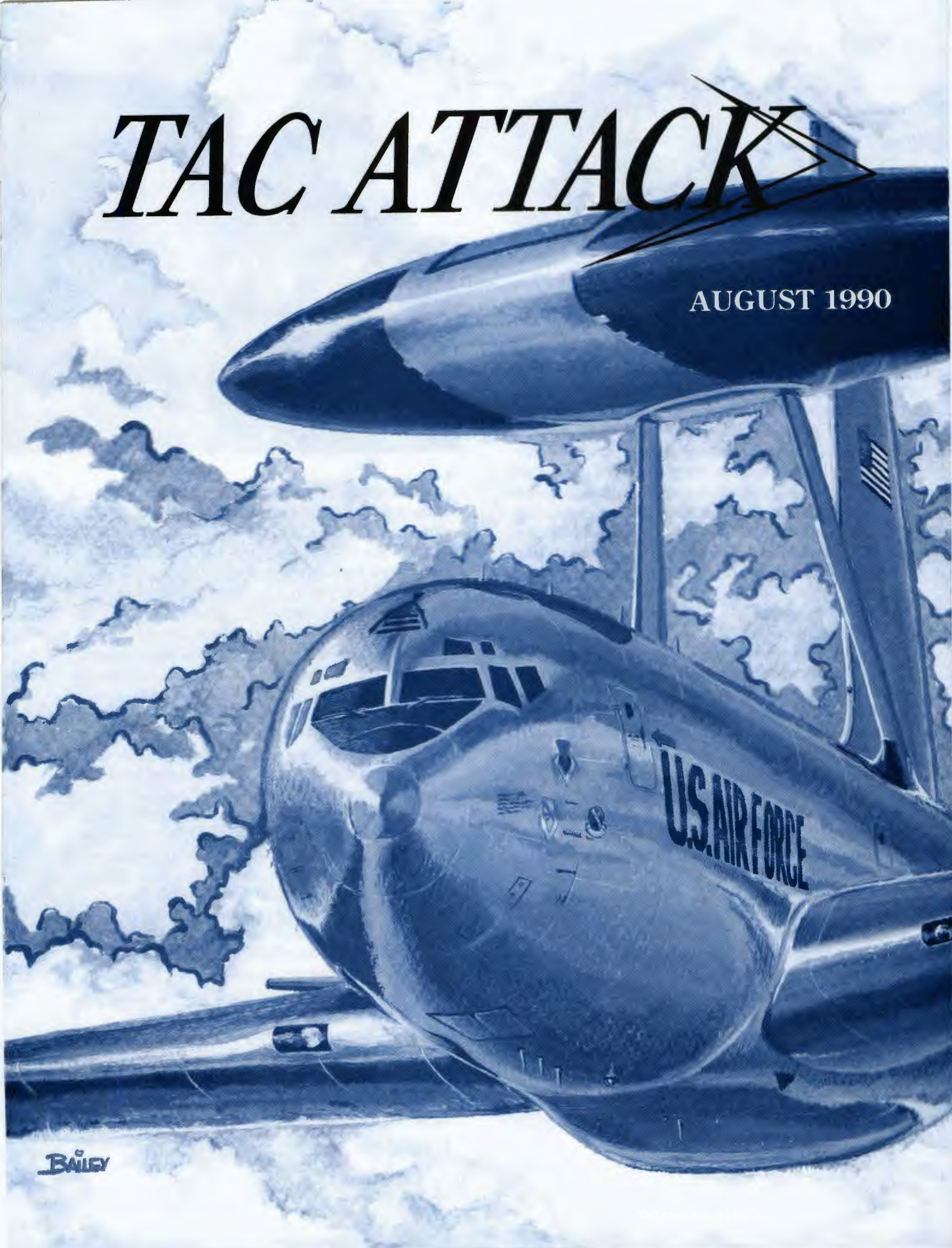


TAC ATTACK

AUGUST 1990



BAILEY

ANGLE OF ATTACK

All you sharp-eyed readers of *TAC ATTACK* may have already noticed that the format on the TAC TALLY page has been changed. For those of you who haven't, I want to point out that the TAC's TOP 5 listing is now based on the number of **Command-Controlled** (those which can be reasonably avoided through actions/performance by someone wearing a TAC patch) Class A mishaps. That means **YOU**—the commander, supervisors, aircrews, maintainers, and support personnel—directly control your standings. Are you doing your part for "smart mission accomplishment?"

Speaking of "smart mission accomplishment," one way to do it smarter is to learn from our previous mistakes and not needlessly repeat them. That's why I recently reviewed once again all the ops factor mishaps which occurred in TAC since 1985. I know firsthand that flying fighters during large scale exercises, striking targets on the range, flying low levels, or participating in air combat training is inherently more **riskier** than flying passengers at cruise altitude with the autopilot on. But, I looked through to find out what area in our high threat business was the **most dangerous**. And it jumped right out. **Twenty-seven percent** of all our ops factor mishaps occurred in an arena that every fighter aircrew flies in at least once during every flight—the traffic pattern! The question I want to ask is, "Are we getting so intent on briefing and flying the low levels, the air-to-air, the air refuelings, that we are complacent and forget the basics of flying the traffic pattern?" Remember, I am talking about ops factor traffic pattern mishaps, so that twenty-seven percent doesn't include when the engine quits or the jet quits flying due to a logistics problem. What about you, how do you brief and fly this part of the mission—"high threat" or "standard, any questions?"



Next month we'll take a closer look at the basics or standard procedures and how they are viewed by aircrews with various levels of experience.

Speaking of "standard," August is normally the last month for heavy thunderstorm activity with its associated hail, initial gust, lightning, wind shears and wet runways. As you plan your flying, especially your cross-countries from out in the dry west, remember to keep a close check on this rapidly changing phenomenon. Keeping a close tab on the weather is also an excellent survival technique for boaters. The Coast Guard attributes weather as a factor in over thirty-six percent of all fatal boating mishaps. Do you check the weather before launching or do you just wonder why everyone else stayed home?

Two of the stalwarts from TAC Headquarters have departed the fix to provide the rest of the Air Force with more of the TAC view. I would like to say farewell and thank you for their support to Lieutenant General Ashy and Major General (Selectee) Ralston.

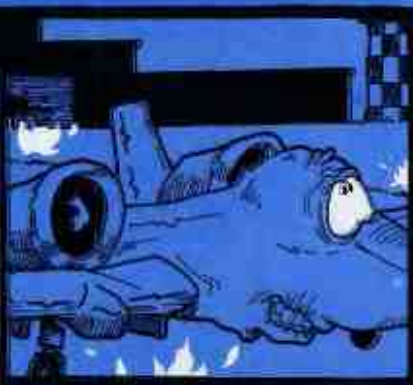
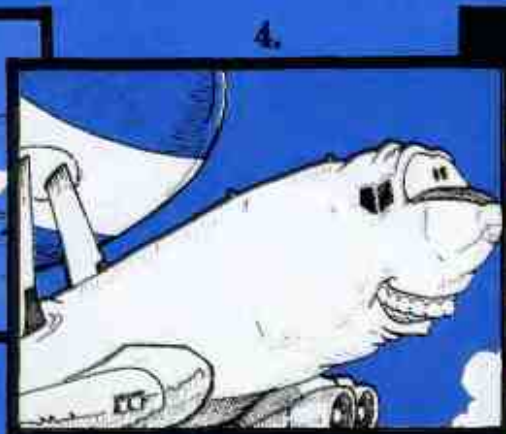
We would like to congratulate the 58th Tactical Training Wing, Luke AFB, Arizona, as the 1989 recipient of the USAF System of Cooperation Among the Air Forces of the Americas (SICOFAA) Flight Safety Award. This award recognizes the 58th Wing as the training unit with the best flight mishap prevention program in the Air Force.

Congratulations, pardner.

Jack Gawelko
JACK GAWELKO, Colonel, USAF
Chief of Safety

TAC ATTACK

DEPARTMENT OF THE AIR FORCE



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The building blocks of flight safety

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14. TRY HARDER AND HIS FISHING EXPERIENCE

18. JUST CAUSE

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No accidents, no incidents

DEPARTMENTS

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7. FLEAGLE SALUTES

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24. DOWN TO EARTH

16, 26, 30. AWARDS

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TAC SP 127-1

TAC Attack is not directive in nature. Recommendations are intended to comply with existing directives. Opinions expressed are those of the authors and not necessarily the positions of TAC or USAF. Mishap information does not identify the persons, places, or units involved and may not be construed as incriminating under Article 31 of the UCMJ. Photos and artwork are representative and not necessarily of the people or equipment involved.

Contributions are encouraged, as are comments and criticism. We reserve the right to edit all manuscripts for readability and good taste. Write the Editor, **TAC Attack**, HQ TAC/SEP, Langley AFB, VA 23665-5563, or call AUTOVON 574-3658.

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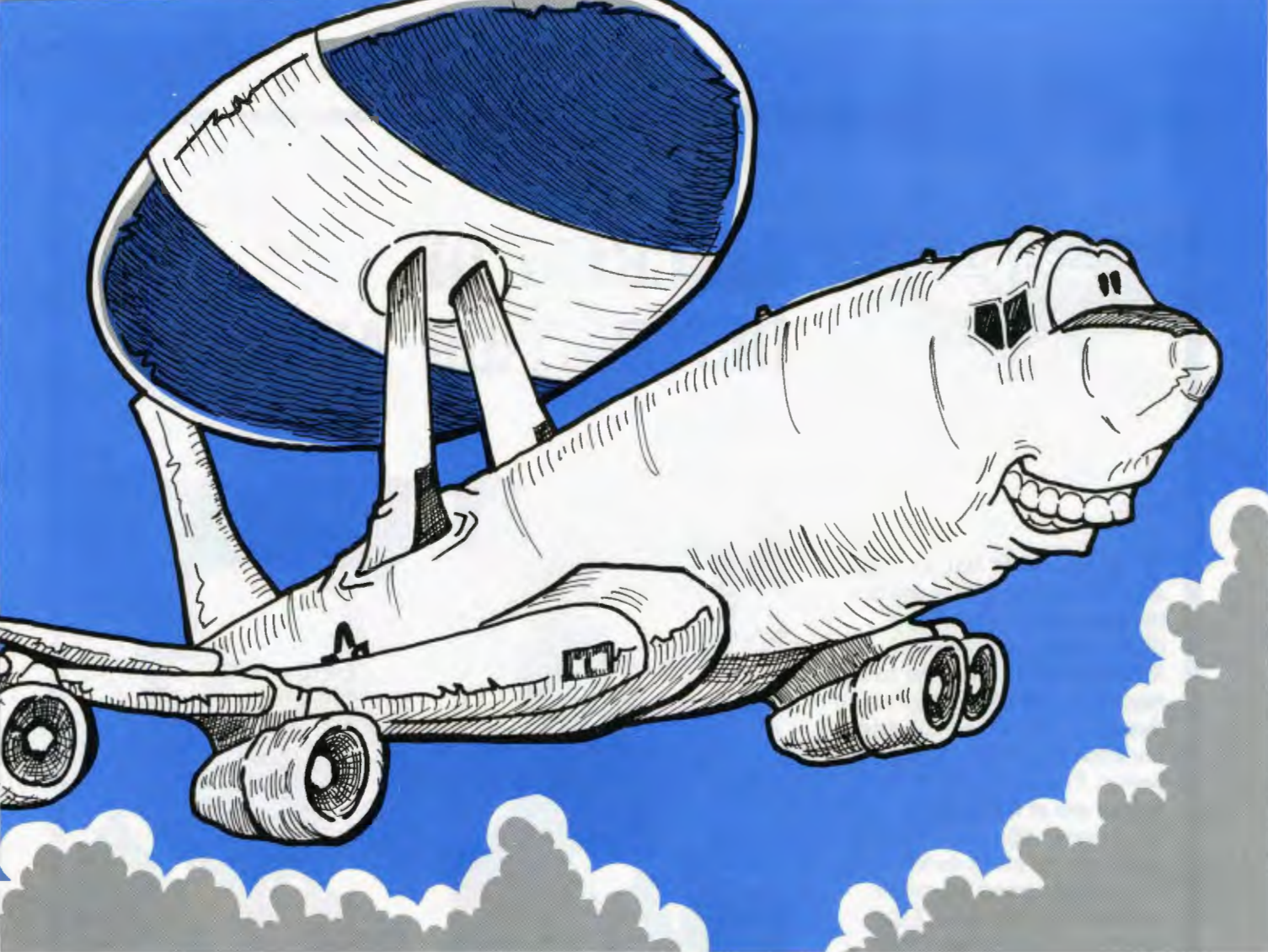


Capt James B. Osborne
 41 ECS/SE
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**CRITICAL
 COORDINATION**

Crew coordination is one of the building blocks of flight safety. Unfortunately, what constitutes good crew coordination is as difficult to define as the term good airmanship. When flying the large aircraft found in the 28th Air Division, crew coordination is critical. Whether you are an E-3 avoiding a vehicle on the runway during takeoff or an EC-130 losing an engine, good crew coordination is the difference between bringing the aircraft back safely and losing an expensive resource and priceless human lives.

Nowhere else in TAC does crew coordination play as major a role in flight operations as in the 28



AD. Instead of a flight lead and a wingman or a pilot and a WSO working together as a team, we in the 28th deal with crews of over 20 — a real challenge. Good crew coordination is simply a combination of effective speaking and active listening.

Clear and precise speech is one key to good crew coordination. Every time you say something to another crew member, there is a chance that it will be misunderstood. The speaker needs to make messages simple and concise. This is why radio and interphone discipline is so important.

If you use slang terms, you are running the risk that what you

mean by a term is not the same as what the listener thinks. Always be sensitive to any possible misunderstandings.

As the listener, stop talking, be patient, and ask questions if there is any confusion. It is much better to clear up any misunderstanding immediately than let it go and try to figure it out when things start to get hectic. Remember, no matter what your job on the aircraft, you are part of the crew and have an interest in the outcome of the flight — possibly your life.

A good example of how important clear and precise communications can be is found in the accident investigation of a recent

crash of an international airliner. The safety board members indicated that the crew used “non-standard phraseology” to inform the controller of critically low fuel reserves. The aircraft, subsequently, ran out of fuel during the second approach in instrument conditions.

Crew coordination is here to stay. When you feel you have a good handle on your in-flight duties and you are beginning to feel comfortable in your position on the crew, challenge yourself to go one step further and work at optimizing your crew's performance through good crew coordination. ➤



TAC AIRCREW OF DISTINCTION AWARD

During a 500' AGL air-to-air Low Altitude Step-down training mission, Capt Hyatt (FCP, mission pilot) and Maj Stevenson (RCP, instructor pilot) experienced an engine nozzle burn-through and subsequent engine fire while their F-16 was in afterburner. The fire destroyed the A system side of the hydraulic rudder servo-actuator and ignited an additional fire in the dorsal avionics bay and around the rudder servo-actuator. Because of the fires, the A system hydraulics failed and the flight controls switched to the digital back-up (DBU) system. After terminating afterburner operation and declaring an emergency, the engine fire was confirmed extinguished by the chase aircraft, but the fire in the dorsal avionics bay and rudder servo-actuator area continued burning. Capt Hyatt and Maj Stevenson correctly analyzed their situation and successfully piloted their severely crippled aircraft to the nearest available landing field (Gila Bend AFAF), which was more than 60 miles away. After successfully landing and stopping the aircraft, Capt Hyatt and Maj Stevenson emergency ground egressed the still burning aircraft. Later analysis of the remaining hydraulic system showed that this



Major Ronald W. Stevenson

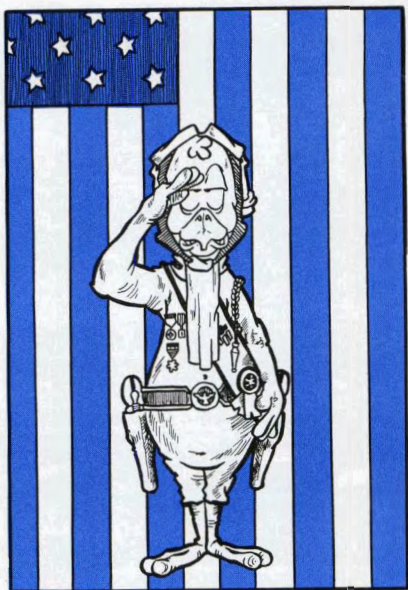


Captain James W. Hyatt

**310 TFTS, 58 TTW, 832 AD
Luke AFB AZ**

system would have failed had the aircraft been flown any longer. Failure of the remaining hydraulic system would have forced an ejection and, as a minimum, caused

the loss of the aircraft. The accurate and timely decisions made by Capt Hyatt and Maj Stevenson during a critical phase of flight saved a valuable combat aircraft.



FLEAGLE SALUTES

TAC'S OUTSTANDING AIRMEN

During a routine start attempt on an F-16 F-100/PW-200 engine at the 31st Component Repair Squadron Test Cell, 31st Tactical Fighter Wing, Homestead AFB, Florida, a faulty unified fuel control allowed excessive fuel to be delivered to the engine. After engine ignition, the fuel caused a fire in the augmentor section of the engine. The engine operator completed the emergency shut-down procedures to dry the motor, but a substantial fire still remained. **Sergeant Patrick D. Robertson** responded quickly by grabbing a fire bottle and extinguishing the flames. He remained at the scene until the fire department arrived and verified a safe environment existed. Sgt Robertson's quick, decisive actions ensured the safety of personnel and equipment. Consequently, there was no damage to either the aircraft engine or test facility. Sgt Robertson's attention to detail and professional response have earned him a **Fleagle Salute**.



Master Sergeant Richard Dean of the 363d Equipment Maintenance Squadron, 363d Tactical Fighter Wing, Shaw AFB SC, was in the Inspection Section office when he heard a ground emergency call come over the radio. An individual had his

hand caught between the flaperon and fuselage during engine shut-down. Having been involved with this type of incident before, Sgt Dean ran to offer his assistance. When he arrived at the F-16 aircraft, other personnel were pouring liquid detergent on the victim's hand trying to make it slippery enough to pull out. He instructed the maintenance crew to remove the flaperon hinge access panels on the bottom of the wing, while he removed the top panels himself. When this action was completed, the flaperon was easily moved and the victim's hand was freed. Sgt Dean's quick response to this situation directly contributed to the victim receiving only minor injuries. Additionally, his willingness to get involved eliminated the need for obtaining the "Jaws of Life" and saved the cost of repairing the flaperon. Sgt Dean, by "getting involved" and using his experience, prevented a serious mishap and earned a **Fleagle Salute**.

LOW ALTITUDE SURVIVAL TECHNIQUES



Maj Dan Runyan
HQ TAC/SEF

Let's face it—one of the most exhilarating things we get to do in the fighter business is to fly at warp-8 at low altitude. There's something about the rush of the terrain as it accelerates to a blur and disappears behind our jets! The sensation of speed, the challenge of staying ahead of the jet, the opportunity to hone our war-time skills all add up to some of the most demanding, but also most enjoyable hours we'll ever log. But that's not why we practice them. It's the threat that drives us down to these altitudes, and training there is serious business.

It's also an inherently dangerous business; and controlled flight into terrain, which is the fancy

safety term for perfectly good airplanes hitting the ground, is the number one safety concern for fighters that have a low altitude mission. In the past five years, TAC active duty units alone have averaged five mishaps a year where good pilots flew good aircraft into the ground. In most of these cases, the pilot never got another chance to learn from his mistake.

Whenever a tragedy like this occurs, the mishap board, along with the command review process, takes a hard look at how we do business. A lot of constants come out of this review. The need for training in this environment is always reaffirmed—the capabilities of the threats we face have

not diminished—so we must train at low altitude. Our training procedures and rules are reviewed, and with only minor adjustments are found to be sound. Engineering fixes are studied, and Ground Collision Avoidance Systems (GCAS) have proven feasible and are being procured. But even these technological breakthroughs will **only** assist the ultimate factor in these mishaps—and that's the human factor. This article is an attempt to increase the awareness of how you as the aircrew can survive in the low altitude environment. TAC Manual 3-3 states the following:

Task prioritization at low altitude is critical. Do not fly



lower than the altitude where you can safely and effectively perform all assigned tasks.

This statement pretty well summarizes the most important point. But this is certainly not a new revelation to any fighter aircrew! We've been taught this and had it drilled into our heads from our first training sortie at low altitude. But perhaps it's this excellent training that gets some of us in trouble. At some point in the experience cycle, fighter crews can become **too comfortable** at low altitude. Complacency starts to set in—you hit the start low level point, turn to the heading, hack the clock, check on your wingman, check six, check the

RWR, check the radar, and check the fuel. You have very subtly become task saturated and have maybe even fixated on one of these items. But you forgot one thing—check 12 o'clock for the rocks! This is a prioritization problem. There should be "Check Rocks" between every task mentioned above. If you are flying a two-seater jet, this prioritization must be an integral part of your crew coordination. **Survival technique number one is to prioritize your cockpit tasks, and checking rocks should happen first and often in this sequence.**

Another valuable technique is to know and understand the insidious nature of certain optical illu-

sions. Due to visibility restrictions such as a low sun angle or haze, terrain contours directly in front of you may be lost against the horizon. Subtle rises in terrain, while maintaining level flight and a "wired" MSL altitude, may result in significantly reduced ground clearance. Flying over scrub desert with small bushes and cactus gives you the illusion of being much higher than your actual AGL altitude. Flying across an open field into an area of tall trees will suddenly and drastically reduce your terrain clearance.



LOW ALTITUDE SURVIVAL TECHNIQUES

In all these situations, mishaps occur when the illusion is not recognized or properly dealt with soon enough. An operable radar altimeter and appropriate low altitude warning would help greatly; so if you've got 'em, use them! Awareness that these illusions may exist is critical to their early recognition. **Our second survival technique depends primarily on the aircrews' awareness and recognition of these illusion traps and a subsequent "Climb to Cope."**

The low level environment is not usually thought of as a precision flying arena regarding pitch and bank. But unperceived descents and overbanked turns can be just as deadly at 300 feet as an SA-8 or ZSU 23-4. Small descent angles or unplanned increases in bank angles without corresponding increases in G can result in significant descent rates. The vast majority of our low level mishaps occur during turning or vertical maneuvering, not while straight and level. Precise bank and G is critical in these low altitude turns. Our perception of time may also be distorted. For example, at 500 feet, 450 knots, with a 3 degree descent, it will take 18 seconds to impact the ground. But take that same altitude and air-speed and introduce a 5 degree overbank in an 80 degree turn, and your time to impact is cut



almost in half. We become comfortable with our crosscheck during wings level flight and pace ourselves accordingly. However, this same pacing can be disastrous in a turn! Many of our mishaps also occur when attention is diverted from flying the jet to something inside the cockpit or to something behind the 3/9 line. As the time-to-impact charts show, increasing AGL altitude provides very little margin for typical turning maneuvers. So remember—at low altitude—turning and looking at anything other than your flight vector may be a death act! To bring this into further perspective, consider this: at 300 feet, 500 KTAS, and an insidious 3 degrees of descent, you are just over three full sweeps of an F-16's radar or about seven seconds from ground impact! **Our third survival technique is to fly the airplane precisely by controlling the flight path vector—low altitude is not the regime to tolerate sloppy pilotage.**

These are just three survival techniques we, here on the staff, have highlighted in attempting to make low altitude flying a safer place for us to be. They are not all inclusive, and this article is not meant to be the final word on this subject. Our intent is to provoke your thought and interest, and thereby your awareness of some of the particular hazards down low. Reprinted below is a standard "time to impact" chart. Review it, and reaffirm the techniques of task prioritization, terrain illusions, and unperceived descents. Fly smart and check twelve!

TIME TO IMPACT (seconds)

<u>DIVE ANGLE</u>	<u>ALT AGL</u>	<u>KTAS</u>		
		<u>400</u>	<u>450</u>	<u>500</u>
1°	700	59.5	52.9	47.6
	500	42.5	37.8	34.0
	300	26.1	23.2	20.9
3°	700	14.2	12.6	11.4
	500	19.9	17.7	15.9
	300	8.5	7.6	6.8
5°	700	11.9	10.6	9.5
	500	8.5	7.6	6.8
	300	5.1	4.5	4.1
10°	700	6.0	5.3	4.8
	500	4.2	3.7	3.3
	300	2.6	2.3	2.0

How about for other than wings level? The following chart depicts the effect of small overbanks given a constant "G" turn. Even small errors can be fatal. Constant attention to altitude, attitude and flight path vector is a mandatory requirement. The P_k of the ground is still close to 1.0.

Bank Angle/G for Intended Level Turn (time to impact in seconds)

	<u>Altitude</u>	<u>75°/4G</u>	<u>79°/5G</u>	<u>81°6G</u>	
5	500 Ft	12.0	9.8	8.5	
	Degree	300 Ft	9.2	7.0	6.1
	Overbank	100 Ft	4.3	3.8	3.3
10	500 Ft	7.0	6.2	5.4	
	Degree	300 Ft	5.2	4.5	4.2
	Overbank	100 Ft	3.0	2.6	2.4
15	500 Ft	5.5	5.0	4.5	
	Degree	300 Ft	4.3	4.0	3.8
	Overbank	100 Ft	2.2	2.0	1.9

One more time — CLIMB TO COPE!



WEAPONS WORDS

PRACTICE TO WIN

Major Martha J.M. Kelley
HQ TAC/SEW

Yes, around the world and even in the Air Force, people are asking themselves, "What are we going to do now that peace has broken out all over the world?" I've got an idea what we need to do; **what we had better do in Weapons Safety.** We need to be sure we can fight, survive, and operate should we find ourselves in the middle of armed conflict. What part do we play? Well, for a starter, in Weapons Safety, the single most important thing we can do to

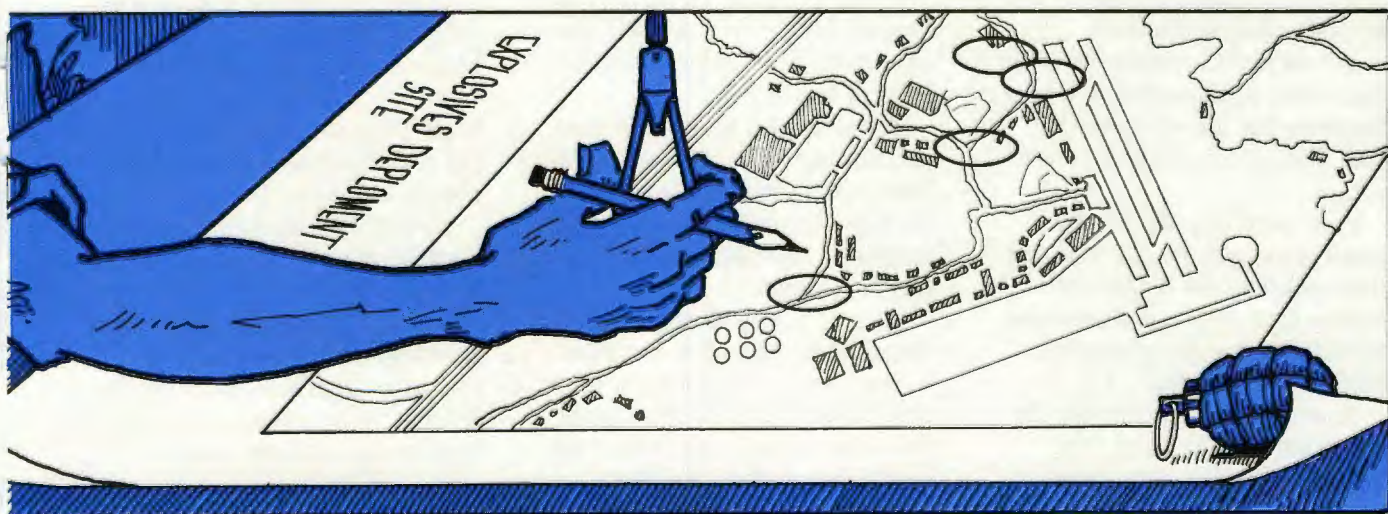


enhance this effort is to ensure our deployment site plans are current and up to speed. We must prepare for war to ensure peace. These site plans lay the groundwork for identifying explosive locations, aircraft parking places, munitions routes, and munitions build-up areas. We must take painstaking efforts to plan our operations (explosive and nonexplosive), so that inbound frag does not take out a whole fighter squadron or their supporting combat munitions unit. We must ensure that we have the required quantity-distance between explosives operations—that we minimize the number of people and resources exposed to explosive hazards. Explosives deployment site plans must be coordinated through the host MAJCOM to ensure other criteria (NATO, British, etc.) are met, if required. This detailed paperwork will help you, the weapons safety officer, the deputy commander for maintenance and the wing commander to highlight any problem areas for review and correction. It will ensure that previous mistakes, such as placing bombs in a flood plain or failing to ensure the jets have adequate room to taxi from their parking places, don't happen to you. Even if we must vary from these explosives deployment site plans during the "Real Thing," we will understand the rules preventing propagation; thus, preserving resources that don't need to be lost because of our carelessness. Weapons Safety should not go out the window, but complement our ability to survive and operate as best as possible. Don't stray from this mindset!

Even here in Tactical Air Command, in the states, we need to perform daily operations practicing to survive. Consider how many people you could lose and injure if you do not always consider how you can

limit the risks should there be a mishap during an explosives operation. For example, instead of conducting concurrent operations because it's convenient, think about how the work could be scheduled, so that the minimum number of people and resources are subjected to the possible effects of explosion. This does not mean that you blindly obey rules which hamper your ability to get the job done. It means that you're working smartly, practicing to limit your losses, practicing the very combat skills you will need to survive.

A final note—the explosives deployment site plans were approved and worked as advertised for the recent Operation Just Cause. If you have not completed the explosives deployment site plans for your unit's OPLAN commitments, don't put it off. If you don't know what to do or where to start, call your numbered air force or call us at TAC/SEW. We are currently obtaining information regarding each unit's deployment locations. Some deployment site plans may be easy (host MAJCOM already sited facilities) while others will be more difficult (as in bare base site planning). If your unit has numerous OPLAN commitments to various locations, talk with your plans people and the Deputy Commander for Maintenance to determine which one to work on first. Once you get the swing of it, things will go easier. Together we can get this done and we can ensure our fighter squadrons can operate safely and effectively in their next wartime locations. We will have done our homework and we won't lose any of our combat resources because we were complacent in preparing for war. **Let's practice to win—make sure your explosive deployment site plans are ready today!**



TRY HARDER AND HIS FISHING EXPERIENCE



Jimmy Campbell
1 AF/SEW

Fishin' weather, that's what it is, fishin' weather. If there was one thing Try Harder liked better than aviation, it was fishing. He might even invite Jim, his next-door neighbor, to come along. Try and Jim had very different interests, but they both loved fishing. Try studied aviation and wanted to become an Air Force pilot before he damaged his hearing while removing tree stumps with dynamite. He even dressed like an aviator with his flight suit unzipped half way down his chest.

Try had a small 12-foot aluminum boat with a two horsepower gasoline engine that he hauled around on a small trailer behind his 1966 Mustang convertible. They loaded the boat with tackle, bait, gas can, sandwiches and Try's beer. Jim took a Louis L'Amour western novel to read. They were ready for a day of fun and relaxation at the lake.

Try backed the trailer down the boat ramp and launched the boat. He threw his life vest into the boat. Jim put his life vest on and smiled.

Putt, putt! Try started the small gas engine on the boat and they glided off for his favorite fishing spot. Try took a beer and offered Jim one. Jim shook his head no and smiled.

After a few minutes to get the tackle out and prepared with baited hooks, they were ready to

start casting for the big one. That big old bass had eluded Try for years, but he knew he would get him some day.

Try flipped his rod back and flung it forward. **SSSwish!** Along with his rod and line went his hat. Try had managed to hook his line through the brim of his favorite World War II aviator's flight cap and threw it overboard. Jim just smiled.

An hour of fishing and another beer later, yank, whine. The rod jerked and was almost pulled from Try's hands. He just knew that he had hooked the big one this time. He started reeling him in, but the fish wouldn't come. Try struggled with the line. The big old fish just wasn't about to be reeled in. Try stood up in the boat, so he could get more leverage. Ugggg, pulllll, he wasn't going to let this guy get away. Try tugged and he pulled and he tugged. **SNAP SPLASH!** The line broke, Try lost his balance and fell overboard.

Try struggled back to the boat. Jim reached down, offered Try his hand, and helped him back into the boat. Try said, "Guess I should have been wearing my life vest." Jim just smiled.

Since Try was all wet and getting cold, he figured it was time to head for land and get into some dry clothes. Putt, cough, sputter! He pulled on the rope to start the engine, but nothing happened.

Must be out of gas. No problem, that was why he brought along the **EEEMPTY** gas can. Good thing he remembered the oars. Oh no, the OARS, where were the oars? Jim just smiled.

Improvise. If Try had learned one thing from studying aviation, it was how to improvise. They were only about 300 yards from the shore. He would just set down low in the boat, so his arms would reach the water, then he could paddle back to shore using his hands. It would be slow, but it should work. Maybe Jim might even help paddle. After a few strokes, Try felt his Seiko watch slip from his arm. Jim still smiled.

The clouds started to come in and the wind was starting to blow. The water was getting rougher with waves lapping over the sides of the boat. Lightning was striking on the other side of the lake. Try was getting worried. **WHAMMM BANG!** The lightning was getting closer. Water from the rain and waves started to fill the boat. They began bailing with their beer cooler. Maybe they should swim for it.

SSWWISHH! A huge wave washed over the boat capsizing it and throwing them into the water. Try decided to stay with the boat. He remembered seeing on TV that an overturned boat probably wouldn't sink and that it was best to stay with the boat.

Just as Try had about given up



all hope, the waves pushed them close enough to shore that they could stand up in the water. They beached the boat next to a picnic area and headed for shelter. They had lost all their tackle, food and beer. It was time to call it a day.

After the storm quit, Try hiked

back to his Mustang and drove it and the trailer down to the boat. He parked on the edge of the beach next to the water. The beach was a little down hill, but that shouldn't be a problem. It wouldn't take long to flip the boat upright and load it on the trailer.

Then they could head for home.

BUBBLE, GURGGLE! Try looked up as the hood of his Mustang slowly descended under the waves. Jim looked at Try, smiled and said, "Remind me to never go fishing with you again."

1989 Winner of SICOFAA Flight

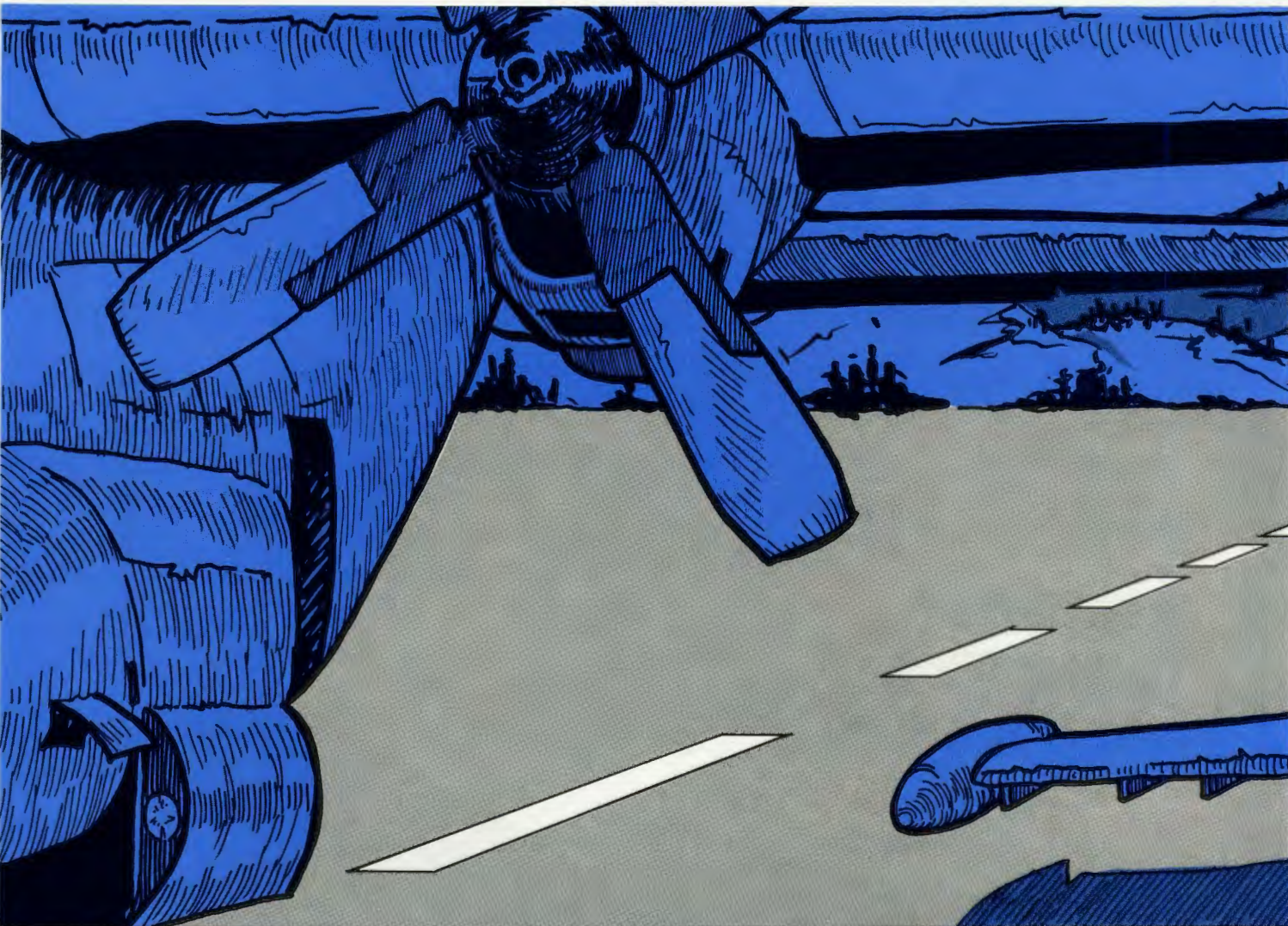


of the t Safety Award

58th Tactical
Training Wing,
Luke AFB, Arizona



F-16 FIGHTING FALCON



JUST CAUSE

Lt Col William M. Wilson
24 COMPW/SE
Howard AFB PN

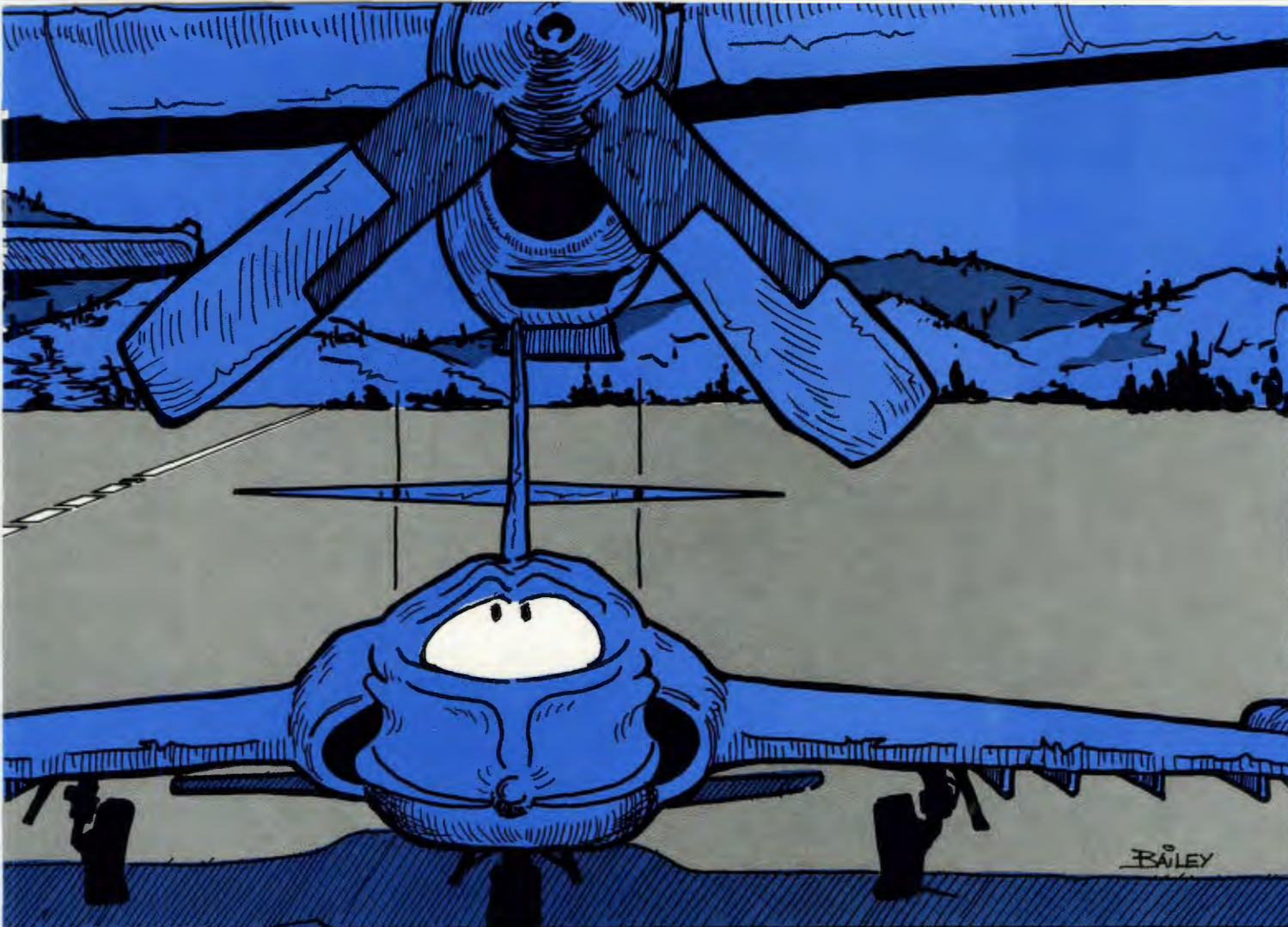
So I'm standing at the bar, first cocktail party after Operation Just Cause and the general walks over and exchanges a few pleasantries.

Then he drops the bomb, "Well, Bill, why don't you just crank up a safety article for *TAC Attack* to tell the world why we had **no** accidents and **no** reportable incidents during Just Cause. It'll help the rest of the Air Force and look great for our safety program that did so well! Send it by for my review next week."

So I obviously replied, "Sure, sir, that's no sweat." After that I

wandered around the party wondering just what the heck we did during the operation that made us do so well. First of all we did our mission and we did it very professionally, both day and night with massive traffic flow into an airfield with no alternates, minimum navigational aids, about a million helicopters (nobody could have counted them all), a ramp the size of a large postage stamp and a lot of blackout operations. There must have been some magical key ingredient we found that made it all come together. I have spent the last week trying to dissect the operation and distill just what happened during that time period. I finally started to look at what I did because I couldn't nail down just what it was that those other 25,000 people did so well. I hadn't

had an accident or caused one. I also was fortunate to have worked as the Air Operations Center Director and to have snuck out from under the wing commander's thumb long enough to fly a few combat missions and lay down a few rounds to help out the "good ole 82d Airborne." So what was it that I did that was so different and safe? After several futile sessions at the word processor and many hours of thinking about it, the light finally came on. **I DIDN'T DO A SINGLE THING DIFFERENT DURING OPERATION JUST CAUSE.** Every time I took off I said to myself, "Pins, canopy, lanyard, pylons." Every time I fragged a sortie for a gunship, an A-37, an A-7, or even called for a Medevac helicopter, I checked



with each of the duty officers to see that we had no other assets there or inbound. "How can we deconflict? Frequency, altitude, time, geographic separations. Keep them apart and get those weapons on target!" I was doing the same thing that I had been doing for twenty plus years. I thank every IP that ever made me do it over again till I did it right and SAFE every time. I also have to thank every commander I had who really was the head Flying Safety Officer for our squadron. The excellent success that occurred in Panama never would have come to fruition if one C-130 pilot had landed gear up and closed the runway or a crew chief had missed a critical preflight checklist item. We all talk about safety as a combat multiplier in

our briefings. Well, I've seen it in action and it really works!!!

Every single unit was critical. Our Tactical Air Control Parties out there in the field of fire with our Army buddies didn't just get lucky driving around in the dark with night vision goggles and combat lighting. They had been practicing SAFELY, and they went into action with every single vehicle and person at 100%. They might have driven out to support the 193d Infantry with one damaged vehicle in the shop, or worse yet had a key man in the hospital, all because of a preventable accident. But they didn't. I've watched them prepare for their Ground Evals and Check Rides. Safety is always a key part of their briefing and operation. They are true professionals, and they view safety as

an essential part of anything they do. If they didn't, they wouldn't have such an enviable safety record. Every blue suiter in Panama attacked his job in the same way. So how did that all translate into mission accomplishment? I'll tell you.

You can call it habit pattern, or an attitude, or a mind set, or just doing what you have to do. Whatever it is in your mind, it is the Air Force Safety Program. Each and every one of us is a vital part of it. Being a professional in the military brings along with it a large set of responsibilities. Each supervisor and commander has an obligation to both the taxpayers who give us the finest military hardware the world has ever known and to each of his subordinates. Those leaders must instill



JUST CAUSE

an attitude that creates a safe work environment all the time — not just while someone is reading a poster or safety sign. Practicing or condoning bad habits directly reduces combat power. It takes just as much self-discipline to put on those hot sweaty goggles when using a metal lathe in the heat of Panama as it does to continually strive for tactical position during a grueling range mission; maybe more because frequently no one is watching to see if you put on those goggles. In combat, everyone expects you to do your job right. Lives depend on it. Do your job right everyday and you'll do it right in combat. So in my mind, we did well during Just Cause because we had already been practicing doing it right before the balloon went up. If you want your unit to do well, then try these simple combat proven steps:

1. Practice safety as an integral part of your daily tasks, not something special or different.

2. Don't let yourself or others get into the habit of taking shortcuts or unneeded risks.

3. When you become a commander or supervisor, don't give lip service to your safety program, be the best example.

In the future when we go back into combat, and we will, each and every one of you can perform as well as we, the Air Force members of Joint Task Force South, did. No accidents and no injuries, just success.

"BOX SCORE JUST CAUSE"

AIR FORCE	ACCIDENTS
14,000 troops moved into country.	0
Over 300 fixed wing aircraft employed on D-Day.	0
Howard base population tripled by D plus 2.	0
Day/Night Close Air Support over 500 AC-130, A-37, and A-7 sorties.	0
Over 30 million pounds of cargo moved during the operation.	0
Up to 25 aircraft movements per minute handled by ATC controllers for extended periods—fixed and rotary wing, transport, and fighter.	0
Rates of 1 million pounds per hour of fuel pumped without a single aircraft departure delay.	0
160 air refueling missions pumped 10 million pounds of fuel.	0

AND LOTS MORE . . .

FINAL SCORE: AIR FORCE — MISSION ACCOMPLISHED
ACCIDENTS — 0



Dear Ed

Skimming through the January 1990 - "TAC Attack" issue that I received, I have noted and read your open letter. I am a reader outside the US Air Force, but I have decided to write you in any case to testify my appreciation for "TAC Attack."

I have been one of your subscribers since the July 1986 issue. In fact, during that year, I was hunting for a magazine about the Air Force to improve my English and to pass the spare time reading about my hobby: military aviation. The US Government Printing Office, to which I wrote an inquiry, advised me to read your publication.

I am very satisfied with my choice; chiefly because in each "TAC Attack" there is useful advice and/or good rules of life to learn and apply. For instance, here in Italy, the use of seat belts has been imposed by law for a year, but thanks to your publication I have understood the benefit of wearing them and I have buckled them up since 1986. In a word: reading "TAC Attack" I can combine the useful and the pleasurable.

You are doing a good work, and I like "TAC Attack" just the way it is.

Yours sincerely

Claudio Vittozzi
Via Cividale 9
33050 Felettis UD Italy

Thanks for your feedback. Ed

Dear Ed

The aircrews of VMFP-3 have eagerly awaited each monthly issue of *TAC Attack* for several years and have never been disappointed with your outstanding magazine. Unfortunately, our squadron is scheduled for decommissioning on the 31st of September 1990. Hence, we must, regretfully, cancel our subscription for your magazine.

Thank you for years of entertaining reading while effectively increasing our squadron's safety awareness.

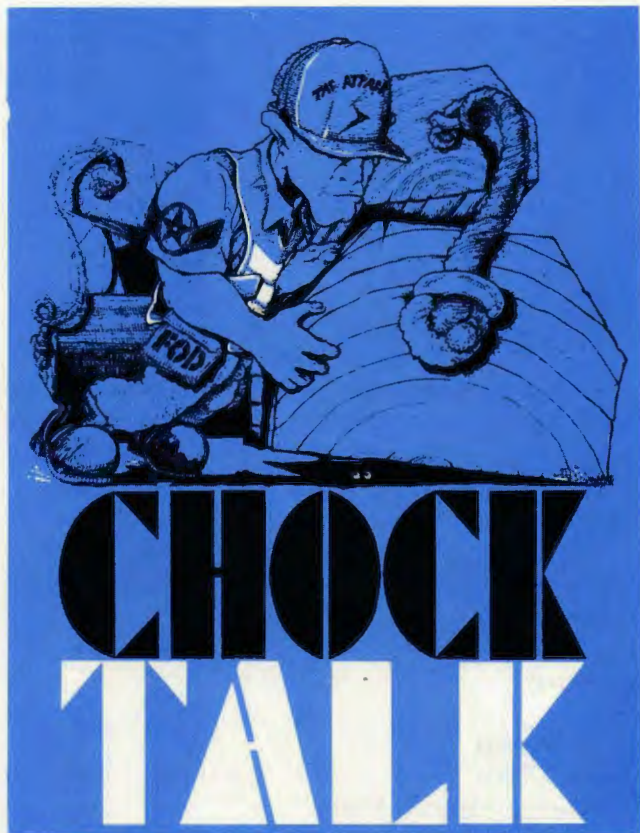
Sincerely

T. P. Hewitt
Capt, USMC
3 Marine Aircraft Wing
Santa Ana, CA

Thank you for the feedback. **TAC Attack** is available to all DOD activities. If your next unit isn't receiving it, please have them send in a request. Ed

HELP WANTED: TAC Attack is searching for information on Tactical Air Force (TAF) pilots, WSOs, and EWOs who have accumulated 2000 or more flying hours in fighters and who have never been involved in a Class A or B mishap. We want to discuss what you did right (was it blind luck, skill and cunning, or what?), so it can be shared with others who are still formulating their bag of tricks. If you are one of those aircrews or know of one of them, please contact Lt Col Hap Tucker, AV 574-3658, or mail your thoughts on how you accomplished such a commendable feat to: Editor TAC Attack, HQ TAC/SEP, Langley AFB, VA 23665-5563.

HELP WANTED: The USAF Survival School is looking for people who have experienced a survival episode, either military or civilian, which can be used to enhance USAF Survival Training. They would like to use your valuable experience and insight to let others know what they might encounter. Please contact them at 3636 CCTW/DOV, Fairchild AFB WA, 99011-6024, AV 352-2371/2171 or commercial extension (509) 247-2371/2171.



F-16 FIRE

Capt David M. Huyck, Jr.
58 AGS/MAAA
Luke AFB AZ

What started out as "just another day" for the 311th Aircraft Maintenance Unit (AMU) ended on a very different note. I'm Capt David M. Huyck, Jr. (311 AMU OIC) of the 58th Tactical Training Wing, Luke AFB, AZ; and I've documented the following to show how ordinary days can become extraordinary for maintainers and AMUs. We had entered the 22d day of February with a heavy flying schedule (16 turn 14), and five of our F-16s were non-mission capable for either supply or maintenance.

Aircraft 78-0089, an F-16B, had landed Code 3 the day before with a "centralized air data computer (CADC)/electronic engine control (EEC) light that came on 40 minutes into the flight." The events that occurred from the time the flight was debriefed until later the following day were pretty uneventful, actions that transpire on every flight line while work-

ing "broke aircraft." The troubleshooting became progressively more extensive because we were not able to duplicate the malfunction.

Staff Sergeants Paul A. Miller (an avionics specialist) and Albert J. McPherson (a tactical aircraft mechanic) were performing various ground maintenance operational checks throughout the afternoon of 22 February. Even with their best efforts, they had been unable to duplicate the discrepancy and get a "hard fail." During the process of their troubleshooting, they completed two engine runs, one below idle and the other above idle; however, the malfunctions still could not be duplicated.

Following the fault isolation troubleshooting procedure, they shut the aircraft down and replaced the CADC. Sergeants Miller and McPherson concluded that the engine speed had no effect on trying to duplicate the malfunction and then decided to run the aircraft at idle. After ten minutes with no indications of any problems, Sgt McPherson began running up/testing the various aircraft systems. When the stores management system (SMS) was turned on, the problem was immediately duplicated; the CADC and EEC lights came on. The ground man, Sgt Miller, heard this through his headset. When I was talking with him afterwards, he stated his first reaction was "a feeling of relief, as all the hours we had spent troubleshooting had finally paid off." This feeling though soon took a different course . . . changing to one of fear . . . as in a matter of seconds, Sgt Miller observed a **FIRE** emanating from the station seven wing pylon cannon plug area.

The following sequence of events was captured through interviews with the individuals involved. According to Sgt Miller, "the fire juttied out like a flame thrower, heading straight for my eyes. The whole chain of events was totally unexpected and I could feel my adrenalin working overtime." His instincts and training took over as he yelled into the headset. "**FIRE! FIRE! SHUT DOWN!**" Upon hearing this, the run man, Sgt McPherson, quickly looked towards the rear of the aircraft where he saw Sgt Miller running toward the fire extinguisher. Sgt McPherson's training paid off as he remained calm

and complied with emergency procedures by quickly shutting down the aircraft, notifying maintenance operations control and ground egressing. Sgt McPherson recalled that "the moment I heard the word 'fire,' I didn't let fear overcome me and instead remained very calm." Within seconds of noticing the fire, Sgt Miller had put the fire out. Discussing this with him later, he realized that he didn't have much time to contemplate the situation at hand. Knowing the possibility of an explosion, he focused all his efforts towards putting out the fire. He appeared calm, but he was worried as "the fire appeared to regress into the wing cannon plug area." Despite this, Sgt Miller took extra precautions and thoroughly sprayed the cannon plug area with halon.

By the time supervision and emergency vehicles arrived, the danger was over. You could tell Sgts Miller and McPherson were shaken, yet proud their experience and training had permitted them to control the situation. The prompt, decisive actions and adherence to technical data by Sgts Miller and McPherson prevented the probable loss of a 16 million dollar F-16 aircraft. Their actions combined to keep a potentially hazardous situation under control and limit the damage to one wiring harness.

It's a privilege to work with these two professionals within our AMU. The Air Force is fortunate because there are many Millers and McPhersons throughout the maintenance world who work long hours under austere conditions, day in and day out. This article conveys our thanks for a job well done and reaffirms that training does make a difference.





DOWN TO EARTH

ITEMS THAT CAN AFFECT YOU
AND YOUR FAMILY HERE ON
THE GROUND

LEARNING BY EXPERIENCE

Maj Don Rightmyer
16 AF
Torrejon AB SP

I've been driving a car now for 24 years and over 290,000 miles. Fortunately during that time, I've experienced only four minor accidents. Three of the mishaps I caused and all of them were avoidable.

The first mishap occurred within the first year or so after I received my driver's license at age 16. I was taking a short ride in the family car out in the countryside

just after a brief, but severe, summer thunderstorm had passed through the area. I decided to see how much power the car had, so I mashed down on the accelerator; and when I did, I was in for a surprise! The sudden acceleration caused the rather lightweight Chevy Impala to lose traction and go into an eye-watering 360-degree spin in the middle of the road. Then the car went sideways down a ditch and up the other side, coming to rest right next to a farmer's fence. Nothing damaged other than my ego from having to get the farmer's assistance to pull my car out of the ditch.

The second mishap also occurred during my early driving days. Following work one evening after my part-time, after-school job, I went in search of classmates who were building a float for the upcoming community Thanksgiving parade. My hunt took me into

a poorly lit residential area on a moonless night, so I slowed down as I continued to look around for the garage where the work was being done.

When I noticed that several vehicles were parked perpendicular to the street with their front wheels actually sitting on the pavement, I turned the wheel to the left to avoid them. **WHAM!!!** Suddenly my search stopped as I ran into another car parked on the left side of the narrow street. Lost SITUATIONAL AWARENESS and much lost salary.

The third incident occurred just a block off of Sunset Boulevard in Los Angeles. I was preparing to turn left into a driveway in order to turn around and head back to the boulevard. Before I could complete my turn, another car approaching me from behind at well above the posted speed hit my left front fender, completely shoving in the entire side of his car from front to rear.

The last mishap happened ten years ago in downtown Washington, D.C. Three cars were in front of me as we all made our way down an on-ramp to merge onto a four-lane highway. There was no conflicting traffic coming, so the first two cars entered without any problems. There still was no one coming on the main road, so the car in front of me began his move onto it as well. Thinking (read **assuming**) he was on his way, I continued to move forward as I checked once again for traffic back over my left shoulder before I also merged.

When I looked back in front of me, the car in front of me had stopped dead in the road for no apparent reason, and I struck his right rear fender.



Those have been my four POV mishap experiences, none involving personal injury or serious vehicle damage. What did I learn from them? **PLENTY! SITUATIONAL AWARENESS.** One of the biggest things I learned was the critical need for situational awareness. Each of these incidents could have been stopped if I'd been aware of what was going on around me and my car—a rain-slickened road; unusual parking pattern on a dark street; another driver approaching dangerously; and an unexpected stop in front of me. As a result of these minor experiences, there have been countless mishaps which I have consciously been able to avoid in such high-density traffic areas as Los Angeles, Washington, and Hampton, Virginia. Situational awareness on the highway is often the difference between a close call

rather than a close encounter. **DRIVE DEFENSIVELY.** After my second car mishap, I self-enrolled in a defensive driving course. I think I was the only one there voluntarily, but it was very worthwhile. We've all had some exposure to the same subject in our Air Force driver's training, but the main key to success is opening your eyes to the potential for auto mishaps that surround you whenever you put your car in gear. Unfortunately, sometimes it takes a minor fender-bender before we wake up to the areas where we can get in trouble. After my incident on the highway entry ramp, I was amazed at how easily poor road engineering and false assumptions can lure you or me into the rear end of another person's car. There may be contributing factors, but you'll be deemed the one at fault.

PAY ATTENTION. A common area that many drivers, particularly experienced ones, fall into is becoming bored with driving. We've done it so much that we "think" we need something else to occupy our attention, such as lighting a cigarette, fixing makeup or hairdo, reading a book or newspaper, playing (or fighting) with the kids, and so forth—all of this while you're driving the car (or are supposed to be). Don't overestimate your car's sophisticated technology. It still needs you to drive it.

I hope your driving record will be better than mine. Try to learn from my mistakes and, if possible, from any you make, so the next time you hit the asphalt, you'll be even safer. **Look out for me, cause I'll be looking out for you.**



TAC OUTSTANDING ACHIEVEMENT IN SAFETY AWARD

After completing an aircraft refueling from an R-9 refueler, **Airman Waylon J. Louviere** proceeded to evacuate a 3-inch, 60-foot collapsible hose. Upon completion of the hose evacuation and immediately after reducing engine speed, a sudden explosion occurred internally in the filter-separator. Overcoming his fear of a fuel fire and without hesitation, Airman Louviere executed the emergency R-9 shut-down procedures. He released the dead man control, pushed the engine auxiliary throttle control

all the way in, turned off the emergency switch, closed the hose reel shutoff valve, and closed the main tank emergency shutoff valve. Concerned that a static discharge might ignite the dripping fuel, he evacuated the area, ran to another refueler and, by radio, notified the fire department. The force of the explosion had stripped the retaining bolts and blown the R-9's heavy, steel top cover off. Fortunately, there were neither fire nor personnel injuries following the explosion.

Through his prompt action, Airman Louviere avoided potential loss of life, prevented the destruction of an R-9 refueler valued at over \$100,000, eliminated the probability of major damage to an RF-4C aircraft, and kept the fuel spill to a minimum. His quick professional response to this emergency has earned him the TAC Outstanding Achievement in Safety Award.



Airman Waylon J. Louviere
67 SUPS, 67 TRW
Bergstrom AFB TX

Fleagle

THEM TARGETS WILL RUN AN' HIDE
WHEN THEY SEE TH' LIKES OF ME
APPEAR ON TH' RANGE



WARRISON

FEELS GOOD TO HAVE TH' OLD SHOOTIN'
IRON IN MY GRIP AND READY TO SHOW
ALL WHO WATCH WHAT A REAL BALL AN'
POWDER JOCK CAN DO.



JUST A FEW MORE MILES
TO TH' RANGE. BETTER GET
TH' OLD KILLING MACHINE
READY.



WHAT TH...!



I SURE THOUGHT THIS
THING WUZ ON SAFE.
I BETTER GO HOME. I
AIN'T IN NO SHAPE TO
SHOOT TODAY.



BUNCH OF FOLKS WAITING TO SEE YA'.
THEY CLAIM YOU TRIED TO BLOW THEM
AWAY OUT NEAR TH' RANGE THIS
MORNING. THAT SO,
FLEAGLE?



ONE SOF's STORY

Major Kris D. Gianakos
23 TFW/SEF
England AFB LA

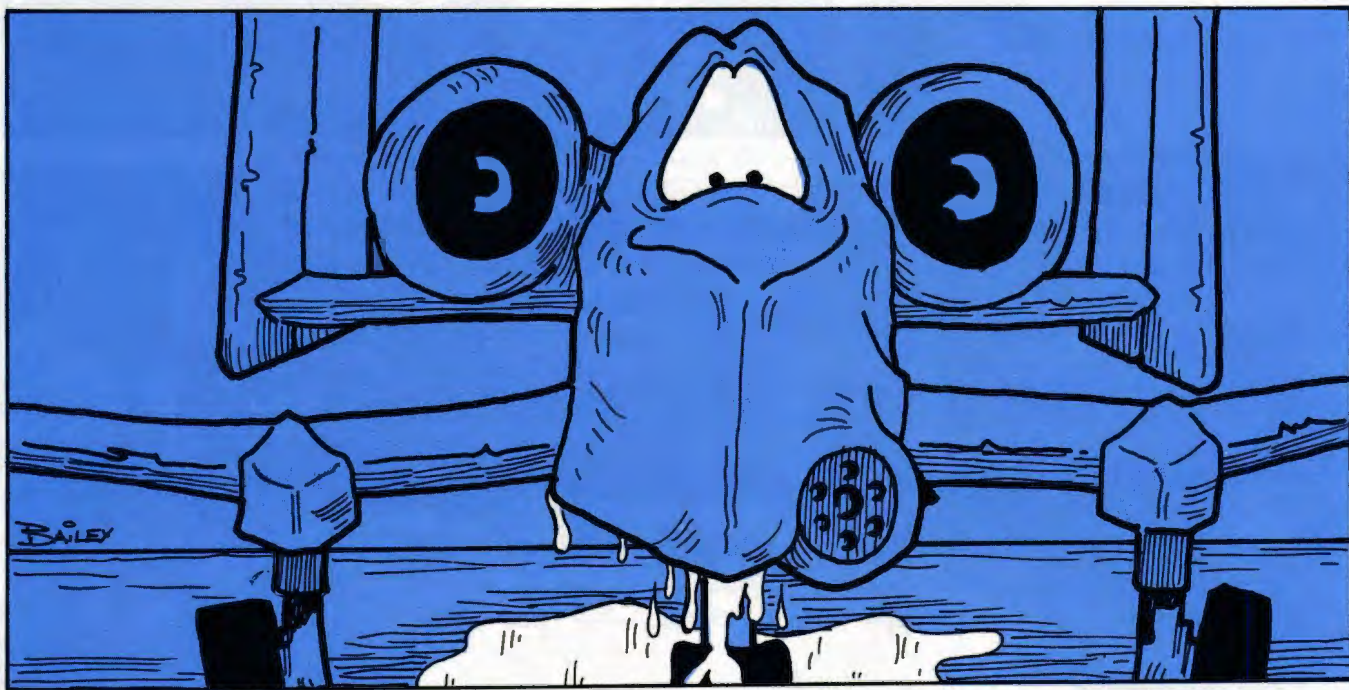
The changeover brief was a breeze. The weather is clear, all facilities are good, and it's a light schedule tonight with one squadron deployed to Nellis. Checklist completed, it's time to sit back and wait for the first launch. The sun is hanging low in the twilight sky, no bird activity and the tower crew is ordering pizza. The only activity around the airpatch is a single Navy T-2 shooting an instrument approach to a full stop. As the Buckeye touches down, I'm following his roll-out. As the red and white trainer approaches the midpoint of the runway, it occurs to me that the jet isn't going any slower now than when it touched down. I make a comment to the tower

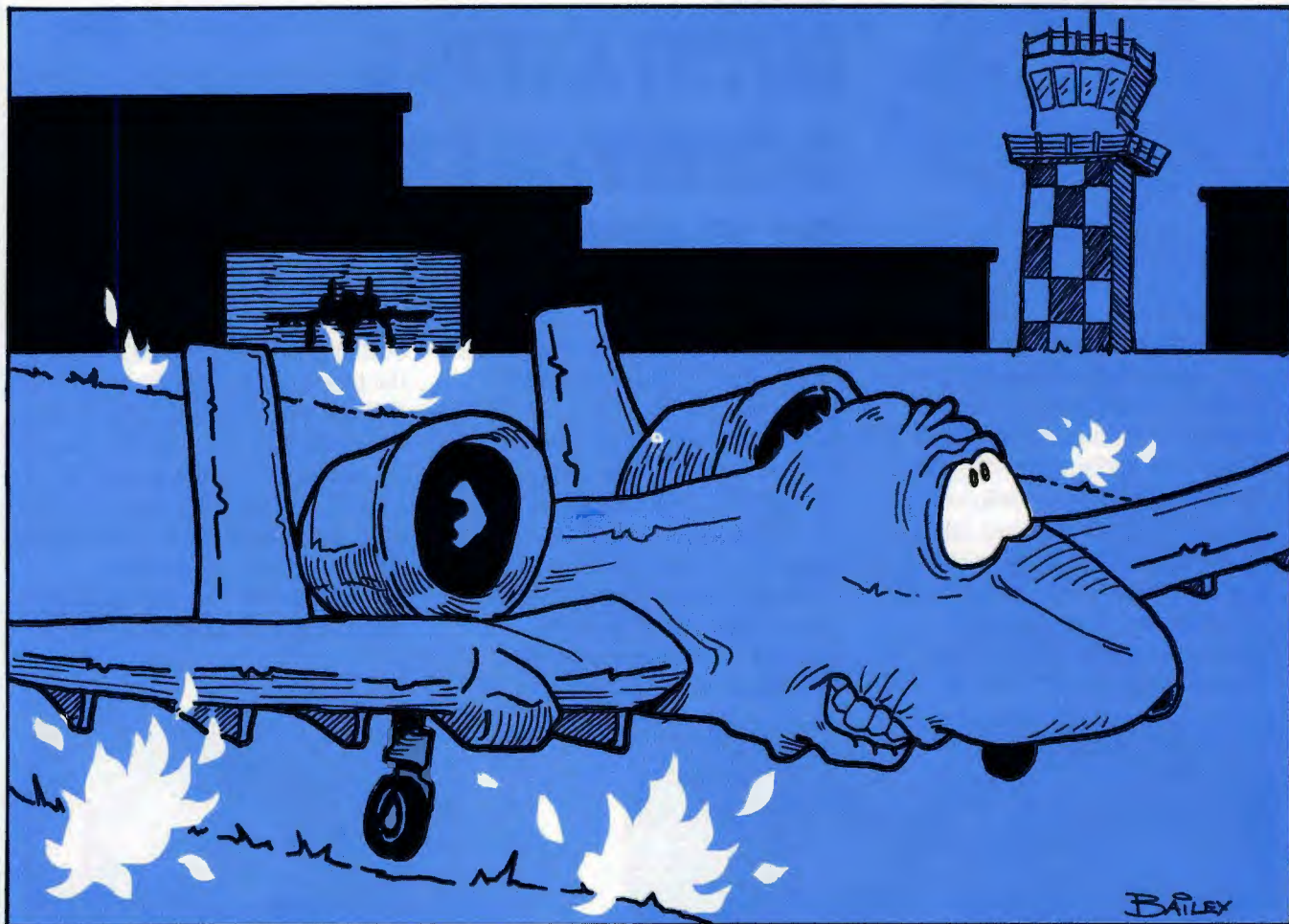
chief, and then I watch the tail hook drop to the runway and the barrier begin to be stretched out. The seabird trainer is quickly stopped, but unfortunately one wheel is off the runway and sinking rapidly into the mud.

So much for a quiet Supervisor of Flying (SOF) tour. The response team is busy removing the jet from the runway while I set up a holding action for the now taxiing local fighters. As the orange sun kisses the horizon, I'm thankful to see the T-2 being towed off the runway. The first flight is still holding short of the active. Don't rush, I say to myself, as base ops completes the final FOD check of the runway. Runway's open and the holding four-ship is cleared for

immediate departure. My mind relaxes as I watch the first jets lifting off. Back to normal ops . . . not so fast hog breath!

The pilot isn't even clear of the field when his voice comes over the UHF radio. He's declaring an In-flight Emergency (IFE) for a hydraulic problem, low pressure lights and pressure dropping on the gauge. I pull out the IFE response checklist and follow the problem through to an uneventful full stop landing that closes the main runway. By this time, lots of night fighters are turning JP-4 into night noise on the ramp waiting for me to help get them airborne. I coordinate the arming crew change to the secondary runway and start launching jets. The





IFE jet had discharged lots of fluid on the main runway requiring sweepers to clear up the mess. Not an easy task in the dark.

The phone rings for me. The caller gives me a heads up that the evaluation team is going to have an exercise at 1900 requiring fire department response. The main runway is clear again. The arming crews have been repositioned and are ready to arm the jets. We switch runways back to the primary which should improve our operations. Two major runway closures in the last hour should be

enough for this old SOF. Not so fast ole hog breath!

The **first** fighter to take off on the newly opened runway has an uncommanded ALE-40 flare jettison which starts several small fires on the side of the runway. I bring the unlucky pilot back as an air abort and watch the fire department get some real world continuation training. So much for their planned exercise. Fires are out, another FOD check of the runway, and the operations continue toward midnight with no further problems. The points I

pondered following this SOF tour were many. The ones I feel are the real counters are: (1) be prepared for anything, (2) have a backup plan ready and know it will work, (3) when you think the party's over, check out the back rooms, and (4) the tower crew, fire dept, base ops, RAPCON, maintenance, barrier mx, and operations folks work best when working together. My thanks and a hardy thumbs-up go to the super teamwork displayed during my SOF tour.

That's one SOF's story. ➤



TAC OUTSTANDING ACHIEVEMENT IN SAFETY AWARD

Technical Sergeant Robert H. Blind was conducting vehicle familiarization training in front of the 405 EMS Repair and Reclamation Section. An F-15 aircraft from Holloman AFB, New Mexico, had just landed. As the aircraft turned off runway zero three right, Sgt Blind noticed flames coming from the right main landing gear wheel. After obtaining a 15 pound halon fire

extinguisher from the repair and reclamation tool crib, Sgt Blind ran to the aircraft and signaled the pilot to stop. He positioned himself in front of the tire and put out the fire. Twenty seconds later, the flames ignited again, and then once again after Sgt Blind had extinguished the flames. Sgt Blind stayed with the aircraft and ensured the flames were fully extinguished. Sgt Blind's out-

standing training as a member of the base's crash recovery team coupled with his quick reaction to an unexpected situation definitely prevented serious damage to the aircraft and potential injury to the pilot. Sgt Blind's safety consciousness and quick actions have earned him the TAC Outstanding Achievement in Safety.



TSgt Robert H. Blind
405 EMS, 405 TTW
Luke AFB AZ



TAC TALLY

CLASS A MISHAPS
AIRCREW FATALITIES
• IN THE ENVELOPE EJECTIONS
• OUT OF ENVELOPE EJECTIONS

• (SUCCESSFUL/UNSUCCESSFUL)

Total			TAC			ANG			AFR		
JUN	THRU JUN		JUN	THRU JUN		JUN	THRU JUN		JUN	THRU JUN	
	FY 90	FY 89		FY 90	FY 89		FY 90	FY 89		FY 90	FY 89
2	21	19	1	13	13	1	5	6	0	3	0
3	11	5	1	5	4	2	4	2	0	2	0
0/0	15/0	13/4	0/0	7/0	7/2	0/0	6/0	6/2	0/0	2/0	0/0
0/0	1/1	1/1	0/0	1/1	1/1	0/0	0/0	0/0	0/0	0/0	0/0

CLASS A MISHAP COMPARISON RATE

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

TAC	FY 89	1.7	2.7	3.0	3.2	2.6	2.4	2.3	2.9	2.6	2.5	2.6	2.4
	FY 90	1.8	2.8	2.7	3.0	2.4	2.7	2.8	2.9	2.8			
ANG	FY 89	0.0	0.0	1.5	2.3	2.8	3.1	3.2	2.8	3.0	3.6	3.2	3.3
	FY 90	0.0	0.0	1.6	1.2	0.9	0.8	1.3	2.2	2.5			
AFR	FY 89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	FY 90	20.4	11.2	8.2	5.9	4.7	7.7	6.4	5.6	5.0			
Total	FY 89	1.2	1.8	2.5	2.8	2.5	2.5	2.4	2.7	2.5	2.6	2.6	2.5
	FY 90	2.4	2.5	2.7	2.6	2.1	2.4	2.6	2.9	2.8			
MONTH		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP

TAC'S TOP 5 thru JUN 1990

1st AF		9th AF		12th AF	
"COMMAND-CONTROLLED CLASS A MISHAP-FREE MONTHS"					
128	48 FIS	61	507 TAIRCW	142	58 TTW
53	57 FIS	36	1 TFW	49	388 TFW
13	325 TTW	32	4 TFW	38	479 TTW
		17	363 TFW	30	355 TTW
		15	56 TTW	29	366 TFW

ANG		AFRES		DRUs	
"COMMAND-CONTROLLED CLASS A MISHAP-FREE MONTHS"					
449	119 FIG	147	301 TFW	165	552 AWACW
425	147 FIG	110	482 TFW	56	28 AD
229	110 TASG	107	924 TFG	35	USAFTAWC
209	177 FIG	95	906 TFG	27	USAFTFWC
209	138 TFG	70	507 TFG		

NEAR MISS!

