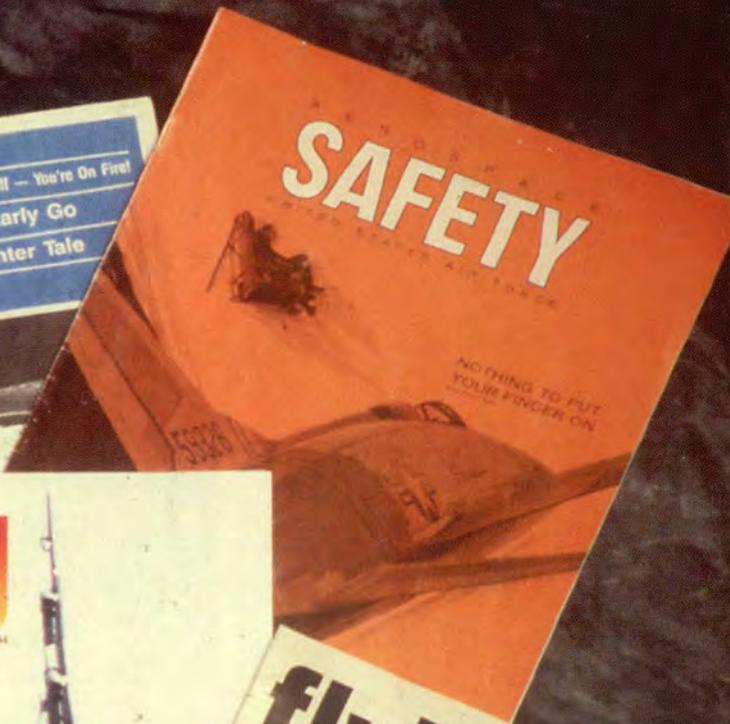


December 1995

Flying SAFETY



The Best
Stories
in Safety



■ The Cold War is over, downsizing is almost complete, turbulence created by external and internal changes are stabilizing — all good news. However, this progress has not occurred without cost: a rise in hot spots around the globe, increased operations requirements, and increasingly scarce resources. The outlook for future demands on our personnel and equipment remains high. So, what does all this mean to you? The answer is simple: a personal challenge to “Take Stock in America” and accept the challenge to improve yourself and your Air Force. Take the offer and buy-in to your future — “Invest in Yourself.”

As members of the Total Force — officers, enlisted, and civilians — we are all responsible for preserving our resources and accomplishing the mission. To sustain mission success each of you must display the integrity to examine yourself and make an honest evaluation of what actions should be taken to improve your abilities to serve your country — always remembering the call to duty requires service before self. We all must take the time to develop within our culture “excellence in everything we do.”

Learning to use the new tools at your disposal will greatly assist your probability of success. Quality Air Force programs, risk management, crew resource management, human factors awareness, and lessons learned,

TAKE STOCK IN AMERICA INVEST IN YOURSELF

Major General James L. Hobson, Jr.
Commander, Air Force Special Operations Command

are all force multipliers placed in the right hands. Another force multiplier is sustained capability, before and after each mission. To that end, any mishap that cost a team member's life, destroys or damages any of our equipment, is unacceptable.

One of AFSOC's strategic goals is to Eliminate Command Mishaps to Maximize Mission Success — this is essential.

Most of our accidents happen for the same old reason — human error. These errors are not inevitable. Mishaps can be prevented and each of you can take positive actions toward lowering your risk. By just slowing down, remembering to maintain control, analyzing the situation/risk, and taking action to correct the problem, you can achieve lower risk. Improving judgment, communications, situational awareness, discipline, crew management, training, and leadership skills can all help prevent mishaps. Develop a safety culture in everything you do and the value of your stock will go up. Your ability to successfully complete the mission will be enhanced.

Your future, and the future of your fellow Air Force members, lies in your hands. Step up and accept personal responsibility for safety. As an investor in your future, you will be doing your part to ensure the Air Force is always capable of employing “The Right Force, in The Right Place, at The Right Time.” ■

Our 51st Year

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UNITED STATES AIR FORCE

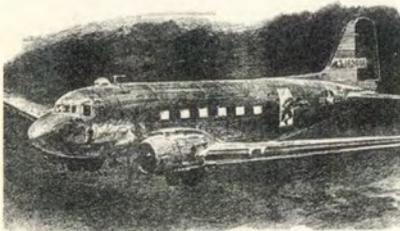
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Cover photo by MSgt Perry Heimer

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Commander, Air Force Special Operations Command

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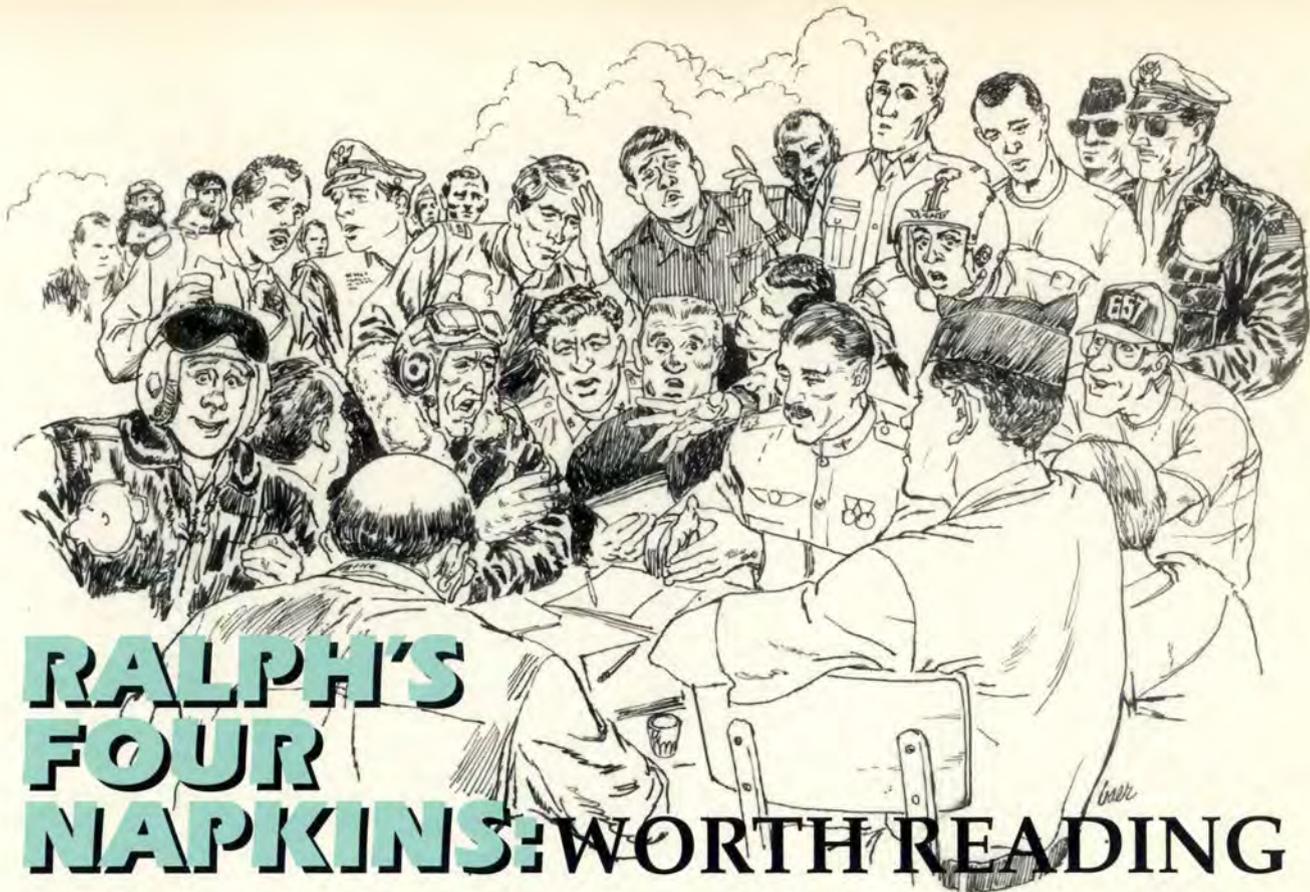
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CONTRIBUTIONS

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RALPH'S FOUR NAPKINS: WORTH READING

ROBERT R. SINGLETON
55 ARRS
Eglin AFB, Florida

■ Friday, 14 August, another night in the spirit world's "Aircrew Lounge." I slowly wound my way over to the giant screen TV. Tonight's show featured live coverage of in-processing at an aircrew training course. I don't think any of us watching were at all concerned with whether it was an Air Force, Navy, or Marine school, whether it was an F-18, C-130, or B-1 class, or whether those in-processing were pilots, navs, loads, or any other particular crew position. They were aircrew — that was enough for us.

I took a seat on the nearest empty stool and turned to Doug. He had been a C-130 loadmaster, and a good one. Without giving it much thought, I asked him, "Say, Doug, what would you tell them (nodding my head toward the TV screen) if you had the chance?"

"That's a good question, Robbie." He thought a minute and continued, "Whatever it was, I'd want to make sure it was the best piece of advice I could possibly offer. Being a spirit is nice, but no sense becoming one any earlier than necessary."

It didn't take long before a few of us had a real good discussion going. If there was one thing we'd pass on that would apply to all aircraft, all crew positions — what would it be?

Would we emphasize procedures? Would we emphasize systems knowledge, proper crew rest, the hazards of IMC and spatial disorientation, alcohol, or visual illusions, particular techniques, or tactics? The consensus was a negative to all the above. They were all either adequately covered in earth-bound guidance or not applicable to all aircraft or all crew positions.

Steve, an old C-130 nav, began to vent some frustration. "There is no way we can provide a one-liner to *all* aircraft, *all* crew positions. Those people have systems, technology, procedures, and missions we don't even know about. The only thing we have in common with them is people, and even they have changed. Any advice we might give would be outdated, obsolete."

"People." I had stopped listening after "people." Without knowing it, Steve had hit the nail on the head. What did *we* have in common? I looked about me — Doug, the C-130 load; Dale, the Eagle driver; Steve, the C-130 nav; JJ, the Marine pilot;

and Ralph, the H-60 driver. What did we have in common? People.

Every preflight, every flight, every postflight — every flight planning session, every debrief — *people*. We should tell them about people. But what to tell them? Steve had stated that the aircrews of today were somehow different, with a lot more technology and sophistication. "That might be true," I thought, "but regardless of aircraft or crew position, people are people — always have been, always will be."

A few of us retired to the bar, refilled our glasses, grabbed a napkin, and began jotting down ideas. Some early agreements came to the fore, a lot of it based on experience. After all, we were all spirits. How do you get to be a spirit? You die. A number of us had done so in airplanes. We knew what we were talking about.

The First Napkin

The napkin began to take on a life of its own . . .

■ Truth: Often the younger fliers knew something the older fliers didn't know.

■ Truth: Often the less experienced fliers knew something the more experienced fliers didn't know.

■ Truth: Often the copilot knew something the aircraft commander didn't know.

■ Truth: Often the navigator knew the aircraft systems answer that the flight engineer didn't know. Or the radio operator knew the flight procedure answer that the pilot didn't know.

■ Truth: Often the ground crew knew something the aircrew didn't know.

■ Truth: Often the HH-53 crews knew something the C-130 crew didn't know.

The Second Napkin

On to the second napkin for the "Findings..."

■ Finding: Often the one who knew the answer wasn't asked.

■ Finding: Often the one who knew the answer didn't speak up.

■ Finding: Often the one who knew the answer *did* speak up and wasn't listened to.

■ Finding: Often the one who knew the answer, who did speak up, who was listened to, was subsequently ignored.

■ Finding: Often if the one who knew the answer *had* been asked, if the one who knew the answer *had* spoken up, if the one who had spoken up *had* been listened to — the aircrew would have lived to fly again rather than scribbling on napkins in the Spirits' Aircrew Lounge.

The Third Napkin

It was time for the third napkin. We put the heading "Why" at the top of this one.

■ Why: People assume the older know, the younger should learn. Why ask the younger? Why listen to the younger?

■ Why: People assume the experienced know, the inexperienced should learn. Why ask the inexperienced? Why listen to the inexperienced?

■ Why: People assume qualification equals knowledge and judgment — the higher have it, the lower don't. Why ask the less qualified? Why listen to the less qualified?

■ Why: People assume knowledge is area specific. Why ask the radio operator a pilot question? Why listen when the radio operator gives a pilot answer? Why ask the

navigator an aircraft systems question? Why listen when the navigator gives an aircraft systems answer?

■ Why: People can be reluctant to speak up if younger, less experienced, possessed of lower crew qualification, or operating out of their area.

■ Why: People will *choose* to *not* listen, acknowledge, or act upon the thoughts of another crewmember.

Three napkins. The crowd was thinning. We topped off our glasses, kicked back, and reflected a while. We had all experienced each of these truths at one time or another. Each of us knew someone in the Spirits' Aircrew Lounge who had come to be here as a result of one of these truths. We had stumbled on something big. We could *feel* it.

The Fourth Napkin

The *last* napkin — *our* message to those folks on the TV screen — the *one* message we could give:

■ Make *no* assumptions regarding what the people around you can contribute.

■ If you *must* make an assumption regarding what the people around you can contribute, assume they have an unlimited potential to contribute in a positive manner.

■ Remain blind to age, experience, qualification, and area of expertise.

■ Focus on, and listen to, *what* is being said, *not* on *who* is saying it.

■ Know, and never forget, that *everyone* knows *something* about *everything*. They just may know the missing piece to your puzzle.

■ Know, and never forget, that while being a free-floating spirit may be nice, life is worth living. It is worth the moment to ask. It is worth the moment to listen.

■ Know, and never forget, that ego and pride can kill. The other person may be right, you may be wrong. The other person may know more than you. Accept it, be thankful, and learn from it.

■ In all your words and actions, demonstrate your belief in the above, *and live to fly again*. ■

Flying Safety reprint, Mar 88



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PURPOSE--Flying Safety is published monthly to promote aircraft mishap prevention. Facts, testimony, and conclusions of aircraft mishaps printed here-in may not be construed as incriminating under Article 31 of the Uniform Code of Military Justice. All names used in mishap stories are fictitious. The contents of this magazine are not directive and should not be construed as instructions, technical orders, or directives unless so stated. **SUBSCRIPTIONS**--For sale by the Superintendent of Documents, U.S. Government Printing Office (USGPO), Washington D.C. 20401; send changes in subscription mailings to the USGPO. Limited copies of back issues are available for official purposes. **REPRINTS**--Air Force organizations may reprint articles from Flying Safety without further authorization. Non-Air Force organizations must advise the Editor of the intended use of the material prior to reprinting. Such action will ensure complete accuracy of material amended in light of most recent developments. **DISTRIBUTION**--One copy for each three aircrew members and one copy for each six direct aircrew support and maintenance personnel. Air Force units must contact their base PDO to establish or change requirements.

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Who's responsible for that smoldering hulk — all that is left of a \$3 million airplane and three fine young men? Not the airman who failed to safety the hydraulic connection, or the staff sergeant supervisor who failed to catch this error on his supervisory inspection. Let's go back, way back to the start of the chain of events that eventually ended in this tragic climax. Yes, a long way back — slightly over 3 months, to be exact.

Remember the first indication during that morning staff meeting when the maintenance officer said, "Sir, I can't support this proposed flying schedule by Operations without sacrificing our high standards of quality maintenance and working the maintenance people overtime. I suggest we request relief from some of the missions ordered by higher headquarters or slow up on our own transition program."

While you were considering this comment and recommendation, the operations officer came in with, "This will only mean an increase from 35 hours per assigned aircraft to 40 hours per. I think maintenance can hack it. Besides, it will make us look good because we'll be OR a month earlier."

"Okay, Bill, we'll go ahead with it. Maintenance, keep me advised if you start going under."

The seed had been planted, and the race was on. A trend such as this, once started, gains momentum rapidly and is difficult to slow or reverse. Let's take a look now at the many *indicators* that all was not well with maintenance and that you might be headed for trouble if firm and intelligent balance was not established between maintenance and operations.

Let's look at these indicators chronologically. Some of them are so obvious, as we look back, you may wonder how you ever missed them.

First, the unscheduled overtime — remember how it increased?

Second, the unscheduled maintenance increased, as did late takeoffs. These two go hand in hand, don't they?

Third, the abort rate started to rise, and the mission accomplishment dropped off.

Fourth, about now, as I recall, we were dropping a few more gross error bombs.

Fifth, the NORS rate rose to the

point where you had to relax your always-firm policy and control of cannibalization.

Sixth, as we started to cannibalize to provide mission aircraft, our maintenance man-hours expended for cannibalization reduced the man-hours available for preventive maintenance, which resulted in write-ups being carried forward on the maintenance records until the aircraft entered periodic inspection.

Seventh, the man-hours required for periodic inspection increased which, in turn, fouled up the flow of aircraft to the periodic docks.

Eighth, the backlog of aircraft awaiting periodic inspection increased to an unacceptable point.

Ninth, morale of maintenance personnel took a rapid drop and consequently the quality of maintenance performed became substandard.

Tenth, the reenlistment rate of maintenance personnel became nil.

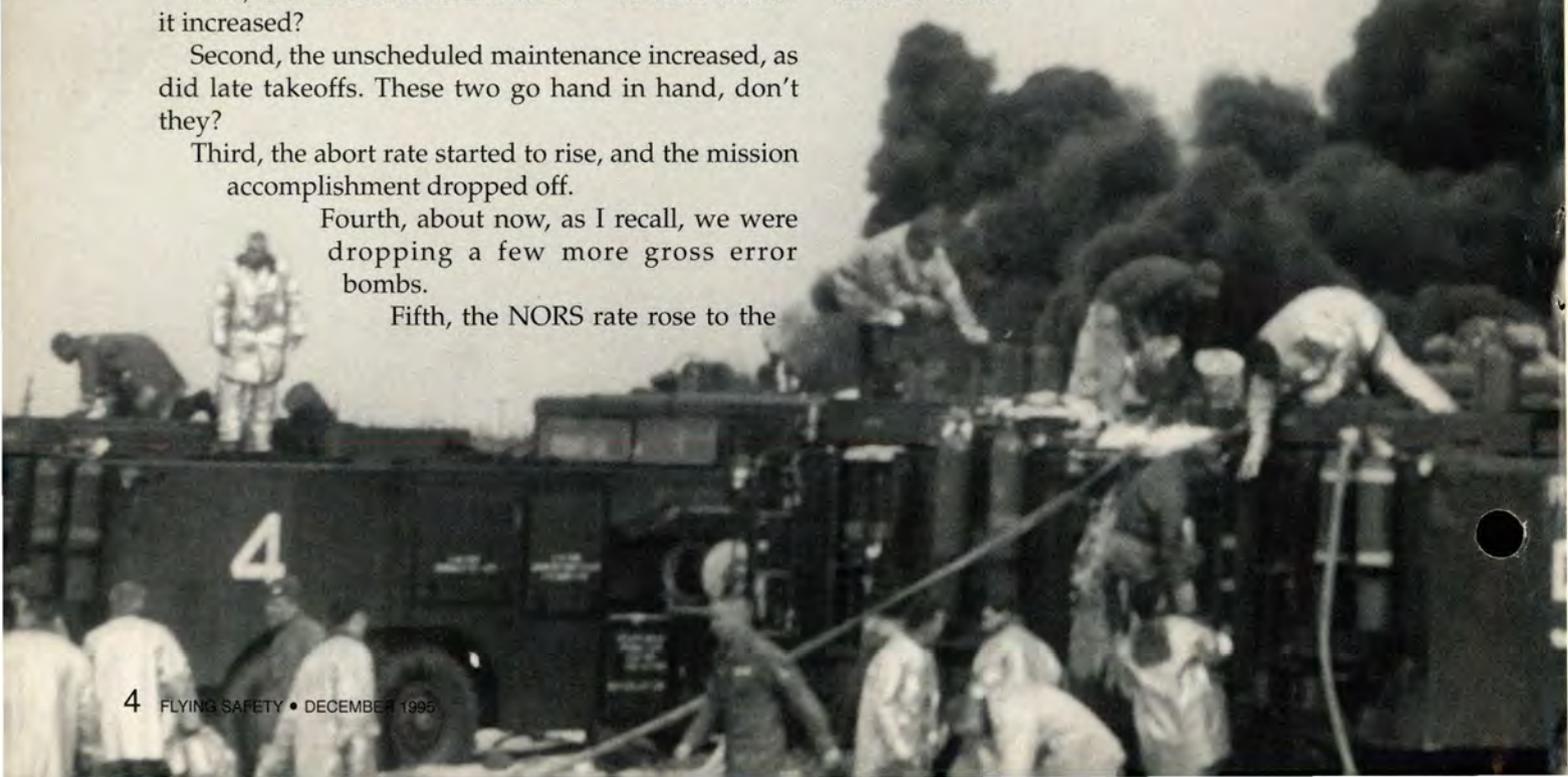
I'm sure that now you recognize all these indications that your maintenance was becoming ill. And now we are looking at the results. Hairy, isn't it? But was it really necessary?

These are but 10 indicators that you commanders can use in evaluating maintenance, but let's not stop with just these 10 major indicators. Let's look at some of the ways to assist maintenance before it gets sick.

■ Are you and your subordinate commanders personally reviewing quality control inspection reports?

■ Are key maintenance personnel at wing level familiar with primary mission aircraft and, if rated, required to maintain proficiency in them?

■ Are proper selections made of maintenance men for tech schools, or are "quota fillers" used?



■ Are pilots and other flightcrew personnel encouraged to accompany their aircraft through periodic maintenance when time permits?

■ Are maintenance and flight-crews encouraged to maintain friendly relationships, and do they understand each other's problems?

■ When a particularly successful operational mission is completed, are maintenance personnel given recognition for outstanding accomplishment as well as flightcrews?

■ Do you and your subordinate commanders devote as much time to maintenance and supply problems as to operational problems?

It is true every commander cannot be a skilled maintenance officer, even though this may be desirable. He can, however, by applying himself to the problem and supporting and working closely with his

maintenance officer, relieve him of a large portion of his burden.

A sound maintenance organization supported by the commander is the best insurance against the black smoking hole, the Form 711, and the task of breaking the news to the next of kin. ■

Who's Responsible ?

That's a question usually asked only when something has gone wrong. But it's a valid question, not necessarily for the purpose of fixing blame, but more importantly, to establish the means of prevention. We've known this for a long time, but a reminder usually helps us focus a little more sharply on our problems and their solutions. Hence this reprint from 1958, which seems to fit so well today. Try it on.

Reprinted from *Aerospace Safety*, Feb 73, Courtesy of *Maintenance Review*, Jan 58

Historical USAF photo from AFSA archives

LT COL JAMES P. BRONOWSKI
Reprinted from *Combat Crew*, May 89

■ The sun is already low on the horizon, and our day is just beginning. They are now closing the cargo door on our KC-10, indicating the loading is complete. It will be a long night's work as we leave Yokota AB, Japan, for McChord AFB, Washington. At McChord, we will unload our cargo and then press on to March AFB, California, our home station. It's one of those 16-hour days we all try to learn to live with.

We have been out 5 days, and fatigue and frustration are starting to take their toll. The crew is showing the normal signs of wear and tear from so many time-zone changes and a less-than-balanced diet consumed at times when the body knows it should be sleeping.

I notice the boom operator is with us in the cockpit, working on his weight and balance computations.

"Hey, Boom, we got any passengers on this leg?" I ask.

"Passenger Service says they've got one space available pax for us," he answers, "but he's not out here yet."

Mark, my right seat pilot, pokes my arm and says, "Boss, we've got a problem with this clearance. They're trying to give us a different routing that'll take us way out in the sticks."

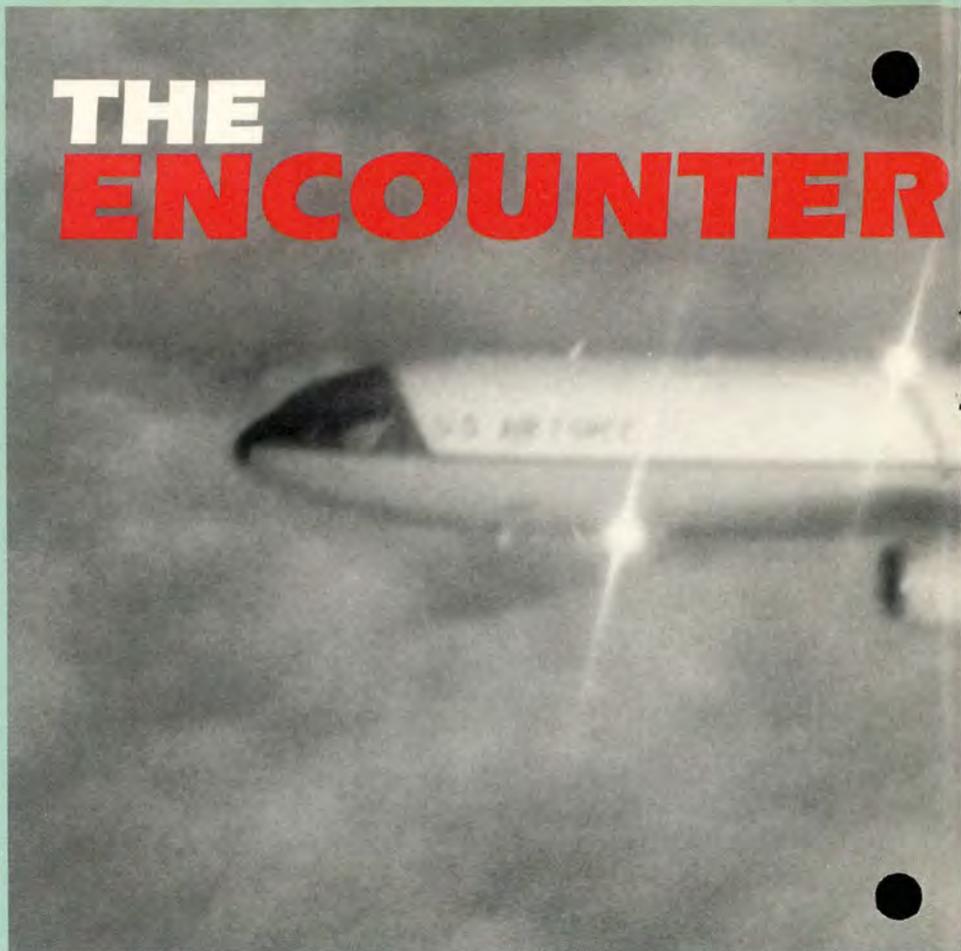
Finally, we manage to convince someone of our need to conform to the original flight plan — but not without cost. We are now 10 minutes past our scheduled engine start time.

"Let's fire 'em up and get the show on the road," I command.

The flight engineer rotates his seat and moves it forward so he is positioned between me and Mark. His checklist is in his hand as he awaits the signal from me to begin the challenge and response litany.

"Cockpit preparation checklist," I state, and slowly the multitude of systems on this giant machine start coming to life as each item on the checklist is accomplished.

Things are running smoother



now, and we are making up the lost time. We are working efficiently together, and I have that special, nice feeling you get when things start going right in your element. Our element is this airplane, and we are all very comfortable here.

We all are anxious to get back home to display our gifts before our loved ones. Crewmembers bring back presents, not like the trophy of the hunt, but as an atonement for their absence. We know the last leg of the trip can be the most dangerous because the strong desire to get home can alter judgments and affect decisions.

Waiting No. 1 for takeoff, I take a glance around the cockpit to make absolutely sure in my mind everything is set for takeoff. I mentally prepare myself for an aborted takeoff and review my own actions in case something happens before decision speed. Odds say nothing will happen, but you never know.

"Everyone set?" I ask as I align

the aircraft with the runway centerline. Hearing three affirmative responses from the rest of the cockpit crew, I push the throttles toward the takeoff setting, and we begin our journey home.

We are now 3-1/2 hours into the flight. I stretch my arms above my head, reach back, and force my shoulders against the seat back while sliding my feet under the rudder pedals to elongate my body into as near a straight line as the seat belt will allow. Muscles that have been strapped in a seat and mostly immobile for hours now strain and flex to move blood around a tired body. A gigantic yawn draws in the large supply of oxygen needed by my aging frame. All is quiet and routine, and the only problem we are presently confronted with is staying awake and alert.

"Mark, you've got it. I'm going to the back to stretch my legs and get some coffee," I tell him and watch his head nod in acknowledg-



ment while he is still looking straight ahead into the darkness of night over the northern Pacific Ocean.

I dislodge myself, glance at the instruments on the flight engineer's panel, and slowly leave the flight deck.

The passenger section of our aircraft has the lights dimmed to accommodate sleeping crew chiefs who are sprawled in and around the seats recovering from their many long hours of work prior to takeoff. It is quiet, except for the gentle drone of the engines and the hissing of pressurized air entering the cabin compartment from overhead.

I dig around the contents of our small refrigerator looking for an unopened box lunch. I find one, retrieve it, and place it on the galley counter. I do a couple of deep knee bends to work out the kinks in my legs and then start filling a double paper cup with coffee that looks like it started life in a tar pit on a dark

night.

As I attempt to force the non-dairy creamer to mix with the sludge that came out of the coffee pot, I catch movement out of the corner of my eye. I turn to see a man standing in the corner near the entrance to the cargo compartment. It is quite dark in that area, but I can tell it's not one of our crew, so it must be our passenger.

I motion to him with my arm to come over, and I hold an empty paper cup in my other hand pointed at him. This ancient gesture signifying a symbol of friendliness is accepted as he starts to walk toward me.

I've hauled a lot of passengers in my day, and most of them know to dress casual, warm, and comfortable for military aircraft, but this guy takes the cake. He has on a pair of green coveralls that are badly stained and have several visible rips and tears. The jacket is leather with a sheepskin lining and collar similar to the old flying jackets. Unfortu-

nately, it is stained and torn like the coveralls. His hat is the same brown leather as the jacket, and it, too, has a sheepskin lining and earflaps that are pulled up and tied at the top.

As he approaches, I hold up the paper cup again and reach for the coffee pot. He holds his hand up, palm toward me, indicating he probably has already tasted this foul brew.

"Don't blame you," I say, starting the conversation. "This stuff would take the tiles off the space shuttles."

"This is a magnificent aircraft you have here, colonel. It must be a total joy to fly," he says with a strong voice that gives the inference that he was once probably a pilot.

Well, he certainly knew how to get me started. I begin telling him all the wonderful attributes of the KC-10, including the pure enjoyment of flying it. He seems genuinely interested in knowing about the aircraft and the Reserve program.

He slowly raises his arm with his index finger pointing directly at my chest.

"You are the most important person in a flying unit," he says, still aiming his finger at me. "It is your work and your persistence that will save lives and aircraft. It is your duty to learn from the experiences and mistakes of others and pass it on to all fliers. You must impress on them the absolute need to think safety and live safety in the aircraft."

He lowers his arm to his side, but his eyes never leave mine.

"I was involved in an aircraft accident years ago that could have been prevented if just the simplest safety measures would have been employed," he says, as he takes his gaze from me and lowers his head.

He raises his head back up, pauses as if he were hesitant to speak, and says: "Tell me a little about your other pilot."

"What, Mark?" I respond. "Great guy, super pilot, and one of the funniest people you'll ever meet. Give you the shirt right off his back."

continued next page

"What about his job and his family?" he asks.

"Let me think," I answer. "I believe he's got four kids now. Yes, that's right, four. Flies a DC-10 for one of the major airlines. Has a nice house in California — and a wife that's way too good for him."

"Would you give him this?" he asks, as he reaches in his pocket and withdraws a chain with two metal dog tags hanging from it.

"Why don't you give it to him yourself?" I question, getting more suspicious and now really wishing I had never offered the coffee and conversation.

"I can't explain," he says sadly. "But you have to do it. I can't. Please do me this favor."

The chain was looped across his index finger with the two dog tags at the bottom of the chain swaying back and forth with the motion of the aircraft.

I grab the box lunch setting on the counter with my left hand and take the chain from his finger with my right.

As I walk rapidly back toward the cockpit, I hear "Thanks, colonel," behind me.

I close the cockpit door and carefully maneuver into my seat. I put the flight lunch down on the floor to the left of my seat and fasten my lap belt.

"Whatta weirdo back there," I comment to no one in particular as I

position my seat.

"Whadda ya mean?" comes the reply from Mark.

"Our passenger back there is a real fruitcake," I answer. "Dressed like he just finished World War II, and then he rips into me about my responsibilities as a safety officer and how he was in an airplane crash because no one cared about safety. Brother, what next?"

I look down at the engine instruments, check the airspeed indicator, and make a minor adjustment to No. 1 throttle.

"Funny though, he didn't look old enough to be retired — hardly past 30, come to think of it," I continue.

"It takes all kinds," Mark comments and then goes back to his study of the flight plan.

"Oh, I almost forgot," I remark. "He asked a lot of questions about you and your family and said to give you this — said he couldn't do it himself. Strange."

I reached into my lower right flight suit pocket, feeling around for the dog tags I dropped in the pocket getting into my seat. Finding them, I hand them over to Mark.

"What's this?"

"His dog tags, I guess."

Mark turns on his map light and studies the dog tags. He turns them over and over, rubbing each side with his finger like he was reading by braille.

Then he turns off the map light, clasps the dog tags firmly in his right hand, and lowers his head.

I can see tears streaming down his cheeks.

"What's wrong, buddy?" I ask quietly and put my hand on his shoulder.

With his head still hanging down and his eyes closed, he says: "These are my father's dog tags. I memorized his serial number. These are his tags."

"I don't understand," I counter.

"My father was killed in the Korean War when I was 2 years old," he says in a voice that is barely audible. "He was copilot on a B-29 that crashed in Japan coming back from a mission."

I turn around to the boom operator who is sitting in the jump seat behind me and say, "Boom, bring that passenger up here. I want to talk to him."

"There aren't any passengers back there," he replies.

"What do you mean, no passengers. I was talking to the one we picked up at Yokota. We had one scheduled to get on at Yokota. I was just talking to him."

"The one scheduled to get on never showed up," the boom operator states. "All we got, Boss, is 12 pallets of cargo for McChord and one pallet of pieces and parts taken off an old, crashed B-29 headed for the March base museum." ■





Learn About Flying From This!

■ The Tides Reach Hotel at South Sands, Salcombe, Devon, features a fresh-water pond some 40 yards from the high-tide mark. The pond is constantly refreshed by a small stream and features 54 Chinese carp and 30 or so mallard drakes and ducks.

In May, a majority of the ducks were upstream, privately hatching their broods. The drakes, their allotted task fulfilled, lazed around the pond, although the odd drake was still wooing and hoping to win. The pond to the sea side is sheltered by a wall and hedge 10 feet high. To the north stands the hotel, and the remainder is screened by trees some 30 feet high. All attempts to land on the pond into the standard offshore breeze are tricky and call for a high approach over the trees, into the turbulence created by the protective hedge, onto a target less than 50 yards long.

On the day in question, the offshore breeze was a force 7 gale. A majority of the drakes remained grounded. The ducks were otherwise involved. However, at mid-morning, a drake appeared over the

trees, flying hard into the gale. He dropped like a stone into the shelter of the trees, reduced his now considerable forward momentum with some most dexterous wing work, and landed within 3 feet of the front edge of the pond, veering hard left as he did so to avoid hitting the bank. The safe landing was almost skillfully done, but an accident had been a near thing.

Fifteen seconds later, an attempt by a duck was less masterly. At the very last second, she overshot, to be followed immediately afterwards by a second duck suffering a similar fate. Each made a further two approaches, trying different techniques, never managing to beat the tricky wind conditions, but always overshooting in good time to clear the hedge. Throughout, the drake looked on anxiously, getting progressively more agitated. After the sixth overshoot, the drake launched into the air.

Some 2 minutes later, a V-formation of three appeared — the drake leading the two ducks. The approach was good, considering the conditions, and the drake would

have made it. Perhaps he was stronger, his wing area greater, his power to decelerate better. But as the round-out approached, his ladies started to go high on the critical flightpath, and they were in danger of crash landing. The drake saw their problem, and he elected to overshoot the formation. He steered his formation to a safe landing in the sea immediately on the wrong side of the hedge.

Five minutes later, a team of three — the drake followed by two ducks — waddled into view. Squawking loudly, they padded across the road, round the trees, and followed the footpath into the pond. The drake was still in command of his small harem. His swagger and general manner indicated that he was giving a very thorough debrief. In extreme conditions, there had been no flying accidents. Here was a sound lesson for all who fly.

There are obviously some days when a safe approach is simply impossible. On such days, an alternative safe recovery must be found. We could all learn about flying from that. ■

Courtesy *Air Clues*, Oct 84

CAPT JERRY M. BREWTON
Det 1, 40 ARRS
Homestead AFB, Florida

■ Filbert vividly remembered the day the chips were installed in his thumb.

"Don't worry," Dr. Jeckly had told him. "It only takes a couple of minutes, and it won't hurt at all. You do more damage every time you cut yourself shaving."

"But Doc," Filbert had protested, "I really don't want anything implanted in my thumb. Especially not a computer chip. What's it for anyway?"

"Progress, boy," the old flight surgeon had replied. "Everybody'll have one within 5 years. Your squadron just happens to be the first to get them. Now, let's see how this thing works. Put your thumb here on the scanner."

Filbert dutifully placed his thumb over the luminous green light emitting from a small box on the doctor's desk. He was surprised by the box's response. It spoke!

"Filbert, Dexter X., Captain, 074-00-3100, A-pos, aircraft commander, 1182 MAW, pulse 72, BP 128 over 83. I find you physically sound. Have a nice day."

"How's it do it?" Filbert asked.

"Simple," the doctor replied. "One of the chips has your identity on it. Name, rank, SSAN, the whole 9 yards. The other is a miniature transmitter that constantly monitors your body's vital signs and blood chemistry. It can tell quite a lot about you in a single scan. The scanner is just an improved version of the kind the supermarket checkers use. When you think about it, this thing has unlimited potential."

As time passed, Filbert began to realize quite a few people must have been thinking about the scanner's potential uses. Restricted area badges became a thing of the past. Instead, scanners were used to identify and determine access — simply place your thumb over the scanners

on the flightline or in the ops center.

Once scanners were installed in all the billeting offices, registration became a simple matter of placing your thumb on the scanner, and you were signed in in a matter of seconds. Scanners in the clubs made it possible to charge meals with the flash of a thumb and a signature on the bill. By the time 5 years had passed, scanners were everywhere. Everyone had grown accustomed to them. In fact, everyone liked them.

Then the changes began. The scanners became more powerful. They no longer needed direct access to identify and evaluate. They could literally read a thumb from a hundred yards. *And they began to give orders.*

For years, the scanners installed in the cockpit of every aircraft had remained silent boxes, speaking only when someone wanted to check his heartbeat to make sure he hadn't died of boredom on a long flight. One day, the scanners assumed a new role. They began to make demands on the crews. Filbert learned about it 6 hours out of Charleston on a direct flight to Frankfurt.

Mot Greeneye is Wat Have You Checked

"Captain Dexter." Filbert immediately recognized the mechanical monotone in his headset. He suspected some sort of malfunction and ignored the machine. It called again. "Filbert, I'm talking to you."

Filbert decided to break the monotony and entertain the crew by having a conversation with the black box. He turned to face it. "Yeah, Greeneye, what do you want?"

Much to the entire crew's surprise, the scanner answered. "Your blood sugar appears to be slightly elevated, and my sensors detect a large amount of caffeine in your system. You need to eat something."

Filbert quickly realized the scanner's powers had been increased, but he had no intention of taking orders from a machine.

"Gee, Mom, I'm really not hungry right now," he said and looked to his crew who were starting to chuckle at the scene.

"I said you need to eat something. If you don't, I'll burn your thumb."

Almost immediately, a sharp pain shot thorough Filbert's thumb,

her ching

Your Thumb Lately?

proving the scanner meant business. Filbert winced. "You have the controls," he said, turning to his copilot. "I think I'll break out a box lunch."

As they began their descent into Frankfurt, the scanner spoke again — this time it seemed impatient with Filbert's copilot.

"Lieutenant Foople, if you don't put that cigarette out this instant, I'll burn your thumb." Foople remembered Filbert's earlier experience and immediately extinguished the cigarette he'd just lit.

From that day forward, the scanners played an increasingly larger role in the crews' lives. From the moment a crew departed home station until they returned, the ever-present green eye watched them. The slightest violation of aircrew discipline brought a reminder from the nearest black box. Failure to heed a warning resulted in punishment. Very few crewmembers could say they had never had their thumb burned for something. "Mother Greeneye is watching," became a standard warning.

Road trips became very boring affairs. No one dared stay in the bar

1 second past crew rest limits. One blink from the scanner was much more effective than any bartender saying "last call." With the scanner watching, last call was frequently well before closing time. The scanners in the transient quarters put an end to late-night poker games, and even going off base provided no relief. You always had to face the scanner when you returned. You received an immediate evaluation when you passed the first scanner.

To make matters worse, the machines were beginning to sound almost human. "Good evening, Captain Filbert. It seems you've had a good evening. You've eaten well, no excess drinking, and you're back in time to get a good night's sleep." Or, "Lieutenant Foople, where the hell have you been? Straggling in here 6 hours before crew show. *And* your biological readings are a disgrace. Nothing in your system but German beer and pretzels. You won't be flying tomorrow. Remember this the next time you try to fool me." Foople staggered away, clutching his burning thumb.

The machine even seemed to be

developing a sense of humor. "Good morning, Sergeant Oxnard. Where were you last night? Your bio readings are in perfect shape so you couldn't have been out with the boys. Oh, Chanel 19, my favorite fragrance. Good thing I'm not into blackmail."

Even with a sense of humor, the machines were universally hated. Everyone harbored a secret desire to smash those probing green eyes with a hammer. It took a near disaster to change Filbert's opinion.

"Filbert, your bio readings have become very erratic — pulse and BP are way up, and your system is saturated with adrenaline. Is something wrong?"

"Just once, Greeneye, I wish you'd shut up! Is something wrong? Hell, everything is wrong. We have an engine out, the field is right at minimums with blowing snow, there's a 30-knot crosswind, our alternate is closed for ice on the runway, we burned most of our fuel in a holding pattern, the last plane down final went around because he hit a severe wind shear at 300 feet, and now our nose gear is indicating unsafe. And you ask if there's something wrong? If you weren't a machine, you'd be a little hyper too." Greeneye didn't respond.

Filbert's mind raced as he tried to evaluate all that could happen on the approach. He'd just finished briefing his crew for the second time when the scanner spoke.

"You can do it, Filbert. I know you can. I've just evaluated your records. You flew an engine-out crosswind approach just 28 days ago. You've made approaches in weather as bad as this six times in the last 5 months, and you've landed on slippery runways hundreds of times. That wind shear will be exactly like the one you had in the simulator last August. Just take things one step at a time and we'll be fine."

For once the scanner's voice had a very soothing effect on Filbert. The approach was flawless, and Fil-

continued next page

bert was in line for a round of well-deserved "at-taboys."

Later, in his room, Filbert eyed the scanner as he sipped a coke. "You there, Greeneye?" he questioned.

"I'm always here, Filbert."

"I, uh, just wanted to say thanks for the help."

"My job, Filbert."

"I thought your job was harassing aircrews, not helping them out of tight spots."

"My job is keeping you mentally and physically ready to fly. I do it well. There are many days when you can get by with hangovers, hypoglycemia, or someone who's half asleep. Then there are days like today when everyone has to be ready to give 100 percent mentally and physically. Your crew had flown 35 hours in the last 6 days, but today they were ready. Maybe because of my harassment or maybe because they're all professionals. Either way, they were ready. All I did was remind you that you'd done it all before. You're the ones who flew the aircraft and brought it in safely."

"Well, Greeneye, I used to hate you. But I don't anymore," Filbert mumbled.

"It doesn't matter, Filbert. I'm just a very complex computer program with a specific job to do. There are no feelings involved. Now, you need

food and rest. If TA works a miracle on that pig you rode in today, you're flying again tomorrow."

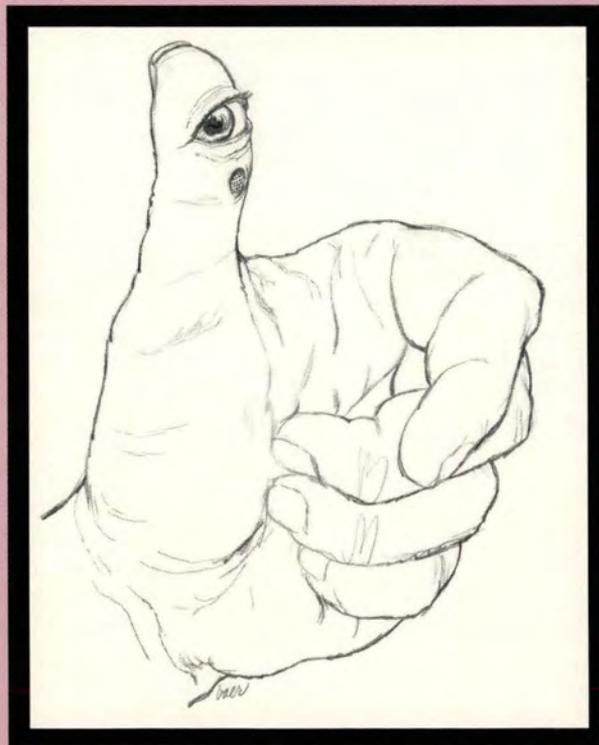
"Are you going to burn my thumb if I have a couple of extra beers to celebrate tonight?"

"You know I will."

Filbert grabbed his jacket and headed out the door. After he'd left, the scanner's green light moved slowly about the room as if searching to make sure he was gone. Then it flashed a picture that covered the entire wall, men and women of all ages wearing flight suits. "Mother Greeneye has so many children," it hummed. "I'll take care of you." ■

Courtesy of *The Mobility Forum*

At the time this story was written, Capt Brewton was the operations officer of Det 1, 40 ARRS, Homestead AFB, Florida. A prolific writer, Capt Brewton began contributing to the MAC (now AMC) Flying Safety Writing Contest in 1976. "Mother Greeneye Is Watching" was the First Place Winner in the 1984 MAC Flying Safety Writing Contest, and the story first appeared in the July 1984 issue of The MAC Flyer.



THE TEN COMMANDMENTS OF CREW COORDINATION



MAJ JOHN WOODRUFF
Reprinted from *Aerospace Safety*, Jan 73

1. AIRCRAFT COMMANDERS: Think People!

Remember you are working with people who need to be valued and treated with dignity.

2. AIRCRAFT COMMANDERS: Set the Tone!

If you are the director of a one-man band, you won't foster much crew coordination. You, the pilot, set the tone of the crew. If you encourage and are receptive to an exchange of information, you'll probably get it. Also, let each crewmember know what you expect of him or her.

3. AIRCRAFT COMMANDERS: Solicit Information!

Ask for opinions or suggestions. It's not a sign of command weakness to ask what the other crewmembers think.

4. AIRCRAFT COMMANDERS: Use Other Crewmembers' Experience!

That old engineer probably has a lot of experience that can help you. Use it.

5. CREWMEMBERS: Don't Be Shy!

If you've got something bothering you, speak up. You may know something someone else doesn't.

6. CREWMEMBERS: Be Persistent!

Keep the pilot and other crewmembers in-

formed. Don't let one crewmember snuff you out.

7. CREWMEMBERS: Remember Who's in Command!

Make your input to the boss, but remember he or she makes the final decision.

8. AIRCRAFT COMMANDERS AND CREWMEMBERS: Be Tactful!

Don't close the channels of communication in crew coordination through immature or unprofessional behavior.

9. AIRCRAFT COMMANDERS AND CREWMEMBERS: Reinforce Good Coordination!

When your crew flies a successful mission, it involves a lot of successful efforts by your crew and other support people. Reward people for special efforts with a "thank you" or a letter to their commander. Remember, a small "thank you" goes a long way with the other crewmembers and team players.

10. AIRCRAFT COMMANDERS: Don't Shirk Your Responsibility!

Think people; set the tone for crew coordination; solicit information; use experienced people; reinforce good coordination; BUT, remember you must make the final decision and be responsible for it. ■



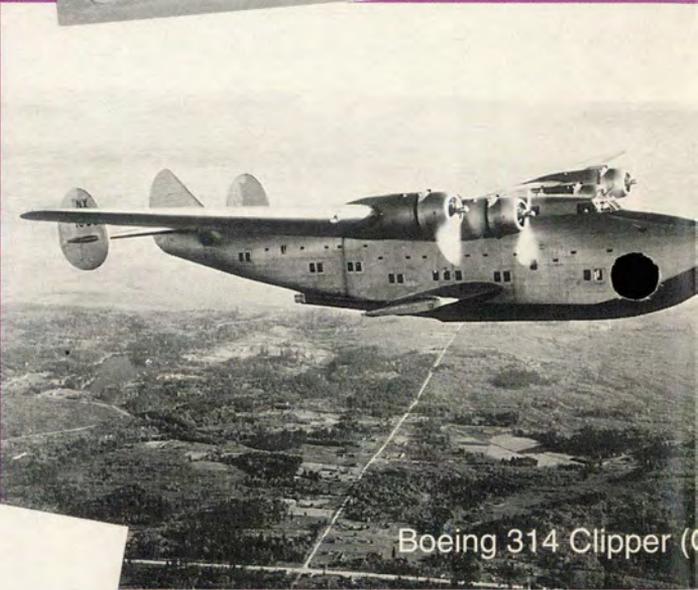
Boeing XB-15



Bell XFM-1



North American B-45A



Boeing 314 Clipper (C)



Republic XF-91



North American F-82 F

The Way to

Our little gallery of "Wings" should stand as a reminder of the safety and reliability of our aircraft and machines that have served us so well today. Let all of us strive to improve and further the cause of aviation and the capability to rise to answer



Douglas C-74,
The original Globemaster



Boeing XL-15



Vultee XP-54



Bell P-59B

Sikorsky H-5G



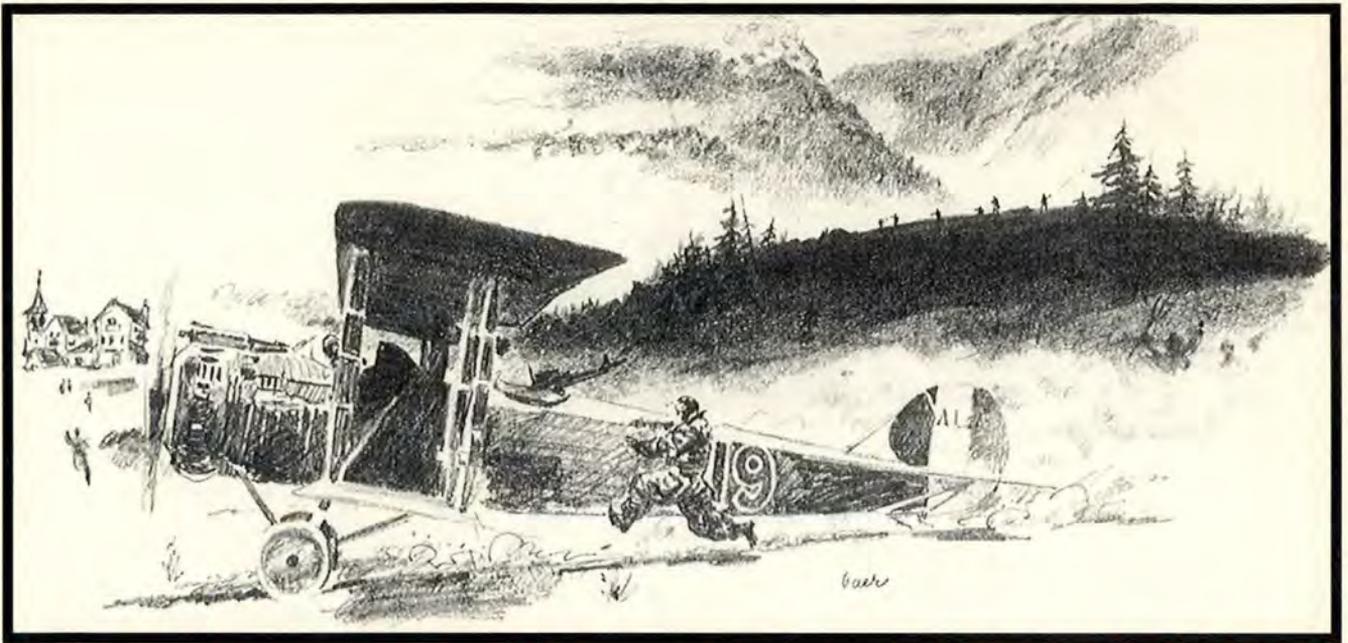
Boeing Clipper photo courtesy
11th Comm Sq, Andrews AFB, MD
All other photographs courtesy
Mr. Dave Menard
Air Force Museum
Wright-Patterson AFB, OH

it Used Be

"aged Wonders" of the past
er to us all of the people
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do our utmost to maintain
saf flight and ensure our
r when called upon.

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Never A Discouraging Word

LT COL JIMMIE D. MARTIN
Flying Safety, Jul 87

■ U. S. Army Aviation lagged far behind the rest of the world in terms of money spent for aircraft development. By the time we entered World War I in April 1918, things had not changed much. General Pershing stated that of the 55 aircraft (all trainers) possessed by the Aviation Section, 51 were obsolete, and 4 were obsolescent.

However, our aircrews were eager and were constantly pushing the limits to advance airpower. They could see some of the potential that existed even though most of the nonflying hierarchy could not. This month, we take a look at the actions of one crew stationed in France during World War I. In speaking of this crew (especially the pilot), the following phrase seems to fit: "If it wasn't for bad luck, we'd have no luck at all." The information was taken from an official report printed in *The U.S. Air Service in World War I*, published by the Office of Air Force History.

A Routine (?) Mission

First Lieutenant Thomas J. D. Fuller, Jr., pilot, and Second Lieutenant Virgil Brookhart, observer, both of the 135th Aero Squadron,

took off from their airfield near Toul, France, on the morning of 12 September 1918, to observe artillery fire near Montsec.

Their first problem was the weather. It was described as "quite unfavorable owing to low, hanging fog and the southwest wind."

They began their flight at 1,500 feet, but soon ran into heavy clouds. After flying east for about 5 minutes, "they became temporarily swallowed up in the clouds. By chasing holes in the clouds, they managed to catch glimpses of the various towns over which they were passing. Although this presented some difficulties since it was their first flight together over the lines, they identified Nancy, and then found themselves over Thiaucourt (West)." The crew decided to abort the mission and fly to Ourchess airdrome which was southwest of their position.

Heading for Home

The crew climbed to 10,000 feet and headed southwest. After about half an hour, they let down below the clouds and found themselves over a range of mountains which they later discovered was near Mulhausen. As they got closer to the ground, they could see trenches, so they climbed back up and

continued southwest (or so they believed).

Some time later, they once again let down below the clouds and found themselves over the front line trenches. "It became apparent to them that a fairly strong wind was blowing them off their intended course." Since the wind was from the west and they had been heading southwest, they concluded the wind was pushing them southeast toward Switzerland.

When they let down below the clouds the next time, they found they had left the trenches behind, so they landed. They decided this wasn't the right move when soldiers and peasants appeared from all directions. They also realized the country around them looked unfamiliar.

So they made an immediate takeoff. Unfortunately, their engine failed, and they were forced to land again. The most likely cause of the failure was a bullet in the engine since the soldiers had started shooting at them as they took off.

What Now?

The fliers soon found out they had been unlucky enough to land in one of the areas where Switzerland projects into French territory and were only about 600 meters

outside France. If it had not been for the lucky (or unlucky, depending on your viewpoint) bullet hit in their engine, they could easily have made it back to France.

The two men were taken into custody by the Swiss authorities and transported to Lucerne. There they were informed of their rights. They had two choices. They could be put on parole and remain free in Switzerland, or they could go to prison. Either way, they would remain in the country for the rest of the war. After all their efforts to avoid being captured by the enemy, they ended up being interned in Switzerland.

Both men were unhappy with the situation. They knew if they accepted parole, they wouldn't be able to escape because the U.S. Government would be obligated to return them to Switzerland if they broke their leave of honor. Consequently, they decided to take their chances on escaping from prison. If they were successful, they would be allowed to remain free.

The Plan

They came up with a plan. Lt Brookhart would initially accept parole and would live at the hotel in Lucerne. This would give him freedom of movement, and he would be able to learn the area and pick up information that might help them later. Meanwhile, Lt Fuller would go to the military prison at Andermatt near the St. Gotthard Tunnel.

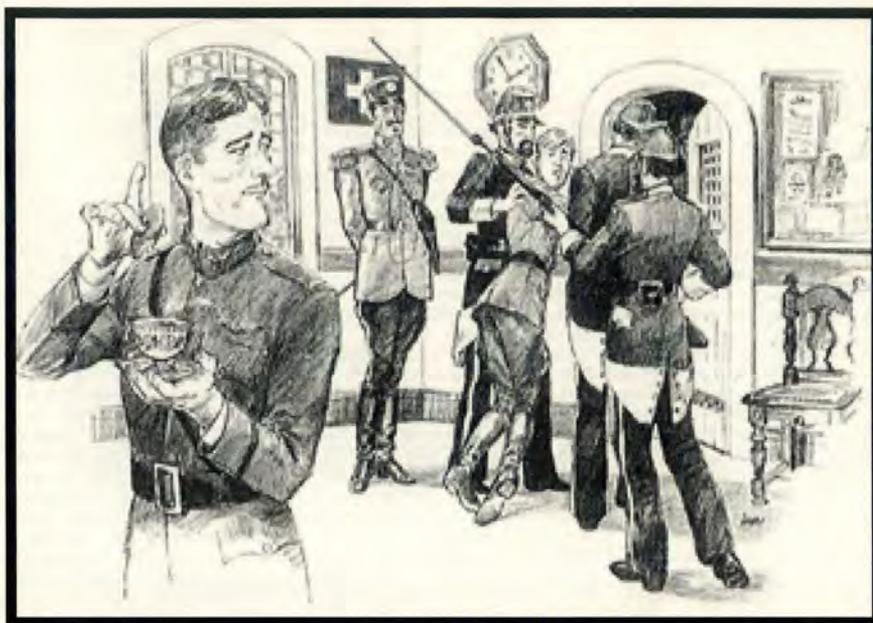
Lt Fuller would study the prison and come up with an escape plan. He would send his plans in code by letter to Lt Brookhart. Lt Brookhart would then choose to go to prison, and they would escape together.

But by the time Lt Fuller was able

to come up with a good escape plan, the situation had changed. Everyone was anticipating an Armistice in the very near future. Lt Brookhart apparently had come up with a plan of his own that didn't include prison, because he never communicated with Lt Fuller.

Over the Wall

Anxious to get on with his escape, Lt Fuller decided to go alone. He was housed on the fourth floor of the prison near a toilet with a window opening on the outside of



the prison. Whenever he visited the toilet, he was always accompanied by a guard who waited outside the door. Lt Fuller gradually increased the time he spent in the toilet each night so the guard would not get suspicious too quickly on the night of his escape.

He chose a dark, foggy night in early November to make his break. He cut up his bedsheet and made a rope which he wrapped around his waist under his pajamas. He then asked to go to the toilet. Once inside, he tied one end of his bedsheet rope to the window sill, tied the other end around his waist, and started to let himself down just as the guard knocked on the door.

Everything was going according to plan until he reached the third floor and Lady Luck dealt him an-

other blow. His improvised rope broke, and he fell 30 feet to the ground below. His face was severely cut, and he was knocked unconscious by the fall.

Fortunately, Lt Fuller regained consciousness before being discovered, and despite his injuries, followed his preplanned escape route to the tunnel. By moving carefully, he successfully avoided the two sentries at the tunnel entrance and made his way into the tunnel. He then discovered he had lost the candle and matches he had planned to

use to find his way through the heavy fog.

With freedom near, his luck once again ran true to form, and he emerged from the tunnel right between two sentries. They quickly apprehended him, and Lt Fuller soon found himself back in the hands of the Swiss authorities.

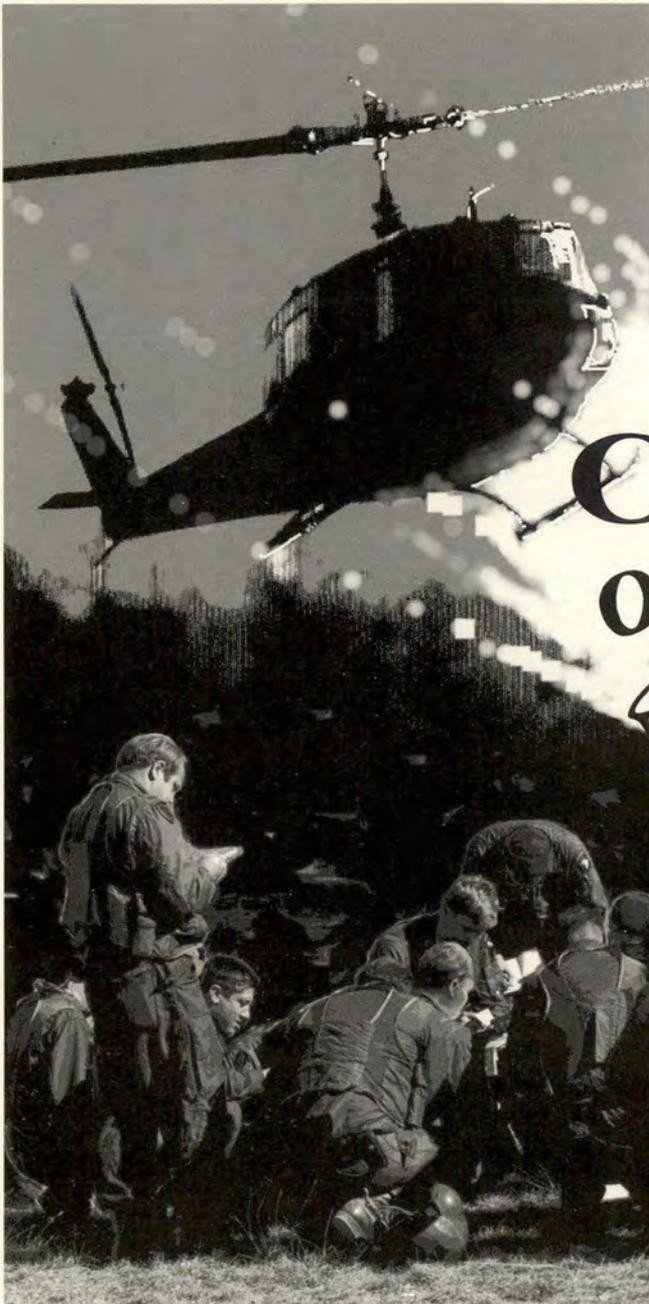
A New Plan?

He was confined to bed for more than a week while recuperating from the injuries he suffered in the fall. He was then released after the Armistice was signed.

The report concludes with the following:

"Lieutenants Fuller and Brookhart told substantially the same story of their experience up to the point where they separated. From that point on, Lieutenant Brookhart remained on parole at Lucerne, and of this period had little to say."

I don't know what happened to Lt Fuller after that, but I hope his luck changed for the better. I'm sure he continued with the same never-give-up spirit that exemplifies the military aviator to this day. ■



A Nearly Deadly Combination of

One mission change
after another can put
aircrews in situations
that call for
more experience
than they have.

Unplanned
Events

Courtesy *FlightFax*, Aug 94

■ Obviously, and by pure definition, accidents are unplanned events. No one begins a mission planning to have an accident before that mission is complete. In most cases, it isn't one single incident or factor that results in an accident. Often, one thing goes wrong, then another. Pretty soon, bad does turn to worse. The following scenario illustrates how a combination of several events and uncontrolled hazards can lead to an accident.

The Mission

The night, unaided mission was to provide airlift support for troops. The unit had six crews and aircraft available for the mission. The requirement for eight UH-1s forced the unit to borrow two crews and two aircraft from their sister unit. The crews were to meet at the pick-up zone (PZ) and receive a briefing upon arrival.

A young lieutenant, about 10 months out of flight school, assumed duties as the air mission

commander (AMC) and flight lead. Because of the changing mission details, he received an extensive pre-mission briefing only hours before the final briefing.

Final Briefing

The mission called for the crews to pick up troops at the PZ and transport them to a landing zone (LZ). The AMC briefed both the PZ, LZ, and the route of flight, noting no particular hazards. The PZ and LZ were large enough to accommodate

One of the pilots made a remark about watching out for wires on the approach end of the LZ. He also said something about the LZ having a lot of artillery berms and that each pilot should pick out his landing spot carefully before setting his aircraft down. Wires and artillery berms greatly increased the complexity of the landing, but most of these final comments were unheard by the other PCs as they hurried off to their aircraft.

all eight aircraft. Additionally, pathfinders were to set up tactical lighting. Another unit completed the recon of the PZ and LZ and inserted the pathfinders.

The flight was to be low level, hugging the mountain ranges for cover. It would be night, unaided because no one in the unit was night vision goggle current. For tactical training purposes, the chain of command decided the flight would land without the aid of landing lights. Position lights would be up bright on approach, and the formation for the flight and approach would be staggered trail.

The flight of six UH-1s departed for the PZ where they were to meet the other two aircraft. They arrived without incident. Upon landing at the PZ, the crews refueled and waited for departure time.

Uneasiness Develops

The pilot in command (PC) of Chalk 3 had also been assigned to the unit straight from flight school 10 months earlier. While waiting for departure time, he heard there was going to be a change in the mission.

Chalk 3 PC was worried about the mission ahead — meeting take-off times, navigating, and landing at night without a landing light. He had done it before, but never on a night as dark as this one. His recent flying had been day, VFR, point A to point B. And he was one of the more experienced pilots in the platoon! His copilot, fresh out of flight school, had been with the unit only 2 months. The platoon had flown numerous lift missions, but not at night through mountains and close to borders. But the Chalk 3 PC had confidence in the flight lead — his platoon leader, who was very professional, an excellent navigator, and

well respected. Still, uneasiness kept gnawing at the Chalk 3 PC.

Last-Minute Change in the LZ

Before takeoff, all of the PCs met near the flight lead's aircraft. One of the pilots from the sister unit had completed the recon of the LZ, and he had his map spread out on the ground. The aviators quickly huddled together over the map and discovered the LZ had changed. The pilot who had completed the recon hurriedly read off the grid coordinates of the new LZ while the PCs wrote them down and searched their maps to locate the area.

Mission Complexity Increased

A last-minute change in the LZ — the Chalk 3 PC just didn't like the sound of it. And it was apparent from their mumblings that the other pilots didn't either. He looked at his watch — only 10 minutes before takeoff. Holding his red-lens flashlight in one hand, he studied the marked spot of the new LZ, which was about three clicks to the left of the original LZ. "Pretty small field," he thought. His feelings were echoed by others, especially the flight lead, who was also hearing of the LZ change for the first time.

As the huddle quickly broke up in order to meet takeoff time, one of the pilots made a remark about watching out for wires on the approach end of the LZ. He also said something about the LZ having a lot of artillery berms and that each pilot should pick out his landing spot carefully before setting his aircraft down. Wires and artillery berms greatly increased the complexity of the landing, but most of these final comments were unheard by the other PCs as they hurried off to their aircraft.

Questions Unasked

One who did hear the final comments from the unidentified pilot was the PC of Chalk 3. He nervously digested all of this new information — wondering where the wires were located, how many artillery berms were in the landing zone, and how high they were. He pondered how he was going to pick out a spot in the dark in a field he had never even seen. It didn't sound easy. Although the concerns and doubts raced through his mind, he kept silent.

The PC of Chalk 3 wasn't the only one who was worried; the flight lead was plenty worried too. He quickly surmised that they couldn't land eight aircraft in the new LZ. But there was no time to study the map, do another recon, or plan another route. What should he do? Almost immediately, the flight lead stopped the PCs and divided the flight into two flights of four aircraft and assigned a flight lead to the second flight. Since he (also the AMC) would be landing first, he could relay any hazards back to the second flight. A few grumbles were heard, but it was time to crank.

The Flight

The Chalk 3 PC briefed his copilot on the changes and stated he would fly the first lift since they were anticipating three lifts. The 10-minute flight to the LZ was uneventful. It was easy to maintain loose formation and orient off the position lights. The mountains cast shadows easily distinguished, and the altitude kept them safe from obstacles.

Everything seemed to be going pretty well. But then the Chalk 3 PC began thinking about the LZ and the wires. Never having located the wires on his map, he watched Chalk

continued on next page

2 closely and stayed at the same altitude. As they approached the LZ, he thought that if he could just stay a little higher he would be okay. What he didn't know was that the Chalk 2 PC never heard the comments about the wires as the huddle broke up before takeoff.

The Chalk 3 PC cautioned his crew to watch out for the wires. His crew chief, who was practically hanging out the window, searched as they started the approach, and the pilot scanned through the darkness. As Chalk 2 settled down in the LZ, the Chalk 3 PC heard "Wires!" He saw them in his chin bubble and immediately applied collective and aft cyclic, just barely clearing the wires.

The PC of Chalk 4, the platoon IP, watched Chalk 3 balloon up and immediately turned on his landing light. He, too, was headed straight for the wires.

In the meantime, the Chalk 3 PC lowered the collective and searched for a landing spot. He knew he was too high and coming down too fast. Although Chalk 2 had landed in a cloud of dust (with the last-minute change in the LZ, somebody must have forgotten to caution them about brownout), Chalk 3 PC could see the ground and chose a spot near an artillery berm. From the start, the Chalk 3 PC had doubts about this mission. He had been right so far, and things were about to get worse.

Another Hazard

About 100 meters ahead on a road stood a television crew filming the air assault. When Chalk 3 crew was about 50 feet AGL, the film crew focused on them. Suddenly, two floodlights beamed straight into the cockpit. The PC immediately turned his head, but it was too late — his night vision was gone. A glancing look at his pilot told him that there was no point in transferring the controls.

What to do now? A go-around? Guess not; he couldn't see the instruments. Level the aircraft — yes,

that's what he should do. Now where were the artillery berms? It didn't take him long to realize that if he hit one of the berms, the aircraft would roll for sure. He realized his descent was too fast. Looking through the chin bubble, he caught sight of the ground just as the aircraft landed hard. The skids broke, the aircraft bounced into the air once and settled back down, and the right chin bubble struck the ground.

The uneasiness that had plagued him from the beginning was now a sick and sinking feeling in the pit of his stomach. The Chalk 3 PC immediately shut down the aircraft, checked to make sure everyone was okay, and made the I-have-just-

It's far better to express your concerns before the mission begins than it is to bring them out as you're rehashing the combination of events that led to an accident.

done-it radio call. Now it was time to ponder his fate, try to sort out what had happened and why, and mentally kick himself over and over for allowing this to happen. His earlier silence had cost him plenty.

Lessons Learned

Most likely, the occurrence of any single event in this scenario would not have resulted in an accident. Failure to identify and assess the hazards — inadequate unit training, poor communications and crew coordination, lack of pilot proficiency and experience, improper crew mix, and so forth, coupled with the late mission changes with incomplete information — set the stage for the subsequent accident.

The probability is high that this accident could have been prevented.

If the hazards had been identified and someone had properly assessed the risks and taken appropriate measures to eliminate or control the hazards before this mission began, you probably wouldn't be reading about it. Preventing this accident could have been as simple as someone realizing the risks were high even before the mission changes and calling time out to reassess the risks. The risks were further compounded by the major last-minute change in the LZ.

Why didn't someone inform the flight about the TV crews filming the air assault? Was this the reason for the LZ change? And why weren't the TV crews warned about the effects of their floodlights on pilots' night vision? Should the unit have had a requirement to complete a recon before landing in an LZ at night? Should they have accepted an LZ with wires on the approach end and littered with artillery berms?

I've learned a lot of lessons from accidents I've investigated since being assigned to the Army Safety Center. But I didn't learn to ask the right questions, or to speak up when I'm uneasy with a situation, or the importance of carefully analyzing the impact that last-minute changes can have on a mission (today we call it managing and assessing the risks) by investigating this accident. I learned these lessons the hard way. I was the 10-months-out-of-flight-school PC of Chalk 3.

Take this opportunity to learn from the mistakes I made. If you're uneasy with a situation, speak up. Don't just mutter to yourself or another crewmember. Others may have serious concerns, too, and be reluctant to say so. Don't be afraid to say that you aren't comfortable doing a particular mission. It's far better to express your concerns before the mission begins than it is to bring them out as you're rehashing the combination of events that led to an accident. ■

THE AMBULANCE DOWN IN THE VALLEY



'Twas a dangerous cliff, as they freely confessed,
Though to walk near its crest was so pleasant;
But over its terrible edge there had slipped
A duke and full many a peasant.
The people said something would have to be done,
But their projects did not at all tally.
Some said, "Put a fence 'round the edge of the cliff,"
Some, "An ambulance down in the valley."

The lament of the crowd was profound and loud
As their hearts overflowed with pity;
But the cry of the ambulance carried the day
As it spread through the neighboring city.
A collection was made, to accumulate aid,
And the dwellers in highway and alley
Gave dollars and cents — not to furnish a fence —
But an ambulance down in the valley.

"For the cliff is all right if you're careful," they said;
"And if folks ever slip and are dropping,
It isn't the slipping that hurts them so much
As the shock down below — when they're stopping."
So for years (we had heard), as these mishaps occurred
Quick forth would the rescuers sally,
To pick up the victims who fell from the cliff,
With the ambulance down in the valley.

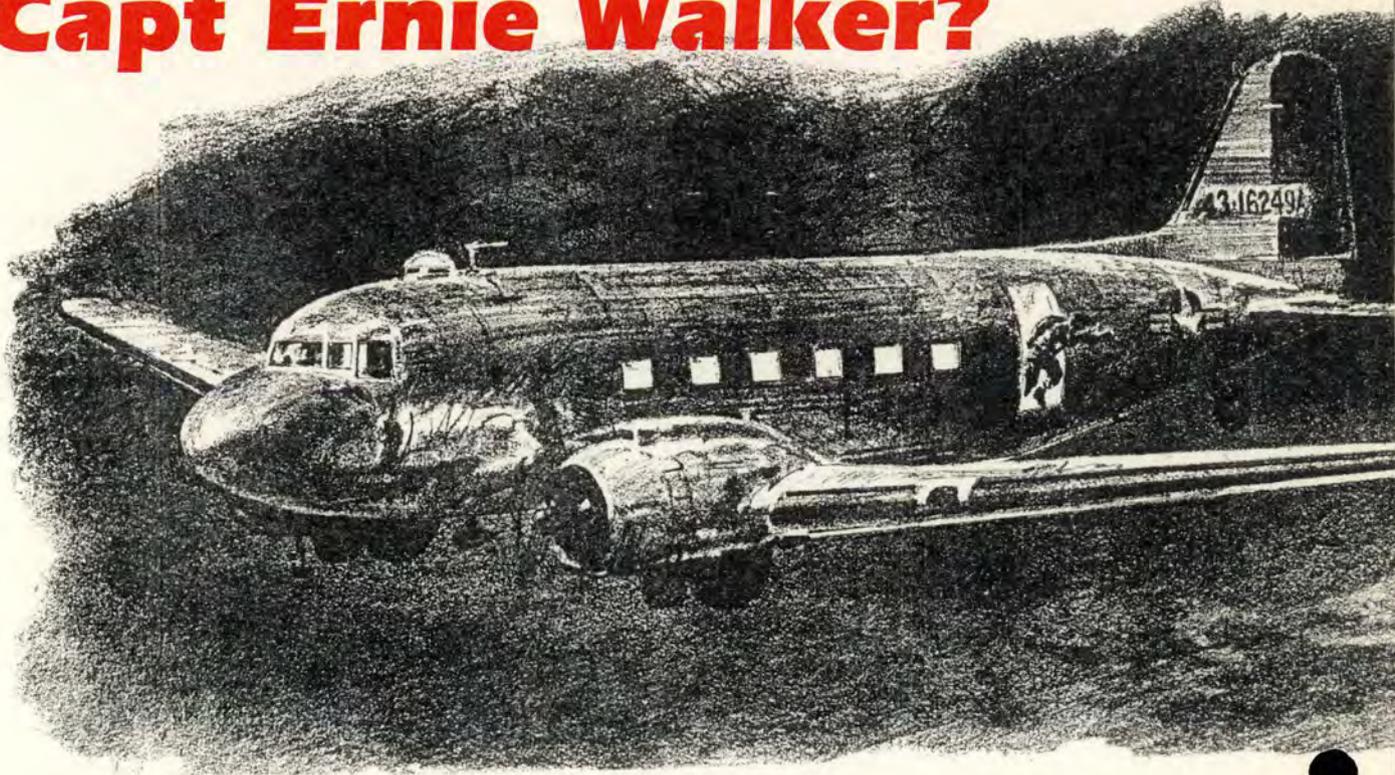
Said one, in his plea, "It's a marvel to me
That you'd give so much greater attention
To repairing results than to curing the cause;
You had much better aim at prevention.
For the mischief, of course, should be stopped at
its source;
Come, neighbors and friends, let us rally.
It is far better sense to rely on a fence
Than an ambulance down in the valley.

"He is wrong in his head," the majority said,
"He would end all our earnest endeavor.
He's a man who would shirk this responsible work,
But we will support it forever.
Aren't we picking up all, just as fast as they fall,
And giving them care liberally?
A superfluous fence is of no consequence,
If the ambulance works in the valley."

The story looks queer as we've written it here,
But things oft occur that are stranger.
More humane, we assert, than to succor the hurt
Is the plan of removing the danger.
The best possible course is to safeguard the source
By attending to things rationally.
Yes, build up the fence, and let us dispense
With the ambulance down in the valley.

Author Unknown

Whatever Happened to Capt Ernie Walker?



CAPT STEPHEN M. MORRISSETTE
Flying Safety, Mar 88

■ The mystery started on the night of 11 January 1952 when Capt Harvey S. Tilton, pilot; Capt Ernie Walker, copilot; Sgt Charles Medina, flight engineer; A2C Oscar Provencher, radio operator; and A2C Glen Mellon, student radio operator, flew a C-47 into the cold arctic night — never to return. This is the story of that fateful night and the tragic deaths of these five airmen.

The mission was to be a routine night instrument training mission, just another proficiency flight. They had enough fuel on board for an 8-hour flight.

Okay at First

A light snow was falling as Capt Tilton piloted the red-tailed C-47 into the night sky at 1818 hours. He headed for Fairbanks as he began the climb to 11,000 feet. At Fairbanks, he turned north and headed for Umiat. He tuned his ADF radio

to KFAR and watched the ADF needle swing near the bottom of the dial. A deflection of the needle made it quite obvious there was a strong west wind blowing, but it didn't take long to set up a good wind correction angle.

The Gooney Bird was a popular aircraft with those who flew it. Although warm and comfortable, the C-47 was anything but quiet. Some people compared a flight in a C-47 to that of a flight inside a bass drum. To add to the engine noise and wind noise, there was the noise of the radios.

It was probable that, in addition to KFAR, the crewmembers were listening to other air-to-air and air-to-ground communications, talking to each other on the intercom, and Capts Tilton and Walker were also listening to the constant background tones of either a Morse Code "A" (dit-da) or an "N" (da-dit).

These Morse signals were the audible part of the radio ranging system that was the primary means of

navigation in the 1940s and 1950s. They were the only thing Capt Tilton would be able to depend on for guidance that night — just that steady stream of dots and dashes in his headset.

Confusion

The flight was apparently uneventful until shortly after passing over Bettles. Capt Tilton reported he was experiencing a 90-degree wind correction angle and was flying back to Bettles to reorient himself on the southeast leg of the Bettles radio range. Three and a half hours later, with over half his fuel gone, Capt Tilton requested assistance, indicating he was lost and in need of a DF steer.

Ladd Field responded. Ladd homed on Capt Tilton and gave him two vectors to positively locate him. Capt Tilton complied with both steers. Ladd then gave him a vector of 211 degrees magnetic. That steer would have brought him home, but Capt Tilton did not acknowledge these last instructions.



The 50-knot west wind would also require a wind correction angle of another 10 or 15 degrees. But crews in Alaska were trained to take all of these factors in stride. It was not these difficulties that drove Capt Tilton 300 miles off course — it was an administrative error!

On or about 11 December 1951, ground maintenance crews swung the Bettles radio north leg 9 degrees counterclockwise from 156 degrees to 147 degrees magnetic. The magnetic variation at Bettles is -28 degrees, which would cause the 180-degree true bearing to be in a different quadrant, or, in plain terms, Capts Tilton and Walker were hearing *da-dit* when they knew they should have been hearing *dit-da*.

The administrative error was that the message noting this change had apparently never been received in Eielson Ops. Airmen are trained to trust their instruments. There was no way for Capts Tilton and Walker to know that their instruments, although work-

ing properly, were leading them in the opposite direction of their intended path.

Capt Tilton's confusion lay in the fact the whiskey compass told him one thing, the ADF needle told him another, and the radio range told him yet a third. Now the boys on the ground were telling him to steer in a direction that he was convinced had to be wrong!

Bail Out!

Somewhere around 6 hours into his flight, Capt Tilton must have realized he was hopelessly lost. He must have called his crew together and started to build a plan to abandon the aircraft, a plan that would not be executed until the last possible moment.

At midnight, KFAR signed off the air. About this time, Capt Tilton must have heard someone on the VHF radio and put out his last radio message, "Hearing you very weak. Do not know where I am. Receiving a strong N quad signal."

About an hour after this broad-

This map shows how confused the crew was. Note the wide variance between where they were supposed to be, where they thought they were, and where they *really* were.

He was confused.

He was listening to the radio range. He was sure he was on the north leg of the Northway radio range. That's 150 miles south of Eielson. Why should he steer 211 degrees? That would only take him further south into the mountains! Actually, he was 150 miles *north* of Eielson, and the 211-degree steer would have brought him home.

How could a crew with the experience of Tilton and Walker, both World War II combat veterans, get so lost? First, it is important to understand that navigation by compass in the northern latitudes is "iffy" at best.

You must first subtract 30 degrees from your indicated heading to know which way you are really headed. In addition, most aircraft have a 1- or 2-degree correction factor to either add or subtract. Also, the whiskey compass is only good in straight and level, unaccelerated flight. The storm that night was bouncing the C-47 around pretty badly.



continued on next page

cast, Capt Tilton gave the command to abandon ship. The plane would run out of gas within minutes.

The survival kits and radio went first, then the enlisted men. Presumably, the next man out was the copilot, Capt Ernie Walker. The last man to leave the aircraft was Capt Tilton.

Can any man know what Capt Tilton was feeling or thinking as he climbed out of the left seat and walked aft? He was alone in his aircraft. It was still warm. It was still flying. The radios were still receiving signals. As he took a stance at the open cargo door, he may have looked over his right shoulder toward the cockpit. If he did, he saw what few men have seen.

It must have seemed ghostly. The empty cockpit was still bathed in red light from the instrument and area lighting. The yokes moved back and forth as if controlled by invisible hands. But there was no time for hesitation now. Every second he delayed separated Capt Tilton from his crew by hundreds of yards.

As Capt Tilton hurled himself from his C-47, the cold would have been murderous. The wind chill created by the forward motion of the C-47 and the velocity of the fall would have been over 100 degrees below zero. Almost certainly, every man was frostbitten before his parachute opened. The fear each man must have felt as he drifted earthward in absolute darkness cannot be imagined. Although dark, their descent was not silent. That 50-knot wind was howling through their shroud lines.

There was little relief once they reached the ground. The wind was still stealing the men's body heat. The storm continued to keep each man trapped in total isolation. Each had to find protection from the wind and wait for the sun to come up. That would be over 9 hours later!

About 1000 hours, the sun weakly illuminated the tundra. The storm still raged, but at least the men could now see. The wind made shouting useless. They had to find each other by simply wandering. They finally did meet up — at least four of them did. There is no evidence that Capt Walker ever teamed

up with the rest of the crew.

The men built two very crude shelters which consisted of several poles with parachutes thrown over them. Parachutes were used as floors. One of the survival kits had been located and was used. Fires were built, and they began to wait.

Back at Eielson and Ladd Field, men were waiting also. They were waiting for the storm to let up. For 3 more days, the storm kept all aircraft in the interior of Alaska grounded, but hope was not lost. All of the crew of 249 had arctic survival training, and with any luck, they'd be found the next day.

The storm was only one problem faced by the rescue crews. Ladd's "homer" put Capt Tilton's last fix north of the base somewhere in a line drawn through Circle Hot Springs. But Capt Tilton indicated he was south of the base near Northway. Not one, but two searches would have to be conducted.

On 14 January, the storm broke, and dozens of aircraft started searching for a red-tailed Gooney Bird. In all, 199 sorties were flown

by dozens of aircraft from as far away as Anchorage. Day after day, the planes searched both the suspected areas without a clue until on 19 January, a spotter in a search C-47 saw a star flare. The area was searched intensively but with no results.

Flight "D" of the 19 ARS became lost in broad daylight in clear weather. It seems the pilot was getting a strange signal from the Bettles radio. It took several hours for all involved to realize that the Bettles radio had been swung 9 degrees!

Finally, on 27 January, 15 days after the crash, the active search for C-47, tail No. 43-16249A, was terminated. The crew was presumed dead.

Six Months Later

On 1 July 1952, the 10 ARS reopened the active search for 249 and its crew. The search would be concentrated in an area north of Eielson. A trapper who had been in the bush told a convincing story of an aircraft crash about 50 miles southeast of Fort Yukon. This area would be in line with the homer fix made on the night of the crash.

Planes searched the area until on 7 July, Lyle B. Otto, the pilot of an SA-16 Tri-Phibian (HU-16 Albatross), spotted a red-tailed C-47 that had crashed in the area reported by the trapper. There was no sign of life.

The terrain prevented a helicopter landing. Rescuers reached the site on foot 9 July. They found 249 had crash-landed on a downward sloping wooded hill. The cockpit was crushed, but the rest of the fuselage was intact. The right wing and stabilizer and both propellers were torn away. There was no post-crash fire. Supplies found aboard the aircraft included arctic issue and rations. There was no evidence the crew had ever found their aircraft.

Approximately 2-1/2 miles behind the aircraft, the searchers found two shelters. In one, they discovered the bodies of Capt Tilton and the enlisted members of his crew. They were fully clothed except for their boots and gloves which were found just outside the shelter entrance. Among the items





The Eielson base theater is named after the former base special services director, Captain Ernie Walker.

found in the shelter was a log from Capt Tilton addressed to his commander, Col Moore. The log read as follows:

Col Moore,

Took off EAFB 1820 over Bettles winds causing 50 to 70 degree correction. VHF REC inop. Heavy static. Followed SE leg towards Nenana for 45 minutes on Bendix. Flying 60 to 70 degrees to stay on beam KFAR signing off next STA heard. No time for FBK. No fuel bail out in place of crash. No food, H2O. Frozen hands. Bail out 0120 SAT. Send things to my wife.

I'm sorry Col. Goodby

Fire pits and other evidence led the rescue team to believe the men had survived for only several days. Approximately 165 yards south of the shelter, the search team found

the Gibson Girl hung high in a tree. It appears the crew had found the radio but could not get it out of the tree.

A mile further south they found a survival kit hanging high in a tree. Evidence indicated each man had made a personal shelter before joining up. The position of these items helped the search team recreate the events of the first several days of the victims' ordeal. That is, with the exception of that one unanswered question. Where was Ernie Walker?

Into History

The search for Capt Ernie Walker continued on foot and by air for another 3 weeks. During that time, not a single additional clue was discovered. It would seem that all that remained of Ernie Walker was unanswered questions. Did he survive the

bailout? Did he join the other men, or did he remain separated from them? Did he strike out to find help or simply wander until he died?

During the search in January, a spotter reported flares 30 miles south of the crash. Were they a signal from Capt Walker, or was it just the spotter's tired eyes playing tricks on him? There are no answers to these questions, and 35 years after the fact, any evidence of the events surrounding the demise of Ernie Walker would be gone. It is doubtful that even as much as a boot nail would now remain. The death of Ernie Walker will forever remain a mystery.

On 20 November 1953, a new base theater opened at Eielson. The theater was named after the former base special services director, Capt Ernie Walker. ■

Post Script

The crash of 249 and the deaths of its crew have a striking number of similarities with the crash of a B-24 in Libya during World War II. This B-24, known as the "Lady Be Good," captured the imagination of America until 1959 when her secrets were finally revealed. The following is a list of some of these similarities.

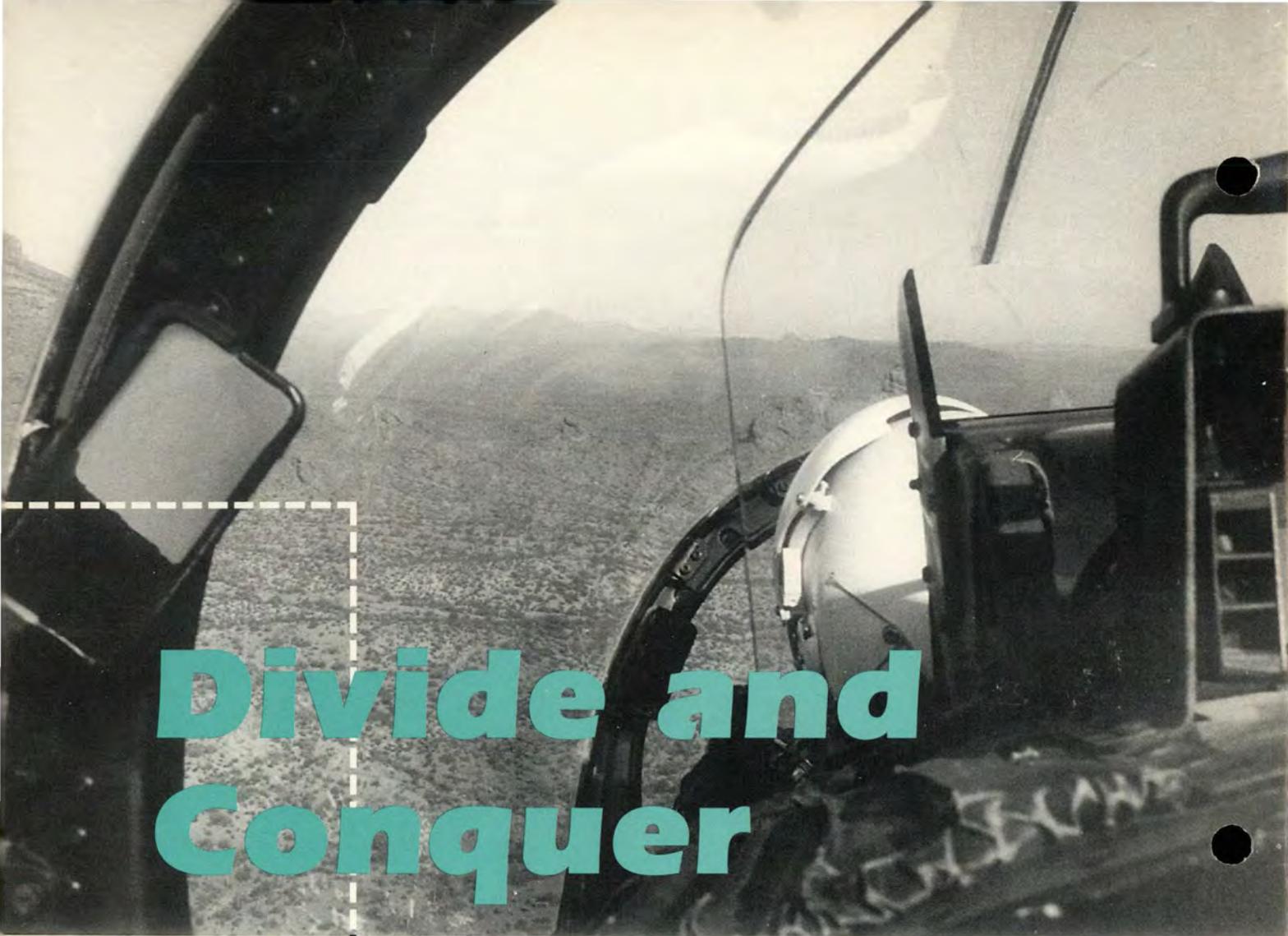
- Both aircraft became lost at night due to navigational problems.
- Both aircraft ran out of gas.
- Both aircrews bailed out of their ship over extremely remote and hostile terrain.
- Both aircraft flew on and made survivable crash landings after the crew bailed out.
- In both cases, the aircrew never found their aircraft.
- In both cases, survival rations were on board the aircraft.

■ In both cases, the crew perished because of weather extremes.

■ In both cases, one crewman was never found.

A Lesson for Today's Airmen

We no longer fly the C-47, and our aircraft are now computerized and high-tech. But today there are things that can happen to foul us up too. We could punch in the wrong INS coord or tune in the wrong VOR. And even though we are no longer concerned with such things as the constant background tones of Morse Code as this crew was, we can also be diverted by activity in the cockpit which can lead to a breakdown in crew coordination. It's just important to remember that even though our equipment is more sophisticated, the potential for a mission stopper or a mishap is **always** there.



Divide and Conquer

MAJ JAMES M. TOTHACER
Flying Safety, May 85

■ Spell the word “joke” — J-O-K-E. Say the word “joke” three times out loud: “Joke, joke, joke.” Now quick — what’s the white of an egg called? If you answered yolk, you have just fallen prey to attention fixation. Not serious? Well, in flying, attention fixation is one of those insidious little creatures that can sneak up and leave you dead.

The importance of “paying attention” is something drummed into our heads from practically our first day of schooling. Do you remember having one of your elementary school teachers warn you to pay attention? What effect did this have on you? Did you pay attention so intently you failed to notice when lunchtime came? Did you miss going home that afternoon because of your intense concentration and eventually die from starvation

while peering at the blackboard? Of course not, or else you wouldn’t be reading this right now. But, it is a horrible truth that channelized attention kills pilots every year.

Not too long ago, an A-7D crashed while on a two-ship, low-level navigation/weapons delivery mission. The mishap aircraft had completed two bomb deliveries and was on a downwind leg at 3,000 feet AGL for a third pass. The aircraft descended in a right-hand turn and impacted the ground. The aircraft was destroyed, and the pilot was fatally injured. It’s likely the pilot channelized his attention on some specific function — possibly the weapons delivery computer — for much too long a period of time. Possibly he failed to check his altitude for 10 seconds or more, and when he finally recognized the turning descent, it was too late to recover.

Another case in point is the F-106

interceptor pilot who became so involved with his attack and reattacks on a target that he flew into the ground. More than likely, his attention was so fixated, so riveted, that the rest of the world was oblivion until that oblivion smacked the unfortunate pilot right in the face.

In the complex arena of aviation, we must be able to divide our attention in order to accomplish multifaceted flying tasks. No matter how sophisticated or simple the aircraft you fly, you must divide your attention properly in order to ensure safe aircraft control. When a function inside the cockpit becomes the focal point of your attention for an extended period of time, you are courting disaster. The high-speed, low-level missions flown in many aircraft today increase the dangers of channelized attention. Pilots of "slow movers" are equally susceptible to the perils. It'll get you, too. It just might take a little longer.

So what can we do to protect ourselves from the dangers of fixation? There is no one answer, no secret salve, no magic potion or pill we can take to make us immune. But there are steps we can take to minimize the problem.

One thing to do is to recognize channelized attention is a phenomenon that has the potential to occur at any time and to admit that it doesn't always happen to some other pilot — it can happen to *you*. Once you have accepted the premise, it's time to consider the seriousness of the problem. No gentle hint, just the bottom line. It can kill you — dead.

So let's say now you believe there is such a thing as attention fixation, and you know it can alter your lifestyle, big time. What you may not realize is you already have learned not to fixate. You just don't consciously think about it (after all, you haven't died yet, have you?).

Back when you were first learning how to fly instruments, I'll bet you remember your instructor hounding you to "keep your cross-check going" or "keep your eyes moving." Although you may have thought you were only learning how to maintain heading, altitude, and airspeed, you were also learning to divide your attention or not

to fixate. Your instructor was forcing you to do something you should think about when evaluating your cross-check. That is the development of timing patterns for knowing how long you need to look at the instrument(s) and when it is time to recheck parameters. Practice building a cross-check where you consciously break your focus every few seconds or so, even if you don't need to. In other words, and it may sound strange, practice being as alert as you can possibly be during your cross-check.

Please don't get the idea that instrument flying is the only place where channelized attention will bite you. This is far from true. You can fixate on a target, a runway, emergency warning light, or anything else inside or outside the cockpit. To prevent doing so, you must practice what I call big-picture flying. Have it squarely in your mind what your priorities have to be for your particular mission, and think how you would handle any distractors that might occur. I know, I know, you can never think of every situation. But just "getting your mind right" helps.

Fly your aircraft such that if you saw Godzilla dancing on the floor of the Grand Canyon you could tell your kids all about what you saw and still be qual-level one on your flight parameters.

If all this sounds so basic that you are sorry you ever started reading this article, then I'm glad. I'm glad because fixating or channelizing your attention is all too often a result of overlooking the basics. Once upon a time, we all learned something about maintaining aircraft control, analyzing the situation, taking proper action, and landing as soon as conditions permit. *Fly — Think — Act — Land*. You just can't afford to do any of these steps to the exclusion of the others, and you certainly can't afford to exclude these steps completely.

Perhaps you have given this article such close attention that you haven't thought of albumen as the answer to the earlier egg question. You probably knew it all along but got fixated on the reading. It's okay here, but don't forget — flying demands your attention. Not your undivided attention, but your intelligently divided attention. ■





Scared to Death

LT D. S. ANDERSON

Courtesy *Approach*, Aug 94

■ *Here's an unusual experience by a former Army paratrooper — before he saw the light and upgraded his professional activity. Jumping out of airplanes on a regular basis requires the same attention to detail we in the Navy and Marine Corps demand to stay in our jets and do our mission. This author had a different perspective to the same general product: He almost didn't live to experience the second.*

"Bulletproof" is a term that has long been associated with aviation safety. We gain experience, get comfortable in our aircraft, and then find ourselves not worrying about mishaps. We get so used to cheating death, even on the most routine of flights, we forget danger is always present. One very cold, very dark night, when I was an 18-year-old Army paratrooper, I learned the Grim Reaper is always standing by to snatch us from the world of the living.

I was used to dealing with danger. I had qualified with the M-16 rifle, M-60 machine gun, and M-203 grenade launcher. I had successfully negotiated the hand-grenade course without blowing up myself or my buddies. I had completed Airborne school and had more than 20 night jumps. And in all this, I never thought much about death. These things weren't dangerous — they were fun! I was having the time of my life!

In all these adventurous activities, we always took precautions, and our gear was always in tip-top shape. I knew the emergency procedures for all the different parachute malfunctions. No danger, right? Wrong!

The drone which plagued the inside of a C-141 had lulled most of us to sleep. We had been airborne for more than 2 hours and were scheduled to hit the drop zone in another hour. The jumpmaster, a crusty old first sergeant (E-8) who had completed three tours in 'Nam, strolled down the two aisles, randomly kicking or shoving sleeping soldiers.

"Wake up, ladies! Let's get ready to put our knees in



USAF Combat Camera Photo

the breeze. There's a horde o' commies down there just waiting to die for their country. Anderson! Wake up Jones over there before I break your skinny little arms!"

I was afraid he would do it, too. It was rumored he had beat up a private once for failing to see a static line was misrouted on his buddy's parachute.

I woke up Jones, and we started the ritual of 'chuting up. It was difficult in the confines of the C-141's fuselage, but we managed. I helped Jones get into his gear and checked him out from top to bottom, front to back. Then he did the same for me.

As usual, we paid extra attention to four critical areas of the parachute and harness.

First, the routing of the static line. It pulls the parachute out of the pack and keeps privates from getting beat up by jumpmasters.

Next, the attaching points on the harness quick-release mechanism. The two leg straps and two shoulder straps must be securely joined to this mechanism, located in the center of the chest just above the reserve

'chute.

Third, the release plate, which is on top of the quick-release mechanism. It must be rotated to the "locked" position. When the plate is rotated to the "unlocked" position, merely pressing on the release plate causes the shoulder and leg straps to disconnect, and the harness falls neatly off the paratrooper.

Finally, the safety clip. It hangs from a bright yellow lanyard and prevents the release plate from being pressed, even when the plate is in the "unlocked" position.

After Jones and I had checked each other out thoroughly, the jumpmaster inspected every inch of our gear, top to bottom, front to back. A few moments later, the white cabin lights were changed to red, and the troop doors opened, revealing the waiting blackness of the winter night. On command, I stood up, hooked up, and shuffled to the open door. I hurled myself into the 130-knot jet stream.

I counted to myself at the top of my lungs, "One thousand, two thousand, three thousand..." As a kid, I always wondered what it would be like to be sucked up in a tornado like Dorothy in the Wizard of Oz, and once again, a second before my parachute opened, I was reminded that now I knew! This wasn't dangerous; it was fun. I couldn't believe they were paying me to do this.

I floated toward the ground and prepared for landing. Landings were the only part about this business that could be dangerous. At worst, you could break a leg, and often you got the wind knocked out of you.

After what was one of my softer landings, I knelt down and reached for the safety clip under the release plate, but it wasn't there. I fumbled in the dark and found it already detached and hanging at the end of its lanyard. No problem. It must have detached during the exit, which was known to happen occasionally. Good thing the release plate has a "locked" position.

Try as I could, though, I could not get the release plate to turn counter-clockwise from the locked position. It simply would not budge. I began to panic. If I didn't get out of this parachute harness and beat feet to the rendezvous point, my squad leader would chew me up and spit me out like a rancid piece of meat.

Then the answer to the stuck release plate dawned on me. An ice-cold terror swept over me as I realized why the release plate would not rotate: It was already unlocked! But it couldn't be. I had checked it. Jones had checked it. The jumpmaster had checked it, hadn't he? And it couldn't have rotated by itself, could it? Of course not.

In the dark, I could not see if the red pointer was indeed pointing to the unlocked position. There was only one way to tell. I gently pressed the release plate.

Click!

The sound stopped my heart. What happened next scared me to death. All the attaching points released, and harness fell neatly off my body.

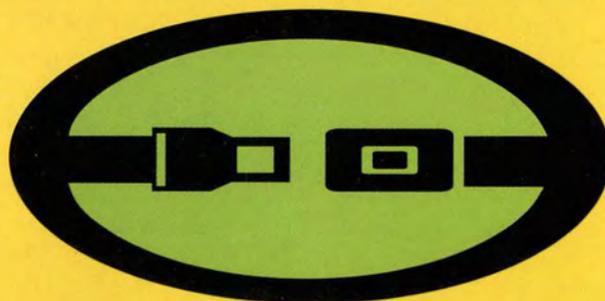
The Grim Reaper had swung his bloody sickle and missed...but not by very much. ■

Lt Anderson flew with VT-24.

If You Believe in Signs



**Bet Your LIFE
on This One!**



**Now, More Than Ever,
MAKE IT CLICK!**