TAC ATTACK

OCTOBER 1971

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ON TARGET...Page 16

on target..page 16

for efficient tactical air power

TAC ATTACK

OCTOBER 1971
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Tactical Air Command

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Angle of ATTACK

"For the North Wind Doth Blow..."

October is a fine month. It represents a transition between the hot, hubbub activity of summer and the creeping slowness of winter. It's a month that's punctuated by one night of roving bands of ghosts and witches and door-to-door hobgoblins. An occasional chill in the night air gives way to frosty mornings.

The frost is not only indicative of that "easy" time of year so appropriately named "fall," it also points to it lies just around the corner. Soon the frost becomes ice, and the cool fall rains turn into the white monster called snow. Winter weather slows down activities in and around airplanes and puts a crimp in just about everything that's done, unless . . . unless some of the time during the fall season has been devoted to planning for the winter severity.

For instance:

How's your snow removal plan? It should include working areas as well as aircraft operations areas. Removal equipment checked?

How about the de-icing vehicles . . . are they in good mechanical repair?

Are there any new troops in the outfit who do not have the proper winter clothing for the job they're doing?

What kind of seasonal weather briefings are planned for the flying troops?

How about diversion charts for the jocks? They're going to be even more important during the winter season. Are they current?

How about the PMV team chiefs? Do they have enought poop to pass out to the troops on winter driving?

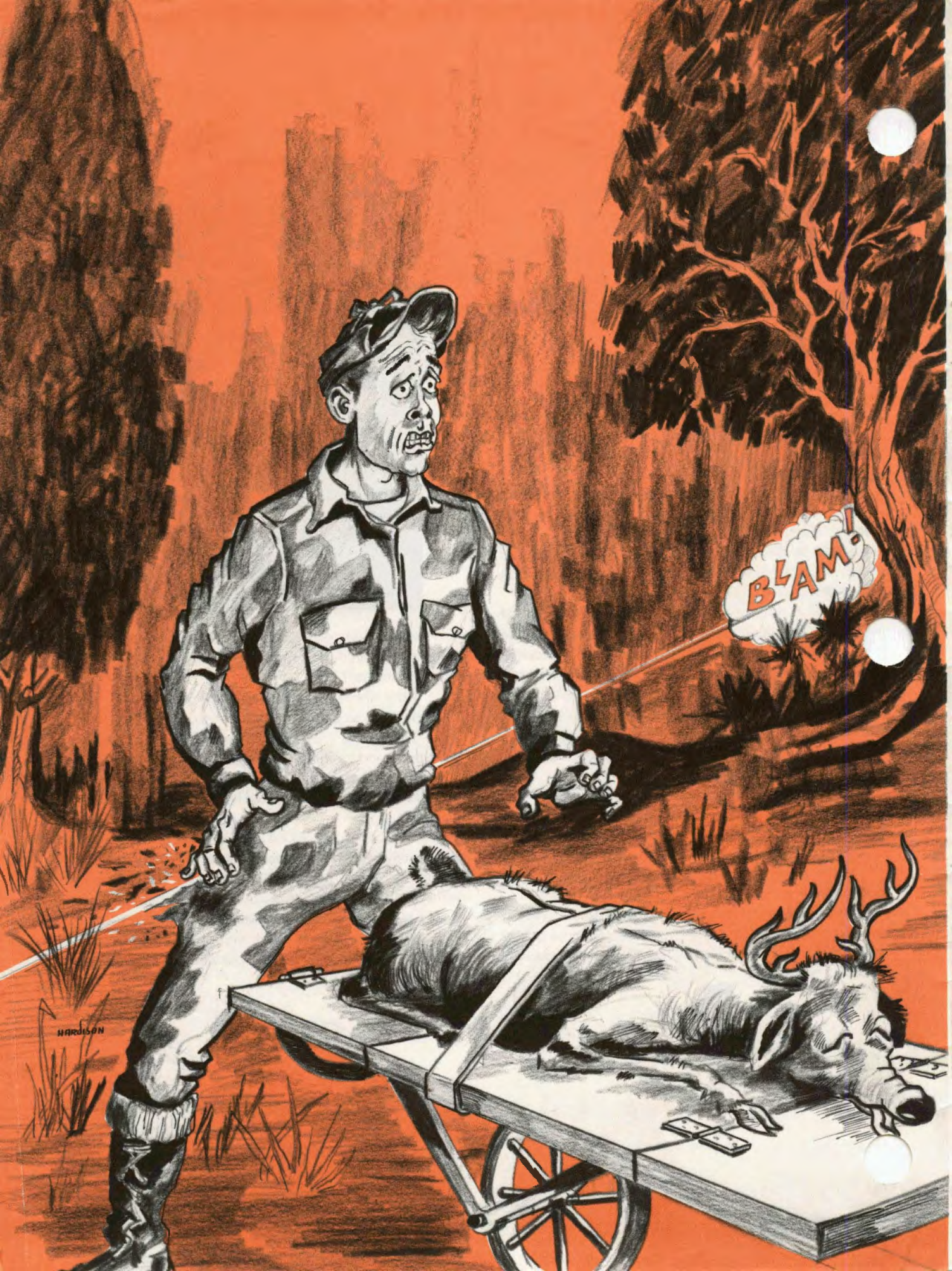
You jocks . . . have you reviewed cold weather procedures and established your own personal minima?

Remember . . . your aircraft and aircrews won't always be in the same climate as home plate.

The list of things to do goes on and on . . . but not indefinitely. There are several aids to help in planning for the season. Each safety officer will have (or can get) a winterization checklist that covers a multitude of items.

No matter what your particular job happens to be, it will change with the arrival of winter. How well you and your unit function depends on how well you have planned and prepared.

GERALD J. BEISNER, Colonel, USAF
Chief of Safety


BLAM!
HARRISON

Hauling a deer out of the woods on your back is a tough job – even for a big man, and for a small man like myself it's really a backbreaking chore. Even after you've field dressed him he still weighs enough to cause you a lot of grief . . . if you have any distance to travel.

With this thought in mind I assembled my drafting : a pencil sharpened with a pocket knife, a yard stick from the local lumber yard, my son's plastic ruler, and a large sheet of butcher paper which kept rolling up until I stuck it down with two mangled band-aids. So armed I sat down at the drafting board (kitchen table) and began my creation.

It was to be a single wheel (that's all I could wrench from the pouting grasp of my son), dynamically balanced rough terrain harness equipped dead deer delivery device. It would be designed so that the vehicle would support the weight of the deer and a special shoulder harness would provide the motive power.

I worked laboriously over the butcher paper drawing lines, making precise measurements with the plastic ruler, making erasures, shooing off the kids, and shunning the chatter from my wife who was saying something about the lawn. Finally my design was complete and I jumped in my battered hunting car and went down to the lumber yard to get the materials which I had estimated would cost four dollars and thirty-seven cents. Ten dollars later I was on my way back home ready to saw, hack, hammer, splice, and cuss these materials into something resembling what I had on paper.

It wasn't easy work and I can't honestly say that I'm a skilled craftsman but at least no fingers were cut off and I 't hit myself with the hammer more than once (don't think that thumbnail will come off). But it was finished and a thing of beauty it was. I admit it looked kinda strange with that single wheel right in the middle and the ends all folded up so I could get it into the car easily but I knew it would work as planned. It even had a belt on it to tie the game down with. Now all I had to do was wait for deer season to open. There were still plenty of things to do in the week left before I could legally get a crack at all those white tails roaming about. My new 30-30 hadn't been sighted in yet and I still had a trip to make to the Army surplus store to pick up a set of those camouflaged fatigues.

The day before deer season opened I carefully laid out my hunting equipment on the garage floor – on a blanket of course – and inspected each item. Those new fatigues would be perfect. I would blend in with the underbrush just like a chameleon. Those white tails were really in for it and my freezer had an empty space just waiting for the venison.

I called my friend Ben, who was an old hunting and fishing buddy, and made sure his preparations were complete. He was as thrilled about going as I was – like two kids going to the circus for the first time. He didn't even wince when I told him that I'd pick him up at 3:30 AM – the sign of a true and dedicated sportsman.

Promptly at 3:30 in the AM the next morning I clattered to a stop in front of Ben's house. His gear was piled outside under the carport. As I opened the car door Ben came out of the house slightly bleary-eyed but somehow alert. I was amazed to see him in a bright red shirt with an equally red cap. When I admonished him about it he mumbled something about not wanting to get

THE HUNT

shot and I assured him that the place we were going hunting was practically unexplored, save myself, and absolutely no one knew of its existence, consequently, it would be impossible to get accidentally shot. Ben allowed that he wasn't about to change shirts at this time of the morning 'cause if he were to wake his wife for the second time he could guarantee that we'd both be shot.

An hour and a half later we parked the car and began to get our gear together. I took my 30-30 out of the case and checked to see that the shell was still chambered and that it was all ready to go. Ben noticed that the gun was already loaded and said something about the dangerous practice of carrying a loaded gun in the car. I explained patiently that you must always be prepared; suppose a deer jumped out of the brush right now — I'd have him dead and half dressed before Ben could get off a shot. Ben mumbled something and shook his head, then I hooked up my shoulder harness and attached it to the cart and we started out through the woods.

We came to the familiar barbed wire fence and I gave my gun to Ben and climbed through. He passed the guns across the fence then he started climbing through. I thought I heard a noise and turned around to investigate. As I did the arc of both guns passed through Ben. He hollered something and I told him that my finger was nowhere near the trigger of either gun — besides the safety was on — and to make this point clear I showed him the safety on my gun . . . it was not on . . . Ben said that we should unload before crossing the fence the next time. Again I had to explain to him that time was a critical factor . . . if we took time to do all those things the deer would be long gone.

After stomping through about a mile and a half of dense woods we made our way to the deer trail that I had staked out. As we moved into position I grabbed a handful of dry grass and threw it into the air to check the wind direction and immediately felt foolish for doing so. I could see the trees moving and the tall grass leaning so the wind direction was already obvious. The wind was right in our faces at about eight or ten miles an hour. As I settled in position I glanced down at the one wheel contraption that I had muscled all the way and knew that I would find it useful today.

I looked up and there it was, a beautiful eight point buck just standing there and looking around as if he sensed something. I slowly brought my rifle up and adjusted my aiming point for the distance which I estimated to be forty yards and squeezed the trigger. As the last sound of the shot died I could see the big buck take one leap forward and then thud to the ground.

I ran over to the location dragging the cart behind me and saw Ben coming out of the woods to my left. It was a good clean shot and the deer was dead before he hit the ground. I clamped my tag on him and Ben and I field dressed him, then lifted him onto the cart and tied him down.

I strapped the harness on my shoulders and we started out toward the car. After going about a quarter of a mile I was pooped. It was easier than carrying the carcass on your back but it still took some effort. Ben and I sat down on a log and smoked a cigarette discussing the kill. We would take it to the car and lock it inside then go out again.

After resting for a few minutes I got up and bent over to pick up the cart harness then Ben kicked me in the rear. Not just a little kick I mean a full-fledged rare-back and let fly kind of a kick. He kicked so hard that it wheeled me around and knocked me to the ground. Then I heard the sound of a rifle shot and I put my hand back on my hip and my hand came up bloody. He shouted, "You're shot!!" I guess he really didn't kick me and I'm happy about that 'cause Ben and I are good friends.

I tried to get up but than it started hurting real bad and I couldn't seem to get off the ground. Just about that time I heard a guy running up and saying, "My God, did I do that? I was shooting at the deer; I thought it was a deer; I saw it lying down then it moved. My God . . . We've got to get him to a hospital."

That's about all I remember until I woke up in the hospital room, lying on my stomach and confused . . . then I remembered . . . some fool had shot me as I was bending over — got me right in the southern exposure. But thinking back on it that guy hit me pretty close to my brains.

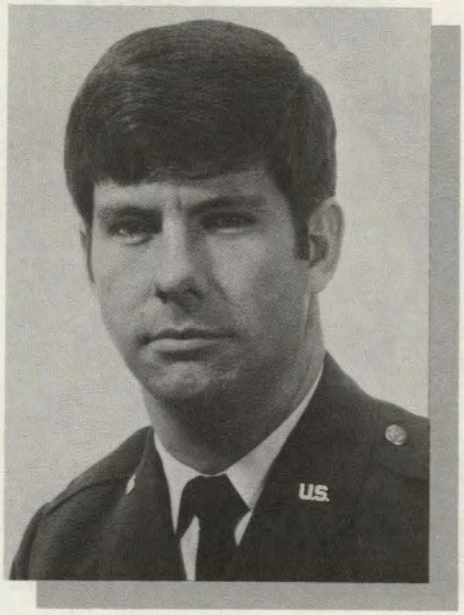
He broke the cardinal rule in hunting that says, "Be sure of your target." It's not a new rule . . . I'm sure it was being preached during the days of Daniel Boone . . . but it's still violated.

But getting back to my brains I sure wasn't carrying them in my head that day. I broke just about every common sense rule in the book . . . so I guess this shot in the rear was a kind of payment. I carried a loaded gun in the car; I didn't have the safety on while hiking; I didn't unload the gun before I crossed that fence; and probably worst of all I wore clothing that blended in with the background and made it hard for other hunters to spot me.

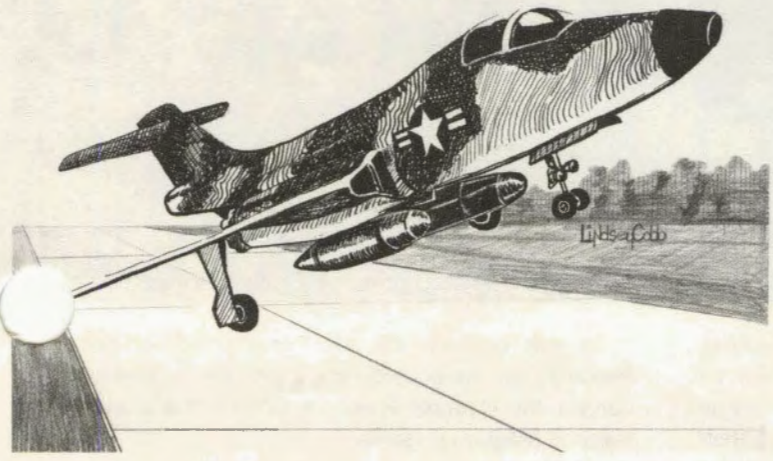
Deer season is over for me this year and I'm getting awfully tired of lying on my stomach, but at least it has given me time to think and plan for next year. "Let's see what did Ben say about that red shirt . . . ?"

TACTICAL AIR COMMAND

AIRCREWMAN of DISTINCTION



LT BRYANT



First Lieutenant Shelby G. Bryant of the 154 Tactical Reconnaissance Squadron, Little Rock Air Force Base, Arkansas, has been selected as a Tactical Air Command Aircrewman of Distinction.

Lieutenant Bryant was Number Two in a flight of six RF-101s scheduled for a navigational training mission. As he approached rotation speed on takeoff, Lieutenant Bryant was informed that he appeared to have an abnormal afterburner light on one engine. Because of the speed and configuration of the aircraft with full drop tanks, he elected to continue the takeoff. Shortly after the gear and flaps were retracted, he felt and heard a "thump" followed by the illumination of both engine overheat lights. He quickly retarded the throttles and advised the flight leader of the situation. The right engine overheat light continued to indicate a fire and he shut down the engine. By this time another member of the [illegible] had joined him and reported a panel from the right engine bay was missing. Lieutenant Bryant declared an emergency and, although operating on one engine, proceeded to the prescribed "tank drop" area where both drop tanks were jettisoned. After computing his landing speed, which was 40 knots above normal due to the heavy weight and single engine, Lieutenant Bryant entered the traffic pattern, landed in the first 1000 feet of runway, and stopped the aircraft without the need for a barrier engagement. Investigation disclosed that an afterburner component had failed and caused the fire and explosion by allowing fuel to spray into the tail section and outside the combustion chamber.

Lieutenant Bryant's professional competence during this critical inflight emergency readily qualifies him as a Tactical Air Command Aircrewman of Distinction.

THE FEATHERED MISSILE

The air is populated by internally guided, air breathing, noiseless, feathered missiles that seem to contain an inherent self-destruct mechanism. These missiles vary in effective weight depending on your speed and their weight. If you're a fighter jock screaming along in the neighborhood of 520 knots that ring-necked mallard which looks great if you're sitting in a duck blind now is a 108,000 pound missile and somehow doesn't look so great anymore. Those feathers that make such nice soft pillows hardly cushion the impact force of the bird as it does grievous damage to our flying machines and much too often to our fliers.

In one journal it's reported that birdstrikes cost Uncle Sam about ten million bucks for each year that passes. Birdstrike damage is not limited to the good old U.S. of A. In England the citizens shell out about two and a half million dollars a year . . . In Germany (FRG) a similar amount is donated and even the Russians are tossing a few rubles down the drain. (As of now they do not claim to have invented birdstrikes.)

Committees have long since been established to study the problem. International meetings are attended by most of the heavy aviation countries, friendly and otherwise, to exchange information and provide problems and problem solutions.

In this country the Air Force Office of Scientific Research has conducted forays into the problem, and in Canada the National Research Council has a continuing research program underway.

A library full of information has been gathered concerning birdstrike incidents, some of which you may have run across but, nevertheless, is worth repeating:

- Approximately 60 percent (on an average) of the birdstrikes occur below 1000 feet AGL – the majority of the incidents that make up this percentage occur below 500 feet AGL.
- Transport aircraft are involved in approximately 29 percent of the birdstrike incidents.
- Fighter and trainer aircraft (shown collectively because of speed association) are involved in approximately 46 percent of the birdstrike incidents.
- Aircraft and bird collisions in the traffic pattern consume approximately 48 percent of the birdstrike incidents.
- The month of October accounts for the highest single month of birdstrike incidents.

Migratory birds gin down across the nation during the period from mid-October through November and from 1 March through about 10 April. Four major "airways" are used. These include: the Atlantic seaboard route

Mississippi River route, the Missouri River – Gulf coast of ·as route, and the California coastline route. ·unately for the day fliers the migratory birds do most of their aviating at night. However, there appears to be that segment of the fowl population who demonstrate their non-conformist attitudes by wandering through the skies during the daylight hours creating a general hazard.

One would be prompted to ask: What can be done or is being done, or what can I do?

The Russians have an interesting approach . . . a lieutenant was flying his MIG on a low-level bombing mission when a bird struck the aluminum canopy perimeter which split . . . as did the canopy. It departed the airplane . . . The Russian lieutenant, through superb airmanship, maneuvered the airplane to a safe landing. For his efforts the lieutenant was given a hunting gun.

Another tidbit of information that V. E. Jacoby of the USSR has provided is that a large number of birdstrikes occur while an aircraft is turning. He surmises that when an aircraft is flying straight and level the birds can extrapolate the point of combined trajectories, however, when the airplane is turning, descending, or climbing, the birds are unable to predict the intersection of trajectories.

bird control

Several means have been employed in varying degrees ·uccess to control birds on and around airfields. Each ·e should have a bird control program that incorporates some, if not all, of these approaches.

- Eliminate dumps and other unsanitary conditions.
- Ponds and other accumulations of water should be drained.
- Destroy potential roosting sites. Tall reeds, weeds, or brush attract many birds such as starlings and blackbirds.
- Remove the food source by replacing berry and seed-producing shrubs with vegetation less attractive to birds. Keep grass cut near runways and in adjacent areas to control insects, a food source for birds. Apply herbicides and weed killers to eliminate broadleaf seed plants and weeds.
- A particular species may be indigenous to a given area. Careful study of a species to learn its habits can provide a worthwhile knowledge that will help in controlling the population.
- Pyrotechnics and explosive devices such as the cracker shell are effective to rid airfields of birds for short durations.
- Sound reproduction of specific distress calls of a given species, recorded on tape and carried in an equipped vehicle, can be a handy device for temporary relief on and ·und runways.

the pilot's viewpoint

There may be a time in the not too far distant future when the pilot will receive a "feather report" . . . a radar tracking of large flocks of birds heading in a specific direction at a given altitude. However, that is down the road and the problem is with us now.

Perhaps the most important measure the pilot can take is to fly with the helmet visor down. Many an eyeball (and probably aircraft) have been saved due to the added protection the visor provides. If your helmet has a double visor don't be reluctant to use the clear visor at night . . . it could save your life.

It is unlikely that bird/aircraft collisions can ever be prevented entirely, however they can be reduced. A knowledge of the migratory patterns of birds and of the birdstrike problem in general is an essential element in preventing bird/aircraft collisions.

Operational requirements for all TAC aircraft are understood and the following suggestions are not offered tongue-in-cheek, but are areas to be considered when planning any mission.

- Keep low level missions to a minimum but when required (especially during migratory seasons) reduce airspeed as much as possible to minimize strike damage.
- Decrease airspeeds and increase rates of climb or descent during terminal activity. Stay above 10,000 feet AGL for as long as possible.
- Reduce local night flying during periods of increased bird activity (migratory season). Realistic scheduling can reduce the strike hazard.
- Report all birdstrikes regardless of damage to aircraft. Information is essential to the continuing birdstrike studies.
- Report observed bird activity to controlling agency.

The birdstrike problem is very real . . . chances are excellent that you can cite your own personal feathery fable to illustrate the point.

Research is underway but a solution that meets the problem head on is still in the future. Protect yourself as much as possible by following the accepted guidelines; it's your only weapon.

Sources:

USAF Collisions with Birds, Study Numbers 14-66, 12-67, 21-68, 3-69, and 1 Jan – 31 Dec 70.

Bird/Aircraft Collisions, AFOSR.

Associate Committee on Bird Hazard to Aircraft, National Research Council, Canada. Field Note Number 52.

"Fowled Air," FAA Aviation News, March 1966.

Winter Weather

~~A DISSERTATION ON THE ADVERSE EFFECTS OF~~ WINTER ~~AS IT APPLIES TO THE~~ WEATHER ~~CONDITIONS MOST LIKELY TO AFFECT AVIATORS AND OTHERWISE INTERESTED PARTIES.~~

The weather officer is really in the Doldrums. Last night his wife had become incredibly angry and had smote him in the face with an Adiabat. This morning his Hygrometer broke and he had to walk to work. To top it off he had just finished his tenth cup of morning coffee when his assistant informed him the Diurnal was on the blink. He has since tightened up his Gradient and once more has his Lapse Rate in firm control. So, before he heads for the Barograph, let's extract a few words of wisdom concerning winter weather . . . Ed.

FIRST THE BAD NEWS –

Winter weather is predictably unpredictable and changes can occur very rapidly. That morning fog often times is blown away by a temporary wind shift only to have it return at the worst possible time. The sun doesn't go to work before noon, consequently the morning fog is very slow to lift.

Your friendly weather forecaster has a much better chance of busting the forecast because of the speed at which an air mass can change its character. A small wave on a front may quickly emerge as an intense low and wipe out every forecast within a several hundred mile range.

The fluffy white snow that announces the "Ho-Ho-Ho" season is not joyously accepted by the flying community. It messes up the runways, causes teeth gnashing in the GCA shack (because it limits the radar capability), reduces the VIZ, increases the chances for icing, and makes preflight sporting.

NOW THE GOOD NEWS

The winter season leaves behind the majority of thunderstorms, tornadoes and associated severe weather. However, don't be misled; the monsters will still be

around but they'll be harder to see, so perhaps the good news is not so good after all. Because thunderstorm activity is reduced (as compared to spring and summer weather) a complacent attitude can develop; when that happens Mr. C. Nimbus will be waiting . . . shrouded by other clouds but nevertheless just as treacherous and lethal.

Since the good news appears to be bad news and the bad news dominates,let's see what we can do about it.

PREPARE FOR THE FLIGHT

Wear the proper clothing for the flight; you may be departing sunny Florida with a final destination in the northern part of the states. You must be prepared to egress into the environment over which you're flying.

PLANNING

Make a thorough check of the enroute and destination weather to insure that it is within your personal limitations.

Select a good alternate. When snow is forecasted or listed as a possibility at the destination, select an alternate where snow is definitely not forecasted.

Check airfield status for operating taxiways, runways, etc.

Don't forget about NOTAMS for destination, alternate, and departure airfields . . . could save embarrassment . . . and maybe an airplane.

THE PREFLIGHT

Don't let the cold weather hurry you into an incomplete preflight.

Make sure the aircraft is completely deiced.

Watch for leaks. Contraction of fittings caused by colder temperatures can cause excessive leaks.

Check that all drains are free of snow and ice.

Check the pitot heat, anti-icing, or deicing systems.

TAXIING

Everyone knows who's to blame for taxi accidents and they can occur very easily on wet, slick, or icy surfaces. When possible have the aircraft moved off ice before starting.

Remember your ground crew buddies and avoid blowing ice, snow, slush, crud, and corruption in their faces.

Taxi slowly and cautiously; increase your normal separation from other aircraft. Be prepared for the slide and creep along slowly in parking areas.

TAKEOFF

Run a double check on the crosswind component after you taxi onto the active.

Find a dry spot to line up on, if possible.

Be aware that you may slip during runup.

Follow the Dash One for snow and slush removal from the gear after takeoff . . . Don't want that beauty to freeze in the up and locked position.

INFLIGHT

Avoid areas of icing or strong turbulence whenever possible.

While flying in the soup scan the radar for concealed thunderstorms. If you don't have a radar keep constantly advised from center.

Keep ahead of the weather. Maintain a weather watch of conditions at your destination and alternate. Be prepared to divert well in advance.

Make sure your diversion chart is up to date and handy.

Don't forget about that PIREP. Take care of the jock behind you.

APPROACH AND LANDING

Plan to avoid or expedite descent through icing conditions. Preheat the windscreen if applicable.

Evaluate all landing conditions – RCR, crosswind, RVR, and ceiling.

Make an on-speed landing – those few added knots for the wife and the ankle-biters will add up to more runway.

Plan on losing the chute; if you get one then you're ahead of the game.

Be alert for patchy surface conditions that can signal directional control problems.

Know your hydroplaning procedures for wet runways.

Slow the machine to below taxi speed before turning off the runway. Better safe than . . . . . .

Taxiing after landing is a new set of problems. The airplane is lighter and you may be at an unfamiliar field. In all cases keep it slow and don't relax until safely in the chocks.

Last item – Don't fall on your can getting out of the machine. You may have just landed at a base with a lousy club and to spend any more time than the absolute minimum would be highly undesired. On the other hand . . . .

Winter brings with it a brand new bundle of problems, all of which can be solved with a little pre-planning. Now is the time to start thinking about it and talking it up . . . and dragging out the long underwear. →

TAC TIPS ...interest items, mishaps

A Pat on the Back

Both engines on the A-37 flamed out at 8000 feet. The pilot maneuvered the aircraft for a flameout pattern, lowered the gear and flaps to dissipate airspeed and altitude, slipped the machine on final to cross the fence at 130 KIAS, touched down in the first thousand feet, and braked to a stop with 2000 feet of the 5000 foot runway remaining. No damage and no doubt about it . . . it was a good flameout landing. A pat on the back? One would think so but let's go back and see what caused the double engine flameout. The pilot was on a high-low mission with "tips" selected on the fuel panel. At approximately 45 minutes into the flight while at 2500 feet the master caution, fuel low, and fuel gravity lights came on and the fuselage tank indicated 300 pounds (apparently the first time he had checked fuel quantity). The pilot started a climbing turn toward the nearest airport with power at 95 percent on both engines and accomplished the correct emergency procedure by selecting pylons, checking fuel system switch in normal, and pulling the fuel management circuit breaker (this procedure allows fuel in the pylons to be fed into the fuselage tank). Leveling off at 8000 feet, and reducing power to 65 percent, he again checked the fuselage tank quantity. This time it was down to less than 100 pounds. He flipped the switches around for some different combinations then returned to the emergency procedures switch configuration. Thirty seconds later both engines quit. Why? The pattern for the emergency was set when the pilot did not check fuel quantity and instead relied on the tip lights to come on . . . they never did. The correct emergency procedure was accomplished; however, the high power setting used during climb consumed the fuel from the fuselage tank faster than it could be replenished from the pylons. (The Dash One specifically cautions against high power settings in this situation.) The reduction of power to 65 percent came too late to alleviate the situation . . . and both engines starved to death.

Checklist Complete?

There aren't too many people around now who question the validity of the checklist. Few aircrews have ever gotten into trouble for following its guidance, but the reciprocal, I'm afraid, is all too true. Recently two unrelated mishaps (one incident and one accident) occurred that demonstrates the importance of the checklist: The pilots overhead hatch was removed fo ventilation on the C-47 during preflight. Sometime pri to engine start the hatch was replaced; however, it was not physically checked for security — a required item on the before taxi checklist. Just at liftoff the hatch departed the aircraft. A closed pattern was flown and after landing a check was made of the airplane and the recovered hatch, both of which were in fine shape. The hatch was snapped back in place and the airplane departed. The airplane was not bent and the hatch was hardly scratched. So . . . what's the big deal? Almost the same situation developed on another aircraft that makes it a very big deal. Shortly after the C-7 became airborne and after gear retraction the upper escape hatch flew open. The flight mechanic relayed this information to the pilot who decided to land straight ahead since 3000 feet of runway was still available. And land he did . . . gear up! Both props chewed up the runway and dragged the engines to a sudden stop. The aircraft belly-slid some 1000 feet before coming to a rest. No fire erupted and the crew egressed uninjured. Obviously the before landing checklist was not completed. Granted there was an abnormal flight condition which prompted the pilot to land immediately but the flight crew set themselves up for the abnormal flight condition when the flight engineer missed a checklist item . . . he failed to insure the security of the hatch. Complying with the checklist is a big . . . big dea

with morals, for the TAC aircrewman

Taxi Trouble

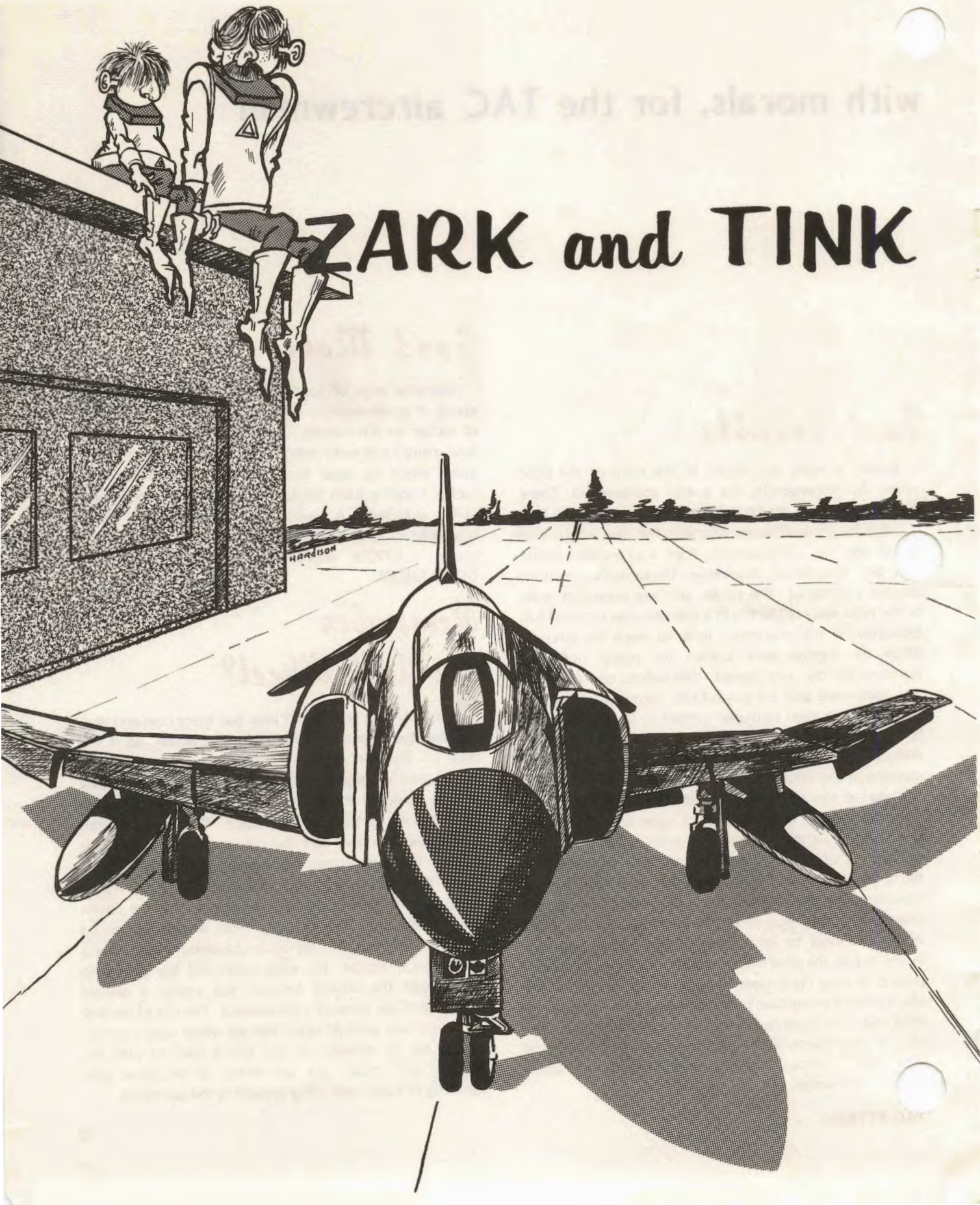
Rarely is there any doubt in the mind of the pilot where the responsibility for a taxi accident lies. There may be a hundred things that lead the pilot into the trap but it is he (in most cases) who adds the final weight that ngs the trap. Unfortunately there is an incident report t will provide an illustration (fortunately it's from another command). The power unit was parked in front of the right wing of the F-4 in a position that required full extension of the pneumatic hose to reach the aircraft. When the engines were started the power unit was disconnected but not moved. The before taxi checklist was completed and the ground talk cord was unplugged; the crew chief then stationed himself in front and to the left of the F-4's nose. The assistant crew chief pulled the chocks upon signal from the pilot. The crew chief standing at the nose signaled and the pilot released brakes and started moving forward. He checked the brakes then turned slightly to the left to check operation of the nose gear steering. At this time the crew chief signaled the pilot to stop . . . which he did. Total distance traveled was thirty feet, however, in the first ten to fifteen feet of movement the aircraft had struck the power cart causing creases, rips, and gouges in the underside of the right wing. Can there be any doubt of the cause? Operator factor in that the pilot did not visually clear the taxi route prior to moving the aircraft. A large penalty to pay for the effort of such a small look. We can't forget about the crew chief tho – he contributed by not moving the power unit after it was disconnected and by signaling the pilot to start taxi without clearing the taxi route. Team . . . in reverse.

Good Move

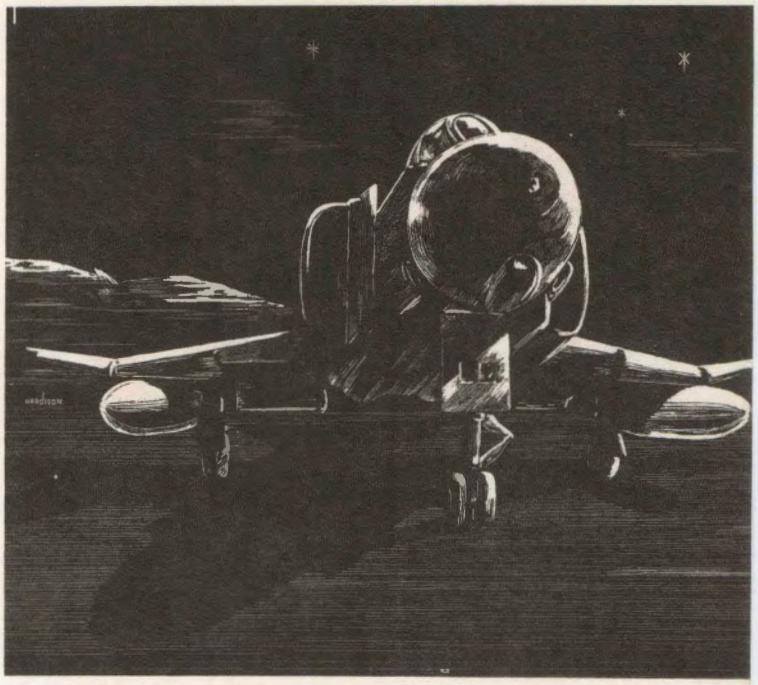
Recently a set of good moves resulted in the possible saving of an airmachine. A landing aircraft reported pieces of rubber on the runway. Tower got busy and determined how many birds were airborne and contacted them all. A quick check by each revealed that one had pieces of rubber hanging from his left tire, however, the tire was still inflated. A successful approach-end barrier engagement was accomplished and the tire did not blow . . . GOOD coordination . . . GOOD landing . . . GOOD SHOW.

Remember the Tail Wheel?

The C-47 is a gallant old lady but every now and then she manages to teach (or re-teach) us a lesson. As in this case (in another command) improper pilot technique caused more damage to the pilot's ego than to the airplane (if they could all end that way) and increased the pucker ratio almost to the breaking point. The approach and landing were normal and the tail wheel came down as it should. The jock slowed the airplane to a speed slightly higher than taxi speed and unlocked the tail wheel. At the same time he applied right rudder and differential power and turned onto the taxiway. The aircraft continued across the taxiway and off of the pavement heading for a maintenance vehicle. The pilot continued the right turn and missed the vehicle (whew!) but struck a nav-aid checkpoint sign damaging the elevator. The out of control condition was entered when the tail wheel didn't unlock caused by an attempt on the pilot's part to turn the airplane and unlock the tail wheel at the same time resulting in a side load being applied to the tail wheel.


ZARK and TINK
HARRISON

look at the F-4



Once again the two worlds are in perfect orbital synchronization and the dimensional window has opened to allow our two observers, Zark and his son Tink, an unrestricted view.

"Gosh, Dad, what is that thing; it looks super-neat-O."

"Glad you asked, Tink; that's what they call an F-4."

"Is that one of those . . . whatchacallit . . . fighter airplanes?"

"It most certainly is, son; as a matter of fact it is the bread and butter airplane of TAC's fighter force."

"Bread and butter?" queried Tink. "You mean it carries bre . . . "

"Good grief, boy," Zark interrupted, "don't take things so literally . . . what I mean is TAC has more of them than any other fighter airplane."

"Oh," said Tink with a cowardly expression, then added, "it must be a fairly new airplane then."

"Well, it's newer than the F-100."

"I see," said Tink, pausing for a second, then adding, "the lower the number the newer the airplane."

"Let me explain it this way, Tink . . . you see . . . "

"Boy," said Tink not listening, "that F-111 must really be an old airplane."

"No, son, the F-111 is a newer airplane; you see it's like . . . "

"I think I'm beginning to get a feel for it, Dad," Tink interrupted, coming to a final conclusion, "That F-15 must really be ancient."

"Tink, you're all confused, you don't understand the system, the F-15 is the newest thing going; you see the numbers go like this . . . "

"Dad?"

"Yes, Tink."

"Can we talk about something else, my head is beginning to hurt."

"Sure Tink, go ahead."

"That F-4 down there . . . I wonder what caused the crash?"

"Crash! What crash!" said Zark beginning to shout.

"That one right down there, Dad, with the tail all bent down."

"You mean the one startin' to move out of the . . . "

"Right there, Dad," said Tink pointing, "the one with the ends of the wings all bent up. Looks like someone really plowed into it."

"Tink," said Zark patiently, "that's the way it was designed."

Tink began to grin broadly, "Sure, Dad, sure . . . they meant to bend the tail down and the wings up."

"That's exactly what I mean, boy," said Zark beginning to get highly irritated.

"Sure, Dad, sure," said Tink, not quite suppressing a grin, "and they meant to make the nose droop down too . . . "

"Tink," said Zark growling through a tightened jaw.

"Yes, Dad?"

"Your Mother is calling."

accident number 1

"When I rolled out on downwind I noticed Lead was almost crossing the target; Two and Three had good spacing. Two's downwind was slightly inside Three and Four and he was just starting his downwind to base turn. I looked back in the cockpit to set my bomb switches. When I looked up I saw Three and I couldn't pick up Two because he was lower than I expected. When I saw him he looked exactly vertical (nose low) about 800 – 1200 feet above the ground in a very slow roll to the left. I heard Three say, "Two what are you doing?" And I said over the radio, "Look out Two!" Lead went down and looked the wreckage over."

accident number 2

"We were watching two planes doing some type of maneuver. They were flying together and one of them had come out of a dive and left that area and headed towards the northwest in a steep climb. The other one veered to the southwest, I believe, and he climbed quite high, and we were watching both planes and it appeared he went into a power dive, like they were going to strafe. We were about a mile and a quarter to his right; he came down in his dive and apparently just about had his plane pulled out of it; it wasn't a vertical dive. He wasn't coming straight down; he was at a slight angle. And he almost pulled out. It looked like he ejected and then the plane crashed. There was a terrible explosion on impact. A ball of fire, a tremendous explosion."

Thus far in 1971 (as of 26 August 71) there have be 27 TAC/ANG aircraft accidents, six of which have b weapons delivery associated. Reduced to a percentage, means 22 percent of all TAC/ANG accidents have occurred during weapons delivery maneuvers.

A comparison of 1969 and 1970 figures for the same time period indicates that a downward trend was in evidence prior to this year (17 percent for 1969 and 10 percent in 1970), however, a trend reversal has now occurred.

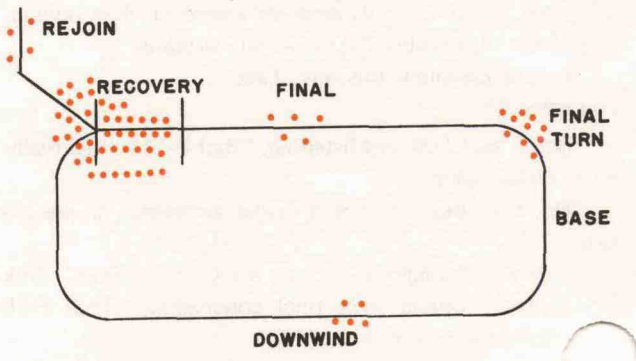
Prompted by the apparent trend reversal TAC Safety conducted a study of all TAC/ANG weapons delivery accidents that occurred during the period from January 1966 through August 1971. The study was conducted to determine where, in the range traffic pattern, the accidents had occurred and what maneuver was being executed.

In conducting the five and one-half year study the following areas were considered:

- On range accidents from all causes
- On range accidents from pilot, supervisory, and miscellaneous causes
- Off range simulated weapons delivery accident causes
- Uncontrolled range (no range officer) accidents from pilot, supervisory, and miscellaneous causes
- Accidents by event – strafe, skip, etc.
- Accidents by pattern location (pilot, supervisc miscellaneous causes)
- Accidents by pattern location (all causes)
- Accidents by pilot experience

The following diagram indicates the pattern dispersion of the sixty-eight weapons delivery accidents which comprised the study.

ACCIDENTS BY PATTERN LOCATION
(all causes)

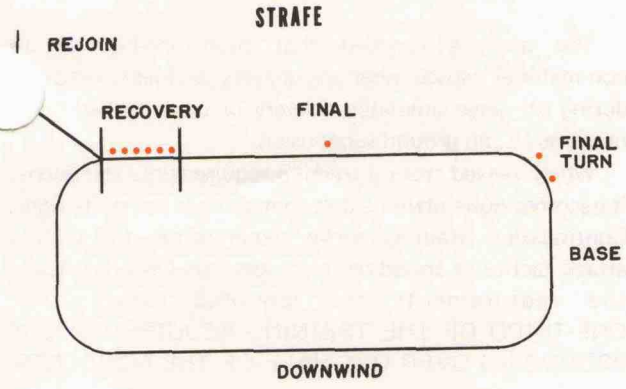


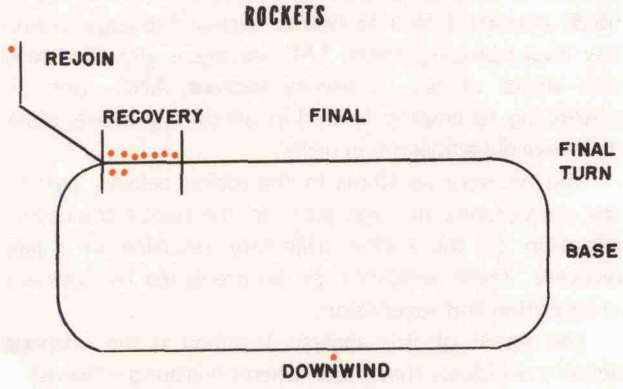
It can be easily surmised that the lion's share of the ...e accidents occur during the recovery, a time when ... the pilot's skill and the airplane integrity are taxed to the greatest degree.

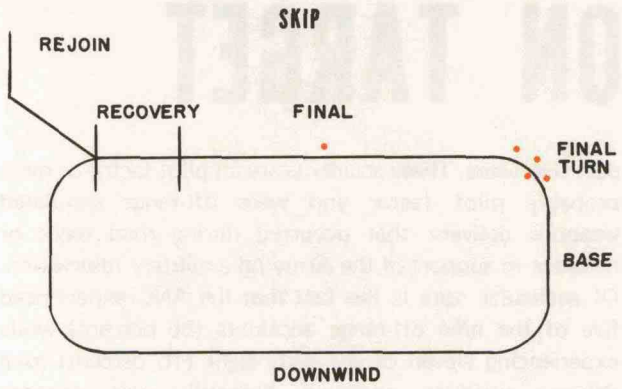
The diagrams below indicate the weapons delivery accidents by event (materiel causes omitted). Eighty-eight percent of the weapons delivery accidents occurred within the four depicted, conventional weapons delivery patterns. (Note: Depictions are not necessarily associated with controlled range deliveries.)

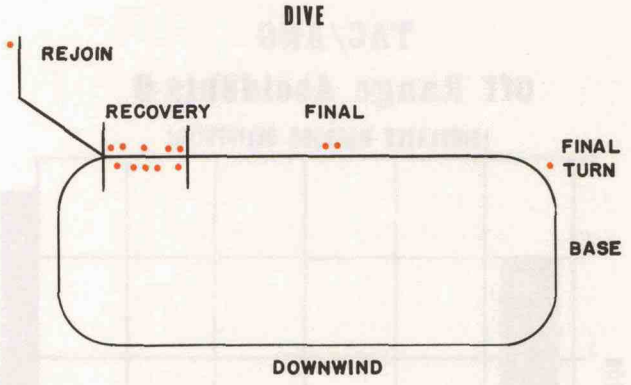
ACCIDENTS BY PATTERN LOCATION

(PILOT/SUPERVISORY/MISCELLANEOUS)









In the skip bomb pattern it is interesting to note that the majority of the accidents occurred during the base to final turn, a maneuver wherein the pilot is making a low altitude, descending turn, and attempting to line up on a specific run-in course. Overshoots due to wind direction or miscalculation followed by an attempt to correct can be disastrous in this low altitude regime.

A review of the thirteen dive bomb accidents revealed that 69 percent of them (9) occurred either off range or on an uncontrolled range. Pilots with minimum experience, either in the UE aircraft, total time, or both were involved in 77 percent (10) of the dive bomb accidents.

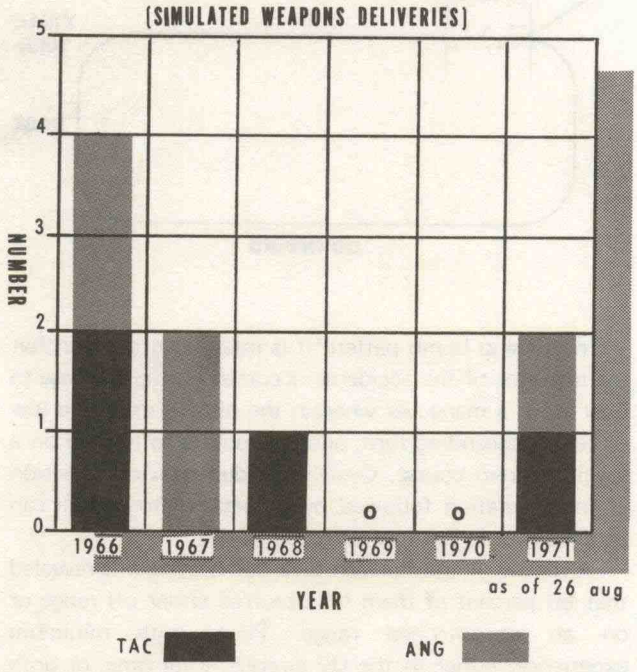
During the review of all weapons delivery accident causes several mishaps began to stand out as consuming a disproportionate chunk of the overall total. Consequently, the following charts were developed to point out the increase in weapons delivery accidents where no ground supervision was required.

The following chart indicates the number of off-range accidents that have occurred in TAC and ANG for the

ON TARGET

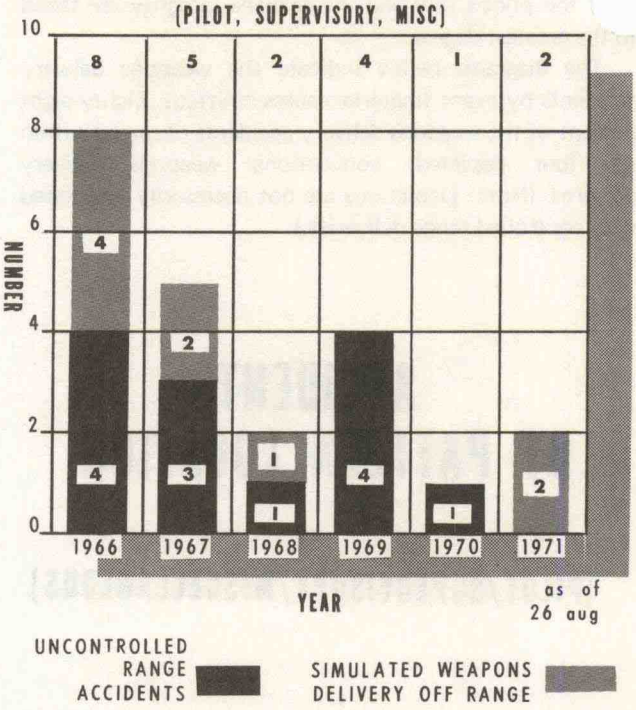
past five years. These accidents are all pilot factor or most probably pilot factor and were off-range simulated weapons delivery that occurred during road recce or missions in support of the Army on a military reservation. Of particular note is the fact that the ANG experienced five of the nine off-range accidents (56 percent) while experiencing eleven of the sixty-eight (16 percent) total delivery accidents reviewed. Pointedly, the off-range weapons delivery accident percentage for the ANG is abnormally high.

TAC/ANG
Off Range Accidents-9



The following chart reflects the total number of weapons delivery accidents where no ground supervision is required. It includes the total of off-range accidents plus those on-range accidents that occurred when there was no range officer present (tactical ranges). In all of these accidents, supervision of the flight is generated from within the flight and it is practically impossible for the supervisor to verify that proper dive angles, recovery altitudes, and other critical maneuvers are being accomplished correctly by all flight members.

NO GROUND SUPERVISION



The analysis revealed that over one-half of all non-materiel caused weapons delivery accidents occur during off-range simulated delivery or uncontrolled ra missions . . . no ground supervision.

When viewed from a training requirements standpoint it becomes quite obvious that something is not quite right. Continuation training sortie requirements for ground attack tactics or armed recce are less than ONE-THIRD of the requirements for controlled range sorties. ONE-THIRD OF THE TRAINING REQUIREMENTS IS PRODUCING OVER ONE-HALF OF THE ACCIDENTS.

conclusions

The base to final accidents in the skip bomb pattern indicate a need to re-evaluate the entire maneuver. AFR 55-89 permits a zero to twenty degree dive angle during low level bombing. While TAC units generally encourage dive angles of ten to twenty degrees, ANG units are continuing to employ level skip bombing practice. More definitive guidelines are in order.

The recovery accidents in the rocket delivery pattern are attributable, in large part, to the pilot's trance-like attention to the rocket trajectory resulting in a late recovery. These accidents can be prevented by constant re-education and supervision.

The thrust of this analysis is aimed at the weapons delivery accidents that occur when no ground supervisi

is required. As shown, these events account for an ing, out-of-proportion share of the weapons delivery ents. There is little doubt that an experienced flight leader can plan, brief, and conduct a safe ground attack or armed recce mission under the existing guidelines. Take away the experience and it's a brand new ball game. A strengthened set of guidelines could enable the weaker or inexperienced leader to plan and execute a safe mission.

actions

To cope with the weapons delivery accident problems Headquarters TAC has taken the following actions.

1. Changes in the appropriate 55 series manuals have been written to provide the following minimum day recovery attitudes for ordnance deliveries (live or simulated) in Tactical Range/Close Air Support Training.

Dive angles of 30 degrees or more – 1000 feet AGL.

Dive angles of less than 30 degrees – 300 feet AGL, or one half of planned altitude loss for recovery, whichever is higher.

Level Deliveries – 200 feet AGL.

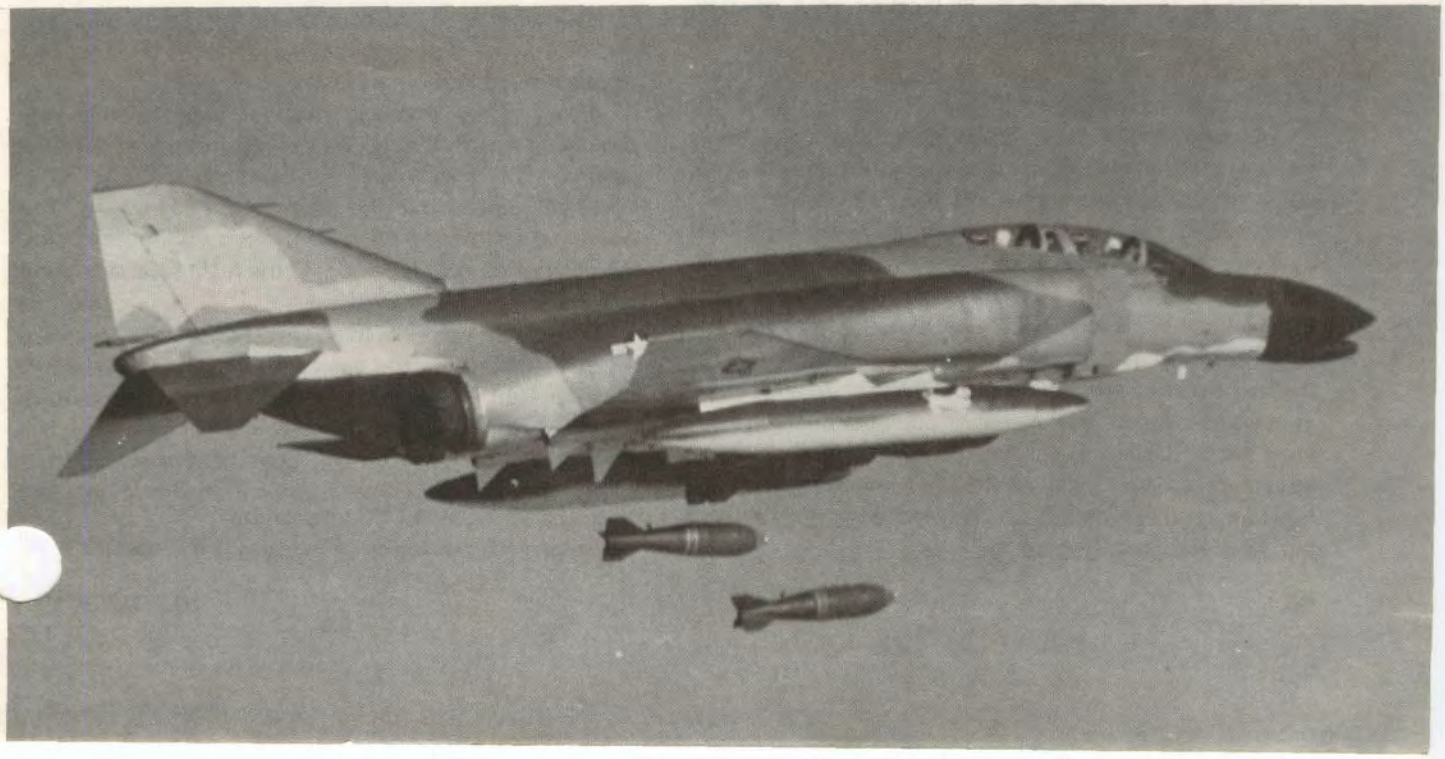
These changes have been published for F-4 and A-7 aircraft. Changes for remaining aircraft are in process of publication.

2. During off range ground attack tactics, close air rt without a FAC, and armed reconnaissance ng the minimum altitude has been established as 1000 feet AGL.

3. An evaluation is underway to determine the feasibility of raising the minimum delivery altitude for level skip bomb training from 50 feet to 100 feet and to restrict the final turn altitude on skip bomb deliveries to no lower than 300 feet AGL prior to rollout on final.

final thought

It is imperative that sound safety practices be blended with operational requirements to form a basis for mission effectiveness. Through constant re-evaluation of tactics and procedures we can achieve that necessary blend, and in doing so we keep the men and machinery on target in peacetime training to insure that in the crisis of war we can put those same men and that same machinery ON TARGET.



CHOCK TALK ...incidents and incidentals

Panel Fastener FOD

FOD comes in all shapes and sizes and from all sources. Overlooking the smallest detail can easily lead to the demise of an engine. Case in point: The F-4 was on an FCF at forty thou in excess of one mach when the left engine compressor stalled; however, the jock got the bird on the ground without having to shut down the engine. During post flight a panel screw that was in place before flight was no longer there. The best guess was that the screw was improperly installed and worked its way to a brief freedom during flight. The compressor gulped it down and as a consequence the engine had to be shipped for overhaul . . . Leave out a small detail and scratch one engine.

CPI

The C-130 was on a practice missed approach when the CPI took leave of its senses, departed the airplane, and fell to the ground. Tower was notified so they could get a fix on the beeper . . . but no luck. The incident aircraft could hear the beeper but was unable to fix its position. Malfunctioning frangible switches and associated wiring was tagged as causing the deployment. What's that you say? . . . What's a CPI? It's a Crash Position Indicator. Its function is to provide an exact location of a downed aircraft . . . It hasn't been found yet.

Tech Data

The autopilot in the F-4 was engaged when the pilot noticed the trim indicator was showing five degrees nose up. When George was turned off the F-4 pitched down about ten degrees. In order to maintain level flight full nose up trim and slight back pressure on the stick were required. Later, at a lower altitude the airplane could be trimmed hands off with two degrees nose up trim but the stick was very mushy; abrupt movements of the stick resulted in slight and gentle pitch changes. Maintenance investigators found that a sealant compound which had been used during a previous pressure probe heater installation clogged parts of the system and degraded its function . . . the problem? . . . The TO does not call for the use of a sealant. Now we know why.

Formula for an Accident

The C-130 landed with number one engine shut down, the left main landing gear not fully down but chained to the aircraft, flaps that wouldn't work, no nose wheel steering, no normal brakes, no anti-skid, and one-half of the flight controls boost gone.

One might possibly expect this if the airplane had just departed a "hot area" on a combat airlift sortie . . . but no one was shooting at this airplane. It was just a routine ferry flight from an overhaul (IRAN) facility here in the good old U.S. of A.

During preflight a gear rub in the left main was discovered by the flight crew. Maintenance personnel claimed that a gear rub in this area was not possib lengthy discussion followed during which time the airc. rejected the airplane. Maintenance jacked the airplane, checked for proper gear clearance, and signed off the write-off as no defect noted.

Engine start and taxi were uneventful, however, during runup a steady stream of oil was observed coming from number one engine drain mast and cowling. All engines were shut down and the number one engine was inspected by maintenance. It was determined that the oil filler cap was causing all the trouble; it was replaced and the next engine run was without incident.

About thirty minutes into the flight number one engine oil quantity dropped rapidly from nine to three gallons. The engine was scanned and oil was again observed running out the drain mast and cowling. The engine was shutdown to prevent the possibility of a fire. An emergency was declared and the flight reversed course to return to the departure base.

During the before landing checklist the flap lever was set at fifty percent. The number two hydraulic pump low pressure light came on and the pressure dropped from 2800 PSI to 700 PSI then to zero. The flaps did not move from the full up position. Loss of system pressure emergency procedures were accomplished and the flap lever was placed in the full up position.

Fearing the possibility of two engine out operation

with a maintenance slant.

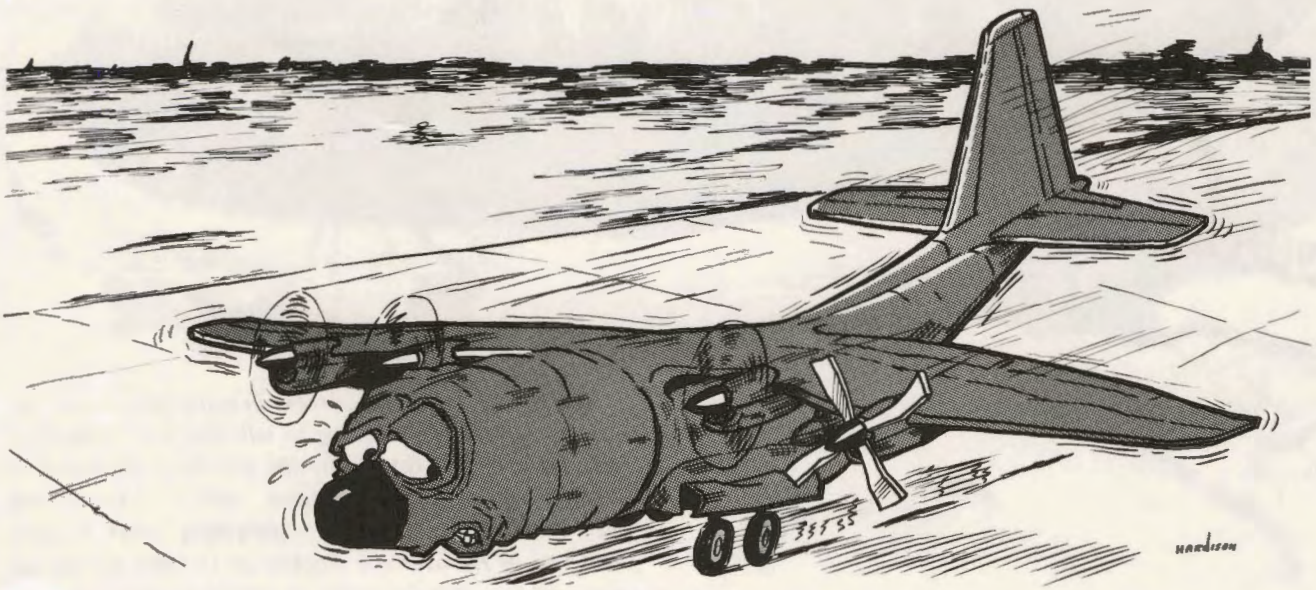
aircraft commander decided to dump fuel to get the airplane weight down into the safe two engine out operational range. The dump procedure was initiated, however, fuel dumping from the left external tank could not be accomplished using normal procedures because of a crossfeed valve failure. The by-pass valve had to be used in order to dump the fuel from the tank. After the dumping was completed and the aircraft gross weight was down to 117,000 pounds the crew discussed the lowering of the landing gear. The decision was made to turn on the number two hydraulic pump switch and attempt to lower the gear using hydraulic pressure.

e pump switch was turned on and the pressure ted normal. The landing gear lever was placed down and the gear was released to an intransit position and the hydraulic pressure dropped. The nose gear and right main extended to a down and locked position, however, the left main indicated an unsafe (intransit) position. The flight engineer visually inspected the gear and found that the drag pins were not fully engaged in the shelf bracket. An unsuccessful attempt was made to manually crank the gear to the down and locked position. The left main gear was then chained down and the aircraft landed without further complications.

All totaled there were eight major discrepancies, four of which pertain to safety of flight and should not have occurred, given proper maintenance supervision and inspections.

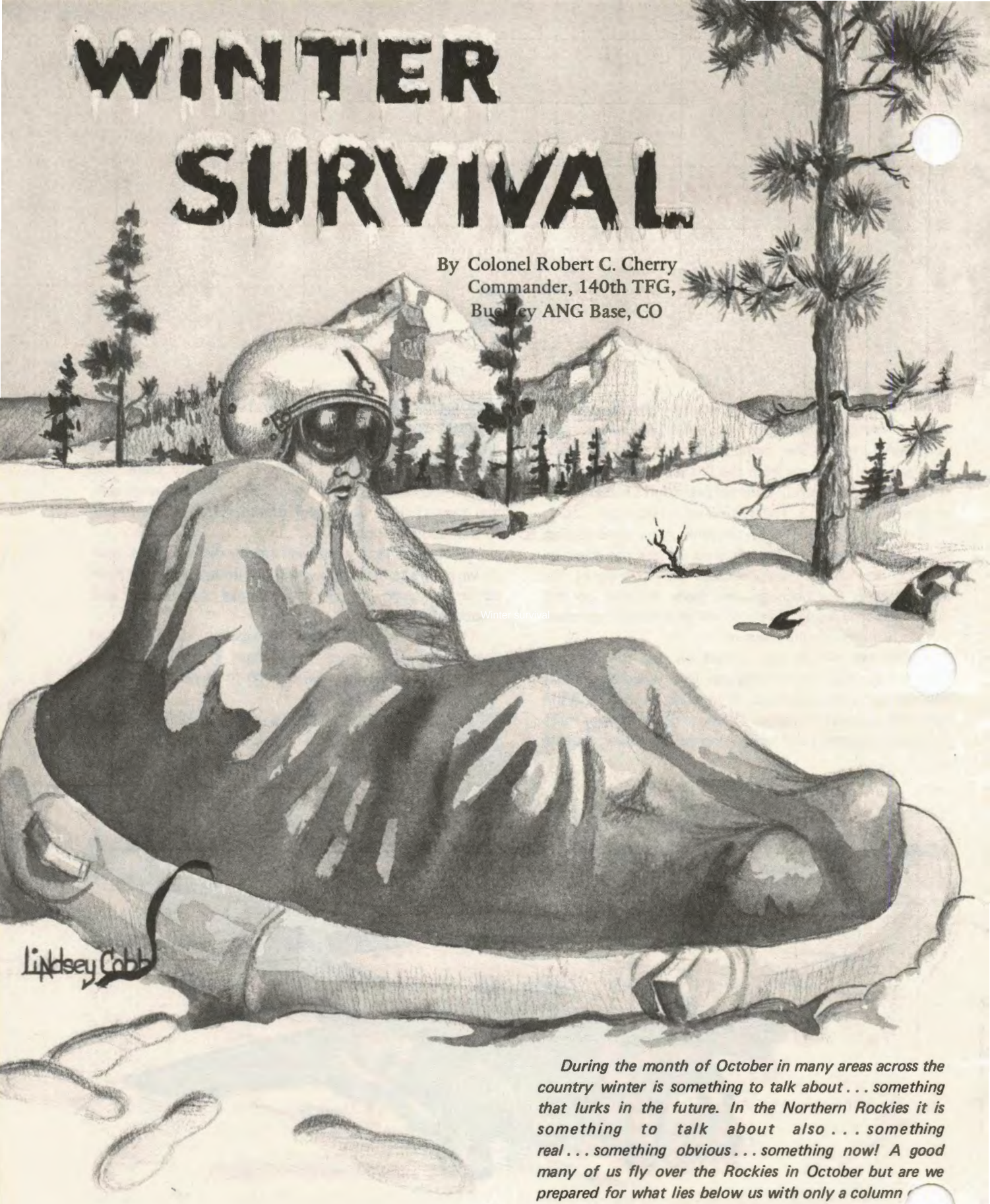
The formula for an accident was very close to being completed. One more emergency in this series of emergencies may have been enough to make the accident formula jell.

Top quality maintenance is not just desired; IT IS ESSENTIAL. Anything less cannot be accepted.



WINTER SURVIVAL

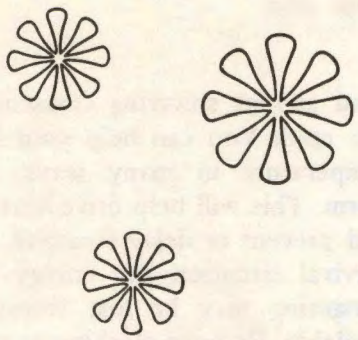
By Colonel Robert C. Cherry
Commander, 140th TFG,
Buckley ANG Base, CO



During the month of October in many areas across the country winter is something to talk about . . . something that lurks in the future. In the Northern Rockies it is something to talk about also . . . something real . . . something obvious . . . something now! A good many of us fly over the Rockies in October but are we prepared for what lies below us with only a column

and the whims of a machine to separate us?

Colonel Cherry is a dedicated survivalist who knows Northern Rockies . . . and knowledge is survival. We are indeed grateful to him for passing on a little of that knowledge . . . Ed.



If your feet are cold, put your hat on! Sound facetious? Perhaps, but it is a statement of fact. The mountain men of a century ago were well versed in all facets of semi-arctic survival. Those who could not or would not learn the rudiments of cold weather protection simply did not return factor not without parallel in the modern d of today. Preparation, mental as well as physical, is as true now as it was in the days of Kit Carson, Jim Bridger, and Jed Smith. Those of us who live and fly in the area of the Northern Rockies must be constantly aware of the hostile environment that awaits the unwary.

INSULATION

The current art of the advertising media can result in the uninitiated relying on items that are supposed to be good, but will not stand the test of actuality. Let's pursue some proven theories for a moment. Radiation and conduction account for small amounts of the total body heat loss. Unless body heat reaches the outer layer of the insulating material, there is no loss by radiation. Direct contact with a cold surface will cause an immediate heat loss by conduction; the transfer, or heat flow, being hot to cold. The best non-conductive material known today is air – but air circulates and becomes a transfer agent by convection. Thus, we enter the realm of insulation.

In order to prevent heat loss by convection we must prevent circulation of our non-conductive agent – air. There is no miracle insulating material, advertisers to the contrary. All depend on dead air for the quality of insulation and on thickness for the quantity. Research done during World War II confirmed much of this theorizing. In one test, cotton, kapok, and steel wool were all evaluated at the same density and all provided the same insulation. Convective insulation depends on thickness of dead air – period. Don't let anyone tell you that the latest one-quarter inch thick "Jim Dandy Astronaut Jacket" is as warm as a one-inch thick down insulated jacket. It is not. It is only one-quarter as warm and the best sales pitch in the world won't make it any warmer.

EVALUATION

Predicated on the above, our life support people performed an evaluation of the insulated life raft as a tool for land survival. Last winter, Master Sergeant Ray Zorens and Major Wayne Sagar set up an emergency camp in the mountains under monitored conditions. Each took a complete survival kit plus one parachute canopy for both. Clothing consisted of waffle-weave insulated underwear, Nomex flying suits, insulated boots, summer flying jacket and summer gloves. This clothing approximated what a TAC pilot would wear on a flight from Bergstrom to Mountain Home.

Temperature in the test area was 12 degrees Fahrenheit with a wind of 20 knots gusting to 35. During the night the temperature only dropped to 5 degrees with an accompanying reduction in wind velocity. Not severe weather perhaps, but adequate for the analysis. After they had constructed a lean-to shelter and started a fire, Sgt Zorens inflated the raft (LRU-6/P), placed it in the open with no other protection, set the seat cushion inside for hip insulation and entered the raft, pulling the inflated spray shield around him and sealing it with the attached velcro tape. THE TEMPERATURE BEGAN TO RISE IMMEDIATELY TO 64 DEGREES FAHRENHEIT AND MAINTAINED THAT READING FOR FOUR HOURS. At that time Sgt

Winter SURVIVAL

Zorens moved to the shelter where he and Major Sagar spent the remainder of the night using both the sleeping bag and life raft. The temperature inside the sleeping bag was maintained at 78 degrees Fahrenheit. It is safe to assume that a properly clothed person could survive with only the raft under reasonable semi-Arctic conditions and, with the raft and sleeping bag, under severe conditions. All we have really added is air — a thick layer of dead air to alleviate the convective heat loss.

MOBILITY

Mobility is indeed a problem. On steep hills the raft would function much like an inner-tube sled, but it was useless on average inclines. In deep snow you would be better off physically to limit movement to short distances for shelter or wood, conserving energy to fight the cold. Since the only sources of heat available are radiation and metabolic rate, the waste of body heat through fruitless effort can be disastrous. The sun or a fire are the limits of radiant heat in a survival situation. The metabolic rate can be increased considerably, but there is a price; increased caloric intake. The answer is increased muscular activity for short periods to relieve discomfort. Muscular tension exercises can be done in the sleeping bag or raft and can increase the metabolic rate sufficiently to obtain the necessary relief. At least 10 minutes is normally required to produce the desired results. You skiers might try it sometime on the chairlift. It works.

HEAT REGULATION

The human body has some involuntary means of heat regulation: perspiring when too warm, and goose pimples (raising the body hairs to trap dead air) or shivering (muscular tension) when too cold. You can help your body regulate the temperature in many ways. Keep your torso warm. This will help drive heat to the extremities and prevent or delay frostbite. Don't sweat. In a survival situation the energy you lose through perspiring may be lost forever unless food is available. Remove clothing as required, but don't sweat. The damp clothing will really chill the body when the exertion stops and the hands and feet will become cold quite rapidly.

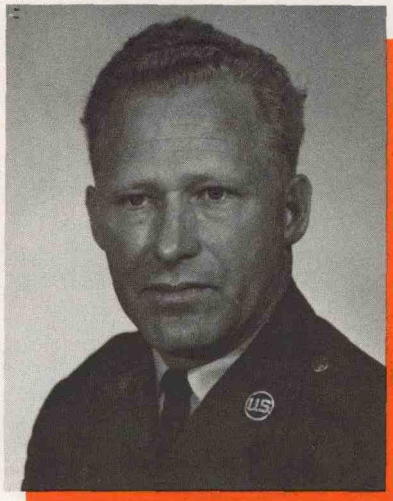
The head has a rich blood supply, but does not possess the automatic constricting device for blood flow we find in the other extremities. It, therefore, becomes the primary radiator for a excess body heat. If you need that heat in your fingers, make certain it isn't lost through the head. In other words, if your feet are cold, put your damn hat on.

NOTE: Much of the research contained in this article was obtained from Mr. Gerry Cunningham, Colorado Outdoor Sports. Mr. Cunningham is noted world-wide as an authority on outdoor clothing and has pioneered many of the construction techniques for better insulation. >

TACTICAL AIR COMMAND

Maintenance Man of the Month

Staff Sergeant Willard L. Taylor, 834 Field Maintenance Squadron, Hurlburt Field, Florida, has been selected to receive the TAC Maintenance Man Safety Award. Sergeant Taylor will receive a letter of appreciation from the Commander of Tactical Air Command and an engraved award.

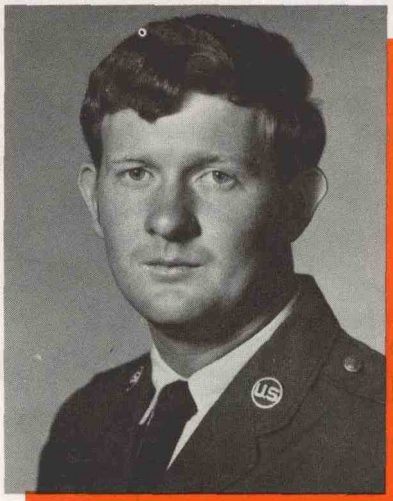


SSgt Taylor

TACTICAL AIR COMMAND

Crew Chief of the Month

Sergeant Larry G. Armstrong, 6 Special Operation Squadron, England Air Force Base, Louisiana, has been selected to receive the TAC Crew Chief Safety Award. Sergeant Armstrong will receive a letter of appreciation from the Commander of Tactical Air Command and an engraved award.

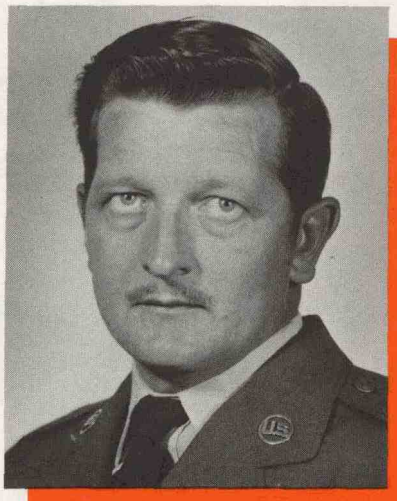


Sgt Armstrong

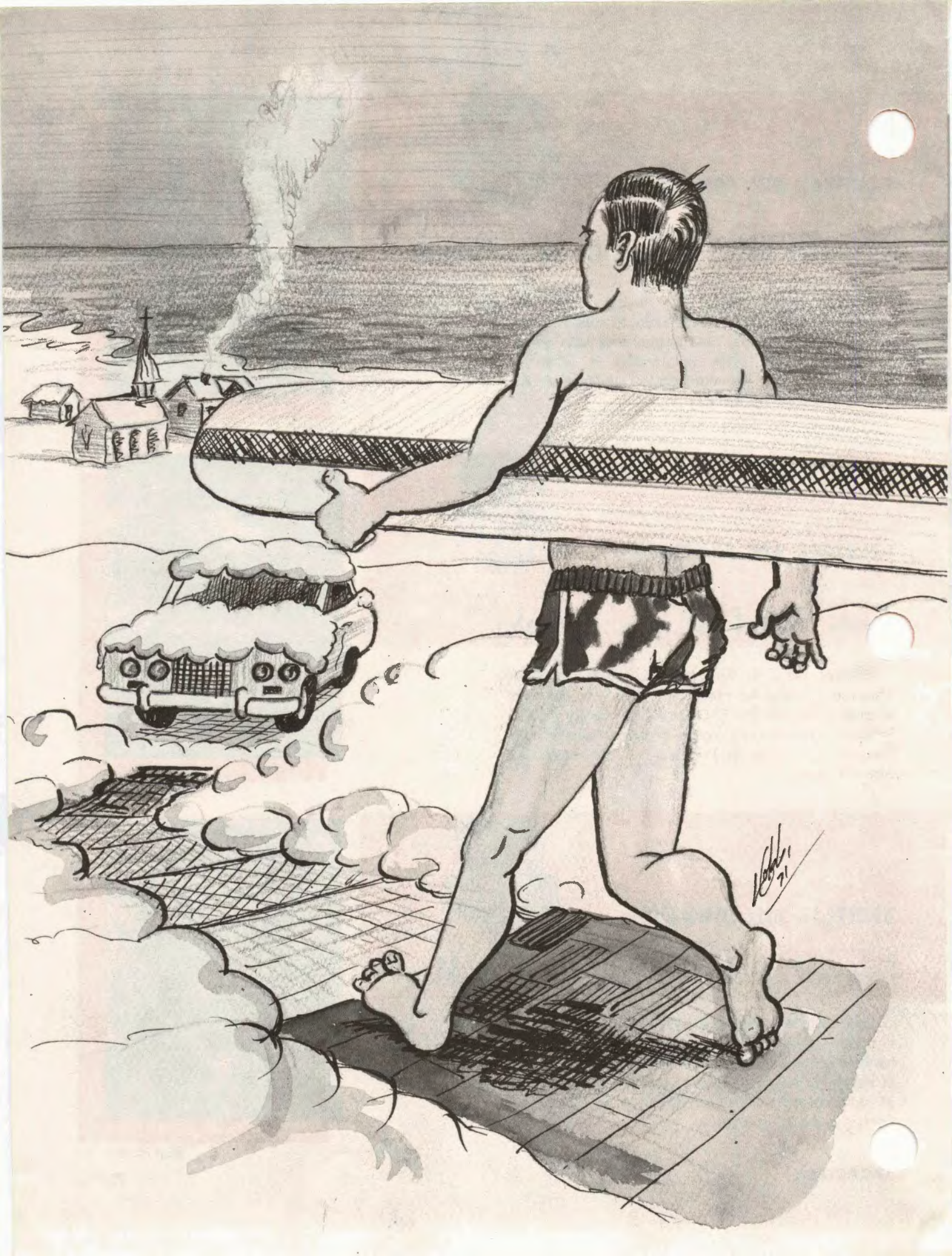
TACTICAL AIR COMMAND

Ground Safety Man of the Month

Staff Sergeant James R. Hughes, 1 Aeromedical Evacuation Group, Pope Air Force Base, North Carolina, has been selected to receive the TAC Ground Safety Man of the Month Award. Sergeant Hughes will receive a letter of appreciation from the Commander of the Tactical Air Command and a Certificate.



SSgt Hughes



The flames have flickered low in the fireplace giving ... the embers which are glowing warmly. The big ...ared dog is sleeping contentedly at your feet. In your left hand is a snifter with just a trace of brandy swirling in the bottom, and in your right hand the old familiar meerschaum pipe is filling the room with the aroma of your favorite blend.

Kneeling at your side is the one that makes it all worthwhile. She has been gazing lovingly at you for some time knowing that you have been turning a thought over in your mind, trying to find the right words.

Finally you speak, "Darling . . ."

Her eyes open wide and she murmurs breathlessly, "Yes . . . yes."

"Darling," you continue, "there's something I've got to talk to you about."

She giggles.

"It's about . . . about. . . "

"Yes, Sweetheart, yes," she cries excitedly.

"It's about . . . Winter Driving!" you cry triumphantly.

"Oh Darling!" she shouts deliriously and you smile inwardly, knowing that once again you've captured the moment.

In TAC during 1970 there were twenty-two motor vehicle accidents caused, at least in part, by inclement weather. Perhaps there were many more in which weather played a part in establishing the driver's attitude that eventually set the stage for the accident.

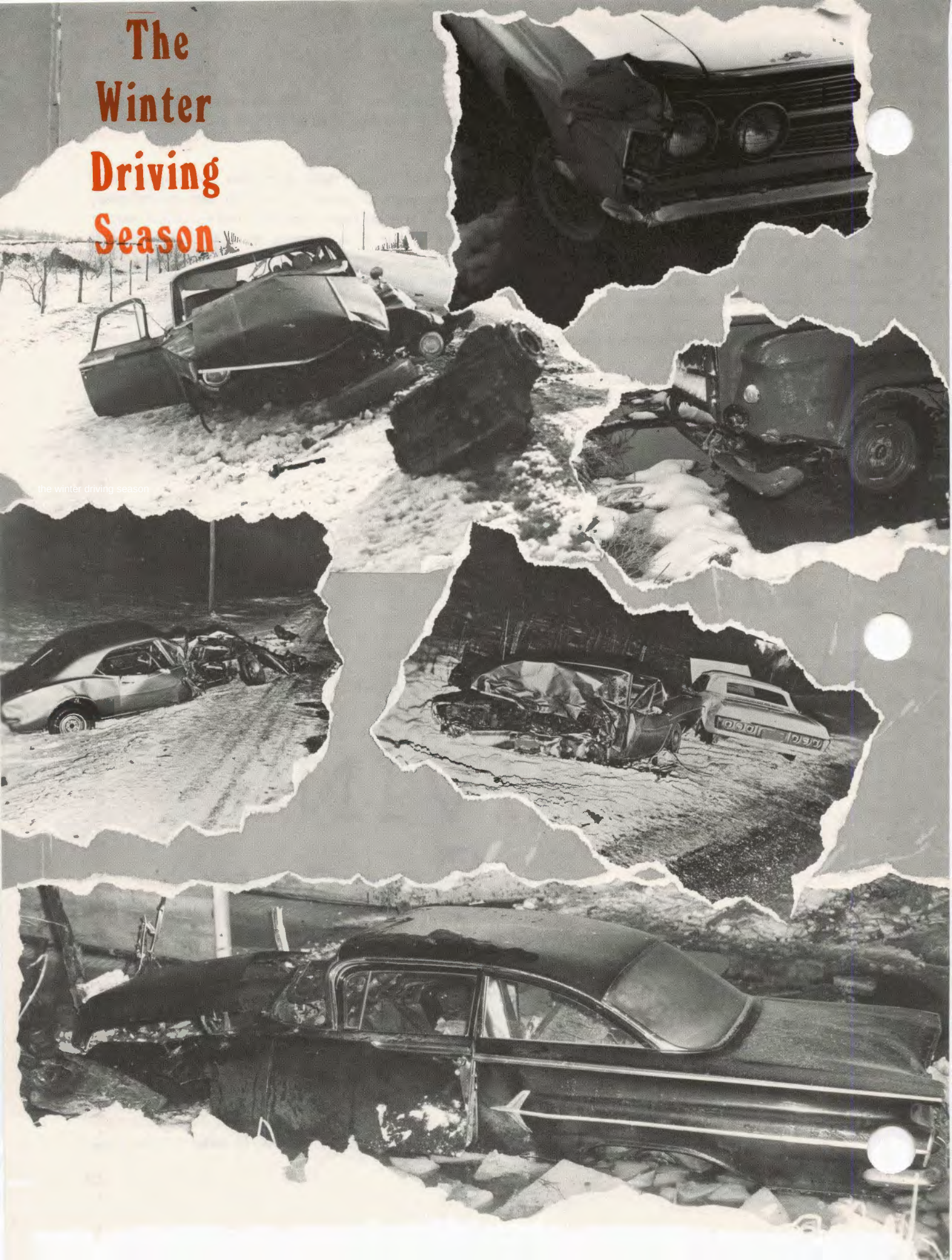
Each season brings with it a set of identifiable hazards. By preparing for the season before it arrives we can improve our chances of coming through on the other side with, perhaps, only a few stories to tell. It's going to take a little self-education and a few logical steps to prepare for the winter season. Just as you wouldn't plan an automobile trip to Alaska without first making some preparations to counter the anticipated driving conditions, you shouldn't let Alaska travel to you without making those same preparations.

The WINTER DRIVING Season

By John D. McColman
Traffic Safety Assistant
Hq TAC Ground Safety Division

The winter season conjures up many thoughts that vary, depending upon where you live. To some it means snow, ice, and freezing weather. To some it means clouds

The Winter Driving Season



the winter driving season

and rain and windy weather. Still others think of balmy with cool nights and dormant grass that no longer to be cut. But, there are some things that are common to all areas: shorter days and more darkness, children going to school, leaves falling, and the traffic crush of the holiday seasons. Wherever you live, the winter season is usually, in some way, associated with adverse weather.

Since TAC bases are located throughout the U.S. they are affected differently by Mother Nature. Each base has its own brand of winter weather and there is no doubt that most of us will be exposed to some type of winter weather driving.

Fog, sleet, snow, heavy rain, and subfreezing temperatures present driving hazards because they reduce a driver's ability to see and the vehicle's capacity to steer and stop. At the onset of rain, hail, sleet, or snow, speed must be reduced and the driver must never lose the feel of the road.

The driver should be mindful of the fact that operators of other vehicles are faced with the same hazards. Watch the behavior of other vehicles with special alertness. Bad weather also affects the behavior of pedestrians. It makes walking more difficult and reduces their ability to see. Good drivers will be aware of the pedestrian's limitations and will be especially alert for them.

EPARE NOW

In preparation for winter get your car in good mechanical condition. Some things to check:

Brakes – Adjusted and good lining.

Tires – Good tread or snow tires. Check pressure. If you haven't checked them since summer the chances are the pressure is low.

Lights – All working. Headlights aimed properly.

Windshield – Good wiper arm tension, live blades, and plenty of windshield solvent.

Engine – Tune up and check battery.

Muffler and Tailpipe – Inspect for leaks. Carbon monoxide is a proven killer.

Toss these items in the trunk: a shovel, booster cables, snow brush and scraper, a tow chain or strap, and last but not least, a set of tire chains. They're the best for winter's worst weather so keep them handy.

SOME DRIVING REMINDERS:

Keep your windows clear, both inside and out. If your windows steam up and you have an airconditioner, on for a few minutes. It will clear the windows.

Turn on your lights – see and be seen.

Take it easy on the start – keep the wheels turning, not spinning. Do not lock the wheels. When stopping on ice or snow pump your brakes.

Keep your car under control, be able to stop. If you can stop you can generally avoid an accident.

BE AWARE THAT IT TAKES MORE DISTANCE TO STOP WHEN:

You go faster. It takes more time to see and react as well as for the brakes to work.

Your view is limited. You have to see danger to react to it and reduced visibility from darkness, weather, traffic, road, or even a dirty windshield can cut your perception time drastically.

Tires are smooth. Worn treads reduce traction, especially on wet roads.

Roads are rough or bumpy. Bouncing car wheels give unequal friction and braking.

You drive over deposits of loose gravel on a hard, dry road surface. Once on the roll, gravel can cut tire gripping power in half.

Temperature rises on icy pavement. At 32 degrees, when ice is wettest, it takes twice as long to stop as when the temperature is zero.

Road dirt becomes an oily film in rain. It's worse after a light shower or at the onset of a heavy downpour – before the dirt can be washed away.

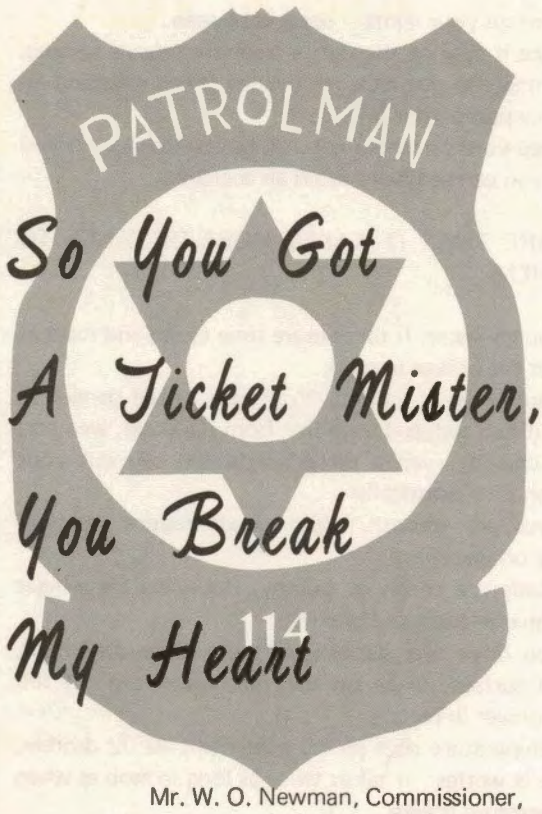
Riding across raised pavement markings that adhere to the road surface. The smooth top of the markings reduces friction, especially when wet and when you may least expect it.

Driving on seemingly clear roads in winter. Frost or patches of ice tend to settle in shady spots, at intersections surrounded by tall buildings or trees, on the north and west sides of hills, on bridges, around underpasses, and at the bottom of banked curves and crowned roads.

The road is wet, regardless of whether it's raining or snowing at the time. Temporary conditions such as standing pools of water and batches of wet leaves also make the road slippery and can produce hydroplaning.

Your attention is allowed to wander. Any action which takes your mind off the traffic, no matter how momentary, can make your reaction too late.

REMEMBER – SEAT BELTS ARE NEVER OUT OF SEASON. KEEP THOSE SEAT BELTS FASTENED. IF YOU DO HAVE AN EMERGENCY, THEY'LL KEEP YOU SNUGLY IN YOUR SEAT AND YOU CAN DEVOTE YOUR UNDIVIDED ATTENTION TO THE DRIVING TASK AT HAND.



Mr. W. O. Newman, Commissioner,
Kentucky Department of Public Safety

Maybe you're one of them. Are you one of the people who call me on the telephone or write me a letter to tell me my troopers are stopping motorists and giving them tickets for "no reason at all?" I wouldn't know – you never give your name! You tell me you're a good citizen and a safe driver just using the Interstate for what it was intended – speed. And that "dumb cop" gave you a ticket.

You break my heart! I hope the next time you're tearing down the road at 85 miles per hour that trooper catches you again. I hope he gives you another ticket and the traffic judge takes your license away. I hope he catches you before you smash into a concrete bridge abutment at 85 mph and he has to help pry your lifeless body out of that crushed speed machine of yours. I hope we can teach you a lesson with a ticket so maybe you won't cause a wreck and cost somebody else his or her life.

You really break my heart telling me you don't have time to go to court about that ticket. I wish you could come with me to the scene of a wreck sometime. I wish I could make you stand and watch a man writhe in the gravel on the shoulder of a highway while he waits for an ambulance that will be there too late to do anything but carry him to the morgue.

I wish I could make you help scrape the bits of bone and flesh of a whole family off the asphalt and baskets. You'd vomit – just like my troopers do, you'd think differently the next time you climbed into that car of yours.

You said you were driving safely when the trooper stopped you. The road was clear and there was no harm in edging over the speed limit a few miles per hour – you said. I'm really impressed with your ability to judge road conditions. I'm only sorry a trooper wasn't at that place a few months ago when a man with a wife and four children had a blowout at over 80 mph. He might have slowed him down; and his children would still have a father and his wife a husband.

Oh, am I getting you mad again? That man might have been mad if the trooper had stopped him. He might have written me a letter. But he'd be alive.

Your letter doesn't bother me friend. What bothers me is that you apparently haven't learned your lesson. You're probably going to get back behind the wheel of your car thinking you own the road and nothing can happen to you. You don't think about the other people on the road who want to go on living.

And who gave your kid driving lessons. You? Then he's probably gotten a couple of tickets, too. It's no wonder he weaves in and out of traffic, speeds, and leaves stri[illegible] burned rubber at stop lights.

I hope we catch him too, mister, before we have to call you and your wife to come identify his body at the morgue. I don't want to watch you crying and wishing you hadn't let him have a car until he learned to drive maturely.

And you say you want my troopers to let you off with a warning. What you really want is for us to stop doing our jobs! You want us to let you go until you meet another guy just like you – head on!

I wish you could come with me to a wreck and see the seared body of a victim after the fire department has finished its job of extinguishing 15 gallons of flaming gasoline. I wish you could go with me to her home and help me tell her husband that his wife isn't coming home because some idiot ran her off the road while trying to pass her. I want you to help him explain why mommy won't be home.

You're mad because you got a ticket, and you have to take time off from work to go to court.

YOU BREAK MY HEART, MISTER!

TAC TALLY

MAJOR ACCIDENT RATE COMPARISON

	TAC		ANG		AFRes	
	1971	1970	1971	1970	1971	1970
JAN	1.6	4.8	16.7	5.9	0	0
FEB	1.6	3.9	11.6	2.6	0	0
MAR	3.1	4.6	7.0	1.7	0	0
APR	2.7	4.9	4.9	2.4	0	0
MAY	2.5	6.2	5.7	3.6	0	0
JUN	2.6	5.5	6.9	3.6	0	0
JUL	2.9	5.1	7.1	6.1	0	0
AUG	2.7	5.0	7.8	6.9	2.7	0
SEP		4.7		6.6		0
		4.5		6.8		0
NOV		4.6		6.7		0
DEC		.6		6.6		0

AIRCRAFT ACCIDENT RATES

* Estimated

UNITS

	THRU AUG			THRU AUG	
	1971	1970		1971	1970
9 AF	2.6	1.7	12 AF	2.0	8.2
4 TFW	0	3.7	23 TFW	0	5.9
1 TFW	0	0	27 TFW	0	10.2
33 TFW	0	0	49 TFW	0	15.5
31 TFW	6.6	6.1	479 TFW	3.6	13.9
354 TFW	6.2	0	474 TFW	0	0
4403 TFW	18.1	0			
363 TRW	0	4.1	355 TFW	0	—
			347 TFW	0	—
			67 TRW	0	0
316 TAW	0	0	314 TAW	0	0
317 TAW	0	0	313 TAW	0	0
464 TAW	0	0	516 TAW	0	0
68 TASG	0	0	58 TFTW	8.8	16.0
			4453 CCTW	5.2	4.7
			71 TASG	0	0
TAC SPECIAL UNITS					
1 SOW	6.9	7.4	2 ADG	0	0
4409 SUP SQ	0	0	4500 ABW	0	0
4410 SOTG	6.3	0	57 FWW	0	0
4485 TTSQ	0	0			

TAC SUMMARY

	AUG 1971	THRU AUG	
		1971	1970
TOTAL ACCIDENTS	1	20	30
MAJOR	1	14	27
MINOR	0	6	3
AIRCREW FATALITIES	0	6	26
AIRCRAFT DESTROYED	0	9	25
TOTAL EJECTIONS	0	9	22
SUCCESSFUL EJECTIONS	—	9	16
PERCENT SUCCESSFUL	—	100	73


FLEAGLE
FLEAGLE, WE WANT TO TALK TO YOU ABOUT YOUR ATTITUDE....
HARDISON
....YOU SEEM COMPLETELY OBLIVIOUS TO EVERYTHING AROUND YOU....
....YOU'VE GOT TO GET WITH IT AND START NOTICING THINGS...OR YU'R GONNA GET HURT....
DO YOU UNDERSTAND WHAT WE MEAN?
OH, YEAH, SURE...NO SWEAT...
CRACK!
LIKE WATER OFF A DUCK'S BACK
NAW, A DUCK HAS BRAINS...
© Stan Hardison 1970