle.



As I said earlier, we continue to get busier as each day passes and continue to undergo change and its associated turbulence. We need to keep attacking and reducing the risks associated with this turbulence. Fly, work, drive, and play smart and safe — we'll be an even better combat force if we all do!!

Colonel Bob Jones
Chief of Safety

Safety & Q -- The Way We Act

Brigadier General William R. Hodges
HQ ACC/IG
Langley AFB VA

Across the Air Force, we are all engaged in a "quality" revolution — working hard to systematically deploy quality principles in our organizations and imbue our people with quality attitudes. As we, in ACC/IG, get around the command, training units to do unit self-assessments and assessing them using Quality Air Force Criteria, we find that some units are having more success than others. What is their secret? And at this point, you're probably asking, "what's this got do to with safety?"

It's no coincidence that the units having the best success in their quality quest are those who deploy "quality" using the same time-honored lessons we've learned in our safety quest. The parallels in leadership, motivation, and training are many, and, almost uncanny. So, for those of you who are searching for ways to get quality jump-started in your organization, I suggest you use your safety model as a good place to start. Let me review just a few of the more obvious areas where our approaches to quality and safety overlap.

First, we could begin with the "big picture." In both cases, success depends upon a **pervasive attitude** that becomes a lifestyle. Safety and quality are not things on your "to do" list or special projects to be completed, but literally must be a part of everything we do.

Second, **leadership commitment** up and down the chain of command is a crucial element in both safety and quality. Where our leadership is visibly involved — "walking the talk" and setting the example, we see our most successful units. The troops are much more responsive to what their commanders think, say, and do than what the safety officer or unit quality advisor says. Sure, our safety officers and quality advisors provide indispensable services, but they can't substitute for strong visible participation by commanders.

Third, striving for **continuous improvement** is the essence of both our safety and quality philosophies — never accepting that our current success is good enough. We've made remarkable strides over the years reducing accident rates because of our constant vigilance. Continuous improvement is also a cornerstone

uality

of any quality culture and,similarly, yields remarkable dividends.

Fourth, **training** is an essential aspect of our safety success. Whether it's flying airplanes or maintaining them, operating a vehicle, or engaging in recreational activities training is the first step in assuring safety. Likewise, training is the critical first step in deploying quality principles — an up front investment we must make if we hope to succeed.

Fifth, I think it's obvious that as much as we might want solid safety and quality attitudes and practices in our organizations, you can't buy them or order them to exist — in both safety and quality, people make them happen. They have to believe in them and strive to achieve them — all the time. If the troops don't buy into it — it won't happen. The key is **empowering our people**—trust, teamwork, and continuous improvement pave the way for success.

Sixth, **continuous reinforcement** is necessary or we lose momentum. We just can't spend too much time or effort focusing on safety or quality issues. This means on-going training, fact based analysis, and constant refinements — keeping these as front-burner, priorities everyday. The job is never done — it's trite, but true, safety and quality are both journeys not destinations — the way we act, not places to go.

So when I'm asked "What's the best way to succeed in bringing quality principles to life," my answer is, "look at how we've tackled safety."

We've seen a lot of high visibility emphasis on quality lately, and though it is not really a new concept, there is lots of interesting information available to help us focus on these principles and establish an operating style for success. Likewise, our safety challenges have been around for a long time but, it's sometimes a challenge to come up with new and innovative approaches in the safety business. Keep searching for fresh perspectives, but, in the meantime, try revisiting some of the time-honored safety basics I've just reviewed:

* Adopt a pervasive safety attitude that is the backdrop for all you do.

* Remember safety is a leadership responsibility — "walk the talk," lead by example, demonstrate commitment — don't leave safety motivation to the safety office.

* Ensure good training programs are in place that emphasize safe practices.

* Empower people to make it happen — success requires a combination of individual effort and organizational teamwork.

* Continuous reinforcement is a must — it keeps us focused — don't pass up an opportunity to push safety.

* Treat safety like a journey, not a destination — strive for continuous improvement everyday — the only "acceptable" accident rate is zero.

In summary, quality and safety are both crucial to our success, but challenging to bring to life. An enthusiastic attitude and a "back to basics" approach will carry you a long way toward your goal in both. "We're here to help!" ... give us a call. ■

Okay, One More Time... THE SAFETY PRIVILEGE STORY

LTC James D. Teigen
HQ ACC/SEF
Langley AFB VA

You remember it, the screen filled with a picture of an egg as the guy says, "This is your brain."

He holds up a frying pan and says, "This is drugs."

He cracks the egg open, dropping it into the hot skillet saying, "This is your brain on drugs." The egg is sizzling, already turning brown around the edges. That's one hot skillet.

The guy finishes the public service announcement with the kicker, "Any questions?"

The real question is how many times does it take before the message sinks in? In the safety business, we often have to ask this question several times.

It was 14 years ago at my first Class A mishap, and I was the investigator. The student was dead; the aircraft was destroyed. The Safety Investigation Board had been in session for a couple of days. We had walked completely through the wreckage, photographing, probing and looking for clues.

The destruction was incredible. I had seen wreckage before, but in each case there had been enough of the aircraft left to identify it. You've seen accident photos where you could identify the aircraft, either from the remaining tail section, or the wing(s), etc. Not this time! Ninety percent of the wreckage was small enough to fit in the palm of your hand. Lots of airspeed and hitting bedrock had done a number on the student and the aircraft.

The student's instructor walked into the board room and took his seat in front of the board.

"Thank you for coming," the board president said. He continued, "In front of you is a witness statement from AFR 127-4. Please read it aloud."

"I, (he then stated his name, rank, and organization), having first been advised that this investigation is being conducted solely for mishap prevention purposes within the US Air Force" ... (he continued) ... "and that this statement will not be distributed outside the US Air Force or used as evidence in disciplinary actions or adverse administrative actions such as Flying Evaluation Board, determining line-of-duty status or pecuniary liability or elimination from the US Air Force, but is to determine all factors relating to the mishap and to avert recurrence, do hearby make the following statement."

The interview progressed as had all the others. At the end of the interview, we reminded the instructor of his witness statement. We emphasized his need to protect the information given and what we dis-

cussed as safety privileged information, not releasable outside of the Air Force. It was for official use only and unauthorized disclosure of the information was punishable under the Uniform Code of Military Justice.

"Please don't discuss with anyone outside of this room the questions we've asked or anything we've gone over," the president said.

As the interviews continued, we discovered that the day before the student died, he had busted a written Bold Print test. The regulations were very specific: after initial solo, should a student fail a test, it was automatic grounding for a day and then the student must pass another emergency procedures test. The board also learned that the test was crumpled up and thrown away. This particular student had been given a new Bold Print test and left unsupervised for 90 minutes. He passed the second test with a score of 100 percent.

The search was on. Witnesses recalled the scenario of the test with some alleging the test was failed (missing 5 to 7 of the 13 bold print procedures), but the test had been thrown away.

The test was finally discovered near the bottom of the third dumpster. You can imagine the smell and basic condition of the document, but the important fact was that it had been found.

We called the instructor back in for his fourth interview. We reminded him again of his acknowledged witness statement and the need to protect the information. The board president took over from there.

"From your own testimony ... and evidence that the student passed the Bold Print test with a score of 100 ... you cleared him to fly the next day, the day he died," the president concluded.

"Yes, that's correct as I remember," the instructor answered.

The president opened his notebook, took out the soiled test and handed it to the instructor. "We found this in the trash, is this the first test the student took? The one he failed. Failed miserably. The one before you gave him the second test, the one he passed with 100 percent. Then you cleared him to fly the day he died. Did you know the regulation governing the failure to pass an emergency procedures test?"

The stunned look on the instructor's face told the whole story. Like they tell us in mishap investigation courses, "metal and facts never lie." Shock, disbelief, it was all there. He slumped in the chair, finally muttering, "How did you know, how did you find it?"

After we discussed the particulars, the instructor and the board were both drained. We agreed to adjourn and proceeded to dismiss the witness. We reminded him of the need to protect the privileged information given in testimony and all that was discussed with the board. Nobody outside of the board room was to know of the questions asked or the answers given.

The instructor said he understood, stood up and slowly walked out the door.

Within two days, there was a knock on the board room door. The instructor was back with fire in his eyes. "How could you, you lied to me, it's already started!"

"What are you talking about? What's started? I didn't lie to you!" I responded as fast as he was talking.

"I've been removed from instructor orders, I've been grounded, there's a flying evaluation board scheduled for tomorrow, and there's speculation I'm going to be PCS'd," the instructor sputtered. "You told! You told my story! Even the lawyers know about the test, the failure, and the retake." He shook as he talked and ended up glaring at everyone in the board room.

"We haven't told anyone, nor has there been a safety message released; one's not due out for a couple of days," we responded. How could this have happened?

I asked, "Did you talk to anyone after your last testimony? When you left here, who did you see, and where did you go?"

His answer stunned the board, sending chills down our backs.

"Well, when I left here, I did run into the wing commander in the hallway on the way out. He asked how was it going and I told him, boy, they've got me now. See, there was this Bold Print test that the student took and missed over half of the bold print.

Seven wrong answers out of 13. He couldn't even get ejection right. I wadded that one up and gave the student another test. He took the test unsupervised, and later I graded it. He scored 100 percent. How could I have known they would find the first test? They went through 3 dumpsters before they found it, but now they've got it. They showed it to me. Then they asked if I knew about the regulation to ground post-solo students for failing a bold print/emergency procedures test. Of course, I knew it; but you see, I didn't want to hurt the student. Now they claim I passed him and sent him out on his solo ride, the one he died on."

The wing commander had just smiled sympathetically at the instructor as he turned a spiral notebook around. "Would you mind signing this and dating it? I just took a few notes on our conversation."

The instructor told us he did, saying, "Sure, sir."

The wing commander patted the instructor on the back and wished him luck as he turned and left.

As the instructor looked at the board it was our turn to be stunned.

"You released your own story. We didn't tell anyone, you did!" the board president responded.

The instructor was near tears. It had finally sunk in, he finally understood.

With the exception of ground safety reports (not involving aircraft), safety reports cannot be used for flying evaluation boards, determining line-of-duty status, pecuniary liability or elimination from the Air Force. Witness statements are protected the same as safety reports. Annually, all personnel having access to safety reports are required to be rebriefed on safety privilege, the limited-use of such reports and the need to protect the information contained within those reports. Cockpit voice recorders and their recordings are also protected. But this protection is a two-way street.

With the exception of ground safety reports (not involving aircraft), safety reports cannot be used for flying evaluation boards, determining line-of-duty status, pecuniary liability or elimination from the Air Force. Witness statements are protected the same as safety reports. Annually, all personnel having access to safety reports are required to be rebriefed on safety privilege, the limited-use of such reports and the need to protect the information contained within those reports. Cockpit voice recorders and their recordings are also protected.

At each safety meeting we discuss the latest mishaps, what happened and how we can prevent them from happening again. That's why there is a safety investigation and why there is safety privilege. To get to the true story and get there quick. That's the real bottom line, get to the truth and get it quick.

As long as we keep the discussion in the safety meeting, keep the privileged information within the safety channels and prevent unauthorized release of safety privileged information, the system will work. We'll all live and learn from the unfortunate mistakes of others and fly and fight another

day.

At ACC/SE, we repeatedly get questions from the field on who can get the safety messages, and isn't there something they can do just to give the messages to the simulator contractors or contractors that work the logistics? Recently, there was a military Safety Privilege workshop conducted at the Air Force Safety Agency. The Army and the Navy came to work with the Air Force to resolve the issues and educate all on what safety privilege is and how to use and protect it.

Safety privilege has its roots back in the 1950's and has been upheld through landmark court cases in the 60's, 70's and 80's. It is still under review each and every time there is a litigation between two parties like the next of kin and the contractor. We may not be party to the case, but we are totally involved with the procedure and the safeguarding of privilege. At the safety privilege conference, I learned one of the key and fundamental building blocks of safety privilege is the initial witness statement and interview process. It boils down to the offering of privilege and confidentiality between the mishap investigation and the witness. If the initial witness statement and testimony is preceeded by the reading of the privilege/confidentiality statement from AFR 127-4, then there is an understanding and a contract between the mishap investigation and that witness. In formal reports every witness testimony should lead off with the privilege statement, each and every time the witness comes in to be interviewed. Every safety office should have pre-printed initial witness statements with this as the head banner.

To answer field questions on contractors, we again have to understand the concept of protecting privilege. Every unit safety office can sanitize the mishap messages for its unit's use in mishap prevention. But no unit has the authority to release privileged information to persons or agencies outside the Air Force. To properly give information to contractors, for simulator and logistics uses, the releasing authority resides solely with the delegated authority from the Secretary of the Air Force. That delegated authority rests with the commander of the Air Force Safety Agency and the Director of Mishap Records (AFSA/IMR). They can extract the information from safety reports and build a releasable document which can be given to the contractors. To obtain such a report, work through your NAF and ACC safety offices to make the request.

Recently we had a unit whose mishap was out briefed to COMACC in the morning and the Flight Evaluation Board was started in the afternoon of the same day. The unit was a buzz with how can this be, what happened to the safety privilege promise? The truth of the matter was that the AFR 110-14 Accident Investigation had concluded and had been out briefed before the mishap investigation board had a chance to brief COMACC. It was an unfortunate juxtaposition of two separate investigations, one for safety and the other for legal reasons. The actions of a punitive nature were driven solely by the results of the legal investigation.

I've used my story of safety privilege every time I've trained a board member, every time I've served on a mishap board, and as often as it's been required to get the point across. It never fails to point out how fragile safety privileged information is.

In this story the instructor released his own story. By signing the notebook, he had created a document which could be used against him in a court of law.

How many times does it take to get the message across? In safety, as in public service announcements, obviously it can't be told often enough.

"Okay, one more time ... this is your brain ... this is drugs ... this is your brain on drugs ... any questions?" ■

PILOT SAFETY AWARD OF DISTINCTION

1Lt Sean P. Ireland, 138 FS, 174 FW, Syracuse NY

I was rejoining on my flight lead after completing an F-16 weapons delivery training mission. At 3,000' above ground level and 480 kts of airspeed, I retarded the throttle to idle. The engine compressor stalled, producing a mild bang, followed by a violent bang that threw me upward against the shoulder harnesses. Engine rpm and temperature pegged at the upper limits of the gauges, then rapidly fell. I commenced a climb and informed lead of my problem. The cockpit quickly filled with thick black acrid smoke, which made breathing and vision impossible. I held my breath as I searched for the 100% oxygen and ram air switch settings. The smoke dissipated quickly after selecting ram air. I was able to breathe again with 100% oxygen selected and wiped my eyes to clear the smoke residue. A cross-check of the engine instruments showed that the engine had recovered itself. I slowly advanced the throttle to mid-range and continued climbing as I turned toward home station. Lead joined on me and we contacted the supervisor of flying (SOF). Home station was the most suitable landing field in the area with weather of 1,100' overcast and 5 mi visibility in haze. I entered a high key position and accomplished the emergency procedures for a weather penetration simulated flame out approach. After landing and clearing the runway, crash/rescue signaled me to shut down the engine. Investigation revealed that the fuel/oil cooler ruptured, allowing high pressure fuel into the low pressure oil system. Fuel then escaped into various portions of the engine through oil seals that could not contain the high pressure. The leaking fuel ignited, disrupted airflow, and caused the compressor stalls.

CREW CHIEF EXCELLENCE AWARD

TSgt Nancy M. May, TSgt Walter J. Edmonds, 55 FS, 20 FW, Shaw AFB SC

Our squadron demonstration jet taxied into EOR (End or Runway) for "last chance" checks before takeoff for a Functional Check Flight. As I checked the nose gear well, I noticed a small amount of hydraulic fluid on a nose gear well support brace. I didn't consider the amount of fluid to be a real "attention-getter," but I did think the location was unusual. I didn't remember seeing fluid there before; so I asked TSgt Edmonds, a former hydraulic specialist to take a look. When he looked up into the nose gear well, he saw some hydraulic fluid on the connector fittings to the dual brake control valve. Sergeant Edmonds asked the pilot to pump the brakes. When the pilot began pushing the brake pedals, the pedals went to the floor and hydraulic fluid began to squirt out of the dual brake control valve seals. TSgt Edmonds then directed the pilot to shut down. If the pilot had launched on his flight, the FCF checklist would have directed him to raise and lower the gear several times. Each time the gears were raised and lowered, the hydraulic and brake systems would pressurize and depressurize, possibly causing failure of the dual brake control valve seals. If the seals failed, both of the A-10's hydraulic systems would fail. The pilot would then have had to recover the aircraft using a manual flight control mode and emergency braking on roll-out.

GROUND SAFETY INDIVIDUAL AWARD OF DISTINCTION

MSgt John P. Davis, Jr., 93 SUPS, 93 BW, Castle AFB CA

As Squadron Safety NCO, Sergeant Davis developed a safety awareness program that recognizes squadron members for single acts and/or sustained professional performance. His article in the "POL Pipeline," a local publication, captivates the lowest echelon of the fuels flight, focusing on real-life experiences and lessons learned. His spot-check and tag out/lockout programs are most noteworthy. Visiting shift workers at all hours of the day or night, Sergeant Davis is well known throughout the squadron. Young airman welcome his presence and never feel intimidated because he is there to evaluate their operation. This face-to-face contact has paid great dividends. During the semiannual wing safety inspection, the tag out/lockout program was identified as being error-free. Not a single unit, piece of equipment, or facility was ever used in an unsafe condition. Sergeant Davis knows his business. By simply monitoring the military service station operations, he identified a severe traffic congestion problem. His recommendation to post caution signs and change the traffic flow to one way alleviated this hazardous condition. Another situation in the refueling unit parking area was addressed as being an "incident waiting to happen." Once again, Sergeant Davis implemented immediate corrective action. Sergeant Davis takes great pride in his programs and is certainly deserving of this prestigious award.

FLIGHTLINE SAFETY AWARD OF DISTINCTION

A1C Dawn M. Wurts, 71 FS, 1 FW, Langley AFB VA

I was tasked to be part of a defuel team. One of our F-15's external wing tanks was leaking fuel and needed to be defueled and removed. The defuel truck arrived and we began preparing the aircraft and its parking spot. The fire guard was positioned next to the fire extinguisher on the left side of the aircraft. When the cap from the external tank was removed to insert the defueling hose, fuel gushed out of the tank all over the parking ramp. The flightline production superintendent responded with absorbent pads and a fuel recovery unit called "The Supersopper." MSgt Bailey immediately began to use the supersopper in an attempt to contain the spill and prevent the fuel from entering a nearby drain, which leads to the Chesapeake Bay. He made several passes picking up fuel when the supersopper instantaneously burst into a ball of flames under the aircraft's left wing. I couldn't see MSgt Bailey or SSgt Newman, who was holding the defuel nozzle in the external fuel tank. The entire area was on fire! I pulled the charging handle on the fire extinguisher, unrolled the hose and fought the fire until it was completely out. I stood by and prepared to continue fighting the fire if it ignited again. Meanwhile Sergeants Bailey and Newman were both clear and out of danger.

WEAPONS SAFETY AWARD OF DISTINCTION

SrA Clifford M. Hamon, SSgt Donald P. Dorr, Jr., 4 FS, 388 FW, Hill AFB UT

While preparing to transport several TER-9/A Bomb Racks to the Armament Shop for scheduled inspections, a Linkage Security Pin was found lying on the transport trailer. Realizing the importance of this item, an inspection was performed on all TERs in the immediate area and on the Alternate Mission Equipment storage racks in order to determine which TER was missing the pin. To their surprise all TER pins were accounted for. Not stopping there, SrA Hamon and SSgt Dorr turned their attention to the flightline and vigorously began a search of all TER configured aircraft. The TER with the missing pin was quickly located, unfortunately the TER was loaded with BDU-33s, and on an aircraft scheduled to fly that morning. They immediately coordinated the munitions download with the Weapons Expediter so that the TER could be removed from the aircraft and repaired. The aircraft was promptly reconfigured and loaded, enabling the pilot to complete his scheduled sortie. SrA Hamon and SSgt Dorr's attention to detail and quick thinking prevented a possible dropped object and a potential inadvertent release as well! Their value and worth to this squadron and to this wing as Weapons Maintenance Technicians is made evident by their extensive systems knowledge and safety conscious attitude.

STUDY CONFIRMS BENEFITS OF AIR BAGS

MSgt Gary R. Reniker
442 FW/SEW
Richards-Gebaur AFB MO

The first federal study of automobile air bags in traffic accidents has found that they are far more effective than seat belts alone, reducing the risk of death by 26 percent.

In making the study public, the Department of Transportation cautioned that air bags worked this well only when occupants were also wearing a properly buckled seat belt over both lap and shoulder. Other studies have found that without a belt, air bags are of only a slight benefit.

In contrast to earlier findings, which did not involve actual road conditions, the study demonstrated that air bags protected occupants in ways that seat belts alone did not — by spreading out the violent impact of a crash and keeping even a belted occupant from smashing against the steering wheel, dashboard or windshield.

More than 6 million cars, or about 4 percent of those on the road today, have air bags; the vast majority are only on the driver's side.

Our safety office has felt all along that the most effective system is a properly fastened seat belt and an air bag. The report appears to confirm this.

BACK PAIN

Although most back pain is caused by muscle strains or sprains, it can be a symptom of a more serious problem. Call your health care professional immediately if:

- You have back pain that radiates down your leg.
- You have numbness, tingling or shooting pain in your arms, legs or buttocks.
- You have a weakness in your legs and can't raise up on your toes or heels.
- You urinate frequently or lose bowel or bladder control.
- You have pain in any part of the spine as a result of an accident or other trauma.
- Your backache is so severe that it wakes you up at night or causes insomnia.
- You have chills or fever.

Going Beyond the Minimum

SMSgt (Sel) Brian D. Prucey
2 BW/SEW
Barksdale AFB LA

How many of us would like to get only the minimum out of life? Who would settle for minimum wage when the employer wants to offer more? Who would accept minimum work from subordinates when they have the potential to excel? Who would be happy with only minimum attention from their spouse and children? No one that I can think of. Yet many never consider going beyond the minimum standards when it concerns explosives safety and the mission.

I've been in the wing weapons safety business for only a few months, but I've quickly learned how to read someone's safety consciousness. Commanders, managers, and supervisors (my customers) often come to my office to discuss the safety criteria for a planned explosive operation. Usually, my customers want to know the quantity-distance (Q-D) separation criteria required between an explosive operation and other activities. The first question I'm usually asked is, "What is the minimum safety criteria?" Right away, this question tells me that my customer may not be fully aware of the risks involved.

After determining the scope of the planned operation, we can look to AFR 127-100 to find the minimum Q-D separation requirement. We must now pause and ask ourselves, "Does the minimum separation present an acceptable risk?" This is where I try to shine. I try to provide my customer with a thorough risk assessment. It thrills me to watch their eyes widen as I tell them that Q-D primarily serves to prevent a chain reaction of explosions from one site to another. A combat aircraft properly separated at minimum distance from other explosive loaded aircraft will be destroyed or require major depot-level repair. At distances less than inhabited building distance (IBD), people will probably die or be seriously injured. Equipment will be destroyed or rendered unserviceable and buildings could incur severe structural damage.

Instead of asking what the minimum is, I ask my customers what level of risk they are willing to accept. Who do they want to live and who do they want to die? Are they willing to risk that building, that piece of equipment, or that aircraft? Does that "Related Facility" really need to be built at the minimum distance if damage to the facility renders it unusable? Does that Burger King really need to be built on the edge of the explosive safety clear zone, if people inside will be injured by flying glass and those outside injured by flying debris and fragmentation? Do we really want to risk the loss of a multi-million dollar aircraft by parking it at minimum distance from a weapons loading operation?

Questions about explosive safety are not always cut and dry. Commanders and supervisors must ask the tough questions. I don't feel that it's enough to ask, "Can we do this?" Perhaps we should ask, "Do we need to do this?" Sometimes the demands of the mission do not allow for flexibility, but commanders and supervisors must know the risks from explosives operations and locations. We should always ask ourselves if there's a better way of doing the operation. Can we locate that facility farther away so that we go beyond the minimum and thus reduce or mitigate the potential risks to our people and resources.

This article perhaps raises more questions than it answers. It's meant to provoke thought and encourage discussion. It's meant to help you, the wing weapons safety customer, evaluate your own safety consciousness. Hopefully, it will encourage you to examine your current explosive operations, their associated risks, and seek to go beyond the minimum. Knowledge is power. An informed manager is better able to make decisions that could affect the combat capability of their unit. ■

THE WORLD'S GREATEST PROCRASTINATOR

Mr Cal Faile
HQ ACC/SEG
Langley AFB VA

Prior to becoming a safety professional, I could put off until tomorrow what I should have done today with the best of them. I considered myself the world's greatest procrastinator — I enjoyed being that way. My wife often made comments to the effect that I was a little lazy, but I didn't listen to her. I remember one day in particular when my procrastination created quite a bit of excitement in the neighborhood. It was a warm summer evening in early July. Hold on a minute... this episode really began about three weeks earlier. We came home from shopping for our newborn son, John. As we entered the house, my wife said, "What is that sound coming from the kitchen?" I said, "It sounds like the battery alert in the smoke alarm. I'll fix it later."

The clicking noise in the smoke alarm just about drove her crazy. I just kept telling her I would replace the battery tomorrow. Finally the clicking stopped altogether and she quit bugging me. About a week later the power went out while she was frying chicken on the range, and she forgot to remove the pan. It was Sunday and I was busy reading my paper in the living room. She gave up trying to get me to check the fuse box and went to the bedroom to check on the baby. About fifteen minutes later the power came back on — I knew it would.

I finished reading the newspaper and decided to watch a ball game on TV. Shortly thereafter my wife came racing into the living room carrying the baby and screaming, "Where is that smoke coming from?" This time there was no procrastination. I jumped off the couch and observed a pall of heavy smoke against the ceiling. I realized it was coming from the kitchen. I told her to take the baby next door and call the fire department. She did and I headed for the kitchen, grabbing the fire extinguisher I had thankfully mounted in the entryway after much procrastination. I extinguished the fire on the stove and in the overhead cabinets. The fire department arrived and confirmed the fire was out. Their subsequent investigation revealed (you guessed it) that the grease in the frying pan caught fire and because the batteries were dead, the smoke alarm did not function. I will never forget the lecture the fire chief gave me. Some of his words are not printable in this magazine. By the way, this procrastination episode cost $4,000 which could have been avoided by installing a $1.50 battery.

Do you procrastinate? I guess we all do at times. However, we must all remember to be very careful about what we choose to procrastinate about. Take this from one who knows; I used to be the world's greatest, but I'll gladly pass the title on to you. ■

B-2 STEALTH BOMBER

Majestic Wing

Flying Safety THEN & NOW

Ever wonder how much things have changed or not changed over the years in relation to flying safety? In our January 1994 issue we published three articles concerning physical fitness, G tolerance and G-induced Loss of Consciousness (GLOC). Evidently this is not a new phenomenon as evidenced by the following excerpt from one of my prized possessions, the Pilots Information File, dated 1 May 1943. Although somewhat simplistic, the core concepts are as valid today as they were 51 years ago. Perhaps as J.W. Goethe said, "Everything has been thought of before; the challenge is to think of it again." You be the judge.

- Ed.

EFFECTS OF CENTRIFUGAL FORCE

Any speed may be endured in level flight, but sharp turns and sudden leveling of your plane cause a high centrifugal force to act upon you as well as your plane. This centrifugal force may be so directed as to pull the blood away from the brain. It is then called plus G and occurs in all inside turns and pull-outs.

Or, the force may be so directed as to force the blood toward the brain. This is negative G and occurs in outside turns and push-downs.

Positive G

The normal weight stress due to the force of gravity on a body is called +1 G. A stress of +4 G, therefore, will thrust you against your seat with a force equal to four times your actual weight. Under such conditions, you and your crew will be less efficient in the use of your controls and armament—you may not hear well and your reactions may be slowed—and greater stresses may mean loss of sight or consciousness. If at such times you happen to be near the ground, or near other aircraft, you may crash or collide. In combat under such conditions, your sight very likely will be dimmed at the best moment of firing.

You must know how to resist the effects of these forces as much as possible—you must know the limit of your own G resistance, as well as that of your plane.

First of all, your resistance to G is greater when you are sitting than when you are standing. When your crew is standing, avoid sudden unexpected leveling and sharp turns, and take care that your plane does not "slip" or "drift." At 4 G, those standing may collapse. At 5 G, they may lose consciousness. Remember, the forces exerted in the tail of a plane are greater than in the cockpit.

Even with the personnel seated, you must be careful. Here, centrifugal forces of from 5 to 6 G for two seconds or more are likely to produce a temporary darkening of the field of vision, a "gray veil" which disappears as soon as the centrifugal force is eased. If the exposure is prolonged, you may have a complete blackout even though you do not lose consciousness. Forces greater than 6 G for only a few seconds produce loss of sight, and, finally, loss of consciousness. There is a margin of about 1 G between the "gray veil" and loss of consciousness, so **the dimming of sight is the excessive G warning sign.**

If you or your crew are exposed to a prolonged period of high centrifugal force, fainting and unconsciousness over an extended period may result.

Know Your Tolerance

Short, heavy-set persons can stand more than tall, slender ones. But remember, each flyer has his own tolerance. If an accelerometer is available, measure your tolerance with an accelerometer. If no accelerometer is available, get to know the "feel" of each ship under G.

Know the G tolerance of your ships. Do not exceed their stated limit. Carelessness may cost you a wing.

May 1, 1943

To Raise your +G Tolerance:

1. TENSE THE MUSCLES OF YOUR ABDOMEN, ARMS, AND LEGS.
2. STRAIN AGAINST SAFETY BELT.
3. EXERT A STRONG PRESSURE ON THE RUDDER PEDALS.

AVOID THE FOLLOWING CONDITIONS IF POSSIBLE; THEY MAKE LOSS OF CONSCIOUSNESS MORE LIKELY AND MORE DANGEROUS.

1. LACK OF SLEEP.
2. LACK OF OXYGEN.
3. EXCESSIVE USE OF ALCOHOL AND TOBACCO.

Effects Of —G

Inverted flight, outside turns, and push-downs force the blood to the eyes and brain. Under —G bad effects may be felt at —2 G or —3 G. There may be a "gritty" feeling in your eyes, and your eyeballs may feel as if they are popping from their sockets. There may be a throbbing pain in your head. Prolonged stresses of —3 G may cause hemorrhage in the eyes and blindness, and, in older persons, a fatal cerebral hemorrhage. At —4 G, you may see "red" or lose your sight completely. These disorders may outlast the stress by several seconds, and you may have a severe headache for several hours. Because the skull is rigid and does not allow for much pooling of blood, the effects of negative G may be felt to a greater degree than positive G.

Play Safe

1. Except in combat, make all flight figures with the least possible stress to your plane and crew. Even then, be careful not to go beyond the safe load limits of your plane's structure.

2. Always remember that your equipment has definite limitations and is undergoing the same stresses that you are. If your plane is equipped with an accelerometer, use it to keep within safe limits. If your plane is not equipped with an accelerometer, rely on experience and close observation.

REFERENCE: T. O. 00-25-12, dated November 6, 1941, Physiology of Flight, TM 1-705.

ACColades

QUESTIONS OR COMMENTS CONCERNING DATA ON THIS PAGE SHOULD BE ADDRESSED TO HQ ACC/SES, DSN: 574-3814

	TOTAL			ACC			ANG			AFR		
	JAN	THRU JAN		JAN	THRU JAN		JAN	THRU JAN		JAN	THRU JAN	
		FY94	FY93		FY94	FY93		FY94	FY93		FY94	FY93
CLASS A MISHAPS	1	5	6	1	3	3	0	2	2	0	0	1
AIRCREW FATALITIES	0	3	5	0	2	4	0	1	1	0	0	0
* IN THE ENVELOPE EJECTIONS	1/0	3/0	4/0	1/0	1/0	2/0	0	2/0	1/0	0	0	1/0
* OUT OF ENVELOPE EJECTIONS	0	0/1	0	0	0/1	0	0	0	0	0	0	0

* (SUCCESSFUL/UNSUCCESSFUL)

CLASS A MISHAP COMPARISON RATE

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

ACC	FY 93	2.0	3.1	2.2	1.6	1.7	2.1	1.7	1.7	1.7	1.6	1.6	1.8
	FY 94	0	1.1	1.5	1.7								
8 AF	FY 93	0	5.2	3.7	2.7	2.1	1.6	1.4	1.2	1.0	0.9	0.8	2.3
	FY 94	0	0	0	0								
9 AF	FY 93	6.7	6.5	4.4	3.3	3.9	3.1	2.7	2.3	2.7	2.4	2.2	2.0
	FY 94	0	0	0	1.7								
12 AF	FY 93	0	0	0	0	0	0	0	0	0	0	0	0
	FY 94	0	0	2.1	1.6								
DRU	FY 93	0	0	0	0	0	2.8	2.4	4.2	3.7	3.3	4.4	4.0
	FY 94	0	14.9	9.9	7.4								
ANG	FY 93	0	0	0	0	0	0	0	0	0	0	0	0
	FY 94	0	2.2	2.9	2.1								
AFR	FY 93	0	2.2	2.9	2.1	3.5	2.9	3.1	2.7	3.4	3.0	3.2	3.3
	FY 94	0	0	0	0								
TOTAL	FY 93	0	0	8.0	5.9	4.8	4.0	3.4	3.0	2.7	2.4	2.2	4.0
	FY 94	0	1.4	1.8	1.7								
MONTH		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP

* (HOURS NOT AVAILABLE)

ACColades

HONOR ROLL

Units without a "Command-Controlled" Class A flight mishap since the stand-up of ACC on 1 Jun 92, or their respective assimilation into the command.

1 FW	106 RQG	137 AW	175 FG	419 FW
4 WG	107 FG	138 FG	177 FG	440 AW
5 BW	109 AG	139 AG	178 FG	442 FW
7 WG	113 FW	140 FW	179 AG	482 FW
9 RW	114 FG	142 FG	180 FG	507 FG
23 WG	116 FW	143 AG	181 FG	509 BW
24 WG	117 RW	144 FW	185 FG	552 ACW
27 FW	118 AW	145 AG	187 FG	906 FG
28 BW	119 FG	146 AW	188 FG	908 AG
31 FW	120 FG	147 FG	189 AG	910 AG
33 FW	122 FW	148 FG	191 FG	911 AG
35 WG	123 AW	149 FG	192 FG	913 AG
42 BW	124 FG	150 FG	301 FW	914 AG
55 WG	125 FG	152 RG	302 AW	916 ARG
79 TEG	128 FW	153 AG	314 AW	924 FG
92 BW	129 RQG	156 FG	347 FW	926 FG
93 BW	130AG	158 FG	355 WG	928 AG
94 AW	131 FW	165 AG	366 WG	930 OG
99 WG	132 FW	166 AG	388 FW	934 AG
102 FW	133 AW	167 AG	403 AW	939 RQW
103 FG	135 AG	169 FG	416 BW	
104 FG	136 AW	174 FW		

MUNITIONS

Anytime, Anyplace We Deliver

Col Gary R. Hepfner
HQ ACC/LGW
Langley AFB VA

Reprinted with permission from
ACC MUNITIONS (ACCRP 136-1, Vol II, Issue 1)

In keeping with my past articles, this also deals with change but from a slightly different perspective. Over the last year we've seen several incidents occur that bring home a basic truth — regardless of all that has been done to make them safe, what we work with (munitions) are designed to kill. This holds true from our largest nuclear weapon to our smallest impulse cart. We have had incidents ranging from no damage or injury after unintentional release of inert practice munitions to severe injury and death during range survey operations.

My real concern is not with the individual incidents themselves, but with the potential that they will increase in numbers as we continue to deal with the changes we face in the Air Force. To put it in more concrete terms, we've got people who may be out on the line or in the bomb dump who are concerned about their future instead of concentrating on the job at hand. We have units receiving different systems and weapons for which they have no experience. We have people rushing to complete base closure actions or to ship stockpiles to meet critical schedules. We have people who are on their third, fourth, or fifth rotation to the desert. The list just goes on and on as to actions dictated by change that open us up to disaster.

What is the answer? PEOPLE! The only way we can meet this concern is through the efforts of all of us. We need to recognize that we must make an extra effort to compensate for the disruptions caused by change. Slow your operations down a bit if necessary. Insist upon and comply with strict adherence to tech data and good safety practices. Question your supervisors if what they tell you to do just doesn't feel right. Check and recheck your work. Train your people just as hard on the little things as you do on the major tasks. Anticipate problems; don't expect that just because everything went smoothly yesterday it will be the same today. Involve everyone in planning to meet the challenge of change and solicit their opinions, solutions, and concerns. The more involved everyone is in this process, the more they will take responsibility for themselves, the people around them and in the successful completion of the task at hand.

Until next time, keep your powder dry and keep them loaded. ■

Your Safety Habits At Home

Provided courtesy of the Virginia State Police

- ☐ Do you know your neighbors? Do you look out for them? Do they look out for you?
- ☐ When the door bell rings, do you check to see who it is before opening the door?
- ☐ Do you always ask a sales person, meter reader, repair or delivery person to show an identification card before letting him or her in?
- ☐ Do you caution your children and babysitters not to open the door to unexpected visitors and delivery persons?
- ☐ Have you and your neighbors cleaned up dirty alleys, litter and broken windows? They all attract crime to your neighborhood.
- ☐ Do you hang up immediately on nuisance and obscene calls?
- ☐ Have you posted emergency numbers for police, fire and paramedics on every phone in the house?
- ☐ If you are at home, working or just relaxing, are your doors locked?
- ☐ If you have to leave your children at home alone, do you make sure they know where you can be reached, when you are coming home, and the name and number of a friend or neighbor to call in an emergency?
- ☐ Do you and your neighbors have a phone network to alert each other to suspicious activity?
- ☐ Do you procrastinate a few days before replacing a burned out lightbulb over your front door, garage, or yard?
- ☐ Do you keep blinds, shades, and drapes closed at night?
- ☐ Do you test your smoke alarms and, if you have one, the burglar alarm, once a month?

TEAM SALUTES

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 these recipients of the **TEAM SALUTE.**

A1C Chad P. LeGros
4 FS, 388 FW
Hill AFB UT

While accomplishing the Thruflight Inspection on his aircraft, A1C LeGros discovered a missing Thumb Latch Foot from beneath access door #3322. Realizing the severity of this missing item and its Foreign Object Damage potential, he immediately began a thorough search for the small metallic object. He soon located and secured the part after which he turned his attention to replacing the unserviceable latch mechanism. But A1C LeGros didn't stop there; he questioned the integrity of the latch assembly and promptly initiated a Product Quality Deficiency Report (PQDR) (Report Control Number: FB2027930626 388 FW). A1C LeGros' safety oriented attitude and his follow-through approach to doing business is an example for others to follow.

SrA John D. Simmons
24 MS, 24 WG
Howard AFB PN

On 28 September 1993, SrA Simmons was performing a turn-in inspection of brass residue containing approximately 10,000 rounds of 7.62 mm and 5.56 mm ammunition. During the inspection, he found two live rounds of 5.56 mm. Had these rounds been turned into Defense Reutilization Management Office (DRMO), they would have been processed through a furnace for melt-down. During that process, the rounds could have exploded, causing damage to equipment and injury to personnel. SrA Simmons' strict attention to detail was instrumental in averting a potentially disastrous situation.

WHO GETS BACKACHES?

Back pain is epidemic. It brings us to the doctor more than any other ailment except colds and sore throats -- and it affects everyone. One hundred million Americans suffer from back problems!

WHO GETS BACKACHES?	HOW TO PREVENT THEM
People who sit or bend when they work.	Practice proper body mechanics.
People who lift or carry when they work.	Learn to lift and carry safely.
People who are overweight.	Maintain a healthy weight.
People who are inactive.	Follow a regular exercise program.
People who are under stress.	Try exercise, relaxation or mediatation to reduce stress.
People with poor posture	Keep your three natural curves in balance.
People who play sports.	Warm up properly before sports activities.
People like you!	All of the above!

Preventing BACK Injuries

Lt Col Alan M. Lafky
1 MG/MGHT
Langley AFB VA

Back pain is one of the most common maladies known to mankind. Eight out of 10 Americans will experience a painful back episode at least once in their life. Over 100,000,000 Americans have serious back problems and over 250,000 have back surgery every year. Back pain ranks second only to upper respiratory infections in terms of work time lost due to illness.

Your spine consists of 24 bones, called vertebra, that are separated by discs. These discs function as shock absorbers. The upper 7 vertebrae are called the cervical spine, the next 12 are called the thoracic spine, and the lower 5 vertebrae are called the lumbar spine. Notice the curves of the spine in Fig 1. These curves are normal and must be maintained at all times by correct posture.

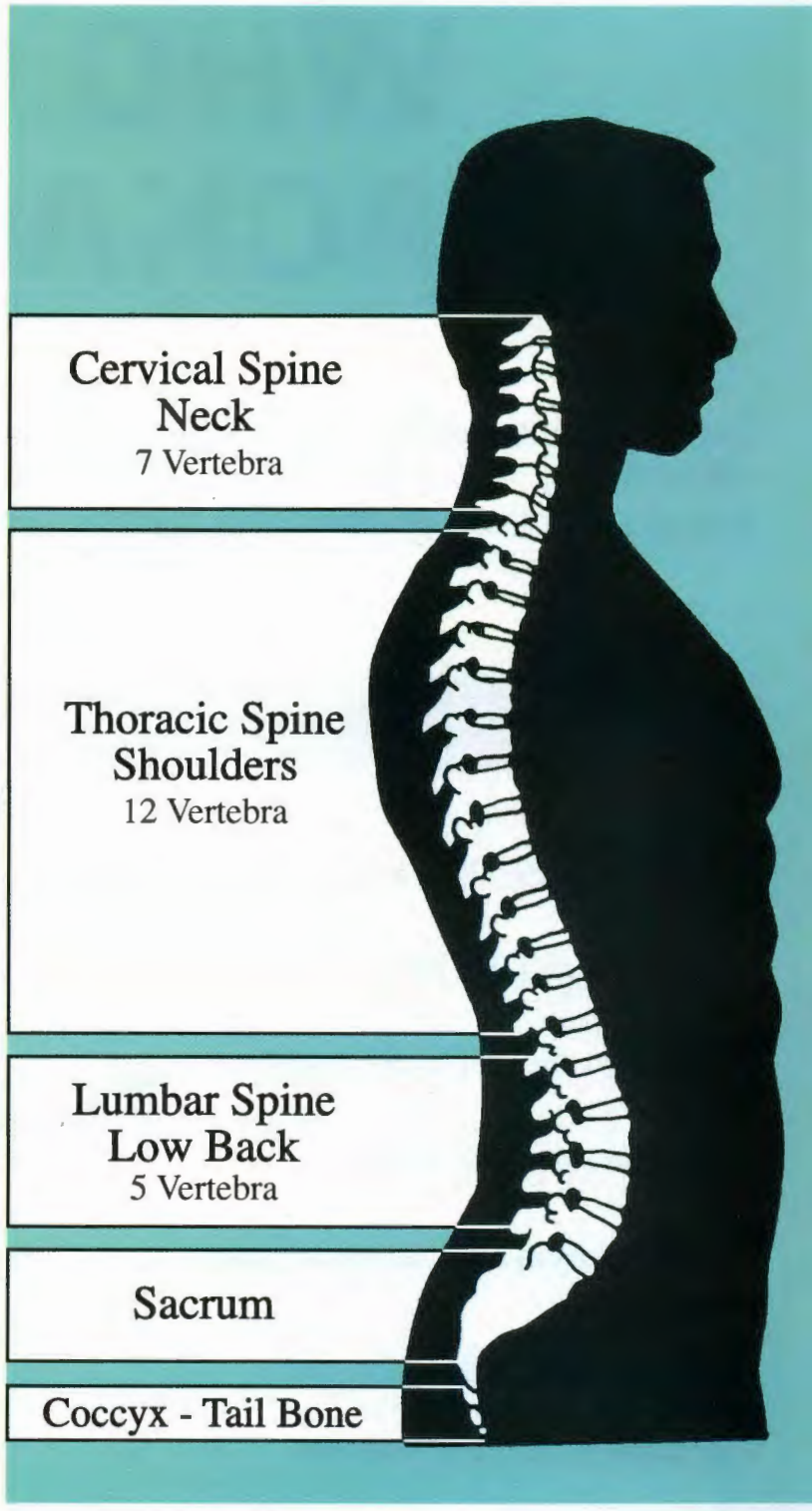


FIGURE 1

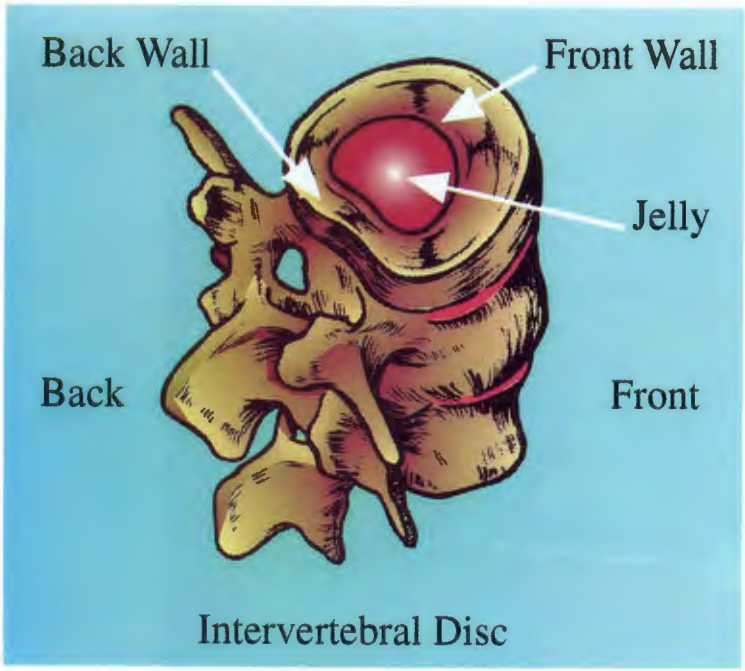


FIGURE 2

Fig 2 depicts the structure of a disc, which is made up of two parts, much like a jelly doughnut. The inner jelly-like part is the nucleus and is subject to hydraulic forces. It is surrounded by layers of fibrous connective tissue. The discs allow spinal movement, but abnormal forces on the disc can cause it to tear, especially while bending too far forward or twisting.

Through wear and tear or injury to the disc, cracks develop in the layers of the connective tissue (see Fig 3). Since the nucleus is highly fluid, it flows into the cracks, which can cause the disc to bulge. Tears inside the disc are called "herniated discs," and tears all the way through the layers to the outside of the disc are called "ruptured discs." Although painful by itself, a bulging disc may press on a nerve root, causing further severe pain which usually radiates down from the buttock into the leg as far as the foot (see Fig 4).

Another analogy to the disc is that of toothpaste. Bending backward tends to press the nucleus forward, where the disc is thicker and stronger; and bending forward presses the nucleus backward where the disc is thinner and weaker, much like squeezing a tube of toothpaste. So most disc injuries involve bending forward when lifting or twisting.

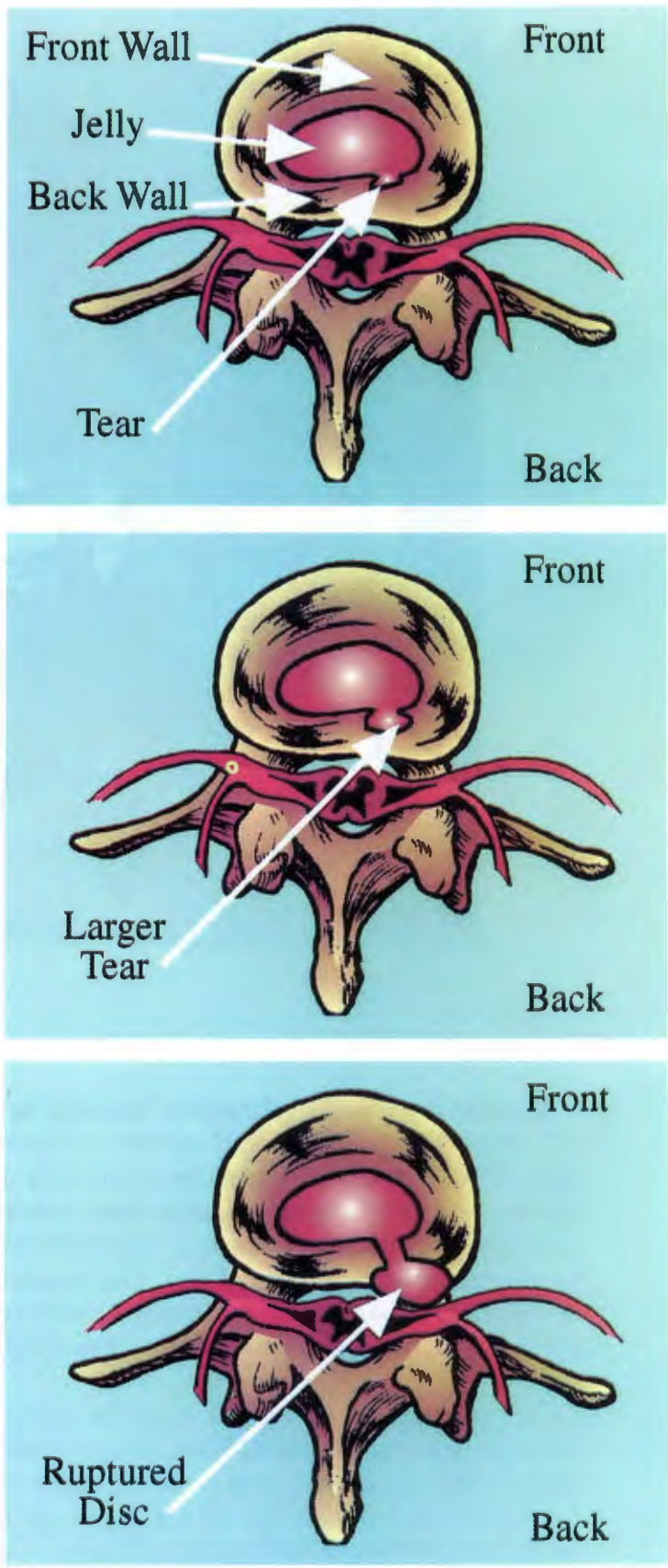


FIGURE 3

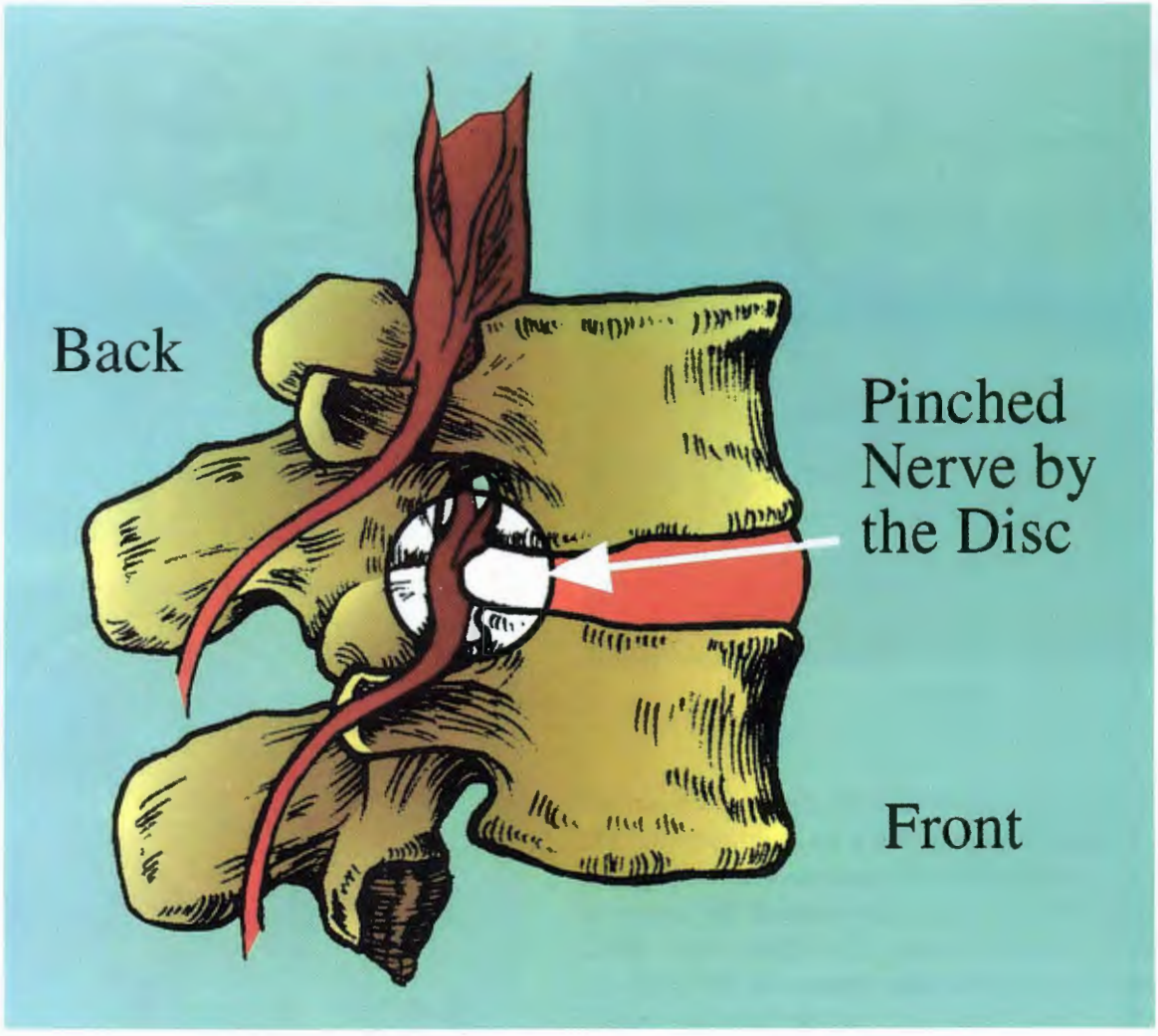


FIGURE 4

When the lower back is allowed to "bow out" in a "C" curve like a banana, the nucleus is forced backward. If enough force is involved, such as lifting a very heavy object, or sudden force from an auto accident, the disc layers may tear suddenly, causing a herniated or ruptured disc. Fig 5 depicts the right and wrong posture for lifting. Notice that the normal curve is maintained in the correct technique.

The disc can also be injured from the gradual subtle forces of a lifetime of poor sitting posture. When the normal lumbar curve is not supported, the lower back tends to "bow out," increasing pressures on the disc. When the lumbar curve is supported, the pressures are reduced (Fig 6).

There is a common notion that the "rule" for lifting is to ***"lift with the legs, not your back,"*** or ***"bend your knees when lifting."*** These cliches are very misleading. Figs 5 and 7 show that it is possible to lift with your legs and still "bow out" the back. Since the real issue in correct lifting is preventing BACK injuries, you must think of your BACK when lifting. The correct "rule" to remember when lifting is this: **ARCH YOUR BACK!** In addition to maintaining the normal curve in the low back, you must also keep the load close to the body and avoid twisting while lifting.

Sometimes a person has to pick up something while in an awkward position, such as from the trunk of a car, or leaning over to reach into a bin.

Since most people think bending the knees is the issue in correct lifting, it may appear that one has no choice except to bend over from the waist, as is the case in Fig 7. However, if one keeps the low back arched or "bowed in," it is possible to prevent abnormal pressures from occurring in the discs.

In addition to using correct posture when sitting and lifting, there are other factors to consider. To fully minimize the effects of all the stresses and loads on one's body requires a certain degree of physical fitness, which means getting in shape through regular exercise and healthy nutrition. Research has shown that high sugar diets not only lead to obesity, but tend to weaken the connective tissues.

It is important to consider one final point in the prevention of back injuries. Most people understand the importance of proper "warm up" before a workout; but fail to realize that there are times when it is necessary to "warm up" before lifting, particularly when the loads are fairly heavy. Straining one's muscles when not properly warmed up frequently leads to injuries or strains. "Warm up" involves actually increasing the temperature inside the muscles rather than stretching the muscles. Unfortunately, most people equate stretching with warm up, which it is not. In fact, simply stretching a muscle prior to exercising provides NO benefit whatever. To truly warm up muscles, one must begin to use those muscles more. For example, to warm up for running, instead of stretching quads and hamstrings, perform a brisk walk for 5 minutes, or even slow, careful 1/2 squats for about 30 to 50 repetitions. Only increasing muscle activity leads to proper "warm up."

In summary, prevention of back injuries involves maintaining the normal inward curve of the low back when sitting and lifting, never twisting while lifting, being physically fit, eating a balanced diet, and properly warming up before exercise or strenuous work. ■

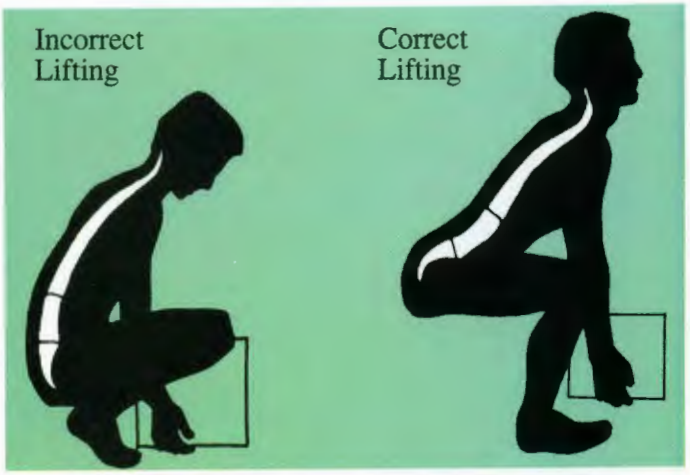


FIGURE 5

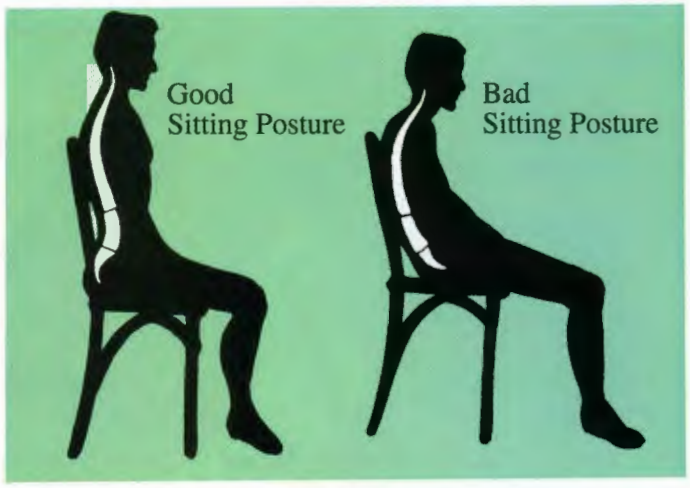


FIGURE 6

FIGURE 7


509TH BOMB WING