FEBRUARY 1974

AIRSCOOP

53D TFS COMPLETES 50,000 ACCIDENT FREE FLYING HOURS

score 2 FOR SEAT BELTS

Here is the story of one airman who has learned that if you won't drive sanely and sensibly, at least you can buckle up and live.

Three years ago he rolled and totaled a car while speeding on a section of residential road near an Airbase where he was stationed. Having walked away from that one with little learned, he repeated the performance again this summer. On a visit back to his old base he was traveling the same stretch of road at an estimated 80 to 90 miles an hour when a cyclist pedaled across an intersection in front of him. He made an attempt to steer around the bicycle, but clipped its rear wheel, sending the cyclist flying into the air. The car continued off the right edge of the road into a slight ditch and struck a culvert, veered back onto the road, then left the road a second time. In its continuing wild ride it struck a road sign and another culvert, then tumbled end over end several times, taking out part of a metal fence and two more culverts.

When the car finally came to rest on its wheels facing the direction it had come from, the windshield was popped out, the door on the passenger side was sprung open, the door on the driver's side was torn completely off, and the car was a fatal wreck. But the driver and passenger were held in by their seat belts, which, without a doubt, saved their lives.

Dedicated to Conservation of Command Resources

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a HAZARDOUS activity

A pilot performing weapons delivery on a range is somewhat like a surgeon performing an appendectomy in an operating room. Where good condition, sound training, and high skill are possessed, the operation is relatively safe. But remove any of these requisites, and the results can be fatal. (The surgeon has the advantage in this, however, since he survives his mistakes.)

There is a general assumption that the fact of being a surgeon or a pilot presupposes the required skills and knowledge. Experience has shown the fallacy of this assumption. The military pilot is no more capable of safely performing weapons delivery without specialized weapons training than is the plastic surgeon capable of performing a heart transplant without special instruction.

TAC, with 28 of the 43 F-4 weapons delivery accidents that the Air Force has experienced in the last 10 years, and with its commitment to train combat replacements during the SEA war demonstrated the hazards in giving that training. Their accidents occurred despite a carefully planned, well taught, and safety-oriented course staffed by well qualified instructors.

The fact of the matter is that air-to-ground gunnery in a fighter bomber is an inherently hazardous acitivity made possible only through a long history of lessons learned and applied, and through carefully disciplined skill. It requires the utmost from machine and man and is not forgiving of a lesser performance.

Oversights Magnified

This, of course, has implications to ground personnel as well as to pilots, since the mission that demands the most of an aircraft also demands the most from maintenance. The high speed and high "G" maneuvers in weapons delivery will magnify small maintenance oversights.

FOD, a loose nut, a chafing line, a poorly fastened panel, misrigged flight controls, improperly hung tanks or armament, or a malfunctioning control augmentation system, may mean only an incident during other phases of flight, but can spell disaster on the range.

The accompanying list of USAFE range accidents shows the scope of our accident history since 1963. The "Murphy's," oversights, and unreasoned acts are well represented. Thoughtful examination of this record may show us why we should approach weapons delivery training with sober care.

USAFE RANGE ACCIDENTS

Acft	Circumstances	Findings
	1964	
F-100D	LABS — Lost Control at Top	UND
RF-101C	Laydown — Smoke in Cockpit	MAT
F-100D	Dive Bomb — No Recovery	UND
F-105D	Inflight Fire (Battery)	MAT
F-101A	No Spot — Crash	UND
F-105D	Inflight Fire	MAT
F-100D	CAS — Flight Control Malfunction	MAT
F-105D	CAS — Delayed Recovery	PILOT
	1965	
F-105D	RX — Ext Tank Hit Wing Tip	MAT
F-100F	Level — Inflight Fire	UND
F-100D	Skip — Crashed on Base Leg	UND
F-100F	RX — Crashed Near Target	UND
	1966	
F-100D	CAS — Delayed Recovery	PILOT
F-100D	Inflight Fire	MAT
F-100D	Engine Flameout	MAINT (FOD)
F-4D	Fuel Starvation	PILOT
F-100D	Inflight Fire	MAT
	1967	
F-4D	Skip — Flew Into Ground	PILOT
F-100D	Level — Flameout	MAT
F-4D	No Recovery from Dive	PILOT
	1968	
	None	
	1969	
F-100D	Strafe — Hit Trees	PILOT
F-100D	Engine Flameout	MAINT
F-100D	RX — Late Recovery	PILOT
F-100D	Engine Flameout	MAINT
	1970	
F-100D	Crashed During Spacing Pass	PILOT
F-4D	Lost Control During Spacer	PILOT
	1971	
	None	
	1972	
	None	
	1973	
F-4E	Crashed During Pop-Up	PILOT
F-4E	Dive Toss — Lost Control in Pullout	
F-4E	CAS — No Recovery	

Bardenas Reales

by Major Don Jonson

They called it Bardenas Reales, and when the first USAFE aircrews pitched out into passes above it in early 1970, the facilities hardly met American standards.

You could easily fly past without realizing that it was a gunnery range. There was little on the ground that you could use for reference, and to pick out the dive bomb target before reaching the middle of the roll-in was something of an achievement. Base turns were made by guess, and ragged patterns tended to show it.

The present Spanish and American air-to-graund range 50 miles north of Zaragoza looks vastly different, and the improvement represents the large amount of effort and money expended on the two-by-five-mile piece of desert real estate. As a key campanent in USAFE's combat readiness training program, the range befittingly receives a great deal of attention and considerable care.

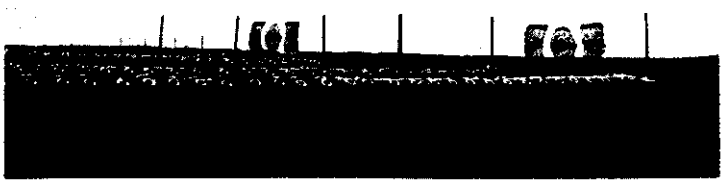
Improvements in Strafing Area

Development of the strafing area illustrates the progress of the overall program. The first practice rounds were fired from Phantoms in the summer af 1970 against cloth targets and impacted into a bed of clay soil.

Although clay was considered to be a fine surface to minimize ricochet, the surfaces at Bardenas Reales praved less then satistactory and produced four ricochet incidents between October 1970 and April 1971. One slug pierced a radome, one went into an engine, one put a hole through an intake, and another shattered a wind screen.

Range supervisors discovered that the dry clay became hard as rock, and bullets would penetrate the thin powdery surface as though they were passing through a lubricant — only to ricochet upward off the packed clay below.

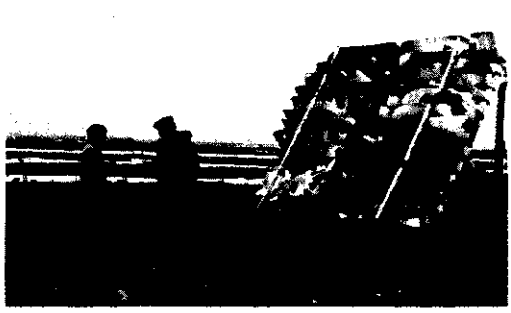
On the good days following somewhat infrequent rains, the damp clay effectively stopped the slugs but was still no blessing since the strafing areas became huge mud pits which could not be cleaned. And a "dirty" strafe area is a dangerous area. The 5,000 to 10,000 slugs deposited daily around and behind the targets deflect incoming rounds and are themselves often propelled upward by impact. The mud made it impossible either to plough the slugs under or to rake them out, even with 20 to 25 Spanish saldiers available ta hand pick



The soil in all target areas is disced and harrowed on a two-week cycle. In this picture, hundreds of painted tires mark the scoring box for the low angle dive bomb targets.

Old F-86's from the Spanish Air Force, together with vehicles and simulated missiles, provide tactical targets for USAFE aircrews.

Salvage F-4 drag chutes are used as strafe targets. The sand around the target is sifted, leveled, and cleaned both by hand and magnetically several times weekly. Target suspension poles stand 32 to 35 feet high.



A portion of a steel blast deflector serves as the bull's eye of the bombing circle. Haze obscures the high cliffs only two miles beyond the battered deflector.

Ravines, gullies, eroded hills and mountains form the landscape for Bardenas Reales range. Most of the gunnery patterns, however, require overflight of farm land outside the 6,200-acre restricted area.

the area on an almost daily basis.

Improved Conditions

In the summer of 1971, conditions at the range began to improve rapidly. A Memorandum of Understanding with the Spanish Air Force and a U. S. appropriation enabled the Spanish to build new barracks, make new roads, and improve old ones.

Furthermore, the range was closed for three weeks, and pits 300 feet-long, 80-feet wide, and two-feet deep were excavated in the strafing boxes. From the town of Tudela, 3,100 tons (137 truckloods) of sand were hauled to the range, washed, and dumped into the pits. Then drainage ditches were dug around the pits and the area was leveled.

An acoustical scoring system was installed to replace the manual hole-counting method, and the range was placed back into operation. Some pilots were quite skeptical of the scoring system, and the skepticism was heightened by some initial system failures. But its accuracy was verified through many test firings where actual hole-counts were made on cloth targets and checked against the acoustical scores. If anything, the system proved to be a slight bit generous. Canvas targets were then replaced with salvage F-4 drag chutes which make an ideal bull's-eye target.

Care Essential

The present sand-filled strafe pits may be the safest in the world, as evidenced by the dramatic reduction in ricochet incidents (only two since April 1971), but they require continuous care.

In 1971, a potato digger was located in the States and airlifted to Zaragoza from Edwards AFB. Pulled by a bulldozer or grader, the digger sifts the soil and sorts out the metal slugs. Although clods and mud reduced its effectiveness at first, operation in the newer sand areas was highly satisfactory, and the area is now sifted after most days of gunnery. Spanish soldiers follow behind the picker to manually retrieve slugs which the picker misses.

In addition, the strafe areas are combed with an electromagnet three times weekly, and 500 tons of sand are added to the pits each six months to replace wind and erosion losses.

Other Improvements

Other areas on the range have not been ignored. A combined level delivery, low angle dive, and high angle dive target was improved and marked. Skip targets were redefined and marked. Run-in lines were extended and marked more clearly, foul lines were made more visible, and the tower plotting system was resurveyed and corrected.

Later, a number of salvage F-86's were obtained from the Spanish Air Force and hauled by Army CH-54 helicopter to a short, plowed strip beyond the strafe targets. These, along with a number of salvage buses, trucks and other vehicles placed in convoy, and dummy rockets provide tactical targets which may be scored from the regular range towers.

The great effort that has been expended to provide aircrews with a safe and effective practice site is paying off in many ways. Today, Bardenas Reales is a clean, effective range that is easy to see from the air. Scoring is accurate, though not always easy, due to some delay inherent in a two-language operation. Control is vastly improved.

But the effectiveness and safety with which we use the facilities will be determined at the briefing tables and in the cockpits.

The old borrowed blue square corner

By Major Glenn L. Ramsdale, Jr.

Over the past 18 months I have watched more tactical aircrews in the performance of their mission here at Zaragoza than the average tactical aircrew supervisor would see in several years. With the departure of our old USAFE heads and the influx of the younger crews, an old pattern is beginning to show itself. I call it the OLD, BORROWED, BLUE, Square Corner in the sky.

OLD, because you've heard it before.

BORROWED, because it's been done by someone else.

BLUE, because we still do it.

Let me cite a few examples of the Old, Borrowed, Blue, Square Corner in the sky.

★ During a VFR Four-Ship Formation departure, the lead element climbed out shallow. The second element encountered jet wash shortly after rotation. Four rolled uncontrollably over the top and went in after hitting three. Three impacted on the opposite side of the runway.

★ Enroute to the range, when the flight was moved out for weapons checks, the wingman rolled slowly to a near inverted position.

The aircraft crashed slightly nose low in an accelerated stall.

★ During a dive attack the master caution light came on. The pilot looked inside the cockpit for the problem and the resulting recovery, with many "G's," was 300 feet AGL.

★ Number two pulled off loose checking switches for the next event. Number three was a little tighter, didn't see two and didn't ask where he was. The collision was on downwind, turning base.

★ It was a good day, scores were outstanding. Three experienced crews shone, with the new guy flying number two. The pattern was tight and aggressive. Two's roll-in was a little late so he pulled tighter. The aircraft departed, and sometime later so did the crew. However, their chutes did not have time for full deployment.

★ During the transition from high angle dive recovery to low angle downwind, while changing switches, the aircraft continued in a descending turn. The recovery was well below 500 feet AGL.

★ The range was VFR and the home drome, only a few miles away, was marginal. VFR Bingo was used, "because if the weather starts down we'll press straight back and land." The weather did drop, and in order to reach the alternate, which was 125 miles away, the flight flew an optimum profile and jettisoned several thousand dollars worth of aircraft stores.

★ In an attempt to observe the bomb impact after a LADD delivery the aircraft pulled around tight. The vis was hazy and an uncertain horizon existed. The aircraft impacted at two o'clock from the target in a slight nose and wing low attitude about the same time the bomb hit.

★ The flight elected to continue under a cloud deck. The flight leader aborted the mission and during climb out he saw a bright flash on his left wing. Number two impacted less than 50 feet from the crest of the hill.

★ Things didn't look too bad for a VFR recovery so the flight eased in under a cloud deck. The wingman was tucked in nice and close as they flew into the plateau that was about 1,000 feet higher than the valley floor.

★ After a good gunnery mission and during the range join-up, while the off-range safety check was being performed, number four lost part of the nose section, and number three came home minus some tail.

★ The mission was good, his scores took the pot. A nice tight traffic pattern for mobile and the younger jocks in the flight would finish off the mission. It did, about a half mile from the end of the runway in a big hole.

All the incidents you just read are true and all have happened more than once. When I was the new guy the old heads told me, "There's not a gunnery mission around that's worth you or your aircraft." Since then, I've flown in PACAF, TAC, USAFE; and seen the Thud, Sabre, Voodoo, and Phantom die — some with young crews and some with old crews. I have seen the mistake and the result. Some have been or will be lucky, but most won't get the second chance.

Flying at Zaragoza and observing most of USAFE's tactical aircrews has brought that old, nagging feeling that I've been here before. So instead of trying to hack the Old, Borrowed, Blue, Square Corner in the sky, why not learn a little from the past. Never think you've flown so long and have accumulated so much experience that you cannot make a mistake. Play it straight, and your mistakes won't end your career.

Major Glenn L. Ramsdale, Jr. has been flying tactical aircraft since 1961 and has accrued over 3,000 fighter hours. A Fighter Weapons School graduate, he has instructed in the CTTS at Luke AFB, flown a combat tour in SEA, and flown F-100's and F-4's on two USAFE tours. He is presently assigned to the 406th TFTW at Zaragoza AB, as a WTD Liaison Officer.

Hey GIB,

Can you hack it?

By Captain [illegible]
Instructor WSO, WTD [illegible]

Are you doing your part to enhance the prestige of the navigators in the fighter business? Because this has been a pilot-only operation (with the exception of the Air Defense Units) up until the F - 4 made the scene, some older fighter pilots have felt little need for the navigator. You have the responsibility to show each pilot you fly with that GIBs also do it better.

Can you visualize a fighter pilot saying "I need help to get the job done"? Now, I'm not sure some of them couldn't use a little help from time to time, but it's the attitude that's important. You must express this same attitude - not that you can go it alone - but that you know your job, know you are competent at it, and know that it is indispensable to mission accomplishment and mission saftey. If you don't have this attitude and can't generate it

you should consider getting out of the fighter business (There are lots of folks who would love to have the best flying job in the Air Force available to a navigator). If your nose - gunner doesn't feel you're the best GIB in the Air Force and he can't get along without you (even if he won't admit it), something is wrong!

How to do it

What are some of the things that degrade our position? Consider a radar bomb run. Do you tell the pilot to line you up on the run - in line? Do you ask him to offset 200' right for cross - wind? Do you ask him to call you when you're over the IP? Do you tell him to pickle if the tone hasn't gone off within one second after passing a visual point, and so forth?

If you do, you're not hacking the program. You should brief *him* on the importance of holding heading, altitude, and airspeed, and *you* should do the rest. It might surprise you how good you really can be if you start assuming the responsibilities for getting the job done. Not only that, you're going to impress the pilot with the fact that the GIB *can* get the job done.

Let me be more specific. At Bardenas Reales Gunnery Range there is a timer reference point (TRP) 10,372' short of the radar/main bomb target used for visual LADDs. The biggest criticism I have is for navigators who want to use this visual TRP in conjunction with their radar LADDs. My job includes publishing the ballistics for practice ordnance delivery on the range. I publish, and try to have the GIBs use, a one - second and seven - second pull - up and release timer setting for an integrated radar LADD release. I would say that less than half of the GIBs use this setting because they would like the tone which indicates timer activation to coincide with the visual TRP; i. e., so the pilot can manually pickle and "save" the bomb run if the tone hasn't gone off within one second or so after passing the TRP.

Do it all the way

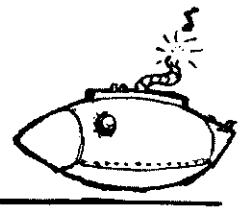
Does this cause the pilot to have respect for you as the back - seater? Is this the way for a GIB to build *pride* in himself and to help the navigator cause? Or is it the way to learn how to radar bomb? It gives you no indication of equipment operation, and no idea of how good you are, or where the bomb would have really impacted. How do you correct a procedure you don't know the result of? Where will you place the cursors next time? Were you 1.1 seconds long on cursor placement, or 5 seconds? Is the equipment not generating an active signal, or is there a two - second delay?

Gents, if you don't do it all the way and get the results of your efforts, there is no way you can make an accurate correction and improve. It doesn't make any difference if it's a radar bomb run, an ARA, or an intercept. *You* must take control of the situation. *You must make it clear to your nose - gunner that you're in charge of these operations and that you will do your thing correctly, with precision, and by the book - just as you expect him to know and do his thing correctly, with precision, and by the book.* It's the only way you can fulfill your obligation to your fellow GIB in the fighter business and generate respect for what the GIB can do. It's the way to build a partnership and develop the partnership into an effective, and safe, team.

What about it, GIB? I *know* you can hack it!

Captain Ronald F. May graduated from NAV and Electronic Warfare Schools in 1964. His crew duties have included a tour in B - 58 s, a combat tour in EB66C/Es, and a tour in F - 4Es at Torrejon, Spain.

in the pattern



TOO MUCH TO BOTHER WITH?

The pilot of a high performance aircraft was on a mission over snow-covered mountains. He was forced to eject when his aircraft caught fire, and he landed in a densely wooded area in a small valley. No radio contact was made with him despite the fact that several search aircraft flew directly over the valley. Ground parties found his frozen body two weeks later.

The battery contacts in the pilot's survival radio were bent, rendering it useless. And the flexible antenna on his URT-21 survival beacon was still attached to the parachute riser. He had broken it off while removing the beacon from his harness. The beacon worked but no one could hear it without the antenna.

His two MK-13 day/night flares were found lying beside his shelter. Both ends of each flare had been expended, but no aircraft reported sighting smoke of any kind. The weather in the area made his signal mirror useless. In other words, that eliminates all the signalling devices he had in his survival kit. But what about his *personal distress kit?* He had refused to take it when the life support specialist offered it prior to his flight — because "it was too much to bother with." If he had *bothered,* he might still be here today.

This story, while fictitious, could very well be true. USAFE Regulation 501-2 requires that you have these pen-gun flares with you on every flight. Common sense should also tell you this. Don't be the one to make this a true story. The pen-gun flares are not much trouble to carry and they just may be your *last chance for rescue.*

SMOKE GETS IN YOUR EYES

The nostalgic melody, "Smoke Gets In Your Eyes," may have its place in a stack of 'oldie' records but not in the cockpit of an F-4. A crew, flying at night under a bright October moon, might be forgiven for thinking about it but when acrid fumes begin to filter into the cockpit, it's time to get that bird on the ground!

The incident aircraft was leading a flight of four on a night mission when, immediately after takeoff, the radar/CNI cool-off light came on and the crew smelled an acrid odor in both cockpits. They went to 100 percent oxygen, and reset the cool light, but it popped out again in less than a minute. During orbit to reduce landing gross weight, the system was reset five times. When the odor became stronger, the crew landed straight in with no further problems although the aircraft commander experienced some eye irritation and smoke was visible in the cockpit.

Investigation proved that clamp bolt failure on the bleed air duct to the inlet side of the pressure regulator/shutoff valve in the equipment air conditioning section allowed bleed air to escape around the duct connection.

The incident points up the fact that even 100 percent oxygen does not solve all cockpit smoke problems (e.g. eye irritation), and emphasizes the need to land as soon as possible under such circumstances.

LITTLE THINGS MEAN A LOT

Preparations for the ferry flight seemed complete. A centerline tank had been installed on the F-4, three externals and all internal tanks had been filled, the appropriate checks made, and preflight inspection completed.

The aircrew arrived at the aircraft, completed all their starting, taxi, and before takeoff checks and roared down the runway in what turned out to be a more interesting flight than they hod bargained for.

As the weight left the gear and the centerline tank began to pressurize, the seal on the centerline cap failed. Fuel poured out past the blown seal, was sucked up through the aux oir door, and flowed back around the afterburner section on number one engine. An accumulation of fuel settled into the space between the inner and outer skin of door 96L,

and as the flash point was reached, the fuel ignited.

In the cockpit the pilot saw an overheat fire warning light at about the same time the tower told him the left engine was on fire. He shut down the engine, saw the lights go out, dumped fuel and landed.

Fuel was still leaking but when the gear were initially retracted the aux air doors closed, shutting off the engine access and ending the fire. When the gear were extended for landing and the aux air doors opened again, the secured engine was already cool.

Few things on an aircraft are too small or unimportant to warrant careful inspection and handling. In this case a fifty cent seal in o tank cap almost liquidated a Phantom,

A GOOD PIECE OF PAPER

As every good fighter pilot knows, paperwork is something prepared by limp-wristed people called staff officers who periodically publish never-ending streams of directives. Anybody who suggests adding to that stream is automatically suspect.

We would like to briefly risk that possibility for the purpose of defending one piece of paper that occasionally impresses even fighter pilots — the Operational Hazard Report. The nice thing about OHRs is that if you write one up, somebody *has* to do something about it and he *has* to tell you, in writing, what that something is. He might hint that you are way out in left field, but chances are, if you had a legitimate gripe, he'll be anxious to make things right rather than face an "I-told-you-so" after an accident.

An OHR stops at the level where the problem can be fixed. If the wing can't fix it, the report comes to us and if we can't either, USAFE gets it. Sometimes it has to go to Air Force or to another command, but whoever gets it is responsible for taking action within 14 working days. If the subject is really hot, the OHR can be transmitted electrically.

Most OHRs solve local problems — ob-

structions on taxiways, fouled-up GCAs, that sort of thing — but sometimes they solve the big ones. For example, a couple of reports submitted by Third Air Force pilots a while back eventually resulted in fleet-wide aircraft retrofits that were badly needed. So you really can get *them* to do something about hazards if you'll just take the time to write your story down.

If you're no Hemingway, write it down anyway. Take the pencil copy to your local safety guy. He's been arduously trained to edit out the four-letter adjectives and substitute polysyllabic platitudes which will make people think you weren't really mad when you wrote it. If you're shy, check the *anonymous* block and drop it stealthily into distribution (but you don't get an answer that way).

The rules are simple. You can write up an OHR on anything you think is dangerous. It's not a petty gripe sheet for curing things like bad chow on alert, but it can be used for getting action on anything you think is a hazard, big or small. Technically, there are other reports for taking care of hazards caused by materiel deficiencies, but don't let that stop you. The safety and materiel folks can figure out the right format. Your job is letting them know a hazard exists, and the OHR is the way to do it.

Writing one up takes about as long as a dart game. It's a good piece of paper. It gets things done and who knows — if you keep useful paperwork flowing uphill, it just might help stem the tide flowing down.

When do you run and when do you fight? This is perhaps the most critical decision a person engaged in combat can make. Dead soldiers and smashed equipment help few causes but neither does an army that won't engage.

Some military organizations have made the soldiers' problem simpler by proclaiming it a dishonor to ever back away. Some leaders, including the Red Baron, considered it stupid not to back away unless the odds were clearly on your side.

In the peace-time Air Force, flight regulations are structured to guide this decision-making process and reduce the judgment factor. But ultimate responsibility still rests with the pilot, with life and death decisions still an inherent part of the flying game. In the last analysis, they may well *be* the game, since aircraft manipulation is a mechanical-muscular action that can be learned by almost everyone while correct decision making is a much higher process. Consider the complexity of the judgments required in many common flight situations:

Your mission is important and takes you toward a destination where the weather is deteriorating but still forecast to be above minimums at arrival. Although the alternates can be legally used, they don't look good and it would stretch your fuel to reach them. Do you stop short in a good weather area or press on?

You are on a low level route and getting a last (and only?) look at it before a tactical evaluation. Visibility drops steadily and hovers near route minimums. Weather may be good enough by regulation, depending on where you look and how you measure, but you *know that you are riding partly on luck. Do you press on or call it off?*

You are in the middle of a good hassle during an ACM mission, are at your opponent's six o'clock position in a climb and slightly out of gun range. The airspeed is dropping off rapidly, but if you can just hang on for another few seconds, you will have triumphant pictures to show him. Do you push ahead or call it off?

The situations seem countless. Whether to get in that last strafe pass on the range or to push bingo for one more burst at the dart? Whether to stretch the fuel for a final practice GCA or VFR pattern? Whether to brave questionable weather or poor communications to get in on the Close Support target?

They all bring the same question to the surface. When do you back off? And the question is compounded somewhat in a competitive environment where people are often judged more by whether or not they accomplish a job than by the quality of judgment they displayed in attempting it. We tend to condemn the guy who trusts to luck and fails, yet praise another who trusts to the same luck and succeeds.

The Wrong Altar

As a matter of fact, in aviation we don't like to talk about luck at all. But there are often so many unknowns in a situation that to press ahead and succeed may be only dimly related to skill, and to press ahead when you no longer control the probabilities - where your knowledge, information, experience, training, and equipment cannot guarantee a reasonable promise of success - is certainly to worship at the altar of chance. Except in rare instances of grave emergency and on some combat missions, to do so is equally as stupid as to make the banzai charge into certain, fruitless death.

The aviator's great task, of course, is to develop the judgment that will accurately tell him when continued attempts will put him across the line and take control out of his hands. How do you develop that judgment? We may not have all the answers, but we do know a few time - proven methods.

Know all there is to know about your equipment. Know its capabilities and limitations.

Don't cross that line!

Know your operating environment - terrain, weather patterns, airfields, traffic routes and prominent landmarks by day and by night.

Learn all you can from others' experiences. Study their mistakes. Read the accident and incident reports and ask questions, questions, questions of more experienced jocks.

Know your own limitations. Acknowledge your weaknesses and work to strengthen them. But in all cases, take them into account.

Compensate! If you have a slow instrument cross check, raise your personal minimums. If you tend not to register what you see, look more often. If you tend to forget clearance items, write them down and double check them with others in the crew.

Develop a skeptical, conservative, questioning attitude toward every aspect of your flying job.

Develop the courage to say "no" to yourself and others and to face the disappointment of an unsuccessful mission.

These things may not guarantee good judgment or always provide you with the right decision, but they should keep you out of serious trouble while your judgment improves.

Don't Plunge In

Initially, you should back off *before* you reach a critical position. You need to handle an aircraft at stall plus a hundred knots before playing with it at stall plus ten. If you want to know what happens when you run out of airspeed going straight up, find out first what happens when you run out of airspeed straight and level. In effect, you inch your way toward new experiences and capabilities rather than plunging in.

A classic illustration of the whole problem happened not too long ago. Most of the elements were there - the pressure to succeed, incomplete awareness of the aircraft's capabilities, a pilot's plunging himself past his previous experience, and an act of judgment that relied too much on luck.

The flight was an air defense training scramble during a tactical evaluation. The young pilot, with only a few hundred hours of total time, climbed rapidly to 30,000 feet to pit his Phantom against a target 12,000 feet higher. A short setup required a tight left turn to a head-on, snap-up attack, and initial contact acquired during the turn showed the target already inside the snap-up range.

The pilot now had to make the decision whether to skip the pass and lose points for the unit, or to extend himself beyond his experience.

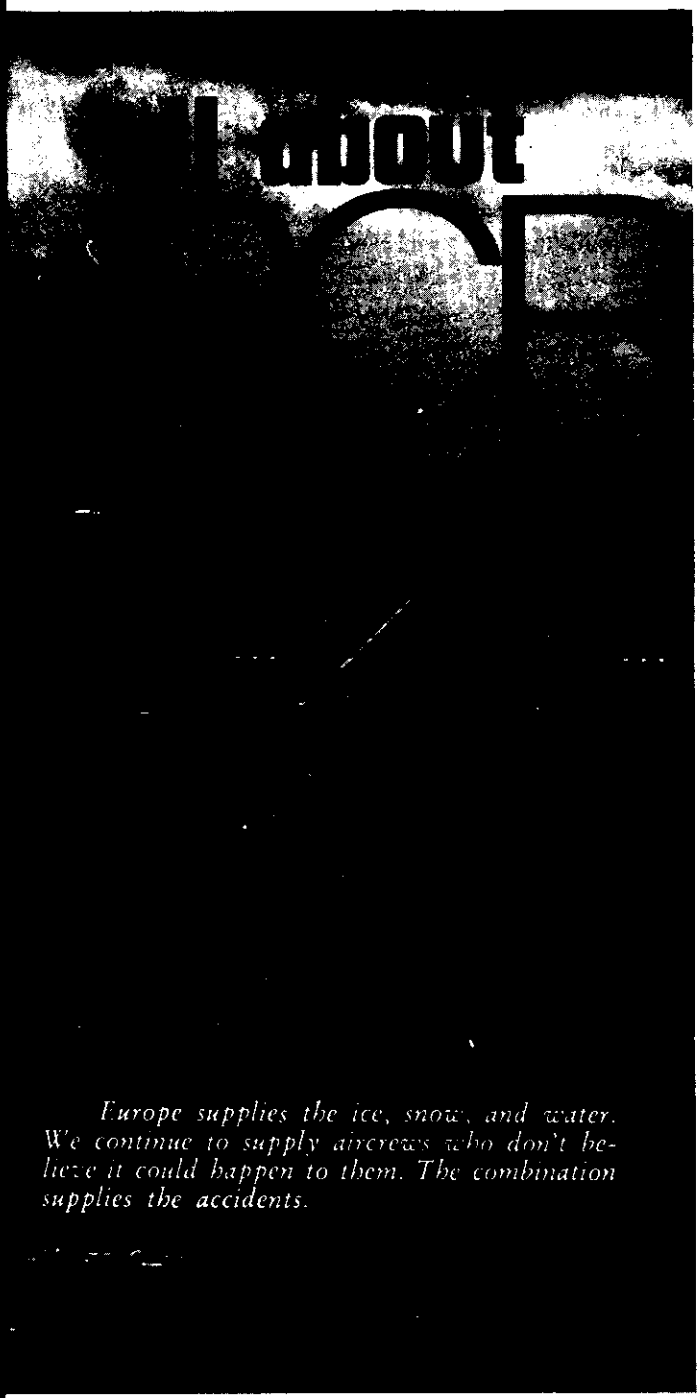
With excess airspeed depleted during the turn, he started rolling the wings level and simultaneously brought the stick back into a heavy pull up. Within four seconds the airspeed had dropped below 220 knots and the aircraft rolled to the right out of control.

Even though the stick was immediately centered and pushed forward, the Phantom rolled two times above, and once below, the horizon. Then the pilot deployed the drag chute, entered a steep dive and recovered the aircraft above 15,000 feet.

The decision to attempt the snap-up was clearly a case of poor judgment, and the pilot may have realized this even before he started the stick back. But in his zeal to succeed, he gambled - probably unaware of how totally the odds were stacked against him.

So how do we know when to press on and when to back off? In our peace - time Air Force, the line must be drawn short of the point where the safety of our crew, passengers, and equipment comes in doubt. This is a point reached before arriving at the limits of our knowledge, before we outrun our experience, and before we exceed the capabilities of our equipment.

When it comes to landing on slick runways, the old vaudeville joke is still up to date: "It's not the coming down, but the stopping that concerns you." Several aircraft chewing up the grass and gravel beside and beyond USAFE runways during the past few years have borne expensive witness to a problem that won't seem to fade away no matter how many words are thrown at it.



Europe supplies the ice, snow, and water. We continue to supply aircrews who don't believe it could happen to them. The combination supplies the accidents.

How do you know when yau have a slick runway ahead of you? The current method is to ask for the Runway Condition Reading. But have you wondered where an RCR figure comes from, and how reliable it is? Here's some ungarbled information.

RCR figures come from an instrument, mounted on the floorboard of a vehicle, that measures deceleration rate. Admittedly, using a decelerometer in an automobile to measure braking action for an airplane is not a 100 percent satisfactory solution, but nobody has come up with a better method.

How Does It Work?

Basically, the driver of the car follows these directions to take RCR readings:

Reset the car mounted decelerometer to zero.

Drive down the runway within 20 feet of one side of the centerline stripe, testing at each 1000 foot interval.

Accelerate to exactly 20 miles per hour. Apply brakes hard enough to induce a skid, but don't stop. Read the meter.

Return down the other side of the runway and test at 1000 foot intervals spaced between the earlier test spots.

Publish the average of the readings as the official RCR.

This seems simple enough, but there is considerable technique involved in getting accurate readings. At one base, three people with considerable driving and flying experience (but not much automobile skidding experience) took separate readings with the same equipment within the same hour, and obtained a spread on the individual readings that went as high as fifteen points, with a final average spread of about six points. However, people who take RCR readings regularly will normally obtain average readings within two points of each other.

Why Friction Varies

But still, this average reading, which is reported as the official RCR, may not accurately represent the friction available to your aircraft upon landing. Why not?

The single RCR value leads the pilot to assume that braking action is uniform throughout the length and width of the runway. However, this is about as true as the stories at a fighter pilots' convention. Runways usually have a crown in the middle, and slope away in a couple of directions. There are low spots where moisture collects and variations in the

construction materials and surface smoothness. The snow removal actions pack snow harder in some areas than others, and do not remove the snow uniformly. Temperature may not be uniform the full length of a two mile long runway, and ice or snow doesn't accumulate, freeze or melt at uniform rates the entire distance. So RCR will often vary from point to point.

Since the manual indicates that skid readings should be taken 20 feet from the centerline, they may not accurately reflect conditions closer to the edges of a runway. This is another reason for setting the bird down on the center stripe.

RCR Can Change Rapidly

In storm conditions, RCR values can change very rapidly. While it may require 45 minutes to take good RCR readings on a runway and taxiways, and several more minutes to transmit the information, light snowfall or freezing rain, or a sudden drop in temperature can reduce an RCR value several points in only a few minutes. At one base, a reading taken shortly after the snow sweeper had passed gave a value of 18. A reading taken 15 minutes later showed an RCR of only eight.

Although most bases take frequent readings during marginal conditions, the information will always be ten to twenty minutes old by the time it gets to a pilot. It is thus important for the pilot to obtain and interpret any of the following "remarks" that may accompany a runway reading:

SLR (Slush on Runway) poses hydroplaning dangers as well as slickness.

LSR (Loose Snow on Runway) can be a light, dry film of snow, or could indicate heavier drifts.

PSR (Packed Snow on Runways). Packed snow is also the basic component of a toboggan run.

IR (Ice on Runway) can indicate a great variation in RCR along the runway length.

P (Patch) can follow any of the above codes, and may mean conditions better or worse than the RCR value given, depending on where the patches are in relation to your braking requirements.

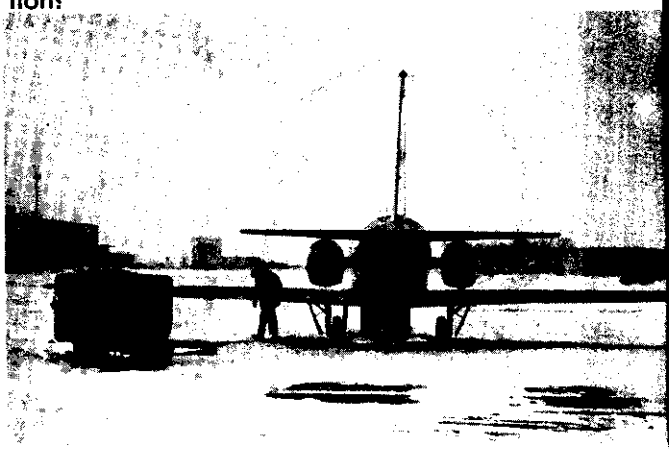
The **WR (Wet Runway)** report deserves some clarification. USAFE Supplement 1 to AFM 55-48 allows two options in reporting runway moisture. If Base Ops personnel observe moisture that causes discoloration of the runway, but can see no discernible water, they may report the condition as **"Damp."** Such a condition should pose no hydroplaning dangers, and has very little effect on stopping distance. Where water is visibly discernible on the runway surface, the report should read **WR** (wet runway).

How Wet is Wet!

How much water does this indicate? The judgment of the person making the runway check is the key factor, but generally he will discount a few puddles here and there, or water near the edges of the runway. The only safe reaction for the pilot is to assume that o wet runway report means the potential for hydroplaning, and to plan accordingly.

With the equipment presently used at USAFE bases, a **Wet Runway** report will not include an RCR Reading. Why? At 20 mph an automobile is well below its minimum hydroplaning speed, and a decelerometer will show normal stopping friction (RCR 22-24) despite the quantity of standing water. Hydroplaning is not related to RCR as presently measured.

So how should a pilot use RCR information?



★ Operations provides the basic guidance through regulations. Follow them.

★ Expect the worst. Reported RCR should reflect the average conditions, but time lag, deteriorating weather, or variations in surface may leod to unpleasant surprises. If you encounter worse than reported conditions, pass the information to weather and ops for the next pilot's benefit.

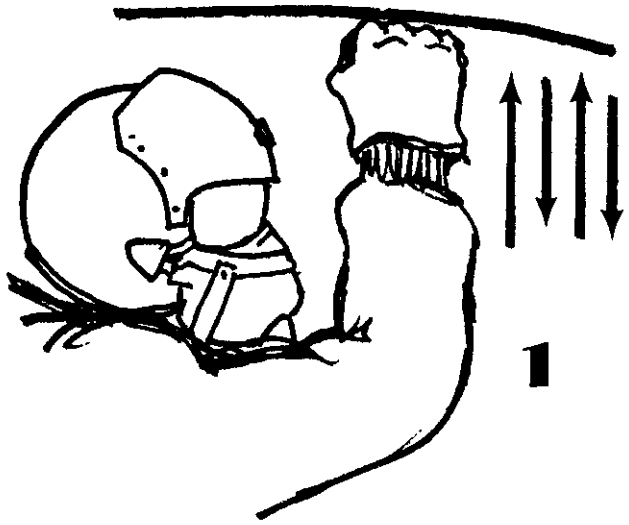
★ Look at all the factors, and don't put all your trust into one thing. This includes RCR readings, wind direction, brakes, anti-skid systems, and steering. Remember that most aircraft have a tail hook available.

The Air Force tries to furnish the best available information for your guidance. But once you touch down, you become the local expert. Be prepared to take any appropriate action listed in your flight manuals.

Do you know these Signals?

What Does It Meant

Have you seen the new version of AFR 60-15 (14 September 1973) outlining the latest standard signals for aircraft opertions? Since some of the international signals could be confused with Air Force signals having different meanings, we suggest that you take a close look at them. And while you are at it, you could make some points by reviewing the marshaling signals given in AFR 60-11.



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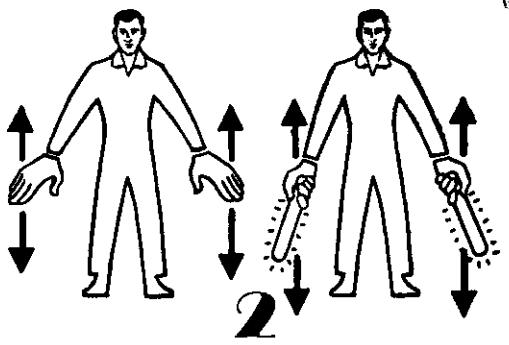

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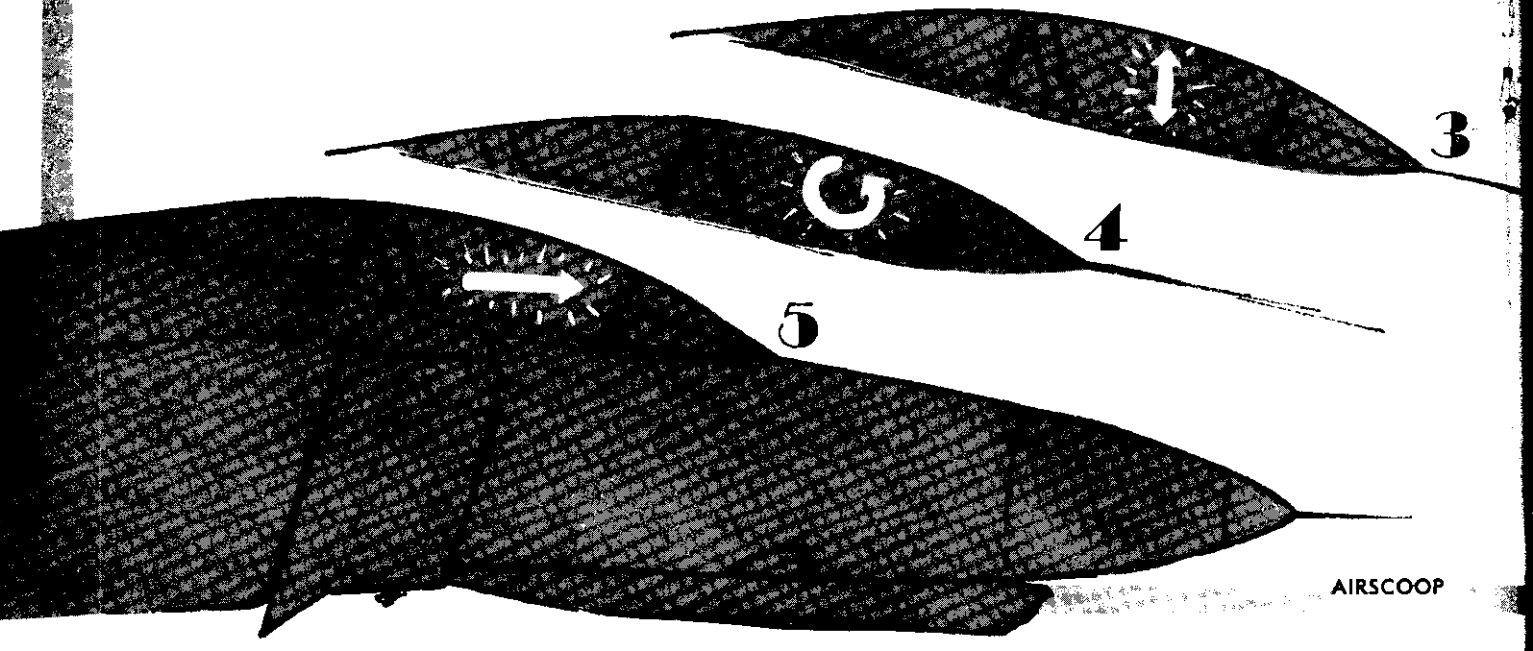

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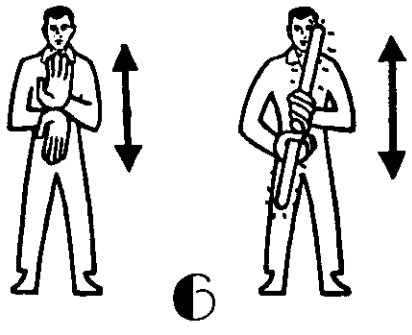

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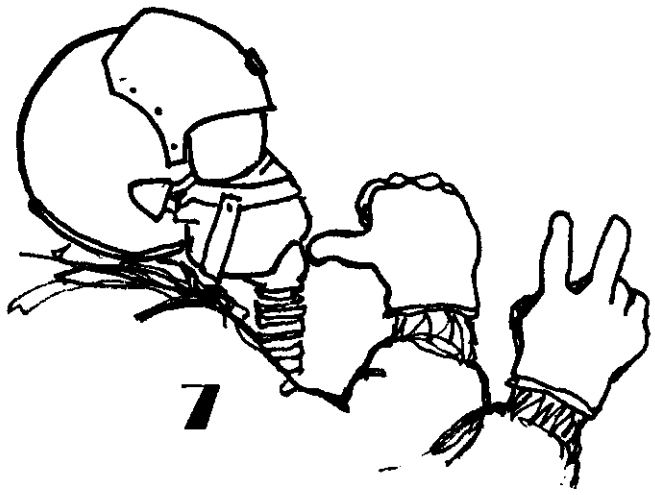

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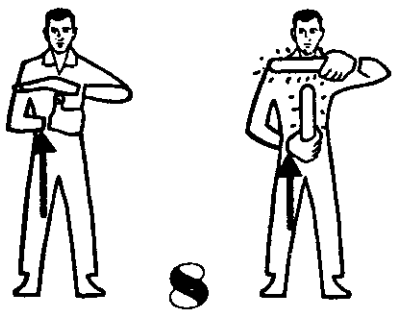

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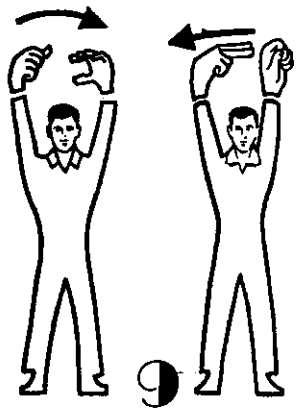

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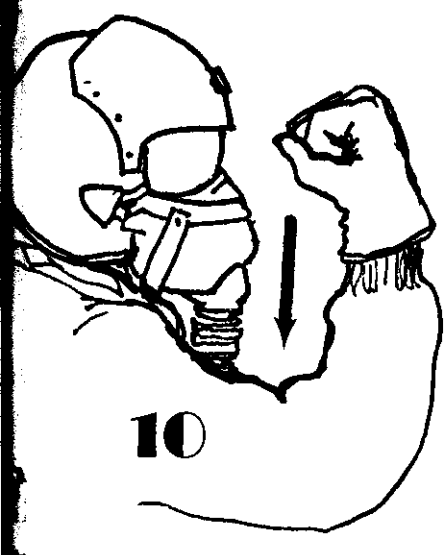

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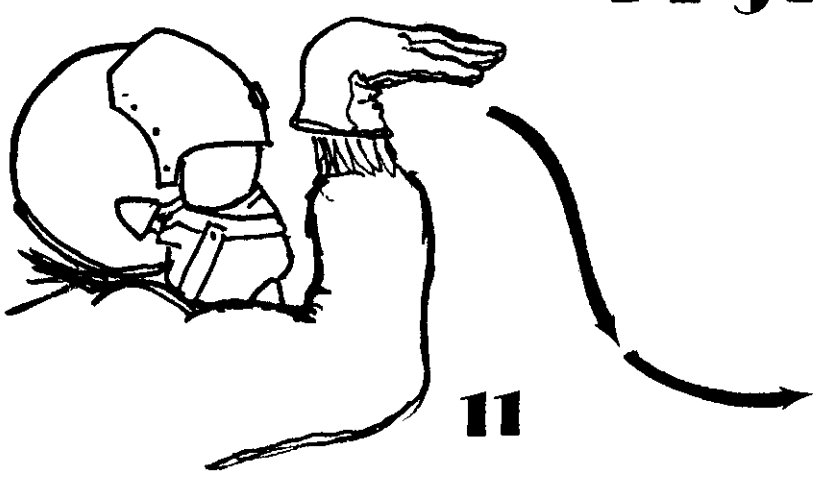


11

on the line

A RIDDLE FOR AGE DRIVERS

Mix the following ingredients and what will you have?

Gas turbine generator — to be refueled

AGE towing tractor — left running

Grounding wire to fill stand — not used

Grounding wire from tank to nozzle — not used

Ideal static electric conditions

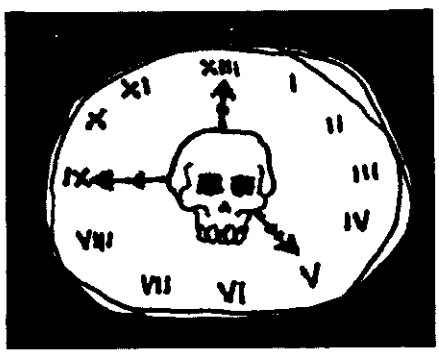
Tractor radio — on

One gallon of JP-4 spilled — not washed down

Smoking materials

Unlighted subpool area — with no flashlight

Give up? How about a fire that destroys the $28 thousand generator, damages the tractor and ruins the refueling hoses? It happened in our command and can happen again unless AGE personnel "do it right — *every* time!"



FRACTURE IN THE WELL
A Dramatic Sequence of Assumptions

1645: Airmen number one and number two are dispatched to check the Aero 27-A rear umbilical connectors on an F-4.

1650: Airmen number one and number two arrive at the aircraft. Number one moves under the left side; number two moves under the right side.

1651: Airmen number three and four arrive at the F-4 to check the PC II and Utility system hydraulic pressure. Both men move to the power unit at the left of the aircraft nose.

1652: Airman number two joins Airman number one under the rear portion of the left wing joint. They notice the new arrivals stretching the air hose from the power unit but think nothing of it.

1654: Airmen number one and number two attempt to reseat the cocked cannon plug on the left aft Aero-27A launcher.

1655: Airman number four connects the air hose into the starter inlet valve for the left engine. Airman number three starts up the power unit.

1656: Airman number two has both hands in the aft missile well. Airman number one holds a flashlight and beams it at the cannon plug. He grabs the trailing edge of the drooped speed brake to support himself.

1657: Airman number three, at the power unit, calls to Airman number four and instructs him to warn the other men that he is going to motor-over the engine. Airman number four does not hear, and so number three motions him closer and repeats his instructions.

1658: Airman number four moves under the wing and shouts the warning to Airmen one and two. He then turns back to Airman number three and gives a thumbs-up signal.

1659: Airman number three moves the "air" switch, and air charges into the left engine starting unit. The turbine begins to rotate, and pressure builds up in the utility hydraulic system.

1700: As a result of pressure build-up in the hydraulic system, the speed brake closes. Airman number one is taken by surprise, and his hand, still in the speed brake well, is crushed.

Synopsis of Plot: Relatively inexperienced men, each intent on his own job, and unfamiliar with all the hazards associated with the equipment, fail to recognize danger signals. They assume warnings have been received. They assume moving surfaces are clear. Their supervisors assume that the men know what they are doing. There assumptions result in fractures and cuts that take a man off his job for 21 days.

IS THIS THE GOLDEN RULE!

"Sometimes it hardly pays to be a nice guy," is a quote that is heard from to time. Here's a case where an organization could hardly be faulted for using this expression, or an even stronger one.

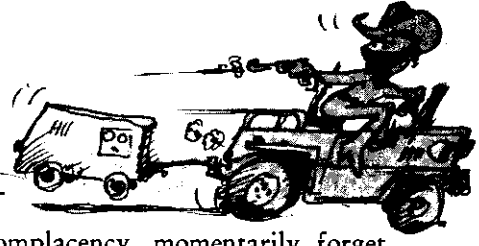
During a large exercise a tactical airlift wing was directed to ship an MD-3 generator to Turkey for approximately 30 days in support of the exercise. The generator was subsequently shipped in perfect operating condition. Following completion of the exercise, the MD-3 was returned to the parent organization with the following discrepancies noted when it arrived:

The gas tank was filled with diesel fuel instead of gasoline!

An alternating current fuse was by-passed with foil from a package of cigarettes!

Batteries were connected during shipment, and consequently were completely discharged when the unit was returned.

A pop can, two pieces of wood, two empty hydraulic fluid cans



and several wiping rags were found in the cable compartment. Deep Furrow FOD?

The pre-heat duct had been disconnected from the carburetor inlet.

The gear case was one-half quart low on oil.

The engine was four quarts low on oil.

The engine compartment was extremely dirty and oily, with no apparent effort at even minimal maintenance. The wiping rags probably weren't used because they were lost in the cable compartment.

Although some of the discrepancies might be expected in equipment that has been used in field exercises, there are several that are of particular concern because they indicate gross neglect for the safety and reliability of the generator as mission essential equipment. Filling the gas tanks with diesel fuel, by-passing the AC fuse, and allowing the batteries to remain connected during shipment were particularly dangerous and showed a callous disregard for applicable technical directives. A whole string of fingers can be pointed.. to the using crews in the field, to the people responsible for preparation for shipment, to the loadmaster(s) who supervised loading, to the supervisors in almost every echelon.

One has to wonder what the reaction of these careless troops would have been if, in an actual combat situation, they had needed the support of tactical aircraft and none were available due to a lack of generators?

Let's take the Golden Rule out of the Sunday sermons and put it to work on the line, huh, guys?

"MERCILESSLY UNFORGIVING"

A frequently quoted maxim from our friends in the Navy states that, "Aviation in itself is not inherently dangerous, but like the sea is mercilessly unforgiving of human error." Not long ago an incident occurred which reinforces the truth of this statement.

After an F-4 was started, the preflight checks were underway with the plane captain stationed as point man and another experienced man as checker. After completion of the left aileron check, the point man saw the checker's feet under the wing and a "thumbs up" signal. Next, the point man signalled for the right aileron check. While this check was being performed, the checker's hand, which was still on the left aileron, was trapped between the aileron and the flap. The checker received lacerations and resection of the bones in the second and third fingers of his right hand. This injury, which could have been prevented, resulted in three weeks of limited duty.

This is almost a story-book example of what can happen to even well-trained and experienced people who, through inattention or complacency, momentarily forget the hazards of working around modern aircraft.

Taking things for granted is an excellent way to create human error, and "aviation . . . is mercilessly unforgiving of human error."

(U. S. Navy Weekly Summary No. 39-73)

CAUGHT WITH THE GOODS

You can't exactly call it shoplifting, but it has a slight resemblance even if you can't hide the appropriated item.

At the completion of a brake change on a C-130, a three-man hydraulic crew, dispatched to bleed the brakes, requested and received a power cart and a low-pressure air compressor.

When the AGE driver pulled up beside the aircraft, he dismounted, disconnected the air compressor, and moved it to the right side of the aircraft. In the meantime, one of the hydraulic specialists fired up the power cart while another plugged it into the aircraft.

All well and good, however . . . The AGE man returned to the tug after positioning the compressor, saw that the power cart was operating, assumed that it had been unhooked from the tug, and drove off. With him went the power cart, the power cord, and the aircraft AC power receptacle. Behind him was left three startled hydraulic specialists plus a C-130 out of commission with a missing AC receptable, a buckled battery access door, and a torn battery access door bracket.

It could happen with any type aircraft. It could *not* happen with people giving full attention to their jobs. Four people had a responsibiity, and four people failed it, causing one of them to drive away with unwanted goods.

DRESS TO SURVIVE

While we've all heard that we should wear the clothes we plan to survive in, it is easier to say than do. Observation of crew members shows considerable variation, and some wear everything they have, including parkas.

Most of us can't do this for any length of time, however, and may dress in shirtsleeve comfort and carry gear in an A-3 bag. This approach is no solution for several reasons. Most emergencies happen rather suddenly, and even if time were available, one or more crew members (usually the pilots) can't leave their seats long enough to change clothes. And have you ever tried changing clothes in cramped, turbulent quarters that are about to fall out from under you? (In a fighter, you haven't any options.)

A Compromise Is Necessary

It should be possible to strike a reasonable compromise between what you can stand to fly in and what you need to survive in. Crews should shoot for this goal, and should wear nearly equal amounts of clothing so that the cabin temperature will come closer to suiting everybody.

As far as we know, nobody ever froze to death tummy first. So, if you can keep out the wind, retain your body heat, and keep your hands, feet and ears warm, you can do a lot of surviving. With this in mind, we can discuss the various combinations of flying gear.

Winter Flying Suit: Too warm for most people when worn with the issued thermal underwear but excellent with cotton long handles or a sweat suit. Don't knock this piece of equipment. It has a windbreaker hood in the collar and excellent pockets to keep your hands warm. If the collar chafes your neck, try wearing a scarf or a hooded sweat shirt.

Summer Flying Suit: No so good with anything but issued underwear. This is a fairly comfortable

combination for flying in all but extremely cold temperatures.

Thermal Underwear: Good with anything, but too warm with the winter flying suit.

Thermal Underwear: (Cotton, waffle-weave) Also good, and many crewmembers prefer these to the other stuff. Although they must be bought, they're fairly cheap and can be washed.

Sweat Suits: I These are warm and comfortable when worn with the winter flying suit. Many crewmembers own hooded sweatshirts and like them very much.

Flying Gloves: Even the winter gloves won't keep your hands warm at very low temperatures for more than a few minutes. You need a good set of pockets where the fingers can get together with each other. Wear the summer gloves during flight and keep one winter glove in each leg pocket, so you'll have them when you need them.

Combat Boots: These aren't much good below about +10 degrees F., although they can be improved somewhat by buying thermal innersoles for them (try a sporting goods store). In wearing socks, remember that several thin pairs are better than one thick pair. Thermal socks from the BX also seem to do a good job.

Alert Boots: These can be discouraging unless you've worn them in very cold weather. They are good for about one hour longer or ten degrees colder than the combat boots, but they will not be adequate for extreme temperatures. To make matters

worse, your feet sweat in them and they are usually fitted so that you can't put additional pairs of socks on. Your feet will sweat less if you wear a pair of socks long enough to extend above the top of the boot.

Scarfs: Many crewmembers wear or carry a GI wool scarf. This can be used a number of ways to keep your head warm.

Caps: You'll see an almost infinite variety of hats among crewmembers this winter, but you should consider several important points. Does it keep your ears warm? Will it fit under a parka hood? Will it be with you when you bail out?

Perhaps the best all-around cap is a knitted waal one that will fit in your pocket; and it is a good thing to have even if you prefer to wear something else. Particularly handy is a little gadget called a skiers headband — a band of knitted wool which covers the forehead and ears and costs about a dollar at sporting goods stores. It takes up about as much pocket space as a folded handkerchief, and can be worn neatly under a helmet or headset. The novelty of putting a helmet that has been cold-soaked to ten below onto a bald head will wear off after the first try, and the headband will then be fully appreciated.

Sunglasses: Snow blindness can be a serious problem. Furthermore, your ability to see at night will depend to some extent on whether or not you wore sunglasses during the day. Stick to the GI models with plastic covered ear bows, and don't wear a set of glasses that has any metal touching your skin during extremely cold temperatures. You'll notice that glasses 'fog up' when going from the cold outdoors into a warm building. The natives have a quaint superstition that this can be avoided by walking into the building backwards. We don't know whether this works or not, but find it easier to explain why we're wiping our glosses than why we're walking backwards.

Other Tips:

Keep dry. Wet clothing tends to conduct heat away from the body because of the loss of insulating qualities. Do not dress in heavy clothing while doing strenuous labor. After dressing and entering the aircraft, leave the jacket and trousers unfastened until cold temperatures are encountered (Again, fighter jocks have a bit of a disadvantage). Cut the cabin heat down to a comfortable temperature rather than remove clothing.

Keep clean. Clothing loses its insulating qualities when grease, oil, or dirt compresses the fibers and reduce airspace.

Take sufficient clothing along. Remember that you will be flying over varied temperature ranges, and should be prepared to survive in the worst condition that could be encountered.

Avoid chilling through proper use of your flying clothing. When you become chilled your body must work harder to regulate body temperature, and uses extra energy.

Dress in layers to provide more insulation for your body, but do not dress so heavily that you are overheated. Do not wear clothing so tight that it restricts the flow of blood which transfers heat to all parts of the body.

Except on the beach, proper clothing is always a trade-off between comfort, safety, and utility. Don't shortchange the safety aspect for the sake of comfort.

WHY DRUNKS HAVE ACCIDENTS

by an Anonymous Drunk

It's about time someone told the truth about why drunks have accidents. Having been drunk a few times, and having driven some of those times, I can tell you why.

Mostly it's because when you're drunk you just don't give a damn about anything.

It's not that your reflexes are slowed — which they are. It's not that your hearing is impaired — which it is. It's not that your vision is dulled — which it is. These things contribute some, but not very much. These things happen when you are tired as well as when you are drunk. Tired people aren't particularly hazardous, unless they fall asleep while driving. It's the drunk drivers, the wide-awake, howling-at-the-moon types who are the unleashed tigers erratically prowling the macadam jungles.

When we drunks get really snockered — looped to the eyeballs — we still have some pretty decent reflexes. I once saw a drunk put a lighted cigarette in his mouth wrong end to. Nothing wrong with his reflexes, muscular or vocal. What makes us dangerous when drunk is our complete lack of common sense. Our logic, our normal reasoning, disappears because it has been drowned in alcohol.

Seventy miles per hour seems no more dangerous when we are drunk than thirty or forty would normally. So we go careening along, blissfully unconcerned, and suddenly face a situation that a professional race driver couldn't cope with cold sober; then ... *pow!* When we are drunk it is easy to pass beyond the point where skill can extricate us from an accident. It becomes a simple matter of mathematical certainty. If the car mass is moving directly toward a tree at sixty miles per hour there is a point beyond which the whole works — the car and the drunk inside — are committed to clobber the tree. No matter which way the car is headed, which way the wheel is turned, or how hard the brake pedal is pushed ... *that* car is going to bash *that* tree.

When we are drunk we realize only partially, if at all, what we are doing. And, if we don't know, we don't care. And when we don't care, we and those around us are in trouble if we drive. It's that simple.

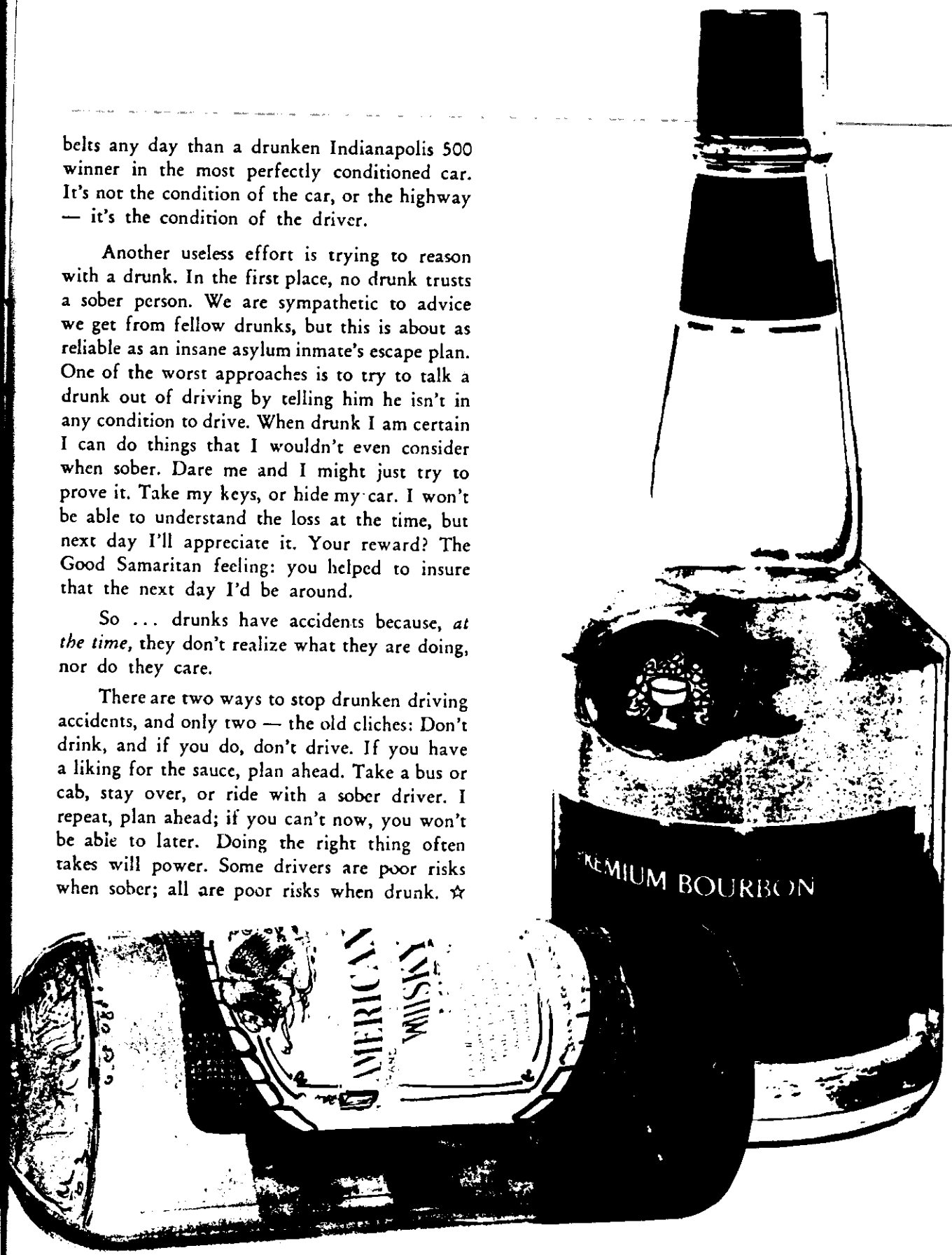
Prevention is a different matter. One thing that always bugs me, drunk or sober, is the do-gooders who are always yakking around the edge of the problem. Let me assure you, and I am cold sober now, I'd rather ride with a twitchy driving-school dropout in a car with bad brakes, smooth tires, maladjusted lights and frayed seat

belts any day than a drunken Indianapolis 500 winner in the most perfectly conditioned car. It's not the condition of the car, or the highway — it's the condition of the driver.

Another useless effort is trying to reason with a drunk. In the first place, no drunk trusts a sober person. We are sympathetic to advice we get from fellow drunks, but this is about as reliable as an insane asylum inmate's escape plan. One of the worst approaches is to try to talk a drunk out of driving by telling him he isn't in any condition to drive. When drunk I am certain I can do things that I wouldn't even consider when sober. Dare me and I might just try to prove it. Take my keys, or hide my car. I won't be able to understand the loss at the time, but next day I'll appreciate it. Your reward? The Good Samaritan feeling: you helped to insure that the next day I'd be around.

So ... drunks have accidents because, *at the time,* they don't realize what they are doing, nor do they care.

There are two ways to stop drunken driving accidents, and only two — the old cliches: Don't drink, and if you do, don't drive. If you have a liking for the sauce, plan ahead. Take a bus or cab, stay over, or ride with a sober driver. I repeat, plan ahead; if you can't now, you won't be able to later. Doing the right thing often takes will power. Some drivers are poor risks when sober; all are poor risks when drunk. ☆




WHISTLE
A SAD
TUNE

Snow White, Grumpy, Sneezy and the other dwarfs sang us some pleasant advice about how whistling can make the work seem lighter and the day go faster. But an interesting study made last year suggests that whistling, humming or singing may be a prelude to trouble in the cockpit.

Some rather extensive research among airline pilots established a reliable estimate that only five percent of crewmembers whistle on the flight deck. But a survey of cockpit voice recorders from aircraft involved in accidents and incidents showed that in over 80 percent of the tapes, one of the pilots was whistling during the last half hour of the flight.

In one tape from the flight deck of a four-engine airliner the captain can be heard whistling the first two lines of an American classic, "The Battle Hymn of the Republic." While setting up landing configuration about thirty miles from the airport on a VOR-DME approach, he discovers that his DME is inoperative. However, the first officer calls DME information from his indicator, which is working, and they continue the approach.

A printed ADF bearing check during descent slips past them and they cross the point 900 feet below the required altitude. Confusion in the cockpit then causes the captain to continue his early descent until it is interrupted by a thick stand of mahogany trees on the slope of a mountain. "Mine eyes have seen the glory. . ."

Another tape tells the story of a captain who is merrily whistling while the first officer makes a straight-in visual approach to one of a pair of parallel runways. A mile from the runway the captain realizes that they are lined up with the wrong strip of concrete. With no apparent break in mood, he discourages the first officer's request to discontinue the approach, takes partial control, and urges the first officer to "swing it over there, make a carrier approach, right down to the deck." The salvaged approach with a 200,000 pound "fighter" wiped out the gear and started a real salvage job.

In a final taped narrative, a crewmember whistles happily as the airliner approaches strong radar echoes from precipitation. The ground controller warns the crew of the weather ahead and strongly suggests that they should detour to the right, as other flights have done.

However, this crew deviates to the left, finds itself fighting a losing battle with heavy hail, and starts a 180-degree turn to make its retreat. In the turn they lose both a wing and their nonchalant attitudes.

It is certainly not the intent of this article to discourage music, or even a throttle bender's poor imitation of it. To feel on top of the world is a pleasant and sporting thing. But, like euphoric hypoxia, a too-satisfied feeling of well-being can blind a pilot to a sky full of thunderbolts. The world of the cockpit may be too unstable and precarious for relaxation, and the complacent lightheartedness that leads to whistling may also lead to oversight.

So, you cockpit whistlers, hummers, and singers . . . the statistics are there. You draw your own conclusions.

home and highway

SLIPPERS ARE SLIPPERY

A top-three grader now knows the value of proper footwear on a stairway. After returning from a youth activity meeting, he was looking forward to a relaxing evening over the records of his youthful charges. He exchanged his duty shoes for the comfort of his leather slippers and then remembered that he had left some books in the car.

He left his second-floor apartment, skipped lightly down the stairs two at a time, and simultaneously lost one of his slippers and his balance. He grabbed for the bannister, was unable to maintain his balance, hit the end of the railing and severely damaged his left eye.

The force of his head-on collision knocked him out temporarily, but he regained consciousness and returned to his apartment. His wife applied cold compresses to the eye, but the injury was too serious for home first aid. The next day he was admitted to the hospital where surgery was performed to repair the damage.

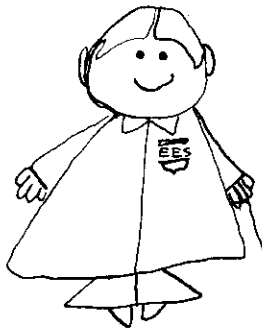
Slippers are well-named—they *are* slippery — and when worn in lieu of proper footwear, particularly while zooming downstairs two at a time, the results can be pretty disastrous.

ODDS × 3 = ETERNITY

Would the "odds against making it" flash through your mind if you were passing a slower vehicle at high speed on a wet, steep hill at night? They probably didn't occur to a USAFE sergeant who died betting against them.

On his way to work a few minutes before midnight, he lost control of his late-model car as he was passing a slower vehicle on a 25 percent grade, then skidded off the road and broadsided a solid, four-foot wide tree. The car wrapped around the tree and compacted the driver's compartment to a width of two feet. The impact was so shattering that, even if he *had* been wearing a seat belt (which he wasn't), he would have died almost instantly.

The straight, unlighted asphalt road was posted at 70 mph maximum, and speed at impact was estimated at 90 mph. The road



was wet and uneven which increased loss-of-control possibilities. And the sergeant had been drinking until shortly before beginning his last drive to work.

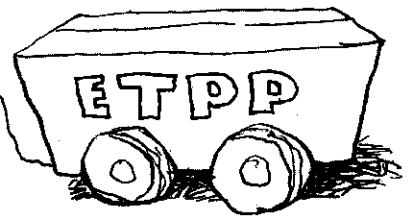
Any speed faster than the limit increases the odds of losing control. Wet, bumpy asphalt roads also increase the odds of a skid. Drinking always increases the odds of driving disaster. By betting against all of these odds simultaneously, the sergeant needlessly proved that the result was an "odds on" certainty to be fatal. Are you betting against the odds when you drive?

EMERGENCY TRAVEL PACKAGE KIT

Few if any drivers in Europe venture very far from home in their automobiles without a workable spare tire. Even with the comparative reliability of tires, an occasional flat tires still occurs, and the safe driver maintains his spare with care.

But how about other spares? Such items as fuses, light bulbs, and even pumps are worthwhile investments to carry. Not many things go wrong with well-maintained cars, but when they do the requirement for spare parts can be critical, particularly when driving an American car in Europe. Nothing can ruin a vacation trip to Switzerland more effectively than to have a water pump fail, with no replacement available in local stores.

To help solve this problem, the European Exchange Service has introduced an Emergency Travel Package Program (ETPP) in all auto parts store throughout Europe. By customizing an ETP kit for your particular car, EES hopes



to provide the "hardware insurance" that will guarantee a safer, more carefree trip.

A model kit might consist of fuel pump, water pump, radiator hose, adjustable clamps, gaskets, fan belt, tail-light bulbs, assorted fuses, and a booster cable, packaged in a carton suitable for storage in the trunk.

The ETP kit serves a dual purpose in providing an emergency source for repair parts when the driver is away from home, as well as a ready source for parts which may not be immediately available at the local auto parts store.

If EES patrons want to take part in this voluntary program, they should contact the auto parts store for assistance.

BASIC EMERGENCY CHECKLIST

In addition to the ETP spares kit mentioned here, the sensible driver also prepares himself for roadside emergencies at night. This means more than just a reflectorized warning triangle. It should include some means of seeing and being seen. The use of a spotlight, operating from the cigarette lighter outlet, is a good idea except in those rare instances when a dead battery is the cause of the emergency.

A strong flashlight, preferably with a red flasher on the top, can provide the light needed to replace a flat tire, put on chains, or inspect the engine compartment for trouble.

Flares, to be placed a hundred yards behind the car as well as close to the car, can keep a minor emergency from becoming a major disaster.

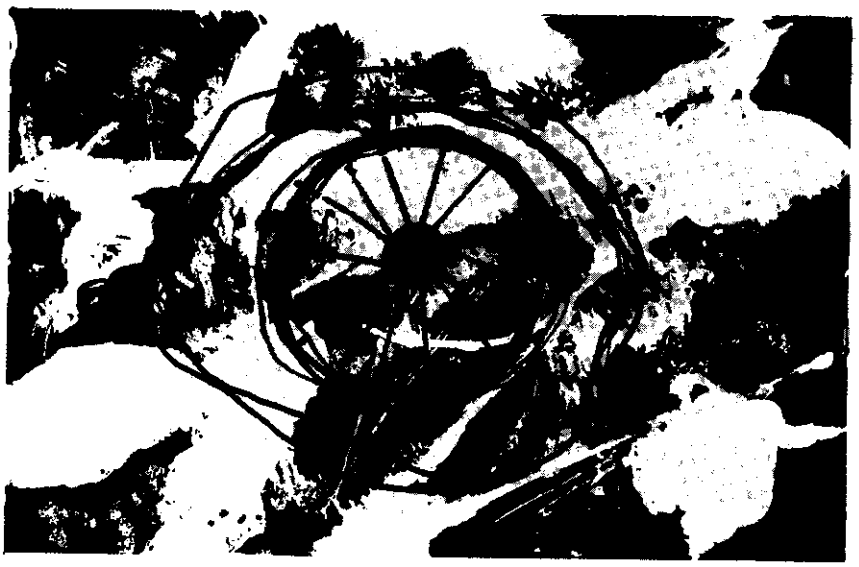
Consider the inclusion of a first aid kit, blankets, a fire extinguisher, a container of fresh water, shovel, chains, Sterno, perhaps even emergency food rations.

Have you brought your emergency gear up-to-date in your car? If not, now is the time to do it. When an emergency happens it's too late to order your safety gear from the BX or auto parts store.

GET A CROWBAR!

There is a story about trains in the early West to the effect that each passenger coach was equipped with a crowbar to open the windows. Most of the old-time coaches had so many coats of paint that the windows were sealed shut, and mere mortal strength could not budge them.

Many European window frames are also painted so heavily that they have the characteristics of the old Western railroad coaches. Like the early travelers, a young



Air Force member might have used such a crowbar and saved himself a heap of trouble. But not having such a tool available, when he tried to open his window, he put all of his pressure on the window handle, lost his footing, and started to fall.

In trying to regain his balance, he stretched his right hand out toward the window ledge, missed it, plunged his hand through the window glass, and suffered lacerations which kept him off duty for two days.

Moral: Never force a window open by hand . . . get a crowbar!

FLASHBACK DAMAGES FOUR AFMVs

The driver of an Air Force station wagon provided a new excuse for wrecking four Air Force motor vehicles (AFMVs) in one accident a few months ago. He claimed to have seen "something animal like" run across the road in front of his vehicle, so he turned hard left, jammed the gas pedal down, jumped a curb, missed a building by three feet, accelerated another seventy five feet across an empty lot and hit a chain link fence. Even after the wagon was stopped by the fence, the driver held the gas pedal down, causing the drive wheels to dig holes in the ground six inches deep. Shoulder and lap belts were in use and properly adjusted.

A passenger indicated that as the vehicle approached a curve to the right he realized the driver was making no attempt to follow the road, so he shouted a warning. Instead of following the right curve, the driver hit the accelerator and swung left as described above. Three other AFMVs were parked behind the security fence and all of them suffered damage to headlights, grills, fenders and bumpers. Damage amounted to almost a thousand dollars.

Medical authorities would make no comment on the possibility of a "flash back" from previous drug use, but it can be considered. The driver had been selected at random for a drug abuse urinalysis four days before the accident, and had tested positive. However, the results of this test had not come back from the hospital at the time of the accident.

Where else can you spin, crash, burn, and survive? And still not meet an investigation board?

Photos by **SSgt D P Jenkins**

the Positive Illusion

Pilot response to artificial airplanes hasn't changed a great deal over the years. In the days of the old plywood trainers, there were those who approached an hour in the contraption (with the "Roger's," "Wilco's," and "Over and Out's") as they would a witless game where losing was common and winning didn't mean much.

To others, it was like a trip to a dentist - best endured if you could keep your mind on other things.

But there were some who tried to slip past the shortcomings of the hooded box into the *illusion of flying*, using its positive features to project themselves into the clouds and into the future, where the box might become a vibrating P - 47 looking for a Radio Range leg in a thunderstorm.

Though modern "black boxes" may fill a good sized room with electronic wizardry, gleam silver in variable fluorescent light, duplicate everything from lightning outside to fire inside, and can pace the crew through any instrument approach in the world or to any target in the world - the gamesters, agonizers, and opportunists are still there.

The latter category, of course, are the professionals. They see the simulator for what it offers - a safe opportunity to enlarge their knowledge, increase their skills, and to reinforce correct procedures and test their reactions and logic.

For them, the challenge of using the simulator parallels the challenge of using an aircraft well. It isn't something they do *instead* of flying, but it is a training activity that is *part of the flying game*, which can help them to fly more proficiently and more safely.

Attitude Important

But the marvel of the thing is that with a little willingness to play along and use their imagination, a crew *can* step past their irritation into the illusion and reality and *fly!* At one time or another, we all accomplished a similar process. We do it almost every time we go to a quality movie and

"TIGERS" acclaimed for

In January 1974, the 53rd Tactical Fighter Squadron at Bitburg Air Base, Germany completed 50,000 hours of accident-free flying in F-4 aircraft. Acclaimed for its safety program during a recent 36th Tactical Fighter Wing inspection by a USAFE Operational Readiness Inspection Team, the squadron's achievement of no accidents in eight years is all the more remarkable in terms of the operational versatility demanded by the NATO peace-keeping mission.

During the squadron's distinguished history, which began on New Year's Day in 1941, Tiger pilots have flown the P-26, P-36, P-40, P-47, F-80B, F-84E, F-100C, F-105, and the F-4D throughout the United States and Europe.

From its beginning, when it provided added defense force to the Canal Zone as a part of the 32nd Fighter Group, until its deactivation in February 1946, the Tigers made a name for themselves. They supported General Patton's Third Army advance, participated in the Battle of the Bulge, and logged 338 combat missions and 2,432 combat sorties. They also participated in victories for which the 36th Fighter-Bomber Group was awarded two Distinguished Unit Citations and a Belgian Fourragere.

Reactivated in October 1946 as a part of the 6th Fighter Wing, the Tigers rejoined the 36th Fighter Wing in 1948 at Furstenfeldbruck Air Base, Germany and became the first U. S. Jet Fighter Unit in Europe. (Coincident with the birth of the Air Force in 1947, Tigers were training in the first of the jet fighters series of aircraft, the F-80B Shooting Star, at Williams Field, Arizona.)

Gunnery Champions

They made a smooth transition to the F-4D in 1966 and became recognized as the undisputed gunnery champions when they won the first five consecutive Inter-Wing Bombing competition flying the Phantom. Since 1962, the squadron has represented the USAF, along with the 79th Tactical Fighter Squadron, in the annual NATO Tiger Meet. This year in June, the 53rd will host the annual event.

During 1971, the squadron deployed seven times to four different European locations for gunnery practice, operational and upgrade training, representation at the NATO Tiger Meet, and exercise of NATO air mobile forces. In 1971, it deployed eight times to six locations; and in 1973, seven times to six locations.

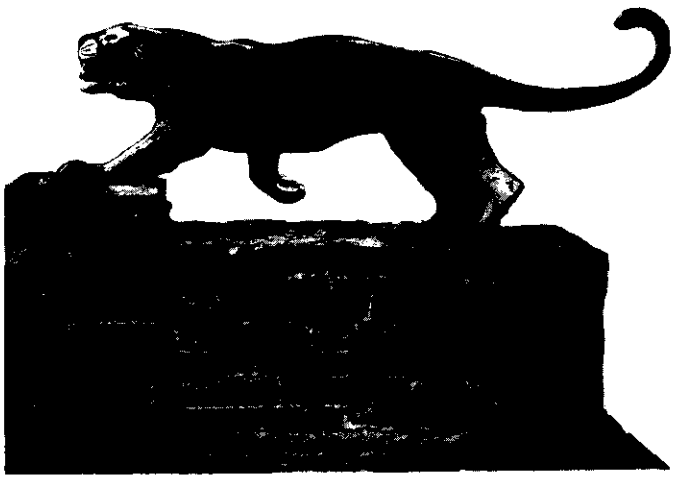
Both National Week and the expanded Greek Week provided an opportunity for realistic training in the latest weapons delivery at sea. Numerous flights were scheduled to simulate long-flight strikes on land and at sea during the "Black Eagle" exercise that saw the Tigers launching to Denmark, refueling over the North Sea, dropping down for low level penetration of Danish airspace, striking targets on the ground, climbing medium level over the North Sea, acquiring shipping targets, simulating launch of weapons, returning for refueling, and finally landing back at Bitburg.

General David C. Jones, Commander in Chief of the United States Air Forces in Europe, has commended the 53rd Tactical Fighter Squadron for its outstanding safety achievement.

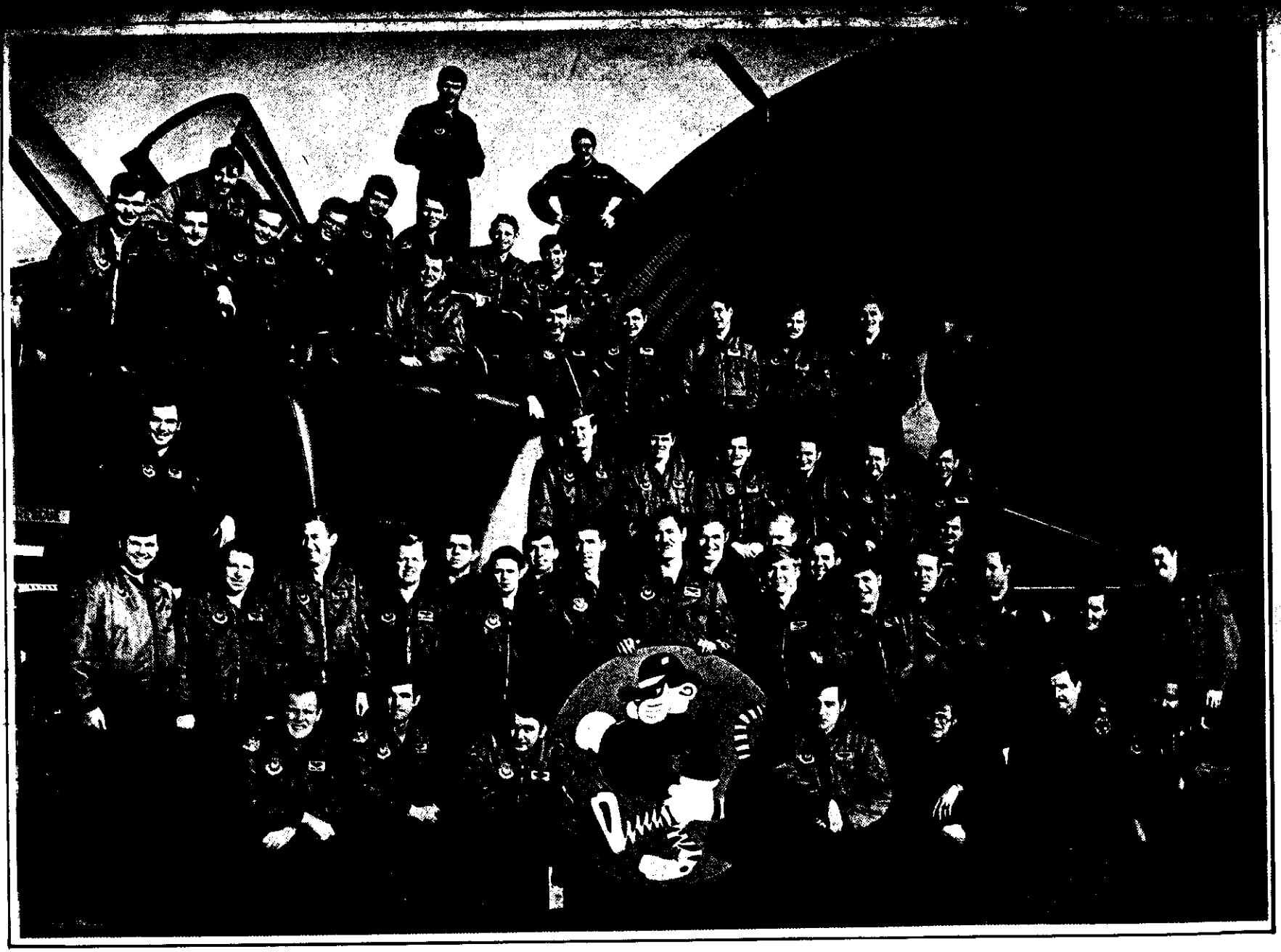
SQUADRON COMMANDER - Lt Col Randolph C. Jameson assumed command of the 53rd Tocticol Fighter Squadron in July 1973. A former T-33 instructor, XB-70 engineer, and aide to Lt Generol Benjamin O. Davis, Col Jameson flew 150 combat missions in the F-4 Phontom out of Da Nang AB, Republic of Viet Nam. He has a master's degree in engineering from Arizona State University, where in 1955 he was commissioned a second lieutenant through the ROTC program. Shown on the left is Capt Roger Dabbs, 53rd TFS Flying Safety Officer.

safety achievement

"53d TFS UBER ALLES"



A bronze statue of a tiger, rooted in concrete, stands in front of the squadron operation's building at Bitburg Air Base, Germany.



53RD TFS TIGERS - Members of the 53rd Tactical Fighter Squadron are shown in November 1973 with the squadron's 30-old symbol-a caricatured pugnacious tiger. Another squadron symbol, created in 1957, is a large, snarling tiger head profile with a staring green eye and the inscription, "53rd TFS Uber Alles." At one time, squadron members were presented this patch upon becoming combat ready, and it was worn on parachute torso harnesses until 1972.