

fly^{ing}

SAFETY

AUGUST 1989

The Accident That Didn't Happen

Do You Have Your Priorities Straight?

A "Let Down" to Live

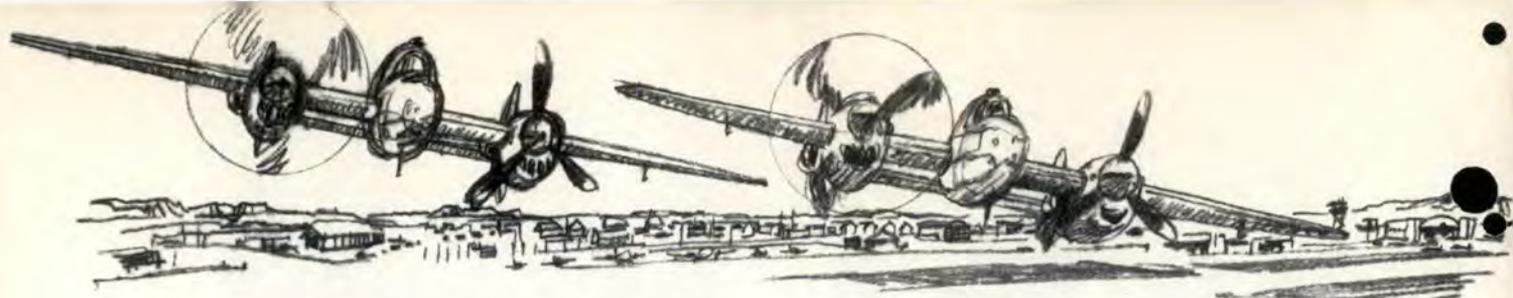
You Should Know . . .

ATTACKING

MISHAPS



Last year, Class A flight mishaps cost the Air Force 48 lives and over \$390 million!



THERE I WAS

M. R. "SCOTTY" GRAHAM

■ It isn't easy to admit you did something real dumb ... even when you know it. After you get to be an old guy and have basked in a degree of hero worship by the young hot sticks, you do a bit of soul searching and come to the conclusion that an honest confession might save some kid's life, career, or an expensive airplane.

At the close of WW II, when all the heroics had dried up, about all the enjoyment left was bragging about how great we were. One evening, after a few beers, we were waxing eloquent with all the hand gestures and rhetoric that fighter jocks are guilty of. One of our group, who traditionally never said much, piped up with, "I never was very good at anything until I became a pilot, and now I feel like I am as good as anybody!"

I seized upon this as a golden opportunity to yank his chain and said, "Why, Jim, you can't even fly a kite!" He retorted, "A beer says you can't lose me!" Me, "I can lose you on takeoff!" He said, "You are the DO. If you can schedule a couple P-38s in the morning, I'll show you a thing or two."

Now I'm trapped. This boy is out for blood, so how can I let his slap of the gauntlet go unanswered? I called the line and had two birds set up for early morning sorties.

Now begins a series of dumb things. We taxied out for a forma-

tion takeoff (a no-no in twin reciprocating engines due to possible engine failure), I give Jim the ready sign, he responds go, and we did. I decide if I'm going to teach this second lieutenant a thing or two, I'd better employ some cunning. I moved the throttles right on through the "war emergency" safety wires and forced the screaming "Lightning" off the runway.

Immediately after breaking ground, I snapped the gear up. Then all hell broke loose! My left engine chose this instant to retire from the war and promptly blew up. The prop went to full flat pitch to maintain its RPM, and with the right engine cranking out maximum horsepower, we made a flat, quick hammerhead left turn. Things got a little busy for the next few seconds with bold face items spinning by (KEEP FLYING, HIT FEATHER, THROTTLE OFF, MIX OFF, MAG OFF, FUEL OFF, FIREWALL SHUT-OFF, KEEP FLYING, DISPATCH LAUNDRY, and more). Had this been the right engine, we probably would have become instant statistics.

Looking around for Jim, who should have been making a normal straight climbout, revealed no Jim. A quick check of my own problem, then back to my wingman. I looked closer, and there he was with his wingtip in my shortrib. A quick doubletake reveals his left prop is also feathered. My God! He took me seriously when I said I would lose him on takeoff. Some rapid-fire

radio conversation took place while I was flying a closed pattern, but he stayed right on me until I turned final. Then he started his dead engine and went around.

I couldn't convince Jim my engine had really failed until he taxied in and came over to curse me out in person. Then he saw the bulge in the left nacelle and grew pale as a ghost. "I thought you did that deliberately ..." "I know, I know," I mumbled, "but you earned that beer. You did a terrific job of flying. You've convinced me."

It doesn't take much intelligence to start analyzing this series of stupid events. But in 'fessing up, I will summarize and elaborate on lessons learned.

■ Leadership. A DO knows his pilots' capabilities and doesn't need to engage in dumb games.

■ Guidance. Rules are written to provide sensible guidelines and definitely should not be violated by anyone, especially by the fearless leaders.

■ Gains. Had the mission proceeded without mishap, and I did outfly Jim, what would I have accomplished except crushing his ego?

■ Regret. I have not enjoyed remembering this bit of stupidity. It was not a complete waste, however. I have kept it in mind while training many, many pilots over the years. One of my axioms is, "It is easier to *stay out* of trouble than to *get out* of trouble!" Good luck and FLY SAFE. ■

Letter from the Editor

This issue focuses on lessons learned from previous mishaps. On the cover, safety personnel go through the paces of mishap investigation at USAF's Crash Lab located at Norton AFB CA. Information gained from the final report is used to prevent similar mishaps from recurring.

Articles in this issue deal with close calls in the "There I Was" section to the importance of crew rest and use and knowledge of your equipment.

In the end, it is each of you who will help prevent mishaps. Your attention to the details of everyday operations in flight and on the ground make the difference between success and failure. We must learn from the experiences of others.

HON DONALD B. RICE
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DEPARTMENT OF THE AIR FORCE • THE INSPECTOR GENERAL, OSAF

PURPOSE — *Flying Safety* is published monthly to promote aircraft mishap prevention. Use of funds for printing the publication has been approved by Headquarters, United States Air Force, Department of Defense, Washington, D.C. Facts, testimony, and conclusions of aircraft mishaps printed herein 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 nondirective and should not be construed as regulations, technical orders, or directives unless so stated. **SUBSCRIPTIONS** — For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Changes in subscription mailings should be sent to the above address. No back copies of the magazine can be furnished. **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 six aircrew members. One copy for each 12 aircrew support and maintenance personnel. Air Force units must contact their base PDO to establish or change requirements. AFSP 127-2 is entered as a publication at the Second-Class rate (USPS No. 586-410) at San Bernardino Postal Service, 1331 South E Street, San Bernardino, CA 92403 and additional entries.



THE ACCIDENT THAT DIDN'T HAPPEN



Although difficult to evaluate, fatigue has been a definite contributor to 11 USAF mishaps in the last 10 years. This is the tip of the "fatigue" iceberg. The current emphasis on human factors and the development of new data recording systems to parallel investigative techniques will provide an opportunity to more accurately assess this killer problem. — Ed.

MAJOR FRANK L. HETTLINGER, ANG

■ It was a beautiful Sunday morning, and the weekend cross-country trip had gone well. The mission for the day was to return to my unit, deployed 1,500 miles from home station. For the F-84F, this meant an intermediate stop, but with excellent weather across the entire route, I anticipated a "no sweat" flight.

At 1300, immediately after my wingman and I became airborne, he informed me that his landing gear handle would not go to the up position. After several unsuccessful attempts to retract his gear, we decided to abort the mission.

Back on the ground, I was notified that an ORI team had arrived at the deployment site, and since I was the operations officer, I was to

return ASAP. This bit of "the-last-thing-I-want-to-hear" type of news was to haunt me all the way back.

We again became airborne around 1530, with my wingman using the override system to retract his gear. An uneventful 2-hour flight brought us to our intermediate stop where a fast 1-hour turnaround provided us with food and fuel.

We gained an hour at this point and were going to gain one more before arriving at our destination. We decided not to reset our clocks until we landed. Takeoff then was made at approximately 1900. This time I flew the wing position to spread the workload around a bit. Darkness prevailed the last half of the flight, which demanded a higher-than-normal degree of attention. One hour and 45 minutes later, we



I wasn't enjoying the trip . . . heat in the cockpit wasn't helping matters either. The second leg required climbing over some 5,000-foot high mountains and quite a few altitude changes along the route.

taxied into the parking area.

I was greeted by troops in various states of confusion and handed all the TWXs that had been received relative to the ORI. The first task was a head count which revealed only about 60 percent of the pilots available. The remaining 40 percent were spread out on rotational and other TDY exercises. A majority of the 40 percent were the flight commanders and assistant flight leaders, since all requirements for these duties demanded "well-qualified" people.

A schedule was made up for the next day's flying. This consisted of 12 sorties of dive bomb, skip bomb, rockets and strafing in the morning, and 8 low-level low altitude bombing system (LABS) sorties in the afternoon. Another fly in the ointment! No published low-level routes for this base. After considerable effort, a group of us drew up an acceptable route terminating over the LABS target. By golly, I'm tired. A check of my watch shows 0200! Time to reset to local time, midnight. Now I didn't feel so bad.

All the details taken care of that I could think of, I headed for the shower and hit the pad around 0100 local time. But I couldn't sleep. All

kinds of ideas, notions, thoughts, etc., ran through my mind. Seemed like I was checking my watch every 5 minutes, too. The night dragged by slowly, and finally it was 0430. Time to get with it.

Breakfast tasted good, and I felt pretty good. A mass, painstaking briefing was held at 0600. None of us had ever dropped a bomb or rocket on this range, and very few of us were lucky enough to get some strafing in before the weekend. Nevertheless, we pressed on under the hard pressure of pencils in the hands of the emotionless inspectors.

The tight schedule required the services of every pilot, including myself and the squadron commander. I was the flight leader on the third flight of four aircraft. We found the targets OK, but it was apparent there weren't going to be many in the scoring column by the end of the day. I was getting somewhat disgusted with the whole thing by now. Felt a little tired, too.

During the lunch hour, I compared notes and prepared for the afternoon's missions. I found myself scheduled to fly the fifth low level and LABS sortie. Seems like the theory was to get the more experi-

enced lads on this phase to try and salvage some portion of the day's activity.

Walking to the aircraft, I can remember having that feeling of heaviness of limbs and of someone tightening a band around my head. I knew I was dead tired, but I was still thinking straight. A fast walkaround of the bird, then I cranked up and made good my takeoff time to the second. Sure was tired, though! Been tired before, but this had a new twist to it. Caught myself narrowing my attention to fewer items than I was used to. Oh, well. So what. The bird's running OK. Only thing I had to do was hit my low-level starting point on time and make good that bomb impact time.

Time to hit the deck. Down I went, leveled off a good 500 feet above the ground, set course and airspeed, and passed over the shack near the railroad track, right on the money.

The first leg went like clockwork — most of it over flat desert. I was hacking checkpoints within 15 seconds, but I wasn't enjoying this trip at all. The heat in the cockpit wasn't helping matters either. The second leg required climbing over some

continued



I'm on the last leg now and having a fight with myself . . . I had to keep pushing and get this chore over. I felt tight and was sweating like blazes. The range controller called, "Running in on the wrong run-in line, abort your pass." "Abort hell!"

THE ACCIDENT THAT DIDN'T HAPPEN continued

5,000-foot high mountains and quite a few altitude changes along the route.

Seems to me I'm doing a lot of mechanical flying on this flight. Watch it, boy! The ground got awfully close that time. Running 20 seconds slow on that checkpoint; need a bit of power to catch up. Looks a little high now. What kind of low-level run is that? Get it down where it belongs. Thirty seconds fast on the next checkpoint. What gives? Back off with that throttle. Come on, keep it at 500 feet!

I'm on the last leg now and having a fight with myself. Keep thinking to heck with the whole thing, but I had to keep pushing and get this chore over with. I felt tight all over and was sweating like blazes. That's the last checkpoint before power pushup. Time looks good. Should be picking up that run-in line about now. Yeah! There it is! Full bore now. Need 504 knots indicated for this run.

I checked in with the range controller who cleared me in. About a minute to go now. Speed almost on. Uncage gyro. The range controller's voice comes through my headset loud and clear. ". . . running in on the wrong run-in line, abort your pass." Abort, hell! I remember briefing about this possibility and know that the correct run-in line was off

to my left and parallel to this one. I raked the '84 into a steep bank to the left, picked up the right run-in line, and rolled out on course. Gee! Nearly blacked out on that correction. Don't forget the switches! There's the target. Ease in on that 4-G pull, now! Up over the top, roll off, and check over the shoulder for the hit. Better turn my switches off. What the . . .? They're all off! Can't be! I swear I turned them on.

The range controller called a hit well outside the ballpark. Sure enough, there's the smoke! So what. Who cares anyway? But what about those switches? Right here I have a flash realization that I must be doing things without thinking about them. Seems like the whole flight has been going this way. I better get this "Hog" on the ground, but fast!

I called the tower for landing instructions. Nothing new here. Same old story about a right break; call the initial approach. I screamed down into a descending turn to the initial approach, knowing all about some local procedures describing the correct way for entering traffic. Who needs 'em? I called the initial approach, and the tower requested a gear check on base.

I broke hard left. Halfway around the break, the tower explodes, "Right break! Right break!" I got the

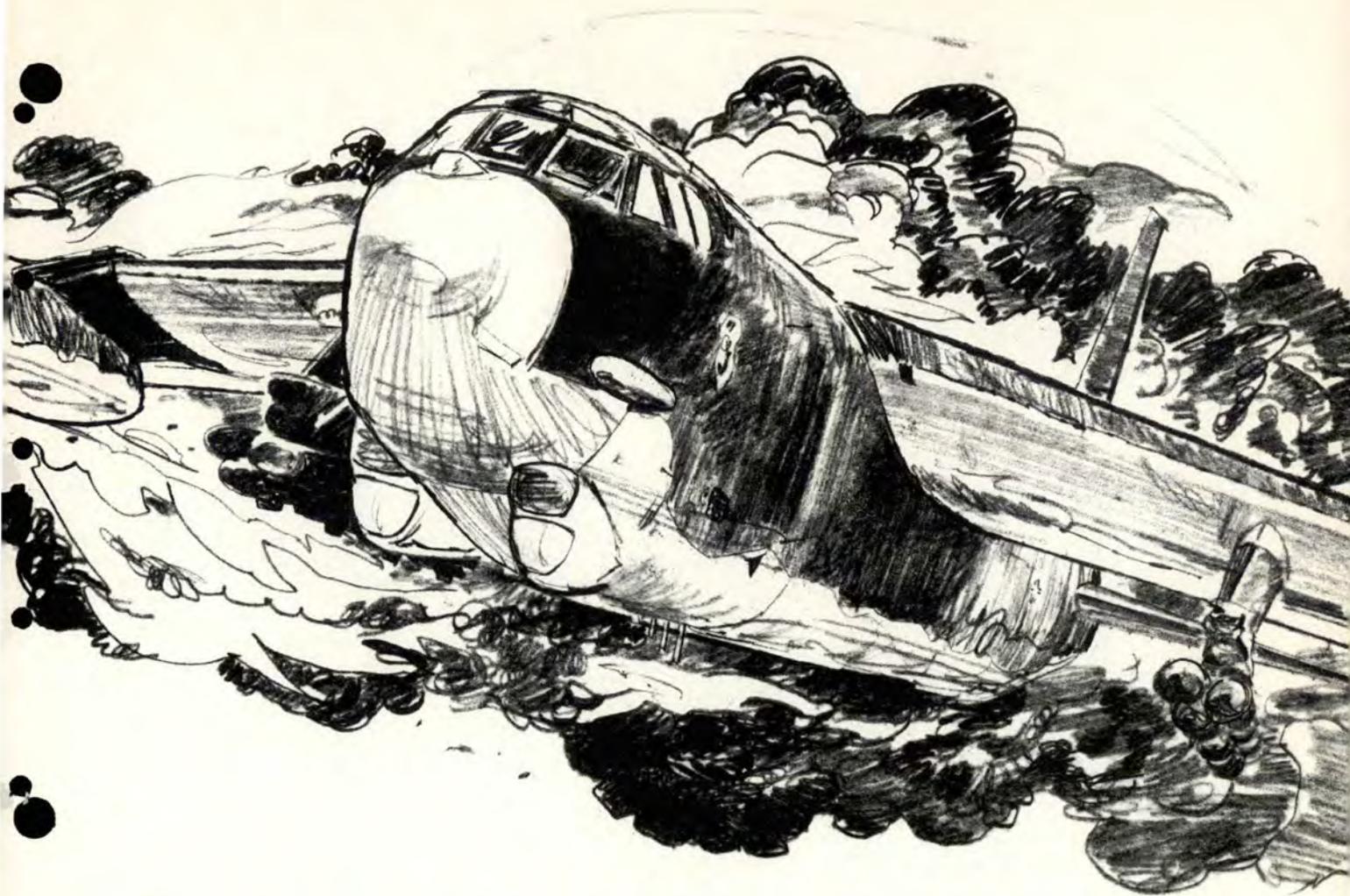
message and mumbled out loud, without pushing the mike button, something about everybody ought to relax. I immediately whipped that '84 into a 90-degree turn so as to roll out on a half-decent downwind leg. Somehow I managed to put the gear down and landed without further incident.

I don't know what I did the rest of that day, but I do know I couldn't care less about anything. I didn't know how bad a physical and mental shape I was in until the next day after a good night's sleep. The more I thought about the way I conducted that flight and the irrational thinking I had performed throughout that day, the more I shook all over. It was apparent to me then that I had experienced a serious condition associated with fatigue.

All that I have ever read or been told about fatigue since then has made an alarming amount of sense. And I wonder sometimes how many of us have to experience it before we are really made aware of its causes and consequences.

The final question then is, if a mishap had occurred, how many investigators would have considered fatigue as the primary cause? ■

The author is now Major General Hettlinger, Commander, Indiana ANG.



DO YOU HAVE YOUR PRIORITIES STRAIGHT?

LT COL KENT D. KOSHKO
Editor

Pilot, we're on fire!!! What should we do??

■ Much has been written about the first critical steps in dealing with an emergency. The following is an exercise intended to stimulate discussion among crewmembers and staff.

Exercise: You have just experienced a serious *in-flight* emergency. Arrange the following list of actions in order of importance.

- Call the command post.
- Accomplish emergency **bold face** items.
- Check heading and aircraft attitude.
- Consider the system lost or malfunction.
- Visually check, if possible. Obtain crewmember/wingman input.
- Accomplish nonbold print and normal procedures checklists.
- Check airspeed.
- Have coffee or your flight lunch.
- Advise the crew/wingman.
- Call ATC, declare an emergency, or obtain a new clearance.
- Set power.
- Cross-check and monitor fuel.
- Plan your landing, continue the mission, or perhaps delay en route.

Check page 6 for the "school solution." Compliments of Major Dave Pfeifer, 329 CCTS, Castle AFB, California, and Maj Jim Kristl, SAC *Combat Crew* magazine, Offutt AFB, Nebraska. ■

SCHOOL SOLUTION TO:

Do You Have Your Priorities Straight?

continued from page 5

■ The "school solution" is basic: **fly the airplane first! AIRSPEED, ATTITUDE, AND POWER ARE INTERRELATED. YOU MUST HAVE THEM UNDER CONTROL BEFORE YOU CAN DO ANYTHING ELSE.**

1. Check airspeed. Regardless of what has happened. You live or die by airspeed. If you don't have airspeed, the rest is academic. Loss of engines, fires, fuel leaks, and electrical problems are all secondary to aircraft control. You need airspeed above stall and above minimum directional control when flying a multiengine aircraft. On takeoff, airspeed is very important, i.e., acceleration checks, ground directional control speed (multiengine), and flying speed. Airspeed must be considered during a ground abort or crash landing immediately after takeoff. If speed is excessive in a ground abort, you may not stop on the hard surface. In a crash landing, you must maintain safe speed above stall so you don't stall the aircraft into the ground. Immediately after takeoff, are you aware of your best climb angle or best rate of climb?

2. Check heading and aircraft attitude. Select a safe flightpath in terms of ground track (direction)

and altitude above terrain. How will your flightpath be affected by reduced thrust? If you have lost thrust, you don't want a wing to get way down or heading to start off in a curve. During departures and low level operations, crews must be aware of obstacles and know their **emergency safe altitudes.**

3. Set power. Set a power setting that will ensure a safe airspeed and flightpath.

4. Advise the crew/wingman. This action puts the crew on watch and directs their attention to saving the airplane and maybe their lives. Survival is now everyone's prime responsibility. Other crewmembers may be used for looking up information, monitoring aircraft and position, or perhaps reading checklist items.

5. Visual check if possible and obtain crewmember/wingman inputs. This information could be essential in properly diagnosing the emergency and determining how best to handle the situation. It will help to confirm cockpit indications.

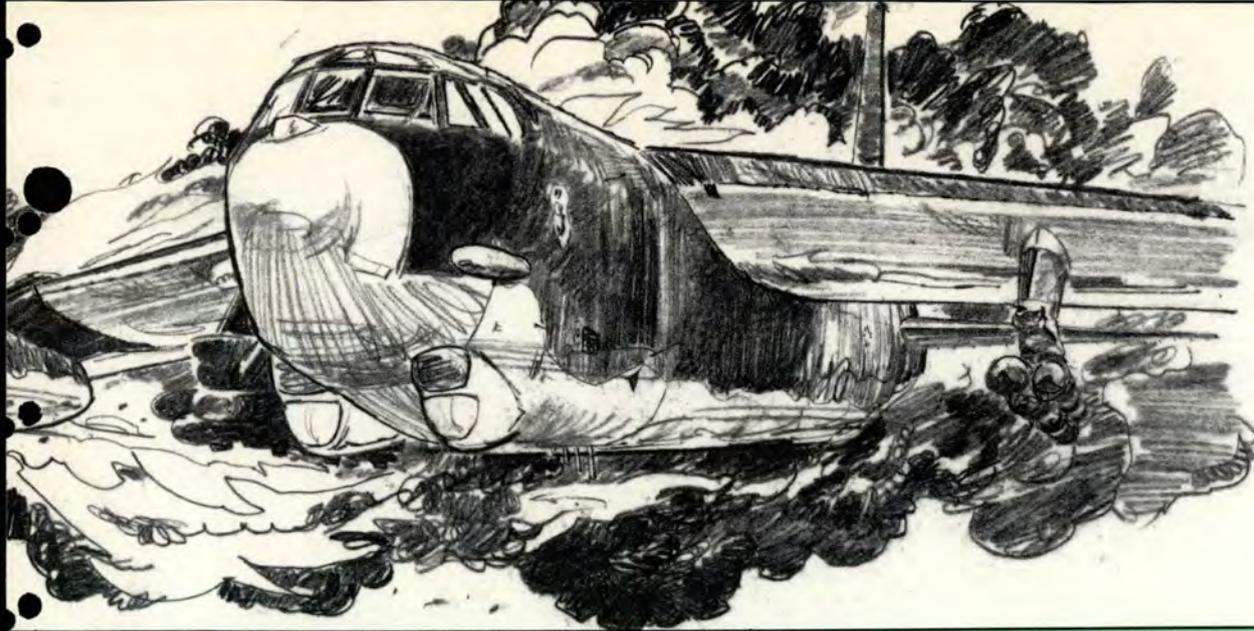
6. Accomplish emergency bold print items. Now that you have your aircraft under control and have properly diagnosed the problem, you are ready to proceed with the

critical action checklist. Remember when handling emergencies, the only fast action required **is to fly the airplane** (airspeed, attitude, and power).

The complexities of most emergencies require a certain amount of analysis before you try to correct them. Fast action without analysis doesn't usually cure problems — it may create more.

7. Accomplish nonbold print and normal procedures checklists. This is to clean up the cockpit phase. You want to do those actions that will prevent a recurrence of the original problem plus additional items that are necessary to ensure continued safe flight. Sometimes you may have a tendency to relax after you have gotten over the initial shock of the emergency and have taken care of the immediate problem. You must continue to monitor the store and police the aircraft, i.e., oxygen procedures, pressurization, altimeters, parachute lanyards, and more.

8. Cross-check and monitor fuel. Fuel status will have a bearing on your decision to continue the mission, particularly if your original problem was a fuel leak or resulted in a range degradation. It most cer-



tainly has to be considered if a landing is attempted.

9. Consider systems lost. This is the first step in the decision making process, which will determine your actions for the remainder of the flight. Ask yourself how will the loss of a certain system affect the conduct of my flight? What can I expect to encounter later in the flight? Do I need this equipment to continue? Example: Thunderstorms along the route and no radar.

10. Plan your landing, continue the mission, or perhaps delay. A careful analysis of steps 8 and 9, aircraft weight and condition, plus weather and runway conditions should be considered. Based on these factors, you are now ready to reach for the mic button and announce to the world your decision. What are my options? Don't get in a hurry — plan ahead.

11. Call ATC, declare an emergency, or obtain a new clearance. Your problem may not be too serious; in that case, you will probably continue as planned. However, if you have elected to abort the mission, you now have the necessary information to be very specific in your desires. Remember, if you have a serious emergency, you **don't ask**

ATC, you tell them what you must do to insure the safety of the aircraft and crew. This step could be inserted between steps 7 and 8 if deviations off course and altitude are in a high density traffic, but definitely after aircraft control has been established.

12. Call command post. If you have gotten this far and the aircraft is still under control and you are having trouble diagnosing your problem, by all means call for help. There are many experts on the ground just waiting to help. This step is required by command directives for commanders to be kept abreast of position and problem areas concerning command and control of their aircraft.

13. Have a cup of coffee or flight lunch if you desire. The immediate danger is past. The foreseeable future is secure. It's time to review. Some people believe this step should come sooner, and their point is well taken. It has a calming effect that may allow the crew to make more accurate judgments. In any event, relax — you have earned it.

How did your list compare? We hope this has stimulated discussion among crewmembers and staffs.

The thought process of handling

emergencies can be arranged in some logical order of priorities. These priorities can be arranged in phases:

1. Fly the Jet Phase. This is **first, last, and always!** If this is *not* done, all the rest doesn't really matter.

2. Analysis Phase. Consider all factors to determine the best course of action in regard to the emergency.

3. Decision and Action Phase. Based on information received in the analysis phase, the crew takes the necessary actions to make the aircraft safe.

4. Talk Phase. Advise agencies of intentions or ask for help.

If you don't have your priorities in order, the result will be confusion and distraction, and the possible outcome is **MISHAPS**.

Obviously, each emergency is unique and will require analysis and decision at the time. But planning for emergencies is certainly a good topic of discussion to include in your mission planning.

Your comments are welcome. Please write: Editor, *Flying Safety* magazine, HQ AFISC/SEPP, Norton AFB, California 92409-7001 or call AUTOVON 876-2633/2634 or commercial 714-382-2633/2634. ■

MANAGING AIRCRAFT PARKING AT DEPLOYMENT OPERATING BASES

CAPTAIN DALE T. PIERCE
919th Special Operations Group
Duke Field, Florida

■ Does the idea of having to generate a parking plan at home station cause you any stress? (Of course not.) How about generating one at a non-Air Force deployment operating base (DOB)? (Maybe just a little tension.) How about if you are participating in an ORI, your unit is sharing the field with nonsimilar aircraft, and varying quantity-distance criteria must be applied on a case-by-case basis? (Are you nervous yet? I would be.)

Managing the parking of a squadron of aircraft at a DOB can be a ticket to lots of stress and more than a few headaches — especially if the DOB is not an Air Force base with a previously approved parking plan.



So how do you deal with the problem of creating what you need when you need it most? Naturally, the task can be made less formidable with good preparation. It requires familiarity with your unit

tasking, some assistance from graphics people, and a little creativity.

To begin, find out where you're going. Once you possess this essential bit of information, obtain an airfield diagram (crash grid) for that location. If you are going to an Air Force installation, getting the airfield diagram should be no problem. If you are going to Timbuktu and your planning officer can't help you, you might have to contact the planners at your MAJCOM.

The worst case is that you can't get it now and will have to obtain a copy of the airfield diagram after you get there. That's not the preferred state of affairs but can be a marginally acceptable situation if all other preparations have been made. Note: If you can't get that airfield diagram, at least call the location and get a verbal description for planning, and obtain the scale used for airfield diagrams. You can use that information to prepare materials for assembly when you get there.



The second step is to create a second diagram of just airfield operating areas (runways, taxiways, and ramp areas). A simple method is to trace the original. Other more sophisticated methods are also available. Talk to your graphics folks. On this second diagram, you will create your basic parking plan.

The third step is to obtain a pair of plastic picture frames (or a suitable substitute). In these, you will place both the original airfield diagram and the parking plan. The plastic frames will keep the diagrams in good repair and will enable use of grease pencil notes.

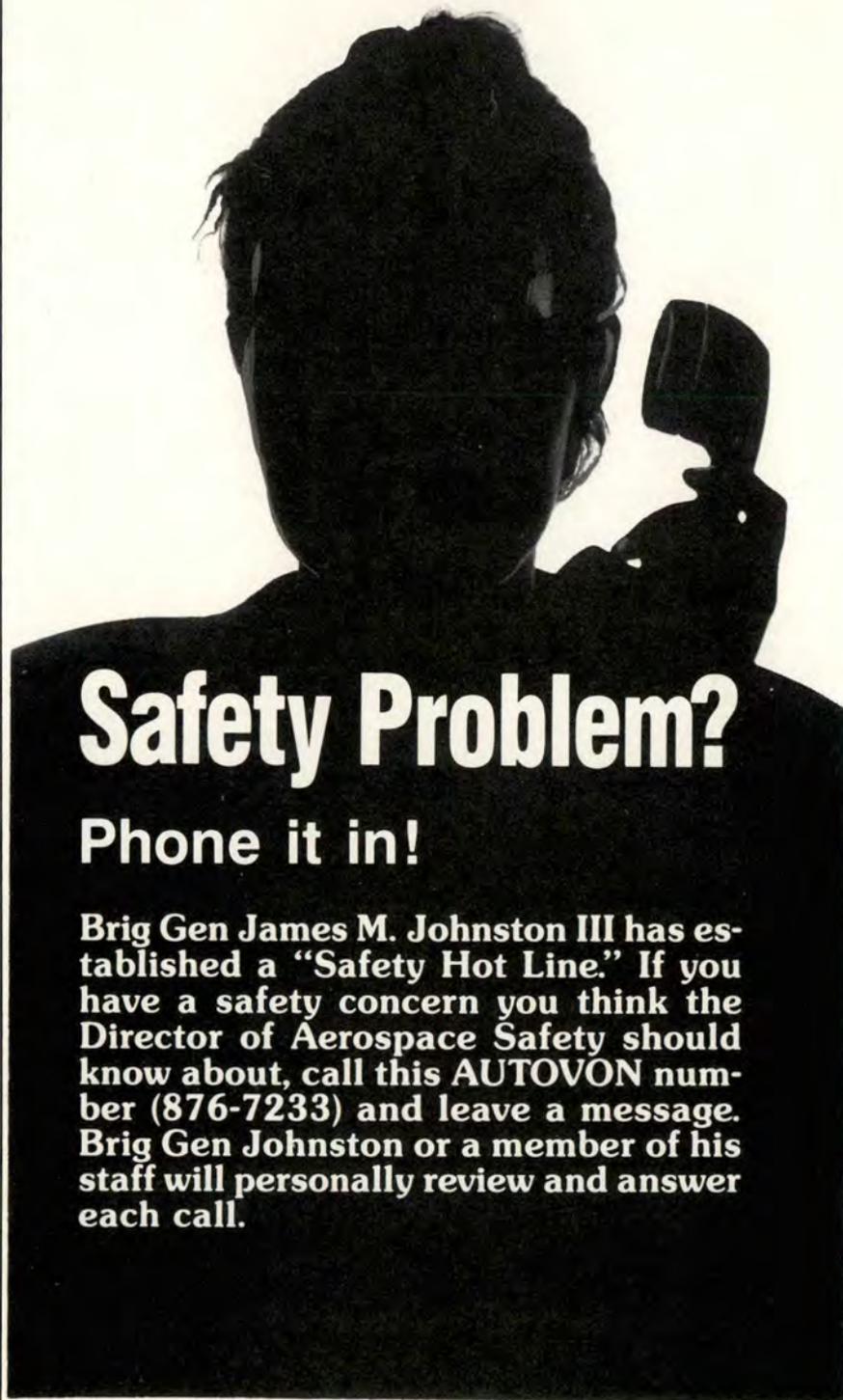
The fourth step is to create a scale set of aircraft silhouettes representing your aircraft and other aircraft expected to be using the installation. These will be made to the scale of the airfield diagram to be used, and can be created in advance if you at least know the scale of the airfield diagram you will have access to later. A small amount of double-stick tape will enable you to place the aircraft silhouettes on the finished boards.

Use of this system is incredibly easy. You can use the scale aircraft silhouettes to show aircraft in place, measure distances to ensure quantity-distance criteria are met, and to simulate aircraft movement prior to requesting or permitting actual movement. A set of quantity-distance silhouettes can also be created for probable munitions configurations, to be used in the same manner as, and in conjunction with, the aircraft silhouettes. This plan will ensure you have proper aircraft clearance in all areas where your jets will be parked and taxied.

This system was created by Captain Marianne Miller and Captain Kevin Smith of the 62d Military Airlift Wing, McChord AFB, Washington. They used it during their ORI and received laudatory comments for their efforts.

What are you doing in your program that could help other FSOs if they knew about it? If you know of something, call me (Dale Pierce) at AUTOVON 872-2012 (USAFTAWC), or send a short note to 919 SOG/SEF, Duke Field, Florida 32542-6005. ■

876-SAFE



Safety Problem?

Phone it in!

Brig Gen James M. Johnston III has established a "Safety Hot Line." If you have a safety concern you think the Director of Aerospace Safety should know about, call this AUTOVON number (876-7233) and leave a message. Brig Gen Johnston or a member of his staff will personally review and answer each call.



A "LET DOWN"

LT COL JESSE F. JENKINS
Directorate of Aerospace Safety

YOU HAVE LESS THAN 30 SECONDS TO MAKE A DECISION OR YOU WILL DIE!

■ Inspired to know more about correcting possible parachute malfunctions? Parachutes can be your best friend or your worst enemy. Undoubtedly, they have saved more lives than not, but using them properly and being able to correct a malfunction may save *your* life!

Some Facts About Parachutes

First, for the historians among us, we need to present a few hard-to-find facts about parachutes. Leonardo da Vinci sketched the parachute around 1495. The first successful jump was from a tower in 1783 made by Sebastien Lenormand. Andre Garnein made the first jump from a balloon (using a parachute) in 1797. On 24 July 1808, a parachute was first used in an emergency to

save Polish aviator, Jodaki Kuparento, when he jumped from his burning balloon. The first premeditated exhibition jump by an Army officer was made by Major W. G. Schauffler, Jr., on 22 April 1920. And lastly, the record free-fall is held by Capt Joseph Kittinger, USAF, who on 16 August 1960, stepped out of a balloon over New Mexico and fell 4 minutes 38 seconds through 84,700 feet before deploying his parachute for the remaining 17,500 feet.

A Nightmare

So, now we can get down to an actual parachute descent. While the following situation plays out, go over in your own mind what you would have done if the same thing had happened to you.

The nightmare happens, you are being thrown forward and to the right. Only seconds before, everything was going well, and we were RTB at 12.5K, under the weather and only 10 minutes from landing. Suddenly, the jet was not responding to any control inputs, and my

mouth was instantly full of cotton. The nose pitched down, and the right yaw was rolling us inverted. I knew I had to step over the side. Must have been the hardest decision I ever made, but easily executed once I was committed to my own survival.

Struggling to get head and back pressed in the ejection seat, I was glad to have tightened my lap belt. After pulling the handle, the canopy cleared. I felt a rush of air, my helmet and mask stayed on, and I felt a not-too-violent kick in the pants. It really got quiet fast, but I was free of the jet. The inertial reels helped pull me into the seat, and the next thing I remember is being pushed from the seat. (Author's note: This is a man-mounted back style automatic parachute.)

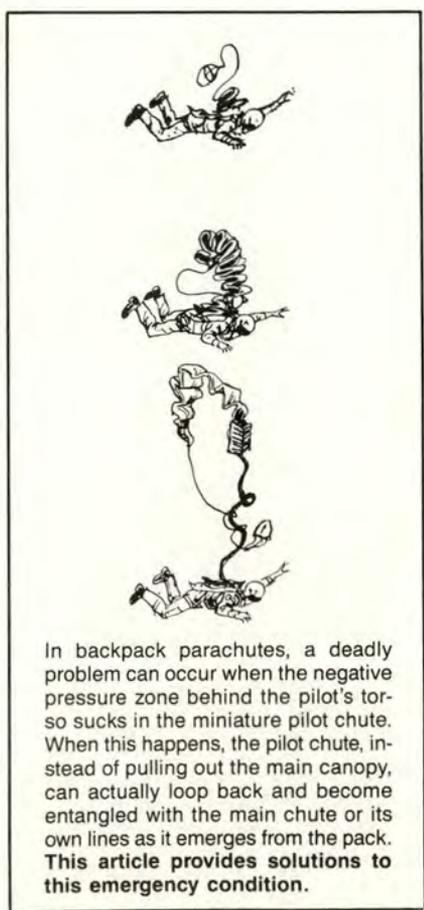
Seat separation was clean, and I went into a tucked position to await opening shock, which did not occur. All that life support training began to read like a book in my mind. I went into a spread-eagle position. As I spread my arms, I noticed



TO LIVE

something was wrapped around my arm. I shook it free and waited. When I looked up, I almost got sick. All I could see was "a bag of trash." The suspension lines were flying around and wrapped up around parachute material.

I pulled the cords towards me and let go — not much better. I pulled them again (about 3 feet) and my breath began to struggle in my throat. I pulled again, remembering the training instructor's words that I had "the rest of my life to clear this malfunction." Then I looked down. At the same instant, I got a full chute. I had fallen approximately 2,000 feet with the malfunction before I got that beautiful canopy at about 5,000 feet AGL. No opening shock was noted, and only minor twisting was present. I corrected that by bicycling my legs to untwist. Post ejection checklist was accomplished, and I even did the four-line cut after checking no canopy damage. The PLF (parachute landing fall) was no sweat after what I had just been through.



In backpack parachutes, a deadly problem can occur when the negative pressure zone behind the pilot's torso sucks in the miniature pilot chute. When this happens, the pilot chute, instead of pulling out the main canopy, can actually loop back and become entangled with the main chute or its own lines as it emerges from the pack. **This article provides solutions to this emergency condition.**

Your Ideas

Could you have done as well? I forgot (on purpose) to tell you this pilot had 32 previous jumps. His experience gave him the confidence to be COOL under extreme pressure. So you say, now tell me how to correct my potential malfunctions. OK.

First, let's talk about how the pilot accomplished the correction in this real-world malfunction. He knew enough about his parachute and how it was supposed to operate to understand it wasn't working properly.

RULE 1. Know your equipment. In our case here, he knew the chute had not blossomed. To land safely, he had to get the chute open.

RULE 2. Identify the problem. Blatantly obvious to the casual observer. Now comes the rule that has won many a war or conflict in the past.

RULE 3. Do something — act now! He had several choices: A. Pull lines to him and release, B. Pull in all material and try to undo knots, C. Pull quarter bag to him, open bag tackings, and get the hem (skirt) of chute into the airstream.

Actually, choice C might have been best, but his choice A won the war. Any kind of parachute opening can change a fatal impact to one with none or only minor injuries. Parachutes are overdesigned for that extra margin of safety. Safe landings can be made with several (the books say up to four) panels blown and several (four again) suspension lines cut. Any malfunction will increase your rate of descent which you want to be about 18 feet per second.

But what do you want most? Life or only a broken limb? Remember — very few fatalities result from broken limbs. Landing without a parachute is almost always fatal. (The one exception to this rule I know about is a WW II pilot who bailed out without a parachute and landed in a 40-foot snowbank.)

Mae West

Another common malfunction you might have is a partial inversion, or Mae West. It will normally result in minor canopy damage with slightly higher rates of descent. Os-

continued

cillations can also increase with this malfunction. When you inspect your canopy and you see what looks like a figure 8, you have a partial inversion. This happens when one part of the parachute passes under the skirt of another part and has opened inside out. If you have sufficient time and altitude, attempt the following corrective action. Otherwise, do nothing — you will still survive the landing.

Locate the lines going to the smaller lobe, then pull these down and quickly release them. Repeat several times, if necessary, until the canopy opens properly. Never, NEVER pull on only one suspension line. You might cut (melt) the canopy if you create too much heat and friction. If pulling lines doesn't work, you might try cutting up to four lines. Use only a hook blade knife, never a single blade. Also, never cut riser webbing. Do not perform the four-line jettison modification if any lines have been cut. (This

could create an imbalance in the aerodynamics of the parachute.) I can just see you corkscrewing through the sky. Fine, OK, I know all that, but what else can happen?

Twisting

Twisted risers have accounted for much concern with recent ejections. They are caused by forces of roll, yaw, or pitch that were transferred to you and your seat at ejection. Twisted risers can hold your head and neck down in your chest and would be very unpleasant to deal with on the PLF. It is not unlikely your neck could be broken.

You can clear the twisting in either of two ways. Use your arms or use your legs. Use both arms and pull the risers apart. Remember when you wanted to speed up the spin on the old backyard swing? Just do the same thing and pull apart. You can also use your legs and bicycle them to untwist. What-

ever the method used, get untwisted before the PLF to keep you from corkscrewing into the ground.

Manufacturers have gone to great lengths to stabilize ejection seats. The Air Force ACES II seat uses a gyro called the STAYPAC to control pitch. There are no Air Force line systems with three-axis stabilization, but the Navy's development engineers have come up with a prototype seat that uses a computer to seek a skyward position.

Final Thoughts

Well, hopefully these tips could help you someday. I hope you never have to use them, but never hesitate to call on your life support gear instantly when you need it. The people who work in life support, egress, and parachute shops are totally dedicated to your survival and safety. They can help if you need more information or have questions. Fly safe and do something — act now! ■

MAE WEST (Partial Inversion)



LINE(S) OVER CANOPY



TWISTED RISERS AND LINES



These deviations can occur during the chute-opening process. While not normally fatal, they decrease the effectiveness of the parachute by lessening the overall dimensions of the canopy. This can result in a faster, harder landing and raise the chances for injury. To correct, grasp the outermost lines on the smaller lobe of the canopy and pull down and release until the chute inflates fully. Do *not* pull back and forth on a single cord looped over the top of the canopy. There is a possibility of cutting the parachute in half.

The risers and suspension lines can sometimes twist so much they force your head to your chest which might cause serious injury at PLF. To rectify, place your hands between the risers and pull them apart. This will start reverse rotation to separate the risers.

FLIGHT LEADER

Radio Procedures . . . is anyone listening?

LT COL KENT D. KOSHKO
Editor

"MiG on your tail!" Did you catch that? What if you didn't? A missed critical call could prove to be fatal! The following story illustrates this point very well.

■ It was our third mission in a week near Hanoi, and feelings were running high. The premission briefing covered targets, SAM and MiG threats, and new radio procedures. We had learned the first night how crucial proper radio procedures needed to be. That night, everyone was on the same frequency and even though it was thrilling listening to all the chatter, GCI directing fighters to MiG intercepts and numerous SAM calls, it was a bit too much to sort it all out. So tonight we were on discrete channels where we could pay attention to our specific sortie information and threats.

We took off and ran through the checklists while we climbed out. As we flew north, our eyes peered into the dark night sky for any unwanted intruders. We were flying lead in a three ship, and so far all was okay.

The closer we got to the target the more alert we became. The mission was running very smoothly . . . too smoothly, in fact. A few last-minute corrections were made going into the target area, and all was still going well. "Three minutes to go," the nav radioed. Final checks were completed. "Three, two, one, bombs away, and let's beat feet for home."

The return flight was also quiet, but our eyes were riveted into the pitch-black night, waiting to be challenged and blown from the sky. Finally, the landing on friendly soil,



and we were feeling pretty good.

It wasn't until we were waiting for maintenance debriefing that I learned what had really happened. My number two man was waiting with me and I congratulated him on how well the mission had gone. Quizzically he asked me if I had not heard the MiG call. Apparently not. Prior to the target, an enemy plane had threatened our flight. The other planes danced around avoiding the MiG en route to their target. No wonder it had been so quiet! My interplane radio had failed, and it nearly got us shot down! How we escaped that night is still a wonder to me. I guess we were very lucky.

So, when was the last time you missed an important radio call that was either garbled or blocked? Granted, some calls are more important than others, but you can't be selective about which ones you need to listen to . . . because they are all important. Sound communication procedures are critical to good air discipline.

Next to the mission prebrief, radio discipline sets the tone for the entire flight. Also, sound discipline provides a good example for new members of your squadron. Here are some ideas to consider for your next mission:

- Monitor your equipment to ensure you know its status.
- Always keep the mission primary in your mind.
- Be brief on radio transmissions.
- Try to anticipate the next radio call.

Good luck and happy landings! ■

Send me *your* flight lead stories, so we can share them with others. Call me at AUTOVON 876-2633/2634 or write me at Editor, *Flying Safety* magazine, HQ AFISC/SEPP, Norton AFB, California 92409-7001.



THERE I WAS

MAJ GEN STANTON R. MUSSER
Commander, AFISC

■ As the Vice Wing Commander of the 1st Tactical Fighter Wing, I had combined an F-15 training flight with a trip to the US Air Force Academy to visit and brief our sponsored squadron. Now it was time to head home so I could clear my in-basket back at Langley.

I was flying out of Buckley ANGB since Peterson AFB was closed. My takeoff clearance was for the shorter, 8,000-foot strip. "No problem. Even with a 5,660-foot field elevation," I thought, "I'll just use the afterburners." All ground checks were completed, and I was ready to soar like an eagle.

I taxied onto the runway, applied power, plugged in the burners, and the thrust pushed me back against the seat. Just after liftoff, about 50 feet in the air, one engine flamed out and the other engine rolled back towards zero RPM. My immediate choices were to eject or shove it back on the ground and hope to engage

the barrier. Since the landing gear was still down and I had a few thousand feet of rapidly disappearing runway ahead of me, I elected to put it on the ground. I lowered the hook and fortunately got it down just in front of the barrier, traveling about 140 knots. The hook grabbed hold of me like a fly caught in a spider web, and I came to a screeching halt in the overrun.

The next thing I heard was tower broadcasting, "You're on fire!" I started to ground egress and reached up to safe the seat. It was already safe. Even amid the heat of the situation, I felt a cold rush of fear. Had I tried to eject, I wouldn't have made it. Shivering from fright, I opened the canopy, took the long jump to the ground, and ran like a bandit.

It turned out the fire was caused by the sudden gush of residual fuel after the engines quit. The fire trucks responded and quickly put out the fire.

Although my ego was bruised and my body a little sore, I came through a potentially deadly inci-

dent unscathed. When I had time to reflect on the shortest flight of my career, I realized how lucky I had been. Somehow I had forgotten the very advice I had given to the academy cadets about the importance of air discipline. In my haste to return to Langley, I forgot the first rule of flying that I had insisted on from my pilots back home . . . **complete all checklist items!** Not only had I missed arming the seat as I taxied out of the chocks, I also missed it as I turned onto the runway. Even with the old head knockers knocking on my helmet before I took off, it just *never registered!* Call it complacency or thinking of other things at the wrong time . . . **it almost killed me!**

Today, the safety lever on the F-15 ACES II ejection seat is located on the left arm rest. The lever protrudes when the seat is still safe as a "can't miss" reminder to the pilot.

This old warrior was lucky that day at Buckley. But don't trust luck, my friends — trust your checklists and fly smart. Check Six and Happy Landings. ■

THE COMMANDER'S FINAL APPROACH FIX



I am proud to salute the dedicated men and women of the United States Air Force with whom I have served for the last 31 years. The Air Force is a great institution whose camaraderie is unmatched in any organization in the world.

We are enjoying the best year ever in ground safety in the nearly 42 years of Air Force history, and our flying mishap rate is still enviably low thanks to the great job of our people and the safety professionals. The key to our mission success is inextricably entwined with safe operations. Each member of the Air Force team is essential to accomplishing our mission. I have seen this team in action throughout my career — from the Air Force Academy, to the skies over Vietnam; from the Thunderbirds, to tactical fighter wings and vital logistic support centers. People make mission success.

We have made great strides in learning more about people. We developed a human factors briefing for commanders and supervisors that helps them identify psychosocial and psychological factors related to mishaps. An innovative briefing for spouses is used to identify ways in which families can support their flier and help reduce the mishap rate. As a result of progress in aircraft design and performance over the last 10 years, we revised the mishap reporting form, resulting in identification of new human factors and life support challenges not previously identified. Improved computer technologies have made the data more accessible, helping us find mishap trends sooner and take preventive actions. The Air Force Inspection and Safety Center provided the momentum in distributing the self-inflating LPU-9P life vests throughout the Air Force, which will save additional lives.

We have begun some long-term efforts in system safety that will have far-reaching benefits. In addition, specific efforts are being made to develop closer technical interfaces between our system safety engineers at AFISC and ALC engineers and operators in the using commands. We have strongly encouraged rapid movement toward the use of less volatile JP-8 fuels throughout the Air Force. We also started a monumental task aimed at developing Air Force guidelines and policy for software safety, which will enable us to ensure the safety of software control systems, while attempting to hold the line on escalating costs. Our efforts are aimed at identifying potential safety problems with the bottom line of saving lives and resources. Our outstanding Air Force people are the only ones that can make it happen. And I know you will.

As Dawn and I transition from Air Force blue to civilian life, we will treasure your friendship and countless fond memories. We leave with great confidence that you will meet the new challenges in keeping America safe and free. Best wishes to each of you and Godspeed.

Check Six and Happy Landings!

STANTON R. MUSSER
Major General, USAF
Commander, Air Force Inspection and Safety Center



YOU SHOULD KNOW...

REST REDUCES RISK

PEGGY E. HODGE
Assistant Editor

■ Current Air Force policy as stated in AFR 60-1, Flight Management, says that "Aircrew members must receive adequate rest." One area of concern today is a lack of sufficient crew rest and the resultant fatigue. You should know some of the problems associated with a lack of crew rest.

It's A Serious Problem

You should know a lack of crew rest can be a serious problem. Many hazards are created by flying without adequate crew rest. This is evidenced by many AFISC mishap reports directly citing crew rest violations as contributory to major aircraft mishaps.

A lack of sufficient crew rest led to major problems for a C-130 crew.

■ The C-130 was on a scheduled channel mission to an overseas base. Many problems ensued.

Approximately 100 miles west of their destination field, the no. 4 generator light illuminated with unusual frequency, voltage, and load indications. The AC directed shutdown of the no. 4 engine. Also, due

to some bad weather, an instrument landing system with a precision approach radar backup was necessary at the destination runway. They were required to go missed approach because they were unable to visually acquire the runway environment.

Further complications included a wet runway with a crosswind from the left. The AC finally made a normal touchdown, but during the landing roll, the aircraft drifted left and departed the runway. It crossed a drainage ditch, went through the perimeter fence, through a stone wall, and came to rest upon another stone wall which enclosed the backyard of a local residence. The AC sustained minor injuries, and the aircraft sustained major impact and fire damage.

Due to poor planning, the AC had been working the day schedule. He took off in the evening and had flown all night. **He had been awake for more than 19 hours.**

Further, the copilot had been awake 18 hours, and the engineer had been awake about 20 hours at the time of the mishap.

The mishap report cited sleep deprivation fatigue as a contributing factor.

... And in a different part of the world in a fighter aircraft, a lack of crew rest led to this disaster and fatality ...

■ The mishap flight was scheduled for a basic flight maneuver and air-to-air refueling mission that was uneventful until departing the tanker. The mishap pilot (MP) forgot to change TACAN channels when he departed the tanker and during the return to base, inadvertently entered controlled airspace due to a navigation error. The mishap instructor pilot (IP) did not notice the navigation error for several minutes, and then directed the MP to descend, turn, and strangle squawk. Shortly after the radio call, the mishap IP performed a barrel roll (at low altitude) and failed to control his flight, resulting in the midair collision.

The mishap IP was killed, and the MP's aircraft was thrown into a nose low attitude. The MP attempted to recover the aircraft, but it would not respond to flight control inputs. The MP ejected from his burning aircraft and sustained injuries during the ejection. Both aircraft were destroyed on ground impact.

The mishap IP was suffering from both chronic and acute fatigue.* The mishap IP had flown two consecutive days and violated his crew rest prior to each flight.

About Skill Fatigue

Lack of crew rest can cause skill fatigue that can be disastrous for crewmembers. Skill fatigue is the deterioration in performance caused by work that demands persistent concentration and a high degree of skill. It can affect any crewmember whose tasks can, at times, place great demands on him or her. It can affect any aviator, fighter pilot, heavy aircraft driver to the private pilot.

In the June 1985 issue of this magazine, it was reported that "skill fatigue is associated with failure of memory, judgment, integrating ability, and presence of mind. Its effects may occur in conjunction with, and be accentuated by, other fa-



Effective flight planning is critical to a successful mission. We must be alert and well rested. If we are not, we may jeopardize our mission and run the risk of a potential mishap.

tigue-inducing factors such as *sleep loss*."

Some of the characteristics of skill fatigue are:

- Losing accuracy and smoothness of control column and rudder movements.
- Accumulating rather large errors in azimuth, elevation, and attitude and being unaware of it.
- Increasing control movements involving greater fluctuation to produce the same effect.
- Under- and over- controlling all movements.
- Forgetting side tasks.
- Failing to scan the sky, fixing vision, i.e., inattention.
- Preoccupying yourself with one task component to the exclusion of others.
- Allowing various elements of operational sequence to appear out of place with respect to one another.
- Letting minor discomforts, aches, pains, noises, etc., become distractions.

A lack of proper crew rest does affect our ability to plan and fly the mission safely.



■ Increasing unawareness of performance deficiencies and, in extremes, signs of physical breakdown such as fainting, cardiac arrhythmias, etc.

■ Requiring larger-than-normal stimuli for evocation of appropriate responses.

■ Timing errors.

■ Overlooking important elements in a task series.

What You Can Do

You should know crew rest regulations offer only a partial remedy to the problem. To minimize the effects of crew fatigue on aviation operations, we offer the following.

■ Use your crew rest wisely! Get that much-needed rest!

■ It's important to unwind — after work and before a flight don't compress your schedule into a sleep, eat, fly routine too many times in a row.

■ Personal discipline should include a program of suitable exercise, regular meals, plenty of water intake to prevent dehydration (avoid caffeine which induces dehydration), control of alcohol intake before flight and not smoking during flight.

■ When you're fatigued, use common sense to stay on the ground until your alertness and energy are restored, mission permitting.

Safety Suffers

You should know that your performance will suffer if appropriate and sufficient crew rest is *not* allowed. And you should know that the lack of crew rest leads to fatigue and can lead to disaster. ■

*For details of chronic and acute fatigue see "Vacation Time Trouble," *Flying Safety* magazine, July 1989, p. 6.



Hazardous Air Traffic Report (HATR) Summary

MSGT WILLIAM L. FINCK
Directorate of Aerospace Safety

The Following Information May Save Your Life!

■ In this month's issue of *Flying Safety*, the HATR article will be comparing the worldwide HATRs received at HQ AFISC during 1 October 1987 — 31 December 1987 and 1 October 1988 — 31 December 1988. The information is presented in parts: Total HATRs Quarterly Comparison, General Classifications, Non-Near Midair Collisions (N-NMAC), Near Midair Collisions (NMAC), and an area with other comments.

Chart 1
Quarterly Comparison
Total HATRS

Year	Oct	Nov	Dec	Total
1987	22	18	21	61
1988	27	23	16	66

Quarterly Comparison

The numbers in chart 1 indicate the total HATRs that HQ AFISC received. As you compare the other data in this summary, you will find the totals for 1988 do not equal the totals above. This is because 13 HATRs were still under investigation.

General Summary

When a HATR investigation is completed and the final report is sent to AFISC, the HATR is assigned a "classification" by AFISC. It is then encoded and entered into the automated data file. The general HATR classification chart shows the individual classifications and includes NMACs and N-NMACs.

Non-Near Midair Collisions

The N-NMAC data is provided for you to compare the figures. Here are some brief summaries of N-NMAC incidents.

■ An E-3 was on final approach, inside the airport traffic area, when the tower local controller observed an aircraft crossing final in front of the E-3. The E-3 was noti-

Chart 2
General HATR Classification

Classification	Oct-Dec 87		Oct-Dec 88	
	Number	Percent	Number	Percent
Controller Error	12	20	11	21
Controller Error/Pilot Deviation	1	2	0	0
Controller Deviation	4	7	4	8
Controller/Pilot Deviation	1	2	1	2
System Deficiency	3	5	2	4
Pilot Deviation — USAF	2	3	4	9
Pilot Deviation — Non-USAF	6	10	7	13
Pilot Complaint	1	2	0	0
Failure to See-and-Avoid	14	23	9	17
Flight Procedures Deficiency	0	0	0	0
Sightings	1	2	1	2
TRACALS Deficiency	1	2	0	0
FLIP Deficiency	2	3	2	4
Avionics Deficiency	0	0	0	0
Runway Intrusion	3	5	3	6
No Hazard	1	2	4	8
Undetermined	1	2	1	2
Potential Hazard	8	13	4	8
TOTAL	61	103*	53	104*

* Totals do not equal 100 percent due to rounding.

fied of the traffic and replied that the aircraft was in sight. No evasive action was taken or required by the E-3.

■ A KC-135 was flying an ILS approach to a full-stop landing. When the aircraft was approximately ½ mile final, a van proceeded to cross the runway. The aircraft was instructed to "go around" by the tower controller.

■ While on ILS final, a T-38 observed an F-15 aircraft in a right turn at his 9 to 10 o'clock, belly-up to the T-38 and at an estimated distance of 500 feet and co-altitude. The T-38 pilot also observed a wingman in trail with the first aircraft. The T-38 pilot took no evasive action, and the F-15 flight passed behind him.

Near Midair Collision Classification

This section not only provides a few NMAC summaries, it also contains charts indicating who the NMAC occurred with, altitudes where they occurred, and in what

type of airspace they occurred. The idea is to keep you informed so you are aware of the NMAC potential.

■ A T-38 was turning left onto an 8-mile straight-in when the IP noted a red-and-white Cessna at his 2 o'clock position, slightly high. The Cessna passed over the T-38 by only 200 feet.

■ A T-37 was on a 5-mile ILS final when the tower called traffic 1 o'clock and 1 mile; then at 12 o'clock, ½ mile, the T-37 evaded the civil aircraft by a mere 100 feet.

■ While on a heading of 040 awaiting clearance direct to an intersection, a C-12 observed traffic on the horizon at what appeared to be the same altitude. The IP, who observed the traffic, took control of the aircraft and began an abrupt climb to avoid a conflict. Estimated miss distance — 100 feet.

■ A KC-135 was on a downwind in the local radar traffic pattern heading 020. The arrival controller called traffic at 1 o'clock, 1 mile, northbound and traffic at 2 o'clock,

3 miles, eastbound, type and altitude unknown. The KC-135 reported a tally on the 1 o'clock traffic and was searching for the 2 o'clock traffic. Fifteen to 30 seconds after the traffic advisories were acknowledged, a yellow civilian aircraft was seen passing by the tanker's right wing, approximately 100 feet away and at the same altitude.

■ A C-5 was in the local radar pattern being vectored for an ILS approach. The pilot was given descent from 5,000 feet to 3,000 feet; passing 3,700 feet, the C-5 saw a civilian aircraft approximately 1,000 feet away at 3,500 feet on a heading that would pass in front of the C-5. The C-5 crew took evasive action to avoid the traffic.

Other Comments

First, everyone must keep in mind that the HATR program is designed to improve aviation safety, by identifying and correcting deficiencies in flying and the air traffic and airspace systems. The action taken

continued

Chart 3
Non-NMAC Classification

Classification	Oct-Dec 87		Oct-Dec 88	
	Number	Percent	Number	Percent
ATC Error:				
USAF	6	20	8	24
FAA	2	7	4	12
Host Nation	1	3	0	0
Other DOD	0	0	0	0
SUBTOTAL	9	30	12	36
Pilot Deviation:				
USAF	0	0	3	9
Non-USAF	2	7	3	9
SUBTOTAL	2	7	6	18
System Deficiency	2	7	1	3
Controller/Pilot Deviation	0	0	1	3
Failure to See-and-Avoid	1	3	1	3
Controller Error/Pilot Deviation	0	0	0	0
Avionics Deficiency	0	0	0	0
FLIP Deficiency	1	3	2	6
Flight Procedures Deficiency	0	0	0	0
Sighting	0	0	1	3
Pilot Complaint/No Hazard	2	7	4	12
Runway Intrusion	3	10	3	9
TRACALS Deficiency	1	3	0	0
Potential Hazard	8	27	2	6
Undetermined	1	3	1	3
TOTAL	30	100	34	102*

* Totals do not equal 100 percent due to rounding.

Chart 4
NMAC Classification

Classification	Oct-Dec 87		Oct-Dec 88	
	Number	Percent	Number	Percent
ATC Error:				
USAF	2	6	1	5
FAA	4	13	1	5
Host Nation	1	3	1	5
Other DOD	0	0	0	0
SUBTOTAL	7	22	3	15
Pilot Deviation:				
USAF	2	6	1	5
Non-USAF	4	13	4	24
SUBTOTAL	6	19	5	29
Controller Error	1	3	1	5
Controller Error/Pilot Deviation	1	3	0	0
Failure to See-and-Avoid	13	42	8	47
System Error/Pilot Deviation	1	3	0	0
Avionics Deficiency	0	0	0	0
FLIP Deficiency	1	3	0	0
Flight Procedures Deficiency	0	0	0	0
Sightings	1	3	1	5
Pilot Complaint/No Hazard	0	0	0	0
Runway Intrusion	0	0	0	0
TRACALS Deficiency	0	0	0	0
Potential Hazard	0	0	1	5
Undetermined	0	0	0	0
TOTAL	31	98*	19	106*

* Totals do not equal 100 percent due to rounding.

HAZARDOUS AIR TRAFFIC REPORT (HATR) SUMMARY continued

must clearly be system improvement and readily perceived as such by all involved. For example, an error is made that results in less-than-minimum required separation. We would NOT be as concerned with what was done to the individual who made the error, but we would be very concerned with what was done FOR the system to prevent it from happening again.

Second, is to remind everyone what is considered to be a reportable event. This is taken directly from AFR 127-3. *REPORTABLE EVENTS. Reports cover events that occur in air traffic or aircraft operations. They occur in flight or on the aerodrome movement area. AF Form 651, Hazardous Air Traffic Report (HATR), will be filed by any person aware of the following conditions.*

■ Near Midair Collision. An un-

planned event in which the aircrew took abrupt evasive action to avoid a midair collision or would have taken such action if circumstances had allowed.

■ A hazardous air traffic situation where there was less than required separation between aircraft.

■ Communications or air navigation aids that could (or did) contribute to a hazardous air traffic condition.

■ Any event, system, publication, directive, or procedure that could (or did) contribute to a hazardous air traffic condition.

■ Any event (including vehicle operations) on the movement area on the airfield controlled by the tower that actually endangers an airborne aircraft or an aircraft on the ground intending flight.

NOTE: Alleged pilot deviations

which do not fall under the classification of NMAC or hazardous air traffic situation are reported to the nearest flying unit commander, FAA, or host nation and are not reported under this program.

Lastly is to remind everyone that the HATR program requires hard work. It takes time to properly investigate a report. It takes time to effect changes in procedures or to educate people. But, no matter how you look at it, being able to recognize and correct deficiencies before they result in a mishap is well worth the effort.

To enhance the effectiveness of the HATR program, your ideas, comments, and suggestions are welcome. You can send them to HQ AFISC/SEFA, Norton AFB, California 92409-7001 or call AUTOVON 876-3416. ■

Chart 5
NMACs With

Type	Oct-Dec 87		Oct-Dec 88	
	Number	Percent	Number	Percent
General Aviation	20	65	15	79
Other USAF Aircraft	5	16	2	11
Foreign Military	4	13	1	5
Air Carrier	1	3	1	5
Other DOD	1	3	0	0
Unknown	0	0	0	0
No USAF Aircraft Involved	0	0	0	0
Others	0	0	0	0
TOTAL	31	100	19	100

Chart 6
Altitudes in NMACs

Altitudes	Oct-Dec 87		Oct-Dec 88	
	Number	Percent	Number	Percent
Below 1,500 AGL	6	19	3	16
1,500 - 2,999 AGL	13	42	7	37
3,000 - 7,499 FT	5	16	7	37
7,500 - 12,499 FT	2	6	0	0
12,500 - 17,999 FT	1	3	0	0
FL180 and Above	4	13	2	11
TOTAL	31	99*	19	101*

* Totals do not equal 100 percent due to rounding

Chart 7
Airspace Where NMACs Occurred

Type	Oct-Dec 87		Oct-Dec 88	
	Number	Percent	Number	Percent
Airport Traffic Area (ATA)	5	16	4	21
Terminal Radar Service Area (TRSA)	1	3	1	5
Terminal Control Area (TCA)	0	0	0	0
Controlled Airspace Terminal	8	26	5	26
Uncontrolled Airspace				
Terminal	0	0	0	0
Military Training Route (MTR)	0	0	0	0
Military Operating Area (MOA)	3	10	0	0
Restricted Airspace	0	0	0	0
Positive Controlled Airspace (PCA)	0	0	1	5
Controlled Airspace —				
En Route	0	0	1	5
Uncontrolled Airspace —				
En Route	9	29	2	11
On Airport	0	0	0	0
Airport Radar Service Area	5	16	5	26
Unknown	0	0	0	0
Not Reported	0	0	0	0
TOTAL	31	100	19	99*

* Totals do not equal 100 percent due to rounding

We have a Dumb Caption Winner

... AND THE WINNER
FOR THE APRIL 1989
DUMB CAPTION CONTEST IS:

MSgt Bob DeVore

**167th CAMS WVANG
E WVRA
Martinsburg, WV
25401-0204**



Your innovative captions are keeping our staff in stitches. Please keep up the great work. If you have photos you would like to send us for the contest, please do. Congratulations to this month's spectacular win-

ner MSgt DeVore. Your cheap little prize is on its way.

For your enjoyment, here are some funny honorable mentions. And for all you jokers with enlarged senses of humor, keep on entering (see back cover).

Honorable Mentions:

1. ... And you should have seen the look on his face when I threw the brick in his propeller!
Ted Stewart, ASD/ENECC Wright-Patterson AFB, Ohio
2. No way! I told you guys I only fix these things. I don't fly in em! Besides, I'm not sure it's gonna work ...
CMSgt Thomas A. Rahn, 93 BMW/MASQ, Castle AFB, California
3. Sir, please allow me to kiss the ground before you embrace me.
A1C Mark S. Cooke, PSC Box 3437, Columbus AFB, Mississippi
4. I'm sorry, Captain, I can't fly today. My wife put too much starch in my shorts and I can't sit down!
MSgt Rose H. Harms, 153 CAMS/MAT, WYANG, Cheyenne, Wyoming
5. Can't I take her along? She goes everywhere with me, Captain! She's so little and cute. Look at her there just a-wagging her tail!
MSgt Rose H. Harms, 153 CAMS/MAT, WYANG, Cheyenne, Wyoming
6. R. C'mon, corporal, you can do it. It's just the Red Baron. L. But, lieutenant, you're the pilot. I'm only the crew chief.
TSgt Danny Rodgers, TSgt Steve Fogelman, 317 OMS Sq, Pope AFB, North Carolina
7. He called me "Snoopy" and invited me for pizza!
Mrs Doris L. Allsopp, 832 CSG/DEA, Luke AFB, Arizona
8. I don't care how many times you gig me with those spurs, I'm not getting in any flying machine built by a lowest bidder!!
Chuck Woodside, Greg McClure, Kelly AFB, Texas
9. L. C'mon Captain, I'm just a mechanic. I ain't never flew no airplane before. R. Trust me, buddy. I wouldn't steer you wrong. It's really easy. The plane almost flies itself.
SMSgt Dennis A. Dzurinko, 170 AREFG, NJANG, McGuire AFB, New Jersey.
10. Someday, airplanes will have enclosed glass covers with heaters; someday men and women will fly unencumbered by suits of fur or boots with spurs. Someday ... NAAAAH!
Major Charles Baumann, AFISC/SEPX, Norton AFB, California

USAF SAFETY AWARDS



THE COLOMBIAN TROPHY

The Colombian Trophy was established in 1935 by the Republic of Colombia to recognize the Air Force group having the lowest aircraft mishap rate during the preceding year. The criteria originally established for the award have been modified but are in keeping with the donor's original intent to award the trophy annually for military aviation safety in a tactical organization. Today, the Colombian Trophy is awarded annually to a wing-level tactical organization for the most outstanding achievements in flight safety during the preceding calendar year.

8TH TACTICAL FIGHTER WING

Kunsan AB, Korea

The 8 TFW flew more than 15,980 hours and 11,350 sorties mishap-free in F-16A, B, C, and D aircraft while performing in a demanding operational environment. This achievement assumes greater significance because it culminated a period of more than 74,000 hours without a Class A aircraft flight mishap. This outstanding flight safety record attests to the professionalism of aircrews and dedication of maintenance and support people.



THE SICOFAA FLIGHT SAFETY AWARD

The Chiefs of the American Air Forces (CONJEFAMER) established the System of Cooperation Among the American Air Forces (SICOFAA) Flight Safety Award at their annual meeting in May 1976. The purpose of the award is to promote safety in the Air Forces of Western Hemisphere countries by recognizing flight safety accomplishments of military organizations. Each Air Force determines its own criteria and annually grants this award to one of its units. The US Air Force presents this award annually to a flying organization that was involved in defense, training, airlift, rescue, refueling, bombardment, strategic reconnaissance, or airborne control operations.

437TH MILITARY AIRLIFT WING

Charleston AFB, South Carolina

The 437 MAW flew its C-141 aircraft 57,000 hours in a mix of strategic, tactical, and special operations airlift missions without a Class A or Class B aircraft flight mishap. The wing participated in both Presidential and Vice Presidential support, the Multinational Force Observer Swapout in the Sinai, and hurricane relief to Jamaica. These accomplishments, without the loss of people or equipment, attest to the discipline and professionalism of the aircrews, maintenance excellence, and effective safety programs that fully meet the high standards established for the SICOFAA Flight Safety Award.

Presented for exceptional achievements during 1988



CHIEF OF STAFF INDIVIDUAL SAFETY AWARD

The Chief of Staff Individual Safety Award is presented to an Air Force person who made significant contributions to safety during the previous calendar year.

CAPTAIN NOLAN W. HARRIS

Pacific Air Forces

Captain Harris served as Chief, Weapons Safety, Seventh Air Force, Osan AB, Korea. In this capacity, he established a numbered air force weapons safety program which was used by two major tactical fighter wings, three additional support bases, eight munitions storage areas, and numerous geographically separated units. Directly and indirectly, he was involved in the safe accomplishment of well over 50 command exercises annually, the storing of over 78,000 short tons of explosives, and the explosives loading of aircraft flying thousands of sorties annually.



DIRECTOR OF AEROSPACE SAFETY SPECIAL ACHIEVEMENT AWARD

The Director of Aerospace Safety Special Achievement Award is presented each year to persons or organizations for outstanding safety contributions or achievements.

STAFF SERGEANT RONALD C. ANDERSON

Air Training Command

The Director of Aerospace Safety Special Achievement Award for 1988 is presented to Staff Sergeant Ronald C. Anderson in recognition of his outstanding contributions to the mishap prevention programs of the Air Training Command and the United States Air Force. As Safety Specialist, 12th Flying Training Wing, Randolph AFB, Texas, Sergeant Anderson's professional approach to problem solving and job knowledge enabled him to apply effective mishap prevention techniques. Especially innovative in his approach to safety education and training, Sergeant Anderson created fictional characters who relayed safety information using humor, compassion, and understanding. Thorough mishap investigations, coupled with sound recommendations, significantly reduced the number of mishaps within the wing. His outstanding abilities were instrumental in significant improvements in the wing's ground safety program, resulting in safer operations and more effective safety program management. The accomplishments of Sergeant Anderson reflect the high standards set for the Director of Aerospace Safety Special Achievement Award.



OPS TOPICS

AIR FORCE AWARDS PROGRAM

The Air Force participates in many prestigious awards programs each year. While some of these awards are solely Air Force-sponsored, a great many are sponsored by outside agencies such as the National Aeronautic Association.

One group of awards that relate to flying activities is the Field of Aeronautics Awards which consists of the following:

- Aviator Valor Award
- Cheney Award
- Mackay Trophy
- Collier Trophy
- General Thomas D. White USAF Space Trophy

These annual awards recognize contributions to aeronautics ranging from individual to crew accomplishments. We encourage commanders to submit qualified candidates for these awards. AFR 900-29, table 4, Special Trophies and Awards, outlines the criteria for each award. Contact your base Personal Affairs office for further information regarding submission due dates. Refer questions to Ms Nancy Gaisford, HQ AFMPC/DPMASA, AUTOVON 487-3934.



RF-4C In-flight Fire

■ It's night, you're single-ship, and the only light you've got left is the red glow from an engine fire. And this isn't some-

thing your flight examiner just made up.

An RF-4C crew was flying a single ship night weapons school sortie.

Twenty minutes into the flight, the crew felt a thump, the aircraft yawed left, and a fire broke out in the rear cockpit near the number two circuit breaker panel.

The low level was aborted, and the aircraft turned toward a nearby recovery base. During the climb, the pilot noticed the number one engine EGT climbing through 750 degrees, and he shut down the engine. Next, the pilot shut off the generators and the fire stopped. All accessible electrical equipment was turned off.

The pilot then turned the right generator back on and the fire reignited. He quickly turned the generator off for the remainder of the flight. Their descent and landing was completed smoothly. An approach end arrestment was accomplished, and the crew egressed without further incident.

Did your last pre-flight briefing for a night sortie include the details and coordination necessary to recover in a similar situation? **Think about it.**

F-16A High Speed Abort

Need to make your next "Abort" EP brief realistic? How about this one?

All checks were normal through engine runup and afterburner initiation. At the 2,000-foot speed checkpoint, the pilot felt a

slight decrease in thrust and assumed it was caused by lead's jetwash.

He checked the engine instruments, and they were all reading OK. At 169 knots, as he rotated, he felt a detectable deceleration and noticed nozzle fluctuations, so he initiated abort procedures. Quickly, he switched his radio back to tower frequency and called for the BAK-14 cable to be raised. At approximately 3,000 feet before the cable, he lowered the hook. The pilot lowered the aircraft nose and initiated full antiskid braking.

He released brake pressure about 500 feet from the BAK-14 cable and crossed it on center line. Unfortunately, the hook skipped over the cable, but caught the BAK-9 cable at 100 knots and some 350 feet farther down the runway. The cable held the jet, and after the fire department arrived, the pilot shut down the engine and exited without further incident.

The pilot wasn't just "along for the ride." He reacted, used his head and the proper procedures, and with the help of the cable and fire department, saved two valuable resources — himself and the jet.

Both main gear tires and wheels, as well as the engine, were removed and replaced. ■



AVIATION HERITAGE

Pride in the Past . . . Trust in the Future

AUGUST

America has a rich heritage of aviation firsts, thanks to the foresight, perseverance, and sacrifice of countless dedicated men and women.

In August, we are proud to salute the anniversaries of these bold pioneers.

- | | | |
|------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1st | 1943 | One hundred and seventy-eight B-24 "Liberator" bombers took off from North Africa to attack the German-controlled oil fields in Ploesti, Romania. Five Americans won the Medal of Honor for their courage. |
| 5th | 1943 | Women's Airforce Service Pilots (WASP) organization was established. |
| 6th | 1942 | Work began on the secret Manhattan Project. Three years to the day, Colonel Paul Tibbets piloted the B-29, Enola Gay, and released the first atomic bomb. |
| 15th | 1957 | General Nathan F. Twining became the first Air Force Chairman of the Joint Chiefs of Staff. |
| 25th | 1932 | Amelia Earhart became the first woman to fly nonstop from Los Angeles to New York. |
| 30th | 1967 | First FB-111A fighter-bomber prototype made its initial flight. |
| 31st | 1956 | The KC-135A "Stratotanker" made its first test flight. Adapted for commercial aviation in the 1950s, it is still a workhorse of SAC's in-flight refueling. |

These courageous aviation leaders set hallmarks that have made our skies SAFER and FREER for millions of people.

MAINTENANCE MATTERS



Sparrow Alert

■ An F-15, on a live fire mission, experienced a hung AIM-7 missile. After a chase aircraft determined there was no apparent damage, the pilot declared an emergency and, using hung ordnance procedures, made an uneventful landing. The Eagle was met by EOD people who declared the AIM-7 safe.

The missile was then downloaded and placed on an MHU-141 trailer,

with the wings and fins removed. At this time, 52 minutes after the hang fire, the missile hydraulic power unit (MPU) inadvertently fired, venting pressurized fluid through one of the wing hubs. At least one other incident of this type has been reported. According to WR-ALC MPU, activation can be expected after an AIM-7F/M misfire within as little as 15 minutes or as long as an hour.



F-15 FOD

The Eagle was in the hush house to troubleshoot the no. 2 engine for an afterburner blowout. After the first run, the crew chief found damage to many of the engine's first stage stators. Investigators from Quality Assurance determined the damage was caused by an angle-of-attack cover

quick release pin. This was confirmed when the remains of the pin were found in the exhaust duct of the hush house. Apparently, the pin was stored inside the communications panel cavity, and it vibrated out of the cavity after engine start and was ingested. The engine was removed and sent to the engine shop where tech-

nicians also found severe damage to the third, fourth, seventh, twelfth, and thirteenth stages. Cost of repairs — \$30,000.

A good percentage of FOD is caused by maintenance and safety gear that finds its way into places where it doesn't belong. However, for some rea-

son, most units don't place the same emphasis on the control of maintenance and safety gear as they do on tool control. The lesson in this mishap is clear. It is as important to maintain strict control of maintenance safety and support equipment as it is for tools.



F-16 Bleed Air

Shortly after takeoff on an FCF for an engine change, the F-16 pilot heard "Caution! Caution!" on the voice warning system. He then observed the overheat and master caution lights illuminate. The pilot brought the throttle to idle, but the overheat light remained on. He again advanced the throttles and requested a closed pattern.

During the closed pattern, the voice warning system announced "Warning," and the fire light came on. Then just prior to touchdown, the pilot pulled the throttle to idle, and both overheat and fire lights went out.

Investigation revealed that the 13th stage bleed air valve ECS duct had separated at the aft clamp,

directing hot air onto the fire loops. Further investigation showed that while the clamp was still holding the duct in place, it was the wrong size. The clamp was for the 7th stage bleed air duct which is 2½ inches in diameter instead of the correct clamp, which is only 1½ inch in diameter.

Installed, the difference in the sizes of the clamps is difficult to detect. In this case, the inch difference between the two clamps almost caused a disaster. The aircraft required depot-level maintenance to replace the longeron and a stringer. It is smart maintenance practice to positively verify the part number of hardware before installing it on an aircraft. Things aren't always what they seem. ■

The FOD Monster Lives!



Photo: SRA Courtney Russell

"The Living FOD Monster," as played by MSgt Truman Ferrell, and two mechanics, Amn Douglas Walter and SSGT Collen Branby, direct your attention to a unique addition to their FOD program. You may want to use this "monster" in your own program to combat this problem.

MAJOR BRISON TORBERT
HQ 161st Air Refueling Group (ANG)
Phoenix, Arizona

■ It walks, it talks, it does not crawl on its belly, but walks on its hind paws. The 161st Air Refueling Group's active foreign object damage (FOD) program has been supplemented by a new addition: The Living FOD Monster.

The Golden Bolt Awareness Program is based upon searching maintenance work areas in hopes of finding a special Golden Bolt sticker. These numbered stickers point out FOD potential problem areas. The

goal is to encourage everyone to look for FOD.

The new addition to this program, the Living FOD Monster, was created through the sewing efforts of a Civil Service employee, Diane Ausum. She adapted a sewing pattern for an alligator design and made it into a functional suit to raise everyone's attention to the problems of FOD. The person wearing the FOD monster suit hands out a small business card that directs each person's attention towards looking for Golden Bolts. The two programs work together to prevent costly FOD mishaps.

The FOD monster's picture is on wanted posters around the base. Plans include having him attend monthly flying and ground safety meetings with a special message about FOD prevention. This humorous approach to a serious issue was modeled after the McGruff crime prevention dog and Sparky, the fire prevention dog. The concept is well received. For less than \$25 total cost, your base can have a FOD monster to help protect USAF resources. For more information, call us at AUTOVON 853-9284. ■

In 1988, FOD mishaps cost the Air Force over \$50 million. — Ed.



UNITED STATES AIR FORCE

Well Done Award

*Presented for
outstanding airmanship
and professional
performance during
a hazardous situation
and for a
significant contribution
to the
United States Air Force
Mishap Prevention
Program.*



Second Lieutenant Second Lieutenant
John M. Patterson Salvatore P. Schamante

**82d Flying Training Wing
Williams AFB, Arizona**

■ On 18 May 1988, 2Lts John M. Patterson and Salvatore P. Schamante were flying a T-38 during a UPT syllabus training sortie. After completing a tactical rejoin and beginning fingertip wingwork, the student, Lt Patterson, sitting in the front cockpit, realized forward stick travel was extremely limited. Lt Schamante, the instructor pilot, took control of the aircraft and broke off fingertip formation.

The control stick would not move forward of a position well aft of neutral. Quickly analyzing the situation, Lt Schamante determined he could maintain aircraft control by a combination of maximum power to maintain flying airspeed, and a bank angle approaching 90 degrees to keep the nose from pitching up. Control stick travel was limited from the full aft position to 3 inches forward of the full aft position.

The T-38 could not be landed from the resulting 2- to 3-G constant turn. Lt Schamante directed Lt Patterson to remove the stick boot in the front cockpit to determine what the restriction was. Not finding the restriction, Lt Patterson followed the IP's instructions to review checklists to include before ejection procedures.

Fuel was becoming critical because afterburner was required to overcome induced drag and maintain airspeed. With time running out, both pilots applied coordinated maximum forward stick forces and broke the obstruction, thereby freeing the control stick. Monitored by other aircraft from the formation, Lt Schamante performed a controllability check while proceeding back to base. Lt Schamante concluded the mission with a straight-in approach and landing.

Investigation revealed a foreign object lodged in the horizontal stabilizer control quadrant. Quick thinking and superb airmanship by 2Lt Schamante and 2Lt Patterson prevented the loss of an irreplaceable Air Force aircraft and deserve recognition. WELL DONE! ■



UNITED STATES AIR FORCE

Well Done Award

Presented for

outstanding airmanship

and professional

performance during

a hazardous situation

and for a

significant contribution

to the

United States Air Force

Mishap Prevention

Program.



US COAST GUARD
AVIATION SURVIVALMAN
THIRD CLASS

KELLY MOGK

Oregon ANG, Portland, Oregon

■ On 3 January 1989, US Coast Guard Aviation Survivalman (ASM) Third Class Kelly Mogk helped save the life of an Air Force pilot who had ejected from an F-4 over the waters west of Portland, Oregon. She arrived by helicopter and immediately entered the frigid water where she found the pilot clinging to his raft, conscious but unable to communicate.

She quickly released the pilot's parachute and made repeated dives to remove the parachute shroud line entangled about the pilot's legs. Due to choppy wave action, her dry suit began to leak, and she also swallowed sea water through her snorkel. Twenty-two minutes after she deployed into the water, the mishap pilot was hoisted aboard a USCG helicopter. This helicopter immediately left the SAR area, while ASM Mogk waited in the pilot's raft for a second USCG rescue helicopter.

ASM Mogk was injured during the snap hoist recovery by the second helicopter and was now exhausted and suffering from hypothermia. She was returned to shore for medical attention.

The rescue efforts of ASM Mogk exhibited resolve, determination, and selflessness. Her actions and courage saved the life of an Air Force aviator and are deserving of the Air Force Well Done Award! ■

Write A Dumb Caption Contest Thing



Are you a clever person? Are you good at unsolved mysteries? Would you like to collect our secret prize? Then, why not enter our Dumb Caption Contest and be a winner?!

Write your captions on a slip of paper and tape it on a photocopy of this page. DO NOT SEND US THE MAGAZINE PAGE. Use "balloon" captions for each person in the photo or use a caption under the entire page. You may also submit your captions on a plain piece of paper. Entries will be judged by a panel of experts on dumb humor on 4 December 1989. All decisions are relatively final.

Send your entries to: "Dumb Caption Contest Thing" • *Flying Safety Magazine* • HQ AFISC/SEPP • Norton AFB CA 92409-7001