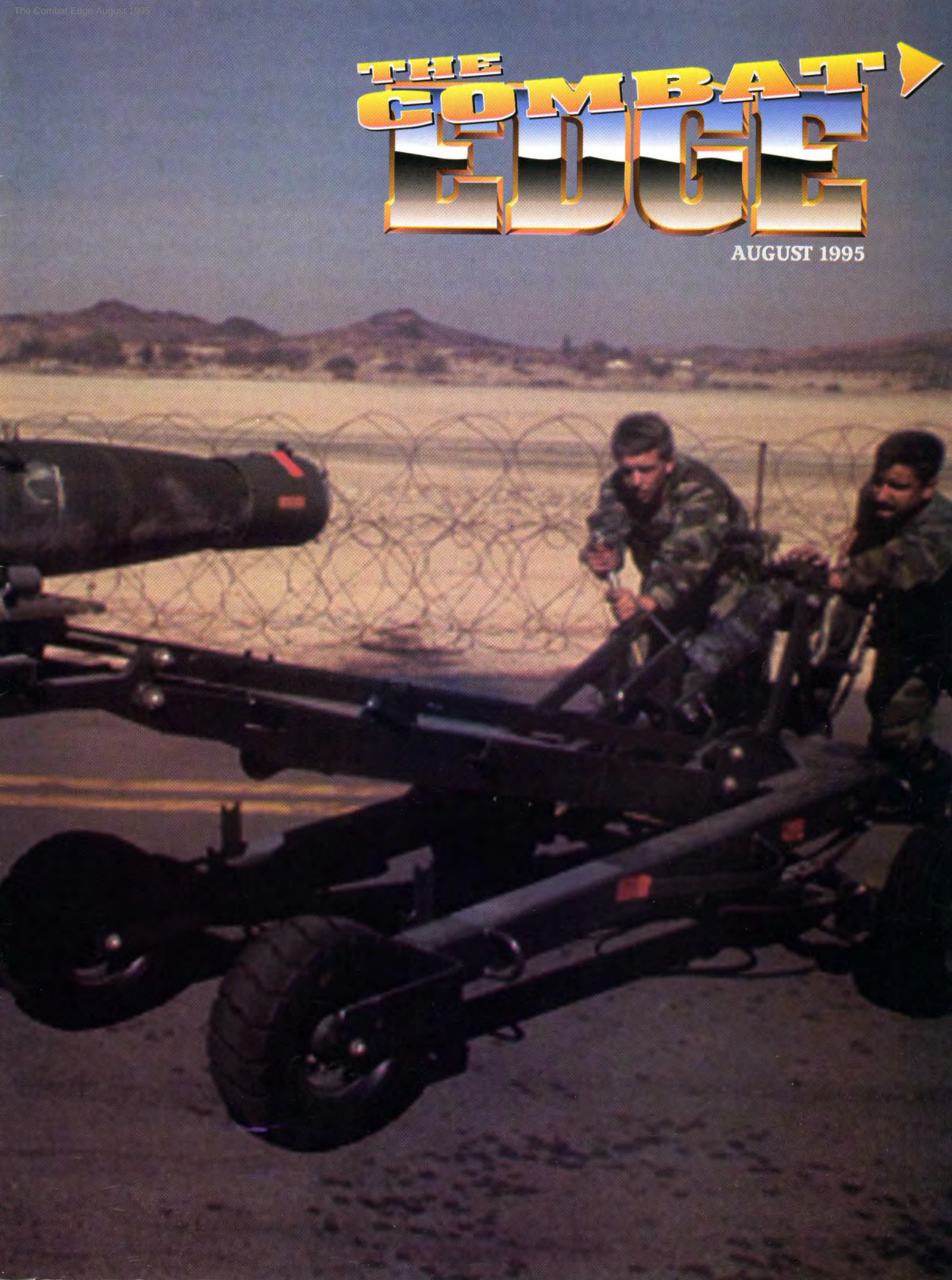
THE COMBAT EDGE

AUGUST 1995



The Combat Edge
AIR COMBAT COMMAND
SAFETY MAGAZINE

Gen Joseph W. Ralston
Commander

Col Fack Acker
Chief of Safety

Lt Col "Nellie" Beard
Editor

Ron Smith
Art Director

Barbara Taylor
Awards Administrator

Sgt Mark S. Bailey
Staff Artist

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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

Telephone: (804) 764-3658
DSN 574-3658
FAX: (804) 764-6362

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ACCent on Safety

Well, here it is August and many of us are trying to figure out how summer slipped by us. Not to worry; there is still a lot of it left. But, please plan ahead for those end of summer vacations, trips, and outings. Don't try to squeeze an entire summer's worth of fun and excitement into the last three weeks — it could be disastrous!

We are two-thirds of the way through the "101 Critical Days of Summer"; and, so far, it continues to be a "good news - bad news" story. We started the 101 Critical Days with a fatality-free Memorial Day holiday. Unfortunately, we did not get through the 4th of July holiday unscathed. We had a recreational outing turn into tragedy when one of our young people drowned. The investigation continues, but it appears that the individual was NOT wearing a life vest. So far this summer we have had 3 fatalities compared to 6 last summer at this time — thus "good news - bad news." The good news...we are on track to have the best 101 Critical Days in the history of ACC. The bad news...people continue dying while trying to have fun. We have one major holiday left this summer, so let's work together to make it fatality free. Plan your recreation ahead of time and think about what you're doing. Is it safe and sensible? If not — don't do it! Watch out for each other. When there's a chance that alcohol can be combined with water, boats, rafts, and vehicles, we need to be especially cautious. Let's enjoy the rest of the summer with our family and friends without the tragedy of mishaps — it's a lot more fun.

I need your help with *The Combat Edge*. First, I need you to write articles for us. Only you possess full knowledge of the active undercurrent of ACC's mission, the problems you encounter, and the solutions you reach. The magazine can be your communications vehicle. Use it to get your ideas to others throughout the command and the Air Force. The magazine will only be as good as YOU make it through YOUR articles, inputs, and feedback. We are committed to giving you the best product possible, but we cannot do it alone — we need YOUR ideas to make ACC safer. Secondly, I need you to complete a reader survey (pg. 15) and send it to us. Reader satisfaction is not just a buzz word — it's a two-way street. To satisfy you, our customer, we must know what you need, want, and expect. You have to let us know your needs and desires so we can better serve you.

Finally, I know you are all putting the final touches on your preparations for your September Safety Day. This one is intended to assess the lessons learned from FY 95 and use them to make FY 96 better (not only in safety but all areas). Use this day wisely and focus on those areas where sound risk management techniques can be applied to make your flight, weapons, and ground operations better and, of course, safer. At the risk of sounding trite, safety really is a by-product of good training, sound planning and preparation, and a mindset that is intolerant of unnecessary risk. This translates into a cultural attitude that will make safety's job easy. As always, the safety staff here at ACC is standing by to assist you in your efforts. Work hard, play hard — BE SAFE!

Colonel Fack Acker
Chief of Safety

VirtualSafety

Col Dennis D. Nielsen
Air National Guard Director of Safety
Andrews AFB MD

As another day starts in Safety, I turn on the computer and call up the Local Area Network (LAN). I read a message from the Director of the Air National Guard (ANG) who E-mails a request only when it is important and he needs the answer right away. Today, he wants to know the overall and the ANG Class A mishap rate for the F-16. I log onto the Air Force Safety Agency (AFSA) bulletin board and obtain the data. Now it is back on the LAN with the answer to the general's request. Great! Another suspense answered almost as quickly as he asks. Here is another E-mail message telling me that the Incident Tracking System software is in place on the file server. I will send an E-mail to Lt Col Joe Amara, 102 FW, and tell him the trip is on to Israel and I'll also inform Lt Dan Polanoski, 192 FG, and tell him to coordinate this with Lt Col Angel, the Israeli liaison officer at ACC. Here is an E-mail from Brig Gen Godsey, Director of Safety for the USAF, telling me that he plans to publish a quarterly Safety Gram. I send a response to him telling him that it is a good idea. As I check my voice mail, I hear a message from Lt Col Mike Russell, 118 AW, telling me about a bleed air duct problem on our C-130's. He tells me he will present this at the C-130 System Safety Group. I E-mail the information to the Chief of Flight Safety for the ANG, Lt Col Tom Weichbrodt. Here also is a voice mail from Col Alan Groben, from the Leadership Culture workshop, telling me of the changes in the schedule for our class. I log on the ANG bulletin board system and read a message from Lt Col Dave Draper, 177 FG, chairman of the Air National Guard Executive Safety Council, asking for agenda items for the upcoming meeting. It is now time to take my pajamas off and get dressed. Wait a minute pajamas at the office! No, all this is happening at my home. An important message answered to a general, a trip coordinated to a foreign country, a possible maintenance problem brought to the attention of an action officer, a revised schedule for a class and an important agenda item added to an upcoming meeting; all this happened on a quiet peaceful Sunday morning, before the kids got up.

If I had been at the office, it would have been my usual cup of coffee and good mornings to those with whom I work. If it takes 5 minutes to get a cup of coffee and 5 minutes or so to greet each person that I work with, a total of approximately 1 hour will pass. My computer needs no refreshment or good mornings. The capability exists right in our homes to log into our LANs, E-mail, BBS, Internet and other systems. Joe Amara needs to know ASAP that he is going to Israel. He does not need small talk.

I was recently riding on a commercial airliner talking to an executive of a large corporation. We were discussing our job responsibilities. I told him about my administrative responsibilities to 114,000 people, 1,500 aircraft, more than 100 locations and many other temporary locations around the world. He commented that we in the ANG Safety office must have a huge staff. When I told him that 8 people work in my office, his mouth dropped open. Then he told me of an idea they are trying in the business world. As I listened, I realized the virtual organization he was describing is already in place in the Air National Guard.

The Executive Safety Council meets twice a year. It is composed of flight, weapons and ground safety specialists from our units. They identify issues and problems and assign a responsible party to work the issue. They do not meet to bring problems to the headquarters to solve but identify problems that they intend to solve themselves. The council solves problems as complex as aircraft modifications and as simple as seat belts on golf carts. We empower and trust them to do the right thing for the field. None of these people work in the headquarters but contribute 20

people to the virtual organization. ANG unit commanders allow these people to participate for the good of the entire community. These commanders have the foresight to know that the time their representatives spend on these projects benefit the entire ANG. This partnership between the ANG safety office and unit commanders makes the program work.

The Air National Guard has a bulletin board system (BBS). The ANG bulletin board system was started more than 2 years ago. It was an outgrowth of an idea expressed by the Executive Safety Council. Lt Col Jude Krejci, of the 137 AW, along with the approval of his commander Col McKinney, started a bulletin board system that has allowed instant communication among all ANG safety offices. The system has more than 10,000 messages on it to date and is accessed by an 800 number providing cost-free information to field units. The BBS works every time and in more than 2 years I have yet to get a busy signal or fail to connect on the first try. The headquarters office commits no people to the BBS. It is done entirely by the field for the field. This adds another 8 people to our virtual organization and many more people that work issues and give information to each other.

Do you want to write a regulation or supplement a current one? In the past, headquarters personnel wrote supplements and regulations for the field. In our virtual corporation, the field writes its own regulations. In safety, we have a 17-person re-write committee from the field. It recently met and in 1 week completely drafted new safety supplements and suggested changes to basic safety regulations. These people met at a field location and had the necessary support to provide a written document before they left. The document was ready for the printer when the meeting closed. In the past, headquarters people wrote these regulations and supplements, then had to encourage buy-in at the field level. Now, because field reps write their own documents, the buy-in is already in place. This field participation also requires cooperation from unit commanders. Again, a partnership between the Safety office and the field commanders produces a virtual organization that is for the good of all. We can add another 17 people to our virtual organization.

The capabilities of the LAN and multi media systems are widely known. We can communicate with each other from our offices, homes and motels. We can compose a message off line while we sit on an airliner. When we get to our motel, we can connect our laptop to the phone line and log into the LAN. It sends our outgoing messages and downloads our incoming messages, all while we are at dinner. Video conferencing methods are widely known and will be expanding more in the future as we are required to reduce our costs.

The other day we were tasked to develop a wiring diagram of our organization. As we prepared this diagram, the traditional lines and boxes did not fit how we operate. Although I could only reach out and touch 8 people, this virtual corporation draws from over 100 experts in many fields. It brings them together on an as-needed basis to do a specific job. We then release these experts to go back to whatever their job is in civilian life. They are people with knowledge of the military and what is required at the field level. Commanders of our Air National Guard units cooperate with the headquarters and consent to lending these people to us. They volunteer for the work, and we always have more volunteers than we need.

As we move forward, we can no longer afford large headquarters staffs. We must get help from others that have both the knowledge and work force to perform certain tasks for our agencies. In many ways this is a giant leap forward because this will allow those in the field to become a part of the process. We at the headquarters will lead this virtual organization, steer it in the right direction, and then get out of the way. Key elements in this virtual organization are trust and a true belief in the integrity of people, even if you don't have direct authority over them. Giving up some control is difficult for some managers, but is essential to make this organization work. Nothing will shut this off faster than authorizing people to come up with an answer which is not used or even considered. Jim Belosco, in his book *Flight of the Buffalo*, tells us that successful organizations teach employees to lead. Much as a flock of geese uses each other for support. These people, along with their commanders who support it, will help lead the Air National Guard into the 21st century. This partnership we have established will carry us through the tough times ahead and continue to build the Air National Guard into a world class organization. ■


Fleagle
SURE HAS BEEN A LOT WRITTEN 'BOUT STRESS LATELY.
PEA PRESS
HOW SO, MACAW?
WELL, WITH SO MUCH NEW TECHNOLOGY CUMING INTO PLAY ALMOST DAILY AND TH' DEMAND ON WORKERS RISING...
MACAW'S LOUNGE
I CAN SEE WHERE ONE COULD LOSE SIGHT OF TH'INTENDED GOAL.
©STAN HARRISON, ASS
PEDO, DO WE KNOW ANYBODY WHO GOT STRESS?
NONE THAT I RECALL.
BASE OPS
'CAUSE IF WE DID, I WOULD SURE TRY TO DO MY PART TO HELP 'EM.
SAME HERE, FLEAGLE.
MAN! AM I GLAD TO SEE YOU GUYS. I'M UP TO MY ARMPITS HERE WITH NO END IN SIGHT. COULD YOU...
HOLD ON. YOU THINK WE WALK IN HERE JUS' T'HELP YOU WITH YOUR MESS?
WHAT WUZ SOME MORE OF THEM SIGNS OF STRESS?
LET ME THINK.
HARRISON

I Know You Thought You Understood What You Thought I Said

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INCIDENT'LY Air Traffic System Effectiveness, issue 95-001, Jan-Mar 1995.
Provided by Mr. Ralph B. Priestley, FAALO/ACC, Langley AFB VA

PHRASEOLOGY is the predominant method of communication between controller and pilot in today's ATC system, and yet it is sadly the area most in need of improvement!

Errors in phraseology have caused more grief to controllers and pilots alike, resulting in losses of separation, embarrassment, and sometimes accidents. The following examples were taken from Operational Error reports which illustrate poor phraseology.

"Make it two seven zero." The controller meant heading, but the pilot interpreted it as altitude.

"Take it to two five zero." The controller meant speed, but the pilot interpreted it as an altitude assignment.

"Bring it to two two zero." The controller meant altitude, but the pilot interpreted it as a heading.

If the controllers had used correct phraseology, the message would have been clear as to whether a turn, change in altitude, or airspeed was required.

Non-standard phraseology can increase your workload. A misunderstood message will require a repeat at best, or worse, result in an incorrect action. Standard phraseology is carefully crafted so that receipt of part of the transmission is still understandable or will cause the receiver to question what was sent. For example, "N1234 hold short of runway 14." Receipt of just the word "hold" or "short" indicates NON MOVEMENT, i.e., STOP! That's why "Hold short for takeoff runway 14" is NOT acceptable. The word "takeoff" indicates MOVEMENT. If the pilot received only part of the transmission, such as, "...for takeoff runway 14," the wrong message has a good chance of being passed.

Keeping pilots informed as to where they fit into the big picture can help a controller get the job done efficiently, effectively, and safely; and can be done without wasting valuable air time. Information such as expected length of the final can help the pilot plan and execute a flight profile which helps the controller because the pilot will endeavor to be where you need him to be at the right time. If ATC tells the pilot "Descend and maintain XXX, plan a 5 mile final," the pilot can interpret the message to mean "Hurry on down and be ready for a turn to final soon." The pilot can help the controller out by descending the aircraft promptly and getting ready for the turn, or advise when the aircraft cannot be maneuvered that readily. If ATC tells the pilot "Plan a 15-20 mile final," the pilot knows that time can be taken to execute a smooth, fuel saving transition. In any case, the information which is exchanged is useful to both controller and pilot.

SOME PROCEDURES REQUIRE THE EXCHANGE OF INFORMATION in order to ensure its safe outcome. Taxi into position and hold (TIPH) procedures fall into this category. TIPH operations are useful, but it is CRUCIAL that the pilots are brought into the loop when this procedure is in use. Traffic information MUST be exchanged with the aircraft holding on the runway and the aircraft approaching the same runway for landing. If you can't understand how something as big as a B-737 can "disappear" entirely from view while sitting on a runway, then take the opportunity to observe first hand from the jumpseat through the SF-160 training pro-

gram, or go talk to pilots. In the last two incidents where landing aircraft passed over aircraft holding in position and landed on the same runway, BOTH FLIGHT CREWS WERE LOOKING FOR AN AIRCRAFT ON THE THRESHOLD BUT COULDN'T SEE IT. In both cases, the controllers had forgotten that there was an aircraft holding, and had NOT issued traffic to either the holding or the landing aircraft. The crews of the arrival aircraft did not know that an aircraft was holding on the runway threshold. They became somewhat suspicious because they heard the controller issue a go-around using another aircraft's call sign for the runway that they had been cleared to land on. The instruction had not been directed toward them, but they became more alert. Had the controller informed both the landing and holding flight crews of each other, one crew or the other would be inclined to ask the controller, "Hey, is so-and-so still on the runway?" or "Hey tower, are we cleared to land?", or "Hey tower, so-and-so is still holding." The reason controllers are required to issue traffic to both aircraft is simple. Three heads are better than one. If the controller forgets, two other crews have the chance to remind the controller so that a dangerous situation doesn't develop further. Advising the crew holding in position of the TYPE of aircraft on final gives them valuable information regarding how long is too long to be holding on the runway. The worry factor will come into play sooner or later, depending upon whether the aircraft on the 5 mile final is a B-747 Jumbo Jet, F-16 fighter, or a J-3 Cub.

The statements "I don't have time to say all that stuff" or "The phraseology is too cumbersome...do you want me to move aircraft or talk?" may be true for some. If you have not learned correct phraseology from the "git go," and practiced it so that it is automatic and can be said without thought or effort, then yes, it probably is too much to think about. Those who have made the effort to learn to use correct phraseology have done themselves and the users a great favor. Pilots will hear and understand standard phrases better than normal conversation patterns. So do you, if you stop and think about it. The controller who uses the standard phraseology does not have to devote active thought to the composition of what needs to be said. An analogy to this concept is that of operating a standard shift automobile. After practice, the driver no longer has to think HOW to shift the gears or WHEN to do it. It becomes "natural" or automatic for him/her. The idea is to make your job easy and effective. If you're still not convinced, consider the barriers to getting messages to pilots clearly in the following paragraphs.

The average cockpit is not a quiet place. Sometimes it is very hard to hear a radio transmission clearly. An aircraft's radio receiver is alternately baked, chilled, and shaken for hours. Small wonder that its quality may not be up to snuff now and then. Aside from the noise of the engines, propellers, and air noise created just by moving an aluminum tube through the air at high speed, consider the quality of noise created by flying through rain. It truly sounds like gravel being slung at a 55 gallon oil drum with you in it! Ice flung off prop tips into the sides of your aluminum tube, static noise from electrical disturbances created by Mother Nature, and noise from stuff thumping around due to turbulence, can create a cacophony of amazing proportions. Even during the "quietest" of times, the people in the cockpit are often distracted by the duties required to keep the aircraft on course and operating efficiently.

All of these elements compete with clear message reception. Now let's compare your environment. A lot better isn't it? Well, sort of. Controllers must contend with other controller voices, speakers, bells and chimes, and sometimes, aircraft engine noise. Such noise may not be as intense, but it certainly isn't library quiet either.

With all the barriers and distraction that messages have to get through, it is so very important that the message be CLEAR, CONSISTENT, AND UNMISTAKABLE! There are times when people get the correct message because they are good "guessers." "I guess he/she said...." Once folks guess or assume...well, the outcome may not be what you assumed it would be! ■

PILOT SAFETY AWARD OF DISTINCTION

Lt Col Alan D. Ray, 147 FG, Ellington Field TX

Lt Col Ray was #2 of a 4-ship taxiing to end-of-runway (EOR) for a night intercept mission at Ellington Field. At the mid-point of the taxiway, his F-16 Falcon's left main brake began to fall apart and eventually caused the release of all System B, high pressure hydraulic which is the life blood of the Falcon's primary braking and nose wheel steering system. Taxiing along the highly congested UPS loading area, Col Ray realized he had lost his brakes. He switches from brake channel to channel 2. He then turns the anti-skid off and finally cycles the parking brake. None of these actions have any effect on slowing or stopping his F-16. While still believing steering control is available, a plan agreed upon with the flight lead is relayed to the Control Tower. The plan is to continue taxiing the now crippled Falcon onto the active runway and engage the approach-end cable with the F-16's tail hook. Col Ray, maintaining steering which is now becoming sluggish, manages to avoid two F-16 squadron mates holding in EOR. Once past these F-16s, he tries to turn onto the runway. By now, unknown to the pilot, all System B hydraulics have bled from the F-16; and the ability to slow, stop, or even steer this injured aircraft is gone. Unable to turn the Falcon and with runway departure imminent, Col Ray turns the throttle to Off, and his injured bird-of-prey departs the prepared surface. His stricken F-16 continues into the mud, collapses the nose gear, and finally comes to a rest on the centerline tank.

CREW CHIEF EXCELLENCE AWARD

SSgt Charles B. Sheaves, 74 FS, 23 WG, Pope AFB NC

Although it was not his regular jet, Staff Sergeant Sheaves was tasked with recovering an F-16 aircraft. During a normal post flight inspection, Sergeant Sheaves noticed a tiny deformation on the top of the forward rudder seal (actually attached to the vertical stabilizer). Even though this small flaw looked relatively harmless, he took the initiative to request stands and conducted a detailed inspection of the affected area. Upon removal of the forward and aft rudder seal panels, the cause of the deformation was brought to light. Severe buckling of the rear rudder seal had occurred due to an improper rudder seal panel being installed. Further examination showed that the buckled rear seal had also caused a severe failure of the left nut plate channel on the rudder. This channel had cracked a distance of 10 inches. Had Sergeant Sheaves not identified or pursued his discovery, it is very possible that this crack could have led to a flight control failure or the departure of the rudder from the aircraft. As a direct result of Sergeant Sheaves attention to detail and professionalism, a future catastrophic mishap has been prevented.

FLIGHTLINE SAFETY AWARD OF DISTINCTION

Capt David M. Fuqua, Sgt Mark D. Matheson, 56 RQS, 85 WG, Keflavik NAS Iceland

The HEED bottle is a source of emergency air used to assist in the underwater escape of the aircrew from a crashed and sinking helicopter. Using AF tech orders, Sgt Matheson discovered the regulators on these bottles should not be used below 55 degrees Fahrenheit. This is unacceptable in our subarctic environment. Sgt Matheson and Capt Fuqua coordinated with 56 RSQ/SE, Life Support, the pararescue section, and the Naval Facility and conducted a test on HEED bottles. Ten bottles were placed in 30 degree Fahrenheit ambient air. Six bottles began leaking air immediately. The other four bottles leaked air profusely when placed in 34 degree ocean water. Capt Fuqua consulted with the local Navy EOD Team and the HEED bottle manufacturers and confirmed that the regulators would freeze open at 48 degrees. Capt Fuqua determined the bottles to be unsafe and over water operations were limited until a solution was found. The manufacturer had a part made from a different material which had been tested to 45 degrees and was certified to 30 degrees. Capt Fuqua coordinated with Navy EOD specialists, received training, and performed the modification. Navy technical material is now being used as a guide to write changes to the AF tech orders. A message was sent to all AF units using this item warning them of the hazard.

GROUND SAFETY INDIVIDUAL AWARD OF DISTINCTION

MSgt John Kendall, 55 MS, 55 WG, Offutt AFB NE

MSgt Kendall is a highly motivated, dedicated Unit Safety Representative whose deep desire to "do the job right" created a voracious appetite to learn all he could about safety requirements for his squadron. He also became extremely knowledgeable in hazard communication and environmental compliance, thus further aiding his commander and squadron personnel. Developed of a monthly safety newsletter provided valuable information and training to squadron members. Well written with photos and artwork, to include a bit of Offutt history, the newsletter informed squadron members about maintenance safety issues. Sgt Kendall worked effortlessly to ensure maintenance squadron shops developed outstanding AF Form 55 briefing guides inclusive of all mandatory requirements as well as shop specific needs. These briefing guides set the Offutt standard and are disseminated by the Wing Safety office as excellent examples of job safety training. Hand selected to be a member of a tiger team developed to find ways to reduce ground mishap rates at Offutt, Sgt Kendall's participation precipitated development of two quality improvement teams geared toward reduction of sports and home/domestic injuries which result in 60% of lost time injury rates.

WEAPONS SAFETY AWARD OF DISTINCTION

SSgt Benjamin C. Logue, Jr., SSgt Alan D. Steffers, A1C John C. Schwenneker, 388 MS, 388 FW, Hill AFB UT

A few months ago, Staff Sergeant Alan Steffers and Airman First Class John Schwenneker were performing an inspection on a MHU-141/M Munitions Handling Trailer. Airman Schwenneker was inspecting the left rear brake assembly when he noticed the lining on the brake pad was crushed. He immediately notified the crew chief, Sergeant Steffers. Sergeant Steffers discovered that improper sized pads were installed, so he notified Sergeant Logue and recommended a 100 percent inspection be accomplished on all 388th Fighter Wing trailers. Sergeant Logue discovered a manufacturer discrepancy in the standard packaging of the brake shoes. He submitted a PQDR on the brake shoes and immediately notified the item manager of a possible Air Force-wide packaging error. Sergeants Logue, Steffers and Airman Schwenneker's attention to detail and expediency in correcting the error were key factors in the elimination of catastrophic brake failures throughout the Air Force.

UNIT SAFETY AWARD OF DISTINCTION

Detachment 7, 79th TEG, Cannon AFB NM

Commander emphasis and motivated personnel make safety an inherent part of the way Det 7 does business. The detachment's 3 pilots and 3 Electronic Warfare Officers fly an average of 144 sorties a year and are supported by 4 officers and 10 enlisted personnel. In addition to conducting operational test and evaluation of EF-111A systems and tactics, Det 7 also supports major DOD test projects requiring operational EF-111A jamming. For the past 16 years, Det 7 has maintained an incredible safety record of zero reportable mishaps, despite a heavy deployment schedule. In the past two and one half years, Det 7 has participated in more than 30 major tests, requiring a majority of the unit to deploy over 18 times. Result— more than 50% of all detachment sorties were flown away from home station at "strange field" locations. During this time frame, detachment personnel moved unit operations on short notice from Mountain Home AFB to Cannon AFB. These events highlight the unit's proactive ground and flight safety programs. Each test deployment is conducted in the safest manner possible. Active "We Care...," designated driver, annual training programs, as well as biweekly safety briefings, ensure safety vigilance is maintained at home station or deployed, on and off duty.

AIRCREW SAFETY AWARD OF DISTINCTION

Lt Col Dexter Griffin, Capt Eric Vogt, Capt Marty Balus
MSgt Eric E. Eckman, MSgt Jerry Wright, TSgt Rik Whitaker
TSgt Mark Cervantez, TSgt Mike Cuccaro
Det 1, 605 TESTS, Seattle WA
Capt Dave Raymo, TSgt Douglas Mace
552 ACW, Tinker AFB OK
Lt Col Robert Congelli, Lt Col Steve Horton, Maj Henry Leal
Capt Andy Beaudoin, Capt Kenneth Bryant, Capt Michael Cribbs
Capt Jack Jibilian, Capt Mike Kirst
HQ ESC, Seattle WA

While returning home following an exhaustive 5 day deployment that included two static displays and three extensive operational assessment flights of the AWACS Radar System Improvement Program, the AWACS Joint Test Force mission crew encountered a civilian aircraft emergency. The pilot of Test System-3 informed the crew that a civilian aircraft was in distress and transmitting on an emergency very high frequency (VHF) channel. Our Mission Crew Commander immediately took charge of the situation and began orchestrating an emergency response. The computer and Radar operators had their systems down for maintenance checks but quickly began bringing them up to full operation. In the meantime, our Radio Operator and Communications Technician immediately tuned in and monitored the emergency frequency. The pilot of N6288P, a PA-24-250 Piper Commanche, said he had inadvertently gone into Instrument Meteorological Conditions, suffered wing damage from an impact with a tree, and become disoriented and lost. He told Great Falls Radio that he was climbing through 8,300 feet somewhere near Coppertown (VOR). When Great Falls Radio started to lose contact, our Communications Technician acted without hesitation and told Great Falls that we were an E-3 aircraft and could be of assistance. N6288P heard us loud and clear and sounded very relieved. We relayed a frequency change to N6288P for Salt Lake Center and tuned in to monitor and provide assistance as required. By this time, our crew had completed system initialization and quickly established an air picture. Salt Lake Center and N6288P established communications, and we informed them that our Air Surveillance Officer had Identification Friend or Foe/radar on the distressed aircraft. We relayed the exact position and altitude of N6288P, and Salt Lake Center recommended a VOR approach to Bert Mooney Airport at Butte, Montana, reading the procedures to the distressed pilot, who had taken off without charts, approach plates, or filing a flight plan and was circling in an area of temporary Visual Meteorological Conditions to gain altitude in the mountainous terrain. Our weapons Director quickly put the approach graphically on our radar scopes and informed Salt Lake Center that he could monitor N6288P and provide altitude and course corrections. Again, N6288P was very happy to know we were watching out for him. The weather was deteriorating (2,400 broken ceiling with visibility 15 miles in light snow); but with some assistance from us, N6288P was able to find the airport and safely land his damaged aircraft.

KEEP US ON TARGET

The Combat Edge mission is mishap prevention through safety education, recognition, and marketing. We are dedicated to providing everyone in the command with thought stimulating flight, weapons, and ground safety information so we can all learn from the pages of a magazine rather than painful personal experience or tragedy.

Quality, to us, is meeting the expectations of our customers in the products we provide them. In simplified terms, we supply a product (*The Combat Edge*) to you the customer (reader). We are totally focused on our product and our customers. We measure our outputs to determine how well we are satisfying our customers with our product. Customer satisfaction is not just a buzzword — it's a two-way street. It requires two parties, a customer and a supplier with separate but equally important responsibilities. To satisfy you, our customer, we must know what it is you need, want, and expect. You have to let us know your needs and desires so we can better serve you!

How can you do this? Complete a survey and forward it to us. We know you don't have much time to spare, but please take a few minutes from your busy schedule to fill out the survey form. We've included two forms in each copy of the magazine and encourage local reproduction so everyone can let us know what they think.

The survey includes some questions about you. We're not trying to invade your privacy; we just want to know more clearly who it is we're communicating with. With that information, we will be better able to tailor the magazine to your interests. Please, no names.

The rest of the survey lets you sound off to us. Tell us what you honestly think about the way we're doing our job. Don't worry about hurting our feelings; just be as honest and accurate as you can. When you're finished, fold and **TAPE** (no staples please) the survey so that the address shows. Send it to us through your official mail channels.

The upcoming September Safety Day would be a great opportunity to provide us with the information we need. Try incorporating the completion of our survey into your formal Safety Day plans. Safety offices and organizations could make the survey part of the Safety Day agenda. Have all of your people fill out a survey; then collect and mail them to us.

We will read each survey and consider your suggestions; after all, it really is your magazine. This is your chance to sit on our editorial board and have your opinions heard. Help us do a better job of serving you by keeping us on target.

Branch of Service/Agency _____ Rank _____ AFSC _____ Age _____ Sex: M F

Duty Status _____ Time in service _____ Education (highest level completed) _____

Job title/description _____

1. How often do you read this magazine?
   a. Very often (every issue)
   b. Often (most issues)
   c. Sometimes (some issues)
   d. Seldom (very few issues)
2. How do you normally obtain this magazine?
   a. Official USAF distribution (PDO)
   b. GPO subscription/direct mail
   c. Library
   d. Co-worker, associate, friend
   e. Other
3. How much of each issue of this magazine do you read?
   a. All
   b. Most
   c. About half
   d. Some
   e. A little
   f. Look at but seldom read
   g. None

4. List the following magazines in your order of preference for reading (which one would you read 1st, 2nd, etc.):
   a. **The Combat Edge** _____
   b. **Flying Safety** _____
   c. **Road & Rec** _____
   d. **Mobility Forum** _____
   e. **Approach** _____
   f. **TIG Brief** _____

   Why? _____

5. How soon do you see a copy of this magazine after it is published?
   a. One week or less
   b. One to three weeks
   c. Three weeks to a month
   d. A month or more
6. What magazines or newspapers do you regularly read?

We are interested in your assessment of ***The Combat Edge*** *magazine. When choosing an answer, write in the number corresponding to the extent you agree or disagree with each statement.*

Strongly Agree	***Agree***	***No Opinion***	***Disagree***	***Strongly Disagree***
1	***2***	***3***	***4***	***5***

7. **The Combat Edge** satisfactorily presents safety information.
8. **The Combat Edge** is as interesting as other publications I read.
9. **The Combat Edge** is as informative as other publications I read.
10. The level of reading in **The Combat Edge** should not be higher.
11. The articles in **The Combat Edge** are technically accurate.
12. Overall, the appearance of **The Combat Edge** is good.
13. Coverage of flight safety issues is adequate.
14. Coverage of ground safety issues is adequate.
15. Coverage of weapons safety issues is adequate.
16. The number of photos, illustrations and charts in **The Combat Edge** is sufficient.
17. **The Combat Edge** articles are informative.
18. **The Combat Edge** articles are interesting.
19. **The Combat Edge** magazine is useful to me personally.
20. Article topics are in tune with important trends.
21. **The Combat Edge** is an effective mishap prevention tool.

For the areas listed below, please rate each using the following scale:

Poor	***Fair***	***Satisfactory***	***Good***	***Excellent***
1	***2***	***3***	***4***	***5***

22. Covers
23. Layout (professional appearance)
24. Article quality
25. Photographs
26. Illustrations
27. Information value
28. Use of color
29. Thought provoking nature
30. Type (size and style)
31. General interest/entertainment value
32. Article thoroughness
33. Article variety
34. Awards coverage (number and frequency)
35. Award write-ups
36. Usefulness in my job
37. Timeliness of articles/issues
38. Accuracy
39. Usefulness in increasing professional expertise
40. Attractiveness
41. Overall value

42. Has a **Combat Edge** article ever saved your life or kept you from doing something dangerous? If so, briefly describe the situation.

43. How would you rate this magazine in comparison with other publications dealing with the same or similar subject matter?

a. The best
b. Better than most
c. Average
d. Worse than most
e. The worst
f. Don't know

Please tell us how you would improve **The Combat Edge**:

What kinds of articles should we print **more** of? **Less** of? **Additions**?

Other comments:

FOLD

C
U
T

FOLD

Official Business

Editor, The Combat Edge
HQ ACC/SEP
130 Andrews St Ste 301
Langley AFB VA 23665-2786

Branch of Service/Agency _____ Rank _____ AFSC _____ Age _____

Duty Status _____ Time in service _____ Education (highest level completed) Sex: M F

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Other comments:

FOLD

C
U
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FOLD

Official Business

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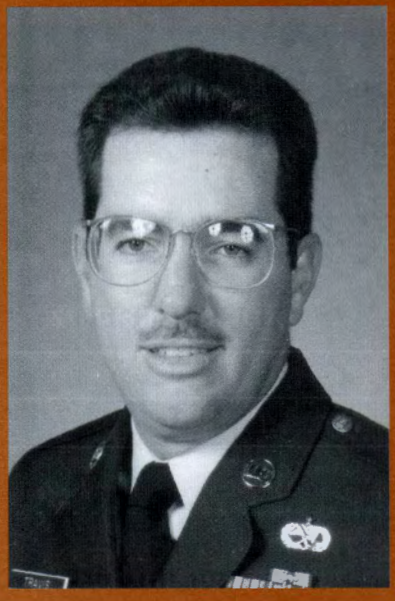
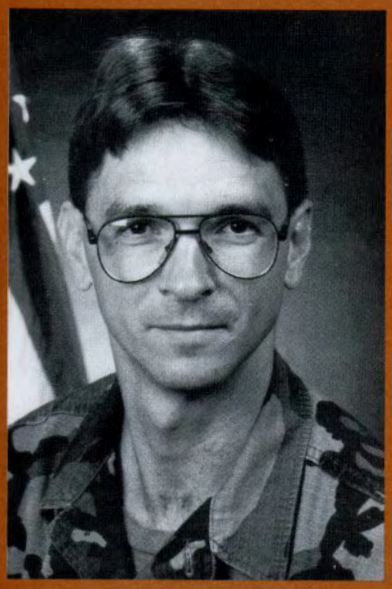
Ground Safety Award of the Quarter

Technical Sergeant Travis has set the benchmark for squadron safety programs. As the 727th Air Control Squadron (Test) representative, he ran a first-rate program which continues to epitomize Air Combat Command mishap prevention objectives. During the recent annual command safety inspection, his safety program received an overall "Outstanding" rating, and all programs met or exceeded ACC requirements. Documentation of job-safety training, hazardous communications program, lockout/tagout program, environmental program, and work center continuity books were reported as "best seen to date." This is the second year in a row that Sergeant Travis' safety program has received an overall "Outstanding" rating. Sergeant Travis disseminated a mammoth amount of educational safety material to each work center, guaranteeing safety considerations were incorporated in all on- and off-duty activities. Because of his energetic style and meticulous attention to detail, Sergeant Travis was hand-picked to assist the Ground Safety Manager at the USAF Air Warfare Center (USAFAWC). While there, he managed programs for ground safety that tracked all minor and major mishaps for over 2,000 personnel assigned to the USAFAWC. He performed weekly and monthly spot inspections on 20 individual units between two Air Force installations to identify unsafe conditions and hazards. He also reviewed safety management reports, identified trends, and distributed safety literature. Sergeant Travis was also handpicked to augment the USAFAWC's Ground Safety Team for 90 days. He continued to perform to the highest standards while working for the USAFAWC Ground Safety Team.



TSgt Travis D. Travis
727 ACS, 505 CCEG
Hurlburt Field FL

Weapons Safety Award of the Quarter



As squadron weapons safety NCO, Staff Sergeant Bottjen's dedication and attention to detail have been instrumental in maintaining one of the most successful and enviable weapons safety records within USAFAWC. Sergeant Bottjen personally briefs new and pertinent safety issues at all squadron meetings and commander calls. He established safety read files for those personnel TDY or not present at briefings. He performs spot-checks on all squadron work areas to ensure no safety hazards are present. He aggressively completed a thorough semi-annual safety self-assessment in a highly professional manner by working overtime and on weekends. These tireless efforts in no way hampered the accomplishment of his primary duties. Sergeant Bottjen maintains his safety book and file of safety-related items in top-notch condition and continually strives to update them with new and pertinent weapons safety information. He continuously maintains safety bulletin boards in three separate buildings, including one for deployed units. In January, during Air-to-Ground Weapon System Evaluation Program (A/G WSEP) 95-02, he oversaw the build-up and firing of 22 AGM-65 Maverick missiles. The entire operation, from build-up to weapons loading, was flawless and mishap free. During the first ever dual A/G WSEP performed at Eglin AFB, February - March 1995, he monitored activities and ensured that both deployments involving 17 aircraft and 175 personnel were mishap free. A total of 42 GBU-12D/B and 14 GBU-10E/B weapons were built, loaded, and expended during this highly successful, two unit evaluation session. His dedicated efforts were directly responsible for the "Outstanding" rating received for the weapons safety program during the USAFAWC annual unit safety inspection in March 1995.

SSgt Stanley G. Bottjen
86 FWS, 79 TEG
Eglin AFB FL

ACColades

QUESTIONS OR COMMENTS CONCERNING DATA ON THIS PAGE SHOULD BE ADDRESSED TO HQ ACC/SEF, DSN: 574-7031

	TOTAL			ACC			ANG			AFR		
	JUN	THRU JUN		JUN	THRU JUN		JUN	THRU JUN		JUN	THRU JUN	
		FY95	FY94		FY95	FY94		FY95	FY94		FY95	FY94
CLASS A MISHAPS	1	11	16	0	6	7	1	4	8	0	1	1
AIRCREW FATALITIES	1	10	8	0	2	6	1	2	2	0	6	0
* IN THE ENVELOPE EJECTIONS	1/0	9/0	13/1	0	7/0	4/0	1/0	2/0	9/1	0	0	0
* OUT OF ENVELOPE EJECTIONS	0	1/1	0/2	0	1/1	0/2	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 94	0	1.1	1.5	1.8	2.4	2.4	2.0	1.7	1.7	1.8	1.8	1.9
	FY 95	2.1	1.1	0.7	0.6	0.9	1.6	1.6	1.7	1.6			
8 AF	FY 94	0	0	0	0	0	0	0	0	0	0	0	0
	FY 95	0	0	0	0	1.8	1.5	1.3	1.1	1.0			
9 AF	FY 94	0	0	0	2.1	3.3	4.0	3.2	2.8	2.2	2.1	1.9	1.6
	FY 95	0	0	0	0	0	1.2	1.0	0.9	0.8			
12 AF	FY 94	0	0	2.0	1.6	1.3	1.1	.9	.8	1.4	2.0	2.4	3.1
	FY 95	6.5	3.3	2.3	1.7	1.4	1.2	2.0	2.6	2.4			
DRU	FY 94	0	14.9	8.6	6.7	11.2	9.5	7.9	7.0	6.3	5.7	5.3	4.6
	FY 95	0	0	0	0	0	5.3	3.7	3.5	3.3			
ANG	FY 94	0	1.9	2.6	2.2	2.7	3.7	3.2	3.4	3.5	4.0	3.6	3.3
	FY 95	0	0	0	0	0.8	0.7	0.6	1.0	1.4			
AFR	FY 94	0	0	0	0	0	0	0	0	0	1.4	1.3	1.3
	FY 95	0	0	0	0	0	0	0	1.3	1.2			
TOTAL	FY 94	0	1.2	1.7	1.8	2.3	2.7	2.1	2.1	2.2	2.4	2.3	2.3
	FY 95	1.3	0.7	0.4	0.3	0.8	1.1	1.1	1.5	1.4			
MONTH		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP

* (HOURS NOT AVAILABLE)

CheckList For Safe Boating

Reprinted with permission from the United States Coast Guard ***Consumer Fact Sheet***

BE EDUCATED AND PREPARED

The overwhelming majority of boat operators that have fatal accidents have never taken a safe boating course. Call the toll-free "Courseline" (1-800-336-2628) for information on courses available in your locality.

Carry all safety equipment required by federal and state law. Federal requirements are discussed in the pamphlet "Federal Requirements for Recreational boats," which you can get by writing to U.S. Coast Guard, Office of Navigation Safety & Waterway Services, Washington, DC 20593-0001. Your State Boating Law Administrator can tell you if your state has any additional requirements. As a minimum, the following are recommended:

- ✔ First-aid kit
- ✔ Manual pump or bailer
- ✔ Transistor radio
- ✔ Extra fuel
- ✔ Paddle or oar
- ✔ Anchor and line
- ✔ Drinking water

Have a Coast Guard Auxiliary Courtesy Marine Examination - a free inspection to see if you are complying with Federal and State safety requirements. The inspection is strictly confidential. Call the "Courseline" to contact a local courtesy examiner.

Familiarize yourself and your crew with distress signals and emergency procedures. Practice putting on Personal Flotation Devices (PFD's).

AVOID FIRES AND EXPLOSIONS

Refueling can be hazardous and even dangerous if safety precautions are not strictly observed:

- ✔ Handle volatile fuels carefully
- ✔ Check with your owner's manual for proper fuel and ventilation system maintenance
- ✔ Test and inspect for fuel leaks periodically
- ✔ Heed regulations concerning fire extinguishers and keep them in good condition
- ✔ Fill all portable tanks on dock
- ✔ Moor boat securely
- ✔ Extinguish cigarettes and all flames on boat and turn off all engines and electrical equipment
- ✔ Close all window and door openings in galley
- ✔ Keep hose nozzle grounded
- ✔ Wipe up all gasoline or oil spillage
- ✔ Keep fire extinguisher handy
- ✔ Ventilate engine and fuel compartment and check for fumes and gas odors
- ✔ Use your bilge blower for at least 4 minutes before starting an inboard engine

BEFORE GETTING UNDERWAY

Leave a float plan with someone. Figure 1 is an example of a float plan that can be used to let responsible people know when you depart, where you're going, and when you expect to return.

Distribute weight properly, especially if you have a small boat. Do not overload. Follow the limit on the capacity plate. Load low and spread the load around.

WHILE UNDERWAY

Be especially careful if you have a small boat (a boat 20 feet or under). The overwhelming majority of capsizings occur on small boats because of sudden weight shifts. Any small boat can be "tippy."

The Coast Guard recommends that PFD's be worn by children and non-swimmers at all times. Everyone should wear them if conditions become hazardous. The most common cause of boating accident deaths is drowning and hypothermia — situations where the victim might have survived by wearing a PFD.

Do not operate a boat if intoxicated, fatigued, or stressed. These human factors cause over 50 percent of all boating accidents. Remember that reaction time is much slower after being out in the marine environment for a few hours.

Keep a good lookout. Failure to do so causes most collisions. You need a second person to act as lookout if towing a skier.

Travel at safe speeds. Give swimmers, skiers and divers a wide berth.

Obey State and Federal laws, local laws and "Rules of the Road."

Respect bad weather. Try to get to shore if the weather turns bad. NOAA weather is heard on radios with a "weather band" or on special weather radios on high-band FM frequencies 162.4 to 162.55 MHz. Some weather radios turn on automatically if a warning is broadcast. You can get a list of weather radio manufacturers by writing to: National Weather Service (Attn: W/OM 15X2), NOAA, Silver Spring MD 20910. You can also get the National Weather Service boating forecast phone number from information.

IF YOU GET INTO TROUBLE

Radio for help. Use the emergency VHF channel 16 (156.8 MHz) if in trouble. The Coast Guard also monitors CB channel 9 whenever resources permit monitoring; VHF channel 16 is monitored constantly.

Everyone should wear PFD's if conditions become hazardous.

In most capsizings, chances of survival and being found are better if you stay with the boat (even if you are a good swimmer). In cold water, climb onto a capsized boat or huddle together to prevent hypothermia. ■

FLOAT PLAN

Complete this page before going boating and leave it with a reliable person who can be depended upon to notify the Coast Guard, or other rescue organizations should you not return as scheuled. Do not file this plan with the Coast Guard!

1. Name of person reporting and telephone number _____

2. Description of boat. Type _____ Color _____
   Trim _____ Registration No. _____
   Length _____ Name _____ Make _____
   Other Info _____

3. Persons aboard _____

Name	Age	Address & Tele No
_____	___	_____
_____	___	_____
_____	___	_____

4. Engine type _____ HP _____
   No of engines _____ Fuel Capacity _____

5. Survival Equipment (check/circle as appropriate)
   PFDs _____ Flares _____ Mirror _____
   Smoke signals _____ Flashlight _____
   Food _____ Paddles _____ Water _____
   Anchor _____ Raft or Dinghy _____
   EPIRB _____ Other _____

6. Radio (yes/no) Type _____ Freqs _____

7. Trip expectations. Leave at _____ (time)
   From _____ Going to _____
   Expect to return by _____ (time) and in no event later than _____

8. Any other pertinent info _____

9. Automobile license _____ Type _____
   Trailer license _____ Color and make of auto _____
   Where parked _____

10. If not returned by _____ (time) call the Coast Guard or _____ (local authority)
    Telephone numbers _____
    _____
    _____

TRANSITIO

LIGHT IR

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Walter D. Miller

Transitioning to a new airplane provides an ideal time to examine the assumptions we make about flying. This article proposes a systematic way of doing that and suggests that "heavy iron" pilots closely examine their assumptions when they move down to the "light iron" of general aviation.

Failure to examine assumptions can result in perpetuating old habit patterns and concepts that may not be appropriate to a different kind of flying situation and which actually can provide bad input to the cockpit decision-making process. "Evaluated" experience, however, can serve as a springboard for continued, or even improved performance.

Although the method applies equally well to pilots moving "up" to larger or higher-performance aircraft, failure to check out your assumptions about flying can result in big-time trouble when transitioning to general aviation flying

WING TO ZON

after a lot of experience in more capable and complex aircraft.

There is no doubt that spontaneous, on-the-spot cockpit decisions are significantly affected by previous experience, because experience colors a pilot's perception of the current situation, be it a routine procedure, an abnormality or an emergency.

So, the more experience a pilot has, the better. Right? Maybe not. It all depends on the kind of experience you're talking about—and what you do with it. The "right" kind of experience, used as a screen to filter current requirements ahead of time, is worth its weight in gold, but "unevaluated" experience could end up hurting more than it helps.

Recent research into the decision-making performance of "expert" pilots over a 15-year period concluded that "experience can interfere with the perception of a situation and provide negative reinforcement for later use in bad decision-making." The report also said that "intuitive performance is based upon experience, the cues and context of the situation, and the expert's ability to identify causal relationships in a situation."

As we'll discuss later, there are many different kinds of flying, and the differences can get you into trouble if you don't think about them and adjust as appropriate when transitioning into other airplanes.

On the Record

To gain more insight into this subject, we asked the NTSB for a sample of general aviation aircraft accidents involving pilots with 10,000 or more hours.

The Safety Board responded with a printout of 11 accidents from 1984 through 1992 that met our criteria.

The average flying experience of the 11 pilots was 16,860 hours, and the reports indicated that their most recent BFRs were completed in such aircraft as the B-747, B-727, DC-10 and DC-9. Ten of the pilots were ATPs, and three were CFIs.

There appears to be no shortage of "experience" among these pilots. But, what's especially revealing to our investigation is that their average flying time in the light airplanes in which they crashed was only 4.67 hours!

Experience, if not used as a teacher, can kill. There were 8 fatalities among the 11 accidents noted above. If a pilot is not used to, or never has experienced an inherent shortage of engine power, for instance, it might be inconceivable that an airplane could be underpowered on a hot summer day.

All of the accidents happened in VMC (visual meteorological conditions). Weather was not a factor in *any* of the accidents.

Most of the accidents involved loss of control of one kind or another and lack of familiarity with the aircraft being flown. Two accidents resulted from poor preflights of the airplanes. (The preflight is something normally done by "someone else" in the airline scenario.) In one of these accidents, control surface baffles were left in place. In the other, the tailwheel oleo strut was inadequately serviced, preventing exercise of directional control on takeoff.

Experience, if not used as a teacher, can kill. There were 8 fatalities among the 11 accidents noted above. If a pilot is not used to, or never has experienced an inherent shortage of engine power, for instance, it might be inconceivable that an airplane could be underpowered on a hot summer day.

I remember checking out an SR-71 pilot in a Cessna 172. He was, of course, a superior pilot. He had a commercial license obtained through military competency testing permitted by FAR 61, but he had only a few hours in "little" airplanes. He had to study hard during his transition to the 172.

His experience wasn't much different from the Boeing 727 captain who was surprised to learn that the manufacturer of the "light twin" into which he was transitioning is not required to certify that the airplane will maintain level flight after an engine failure—much less be able to climb. That notion was totally foreign to him.

He flew the line with a major US carrier and had also commanded a Naval Reserve supersonic fighter squadron, but he had minimal experience in "little airplanes." After finding that the "VFR environment" took a little getting used to, he is now enjoying being a general aviation CFII (Certified Flight Instructor Instruments). And, he's passing along a lot of good perceptions to his students.

Once these pilots had done the headwork and preparation required, their transitions to general aviation were smooth, professional and rewarding.

While these examples may seem to be airplane-oriented, they aren't. They are problems of pilot experience—experience that can get in your way when transitioning to little airplanes, if you allow it to do so! "Evaluated" experience, on the other hand, can be invaluable.

Transition Management

The secret is to manage your own transition much as you would a "company" transition.

Within the framework of the military, airline, corporate aviation flight department and formal commercial training programs, the transition to different equipment is a tightly planned, formally prescribed and controlled process. No problem. A "safe" outcome is relatively assured.

The transition from high-performance, heavy

machines to typical general aviation sport or utility aircraft, however, usually has no such formality. Here, use of the "aeronautical decision-making" (ADM) model can be helpful. ADM proposes three ingredients in decision-making: the pilot, the aircraft and the environment. I would add a fourth: the situation, which is the result of the relationship among the other three factors at a given time and point.

The ADM format can serve as an effective, convenient and helpful model for transition of experienced fast-mover and heavy-iron pilots to smaller, less complex, less capable general aviation aircraft.

It is important to realize that the real challenge in a GA transition is *not* just the new equipment. It is quite different from a formal "company" transition within an established training "system" and in which only the airplane make and model change. The real challenge is in developing your own personal checkout plan that will ensure that you will be just as good a general aviation pilot as you were (or are) in whatever high-performance or large aircraft you've flown.

You would not consider opening a new business without formulating a business plan or flying a complicated route without a flight plan. Why even think about transitioning to a new airplane and environment without a solid, well-coordinated plan?

The keys to success, then, are forethought, evaluation and planning. Effective transition to smaller airplanes is *not* just a "hands" problem; it is a "head" problem...and it is certainly no less challenging than moving up to the "heavy iron."

Big Differences

The message here is *not* that large-airplane drivers make bad general aviation pilots. It is that successful transitions require thought (which must include a very careful assessment of the differences between former and current—perhaps even concurrent—kinds of flying) and a vigilant attitude that *nothing* can be taken for granted, even in the simplest of machines.

At the risk of oversimplifying, it is important to clearly understand that there are several distinctly different kinds of flying. General aviation, airline, corporate and military flying are all very different animals. Even *within* what is called "general aviation," the diversity is surprising. Although there are many similarities, differing prior experience, equipment, "culture," mission, etc., can cause real problems if you allow them to do so.

An unfortunate lesson is that "If you haven't been there, sometimes it's hard to know what you don't know." Most pilots who have made the transition to GA will agree that there was a lot to learn and that they did not realize this fact before they got started.

A good way to approach this diversity as you begin a new kind of flying is to assess four factors—three from the ADM model and the "what if" factor of "situation." The factors, once again, are: yourself, your airplane, your new flying environment and possible scenarios which your judgment tells you could result from your experience.

The ADM format can serve as an effective, convenient and helpful model for transition of experienced fast-mover and heavy-iron pilots to smaller, less complex, less capable general aviation aircraft.

Start with a thorough, honest "audit" of these factors as they relate to your flying, both past and future. It's interesting homework, and you may find that it's also hard work. Think about yourself as a pilot, what you've done, how you've done it, the equipment you've used, the environment you've operated in, the situations you've gotten yourself into, how they could have been avoided, the ones that would have been deadly alone in a single-engine airplane.

What kind of pilot are you? Answering "good" or

"bad" won't do much good, unfortunately. Ask yourself what you do well. What has gotten you into trouble, or could be improved? What do you like to do? Dislike? What do you always forget to do until almost too late? Do you follow the checklist? Will you follow it without someone else to read it to you? How will you feel flying alone?

Will an anxious or antagonistic passenger or family member 12 inches away from you as you are approaching minimums on a dark night affect your instrument flying? What are your biases? What do you avoid doing? What kinds of decisions do you make? You can come up with the right questions if you are willing to expend some thought.

We'd like to think that most experienced pilots are beyond this kind of simplistic "shopping list" characterization, but some of the accident scenarios discussed indicated the influence of hazardous attitudes.

Self-Assessment

It might be useful, also, to think about situations which might cause you to fall prey to one or more of the "hazardous thought patterns" identified some years ago: anti-authority ("Don't tell me!"); impulsivity ("Do something, quickly!"); invulnerability ("It won't happen to me!"); macho ("No sweat, I can do it!"); and resignation ("What's the use?").

We'd like to think that most experienced pilots are beyond this kind of simplistic "shopping list" characterization, but some of the accident scenarios in the sample discussed above indicated the influence of hazardous attitudes.

For instance, was the B-727 pilot who lost control of the Stinson 108 suffering from a little "macho" when he decided to go ahead and fly when the plan was just to practice taxiing? Even though he had 21,800 hours, his instructor had noted just the day before that the pilot "could not takeoff or land the aircraft without assistance." Evidently, the pilot thought he could.

In another case, five people died in a Beech Duke when the 25,130-hour pilot attempted to turn back at 300 feet AGL after erratic engine sounds were noted on takeoff. The report said the pilot had "stated to a witness that he had not done single-engine operation in the aircraft." If not, why would he carry four passengers? Could "invulnerability" have affected his judgment?

For more information on this subject, check out FAA Safety Pamphlet 8740-53, "Introduction to Pilot Judgment." It contains an extensive rundown on pilot judgment with excellent comment on decision-making, stress and how these combine with experience, skill and knowledge to affect cockpit performance. It's worth looking at in the process of self-assessment. You should be able to get a copy of the pamphlet from any FAA field office.

I've seen some of the "anti-authority" attitude exhibited by seasoned pilots so anxious to demonstrate their expertise during transition training that they wouldn't let their instructors get a word in edgewise.

If your instructor looks young enough to be a grandchild, think twice before regaling him or her with tales of derring-do. Ask yourself, "If I know so much, what am I paying this instructor for?" He or she can teach you something. In fact, it might be they're worth much more than what you pay them.

You get the picture. We are talking about "personality issues" and how they can strongly influence the outcome of your transition. None of these kinds of attitudes passes muster if you really want to "do it right." A thorough self-evaluation of your pilot abilities and attitudes can point you in the right direction quicker than anything else. Try it. Start with 8740-53.

Learning the Airplane

Beyond self-assessment, learning the airplane you are about to fly is crucial to a successful transition.

After several thousand hours of flying, I decided to

learn to fly a sailplane. I was already an ATP, multi-rated instructor, type-rated in the B-737, combat-experienced, etc. Gliders helped me to learn a little about what basic flying was really all about—and there was a lot to learn. En route to my glider instructor rating, I had to try very hard to not let previous power experience get in my way.

In our sample of accidents, there was a glider pilot who overshot the runway on landing. He was unaware that a button on the control wheel needed to be depressed before the spoilers would work. In his report, the 12,447-hour pilot admitted that "understanding cockpit controls, especially differences from model to model" might have prevented the accident.

A pilot, whose last BFR was in a B-747, lost control of his Cessna 182 while trying to land it on a turf field. He had once owned a Cessna 180 and had forgotten that the 182 is *not* a tail dragger.

Unfamiliarity with even the most simple airplane can get you into trouble. So, get into the books, check out the performance section of the pilot's operating handbook (POH) and get a feel for what you are dealing with. A habit pattern that is successful in your B-737, F-15 or Gulfstream III may prove dangerous in a less-capable airplane. Think about differences and do something about them.

Think about how equipment will affect the flying you anticipate doing. Review your new checklist—and the one you have been using in your "old" airplane—to ensure that you aren't an accident waiting to happen. Just as in the self-evaluation, it's work—but it's worth it.

New Environment

The instrument proficiency of most airline captains with whom I fly is impressive, particularly after they get the hang of flying on "emergency instruments."

That's what most GA airplanes have, when compared with most airlines. There's likely no HSI or RMI, a marginal ADF and an unreliable or nonexistent autopilot.

Knowledge of the VFR world is usually lacking, but concentrated study of FAR Part 91 and the AIM can remedy that rather quickly.

Once the headwork is done and the captain understands how little there is to work with in the typical GA cockpit, compared with his or her previous "life," things smooth out drastically and the flying gets to be solid as a rock. Most pilots find that "an ounce of book work is worth a pound of 'boring holes'" trying to learn something you haven't studied.

A little preflight thought as part of a comprehensive audit can probably save money, will definitely save time and most assuredly will result in higher GA proficiency.

Returning to the pattern at an uncontrolled airport where there are no navaids, no first officer, nothing but a nondirectional beacon (down for maintenance) and a segmented circle, it's sometimes a "brave new world"—interesting, to say the least. Most pilots who have been living on a steady diet of "vectors to the marker" must refresh their knowledge of AIM procedures.

Likewise, when your only reasonable method of navigation is pilotage, it pays to know how to read the latest sectional. And, when you drop into the flight service station at Podunk Field and there's nobody around to help you read the weather charts, it pays to know what "the books" say.

Unfamiliarity with even the most simple airplane can get you into trouble. So, get into the books, check out the performance section of the pilot's operating handbook (POH) and get a feel for what you are dealing with.

It also pays to know how long you have to insert yourself into the IFR structure after you've filed by phone (mounted on a telephone pole near the access road) when the weather's at minimums and the wind's blowing at the maximum demonstrated crosswind value listed in the POH.

The name of the "environment game," therefore, is to get into the books: the *Airman's Information Manual*, FAR Parts 61 and 91, and *Aviation Weather Services* (AC 00-45C). Know current ATC procedures and the instrument procedures cold. You'll also need to check out the *Flight Training Handbook* (AC 61-21A) to learn about all those FAA procedures you seem never to have heard of. (Even with a few thousand hours of military flying under my belt, until I started flying GA airplanes, I'd never even heard of Vy, Vs, Vyse, Va and a few others!)

The point is that the "environment" is different. One problem I've found with pilots used to flying in a radar environment is poor scanning—*outside* of the cockpit. If you've spent the last 20 years looking at high-altitude IFR charts, flight directors, steering bars and radio altimeters, it takes a little deliberate effort to get your eyes out of the cockpit—and to keep them there!

In most general aviation situations, you will preflight your own airplane, compute your own weight and balance, do your own flight plan and file it. The GA environment is different, but you'll like it once you have studied and professionally adapted to it.

Preparation Pays

After all of this hard work, try to evaluate how your personality and predispositions, the aircraft and the GA environment can get you into trouble. Imagine various scenarios to provide yourself with the benefit of forethought.

An ounce of preparation will be worth a pound of superior airmanship when it comes to tackling mountain-flying or high density altitudes in aircraft with much less power than you're accustomed to, or flying "hard" IFR with limited avionics. Think about all of this well ahead of time, and you'll be ready to transition professionally.

Once you've done your headwork, talk to knowledgeable friends. Do more research, if necessary. Run through the analyses several times to verify what you think you'll need to work on, know, modify, be careful of, etc. Then, you'll be ready to develop a solid checkout plan with a good flight instructor who knows your background, your goals and your constraints (time, money, equipment, background, etc.).

Preferably, your flight instructor will have a similar background to yours and be highly regarded in the GA community. Pick an instructor with whom you can philosophically

agree on a transition scheme. Select one who will keep your progress uppermost in his or her mind, one who will work the agreed plan with you and will demand that you both achieve your goals during transition.

Get with the CFI you have selected and develop a definite but flexible plan for your transition. Above all, both of you should agree on the requirements you must satisfy. If you already have a commercial license for single-engine land airplanes, perhaps your goal might be to "feel good" in the light airplane you have chosen to fly or to conform with the PTS (Practical Test Standards) so you could pass an FAA check ride in the airplane (though that won't be required, since you already have your license). Perhaps, you just want to satisfy the FBO's rental insurance requirements.

It's important to know what the goals are, so everyone will understand when your check-out will be complete. Jointly set priorities. Reserve time. Have objectives. Get feedback. Work at achieving specific progress for every flight—whether the program is three flights long or a full, mini-rating syllabus.

The Bottom Line

After you've done the required evaluations, analyzed the requirements, selected a compatible instructor and planned a program which will lead to the accomplishment of your objectives, it's time to "do it."

You've done it all before—using somebody else's syllabus. Now, use your own. When it's all over, ask yourself these questions:

1. Do I understand what kind of pilot I am and how my skills match the kind of flying I want to do? Has my training helped me to acquire the new skills I need, and am I careful about old habits?

2. Do I understand my new aircraft, its systems, procedures and limitations?

3. Do I understand my new flying environment? Can I use it to my advantage to fly efficiently, enjoyably and safely? Have I prepared myself adequately for unexpected circumstances?

Lastly (with tongue-in-cheek), ask yourself, "Can I use my superb preparation to avoid situations in which I would have to exercise my superb flying skills to save my neck?"

Knowing yourself, your airplane, your environment and potential situations to avoid because they play to your inadequacies (we all have them) will go a long way toward sound decision-making in the cockpit. There is no substitute for planning and preparation.

When the time comes, you'll be up to whatever challenge is presented by your new world. "Differences" really can make a difference, and it pays to assess and account for them ahead of time.

If you can answer yes to all of the above questions, you've had a successful transition and will probably be able to handle the "little stuff" OK. But, don't ever take it for granted. ■