TAC ATTACK

OCTOBER 1982

HEADWORK CAN SAVE HINDQUARTERS ...Pg 4

HARDISON

Angle of Attack

We're into autumn. But besides football and falling leaves, autumn increases our exposure to fire and its dangers. We use fire more in the cooler weather, so the risks increase. That's why Fire Prevention Week is in October, and that's why we are offering you a self-test on fire prevention. We can all learn something in the process of taking the test.

We can also learn from the story "I Never Thought It Could Happen to Me," a true-to-life story about what's really behind the safety statistics—human lives.

Aviators can learn about the value of pre-mission planning and coordinating in the article "Headwork Can Save Hindquarters." The title reminds us what we may be risking when we don't plan well.

October also reminds us of Halloween, of course. In "Down to Earth," we offer some tips to make it a safer Halloween for your kids. Remember that the streets will be full of small gremlins and goblins.

In our business the real gremlins are ignorance and indifference. They are with us all year round, not just on Halloween. Let's try to stamp them out.

Richard K. Ely

RICHARD K. ELY, Colonel, USAF
Chief of Safety

OCT

READINESS IS OUR PROFESSION

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TACRP 127-1

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Distribution (FX) is controlled by TAC/SEPP through the PDO, based on a ratio of 1 copy per 10 persons assigned. For DOD units other than USAF, there is no fixed ratio; requests will be considered individually.

Subscriptions are available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. Price: $14.00 domestic, $17.50 foreign per year. Single issues can be purchased for $2.50 domestic and $3.15 foreign. All correspondence on subscription service should be directed to the superintendent, not to TAC/SEPP.

Authority to publish this periodical automatically expires on 26 Oct 1983 unless approval to continue is given before that date.

TAC Attack (USPS 531-170) is published monthly by HQ TAC/SEPP, Langley AFB, VA. Second Class postage paid at Richmond, VA.

POSTMASTER: Send address changes to *TAC Attack* , TAC/SEPP, Langley AFB, VA 23665.

VOLUME 22 NUMBER 9

HEADWORK CAN SAVE HINDQUARTERS

Abraham Lincoln reportedly received a message from one of his generals that was dramatically titled "Headquarters in the Saddle." "That's his problem," Lincoln remarked, "he's got his headquarters where his hindquarters should be."

Sometimes we have a similar problem. We seem to have our hindquarters where our head should be. At the least, that's embarrassing. And in our business it's often very dangerous.

Our headwork begins with our mission planning. Even the best-laid plans can go awry, but poor planning guarantees problems. The complexity of the plan varies with the mission. Obviously it takes more time and effort to plan a composite strike than a routine two-ship to the controlled range. A difficult mission should begin with hard thinking; if it doesn't, disaster can follow.

At a large exercise an RF-4 was scheduled to take photos as part of a composite strike force. The recce crew had three targets to shoot; the third target was one which the strike force was scheduled to hit just before the recce's photo run. Two two-ship elements of F-4s were to drop MK-82s on the target at 0945 and 0946, respectively. The recce was due at 0947. The times were established by the mission commander, who reviewed the mission plan with the recce crew. The recce crew prepared their own flight plan.

To have mutual support and backup photography, the recce flight was scheduled to be a two-ship. They planned to make the strike target their last target to be photographed after they covered their other two targets. The flight intended to run in on the strike target from northwest to southeast.

Ground and flight operations went smoothly for the recce flight. They covered the first two targets and were ready to run in on the strike target 20 seconds early. From their position northwest of the target, the recce flight could see dust rising from the target area. Since they were 20 seconds early, the recce flight extended to the south and reduced their speed slightly. As they headed south, the recce crews saw a fiery explosion on the target, followed by billowing smoke and dust. When they got about 5 miles southwest of the target, the recce flight turned left toward the target, called "recce is coming in" on the radio, and began a pop-up.

During the pop-up the wingman slid back to extended chase, about 2,000 feet behind the leader. As the leader was about to cross the target at 2,200 feet above the ground, he suddenly spotted an F-4 pass off his nose, headed west. Right after that he felt the concussion of exploding bombs. As the wingman followed at 3,000 feet, he was also jolted by an explosion. The WSO in the lead RF-4 checked the time as they crossed the target—it was 0947:45.

The recce flight returned to base with no indications of any damage. Landings were normal. But on the ground, the lead aircraft was found to have been punctured by shrapnel. The left variramp was gashed, and the left engine intake was penetrated four feet back from the duct lip. The shrapnel left 3-inch by 3/4-inch holes where it entered and exited the intake. Fortunately, the shrapnel hadn't entered the engine or, worse, the cockpits.

Where was the foul-up? The fighter flights thought that they were on time. The leader of the first element said that he dropped at 0945 "almost to the second." His wingman was about 20 seconds behind him. The leader of the second element thought that he was right on time also, but his WSO admitted they hadn't checked the time as they made their run in.

The recce crews checked their time hacks when they got back. They were still within two seconds of the official time. The photographs taken by the RF-4s showed an F-4 just past the target and headed west. Bombs could be seen exploding on the target area 2,000 feet off the nose of the lead RF-4.

When the mission commander had briefed the recce flight, he had said these times on target (TOTs) were "firm TOTs." The special instructions (SPINS) for the exercise also used the expression "firm TOTs." But neither the SPINS nor the mission commander defined what a "firm TOT" was. Is that plus

or minus 30 seconds? One minute? Two minutes? At what point should the second element have aborted because they were late for their TOT? Obviously, they thought they were in the ballpark. If timing was critical, why wasn't a no-later-than time briefed?

Those questions ultimately should be resolved by the mission commander while planning the mission. The recce crews could have helped the mission commander by bringing it to his attention when they coordinated with him. One minute between TOTs is tight, and everyone involved should have been aware of the danger involved. Somebody might even have asked whether the TOTs needed to be that close.

The other problem with flight planning in this case was the lack of consideration for the frag envelope of the MK-82s. When the recce lead planned his run at 2,200 feet, he didn't take into account the size of the frag pattern. If the timing was off at all, and it was, he would be in the envelope, and he was. When dealing with live ordnance or when realistically practicing with training ordnance, the frag pattern should also be planned and briefed. The mission commander and the recce crews could have talked it over, but they didn't.

Plan and brief precisely. A little advance headwork might keep your hindquarters intact.

SGT MICHAEL F. MACK is this month's winner of the Tactical Air Command Crew Chief Safety Award. Sergeant Mack is a member of the 33d Aircraft Generation Squadron, 33d Tactical Fighter Wing, Eglin Air Force Base, Florida.

Sergeant Mack was fire guard for the launch of an F-15 aircraft. During engine start there was a malfunction in the jet fuel starter (JFS) fuel control that caused a fire in the engine bay area. Sergeant Mack immediately notified the launch crew chief and started fighting the fire. Just then the JFS turbine disintegrated with a small explosion, and a ball of fire hit the ground, igniting the fuel from the fuel control. The flames spread from the JFS to the central gear box and down to the ground under the aircraft's aft section. Sergeant Mack held his ground and fought the fire, using up four fire extinguishers before help arrived and put out the fire.

During the entire incident, Sergeant Mack stayed calm, used good judgment, and followed safety directives that ensured the safety of the pilot and minimized damage to the aircraft. He has earned the Tactical Air Command Crew Chief Safety Award.

Sgt Michael F. Mack

SRA JACK B. MARTIN, JR., is this month's winner of the Tactical Air Command Individual Safety Award. He is a mechanic with the vehicle maintenance branch of the 56th Transportation Squadron, 56th Tactical Training Wing, MacDill Air Force Base, Florida.

While performing maintenance on a 1982 pickup truck, Airman Martin found that the mounting bolts on the steering gear box were so loose that the box was ready to fall off. He thought the problem was serious enough to report because the steering would fail if the box falls off. An inspection was made of all similar vehicles on his base and then all TAC bases. Enough vehicles were found with the loose gear boxes to warrant an Air Force-wide inspection, which is now underway.

Airman Martin pays particular attention to detail. On other occasions he has found erroneous labeling of weight limits for tire jack stands and engine hoists. These errors in labeling were significant and could have caused serious accidents.

SrA Jack B. Martin, Jr.

Airman Martin is a dedicated professional who displays safety awareness and attention to detail. He has earned the Tactical Air Command Individual Safety Award.

AIRCREW of DISTINCTION

On 26 February 1982, Maj Phillip G. Anderson was flying an F-104G on a functional check flight (FCF) for an engine change. His aircraft was configured for a normal FCF profile: 5,800 pounds internal fuel, no stores or tanks. The mission profile started with an afterburner climb to 41,000 feet. Approaching this altitude, Major Anderson attempted to reduce power for level off; however, the throttle could not be retarded below afterburner. At some time during the climb, a broken rivet head had jammed in the throttle cable pulley. Major Anderson immediately extended the speedbrakes and maneuver flaps for drag while declaring an emergency.

Using a high-G spiral, Major Anderson descended to 5,000 feet while slowing to gear and flap lowering speed. At this point, he was 15 miles west of Luke AFB, with the afterburner still at full max and only 2,500 pounds of fuel remaining. Using G-forces and a shallow descent to stay below the maximum flap speed of 240 knots, he set up for a seven-mile straight-in from an altitude of approximately 500 feet. He was now on a one-degree glideslope, gear and flaps down, full afterburner and 240 knots, with less than three minutes of fuel left.

After mentally reviewing the emergency procedures one more time, Major Anderson carefully raised the red guarded cover on the fuel shutoff switch. One thousand feet short of the overrun, Major Anderson shut down the engine using the electrical fuel shutoff switch. The engine flamed out in two seconds. Touchdown was

Maj Phillip G. Anderson
69 TFTS, 58 TTW
Luke AFB, AZ

1,000 feet down the runway at 200 knots. The drag chute was deployed, and only light braking was required on the standby brakes to stop with 2,000 feet of runway remaining. The time from takeoff to landing was 10 minutes, and fuel remaining after landing was 1,200 pounds.

The superior airmanship demonstrated by Major Anderson in executing this difficult recovery prevented the loss of a valuable aircraft and possible loss of life. His actions qualify him for the Tactical Air Command Aircrew of Distinction Award.

TIRE PRESSURE LOSS

By John McLaughlin
Senior Writer Specialist, *F-5 Technical Digest*

Back in 1909, the automobile tire manufacturers recognized that airplane tires had to be different from those built for automobiles. Not only was the automobile tire unable to withstand the severe landing shock, but the tire flexing during ground operation was about 2½ times greater. The optimum design was a tire of much greater strength that required specific air inflation pressures to minimize heat generation and limited the tires to intermittent use to provide cooling periods.

Heat is generated within the body of the tire primarily by the flexing of the carcass. Wheel brakes, hot weather, and bearing friction also contribute to the heat accumulation. The flexing action of a heavily loaded rolling tire creates friction which progressively builds up heat within the tire at a rate faster than it can be dissipated. Excessive heat buildup can cause deterioration of the plies or tread and lead to premature tire failure. Lower than recommended inflation pressure contributes to excessive tire deflection and causes greater fatigue and more heat buildup. The life of the tire depends on the correct air inflation pressure at all times.

The nylon cord in the tire will stretch during the first 24 hours following mounting and inflation. This will result in a 5 to 10 percent drop in air pressure. No new tire should be placed in service until at least 12 hours after being mounted and inflated to regular operating pressure. The air pressure should then be adjusted to compensate for the decrease in pres-

sure caused by the stretching of the nylon cord body. Tires inflated in a heated room and then stored outside or in an unheated area will experience an air pressure loss of about 1 lbf/in² for every 2.2°C drop in ambient temperature. While air pressure loss is more common during cold weather, there are no regional or seasonal limitations.

Air loss is normal as all aircraft tires leak a certain amount through their sidewall vent holes. The vent holes permit air which has seeped through the inner liner to escape before it results in separation of the carcass or tread. However, if a tire has a pressure loss of 5 percent or more during a 24-hour period, the reason should be determined. You should keep in mind that the wheel can also be responsible for the air pressure loss.

There are numerous causes of air pressure loss, and a trial-and-error system is uneconomical; it is important to establish and follow a systematic checklist.

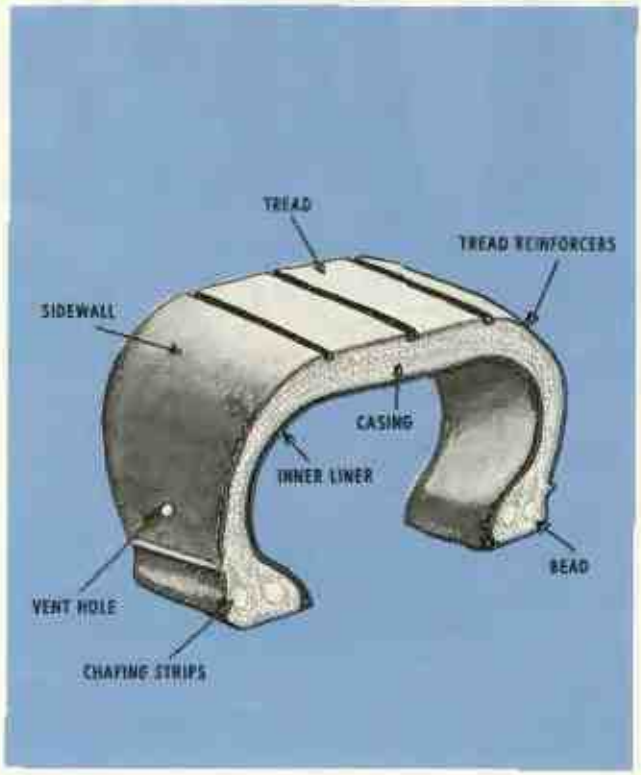
Your checklist should begin with a careful examination of the external surface for cuts or punctures that could possible penetrate the cord body and inner liner. Foreign object damage is second only to heat in the destruction of a tire. Any visible rigid object coming in contact with the tire during taxi or towing is capable of inflicting damage.

Although the tire bead is hidden from view, any exposure of the nylon cord body in the bead toe area or under the face of the bead and the heel should be carefully inspected. Hidden bead damage is also evident by signs of extreme tire heat. Any rough edges along the outer edge of the bead or chafer strip should never be ignored. There is also the possibility that the bead was not properly seated because of careless handling during mounting, lack of lubrication, insufficient air pressure, or kinked and distorted prior to mounting.

You should keep in mind that underinflation permits greater carcass flexing, increases heat buildup, and breaks down the tire sidewalls. It also induces tremendous strain in the tread area and increases the tendencies toward ply and tread separation. Underinflated tires have a lower hydroplaning speed and are subject to more damage than overinflated tires. Overinflation adds stress to the tire, lowers resistance to bruising, increases skidding, subjects the center of the tread to accelerated and uneven wear, and increases groove cracking. It reduces the effect of hydroplaning, but it also reduces the braking coefficient.

Use extreme caution when inflating a tire from a high pressure air source. Tire maintenance technicians have been seriously injured or killed from overinflation. Most aircraft wheels will burst before the tire from high pressure air.

It is not too uncommon to discover an inaccurate tire air pressure gage in use, and that the difference in air pressure is due to different gages being used



and not the air loss. Tire pressure gages are also affected by temperature variations and lubricants that may cause incorrect readings. All gages should be recalibrated periodically. The same gage should always be used when checking a tire before and after the stretch period.

For optimum tire performance, inflation pressures should be checked and adjusted daily, preferably during preflight inspection when the tires are cool. Maximum tire life can be obtained only if the correct design deflection is maintained. Crew chiefs and tire shop technicians should be constantly alert for signs of air pressure leakage.

A pilot skidding a tire at 100 KIAS on a dry paved runway can destroy a tire in about a third of a second. The heat generated by an underinflated tire during taxi, takeoff, and landing will destroy a tire nearly as quickly. Most aircraft tire blowouts are attributed to underinflation. Proper inflation is the key to aircraft tire maintenance.

—Courtesy F-5 Technical Digest

TAC TIPS

...interest items, mishaps with morals, for the TAC aircrewman

The world does not require so much to be informed as to be reminded.

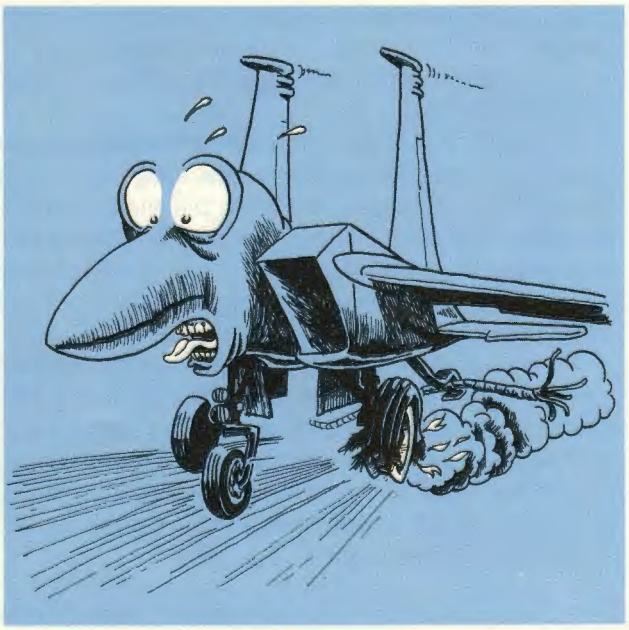
—Hannah More

BAD BRAKING IS CONTAGIOUS

After all our cautions to F-4 pilots about not turning off the antiskid when they don't feel braking at high speed, now we find the problem has spread to the F-15 community. There it's added a few variations. For example:

During a military thrust takeoff in an F-15, when the nose didn't come up, the pilot aborted. The ride then got exciting.

When he first applied the brakes, the pilot could feel what he thought was braking action. But after that, the airplane didn't seem to be slowing down. So the pilot lowered the hook, took his feet off the brakes, turned off the antiskid, and reapplied the brakes. Sure enough, the left wheel locked up, and the tire blew. The resulting skid destroyed the wheel and started the tire on fire. When the airplane crossed the BAK-12 arresting gear, the rim damaged the cable so that it broke after reeling out 50 feet. The airplane slowed to a stop on the runway, and the pilot clambered out, shaken but unhurt.



That's why the story sounds like many similar F-4 episodes. The pilot couldn't feel braking at speeds well over 100 knots, so he turned off the antiskid and blew the tire. Sound familiar? Naturally, there was nothing wrong with the antiskid.

It's OK to copy another team's plays. But if you F-15 drivers are going to steal F-4 plays, only take the ones that work.

COLD COCKPITS

We've all heard of the dangers of an overheated cockpit caused by a full hot air conditioning system. But have you ever considered the danger from a full *cold* system? We ran across several examples of the problem for you to consider as cooler weather draws near.

The first incident was in an F-111. Before takeoff the navigator noticed the cockpit was a little warm, but after takeoff it cooled off. The aircrew didn't notice how much it had cooled off until after leveling

off, when they removed their masks and their breaths formed fog. The air felt cold to their skin, but it didn't seem significant enough to warrant any immediate concern.

The crew were dressed warmly. Both wore thermal nomex underwear under their flight suits. The pilot wore a nomex turtleneck sweater, and the navigator had on a cotton turtleneck. Both wore nomex winter flying jackets and winter leather gloves with wool inserts. The navigator wore mukluks, and the pilot wore insulated winter flying boots.

The aircrew tried to adjust the temperature using the manual mode. That didn't work. They ran through the emergency procedure checklist but still couldn't get any warm air. So they asked the crew of the other aircraft in the formation if they had any ideas. No one did. The pilot decided they'd better abort. At this point they'd been airborne about 45 minutes. As he turned back for home, the pilot began to shiver. He called ahead for a flight surgeon to meet his airplane. It took almost an hour to get the airplane back on the ground.

After landing, the pilot had to be helped out of the cockpit. He could not move his fingers or get his feet to function. The pilot had to turn the switches off with the heel of his hand. He remembered flying the approach with his wrists and the heels of his hand; but while he was flying, neither he nor the navigator realized how much he was incapacitated. The pilot's case was diagnosed as borderline hypothermia. The navigator didn't suffer the same symptoms; in fact, he didn't begin to shiver until just before landing. The only difference seemed to be the mukluks and the fact that the navigator was 40 pounds heavier than the pilot.

But the navigator doesn't always get off lightly. In our second incident, an F-4 WSO suffered worse than the pilot.

The F-4 was on an ocean-crossing flight. Four and a half hours into the flight, the aircrew hooked up for their fourth scheduled air refueling. But they were unable to take on any fuel. They headed for the divert base, two hours away. At the same time, they discovered the air conditioner was stuck on full cold. Because of their fuel situation, they couldn't descend to lower altitudes and warmer temperatures. They had inertial problems, so they couldn't use the autopilot.

The pilot and the WSO took turns flying the airplane. The crewmember who wasn't flying would try to warm himself. As they flew, the WSO noticed that the left leg on his G-suit seemed tighter than normal; he opened the zipper to relieve pressure. His boots were also snug because of the additional bulk from the anti-exposure boots underneath.

When they landed, both crewmembers were hospitalized for exposure to the cold. The pilot soon recovered and was released, but the WSO stayed in an extra three days for frostbite on his left foot. In his case the difference seemed to be in the fit of his G-suit and boots for wear over the antiexposure suit. The restriction in blood flow increased the susceptibility to frostbite.

This incident was almost duplicated about a week later. Another F-4 on the same route reached about the same point when they began feeling uncomfortably cold. The pilot tried automatic hot on the air conditioner. It was still cold, so he tried manual full hot. When he still didn't get hot air, he cycled the manual control from full hot to cold and back to full hot. Bad move. The mix valve stuck on full cold. (The Dash One advises to move the control only in the direction of desired temperature change.) They diverted and landed successfully, but both crewmembers had frostbitten toes.

Each of these incidents ended up well, and the crews recovered, but the lesson is clear. A full cold system is dangerous too, and it calls for an immediate abort. These crews were dressed warmly, yet they still suffered the effects of cold. We often aren't dressed as warmly. How long would we last under these conditions before we were unable to handle our airplanes?

TAC TIPS

EASY DOES IT

A pilot overseas was taxiing a heavyweight F-15 back to the tab vee after hot pit refueling. Only the right engine was running because the left had been shut down for refueling. The parking slot for the tab vee was slightly downsloped. To get into the parking area, the pilot attempted a very tight left turn. He used differential braking and added power to the engine to help the nosewheel steering in getting around the corner. The pilot suddenly lost nosewheel steering, so he stopped and shut the engines off.

The pilot had lost nosewheel steering because the wheel had pivoted more than 60 degrees. It had pivoted all the way to 90 degrees. The sideloads that were exerted on the strut had exceeded design limits and bent the strut. The damage could not be repaired locally.

Calculations afterward showed that in this particular set of circumstances—a hard left turn in a heavyweight aircraft on a downsloping pad with increased power on the right engine—sideloads approached design limits at a taxi speed of only 5 knots. The pilot estimated his speed was between 5 and 10 knots.

Many parking slots like this one require an extremely tight turn to get into. We often aren't aware of the sideloads a turn like that can impose. The only way to make that kind of turn is v-e-r-y s-l-o-w-l-y.

SIMULATED BECOMES REAL

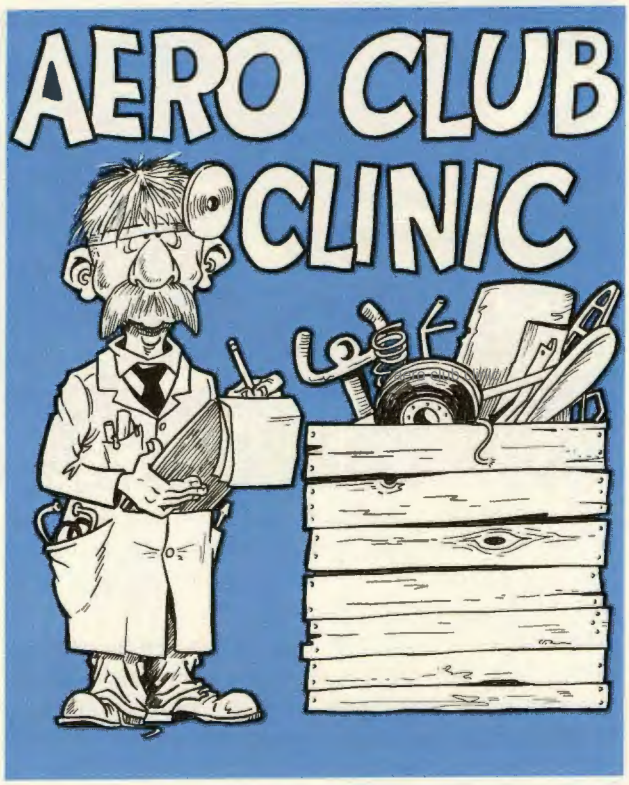
The T-33 pilot had planned to fly a *simulated* flameout (SFO) approach. As it turned out, it's a good thing he was set up for a flameout landing because when he pushed up the throttle to go around from the SFO, the engine flamed out. The pilot dropped full flaps and landed.

A check of the fuselage tank afterwards showed it was empty. The tank indicated empty on the gage also, although the counter showed 276 gallons remaining. The low-level warning light for the fuselage tank was in the dim position. The main wing and leading-edge boost pumps were off, and the airplane had about 280 gallons of fuel on board in those tanks.

The pilot had left his working area with 400 gallons of fuel. When he began to let down, he did his descent checks without referring to the checklist. That's why he failed to turn on the boost pumps for the main wing and leading edge. The pilot flew two low approaches; each time he checked the fuel quantity by looking at the counter but not the fuselage tank gage. The counter does not reliably indicate fuel available. Only the fuselage tank gage shows what's really available to the engine.

Somehow, the low-level light was dimmed, although the pilot was sure it was in the bright position before he took off. The dimming of the light, however it happened, took away his last chance of noticing his fuel management problem.

It's a good thing he flew a well-executed SFO. Good hands can do a lot. But a good head for aircraft systems and good habits of using the checklist could have saved a lot of unnecessary adrenalin and wear and tear on the nervous system. There'll come a time when handwork without headwork won't be enough.



TEACHING BY EXAMPLE

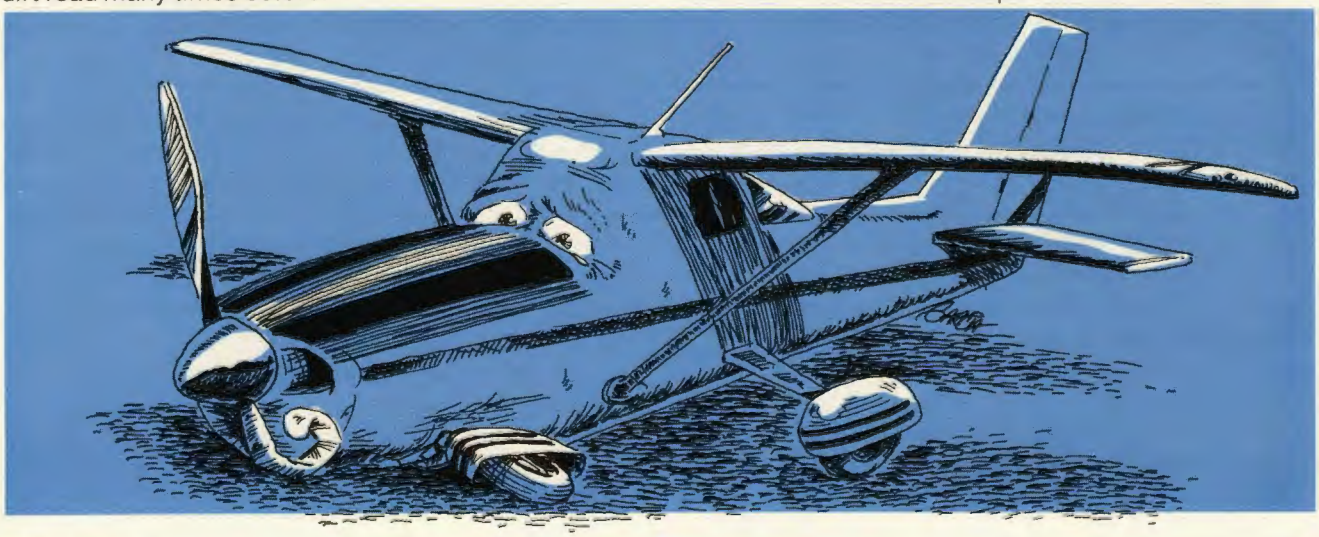
A flight instructor and a student pilot were practicing basic flight maneuvers in a Cessna 152. The flight instructor flew to a hardpacked dirt road to demonstrate an off-field landing. The instructor knew that off-field landings were prohibited by Aero Club policy and by AFR 215-12, but he had landed on this dirt road many times before.

The instructor made a soft-field landing to the south and then turned around at the end of the road. After turning around, he began a soft-field takeoff to the north with a 10-knot tailwind. After rolling about a quarter of the length of the road, the instructor switched to a short-field takeoff technique because he could see he wasn't going to get airborne as soon as he'd expected. They broke ground just before the end of the road; then they heard a loud bang.

The instructor continued the climbout, and they returned to their home base. The instructor used a soft-field technique to land on the runway there. When the airplane's nose settled, they felt a pull to the left. The instructor used full right rudder to keep control, and he informed the tower that he had a problem. When he started to turn right to clear the runway, the nose gear collapsed. The plane tipped forward onto the prop. The instructor shut down immediately, but too late to prevent sudden stoppage of the engine.

When they had taken off from the dirt road, the nose gear had struck a graded bank of dirt at the end of the road. That was the loud bang they had heard. The damaged nose gear gave out under the stress imposed by the right turn.

There are two clear lessons here. One is that they should have aborted their downwind takeoff when it didn't look right. At the point where the instructor changed to short-field techniques and continued, he still had three-fourths of the road length to stop in. The second and more important lesson is that instructors are not above the rules. They are expected to set an example of self-discipline for their students. Instead, this instructor demonstrated the foolhardiness of disobeying directives. We hope the student learned from the bad example.



Aero Club Clinic

THE BEST LAID PLANS...

The student pilot had a good reputation among the Aero Club instructors. He was known to be conscientious about his mission planning and paperwork, and he took pride in it. But he almost relied too much on his plan.

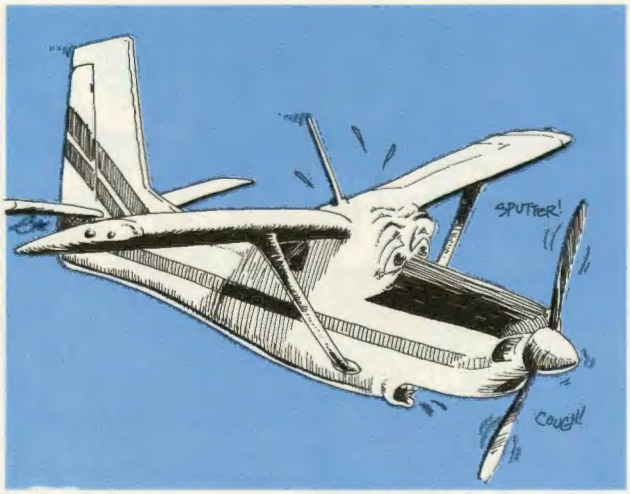
The pilot had planned his long solo crosscountry flight as required by FAR Part 61 for private pilot licensing. His flight plan and procedures were thoroughly reviewed by his flight instructor before he took off. The plan looked good. It included a refueling at his first en route stop to comply with normal Aero Club procedures.

When he got to his airplane for preflight, the pilot found that the fuel tanks weren't full. It took two people to operate the club's manual pump, one at the pump and one at the nozzle. The pilot who'd flown the airplane last had been alone, so he didn't top off the tanks. The student pilot was also alone. Since he planned to get gas at the first stop, he didn't worry about the fuel because he knew he had plenty for the first couple of legs of the flight. He took off.

At the first stop he couldn't get fuel. Although the flight facilities directory had indicated fuel was available, it was not. The student had enough fuel to make it to his next destination, so he continued and made it there with no problems. When he refueled, he put in only 10 gallons. He calculated that amount would give him two hours of flying time, and he planned on making it back home in an hour and a half.

On his way home, the pilot had planned a stop and go at another airport. The winds forecast for that leg were crosswinds; but, as often happens, the winds really turned out to be headwinds of 20 knots. The temperature was also a bit warmer than planned. When he got to the airport, the *stop* part of his stop-and-go went as planned, but the *go* part was delayed by other traffic. He had to taxi all the way back for takeoff.

When he took off, he just had a short hop to his home base. But when he got there, he was held on downwind for higher priority military operations. He noticed that the fuel gages were nearing empty, but he was confident in his flight planning. He was sure he had allowed for adequate fuel reserves. Finally he was cleared to land. He turned base and final. As he began his landing flare, the engine quit. He landed and coasted to a stop; then the ground crew came out and towed him in.



Sure enough, the engine had failed from fuel starvation. His flight plan had been fine, except that he hadn't allowed for those unplanned changes that pop up. First, he should have gotten more gas then 10 gallons—just in case. Then he should have monitored what was really happening to his fuel and adjusted his planning. Even the best of plans needs to be constantly adjusted to agree with reality.

THEN THERE'S THE RIGHT WAY

Day in and day out, our Aero Club pilots do things right. Often we only hear about the goofups because good piloting doesn't normally generate incident reports. However, here's a case of good airmanship we did hear about.

A pilot was on a recurrency check with an instructor in a Beechcraft A-24R. Everything went smoothly through takeoff, departure, area work, and three touch-and-go-landings. After the last touch and go, the pilot climbed straight ahead to 400 feet and began a right turn to crosswind. Suddenly the airplane lost all its power.

The pilot immediately reduced pitch and called out, "Glide—105 miles per hour," to the instructor. The instructor tried to restart the engine while the pilot flew the airplane and made a distress call to tower. They both looked for a field to put the airplane down in, and they spotted one behind them to the right. The pilot continued his right turn toward the field, and they lowered the landing gear. The instructor then gave up on starting the engine. He took control of the airplane after confirming the transfer of control with the pilot.

The instructor landed the airplane in the grassy field they had selected. The airplane rolled about 900 feet and then stopped. The two of them shut

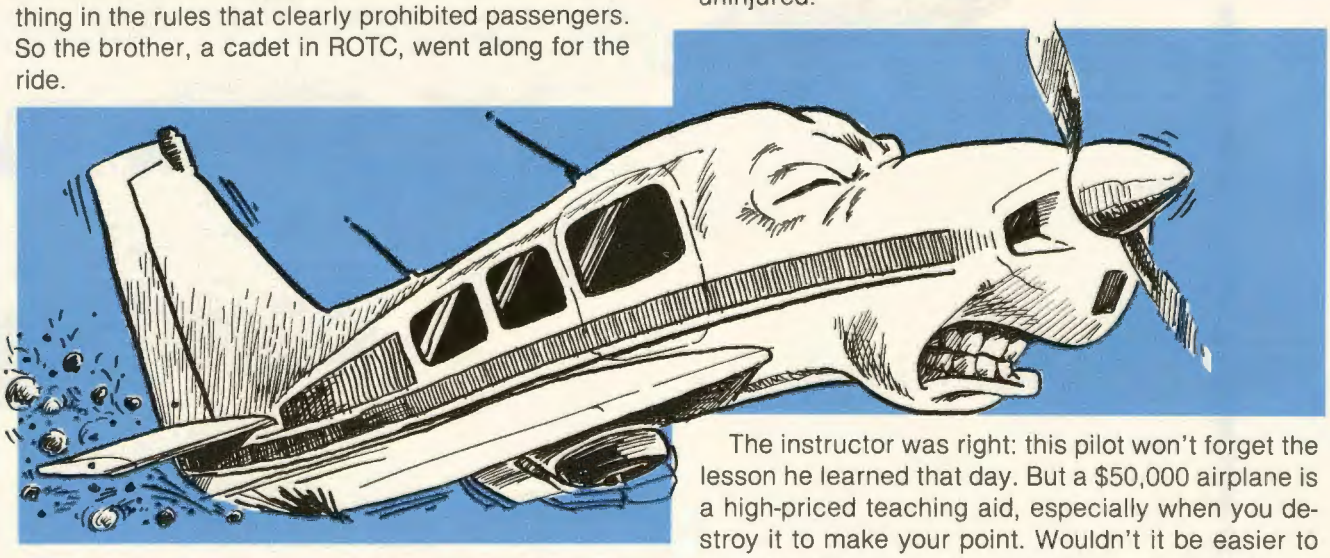
down all the aircraft systems and climbed out of the airplane. They were uninjured, and the airplane was undamaged.

The power loss had been caused by a failure of the impeller on the electric boost pump. Pieces of the impeller blade were found in a fuel filter in the fuel control. The clogged fuel filter could have caused the power loss, or the heat generated by the failing boost pump may have vaporized enough fuel to cause vapor lock.

Regardless of the cause of the problem, the reason it didn't result in damage or injury was the heads-up work by the pilot and instructor. They knew what to do, and they worked together. We expect that the pilot passed his recurrency check.

BROTHER, I'M IMPRESSED

An Aero Club pilot who was working on getting a commercial rating decided to take his brother along with him on a training flight in a Beechcraft. The instructor pilot didn't object; he didn't know of anything in the rules that clearly prohibited passengers. So the brother, a cadet in ROTC, went along for the ride.



The mission called for chandelles, lazy eights, pylon turns, stalls, and emergency landings. After takeoff they went through the maneuvers in the training area and then headed toward a civilian airport to practice emergency landings. Overhead the airport, the instructor pulled back the throttle and lowered the landing gear to simulate a loss of power. The pilot began a left turn and started to spiral down because they were more than 3,000 feet above the runway. The pilot controlled his airspeed a bit erratically, varying between 85 and 105 mph. The correct airspeed should have been 105 mph until the airplane rolled out on final approach.

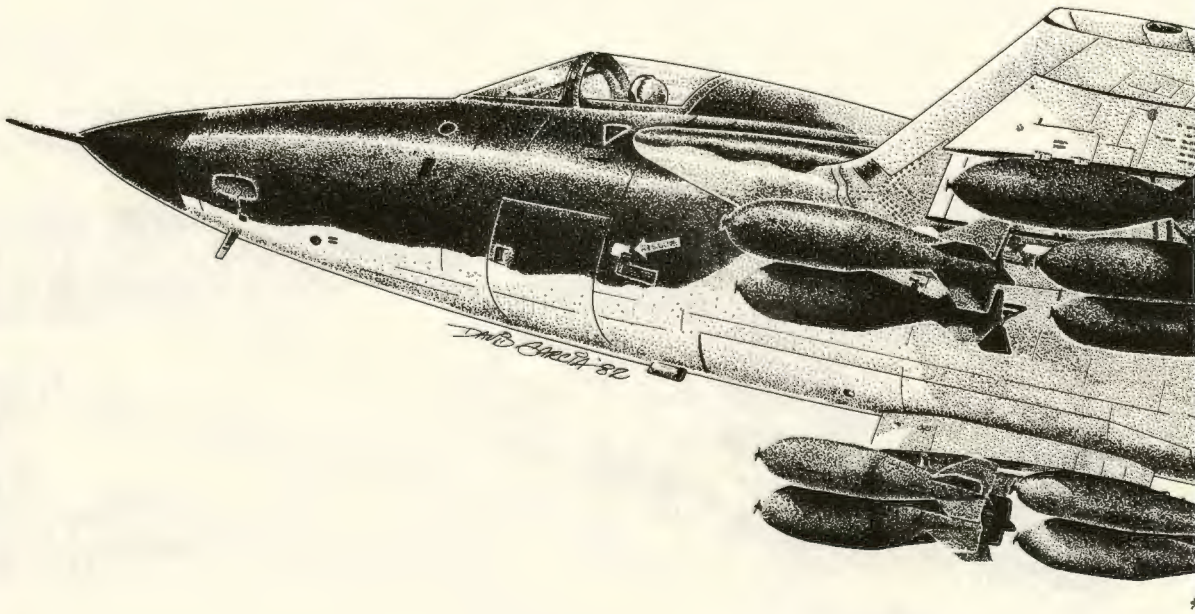
The pilot turned a left downwind at about 1,700 feet above the field. He lowered the flaps and continued on downwind until the runway looked like it was 45 degrees back over his shoulder; then he turned base. That's when the pilot noticed that he might not be able to make the runway. It was going to be close. He mentioned that out loud and then continued his turn towards the runway at 85 knots. The instructor realized the approach would probably be short, but he decided to let the pilot continue in order to learn a lesson from it.

As the turn progressed, the airplane's rate of descent increased noticeably. It became apparent to both pilots that the airplane wasn't going to make it to the runway. The instructor reached for the throttle, but the pilot had already pushed the power all the way up to try to go around. It was too late. The right wing dropped and hit the ground. The rest of the airplane pivoted around the right wingtip and impacted the ground, shearing off the main landing gear. The airplane slid to a stop, facing backwards. All three of them, pilot, instructor, and passenger, climbed out uninjured.

The instructor was right: this pilot won't forget the lesson he learned that day. But a $50,000 airplane is a high-priced teaching aid, especially when you destroy it to make your point. Wouldn't it be easier to spend some time on the ground talking about things like how stall airspeed changes with angle of bank and why you can't stretch a glide by slowing down? Or how about saying, "Let's go around, and I'll show you how to correct that airspeed problem"?

As it was, that poor ROTC student got one heck of an introduction to flying. Makes you wonder if he was planning on volunteering for pilot training when he graduated. It could be that this accident will convince him to volunteer. That way, the next time he flies with his brother, he can make his brother sit in the back while he shows him how it should have been done.

F-105D "THUD"




RIK
AF
62 086

Take a few minutes and think about your danger from fire. When was the last time you checked your garage for combustible materials? If you're at work right now, do you see any fire hazards? Do you know what to look for? Do you have an exit plan for a fire in your home? How much does your family know about fire safety? If you aren't sure, take this fire safety quiz. Score it yourself; maximum score is 80 (or 81 if you're a parachute jumper).

Questions

1. What would you do—

A. If your house began to fill up with thick, black smoke?

B. If you woke up at night, smelled smoke, and found that your closed bedroom door was hot when you touched it?

C. If your clothing caught on fire?

D. If you were trapped in a bedroom on the fifth floor with flames outside in the hall and smoke was coming in from the crack under the door (with no telephone and no fire escape)?

E. If a frying pan catches on fire?

F. If you discover a large fire in your basement?

G. If you are trying to light a gas oven or burner and the first match goes out too soon.

2. Do you have a family escape plan that includes ways of getting out of your house if the stairs or doors are blocked by fire, and does the plan include a meeting place outside the house?

3. Carbon monoxide is produced by almost all fires. What effect does it have on you before it makes you sleepy and kills you?

4. Assume you plan to hang by your hands from a window ledge and then drop to the earth below. Esti-

mate in feet the distance you could drop and still have a 50-50 chance of surviving without serious injury.

5. (a) What is the reason for having fuses in an electric circuit?

(b) What strength fuse should be used in an ordinary lighting circuit?

6. What number should you dial to report a fire by telephone, and how should you report it?

7. When is an electric cord dangerous (give at least 2 examples)?

8. How should you store oily or greasy rags?

9. Should you put out an electric fire with water?

Answers

1A. If your answer included— Score
- Getting beneath the smoke by crouching or crawling +3
- Getting out of the house +3
- Rousing the rest of the household +3
- Calling the fire department +3
- Opening windows without first closing doors (to keep the air from the fire) -3

1B. • If your answer included— Score
- Not opening the door (which would expose you to the fire and smoke) +3
- Calling for help by phone or from a window or finding another way out +3

1C. • If your answer included— Score
- Dropping and rolling (to extinguish the flames by smothering them) +3
- Running (which fans the flames) -3
- Going to get water (which takes too long) -3
- Wrapping up in a blanket, coat, or rug while standing up (and continuing to inhale smoke) +1

1D. • If your answer included— Score
- Stuffing something into the crack to reduce the smoke entering the room +3
- Yelling from the window for help, or hanging something out of the window to attract firefighters' attention +3
- Jumping -3
- Opening, not breaking, the window to vent the smoke and not leaving a door open (which would let air fan the fire) +2
- Finding better air by keeping low or breathing air from outside the window +2
- Making a rope out of bedsheets or curtains (if you said you would make the rope but not use it unless forced to, give yourself an additional 1 point). +1

1E. • If your answer is— Score
- To smother the fire with a lid or baking soda or to use a dry powder (all purpose) or CO_2 fire extinguisher (sand and dirt are acceptable answers if cooking outside) +3
- To smother the fire with salt or a wet towel +2
- To throw water on the fire or use a soda-acid fire extinguisher or a water-pump tank type of extinguisher (water may spread the fire over the kitchen) -3
- To carry the flaming frying pan, which could ignite your clothing, spill, or become too hot to hold -3
- To throw flour, which can explode, at the fire -3

1F. If your answer included— Score
- Shutting the basement door +3
- Calling the fire department +3
- Getting everyone, including yourself, out of the house +3
- Trying to fight a basement fire yourself -2
- Trying to fight the fire yourself before notifying the fire department -3

1G. If your answer included— Score
- Turning off the gas to prevent explosive quantities of gas from accumulating beore lighting a second match +3

FIRE QUIZ

- Making sure the first match was completely out by breaking it or touching the tip before discarding it +1

2. If you have— Score
   - A way out of your house when the stairs and doors are blocked by smoke +2
   - A planned place to meet outside the house that the whole family knows about +2
3. If your answer reported— Score
   - That carbon monoxide has no effect or that it makes you cough, your eyes water, or smells badly. (It has no color, taste, or smell and gives you no warning of its presence.) −2
   - That carbon monoxide distorts your judgment. (Victims of carbon monoxide poisoning may make irrational attempts to escape or may waste vital minutes saving items of little or no value. People who have been in a burning building for some minutes should be watched to be sure they do not go back into the fire.) +2
   - That carbon monoxide disturbs your coordination and makes simple escape efforts such as unlocking a window difficult or impossible +2
4. If your answer was— Score
   - Less than 20 feet +3
   - 20 to 25 feet +1
   - 26 to 35 feet 0
   - 36 to 50 feet −2
   - More than 50 feet −3

Add 1 point if you have had training as a parachute jumper. Subtract 1 point if you are over 50 years old unless your answer was under 15 feet.

5a. If your answer indicated that the purpose of a fuse is to prevent a fire by "blowing" before the wires can overheat when too much of a load is put on them, give yourself 3 points

5b. If your answer was— Score
   - A 15-amp fuse +3
   - A 30-amp fuse −3

6. If your answer included— Score
   - 911, and your area is on the 911 emergency system +2
   - The correct number for your fire department +2
   - The police number or operator or a similar number that would result in a delay in passing the message to the fire department +1
   - That you would stay on the line to give additional information requested if you could do so safely +1
   - The wrong number −3

7. If you listed any two of the following, give yourself 3 points:
   - When it is frayed
   - When the insulation has worn off
   - When it is wet
   - When it is under a rug, where repeated walking on it may break the insulation
   - When it is run over a nail, where the insulation may break at the bend
   - When it is run through a doorway, where closing the door may break the insulation
   - When it is pulled out of a wall socket by the wire instead of by the plug
   - When nails are driven into it

8. If you answered that they should not be kept or if you said they should be kept in a closed metal container, give yourself 3 points.

9. If you answered no, give yourself 3 points.

Now add up your score. You decide what's an acceptable score for you, but anything less than the maximum score could make a difference in preventing a fire or surviving one.

Your base has a fire protection technical services office with answers and expertise. Give them a call to find out more about fire safety inspections at work or in your home. Also call them before you buy such items as wood stoves, fire extinguishers, or smoke alarms. They can help you learn not to burn wherever you are.

—Adapted from the book *America Burning*, by the National Commission on Fire Prevention and Control

chock talk

...incidents and incidentals with a maintenance slant.

IT'S FIXED - BACKWARDS

After breaking ground on a formation takeoff, the pilot in the lead OA-37 felt the nose get heavier and heavier as he tried to trim out the nose-down forces. The instructor pilot in the right seat took control of the airplane and broke out of the formation. He climbed to a safe altitude and slowed the airplane.

At altitude, the aircrew checked out the flight controls and discovered that the elevator trim was working backwards. The more they trimmed back, the heavier the nose got. They trimmed the airplane for the appropriate approach airspeed and then pulled the trim circuit breaker. They returned home and landed without any other problems.

On the day before, during maintenance preflight the elevator trim was inoperative because of a broken wire on the trim actuator. A specialist repaired the broken wire. Together with the crew chief, he checked to make sure the trim was working. But neither one of them noticed that the direction of travel was reversed.

Their mistake alone wouldn't necessarily have caused the incident. If a supervisor had checked the repair work, he or she might have discovered the problem. But no supervisor checked the work. The airplane had never been placed on a red X as it should have been, so the supervisors weren't aware of the status change.

Not only was the tech data ignored when the so-called repairs were made, but TO-00-20-5 was also disregarded when the airplane wasn't placed on a red X. Both errors combined to allow the launch of a bad airplane.

HOW HOT IS HOT?

You'd think that by this time of year our hot weather problems would be over, right? Well, that depends on where you are, but a recent incident shows us that cockpit temperatures can get much hotter than the outside air.

An F-111 was parked on a ramp in 84-degree weather. An airman working on another plane on the ramp smelled smoke. He looked at the F-111 and saw red smoke coming from the left hatch. The airman immediately notified his supervisor and a couple of other airmen. The other airmen ran to the F-111 and found that the smoke was coming from the quick-rescue kit (QRK) located on the bulkhead aft and above the right seat. They removed the burning kit from the airplane and laid it down on the ramp. The kit was ruined; and seven lines from the escape module system, together with the right seat inertia reel and harness, were damaged by the combustion.

Two MK-13 signal flares in the QRK had caught on fire. The smoke ends of the flares were touching the metal upper surface of the kit container, and they had torched off. Heat, smoke, and other combustion products had then caused the damage.

CHOCK TALK

The tech order for storing the flares gives the preferred temperature as less than 100 degrees F. The maximum storage temperature is 160 degrees F. So how hot could the kit have gotten on an 84-degree day? The unit set up a test to find out. They put a temperature recorder in a kit installed in another F-111D on the same ramp.

Their tests showed on one 83-degree day the temperature in the box climbed to 130 degrees. On another day the temperature exceeded 180 degrees. That day the outside air temperature was only *75 degrees*.

How hot is hot? You may think it's comfortable out, but the sun shining through a closed or nearly closed canopy can cause a surprising buildup of heat. Think about any heat-sensitive items that are kept in cockpits—especially the heat-sensitive human beings that work in those cockpits. Heat exhaustion doesn't have to be limited to superhot days.

F-4 FLIGHT CONTROL PROBLEMS

After 25 minutes of flying, an F-4 began having uncommanded rudder movements. The aircrew ran through the checklist for flight control malfunctions. With the yaw aug disengaged, the rudder inputs seemed to stop. Ten minutes later, the airplane began experiencing an intermittent right rudder kick. The aircrew pulled the circuit breaker, but that didn't help. The aircrew then tried reengaging the yaw aug, and they noticed that the rudder kicks seemed less pronounced, so they left the yaw aug on. Rudder pedal movement appeared to be normal, but the rudder itself wasn't deflecting as much as usual for the pedal movement.

The crew declared an emergency and notified the supervisor of flying. Then they did a controllability check and flew a straight-in approach to the landing runway, planning to hook the approach-end cable. The airplane touched down 600 feet in front of the cable and hooked it. But immediately after engaging the arresting gear, the airplane started to drift right. The pilot didn't want to use the nosewheel steering because of the rudder problems, so he stepped on the left brake. The antiskid was off because they'd pulled the circuit breaker; the left tire blew after 600 feet of braking. The arresting gear brought the airplane to a halt 25 feet right of centerline. The aircrew shut down and climbed out.

The right drift was caused by the arresting gear itself. The rewind brake pads on the right side of the BAK-12 were worn to the maximum limit and required a brake change. The worn pads had allowed more tension on the right side of the cable, causing the airplane to drift right. The gear had been through six engagements since the last monthly inspection.

The cause of the rudder problem that created the emergency in the first place was simply poor maintenance practices. The rudder control rod had become disconnected from the control arm on the rudder power control cylinder. A bolt, some washers, and a castellated nut were found laying inside panel 66L, but no cotter pin was around. The rudder actuator had been replaced three days earlier. A red-X entry was made in the aircraft forms indicating that the input rod to the rudder actuator was not safetied. The entry was cleared the next day by repair and reclamation workers. Apparently, the bolt was never safetied.

But that wasn't the only problem. The bolt was the wrong type in the first place. The tech order specifies that a self-retaining bolt be used. The tech data also requires that critical control systems will have blue color-coding on bell cranks and rod end locations that require self-retaining bolts. The control arm of the rudder actuator was painted blue, but the wrong bolt was still used.

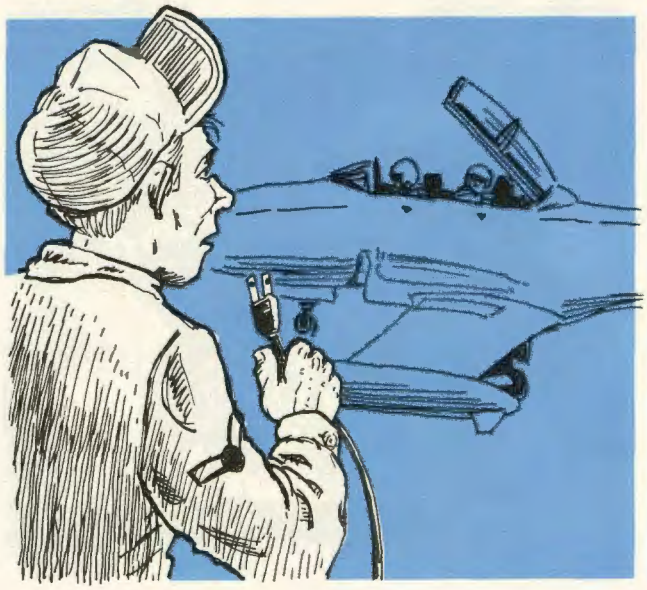
When the correct bolt and nut were installed, an operational check showed that the rotary damper was also defective. The combination of the bad damper and the disconnected rudder control caused the oscillations.

Flight controls are critical. That's why the tech order specifies the color-coding and the self retaining bolts. But tech order specifications only prevent mishaps when we follow the instructions. Otherwise, they're wasted ink and paper.

LEARN THE LANGUAGE

A T-33 was on an out-and-back to pick up a pilot. The flight out went fine, and after picking up the pilot, the T-33 was ready to return home. The launch was crewed by two mechanics, a 3-level airman and a 5-level civilian. The civilian was at the left front of the airplane, manning a fire bottle, while the airman was standing by the electrical power cart.

The start was normal until about 16 percent rpm, when the engine rumbled loudly and exhaust gas temperature rose toward 900 degrees. The pilot shut off starting fuel and tried to motor the starter to increase airflow. That's when he realized that the assistant crew chief had disconnected the electrical power. At the same time, the senior crew chief realized what the problem was and ran to the back of the airplane, where he reconnected the electrical power. After the power was reapplied, the pilot air motored the starter. Then he selected Stop Start, and both front and back seat pilots climbed out of the airplane. The exhaust gas temperature had peaked at 950 degrees.

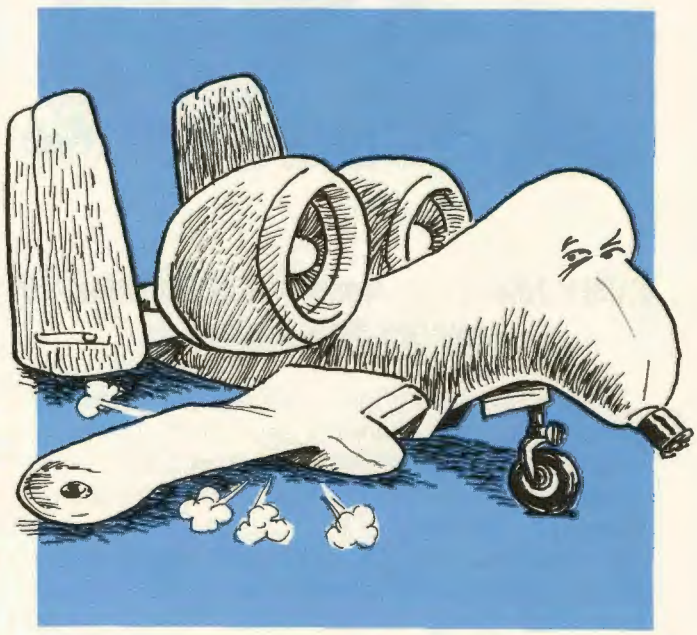


The assistant crew chief had been confused in his understanding of hand signals. The airman had seen the pilot in the rear cockpit reach for his shoulder harness and had thought that the pilot was signaling for the removal of electrical power. So he had disconnected power when it was still needed.

What we have here is a failure to communicate. The airman didn't know which cockpit to get his signals from, and he wasn't clear on the precise signal. In short, he was trying to do a job that required communication when he didn't know the language. And hand signals are a language of their own. If we don't know that language, we're not ready to crew an airplane.

NOT ALL RULES OF THUMB ARE TRUE

We used to believe that installing the safety pins in the A-10 gear meant that the gear had to be down and locked, otherwise the pins wouldn't go in. We used to believe that—we don't anymore.



Both main gear collapsed on an A-10 that was being towed with the gear pins in. The pins had been inserted into unlocked actuators. *They will go in.* Once inserted, the pins prevent the actuator from locking.

The only way to be certain that the A-10 gear is down and locked is to check in the cockpit for three green gear position lights on and the red light in the handle off. That requires electrical power to the essential DC bus, i.e., external battery switch on, cockpit battery switch on.

Another assumption destroyed.

ENJOY THAT FULL MOON - KEEP HALLOWEEN DANGERS TO A MINIMUM

The responsibility for a safe and enjoyable Halloween is mutually shared by adults and children. To ensure a safe experience, the National Safety Council provides these tips to parents and their children.

Ghoulish Get-Ups

Costumes should be lightweight, easily visible, flame resistant, and fit correctly. Some parents have found that making the costumes so they can be let out will provide for last-minute expansion if weather dictates that warm clothing should be worn under the costume.

Dresses, pants, and capes should be designed so they cannot become entangled in children's feet. While shirt sleeves and pant legs can be loose fitting, billowy or tattered sleeves and pant legs can catch on bushes, hedges, or fences.

Comfortable, well-fitted shoes prevent children's feet from tiring too early or at inopportune times such as at the farthest point from home. Clumsy, floppy clown feet, heavy boots, and high-heeled shoes slow children down and contribute to falls and spilled treats.

Whiskers, beards, wigs, and hats need to be fastened securely so they don't block vision or become a fire hazard.

As reflective tape and material becomes more accessible in stores, more parents are using the tape creatively on the costume's front, back, and sides. The tape not only adds to the costume's originality but also keeps the Halloweener visible.

Flashlights light the way across streets, over curbs, up steps, and around fences and bushes. Candles and torches only invite unnecessary hazards that do not contribute to a more enjoyable Halloween.

Because masks become warm and slip easily, obstructing vision, children can be given the opportunity to use their own creative flair by designing, drawing, and coloring a picture of the face they want for themselves. With sketch in hand, parents can apply a cold cream base to the child's face and then, using cosmetics, draw on the child's face the image the child has created.

Going in Groups

Parents or older teenagers can share in Halloween by accompanying smaller ones on their planned Halloween routes. Travel in groups rather than alone or on a bicycle where a costume could hinder pedaling or get caught in the spokes. Many parents ask their children to limit doorbell ringing to their own neighborhood or drive children to the homes of special friends.

Even within your own neighborhood, it's a good idea to stop only at houses with porch or yard lights on. Children should be reminded that Halloween is traditionally an outdoors event and that entering houses only slows them down in their rounds, so they should be reminded not to enter houses or apartments unless the accompanying adult approves.

A Few Final Goodies

A few basic safety rules always should be discussed with children, and it's best to conduct this brief review prior to Halloween night, rather than while children are waiting to join their friends. These basic rules include walking on sidewalks, not in the street, and crossing the street only at intersections or crosswalks rather than between parked cars.

Parents also need to remind their children to use their door-to-door activities to collect treats, and to wait until they return home before eating them. Many parents find that serving an early dinner or a nutritious after-school snack helps children avoid eating treats until they return from their rounds.

Parents should examine all treats collected, discard unwrapped or loosely wrapped items, wash fruit, and slice it into small pieces, checking for inedible additions. The National Safety Council recommends that treat-givers only offer children commercially manufactured and wrapped candy or gum.

Residents welcoming Halloweeners should check sidewalks, porches, steps, and yard for tools, ladders, and toys that could trip a child.

Halloween can be an enjoyable experience when proper safety precautions are adhered to and the responsibility is shared.

—Courtesy National Safety Council
Recreational Newsletter

THE POOR COMBINATION

Take a routine duty, add one bad tool, then combine your own strength. What are you making? This sergeant can tell you what you get.

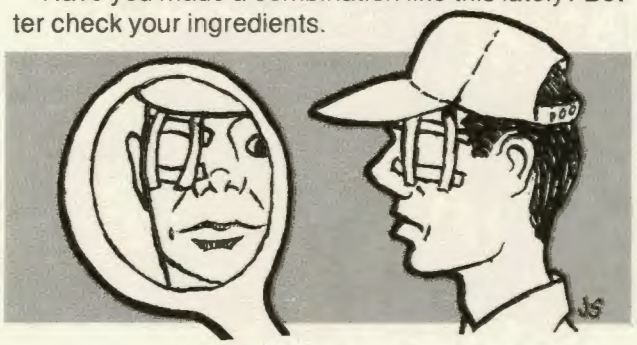
He was removing a cotter pin while working on an aircraft during phase inspection. He put the cotter key extractor in the pin and then pulled toward himself. The extractor slipped and the sergeant poked himself in the eye with the extractor. He was taken to the hospital where he underwent eye surgery. Doctors estimate he'll lose 80 percent of the sight in his left eye.

The routine duty was removing a cotter pin.

The bad tool was the cotter key extractor. It had previously been turned in because the point had broken off. The tool was reground to where only 1/16 inch would fit into a cotter pin. Then the tool was reissued.

The strength was the sergeant's. He was pulling the pin directly toward himself. When the extractor slipped, the sergeant was his own target.

Have you made a combination like this lately? Better check your ingredients.



THE X-FACTOR

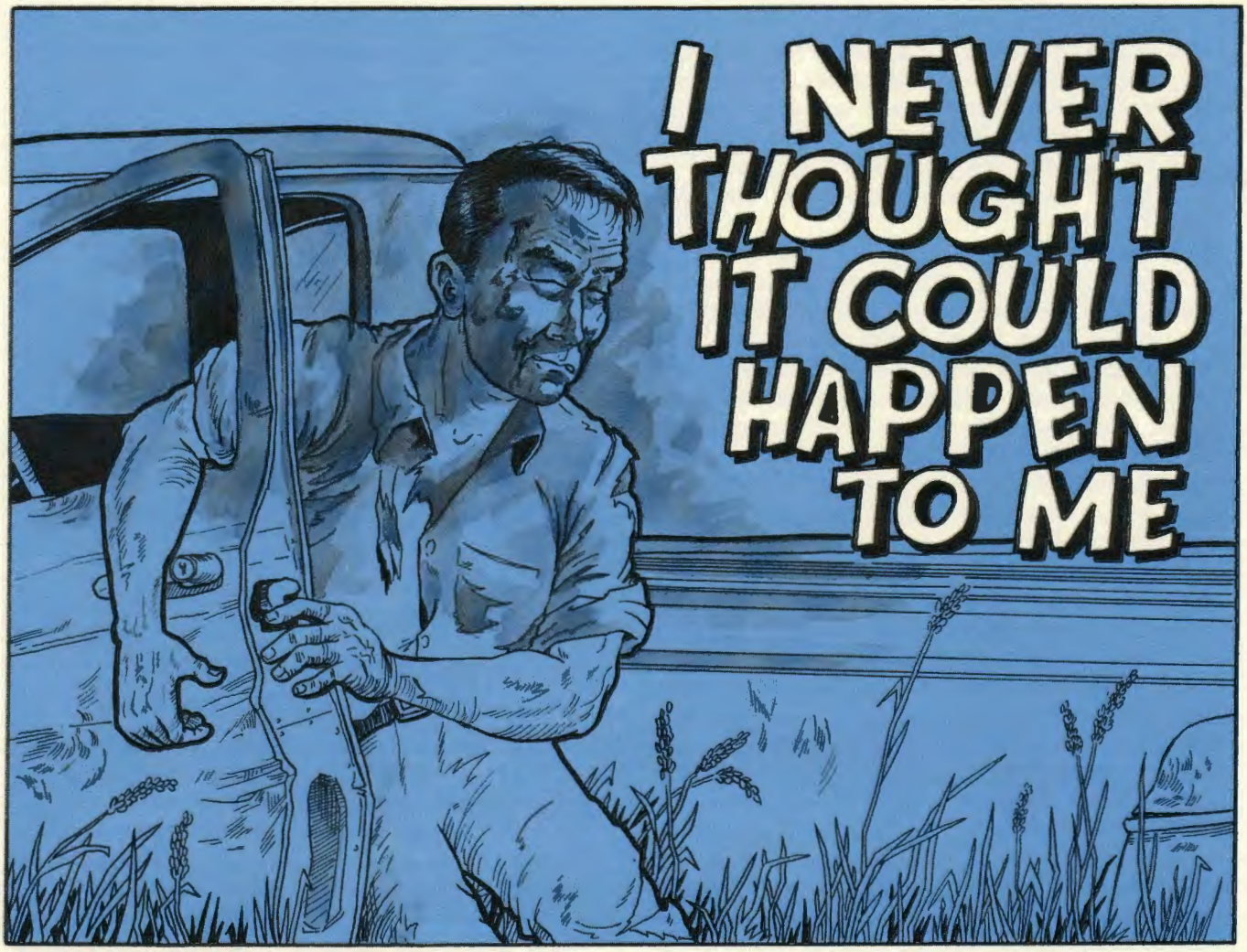
By MSgt Phillip G. Henriksen
HQ TAC Ground Safety

A helmet. A seat belt. A common denominator? Is there one in regards to traffic fatalities? As a keeper of grim statistics, a developer of trend analysis, but more so a concerned safety technician, I search among the mishap log books for that elusive answer: the *X-factor.*

In the August 1982 issue of *TAC Attack,* a page of black silhouettes appears, depicting TAC ground losses through June 1982. Though a majority of the ranks were represented, 20 were our young airmen, the new ones. Each silhouette represents a loved one, a friend, a co-worker. Was an elusive common denominator there? Why didn't someone solve the X-factor?

We can imagine that a mathematical genius using all known variables could derive a formula which everyone might use to determine their fate. However, to live in the past or future is unreal; we must live now, here in the present. And that is the question, How do we live? Certainly we all want to live and experience the future. What about those silhouettes? Their future stopped!

Though I'm not a mathematical genius, I'll continue to probe for the X-factor. And unitl the mishap log books give us the clue, we as supervisors, functional managers, and commanders should continue to provide the best and safest atmosphere for our people.



By SSgt Dee Veal
552 AWACW/PA

"When my truck came to a final stop, I was resting in a pasture. I was a little groggy, quite cut up from the shattered glass. I never expected it to happen to me, just never thought I would be in an accident!" said Lt Col Lowell Thomas, director of operations for the 963d Airborne Warning and Control Squadron.

It was a pretty Oklahoma spring day. One of the few dry ones we've had this season. Colonel Thomas was even able to take the day off to get a concrete slab poured on what he calls his "ranchette"—a small 2 1/2 acre "truck and honey farm" in Choctaw, Oklahoma. Before midday, Colonel Thomas would be in the Tinker AFB emergency room and two teenagers would both be dead.

"For some reason the local firm I hired to pour the slab has a policy of not taking checks. So I got in my '69 pick-up and went to the base to cash the check I had written at the credit union. I was on my way home, traveling east on S.E. 29th between Post and Westminister Roads, when I saw two people on a motorcycle on the opposite side of the road headed west.

"I noticed that they were both young. The girl was wearing a safety helmet; the driver, a young man, was not. They were dressed like normal young people, blue jeans and T-shirts. Not the clothes you should wear when riding a motorcycle.

"When they were about 20 yards away, the operator lost control of the motorcycle. It was just that quick," stated Colonel Thomas as he snapped his fingers. "I had just enough time to lift my foot off the accelerator. I was traveling at 50 miles an hour and he was going as fast as I was, if not faster. There was just nothing I could do!"

In the blink of an eye the 150 Kawasaki motor-

cycle had jammed the left front wheel of the truck back into the engine compartment. The driver hit the hood of the truck and bounced into the windshield. "I saw him coming toward the cockpit of the truck," said the E-3A pilot. "The impact of his body against the glass windscreen just shattered it. I was fastened in by my seatbelt; so I didn't hit him head-on. The momentum of the impact carried the teenager over the truck. We must have collided with a speed of both vehicles in excess of 110 miles or more. I don't know where the girl went," he sadly reflected.

The impact of the motorcycle against the truck's engine rendered the '69 pick-up unmaneuverable. "I became a passenger in my own truck," said the colonel. The force of the impact made the truck veer left, go across the opposite side of the road, become momentarily airborne as it went over a ditch, through a fence, and came to a stop in a pasture.

"I was shook up, there was no doubt. The truck was making all kinds of noises. The engine was hissing and growling. I tried to get out on the driver's side, but the impact had bent the frame and the door was jammed," Colonel Thomas said.

"That is when I realized I still had my seatbelt on. I was reaching for the right hand door and couldn't get to it and thought, My God I'm pinned! Then I looked down and saw my seatbelt was still fastened.

"When I finally got out of the truck, I fell flat on my face. My knees had hit the underside of the dashboard during the crash and were badly bruised. I was covered with blood, with glass still protruding from my face, arms, chest, and legs.

"As I staggered up the hill to the road, I could see the young driver lying on the asphalt,not moving. By the time I got to the top, people were stopped and helping me and looking after the two teenagers. The police had just left another accident and were there within five minutes. I didn't see the girl. I saw a crowd of people around where I think she may have landed—which was about 30 yards beyond where the boy was. I just couldn't bring myself to go see," he said.

"I spent about three hours in the emergency room as they picked glass out of my skin and stitched me up.

"I'm convinced that my seatbelt saved my life. My mid section was sore for days after the accident from where it had fought to keep me in the truck. Fortunately for me, the seatbelt won the battle."

The experience won't soon be forgotten by the Vietnam veteran and father of four.

"All I've wanted to do since the death of the two 16-year-olds is to put the accident out of my mind—to learn to accept it. But the wing safety office talked me into giving a talk about it at a flying safety meeting. It was one of the hardest things I have ever had to do.

"I tried to impress on everyone that an accident can happen to you. It can happen faster than you could ever imagine. Seatbelts save lives! Always buckle up no matter how short a trip you plan! I'm living proof that seatbelts save your life!

"A few days after the briefing, a young man in our squadron was driving his Corvette off-base. Just west of the Air Depot gate he was involved in an auto accident. The other driver was killed. He told me the next day that my talk about seatbelts made him wear his. That is why he was able to thank me. He was also living proof!

"Nothing will ever change the fact that those two teenagers died. But at least I know that one person was saved from my experience. As a father I can understand what the parents of those two young people are going through. I have also tragically learned what it means to survive a vehicle accident. No matter how tiresome slogans, commercials, or ads get about seatbelts, 'Make it click.' I will always remember that a seatbelt is why I'm still here!"

WEAPONS WORDS

CHECKLIST PROTECTS ARMING CREW

An F-16 taxied out to the arming area. After the "quick check" crew finished, the arming crew began arming stations 3 and 7, which were loaded with SUU-20 bomb dispensers. The arming crew turned the SUU-20 intervalometer on station 7 to Arm, following the checklist. The intervalometer immediately stepped through all six stations and fired the six impulse carts. The SUU-20 was loaded with MK-106 bombs, but the bombs didn't release because the bomb safety pins were still installed.

The SUU-20 spring clip had been improperly installed. When the SUU-20 cable was removed, three bent pins were found to be touching other pins and allowing 115 volts of alternating current to reach the impulse cartridges. One pin was melted off the intervalometer by the current.

So, the load crew's errors caused the carts to fire and damage the intervalometer. But because the arming crew followed the checklist, the bombs didn't release and no one was injured. If they had disregarded the checklist sequence and pulled the safety pins first, who knows what might have happened. Many times the checklist protects us from other's errors.

PLAYING THE WRONG TUNE

An F-15 was being readied for alert. An NCO from the loading standardization crew was sent to the airplane to help hot tune the AIM-7F missiles. He tried to assist the pilot by offering information on the weapon system, but stations 6 and 7 still failed to tune. The pilot gave up and left the alert area, and the airplane was electrically and mechanically safed.

However, the NCO didn't give up. He was an expert on the weapon systems and, in fact, had helped develop the hot tune procedures for pilots. He connected all the AIM-7F umbilicals and applied ground power to the aircraft. Then he climbed into the cockpit to try to hot tune the missiles. For a reference he used TO 1F-15C-2-94JG-31-1, which is the tech data for AIM-7F tuned missile simulator checkout.

All four missile stations tuned. He placed the Master Arm switch to Arm and got a ready indication for station 7 on the armament control panel. The NCO leaned back. As he did, his arm pressed the weapons release button. The guidance and control unit for the AIM-7F on station 7 fired. The missile battery activated; squibs fired the seeker head's hydraulic gas-pressured accumulator and the flight control hydraulic pressure unit.

With the best intentions, the NCO had used the worst procedures. He ran weapons checks on armament systems that were not electrically safed. He, a weapons technician, hot tuned an aircraft loaded with live missiles. He ran a missile simulator checklist on live missiles. And he placed the Master Arm to Arm with live ordnance loaded. Those actions are all violations of safety rules or tech orders.

He knew better. But he thought the mission of getting the systems ready for alert was more important than the right procedures. He didn't understand that the right way of doing things is the mission. The "mission" doesn't conflict with good procedures.

ASSUMING DOES IT AGAIN

A SUU-20 bomb dispenser was removed from storage and loaded on an F-16. The load crew ran a functional check of the dispenser after loading it. When they did, an impulse cartridge in breech 4 fired.

The ejector guns on the SUU-20 had been removed before the SUU-20 was downloaded and placed in storage. Since the cartridges *usually* came out with the ejector guns, the crew that downloaded the SUU-20 *assumed* the cartridges were gone. The crew that got the SUU-20 out of storage saw that the ejector guns had been removed, so they also *assumed* the cartridges were removed.

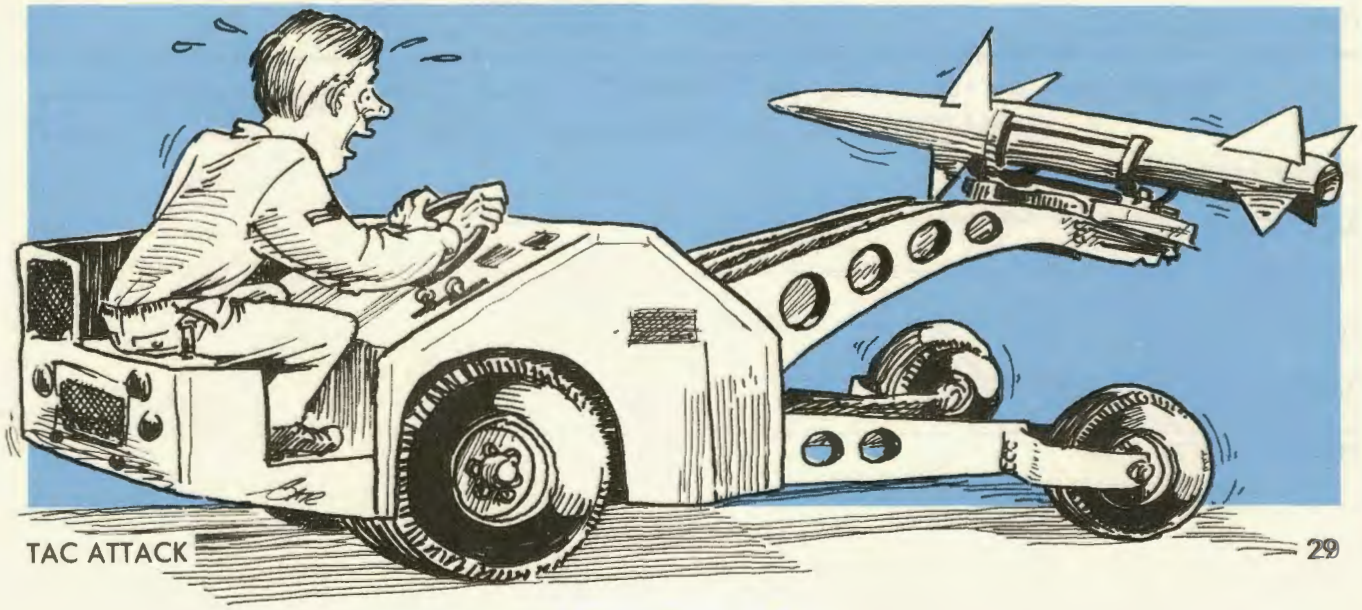
The error in those assumptions was shown when the circuit tester was inserted into the breech and the cart fired. Why do we *assume* when we could simply check and know for sure?

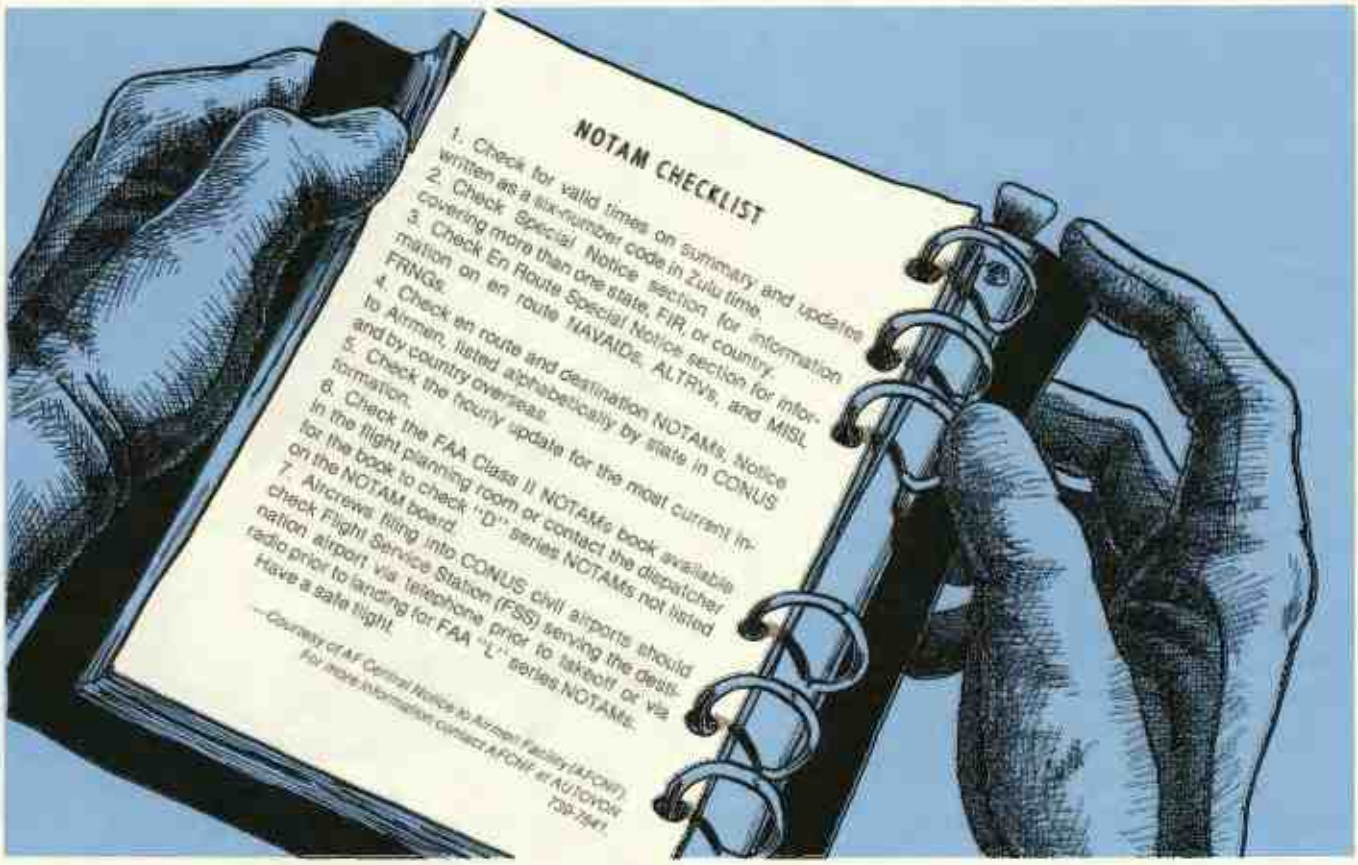
SPARROWS GET A RUSH JOB

A load crew went out to an F-15 to upload AIM-7F missiles. First they inspected the missiles, and then they began to load the aircraft. The MJ-1 jammer they were using seemed to be idling fast, so they tried to slow down the idle, but they couldn't.

The driver also noticed that the jammer kept slipping out of gear. But he drove it forward to the trailer anyway and picked up an AIM-7F. He lifted it about six inches and tried to back away from the trailer. The gear shifter slipped from reverse to neutral. He tried again; it slipped from reverse to neutral again. The driver put it in gear one more time. He thought he had it in reverse; but when he released the clutch, the jammer lurched forward. The missile on the jammer collided with a missile on the trailer, doing almost $10,000 worth of damage to each. The rocket motors and warheads had to be replaced.

This incident happened at 1610; the crew was scheduled for shift change at 1630. Do you suppose that's why they didn't stop and get the MJ-1's problems resolved? Maybe they just wanted to get the job over with and go home. When we're in a hurry, we have a tendency to work around problems with our equipment. Often, working around doesn't work, and our haste makes more waste. The answer is to do it right, no matter what time it is.





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	AUG	THRU AUG		AUG	THRU AUG		AUG	THRU AUG	
		1982	1981		1982	1981		1982	1981
CLASS A MISHAPS	1	22	27	0	5	3	1	1	1
AIRCREW FATALITIES	0	12	15	0	2	2	0	0	1
TOTAL EJECTIONS	0	20	27	0	5	0	2	2	1
SUCCESSFUL EJECTIONS	0	17	21	0	4	0	2	2	0

TAC's TOP 5 thru AUGUST '82

TAC FTR/RECCE	
class A mishap-free months	
47	1 TFW
34	49 TFW
33	355 TTW
24	347 TFW
21	354 TFW

TAC AIR DEFENSE	
class A mishap-free months	
115	57 FIS
68	5 FIS
65	48 FIS
24	318 FIS
15	87 FIS

TAC-GAINED FTR/RECCE	
class A mishap-free months	
124	188 TFG (ANG)
116	138 TFG (ANG)
115	917 TFG (AFR)
112	116 TFW (ANG)
102	434 TFW (APR)

TAC-GAINED AIR DEFENSE	
class A mishap-free months	
102	102 FIW
98	177 FIG
64	125 FIG
47	119 FIG/142 FIG
37	144 FIW

TAC/GAINED Other Units	
class A mishap-free months	
157	182 TASG (ANG)
150	193 ECS (ANG)
145	26 ADS
141	110 TASG (ANG)
137	USAF TAWC

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

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
TAC	1982	7.8	5.7	5.9	5.2	5.9	5.7	5.1	4.7				
	1981	4.0	3.0	3.2	5.6	6.0	5.9	6.3	6.2				
ANG	1982	0.0	2.7	3.2	3.4	3.6	2.9	3.1	2.7				
	1981	9.3	4.8	4.6	3.3	2.6	2.2	1.8	1.6				
AFR	1982	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6				
	1981	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8				

US GOVERNMENT PRINTING OFFICE: 1982—539—060/4


FLEAGLE
MY FOOT...
©STAN HARRISON 1982
EEEYOWWEE!
HARRISON
OW! OUCH! OW! OW!
?
HE WUZ READING 'BOUT HOW TO DO AEROBIC DANCING.
MUS' WORK.