

TAC ATTACK

MAY 1980



HARRISON

BEHIND THE POWER
CURVE ...Pg 4

MAY

READINESS IS OUR PROFESSION



TACTICAL AIR COMMAND
GENERAL W. L. CREECH
COMMANDER

LT GENERAL PHILIP C. GAST
VICE COMMANDER

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TACRP 127-1

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Angle of Attack

Hazard Awareness

Flight safety is but one facet of our total mishap prevention efforts. Aircraft accidents generate a great deal of publicity because of the high dollar loss, reduction of combat capability, and the dramatic sequence of events revealed by the subsequent investigation. With our continuing emphasis on aircraft losses, it is easy to overlook another area which takes a terrible toll each year—ground accidents.

Except for aircraft losses, ground accidents don't result in the high dollar cost that flight mishaps bring, and normally the events surrounding these accidents aren't as dramatic. But, many TAC people are incapacitated or killed in these mishaps each year. Already this year, we've experienced nine fatalities in TAC, and the most hazardous time of the year is yet to come. Historically, during May, June, and July we suffer our greatest losses. Not coincidentally, this is the greatest period of recreation and travel.

There is no simple solution for preventing ground accidents, but safety awareness must become an unconscious part of your thought

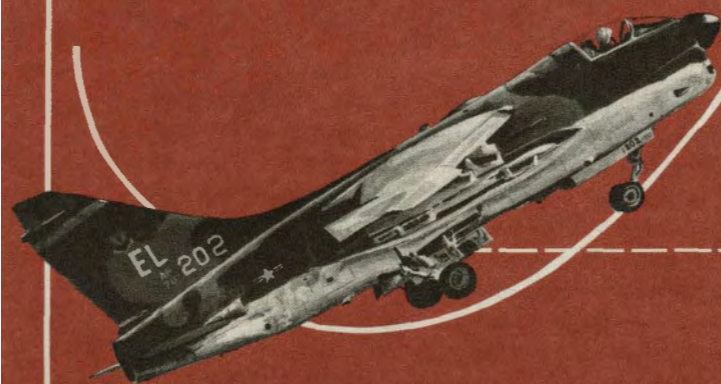
processes. Whether driving a car, flying a light aircraft, camping, or simply relaxing with your family on the beach—you must protect yourself and others with a "sixth sense" of hazard awareness. I urge you to take that one extra step which can mean the difference between a thoroughly enjoyable summer—and tragedy.

Let's not forget that behind each mishap this summer, or whenever, is someone in TAC—someone we need—someone we don't want to lose.

RICHARD K. ELY, Colonel, USAF
Chief of Safety

behind the power

Behind the Power



"Behind the power curve? Yeah, that's one of those things I learned about in pilot training. I've heard a few people mention it since then, but it's no big deal. After all, I have two of Uncle Sam's finest afterburning fire breathers strapped to my posterior—and they'd never let me down!"

I suppose you're right, up to a point. That point being where the power required to maintain level flight is more than the power available in your super fighter. You may have even reached that point more than once without realizing it. Being "behind the power curve" is the easier term we use for flying in the region of reversed command. The impressions and habits we develop flying in the region of normal command can bring about disastrous consequences in the region of reversed command. But, before we dive right into a full blown discussion of each of these regions, let's tackle some basic aerodynamics. Hang onto your slide rules folks—we may not pass this way again!

In steady state flight, what is the primary control of airspeed? The "go levers" you say? Go back to undergraduate flying training and flog yourself with the T-37 Dash 1! Angle of attack is the primary control of airspeed in steady flight. In the lift equation (which I won't repeat here) for a given airplane, each angle of attack corresponds to a specific airspeed. Each angle of attack produces a specific value of C_L (coefficient of lift) and each value of C_L requires a specific value of equivalent airspeed to provide lift equal to weight. [All you air-to-air jocks that are frothing at the mouth, remember we're talking steady state flight—not ACM, but cross country cruisin', GCA final, etc. So, stop worrying and pay attention!]

If an airplane is established in steady, level flight at a particular airspeed, any increase in angle of attack will result in some reduced airspeed common to the increased C_L . As a result of the change in airspeed, the airplane may climb or descend if there is no change in power setting, but the change in airspeed was provided

r curve

By Maj Pete Abler
Editor

by the change in angle of attack. So what then does power do for us?

If the same given airplane is in lift-equal-to-weight flight at some specific airspeed and altitude, there is a specific power required to maintain these conditions. If the power available from the engine(s) is adjusted to equal the power required, the rate of climb/descent will be zero. If the power setting is adjusted above the power required, a climb will result and vice versa. Power then is the primary control of altitude in steady flight.

Now I know, realistically speaking, we can't separate the two in our daily flying. We just don't fly an airplane solely by angle of attack or power setting. These theoretical principles are nevertheless accurate and provide us with the basis for "attitude" flying technique; i.e., "attitude plus power equals performance," and provide a background for good instrument flying techniques. Now that I've got all that out of the way, let's slide over and talk about the regions of normal and reversed command.

For this discussion, I'll be making a lot of references to the following figure:

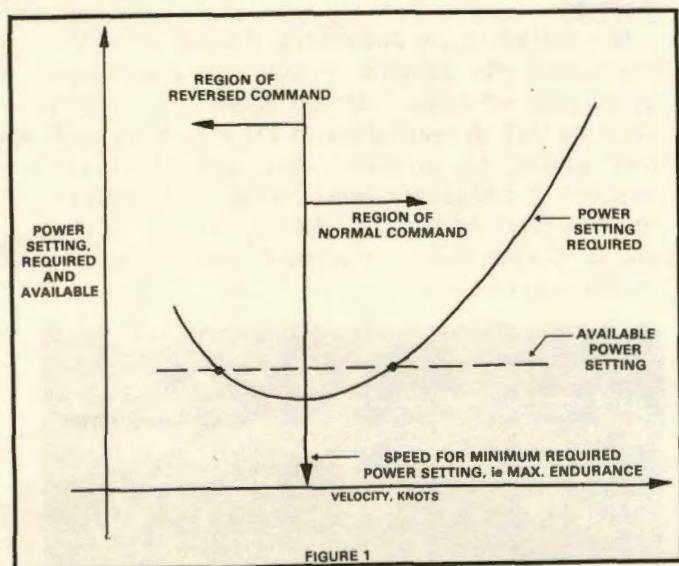


FIGURE 1

The variation of power or thrust required with velocity defines the power settings necessary to maintain steady level flight at various airspeeds. This general variation of required power versus velocity is illustrated by the graph. This curve illustrates the fact that at low speeds near the stall, the power setting required for steady level flight is quite high. An increase in speed reduces the required power setting until some minimum value is reached at the conditions for maximum endurance. Increased speed beyond maximum endurance will then increase the power setting required for steady level flight.

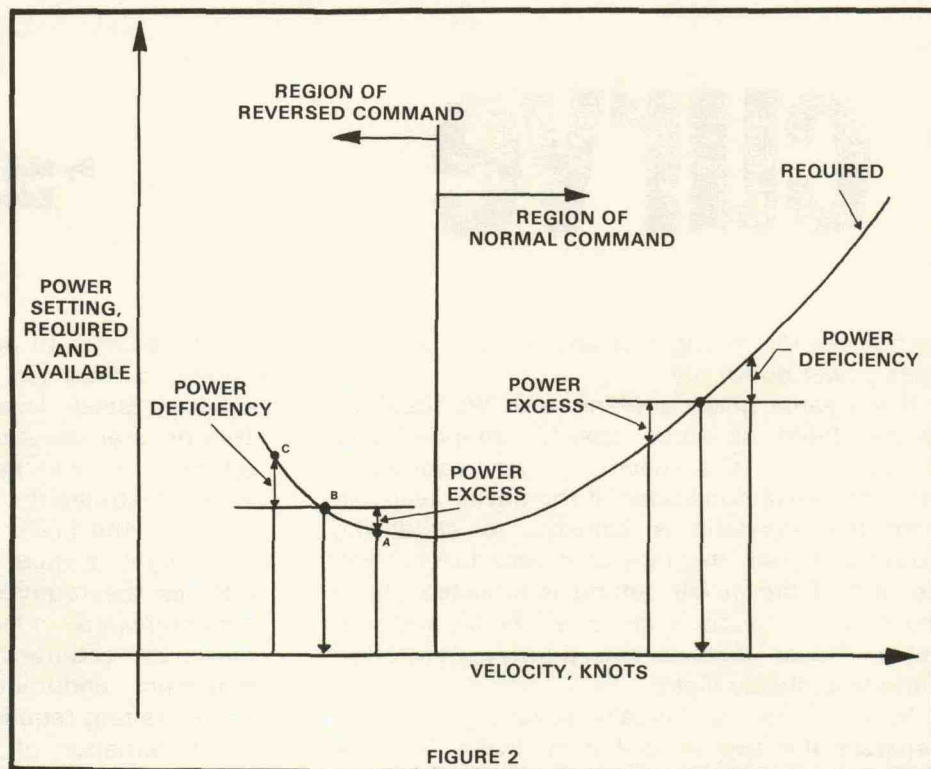
This variation of required power setting with speed allows a terminology to be assigned to specific regimes of velocity. Since the normal command of flight assumes a higher power setting will achieve a greater speed, the regime of flight speeds greater than the speed for minimum required power setting is termed the "region of normal command." The regime of flight speeds between the speed for minimum required power setting and the stall speed (or minimum control speed) is termed the "region of reverse command." In this regime of flight, a decrease in airspeed must be accompanied by an increased power setting to maintain steady flight.

Flight in the "reversed" region of command does not imply that a decreased power setting will bring about a higher airspeed or an increased power setting will produce a lower airspeed. Flight in this region only implies that a higher airspeed will **require** a lower power setting and a lower airspeed will **require** a higher setting to hold altitude.

I'll bet you're wishing the good Major would get to the point of all this verbage. For your sake and mine, I will!

How you handle flight in the region of reversed command may very well affect your personal longevity! You operate in this regime every time you prepare for landing. There you are on final approach, gear and flaps down,

BEHIND THE POWER CURVE



holding speed at a specified angle of attack. Let's say you're about to the GCA glidepath and you start down. Your particular situation may be at point A on the second graph.

What happens if you get low on the glidepath? You're just going to ease the nose up?...up? That may work if you have an excess of speed and thus a lower-than-normal angle of attack. But, what if you're "on speed" or at your computed final approach AOA/airspeed? If you increase angle of attack, you will lose airspeed—more power will be required. If you're slow or single engine (real, simulated, or you only had one to begin with), you could quickly reach point B on the graph. If you keep increasing AOA, you'll reach point C—a nonsustainable flight regime. Now, how do you recover from that one? At this point, you are really behind the power curve—you must reduce AOA. A number of mishaps in the past year have proven just this point.

Suppose you're on GCA final and you end up 10 knots slow and below the glidepath. You have two problems to solve—you need to get back to computed speed and to get back on the glidepath. Pushing the power up may ultimately get your airspeed back, but you'll need excess

power to get back to the glidepath. You must lower the nose (decrease AOA) to increase airspeed and add power to slow your descent. If you add power only—which your brain will tell you to do—your recovery may be delayed excessively. If you're heavyweight, high AOA (that also equates to extra induced drag), and single engine—you could be very close to disaster.

As I stated in the beginning, the way you fly—the habits you develop in your years of flying experience—may well let you down in situations such as this. A realization of the effects of AOA and power on airspeed and rate of climb/descent is necessary when flying in the region of reversed command. Remember, anytime you're flying below maximum endurance airspeed, you're there.

For a more thorough discussion of this subject, see *AERODYNAMICS FOR NAVAL AVIATORS*, H. H. Hurt, Jr., University of Southern California, U.S. Navy 1960 pp 353-357.

This article was inspired by a similar paper I received from Dr. Dallas Blevins, former USAF fighter pilot, now Asst Prof of Finance at the University of North Florida, Jacksonville, FL.

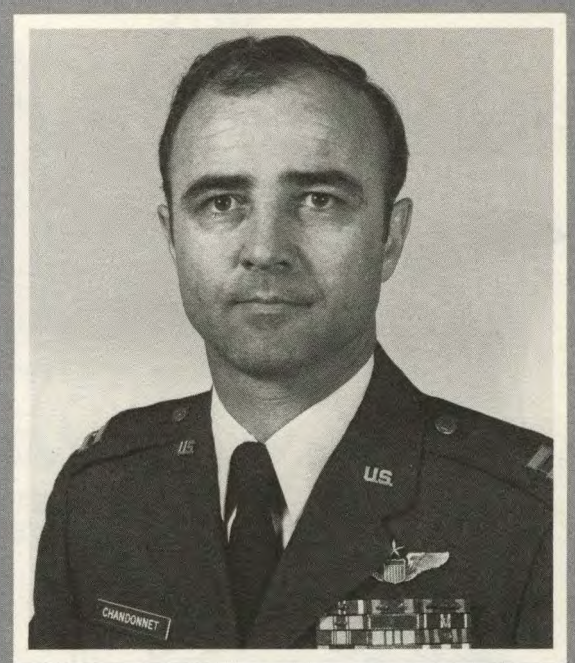


AIRCREW of DISTINCTION

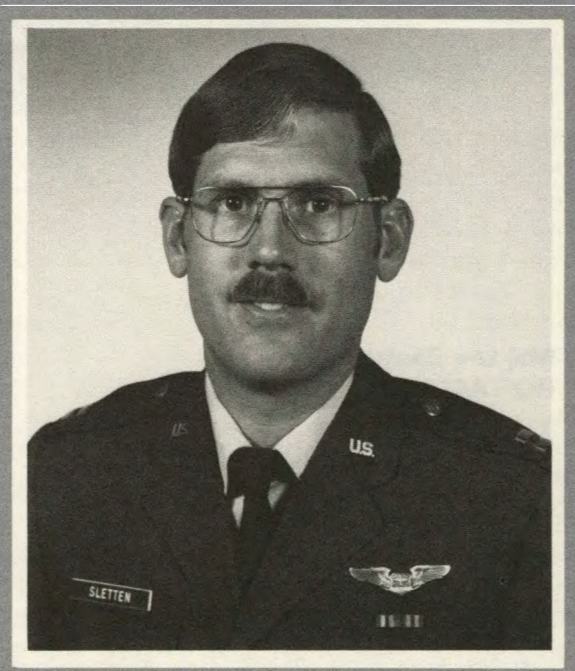
**430 TFS/474 TFW
Nellis AFB, NV**

On 1 February 1980, Capt Patrick W. Chandonnet and Capt John G. Sletten launched from Nellis AFB, Nevada, as an airborne spare for an F-4D deployment to Panama. Following A/B termination, the crew felt a vibration coming from the left side and suspected a loose panel or problem with their travel pod. Upon slowing to 250 knots, their right generator out light came on, and the generator would not reset. The crew declared an emergency with approach control. As they prepared to return to Nellis, the left utility hydraulic system failed, followed by multiple caution and warning lights. At this point, the crew suspected a bleed air duct failure, and as Capt Chandonnet maneuvered to avoid populated areas, Capt Sletten reviewed the multiple checklist items. Eight miles from the field, the right engine fire light began flashing and Capt Chandonnet retarded the right throttle to idle. Being so close to the field, and because neither smoke nor other instruments confirmed a fire, the crew elected to leave the right engine in idle rather than risk landing single engine with total utility failure. The crew jettisoned the centerline and outboard tanks and turned toward Nellis. While setting up for final approach, their right utility system failed, followed rapidly by a steady fire light on the right engine. They blew down the landing gear and flew a no-flap approach, using the left engine for power, with the right engine in idle. After engaging the approach end cable, their right engine auto accelerated and Nellis tower reported smoke coming from the engine. The crew shut down and ground egressed.

Postflight maintenance inspection revealed severe damage to the hydraulic system and high potential for an in-flight fire had the mission been any longer. The crew's decisive actions and superior airmanship prevented the possible loss of life and saved a valuable aircraft. Their actions qualify them as the Tactical Air Command Aircrew of Distinction.



Capt Patrick W. Chandonnet



Capt John G. Sletten



habits versus headwork

By Maj Lee Cantrell
HQ TAC/XPFI

Your average fighter jock is a walking IBM 4300 computer, with the ability to analyze a dilemma, arrive at a solution, and react in less time than it takes to transmit "break right." However, flying airplanes is not all done while sitting on the edge of the seat, tingling with anticipation of the next major challenge to be faced. The fact is a lot of flying involves a series of repetitive tasks. Our IBM 4300 establishes habit patterns to help accomplish these in our daily operations.

Habits are an aid to us all as we go about our everyday business. We aviators need to establish good habits early—such as referring to the checklist, visual lookout, and checking instruments. We will then be less likely to overlook or forget an important step. I remember a T-37 IP who, to strengthen his habit patterns, always tried to do everything exactly the same way, to the point he always put his chute on right arm first.

Habits, however, should be employed as an aid, not a crutch. Our basic 4300 has to keep thinking. People can drive home each day, day-dreaming most of the way. They generally make it. It is the less-than-successful attempts that keep the body shops in business.

Relying on the memory bank of experience acquired by frequent repetition works fairly well until the normal sequence of events is somehow interrupted or changed. Then it's time for the computer to go active and again start employing headwork.

Many of us may remember the A-7 that landed gear-up out west some years ago. The pilot was on his first FCF flight which called for a different gear lowering procedure. This change in routine caused the gear to be forgotten completely. And as luck would have it, the RSU was also temporarily unmanned. Habits 1; Headwork 0.

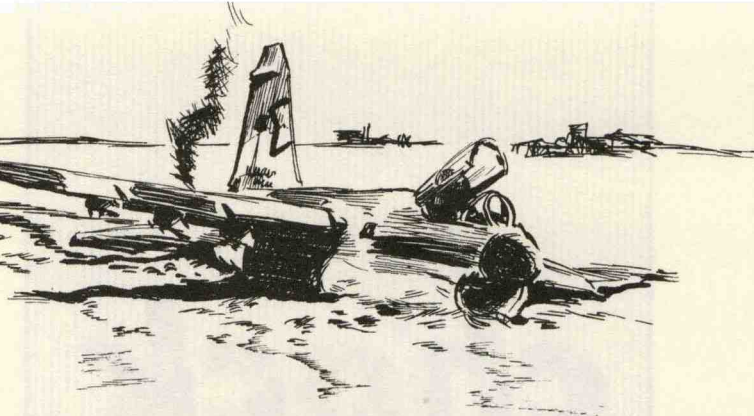
Another example of this same type of habit pattern disruption happened to a friend who was returning in his OV-10 with a single engine. While accomplishing all of the emergency procedure checklists properly, he forgot to complete the normal "before landing" checklist. So he touched down without the condition levers being positioned in "Takeoff and Landing." The remaining good engine could have been severely over-tempered if he had gone into full reverse thrust on rollout—about a \$100,000 mistake. Fortunately he didn't, as he realized his error at the last possible moment. Habits 2; Headwork 0.

I have just completed an F-4 tour with the Navy which had many unique features. One was that the takeoff and landing configurations varied considerably, depending upon what you were doing and where you were. At the field you might takeoff with either ½ or no flaps. At the ship, the takeoff flap setting was always full down.

The landing configuration at the field and on the ship was always full flaps unless you were doing an odd-ball type pattern; e.g., single engine approach. If you wanted to stay aboard the ship, however, you had to remember to drop the hook. That helped to reduce your landing rollout considerably.

The gear and flaps, once lowered, were never raised after the first touch and go landing. The only exception to this which comes to mind is flying multiple instrument approaches at the field. (At the ship, the gear and flaps would be left down for subsequent instrument approaches.)

TAC ATTACK



With the takeoff and landing configuration flip-flops, the Navy jocks had to stay heads-up, especially if they were operating from both the field and the ship. They could not rely strictly on mechanically actuated habit patterns. However, I observed very few configuration errors which indicated to me that people were cognizant to what they were doing.

Except—to inject a sea story—on that fateful day when one of the squadron junior grades landed on the boat with no flaps. That oversight added over twenty knots to his approach speed. Although he over-stressed the arresting gear, pulling it out just past the maximum limits, he trapped safely. If he had had a few knots more of overtake on the ship; e.g., a heavier airplane, less wind over the deck, slightly fast on approach speed, he probably would have snapped the cable and disappeared over the side. The situation was created when the pilot was waved off on his first pass and elected to suck up his gear and flaps—a break in his routine—in an attempt to save some fuel. Habits 3; Headwork 0.

Now, if you've kept your map and compass in hand, you may have been able to follow the frayed thread of commonality woven through the bar tales and sea stories. The message is this. Good habit patterns are useful and beneficial. They generally serve us well as we flail around in our aerospace machines. But they can scuttle our mission if we stay in the memory mode too long. It is up to each of us to ensure that we do not allow our habits to dominate our actions when we should be employing good headwork instead. We must maintain our situation awareness and become especially alert when the normal sequence of events is being disrupted. If we do these things, our IBM computer should be able to live and function—and fly—in concert with its memory bank. ➤

Major Cantrell is presently assigned to Plans, HQ TAC. He recently completed an exchange tour with the US Navy, flying F-4Js at NAS Oceana, Virginia.

chock talk

*...incidents and incidentals
with a maintenance slant.*

CHECK YOUR OIL?

MIL-L-7808 Synthetic Turbine Engine Oil is packaged in uncoated (unpainted) one quart metal cans with military markings in black on the side of the can. Over the years, Air Force flight line maintenance personnel have become accustomed to servicing aircraft engines with products packaged in these "silver" cans. Other military specification lubricating oils are typically packaged in olive drab cans.

It came to our attention a few days ago that a proprietary grade 10W40 automotive lubricating oil (NSN 9150-00-167-2197) has also been packaged in "silver" cans with black lettering. This oil was mistaken by flight line personnel in another command and inadvertently serviced into aircraft turbine engines creating a potentially hazardous situation. It is easy to understand how the two types of oil were mixed up even though they are clearly labeled.

Automotive engine lubricating oils are petroleum base products having additive packages which degrade to form insoluble sludges under the high temperature conditions found in turbine engines. Some sludges can plug filters and small orifices causing oil starvation.

Until procedures are fully implemented to segregate these two types of oil, an extra check



to make certain you have the right oil would be smart. As a matter of fact, an extra check never hurts, anytime.

THE \$7,500 CHOCK

When chocks are used as substitutes for 780 gear, some mishaps are bound to happen. Case in point:

An F-4 developed a hydraulic leak in the speed brake area. The crew chief utilized a chock to hold down the right speed brake while he removed panel 86R. The chock was not removed. When a hydraulic specialist later applied hydraulic pressure to perform a leak check, the speed brake closed as designed and a hole was punched through it.

Now what if the chief had taken the trouble to get a down lock?

OVERTORQUED AND OVEREXTENDED

An F-101 driver was recently placed behind the eight ball by a careless error. During his mission, the left engine oil pressure went to zero forcing him to shutdown the engine. His wingman confirmed oil was leaking from the engine. Fortunately, the aircraft was safely landed.

Maintenance investigation quickly revealed a disconnected oil scavenge line to the CSD housing assembly. The threads in the CSD were stripped, allowing the line to become disconnected—the oil scavenge line had been over-torqued during installation.

This was one of those cases where a little more muscle was also a bit too much.



EAT EM UP

The F-4 was being prepared for a return flight to its home station. When the crew arrived they discovered the airplane had only been partially serviced with fuel and was 500 gallons short. A fuel truck was called but was unable to pump any more fuel into the aircraft.

The crew strapped in and started both engines in an attempt to transfer fuel from the external tanks to the internal tanks by depressing the squat switch. The engines were run up to 80-85 percent rpm. A member of the transient alert team became concerned about jet blast damage to another aircraft. He came from under the aircraft in the vicinity of the right intake to call for a power reduction. As he came out from under the aircraft, his wool cap and ear protectors were sucked into the intake.

When an engine is being run at higher power settings, the danger area around the intake increases dramatically. Watch out for it.

TAC ATTACK

OOOOPS

A maintenance crew in another command was preparing to tow a helicopter outside a hangar. Two crewmen took two ground handling wheel assemblies off one helicopter to be placed on the helicopter which was to be towed. One airman noticed one of the wheels on the assembly was not rotating freely. He thought the cause of the binding was the retaining nut being too tight. He wanted to slightly loosen the nut and see if this would correct the binding.

The airman tried to loosen the nut but could not do so. The second crewman offered his assistance and they finally loosened the nut. The second crewman then suggested they remove the nut and check the wheel bearing. He removed the retaining nut and lifted the wheel part way off the spindle. The split wheel partially separated and the tube burst, causing pieces of rubber to fly into the airman's eye.

Both airmen were aware of the tech data available for the wheel, but neither one felt it was necessary. They also stated during tech school, they were never instructed to deflate tires before disassembling wheels. In this case, two of three bolts which held the wheel halves together failed allowing the tube to burst. But, the airman also would not have been injured if they had deflated the tire.

Whenever you are handling an inflated tire, you're holding a small bomb. The air in the tire is usually under pretty high pressure. It's not worth it to find out just how high by making it explode. Treat tires with the respect they deserve.



TORNADOES AND FLYING MACHINES

DON'T MIX AND NEITHER DOES ANYTHING ELSE

By Capt John K. Sanders
Det II, 24 WS
Reese AFB, TX

Have you ever seen an actual tornado or visited the aftermath of such a storm? It isn't funny. In fact, if you get hit by one of these hummers, you'll probably not consider it to be one of your better days! Winds potentially in excess of 400 knots and the rapid, extreme pressure changes which are associated with tornadoes can scatter people, equipment, airplanes, and even railroad cars across the countryside. At the very least, tornadoes can really screw up your beautiful landscape and rearrange the shape of your homes, buildings, and so forth. Needless to say, any flying machine competing for the same airspace with such a concentration of Mother Nature's energy is going to face tough going.

Tornadoes are fairly small and relatively rare throughout most of the world. However, the central and eastern United States just happen to have the right combination of geography and climate necessary to produce a lot of severe thunderstorms—which spawn tornadoes. Throughout most of the CONUS, twisters are least likely to occur during December and

Tornadoes and flying machines don't mix.

January. The months of greatest frequency are April, May, and June. In very early spring, the center of maximum frequency is located in the central Gulf States. As spring progresses into summer, this center of maximum frequency tends to migrate northward and westward through the Plains States, reaching the Great Lakes area during June. An additional center of high tornado frequency occurs in the southeast Atlantic States during March. Oklahoma (after adjustment for differences in area) leads all contenders in the race for the title "state with the most tornadoes."

With these generalities in mind, you may be interested in the frequency of tornadoes at or

near your base. We say *at or near* your base for two reasons. First, tornadoes are rare enough that the same spot, such as an airfield, doesn't get hit very often. The statistics on direct hits at Able AFB would be small, even if Able AFB were in Oklahoma. Second, a tornado occurring anywhere within your approach and departure patterns would no doubt create havoc in local flying operations. Thus, the surrounding area should be considered. The following statistics for CONUS TAC, ATC, and other bases contain tornado reports within 25 miles of the airfield. Note these are tornado reports; in sparsely populated areas, the actual frequencies are probably greater than those shown.

**TORNADOES REPORTED WITHIN 25 MILES
(1955-1976)**

LOCATION	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	All months
Bergstrom AFB, TX	1	1	8	5	11	1	2	3	10	4	3	0	49
Buckley ANGB, CO	0	0	0	3	10	16	11	4	6	0	0	0	50
Cannon AFB, NM	0	0	2	2	22	15	6	1	0	1	0	0	49
Columbus AFB, MS	2	2	7	4	1	0	0	1	0	0	3	1	21
Davis-Monthan AFB, AZ	0	0	0	0	0	2	1	3	1	0	0	0	7
England AFB, LA	4	2	1	2	0	1	0	1	0	1	2	1	15
George AFB, CA	0	0	0	0	0	0	1	0	6	0	0	0	7
Hill AFB, UT	0	0	2	0	1	3	0	2	0	0	0	0	8
Holloman AFB, NM	0	0	0	0	0	2	1	0	0	1	0	0	4
*Homestead AFB, FL	0	3	2	6	11	38	15	15	18	14	3	2	127
*Hurlburt FLD, FL	6	4	5	5	8	11	10	13	6	3	8	9	88
*Keesler AFB, MS	6	8	4	9	19	18	17	17	7	6	5	2	118
*Langley AFB, VA	0	1	1	13	2	4	10	10	2	8	1	0	52
Laughlin AFB, TX	0	0	0	2	3	1	0	0	0	0	0	0	6
Luke AFB, AZ	0	1	1	0	0	2	6	2	2	1	0	0	15
*MacDill AFB, FL	7	8	11	11	24	45	46	50	22	6	9	5	244
Mather AFB, CA	0	0	0	0	0	0	0	0	0	1	0	0	1
Maxwell AFB, AL	2	1	4	3	0	1	2	0	0	0	1	0	14
Moody AFB, GA	3	4	3	4	1	4	2	1	0	0	0	3	25
Mt Home AFB, ID	0	0	0	0	0	0	0	0	0	0	0	0	0
*Myrtle Beach AFB, SC	0	0	3	2	3	4	7	6	6	0	1	1	33
Nellis AFB, NV	0	0	0	0	0	0	0	1	0	0	0	0	1
Randolph AFB, TX	1	0	0	5	16	1	4	2	9	3	1	1	43
Reese AFB, TX	0	0	2	9	27	24	7	5	3	3	0	1	81
Seymour-Johnson AFB, NC	0	0	6	2	3	3	1	2	1	1	0	0	19
Shaw AFB, SC	0	1	0	2	4	1	3	0	2	1	0	1	15
Sheppard AFB, TX	0	0	1	17	19	2	2	6	4	0	2	0	53
Tinker AFB, OK	1	4	2	16	34	21	6	8	3	1	2	0	98
Vance AFB, OK	0	0	3	14	9	15	5	1	1	2	2	0	52
Williams AFB, AZ	1	1	1	0	3	7	4	1	5	1	0	1	25

*Includes Waterspouts



TORNADOES

Tornadoes, of course, do not simply grow by themselves. They are spawned by severe thunderstorms. The proper conditions for severe thunderstorms and tornadoes are: unseasonably warm and humid air at the earth's surface, cold air at middle atmospheric levels and strong upper level "jet stream" winds. Complicated energy transformations may then produce the tornado vortex.

The dangers associated with severe thunderstorms are well known. Every year one or more hardy souls will feel it necessary to prove that thunderstorms contain severe turbulence, hail, rain, and lightning which can cause serious aircraft skin and airframe damage. After a few years of flying, aircrew members should be aware of the weather patterns in the U.S. during all seasons. Just because the cold weather and low ceilings associated with winter flying are gone, don't relax. Those cottony, fluffy cumulous clouds can grow into one of nature's wonderous and most destructive phenomenons. Tornadoes are just the finishing touch to the thunderstorm's bag of tricks. Don't get caught in one. ➤

INDIVIDUAL TORNADO SAFETY TIPS

- When a tornado threatens, your immediate action can save your life!
- **STAY AWAY FROM WINDOWS, DOORS, AND OUTSIDE WALLS! PROTECT YOUR HEAD!**
- In homes and small buildings, go to basement or to an interior part of the lowest level—closets, bathrooms, or interior halls. Get under something sturdy.
- In schools, nursing homes, hospitals, factories, and shopping centers, go to predesignated shelter areas. Interior hallways on the lowest floor are usually best.
- In high-rise buildings, go to interior small rooms or hallways.
- In mobile homes or vehicles, leave them and go to a substantial structure. If there is no shelter nearby, lie flat in the nearest ditch, ravine, or culvert with your hands shielding your head.

TORNADOES ARE ONLY ONE OF A THUNDERSTORM'S KILLERS

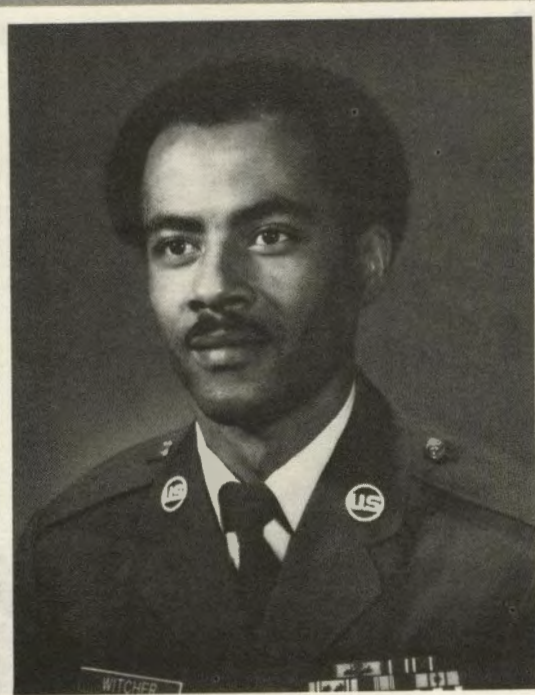
- **LIGHTNING IS A MAJOR KILLER.** Stay indoors and away from electrical appliances when storms are nearby. If you are caught outside, stay away from trees and other conductive objects.
- **THUNDERSTORM RAINS** cause flash floods. Be careful where you take shelter.
- **WINDS.** Very strong straight-line winds can cause great damage.
- **LARGE HAIL.** A rare killer but very damaging.



SAFETY AWARDS

individual safety award

Technical Sergeant Billy R. Witcher, 388th Tactical Fighter Wing, Hill Air Force Base, Utah, is the recipient of the Tactical Air Command Individual Safety Award for May 1980. Sergeant Witcher performed his duties as F-16 Technical Order Verification Team Manager for hydrazine/fuel systems in a superb manner. His experience and technical knowledge were instrumental in establishing safe maintenance practices for handling hydrazine. In addition, his initiative and development of new safety procedures in the fuel system shop have contributed significantly to the Tactical Air Command Mishap Prevention Program.



TSgt Billy R. Witcher

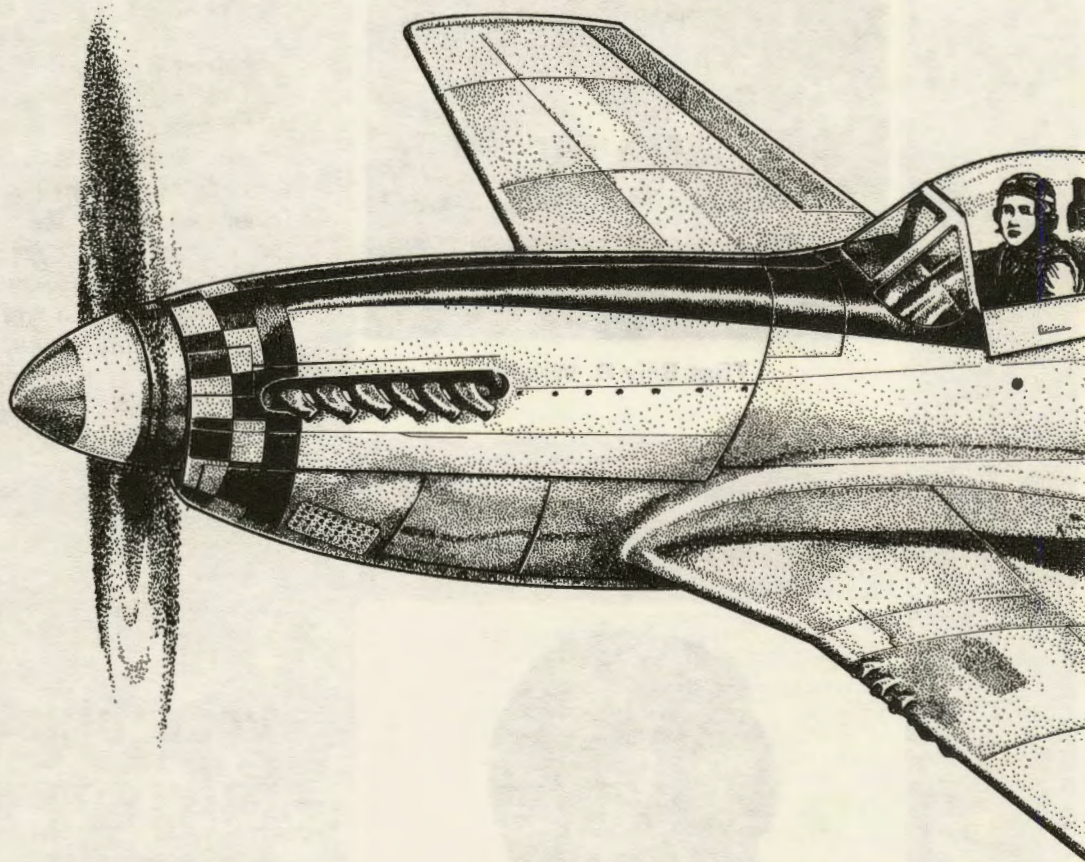
crew chief safety award

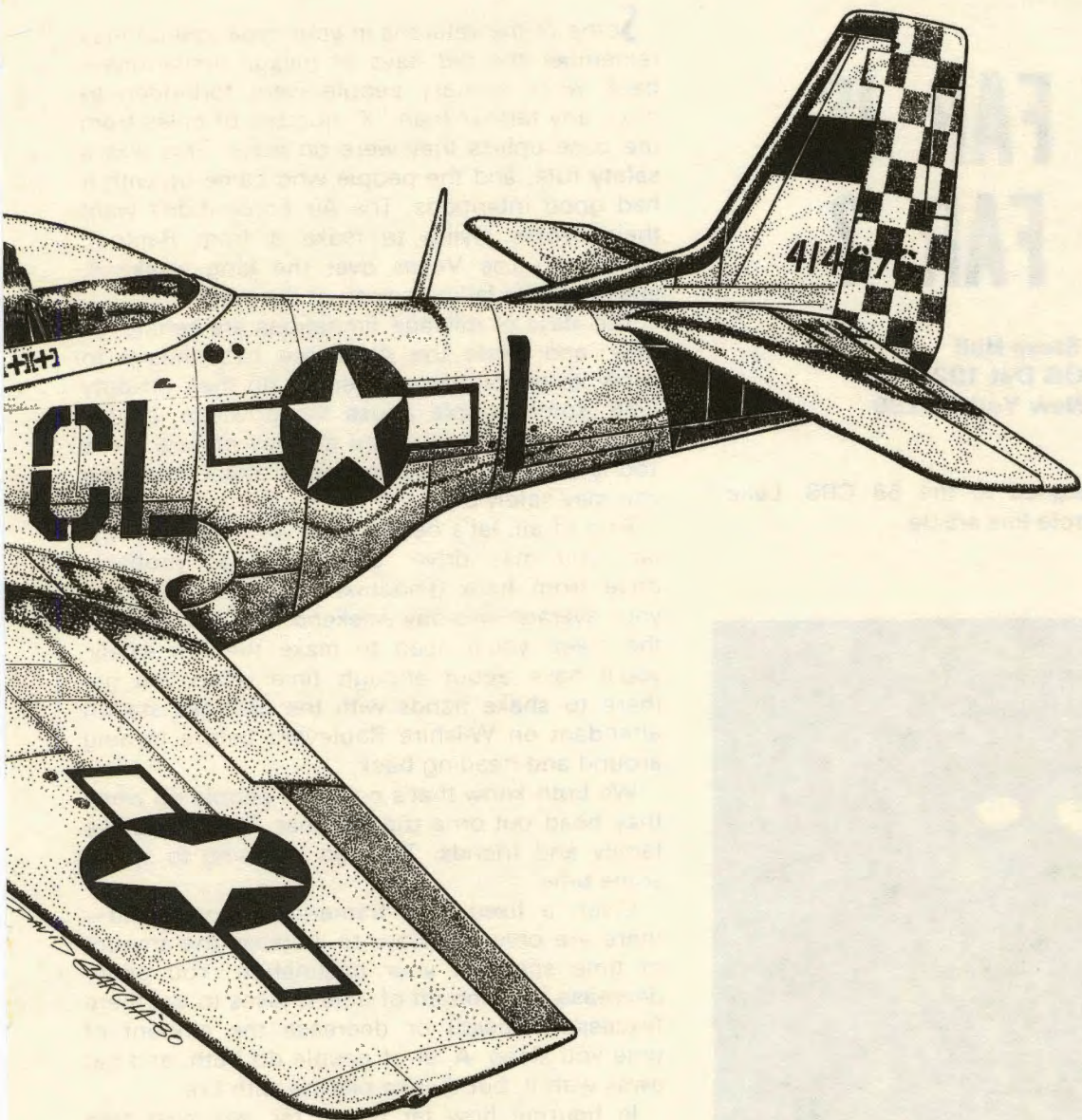
Staff Sergeant Milton Lawrence, 27th Tactical Fighter Wing, Cannon Air Force Base, New Mexico, is the recipient of the Tactical Air Command Crew Chief Safety Award for May 1980. Sergeant Lawrence has an outstanding record as a dedicated crew chief, demonstrating a high degree of safety awareness in all his duties. His dedication and technical knowledge were evidenced when he unhesitatingly removed the battery and liquid oxygen bottle from a smoldering aircraft, only minutes after an engine fire had been extinguished. His prompt action during this critical situation saved a valuable aircraft from further damage.



SSgt Milton Lawrence

P-51 Mustang





EXTENDED DRIVING

HOW FAR IS TOO FAR ?

By SSgt Steve Hull
TUSLOG Det 192
APO New York 09289

SSgt Hull was assigned to the 58 CRS, Luke AFB, AZ, when he wrote this article.

Some of the veterans in your organization may remember the old days of milage limitations—back when military people were forbidden to drive any farther than “X” number of miles from the base unless they were on leave. This was a safety rule, and the people who came up with it had good intentions. The Air Force didn’t want their people trying to make it from Rantoul, Illinois, to Las Vegas over the long weekend, subsequently falling asleep at the wheel.

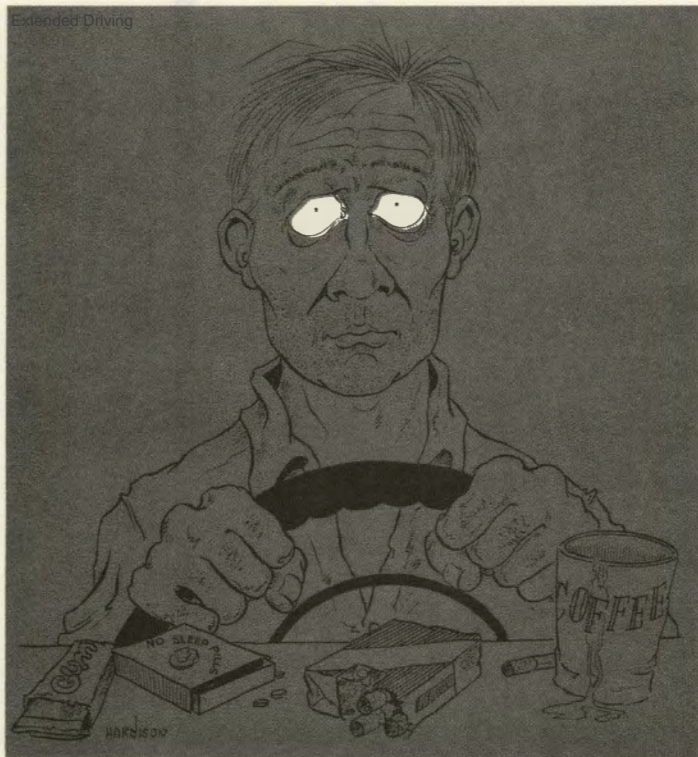
The days of mileage limitations are behind us now, and while the Air Force has chosen to allow its people more freedom on their off-duty time, some people abuse the privilege. In this article I hope to give you an idea of how far is too far, and what factors might affect how long you may safely drive.

First of all, let’s define what we mean by “how far” you may drive. Sure—you can probably drive from here (Phoenix) to Los Angeles on your average two-day weekend. But if you get all the sleep you’ll need to make the trip safely, you’ll have about enough time when you get there to shake hands with the first gas station attendant on Wilshire Boulevard before turning around and heading back.

We both know that’s not what people do when they head out on a trip like that. They go to see family and friends. They go planning to spend some time.

Given a fixed time frame—like a weekend—there are only two ways to increase the amount of time spent at your destination: You either decrease the amount of time it takes to get there (excessive speed) or decrease the amount of time you sleep. A lot of people do both, and get away with it, but they’re playing with fire.

In figuring how far is too far, we must take into consideration the nature of the trip. If the trip is for recreation or visiting, put aside a realistic amount of time for it. If the trip is strictly a business or legal matter, less “stay time” will be necessary. Now, let’s take a look at some of the factors you’ll want to consider before you ride off into the sunset...



S L E E P !! Doggone it, I know that's obvious, but we recently lost an airman because he dirt-biked around all day, worked on swing shift, and then tried to make it all the way to Riverside when he got off work. His body was found in a pile of rocks at the side of the road at 6:00 a.m.

What's the Air Force got to say about a good "crew rest" before making a cross-country trip in your car? Not too much. But it has a lot to say about the kind of R&R its pilots must get before slamming the canopy shut and taking off.

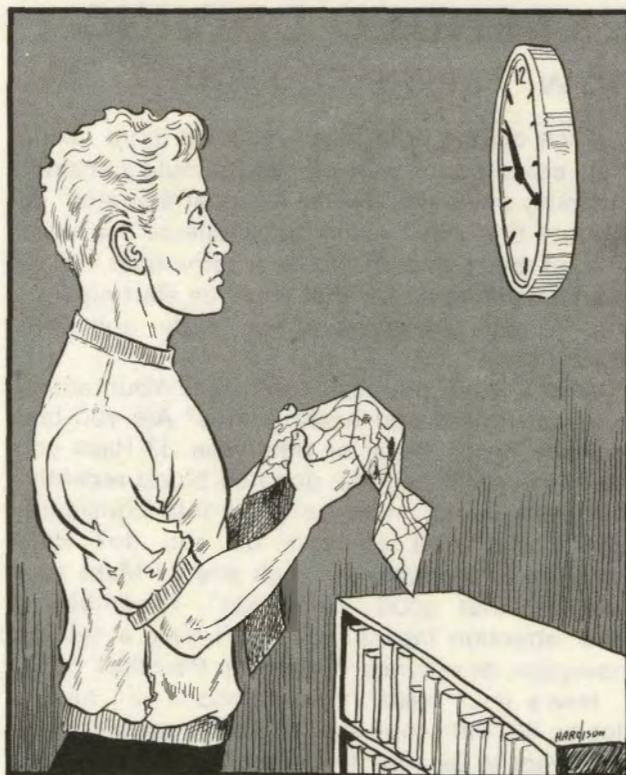
AFR 60-1, the regulation that covers flight management, doesn't allow for a lot of interpretation. It dictates a specified crew rest period that any pilot must have before he does any sort of flying at all, even simple touch-and-go's.



The required crew rest period—which can only be compromised under strictly defined conditions—is twelve hours. These twelve hours include free time, time for meals, transportation, and eight hours of uninterrupted rest.

There are other restrictions not covered in 60-1. A pilot must stay off the booze at least twelve hours prior to his flight, and if he's being treated with any sort of medication—even a simple over-the-counter remedy like Contac—he's grounded. And there's no "awe-come-on-sarge" about it.

Okay, so let's say our all American boy has gotten his crew rest, tossed his cough drops in the dumpster, and ate his Wheaties—how long



may our prime physical specimen pilot an aircraft? The Air Force says twelve hours, maximum. Then it's time for relief.

So you're saying, "Twelve hours, right? Hi-yo Bakerfield, here I come!" Not so fast, Kemosabe. Let's take a second to compare flying and driving.

Most pilots don't spend a full 12-hour day flying their aircraft. A lot of time is spent in preparation to fly. Subtract two hours. Another 30-45 minutes for the preflight checks, start, and taxi. By the time the gear comes up, the crew may be down to nine hours. Most TAC aircraft only fly a 1-3 hour sortie before they're back for more gas, debrief, rebrief, and go again. Out of a 12-hour day, our aviator may only spend 5 hours flying. On extended flights over water, the autopilot helps a bunch in reducing fatigue.

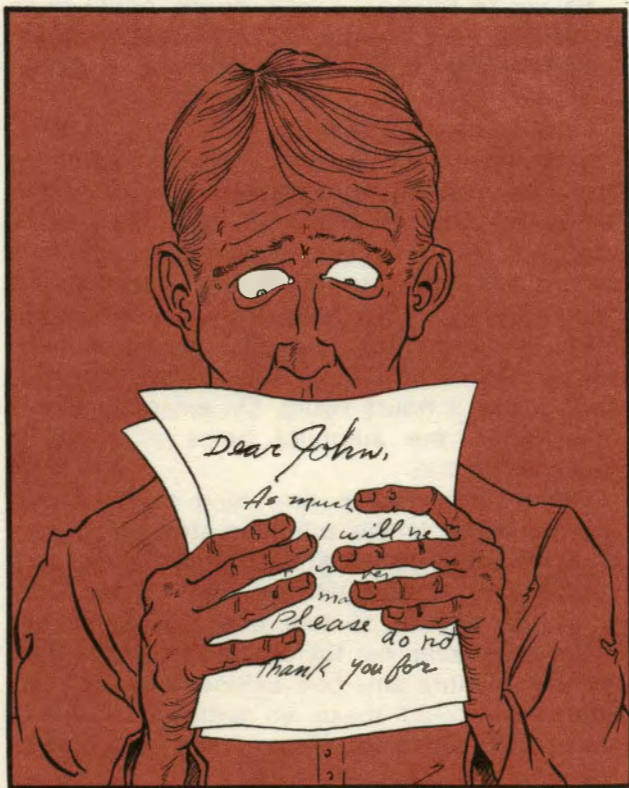
On the other hand, how long may a cross-country driver let his attention stray? How long could a driver keep his eyes closed, even on a straight-line stretch with no other traffic? You know the answer to that one. An automobile driver must keep his full attention on what he's doing the entire time he's behind the wheel. The alternative could mean an eight-point roll or some other maneuver better suited to an aircraft than a Honda Civic.

EXTENDED DRIVING : how far is too far ?

Since driving is in many respects more taxing than cross country flying, you should consider trimming down the "twelve hours at a stretch" to a figure that more realistically reflects the limits of your body and mind. Now remember, we've been assuming so far that you'll be starting your trip in peak condition. What might dull your driving edge?

What's your physical condition? Your actual physical fitness and health status? Are you taking any drugs (legal or otherwise...)? Have you had any immunizations; donated blood recently? All these things must be taken into consideration. What kind of work do you do? Hard physical or mental work; high stress? Make sure you get that good "crew rest"—remember, if your attention lapses, you don't have a copilot, navigator, or engineer to take up the slack.

How's your head? Your emotions will have a lot to do with your safety. As a supervisor you will want to be alert to the mental states of your workers—especially if they're contemplating an extended trip. A person who's lonely or experiencing marital problems where the spouse



SSgt Steve Hull
is this month's
Fleagle T-shirt winner

may be out of state will not be in any condition to try to make Albuquerque over Labor Day—encourage them to take leave, or put in for emergency leave if conditions warrant.

How about the condition of your mighty, fire-breathing steed? If your car's exhaust system is



leaking, for instance, you might be accumulating excessive levels of carbon monoxide in your bloodstream. This problem could be compounded if you're a smoker, as your blood may already contain amounts of what the medics call "carboxyhemoglobin" in quantities that borderline harmful levels. A good defense against this is to keep a window cracked open so you have some air circulation through the car. Of course you know not to ever sleep in a stopped car with the windows up and the engine on for the heater. Entire families have perished while doing that very thing.

You're right, I didn't tell you how far is too far. I don't have a 100% for sure, answer. But, the average person ought not to spend more than eight hours behind the wheel—and that's with liberal time off for gas, exercise, lunch, cokes, or coffee. And that works out to about 450 miles per day. If you intend to turn around and return the next day, you ought to cut that figure by one third. Think about it. Plan your trip well—take the time you need and drive safely and defensively—and you'll arrive alive.

'Cause that's what it's all about. ➤

TIPS

TAC tips

A wise man will make more opportunities
than he finds.

BACON

AIR TRAFFIC CONTROL (ATC) ADDITIONAL SERVICES

By CMSgt Charles McCarn
HQ TAC/DCF

0906:15—"Blunt 21, traffic, one o'clock, 3 miles, westbound, altitude unknown."

0906:21—"Blunt 21 is looking, no joy."

0906:23—"Blunt 21, Roger, traffic now two o'clock, 2 miles, westbound."

0906:27—"Roger, approach, we're still looking."

0906:38—"Approach, Blunt 21, we just had a...uh...a near miss with a light blue and white Cessna."

(Example of tape transcript from a typical near miss report.)

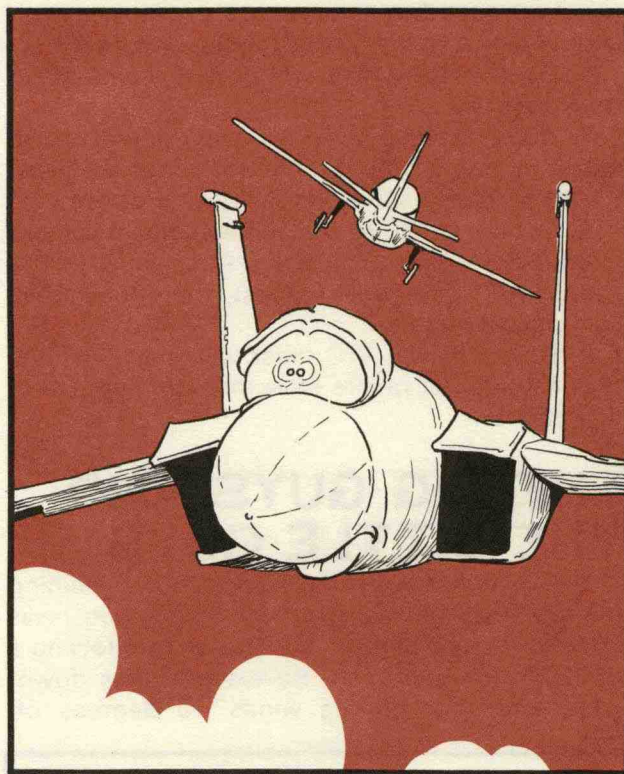
"When requested by the pilot, issue radar vectors to assist in avoiding the traffic, provided the aircraft to be vectored is within your area of jurisdiction or coordination has been affected with the sector/facility in whose area the aircraft is operating." *FAA Handbook 7110.65B, para 46a(6).*

"If the pilot requests, vector his aircraft to avoid merging with the target of previously issued traffic." *FAA Handbook 7110.65B, para 47c.*

Hold it there, troop! Are you saying that Blunt 21 had to request vectors to avoid that puddle jumper? Wouldn't the controller vector Blunt 21 to insure separation?

Yes and no. Yes, Blunt 21 must specifically request vectors to avoid the traffic. No, the controller would not routinely vector Blunt 21 to insure separation. In this example, the civil aircraft was an unknown VFR target, not in contact

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



with approach control, altitude unknown. The controller's responsibility was to issue traffic information, workload permitting. If the controller had some reason to believe the civil aircraft was at an altitude that would have placed him in an unsafe proximity to Blunt 21, an aircraft conflict advisory would have been issued. This advisory essentially alerts the pilot of conflicting traffic and recommends a course of action to avoid the traffic. Once the advisory is issued, it is solely the pilot's prerogative to determine what course of action, if any, will be taken. The controller will not issue positive control instructions in such situations because the actions of the unknown

TAC TIPS

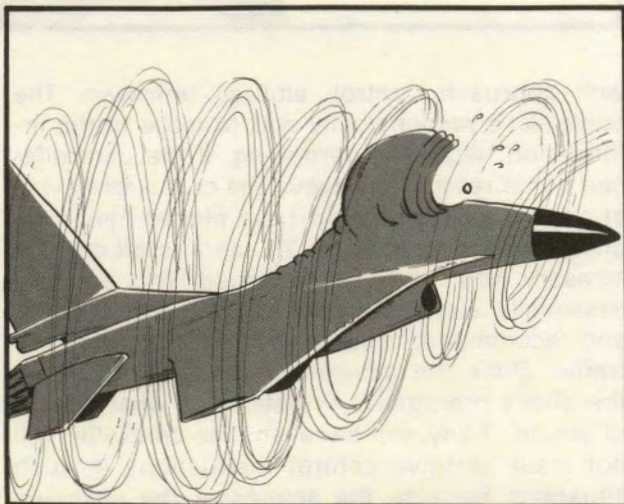
traffic cannot be determined.

The following suggested actions may just possibly keep you from ending up in a situation similar to Blunt 21's.

1. Adhere to the "see and avoid" concept.
2. If you cannot visually acquire the traffic, request vectors to avoid issued traffic.
3. Remain on air traffic control frequencies as long as possible for traffic advisories.
4. Become familiar with common VFR flyways within your local flying area.
5. Visit your local air traffic control agency and find out what services are available to you and what the limitations of those services are.
6. Don't assume ATC will vector you to avoid issued traffic.
7. Don't assume ATC will advise you of all traffic in your vicinity. Traffic advisories are predicated on controller workload (see 5 above).
8. Don't hesitate to request avoidance vectors if you cannot acquire the traffic visually. The sooner ATC gets your request, the sooner they can initiate vectors.
9. Don't assume ATC radar will "paint" all aircraft targets. All radars have inherent equipment limitations.

THE BIG GUYS AND THE LITTLE GUYS

The F-16 was returning from a normal training mission. On closed downwind, the pilot was advised he was number two in traffic following a KC-135 low approach. He extended his downwind and checked the winds 40 degrees off



runway heading at 10 knots. An extended final turn and final approach were accomplished. As the F-16 approached the threshold, it encountered wake turbulence from the '135 which had performed a touch and go. Spacing between the aircraft was about 9,000' (45 sec). The pilot was barely able to keep from busting his and the aircraft's tail—but he did make it out. Postflight revealed a scraped left horizontal tail.

FLIP Planning categorizes both the KC-135 and F-16 as "large" aircraft. Thus the tower didn't impose any other restriction and only issued a caution for wake turbulence to the '16 driver. Common sense tells us the F-16 is not quite as large as a tanker and will get tossed around pretty well by the jet wash created by the big guy.

All those oversize aircraft move a lot of air around as they plow through the skies. You'd be advised to give yourself plenty of room so you don't end up like a ping pong ball in a jacuzzi.

AUTO AUTOPILOT

The flight control system of any modern aircraft is usually fairly complicated. Caution and warning lights are installed to alert the aircrew when things aren't going according to design. When those lights are ignored, further problems can definitely result. An F-4 incident is a case in point.

During the flight control check before takeoff, the autopilot pitch trim and master caution lights illuminated. The pilot engaged the paddle switch and both lights went off. The flight controls then appeared to respond normally.

During the formation takeoff, at rotation, the stick felt stiff. As the stick was moved aft, it began to drive further aft. The pilot engaged the paddle switch, but that didn't help. At a safe altitude, the backseat pilot tried to fly the aircraft, but there was no response to stick inputs. The crew stated the aircraft flew as if the autopilot was engaged. The pilot took control of the aircraft and cycled the AFCS on and then off. The aircraft then began to fly normally. RTB and landing were normal.

Investigation eventually revealed an electrical short circuit in the autopilot control amplifier. This short caused the autopilot to actually turn itself on and assume command of the flight con-

trols even though the autopilot switch was in the off position.

During the before takeoff checks, when the pilot engaged the paddle switch, he observed both the master caution light and the autopilot pitch trim light extinguish. Analysis shows that when the FCP paddle switch was depressed, the corresponding hand pressure (1.5 to 3.75 lbs of force) between the control stick grip and the stick force transducer was sufficient to close a force switch. When this stick movement was sensed by the force switch, the autopilot pitch trim system was disengaged. So when the pilot observed the master caution lights and autopilot pitch trim light go out, it was not a result of the paddle switch action but from merely moving the stick grip enough to disengage the auto trim system. When the mishap aircraft was rotated to match lead's takeoff attitude, the stick felt stiff. This was because sometime during ground operations the autopilot control amp shorted and turned itself on. When the stick was felt to be driving aft, the autopilot was actually trying to help the pilot stabilize at the selected pitch attitude. At this time, the stick was being moved around trying to maintain formation position and fight the inputs of the autopilot. The autopilot pitch trim light did not illuminate then because during control stick maneuvering, the auto trim system is inoperative. The pilot then engaged the paddle switch which had no effect. The IP tried to fly the aircraft but there was no response to flight control inputs because the AFCS and roll stab aug will oppose RCP stick inputs. The paddle switch should have permanently disengaged the autopilot, however, the short in the amplifier most probably disabled this function. When the pilot cycled the autopilot switch on, then off, a relay in the autopilot control amplifier was then triggered and shut the autopilot off. The aircrew was not immediately aware that the autopilot pitch trim light illuminates only when the autopilot is engaged and then only after 10-second stabilized delay in an out-of-trim condition. Infrequent use of the autopilot results in a corresponding lack of thorough knowledge by most aircrews.

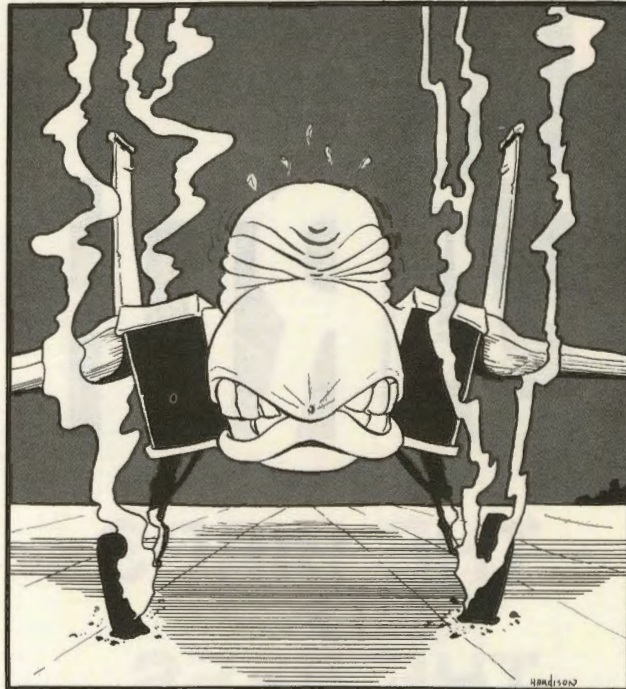
For all F-4 drivers, if the autopilot pitch trim light illuminates when the autopilot engage switch is off, then the autopilot must, in fact, be engaged. If this happens on the ground, abort. No sense trying to fly an airplane with a mind of its own.

TAC ATTACK

F-15 ENGINE SHUTDOWN DECISIONS

By Capt Gary Porter
HQ TAC/SEF

In Sep 79 an F-15 experienced a brake failure/fire after landing. The pilot, when informed of the fire, shutdown the engines and ground egressed. Draining fuel from the shutdown sequence ignited and produced a larger fire. Fortunately, the Fire Department was able



to extinguish the fire without further damage.

The pilot's decision to shutdown in this instance was proper, the incident verifies the need for caution in handling hot brake/wheel problems. Recently a pilot taxiing into a parking area after a mission had both tires blow in quick succession. A nearby crew chief noticed the incident and, running to the aircraft, directed the pilot to stop taxiing. Using visual signals, he next directed the pilot to shutdown. The pilot obliged. The problem here was there wasn't any fire equipment in position to respond to a fire, if one had erupted. There was no compelling reason for a shutdown in this situation, and the pilot was unable to assess the true nature of the situation. We must be cautious in directing or making an emergency engine shutdown on the ground when hot brakes, tires, etc are involved. Otherwise keep'em running until proper fire protection is available.

DOWN TO EARTH

THE BIRDS AND THE BEES

By **Beatrice Waggener**
Editorial Assistant

It's another fine Saturday morning in spring. The hum in the air is the bees, busily making their rounds of the newly blossomed trees and flowers gathering nectar. The robins and blackbirds are busy searching the dew-laden grass for worms and insects. But all is not as peaceful as it could be...

"Scooby, dooby, doo...I wonder why the acoustics in the shower always sound so good. I'm really going to enjoy this whole weekend off. The flight schedule has been really tough. This is the first weekend I've had off in I don't know when. The first thing on the agenda is to spray the fruit trees. All of a sudden winter is over and spring is here. Everything is busting out all over. Next, I've got to spray those weeds along the

picket fence. That should get rid of them for the summer and eliminate my having to trim along there."

The shrill, high-pitched ring of the phone reaches Eddie in the shower. Already it has punctured his elated spirit, and he knows what is coming. Susan's voice calls out from down stairs, "Honey, telephone. It's flight scheduling. They insist on holding."

"Okay, I'll answer it up here. Hello. Yes...hmm, I see, I understand. I'll be there in 45 minutes." Eddie slams the receiver down and as he pulls on his flight suit, "Susan, I've got to take Chuck's flight. He's sick with the watcha-ma-call-its. Be down in a sec for breakfast."

While eating breakfast...

"Honey, I know how much you were counting on this weekend to get caught up. Can I do something to make it better?"

Eddie quickly replied, "You can make it better by spraying the fruit trees for me. How about it?"

"Sure, I wanted to take advantage of this warm sunny day and catch some rays. Spraying that stuff shouldn't take long."

"Thanks, Toots. That way when I get home this evening I can get started on preparing the lawn furniture for painting." With those words, a quick kiss, and a slap on Susan's fanny, Eddie strides out to his car and is off to another long day of flying."

"I just love that man!" thinks Susan as she enters the garage to look over the paraphernalia that Eddie set out. "I know what I'll do! I'll put on



my shorts and halter top—that way I'll get some sun while I'm getting these chores done.

"I hope I put this spray rig together properly. Hmm, the spray nozzle seems loose, I don't feel like messing around with it any more. I want to hurry up and get this done."

As Susan continues to spray the trees, insecticide drips down the handle of the sprayer and down her arms; the constant change in wind drifts cover her with the spray mist.

"This isn't a piece of cake like I thought it was going to be. Oh, well, I'm almost through. I never realized how lovely apple blossoms are up close. These bees are a bit of a nuisance though.

"All done! Now to get to those weeds. This sprayer is too bulky, and I'm getting tired of man-handling it. Think I'll use my metal watering can—that will make it much easier."

So, Susan finished up, feeling really proud of herself for getting the job done. She even noticed the bird bath was empty and used the watering can to fill it up.

That evening...

"Hey Hon, I'm home," announced Eddie as he steps in the front door. "What in the world happened to you?"

"Just a reaction to the insecticide. The doctor said the rash should be gone by next weekend. Luckily, I took a shower before I blistered. That stuff is pretty powerful. I just want to get to bed and think about something besides itching..."

As the glow of the next day begins, there isn't any buzzing or chirping...just the sound of silence.



Pesticides and herbicides can be harmful to more than just the insects and weeds you're trying to control. Think about it before you do yourself in—or the birds and the bees.

- Wear the proper clothing when using pesticides to avoid contact with the skin. Rubber gloves and goggles really are necessary! Always change clothes and wash with soap and water immediately after you are finished. Launder your clothes before they are worn again.

- Use the proper equipment. Study the owner's manual and follow instructions carefully. Never wash a sprayer where the water will puddle or stand where children or pets will play in it. Always store the container out of the reach of children. Pesticide toxicant left on the sprayer can cause serious illness or even be fatal to children playing with it.



- Ill-considered applications (the wrong timing) can be deadly to beneficial creatures. After petal drop is the time to spray with certain insecticides. This avoids killing the bees that are doing the pollinating.

- Set aside a specific container for the use of 2,4-D weed killing mixtures or other herbicides. As a rule, herbicides cannot be satisfactorily removed from the spray tank and will contaminate whatever other liquids you use in it.

- Finally, if you are not sure what the disease or insect problem is, consult a reputable nursery or one of the free Government agencies set up for this service. They are always happy to help you out and can show you how to handle your problem without harming other insects, animals, or yourself.

Did you hear the one about...?



The following stories are true—as far as I can tell. No credit is given to the individual who put them all together. I found them while rummaging through our archives and decided the obvious lessons made them worth reprinting. If any of you have any yarns, old or new, send them in. Perhaps we can print them in a future issue.

Ed

I

When you step on a banana peel or an icy spot on the sidewalk then crash ingloriously to a one-point landing, chances are good that your first reaction is to look around for an audience, hoping there is none. After that, you check for possible injuries.

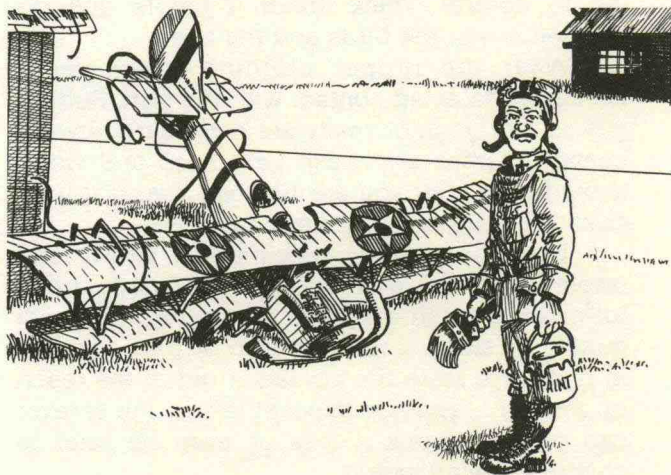
No one likes to make a bad landing. Airmen in particular dislike them intensely. But the history of man's successful and unsuccessful attempts to fly like the birds is filled with crash landings and jackrabbit touchdowns...and reasons and excuses for them.

One of the earliest recorded crash landings was made in the 11th Century by a Benedictine monk named Elmirus. Elmirus made a set of feathered wings, climbed to the top of Malmesbury Abbey, and made a spectacular takeoff, then crashed ingloriously into a chicken yard below, breaking an arm.

"The flight would have been successful," he told his associates, "had I not needed so many feathers. Because I needed so many I was forced to use some from barnyard fowls. They had a natural affinity for the chicken yard, and thus were attracted downward. Had I been able to obtain feathers from eagles my flight would have been successful, for they would have carried me to the upper air from whence they came."

II

Some nine centuries later, in 1920, a strip of green grass was blamed when a pilot made a



nose-first landing in a Curtiss Jenny training plane at an airfield operated by the U.S. Army Air Service.

The pilot, a Captain, confident that his descending plane would clear a hangar roof with several feet of altitude to spare, suddenly lost altitude and got the Jenny's landing gear tangled in some radio wires on the roof. The Jenny fell to the ground in a nose-first position. Two explanations were given for the incident. Fliers who saw the aeronautical pratt-fall from the ground said the Captain had apparently tried to stretch his glide, lost flying speed, and "mushed" into the radio wires. The pilot argued that a downdraft, caused by a strip of green grass near the hangar, had pulled the airplane into the wires. In order to prevent future occurrences of this nature the pilot was given a paint brush and a supply of paint and told to "Get out there and paint that grass white before we lose another plane!"

III

Sometimes a great deal of embarrassment can result from a perfect three-point landing. In mid-1927 at Chanute Field, Illinois, a flying instructor suffered that kind of embarrassment.

The instructor was considered one of the best at the Illinois air base. A nameless cadet, an excellent student in all phases of his training save one, couldn't be talked into landing an airplane.

One morning the instructor told a mechanic to loosen all the screws holding the control stick in the front cockpit of the training plane. He explained that he would take the stick out of its socket and throw it overboard when he got the cadet into the air, and the student would have no choice but to land the plane. Word of the impending event spread throughout the hangar and eventually reached the cadet.

He had already talked himself out of his fears and had made up his mind to go through with a landing on his next flight, scheduled that morning. Information that his instructor was going to throw his own control stick overboard didn't shake the cadet's new-found self confidence.

Just before takeoff our cadet slipped a spare control stick inside his flying suit and climbed into the rear cockpit. His instructor got into the front cockpit and soon the pair were flying high above the cornfields near Rantoul and Chanute Field. After a few perfectly executed aerial maneuvers the instructor motioned for his student to land. The cadet feigned terror.



Now was the time. The instructor removed his control stick from its socket, twirled it over his head a few times, and threw it overboard. He looked back and was horrified to see the cadet also tossing a control stick over the side.

Suddenly the airplane went into a series of violent maneuvers. It did wing-overs, rolls, and loops. It climbed straight up, stalled out, and began to spin sickeningly. It recovered from the spin and went into a shallow climb. At this point the instructor and the cadet climbed out of their cockpits. The instructor, seeing the cadet was getting out without difficulty, jumped. As soon as the instructor was clear of the plane, the student climbed back inside the cockpit, took control of the airplane, and watched his instructor's parachute come down in a muddy cornfield. Then he returned to the field and made a perfect three-point landing.

IV

Another flying instructor, this one assigned to the advanced flying school at Kelly Field, Texas, became unhappy with seven students who failed to follow his maneuvers properly during formation flights. He ended a 10-minute lecture with these words.

"If you guys expect to become pursuit pilots, you'd better start following me properly. I want it understood that on the next flight you will have to stay with me, no matter what happens. Is that clearly understood?"

Apparently it was, for on the next formation flight the engine on the instructor's plane failed and he was forced to glide to a hazardous landing in a rough field...accompanied by seven student pilots who, despite his attempts to wave them off, stayed with him wing-to-wing all the way down.

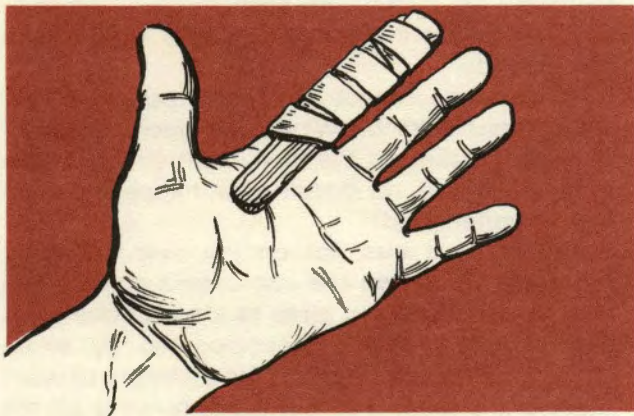
First Aid

Last month I wrote a few words on the emergency treatment of bleeding. This month we will take a quick look at what you can do to help a person who has suffered broken bones. Remember, these procedures are not designed to make you an expert. These steps are what you can do to help the victim until qualified medical help is available.

Your first concern is to make sure the victim is breathing and is not bleeding heavily. Excessive internal bleeding can also result in shock, so be prepared to treat a person for shock as outlined last month. Once you are sure shock is not present or you have completed the treatment, do the following:

1. EXAMINE THE INJURY. Is it an open wound? If so, cover it with a clean cloth. Do not try to clean the wound. You might introduce infection into the bone, which is very difficult to cure.

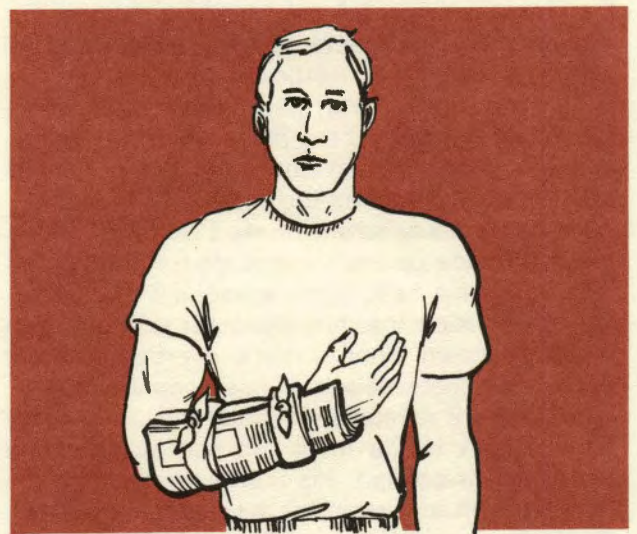
2. IMMOBILIZE THE BROKEN BONE. Fix the joint above and below the break so they cannot move. DO NOT move the broken bone to put on the splint. DO NOT try to straighten bent arms or legs. Use any splint method that works including pillows, blankets, boards, newspapers, cardboard, baseball bat, belt, or whatever. Methods for splinting various limbs are listed in the following illustrations:



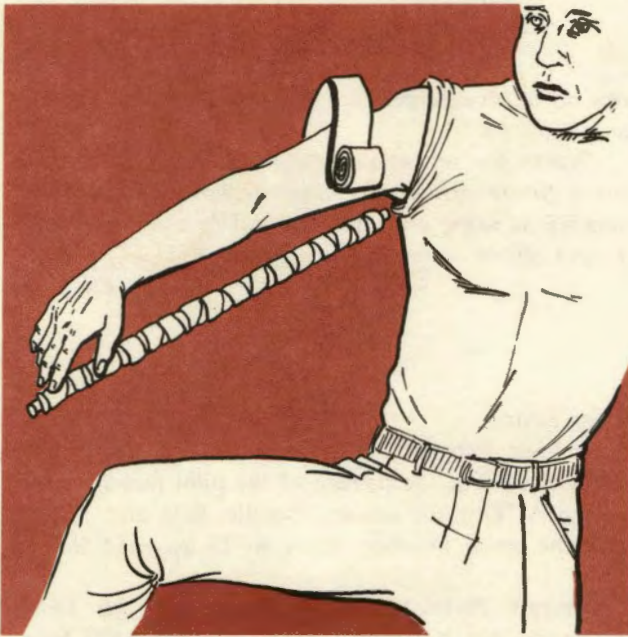
Fingers: Splint with a stick.



Upper arm, collarbone, shoulder, elbow broken and bent: Use a sling. Tie the sling to the chest, or have victim hold it.



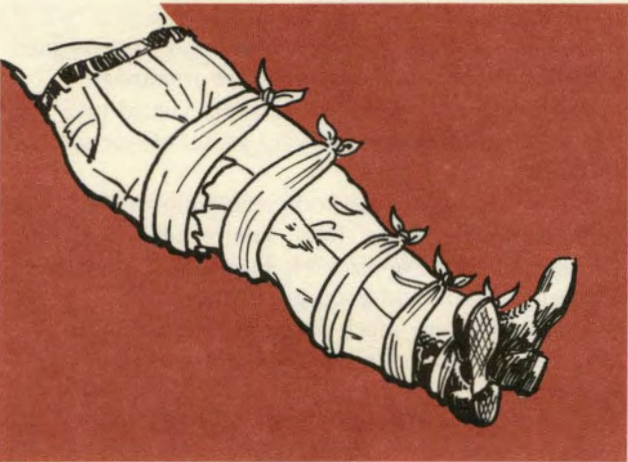
Hand, wrist, forearm: Splint both sides of forearm from elbow to wrist. Then, use a sling (thumb points up; fingers higher than elbow).



Elbow broken and straight: Use a long splint from armpit past wrist.



Knee broken and bent: Use a firm splint between upper and lower leg.



Pelvis: Keep victim still. Tie legs together. Examine and treat for shock. DO NOT move victim unless absolutely necessary.

Leg: Place padding between legs. Tie legs together.

3. CHECK SPLINTED PART FOR: Increased pain, decreased feeling on skin, lack of pulse, pale or blue skin color. These could be an indication of ties that are too tight or an unbroken joint that is bent too much. Correct the problem if you can.

Remember, broken bones themselves do not cause death. But they can do a lot of damage.



Foot and ankle: Carefully remove shoe, cut off if necessary. Tie on thick, soft splint like a pillow or blanket. Raise the foot.

The jagged edges cut muscles, veins, and cause bleeding in the area of the break. The edge can sometimes cut nerves and major blood vessels—especially with breaks near joints like the elbow and knee. This is the reason for your actions to immobilize the limb to prevent further damage. And that's what first aid is all about. Next month we'll cover artificial resuscitation. ➔



Letters to the Editor

Dear Editor

Your April 1980 issue cleared onto the medical range for the first time in several months and, unfortunately, got an "unscorable" for its first pass. In your article, "First Aid - Would You Know What To Do," paragraph 6b, the instructions for applying a tourniquet don't tell the reader which side of the wound to put it on. Result: A 50-50 chance of doing it wrong, for it only works if put between the wound and the heart. Additionally, a tourniquet can be a terribly damaging device to use in an injury. There is no bleeding which can't be stopped by pressure on the bleeding area. The only valid reason to use a tourniquet would be if one were alone, bleeding badly, and about to faint so that one could no longer maintain pressure on the bleeding area.

Despite my criticism, I was pleased to see the medical subject appear in TAC ATTACK. It's a super magazine and widely read, so don't give up; even a fighter pilot can't get a shack every time.

Richard D. Hansen
Brigadier General, USAF, MC
TAC Command Surgeon

Dear General Hansen

You're absolutely correct about where to place the tourniquet. I omitted a valuable piece of information. Both sources which I used while researching the article mentioned the use of a tourniquet—as a last resort.

As I stated in the introduction to that article, I have no intentions of making anyone an expert. I simply want to get folks thinking about what they

can do in an emergency. I also don't want to put out any bad info.

Thanks for setting us straight. I have tabled plans for a future article on "appendectomies under field conditions using only items found in your mess kit." I can't afford any more "unscorables."

Ed

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Dear Editor,

In your February 1980 issue of TAC ATTACK, we noticed that the picture of the pilot punching out of the A-7D in the article, "Needle, Ball, and...", carries the serial number of an A-7D assigned to our unit.

Aircraft 70-1022 is assigned to the 140 TFW, Colorado Air National Guard, Buckley ANG Base, Aurora, Colorado.

We feel that the pictured aircraft should not have had any tail number at all. We feel that this could cause the aircraft to carry the reputation of a "jinx." It has also caused the crew chief and the assigned pilot harrassment and much mental discomfort.

We in the Colorado Air National Guard take our jobs very seriously and are very proud of our aircraft and unit.

We would appreciate your recognition of this fact and would be more than happy to accept 100 "Fleagle" T-shirts in sizes M, L, and XL, as a token of your goodwill and good heartedness.

Thank you very much for your kind attention. We are looking forward to the arrival of our T-shirts.

Respectfully,
The Members of the 140 CAMS and 120 TFS

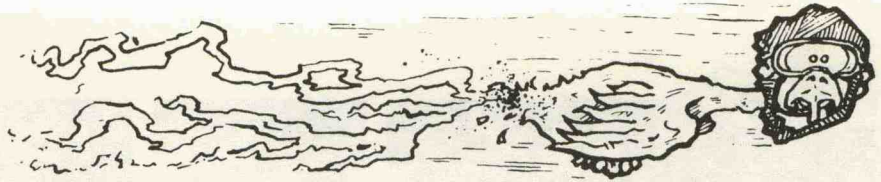
Dear Members of the 140 CAMS and 120 TFS

I'm sorry you feel we "jinxed" your aircraft. The tail number we put on the airplane was simply a random choice by the artist. The tail number is as much a part of the aircraft as the USAF and command insignia.

As for the T-shirts, we only have 12 per year to give away, so we'd be 8+ years behind if I sent you 100. However, if you were to submit 100 top-notch articles, and those 100 articles were selected as the winners for the next 100 months, you could eventually receive the shirts you desire. Hoping to hear from you.

Ed

TAC TALLY



CLASS A MISHAPS	▶
AIRCREW FATALITIES	▶
TOTAL EJECTIONS	▶
SUCCESSFUL EJECTIONS	▶

MAR	TAC	
	THRU 1980	MAR 1979
4	8	8
3	5	6
6	10	7
4	7	4

MAR	ANG	
	THRU 1980	MAR 1979
1	4	4
2	5	3
2	5	4
0	2	2

MAR	AFR	
	THRU 1980	MAR 1979
0	0	2
0	0	1
0	0	2
0	0	1

TAC'S TOP 5 thru MARCH '80



TAC FTR/RECCE	
class A mishap free months	
39	347 TFW
25	33 TFW
21	56 TFW
18	1 TFW
17	31 TFW

TAC AIR DEFENSE	
class A mishap free months	
100	84 FIS
86	57 FIS
39	5 FIS
36	48 FIS
22	318 FIS

TAC GAINED FTR/RECCE		
class A mishap free months		
133	152 TRG	(ANG)
95	188 TFG	(ANG)
87	138 TFG	(ANG)
86	917 TFG	(AFR)
83	116 TFW (128 TFS)	(ANG)

TAC GAINED AIR DEFENSE		
class A mishap free months		
92	191 FIG	(ANG)
73	102 FIW	(ANG)
69	177 FIG	(ANG)
35	125 FIG	(ANG)
18	119 FIG	(ANG)

TAC/GAINED Other Units		
class A mishap free months		
128	182 TASG	(ANG)
121	193 TEWG	(ANG)
113	110 TASG	(ANG)
108	USAFTAWC	(TAC)
104	919 SOG	(AFR)

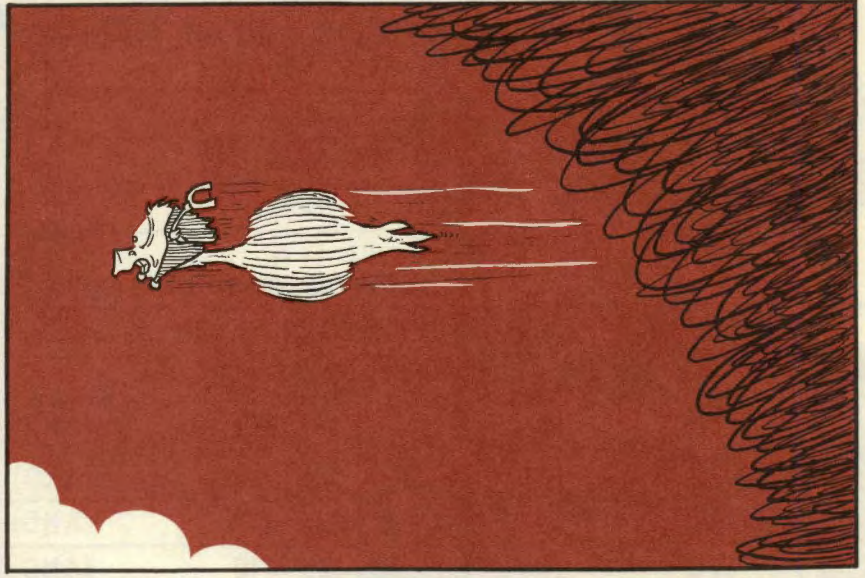
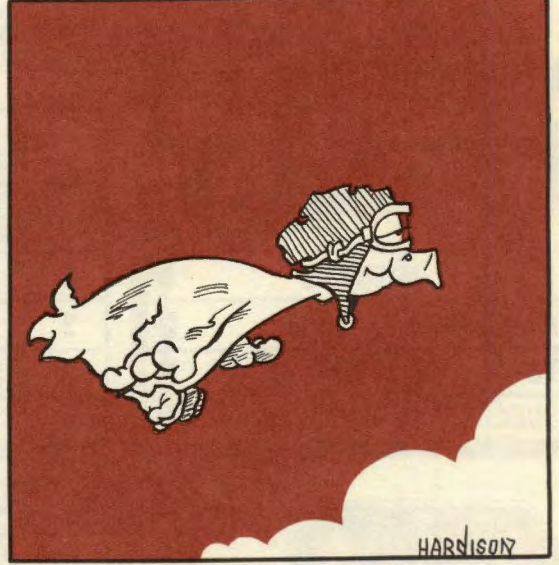
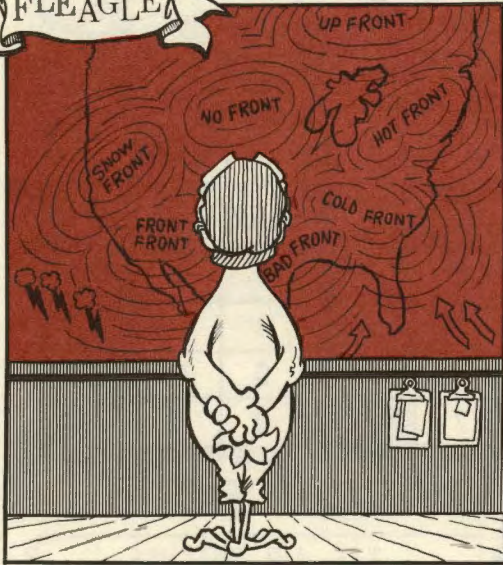
CLASS A MISHAP COMPARISON RATE 79/80

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

TAC	1979	6.9	7.0	5.9									
	1980	2.0	5.0	5.4									
ANG	1979	0.0	11.4	9.0									
	1980	5.0	7.6	6.8									
AFR	1979	0.0	0.0	19.9									
	1980	0.0	0.0	0.0									

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

FLEAGLE



ROOARREE!



PROPE!