TAC ATTACK JULY 1970

OUT OF CONTROL ...Page 4 for efficient tactical air power

TAC ATTACK

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TACTICAL AIR COMMAND

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JAMIE SEZ;

You can always tell a smart man – his views are very much like your own.

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TACRP 127-1

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Angle of ATTACK

"TOGETHERNESS"

(rew integrity and coordination, whether it involves two or twelve, is a shared responsibility. Many times, effective teamwork has broken the chain of events generating an airborne problem, stopping the developing emergency at the incident level, rather than in a smoking hole.

Our many-motor drivers have been in the crew integrity and coordination business a long time; a lot longer than the majority of our present dual-crew fighter members. We should be able to gain something from their operational experiences, and the coordination procedures employed by their crew members. There is no question in my mind that flying with an integrated crew is operationally desirable; the same is true if aircrews can fly the same tail number all the time. But, try as we might we know this just doesn't seem to work out a good share of the time. However, I am convinced that a little more effort by unit schedulers and supervisors could greatly improve integrated crew flying, and by doing so, improve crew coordination. In addition, whether it is the "regular" crew or a mixed one fully-briefed, clear-cut detailing of individual crew member responsibility is a must. I feel that this will greatly reduce, if not eliminate, many of our loss-of-control and aircrew-induced accident problems.

Ever since we started swept-wing aircraft flying, we have had the control problems associated with slow-speed,

heavy-weight maneuvering. But it's not entirely new, heavy weights can also present problems in a T-33 at slow speeds, pulling too many Gs. One obvious, over-simplified answer would be to stay out of this potentially dangerous flight regime, but what fighter pilot can or wants to fly straight and level all the time? With hot mikes, two sets of eyeballs, some "togetherness," dual crew-fighters should be able to fly safely throughout the aircraft's designed envelope. Unfortunately, our accident rates show differently. Like a conscientious co-pilot reading airspeeds on final in an old Gooney breaking a 300-and-one ceiling. crew-coordination pays off by supporting the pilot in tight spots. Any team that fills a vacant position just because there is a required number of players, but fails to train and use him fully, usually ends up a loser. There is not too much different about the flying business. As pilots, you wouldn't consider not using max power for takeoff, or not using all the high-priced, sophisticated equipment installed on your airplane to help you. The same thinking applies to crew members. If they are on your flying team, use them!

Virgil K. MERONEY, Colopel, USAF Chief of Safety





Last year Tactical Air Command experienced five accidents involving F-4 loss of control. Only one crewmember out of ten survived! In each case, the investigation could not positively pinpoint what had happened just prior to impact. Four of the accidents occurred on the range during air-to-ground training. The fifth occurred shortly after pitchout for an overhead pattern. In each case the aircraft was in a maneuver near the ground at, or near, max performance when the airplane became uncontrollable. Through June of this year our score is five airplanes and seven crewmembers lost in out-of-control accidents. The loss of aircraft alone represents an extensive drain on our resources, but the tragic part of this problem is the loss of sixteen crewmembers.

We will be concerned here with just one of the many

possibilities that could have caused these accidents: uncommanded control inputs by the F-4 flight control system. We're taking this approach to the problem hoping that it will stimulate pilot thinking, and increase F-4 crew knowledge about the insidious nature of these random flight control malfunctions.

This is not a finger pointing exercise, nor do we have an axe to grind. We are relating a series of uncommanded control input incidents that have been experienced by F-4s all over the world. Each of these could have deteriorated into an "undetermined" accident had they occurred during a critical phase of flight, or had less skillful crews been manning the aircraft. Some are pretty hairy. To this date, there is no proof that a malfunction of the AFCS has caused any of TAC's loss-of-control accidents. Neither is there definite proof that they did not! The latter is the reason for this review of incidents. A transient input to the control surfaces during a critical phase of flight could, in fact, cause a loss-of-control accident. During certain maneuvers the pilot may not be fully aware of what is happening until the situation is too far gone to effect recovery in the altitude remaining. If the system corrects itself before ground contact the wreckage will yield nothing to identify the real cause. In any case, finding an electrically induced flight control malfunction in a mass of tangled wires, tubes, and transistors is not easy. We can't even find the malfunction in some of the birds that got back okay.

Here's a sampling of our reported incidents by phase of flight. We didn't include the cause factors . . . they range from material, to maintenance, to undetermined. In some of them no corrective action was taken other than to remove and replace a suspected component, or components. The actual cause of the wild ride could not be found. In others, for example, the maintenance troops had to resort to refrigeration of a suspected part to prove failure after it had checked out at room temperature. How about that?

TAKEOFF

During the "before taxi" check the crew chief noted a small movement of the rudder when the AFCS was engaged but the movement was within limits. As the aircraft became airborne the right wing dipped approximately forty-five degrees and required full left stick and rudder to keep from going over. Roll aug was turned off and the bird was recovered.

At liftoff the nose rose rapidly and the aircraft rolled to the right. About one-half aileron and rudder were required to stop the roll. After flap retraction and during acceleration the aircraft could be held wings level with about thirty pounds of control force. Additional force was required to roll left. The maximum left bank at 300 knots was about fifteen degrees. With pitch aug engaged it took twenty to thirty pounds of force to move the stick fore and aft. Aircraft movement in pitch lagged stick movement by three seconds.

Pilot started a left turn after takeoff at 330 knots. After thirty degrees of turn the aircraft started a roll to the right. The ball was deflected full right and rudder trim would not move it to neutral. Circuit breakers were checked "in" and stab-aug was turned off; the airplane still wanted to turn right. This condition existed to touchdown.

On takeoff, as back pressure was applied normally, the nose "flew up" at an abnormal rate and excessive forward pressure was needed to maintain a normal climb. Trim was set properly before takeoff. After level off at 2500 feet a

INFLIGHT

Immediately after takeoff excessive left rudder trim was required. Climb was continued to 7000 feet at which time the vaw damper was turned off. The aircraft gradually assumed an out-of-trim condition to the right, this was corrected with rudder trim. The climb was continued for about thirty more seconds, then the aircraft pitched up. Full nose-down trim and both pilots were required to keep G forces below a plus three. The aircraft then began to oscillate violently in pitch, roll, and yaw. All stab systems were turned off, but the oscillations continued. About a minute later control was regained and a controllability check was made in the landing configuration. Final was flown at 180 knots because the aircraft had a tendency to roll to the right. About ten feet in the air the aircraft nosed down in spite of back stick, the touchdown was firm. About fifty feet after touchdown the nose came up and the aircraft became airborne again. The second touchdown was smooth and the drag chute was deployed.

This aircraft landed at a base away from home following a hydraulic emergency and was being test-hopped following replacement of the rudder actuator cylinder. The flight was normal to the point of checking the autopilot and auto-pitch trim, at which point the stab feel trim circuit breaker was pulled to check the auto-trim circuit. At this time the aircraft pitched up violently and oscillated twice before the paddle switch could be depressed. The G meter in the front cockpit read plus 9.5 and minus 2.5. Damage was noted in flight to the upper surface of the right aileron and unknown to the crew, the right drop tank had been torn off during the violent maneuvering. The no-flap landing required four to five inches of right stick to maintain wings level on final.

Aircraft was in straight and level flight at 5000 feet and 350 knots, rudder suddenly went full right.

While in straight and level flight the aircraft yawed hard to the right. Yaw aug was disengaged but the yaw continued. The ball was centered with left rudder, when the pedal was released the aircraft remained straight and level. The rudder trim circuit breaker was pulled and yaw aug re-engaged, the aircraft immediately yawed to the right again. Yaw aug was disengaged and the yaw was corrected with the left rudder.

Aircraft was straight and level at FL 370, speed .87 mach with the autopilot engaged. Suddenly the aircraft

F-4 Out of Control

broke into a fifteen degree nose-low roll to the right. Recovery was slow, the airplane did not seem to want to respond to control inputs by the pilot. The recovery was completed at FL 320. The left spoiler was up three to four inches, the right aileron was down. Roll aug was turned off and some skid disappeared. Yaw aug was then turned off and the aircraft was trimmed for straight and level flight.

FORMATION

Aircraft was number two in a flight of two on an initial tactical formation checkout. They were at 600 feet AGL, 500 knots. The leader initiated a slight climb to maintain terrain clearance and Two followed. Both aircraft began to level off simultaneously, when suddenly number two went into a shallow dive followed very rapidly by a violent pitchup. The pilot attempted to depress the paddle switch but is not certain if he was successful. The autopilot had not been engaged at any time during this flight. The aircraft then began a series of very violent pitch oscillations. The pilot then attempted to keep the stick from moving, he couldn't. The IP took control of the aircraft during the second oscillation and attempted to hold the stick full aft. Both hands were required to move the stick to approximately the neutral position. As

control pressure began to decrease, some back pressure was released and the oscillations began to dampen out. The leader estimated that they went through four or five violent oscillations with the aircraft's altitude varying from very near the ground to about 3000 feet. The pilot's head and shoulders were pinned against the canopy although he was tightly strapped in with his shoulder harness locked. Both the pilot and the IP received minor neck and upper back muscle strains. The aircraft G meters read plus 8.5 and were pegged past a negative 5.

While flying loose trail formation, the aircraft rolled 360 degrees without pilot input. The aircraft commander actuated the paddle switch and the stab aug system was disengaged. No further problems.

RANGE

After forty minutes of tactical formation practice and four thirty-degree rocket passes, the aircraft maneuvered to downwind for the first dive bomb pass. At that time the aircraft attempted to roll to the right although the stick had not been moved. Stab aug was disengaged but the roll attempts continued. The left aileron was then observed moving down as much as four inches, the right aileron remained neutral. All stab aug switches were then turned off and the aileron feel trim circuit breaker was pulled. The uncommanded control movements ceased at this time.

During flight to target the aircraft handled normally. Roll-in on first bomb pass was at 325 knots. At 400 knots in the dive a little stiffness was noted in the stick.



Recovery was started at 10,500 feet, there was no initial response to the control input. Stick pressure was increased until the stick was <u>full</u> <u>aft</u>. A maximum of only four-and-a-half Gs were all he could get at 500 knots at the bottom of the pull out. The aircraft lost 5000 feet pulling out from a forty-degree dive.

Stabilator trim ran full nose down during recovery from dive bomb pass and aircraft did not respond to attempted trim setting changes.

LANDING

The aircraft was established on GCA final at 2500 feet, landing gear down. The aircraft yawed slightly to the right, this was corrected without difficulty. At 160 knots the flaps were lowered and the aircraft yawed violently to the right. The right rudder pedal was deflected fully, left rudder was applied immediately, the ARI and rudder trim circuit breakers were pulled, and the stab aug system was disengaged. After a few seconds the rudder neutralized immediately and a series of yaw oscillations began. The flaps were raised and the airspeed was increased to 250 knots, however, the oscillations continued. A go-around was made into a closed pattern. While on downwind leg at 2100 feet, and 180 knots with gear down, severe full rudder oscillations were encountered which made aircraft control very difficult. The rudder would remain fully deflected for about one second and then reverse direction. The flaps were lowered again and the airspeed was decreased to 160 knots. At this time the oscillations stopped and the tower was advised that an approach end arrestment would be made. On base leg at three miles the rudder deflected again, full right for about four seconds. Maximum pressure on the left pedal neutralized the rudders for a few seconds, then the rudder went full left. This exercise continued all the way down final. Just prior to touchdown the rudder went full right causing the nose to swing about fifteen degrees. The pilot got into the BAK-12 before anything else happened.

Shortly after left pitchout in an overhead pattern, the aircraft began rolling faster than aileron input demanded. The aircraft continued to roll with the stick in neutral position. The pilot completed the roll underneath to straight and level flight where the ball showed a left slip.

Space does not permit listing all the incidents. However, this sampling should serve to illustrate the depth of the problem. We agree that, given the altitude or time, the crew should be able to cope with these malfunctions, as they did in the incidents listed. But lay on a low altitude, heavy gross weight, perhaps with asymmetrical loading, and put the airplane into a maneuver near max performance for those flight conditions. That's a horse of a different color. How about the fixes? There are some in the mill right now. One which we have known about for a few years should be taken care of late this year, rudder oscillations caused by HF/UHF interference. Last October it was acknowledged that about thirty percent of the F-4 fleet had this problem. At that time attempts to shield wires and relocate wire bundles had not solved the interference problem due to its random nature. A low pass filter will be installed in the ARI amplifier.

At least one unit has shown concern over the reliability of rate gyros and flight control power actuators. In the gyro area, the "AMA" is presently looking at some alternatives. One is to replace the present rate gyros with gyros presently in service, which have proven to be more reliable. Another is to do away with gyros completely, and turn to an advance in the state of the art. There are two new ideas under consideration at the present time. They are angular rate sensors which use a vibrating wire or a metal rod instead of a spinning mass to detect aircraft excursions in a given plane, such as yaw. They appear to be more reliable than the gyroscopes we are using now, and to have a longer installed life. This headquarters has requested a flight test of an angular rate sensor to verify the claimed reliability and establish that it will function as well as the present rate gyro. In any case we're looking at a fix that is a long way down the road.

A new term has popped up in accident reports which we may be seeing more of: "Classic Out Of Control." It is



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F-4 Out of Control

not discriminative so it will probably apply across the board - to either pilot or airplane - initiated maneuvers which culminate in loss of control. At the present time it applies only to pilots, since the flight control system has not entered the accident picture as other than a possible contributing cause.

We have to get more crewmembers back to tell the pilot's side of the story. There is no hard and fast rule to tell you when to get out of a bird and when to stay. But there are some things you, as pilots can do. Don't key your mike turning base in the strafe pattern, for instance. If you roll in on skip and the bird keeps rolling, think before you edge the stick over to stop it. It just may be bottom rudder fed in by a malfunction of the pitch rate gyro. Pro-spin controls near the ground are not conducive to longevity. There are others, things that will only come out if you F-4 jocks hash them over among yourselves.

The important thing is to get the bird back, or failing that, get out before you are in a flight situation where you can only blast yourself at the ground. Add uncommanded control inputs to your personal list of "lookouts." If the errant voltage is not present at impact, if the system returns to normal following its dirty deed . . . there will be no way to prove just what has happened. So, we need you back in Ops. Without your assistance or an assist from something on the order of a flight recorder we may be wandering through F-4 wrecks for some time wondering why another CLASSIC OUT OF

CONTROL ?





Maj Frank C. Albers Pilot



Capt Marvin S. Ervin Co-pilot



Capt Brian E. Gaskill Navigator

SMSgt George T. Walker Flight Engineer



TSgt William D. Fuller Loadmaster

An emergency was declared and a descent made at maximum allowable airspeed. Captain Gaskill determined that Lecce Air Base, Italy, 102 miles away, was the nearest field with crash and rescue facilities. Because of the danger of wing fire, airspeed was held above 280KIAS. Major Albers shut down number three engine when landing because fuel continued to pour from number four. After clearing the runway the remaining engines were shut down and the aircraft evacuated.

Investigation revealed a front main bearing failure and ruptured firewall shut off valve had allowed oil and JP-4 fuel to leak into the tailpipe, cowling, and flap areas.

The immediate crew response and professional teamwork displayed by Major Alber's crew merits their selection for the Tactical Air Command Aircrew Achievement Award.

he C-130E crew of Major Frank C. Albers of the 516 Tactical Airlift Wing, Dyess Air Force Base, Texas, has been selected to receive the Tactical Air Command Aircrew Achievement Award.

Major Albers and his crew departed Athens International Airport for RAF Mildenhall, England. One hour after takeoff the oil quantity on number four engine decreased and the gear box oil pressure fluctuated 10 to 20 psi. Captain Ervin reported heavy black smoke coming from the cowling and exhaust area. SMSgt Walker visually inspected the engine and confirmed the fire condition. Major Albers ordered number four shut down immediately and a fire bottle discharged. TSgt Fuller reported the engine had feathered, but was still producing heavy smoke and fire. The right wing was completely isolated from both bleed air and electrical power and the second fire bottle was discharged, but the fire continued. By MSgt Ronald Madsen Ha 5th WW, Longley AFB, Va

For its size the tornado is the most powerful, destructive, an empermental force in nature's awesome arsenal, nel Webster's descendants define the terrible-tim ered tornado as, "A violetit, whiching wind accomparied by a capital rotating functionaped cloud that usually de trows every in along its narrow path," You may not find a funcei-shaped cloud in all instances, but many resident, of the United States will not their heads in total agreement on its destructive potential.

While it's true that the major share of visible tornade damage occurs on the earth's surface, e-crew types must keep in mind that they are in double jeapardy. They can be had by a tornado bots in the ground and in flight. Airborne funnel clouds a tornado that hasn't touched the ground) threaten aircraft while flying in the visibility of their nurturing thunderstorms. And thus obnoxious orbiting offspring of Touches may sktend upward to 35,000 feet within the spawing "inother" cloud.

Many cumulonimbus clouds (CBs) contain the potential to generate a tori a lo. Additionally, it has been established that "funnels" on vorkces" can occur at far as 20 miles from the patent, thunder torns. And unfortunately, these thoubles in a twisters can be masked by innocent looking cumulus clouds tranking the thunderhead. Also, invisible Vertices may hidebelow CBs, evidenced only by swirls in the cloud base or bust whirls boiling along the ground (swirls on wath it.

Tomadoes usually travel in families and fast from a few minutes up to six hours in duration. The reported ground speeds vary widely from a nearly stand hary" to a maximum of 68 miles per hour. Speeds of the maximum rotary winds have never been descared successfully. However, in 1958 the weather burea user doppler radar and measured a tornado-related vine of mph. And it is reliably estimated that the maximum rotary winds can attain speeds up to 500 mph.

Airborne radar isn't much help in spatial tornado locations. It echoes areas of significant predipitation and doesn't display a spinning column of air for your guidance and comfort while flying around thunderheads. The point that needs emphasis is: just plain eyeballing or radar scanning a line of CBs won't tell you which thunderstorm harbors a killer tornado. Various T-storm projects have concluded that many storms can be penetrated without undue aircraft hazard, but deciding visually "which T-storm has up torny" is an impossible task. A quick review of accorted flying safety magazines and aircraft mishap reports will support the impractical nature of quessing. Figure 1 is a cross-section view of an imbedded tornado that has reached the surface.

Weather records show that Oxtahoma has suffered as re tornedo twisting than any other state, but the South Courd States and west central Florida spawn enough of them to be considered prime tornedo country (Figure 2). However, no state is exempt. A tornedo has visited each of the conterminous 48 states at some time or other. Although their maximum daily occurrence falls between 400 and 2000 hours local time, they can call on you any



Fig. 1

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hour of the day and in every month of the year. Figure 3 shows the average number of tornadoes annually and days of occurrence per year without regard to the time of day or calendar month. As is apparent in Figure 2 there is no 100-percent-safe time or location in the United States to avoid tornadoes when cumulonimbus clouds are on the scene. Actually, penetrating a thunderstorm with or without airborne radar is "shaky business" and should be avoided when possible.

Since there are no completely reliable local indications pinpointing the existence of vortices, their avoidance must be based on a knowledge of the presence of severe thunderstorms. This is where Air Weather Service Detachments can help pilots in their "tornado" flight planning. The Air Force Global Weather Central (AFGWC) issues Graphic Military Weather Warning Advisories four times a day, beginning at 0000Z. Every six hours the advisory gives the areas where hazardous weather is expected to exist in the following 12-hour period. These warnings are estimates of the severe weather patterns. The bulletins are monitored continuously by AFGWC and amended when there is a significant change in the forecast. They consider numerous parameters in its preparation, including moisture content and stability indexes. Warnings may cover fairly large geographical areas as in the case of thunderstorms, but areas of more



extreme weather such as tornadoes and severe thunderstorms are usually described in more limited terms of time and space.

An important source of data used in the preparation of MWWA advisories is the synoptic weather radar reporting network pictured in Figure 4. Observations from the radar units listed are transmitted hourly to AFGWC and more frequently when severe weather situations exist. A special force of forecasters at the center monitor the many



parameters used to forecast severe weather on a 24-hour basis. They provide the detachment weather forecasters and in turn, aircrew members, with the best possible guidance on the shifting pattern of weather hazardous to flight. Their primary goal: Save lives and protect Air Force "hardware."

In order to receive the maximum benefit from your next weather briefing by your friendly forecaster, some common meteorological terms are defined. They'll help you understand what they mean by severe weather:

Thunderstorm. A local storm produced by a cumulonimbus cloud, always accompanied by lightning and thunder, and usually found with strong gusts of wind, heavy rain, and sometimes hail.

Severe Thunderstorm. Produces wind gusts of 50 knots or greater and/or accompanied by hail (surface or aloft) of 3/4 inch diameter or larger.

<u>Funnel Cloud.</u> A violent, rotating column of air which does not touch the ground, and usually pendant from a cumulonimbus cloud.

<u>Tornado</u>. A violent, rotating column of air forming a pendant, usually from a cumulonimbus cloud, and touching the ground. It nearly always starts as a funnel cloud and is accompanied by a loud roaring noise. Waterspout. A tornado over water.

Instability Line. Any non-frontal line or band of convective activity in the atmosphere. This is the general term and includes the developing, mature, and dissipating stages. However, when the mature stages consist of active thunderstorms, it is properly termed a squall line. Instability line often refers only to the less active phases. It is transitory in character, usually developing to maximum intensity within a period of 12 hours or less, and then dissipating in about the same length of time.

Squall Line. A line of active thunderstorms or squalls which may extend over several hundred miles. It is the phenomenon of the mature or active stage of "instability line" development, and may be either a solid or broken line of numerous thunderstorms.

Avoidance of CBs is your best approach to tornado taming. So have an alternate route in your hip pocket and don't get boxed in by forecast severe weather. And use your pilot-to-forecaster service in checking both your original route, and any enroute changes in destination when T-storms threaten to spoil your whole day. It may take a little longer and involve a few more miles, but it sure reduces the risk.

Remember, wherever severe thunderstorms exist an imbedded, invisible vortex may be sharing some part of the cloud complex. Give that wild, whirling wind a wide berth . . . stay out of striking range!



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Tactical Air Command

unit Achievement Anaro

Our congratulations to the following units for completing 12 months of accident free flying :

- 8 Airborne Command and Control Squadron, Langley Air Force Base, Va. 1 January through 31 December 1969
- 143 Special Operations Group, Theodore Francis Green Airport, R.I. 1 January through 31 December 1969
- 603 Special Operations Squadron, Hurlburt Field, Florida 20 March 1969 through 19 March 1970
- 104 Tactical Fighter Group, Barnes Airport, Westfield, Massachusetts 27 March 1969 through 26 March 1970
- 134 Air Refueling Group, Knoxville, Tennessee 1 April 1969 through 31 March 1970

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- 102 Tactical Fighter Group, Otis Air Force Base, Massachusetts 5 April 1969 through 4 April 1970
- 102 Tactical Fighter Wing, Otis Air Force Base, Massachusetts 5 April 1969 through 4 April 1970
- 4442 Combat Crew Training Wing, Little Rock Air Force Base, Arkansas 7 April 1969 through 6 April 1970
- 16 Tactical Fighter Squadron, Eglin Air Force Base, Florida 11 April 1969 through 10 April 1970
- 174 Tactical Fighter Group, Hancock Field, Syracuse, New York 3 May 1969 through 2 May 1970



WOULDN'T YOU KNOW IT !

We stole the following paragraph from a Safety News Letter and thought some of you might get a kick out of it - or cry a lot.

"HOW'S THAT AGAIN ... OVER?"

I'm not quite sure that I know how to put this ... or, for that matter, if I have sufficient life insurance to warrant bringing it up at all. For the past few years the all time favorite "special interest item" of inspectors, one and all, has been Hardman receiver kits. There is something that sets the proud owner of a Hardman kit aside from his contemporaries. He is determined, steadfast, loyal, dedicated, and just plain obstinate, especially when someone threatens his Hardman kit. After 6.48 megawriteups for "possession of unauthorized Hardman receiver kits" we recently coerced the final Hardman kit owner into removing his treasured kit and replacing it with current standard Air Force model. On Monday we received a message stating ... you guessed it, Hardman receiver kits are now authorized for use if you happen to have one. I think I'm getting an Excedrin headache.

UNINVITED ARE UNWELCOME

We've heard that passing aircraft are barging through Myrtle Beach AFB's control zone without letting anyone know they're coming. The Flip IFR Supplement contains a remark that aircraft approaching the area below 3000 feet will contact Myrtle Beach approach control for advice. Obviously, unexpected aircraft create a midair potential. Read, heed, and comply!! Don't be an uninvitee!!

(NOTE: Their control zone extends four miles south, which is over the Atlantic Ocean.)

BY GOLLY, THEY'RE RIGHT !

It was a short hop of 17 minutes, so the T-39 pilot dumped fuel to 4400 pounds to land on the available 5200 feet of runway between arresting gear on a light-rained, crosswind-blown runway. He launched with a forecast 800 feet broken, 1500 overcast, five miles visibility in haze, and winds 100 degrees at 22 knots. His destination also forecast an intermittent 500 feet broken, 1200 overcast, and three miles in light rain and fog.

When center handed him over to approach control they called it 800 feet broken, 1500 overcast, 3 miles in light rain and fog, and winds from 100 degrees at 26 knots. He asked for a precision radar approach to runway 17, but control advised that an air surveillance approach was available, precision radar was set up for runway 35 only.

His ASR approach to 17 ended up in a missed approach at published minimum descent altitude, 412 feet above the terrain. He didn't see the runway and asked for another reading on the weather. This time he received, "600 feet broken, 1200 scattered, three miles in fog, and winds 100 degrees at 20 knots."

After computing a 3500-foot landing roll, the pilot asked for a precision GCA to runway 35. His first pattern was too close; he executed another missed approach after a short slide down the glide path. He asked GCA for another try and this time he picked up the runway visually at about one mile.

He touched down 100 feet beyond the arresting cable with his right wing low at 115 knots. In his first 2000 feet of rollout he decelerated normally, using aileron and

with morals, for the TAC aircrewman

rudder against the following cross wind. Then he hit some standing water on a low spot in the runway. His bird drifted left on hydroplaning tires; full rudder and aileron didn't have enough authority to help. Just before he "skied" off the left side of the runway both tires blew out in close sequence. The right wing tip dragged before the bird skidded to a stop. An RCR reading taken about 20 minutes later registered an "average" of 20 for the entire length of the runway.

The incident report attributed the mishap to miscellaneous unsafe conditions . . . hydroplaning. They reasoned that the onset of hydroplaning left the pilot with very little control of the aircraft. Let's think about that a little. A navigation training mission, a ceiling below forecast and circling minimums, light rain and fog, a wind consistently reported out of 100 degrees at 20 to 26 knots, 5200 feet of runway available between hookwires, a max crosswind of 25 knots recommended for the T-39, two missed approaches, fuel dumped to reduce gross weight and options on alternates. By Golly, they're right! There were miscellaneous unsafe conditions!

BRING YOUR OWN BOTTLES?

The Herky pilot rehearsed his show maneuvers for a later demonstration. His first takeoff was normal and then he landed using assault techniques on a parallel taxiway. For his next number, he backed the bird into position for a six-bottle jato takeoff. He fired the bottles at 70 knots and lifted off at 82 knots in spectacular display of flying and flame. On climbout, three independently minded jato bottles departed from the right side and "jetted" off in a carefree covey. One bird rocketed between hardstands and ended up on a taxiway, another squibbed around and came to rest between a hardstand and taxiway, and the third bird arced over the now three-bottle Herky, landing between the runway and taxiway. Fortunately, no damaging bottle bird strikes occurred.

Investigators found a failed air deflector door actuator allowed the door to swing forward against the slipstream, breaking its hinges. In turn, the released door pulled the JTO release cables, jettisoning the bottle birds from their

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nesting place. They're recommending that other C-130 units check security of air deflector door hinges and actuator fittings before jato-assisted takeoffs. They're also wondering about the advisability of maximum effort landings beforehand with the bottles installed ... it may not be a good idea to bring your own bottles to a Herky "going away" party!

STUBBORN NOSE GEAR

The T-29 crew practiced landings during a local proficiency hop. On GCA final, the pilot lowered the gear at glide path interception. The mains came down and locked, but the nose gear refused to budge. Going around, the crew ran through all the emergency procedures in the book, and some new ideas fed them by command post pilots. They tried emergency air lowering, G maneuvers, multiple cycling of the main hydraulic system with the gear handle down, keying the door, prying the nose doors open, and cutting the hydraulic line leading to the nose gear actuator. Some fancy inflight modifications with crash axes and survival saws were necessary to their emergency lowering efforts. Having no luck airborne, they tried runway bouncing on the bird's main gear, but still no joy on the nose gear. Running out of ideas, fuel, and daylight, the crew decided to set it down on its main gear with a foam assist from the fire department.

With crew only aboard the forward CG was helped by putting all except the pilots in the aft seats. Close in on final, they cut the generators and lowered the hydraulic bypass valve. On touchdown, they feathered both props (good battery!), cut mixtures, pulled both engine fluid handles, and then turned off the battery. After lowering the nose into the foam strip, the pilot maintained directional control with rudder and remaining brake pressure. Sliding to an easy stop, the crew crawled out the overwing hatch without further difficulty.

After prying open the nose gear doors, maintenance troops found a broken quadrant uplock wouldn't release the gear. The break appeared to be a progressive failure over a period of time. They're recommending that other T-29 units inspect their uplocks.





Out of chard lawn mower blaze, plus first degree real idiot!

Diced fingers and split shins are a big price to pay for an outdoor barbecue. Either get a bag of briquettes or learn the proper axe techniques. Above all, don't be an idiot and involve innocent ones in your hazardous OJT programs. Try this to maim a child without really trying! Dad has trailer hitch, and mom and the kids decide to go sailing. T from home so while the wife drives slowly, the kids realize that only a slight misjudgment of brake pressure, fragile bodies to be impaled on the blunt trailer hitch. If y of others.







oal lighter fluid? Try a little gasoline from the can. It's almost guaranteed to give you a some jazzy fireworks, singed eyebrows, and purns...and it's a fine way to prove you're a



The most that can be hoped for if this overloaded boat capsizes is that all five men can stay afloat on their own. Once in the water they're only one short minute from death, very little time to come up with a lifesaving plan which should have been anticipated and prepared for before leaving the dock. It's your choice: be prepared by observing safe boating practices, or, go ahead and be an idiot!

the old car at work, the one with the The launch ramp is only five blocks hang onto the boat trailer. Little does she or another careless driver, could cause those you must be an idiot, at least be considerate





Don't be conned by warm sun and sand! Even though it doesn't feel hot, ultraviolet rays can damage skin cells quickly, leaving a severe case of sunburn. Only an idiot will try for that "great suntan" all at once.

Pilot's Printable Poetry Page

An aviator's windfall in the form of a POW's World War II diary crossed the editor's desk the other day. It contained some classic examples of the inspired, brown-shoe-days poetry that sustained the lagging spirits of downed aircrewmen spending involuntary TDY's in Germany's scattered Stalags. The authors are unknown and we're unable to give them much-deserved credit for boosting morale.

Perhaps some of TAC ATTACK's readers will recall the poet-pilot who authored these nostalgic notes. After you've wiped away that tear, send us his name. And in addition, if you have some not-too-boisterous ballads you've collected during your Air Corps/Air Force tours, send them along. We'll try illustrating them in future issues on our Pilot's Printable Poetry Page.

HAPPY VALLEY

I recently saw the April 1970 issue of your publication which contains some P-38 poetry. I am submitting another poem for your consideration that was written by Lts. Riggs and Hodges of our 429th Sqdn, 474 Group, Ninth Air Force P-38 Sqdn. The poem was written before I arrived as a pilot replacement 1 Jan 1945. When I arrived the squadron was located near Florennes, Belgium about 12 miles west of Dinant near the point of the German advance of the "Bulge." From this former Luftwaffe base our group flew some of the patrols that covered the Remagen bridge. It was on one of these missions that Lt. Riggs was killed after breaking off from the squadron to pursue an attacking FW-190 east of the Rhine into unconquered Germany.

In March 1945 our squadron moved into Germany to a long 10,000 foot concrete runway of a former Luftwaffe jet base at Euskirchen west of the city of Bonn. It was from this base that Lt. Hodges was shot down and captured. His captors negligently did not discover his .45 concealed under his shirt. He subsequently shot and killed his guards and escaped unharmed through enemy lines and back to the squadron. Our last base during the conflict was located at the Luftwaffe Langensalza Ju-88 night fighter base in East Germany.

The enclosed poem is copied from one typed on our squadron's stationery which shows the squadron's insignia. The title of the poem may seem a little incongruous with all the flak that was encountered near the Rhine and beyond. It was simply a typically facetious way that people make light of serious problems. One last note is that the 429th Squadron call sign was Retail.

James A. Stark USAF Reserve Albuquerque, New Mexico



I've heard tales of the long contrails That would send chills up your spine The bomber boys have heard strange noise But the strangest they ever did hear Was just a while back when J met my first flak And those Pearly Gates were so near.

was Christmas Day, we were flying our way Over our medium friends, Talk of your flak, the air was black With the stuff that Jerry sends It was always near but the shrouds of fear Seemed to hold me like a spell. And I must admit I shook a bit As I faced that bursting hell.

hat very flight as we flew packed tight O'er the town of old Cologn. An eighty eight was sent too straight It burst on me alone! One engine secondal, the coolant streamed Such a trail courieldom see And with free hang old Retail Gung Soon particle company

reefed her book til i thought sine o conck She sedfood to han there in the slow The engine shamed and the full beomy ground As the throught operated by Then I mine follow, no man three Could stay up there above. And the Jerry boy's with their similar to Started an oling up therefore.

feathered the prep so the regime would stop And I trim had her up to be Hooked about anti-without a doubt i really had benchit! The gang I found iver spread all around When the R/T beam to whine "Say Red Three, Twhat I see An M.E. 109?"

hen I hit the deck with that shall tom With k And I shoved the power full. One engine gone but I still flew on That Allison could pull. I bent the tóp of the throttle stop She must have felt my fright. I didn't just know how far I must go And I couldn't afford a fight.



I really sweat they would get me yet Then his wings began to spit, When out of the blue came a Lightning too And his tracers started to fly That M.E. broke and it's no joke I could have kissed that Retail Guy.

looked at the map that was spread on my lap And my guts tied up in a knot; I saw at a glance I hadn't a chance Fate had called its shot If flesh was cold but the sweat just rolled Down my checks and I don't know why My face would bell must each golf ball My throat was stocky and

Inga I came to the lase that's known as the Rhine And there a field gap sat: Ma saw my plight and called his Bight His range was short and fiel This first blick tore through my the same stoor The second dicked wire This field was page-1 a loss onder So 4 sloud the radio so

The difference of the second o

Inequilated of the Terror efforts a figural of the end of Galaxies of the pupple instruct.
East new Hale was one and them them above As a supervised common them to be as successed by the see And Tell scenar them a tetra.
And Tell scenar them a tetra in the second of the scenar them are the second of the scenar them are the second of the scenar them.

Ah, there are strange relevations done 'neath the moonday sun O'er the tred that 's assess if the Rhine; I'w heard take and chills up your spine; The bomber boys have heard strange noise But the strangest they ever did hear; Was just a while back when I met my first flak And those Pearly Gates were somear,



Seeing what needs to be seen at night isn't a new problem. Nor is the almost universal solution . . . the use of artificial light. This has helped a lot, but often man has found himself using only a fraction of the amount of light that he is accustomed to during daylight hours. The net result is reduced efficiency, mistakes, and errors in visual response, which all contribute to injury or loss of life. The obvious answer to this situation is to make more artificial light, or make what light we have more effective. The latter is getting a lot of attention in the military as well as industry.

Specially designed light reflective materials – paint, cloth, and adhesive tapes – are available which can be applied to objects of special concern so they can be seen or identified accurately without increasing the amount of artificial light. Several states now use reflective paint on auto licenses to aid motorists in spotting each other. Traffic signs along most federal and state highways make extensive use of reflective materials, helping drivers see what's ahead without additional artificial lighting systems, either on roadways or vehicles.

With a little imagination, the use of reflective materials is almost endless and can be utilized in situations ranging from "the imperative" to "nice to have." These photographs illustrate a few ways that reflective materials can be used in TAC, and how they could mean the difference between good fortune and tragedy.

Latest reflective materials have improved vests for persons performing night duty on streets or flight lines. The older style vest, (left) as seen from a distance, is much lower in reflective quality than the one now available through supply channels. The new safety vest (right), Federal Stock Number 8415-177-4974, offers greater protection to auto traffic controllers and accident investigators, civil engineer repair crews, and aircraft spotters or other flight line personnel.



Reflective adhesive tape has been required on flight line equipment for many years in the Air Force. A new application of reflective tape (sew on type) improves night visibility of warning streamers, identifying protective covers and safety devices installed on parked aircraft. On the T-33 (right) three streamers were lighted by the beam of a two cell flashlight. Only one is readily seen - the one with 2-inch reflective tape sewn on each side and lettered with reflective paint. Above, five reflective streamers were installed on a line of T-33s. They are identifiable, with ramp lighting only, while conventional streamers are not visible, even on the foreground aircraft. The material is available in rolls from one-half to five inches wide.



BE SEEN

How to be seen on a dark rainy night? One solution is to wear light reflective clothing, or, attach to clothing special light reflecting materials. These demonstrate the effect of reflective materials as they might be seen by an auto driver. Hold this page so the star between the two photos is at eye level, 18 to 24 inches from your face. Focus both eyes on the star. Then blink both eyes several times while holding your attention to the star. Both photographs are thus viewed equally with peripheral vision. The pedestrian in the left photo is hardly seen, while in the right photo, the reflective materials stand out. In this case the girl was made to be seen by using items from a specially prepared packet called PEDESTRIAN PROTECTOR KIT, Federal Stock Number 8315-144-5882. The kit includes two kinds of one-half inch reflective fabric tape – grey, which can be sewn on garments, and blue, which is the "iron-on" type – self-adhesive shoe reflectors, and a reflective safety tag which can be tied to a button, belt, or even a finger. Included in the low priced kit are printed directions showing permanent or temporary application of the materials to outer garments, umbrellas, etc, for both children and adults.



Tactical Air Command Crew Chief of the Month

Staff Sergeant Lewis L. Lockard, 414 Fighter Weapons Squadron, Nellis Air Force Base, Nevada, has been selected to receive the TAC Crew Chief Safety Award. Sergeant Lockard will receive a letter of appreciation from the Commander of Tactical Air Command and an engraved award.



SSgt Lockard

Tactical Air Command Maintenance Man of the Month

Technical Sergeant Forest W. Pinkerton, 4410 Combat Crew Training Wing, England Air Force Base, Louisiana, has been selected to receive the TAC Maintenance Man Safety Award. Sergeant Pinkerton will receive a letter of appreciation from the Commander of Tactical Air Command and an engraved award.



TSgt Pinkerton

Backslider II is a modification of Backslider I (see TAC ATTACK, January 1970), a spinal splint to be used when removing unconscious crewmen, or crewmen with suspected spine injuries from crashed airCraft. The following shows the determination of one unit to provide maximum protection to their flyers. And, their unwillingness to let "better-than-nothing" do when, with a little ingenuity, "something better" could be had. — ED.

"Records do not indicate any loss of life due to mishandling of injured crewmen by rescue personnel when removing victims from crashed aircraft."

This statement came in reply to a request for evaluation of an aircrew rescue device called the Backslider, which was designed by the 140th Tactical Fighter Group of the Colorado Air National Guard. Their life support personnel came up with the "splint" to prevent inflicting or amplifying spinal injuries when rescuing unconscious crash victims. However, the less than enthusiastic evaluation received has not deterred the unit from including a Backslider in each crash rescue team's equipment inventory. Their thinking? "We just aren't ready to lose one of our crewmen in order to prove a need for this kind of a device."

Their logic is basic: 1) spinal injury is not an impossibility during a crash landing; 2) rescue crewmen cannot tell that a spine injury exists if the pilot is unconscious, but they know they can make it more severe, or perhaps fatal, while lifting the injured from a cockpit; 3) if fire does not force immediate removal, spinal protection using a Backslider costs very little in additional rescue time, hardly any money, and could mean the difference between an airman's recovery, or permanent disability.

So the Backslider has been SOP at Buckley Air National Guard Base. But they wanted someone (other than their own people) to say that it would or would not be of value under permissive circumstances. A call to USAF's Brooks Medical Center sparked some interest. They said they'd be happy to take a look, and offer an opinion.

The 140th not only got an evaluation but some advice. Brooks' examination determined that the Backslider might be both effective and detrimental: it offers spinal support while lifting and transporting an injured crewman; but, to apply the device requires moving the head from a probably tilted forward position, which would be extremely hazardous to a man if his neck were injured. They said, "If your Backslider could accommodate an injured man, allowing his head to remain in a forward position, probability of further injury during rescue would be reduced even more than that offered by your present device."

So it was back to the drawing board, and soon Backslider II was created. Now Buckley can protect an injured crewman's neck and spine and allow the head to remain at any desired forward angle. A pad inserted between the pilot's neck and the boom helps hold the neck rigid.

Like an old jock recently said, "If I ever have to make a less than routine landing, I hope I'm near Buckley. They may not be the biggest outfit in the country ... but they sure try harder."



Fear of compounding injuries suffered by a pilot who has crash landed his bird led to designing the Backslider II by the 140th TFG of the Colorado Air National Guard. The device (left) allows rescuers to extract an unconscious pilot (right) in such a manner that any spine or neck injuries, will not be aggravated during rescue and subsequent transportation to medical facilities.

To use the Backslider (clockwise from right), rescuers raise canopy, dearm seat, release safety belt, disconnect survival kit, unhook parachute chest strap, insert Backslider between flight suit and parachute pack, adjust Backslider boom to neck angle without moving head, tighten visor straps (if time permits, insert wadding between boom and neck for added support), reconnect chest strap and make tight, pull green apple for emergency oxygen, remove pilot by lifting with parachute harness straps. The Backslider keeps spine straight, and the boom prevents head and neck movement.







CHOCK TALK ... incidents and incidentals

J-33... High Altitude Bomber ?

Flying cross-country with daylight nearly gone, the T-33 jock turned on the newly installed rotating beacon. At that instant both tip tanks jettisoned ... from FL330.

The beacon installation (TCTO IT-33-536) included putting in a switch and a circuit breaker with connecting wires through an F-34 cannon plug. On this distressed bird the whole job was done by a three-level airman, apparently eager but inexperienced. While connecting the cannon plug leads, he used more solder than needed, so much that it overflowed to the next pin in the plug, which just happened to be the tank jettison circuit. If the circuit was tested after installation the short was left undiscovered, possibly because the ground safety pins prevented jettison.

Outcome of the flasco for the airman was a short course in soldering. But his supervisors bought reprimands. Why? The five-level electrician allowed the system to be assembled without his inspection; the shift supervisor signed-off the red-X without proper inspection, releasing the plane for engine installation; and the shop chief permitted shoddy procedures.

To be sure it doesn't happen again, pilots got another checklist item before takeoff: Rotary Beacon - CHECK.

On the Chin....

An F-100 returned to his base after a good range mission. In the landing pattern, he got an unsafe light for the nose gear. So he tried the book emergency procedures but each time a tower flyby confirmed: "Doors open with wheel in the well."

Short on fuel, he had to get her down. So he set up a straight-in approach, touched down a few knots fast, and

kept the nose high as long as the could. When the nose touched, he stopcocked the throttle and held a straight course with rudder and differential braking, stopping just short of five-thou from the approach end.

Maintenance jacked up the nose and dropped the gear manually. That's when a bolt fell from the well (P/N AN24-5, figure 294, Ind. 22, F-100D (1) – 4). Its job was to connect the nose gear strut lock actuator cylinder rod end and the cylinder rod attaching linkage to the uplock hook. Missing was a nut and cotter key. The bolt bore no unusual pressure or wear marks so investigators assumed the bolt had been improperly installed.

Maintenance seemed a little reluctant to accept the "assumed" criticism but after investigation of the whole fleet they couldn't find another bird with similar symptoms.

Dangerous Drain

The OV-10 pilot burned wing tank fuel down to 700 pounds and switched to his centerline tank. About an hour later the pilot noticed abnormal fuel usage. When he turned off the centerline tank, fuel flow returned to normal. His bingo fuel left him with a tight 300-pound reserve on landing. While taxiing in, maintenance troops noticed fuel draining from the aft end of the cargo compartment. After shutdown they discovered JP-4 sloshing around under the cargo floor ... no place for fuel storage.

It was the first flight for the centerline tank. The auxiliary fuel transfer line manual drain valve was left open and allowed fuel drainage when burning out of the centerline tank. Fuel draining overboard through the manual valve flowed along the fusetage belly and entered the cargo compartment through water drain holes. Up to

with a maintenance slant.

now, preflight and postflight work cards didn't require manual drain valve inspections. They're recommending that the checklists be changed before an open drain valve escapes inspection again with disasterous consequences.

BDU-33 Strikes Again!

During a weapons loading operation, an airman picked up a BDU-33A/B practice bomb from the MHU-12 trailer storage box. Seeing that the MK-4 signal cartridge was about to slide out of the bomb cavity the airman quickly tilted the tail section up. The cartridge slid back into the cavity, and struck the firing pin hard enough to set off the charge.

He was lucky! The only damage was a 15-inch hole in the top of the trailer. Had the bomb been tilted only a few degrees differently, the armament technician could have been badly burned and possibly blinded.

Why did it happen? During bomb buildup, installation of a cotter pin was overlooked, allowing the charge to slip out. The airman contributed to the first error by failing to eye-ball each unit for obvious deficiencies during loading.

Jopsy-Jurvy Bolt

While on a tanker, the Thud pilot felt some control stiffness or binding. After disconnect, he noticed his left spoilers at about 20-degrees up, while the left aileron was 5-degrees down. He got little results when he tried flight control emergency procedures, but with nearly full left stick at 350 KCAS he could do gentle turns.

He dropped his ordnance from straight and level, headed home, and with a long straight-in approach, set her down for an easy landing followed by a good maintenance look-see.

They found that the bolt in the left aileron actuator rod end had been installed upside-down and not cotter-keyed. Before takeoff, the controls checked OK – twice, so apparently the bolt came loose during flight resulting in loss of control of the aileron. The left aileron actuator had been changed prior to this flight and the bolt must have been installed incorrectly at that time.

Wheel Deal....

The EC-121 lifted off after its sixth touch-and-go and then the crew felt a thump. Normally, crews feel bumps at touchdown so they looked around for problems. Engine instruments read okay and the gear retraction cycle appeared to be in proper sequence. The scanner solved the problem by reporting the unscheduled, unrequested departure of the outboard right main wheel; tower confirmed the wheel deal. A nearby aircraft closed in to check for damage and reported no evidence of hydraulic leaks. The remaining wheel looked okay.

The pilot dumped fuel and reduced gross weight, setting the bird down left main first. He eased it onto both mains and the nosewheel for a normal rollout.

Investigators discovered that the wheel failed in a 360-degree crack about four inches from the outboard side of the rim. Tire, tube, and the failed part of the rim separated from the main gear. The full-circle crack started at the valve stem hole; about one inch on both sides appeared long established. Rework of the valve stem hole under TO 516 was complied with previously. They're suggesting a dye-penetrant check of other C-121s and an engineering study of the failure.

STAYIN' ALIVE ... IN PUBLIC

Keeping people alive and well can be a problem in the flying business. And in TAC it's a problem that gets a lot of consideration simply because our more than 40 kinds of aircraft and various low-level mission profiles expose flying personnel to more routine hazards than does any other mission in the Air Force. When an accident happens, the mishap gets a lot of high powered study; an all-out effort to prevent the same thing from happening again. But is flying TAC's greatest risk? A quick comparison of figures shows that TAC suffered more fatalities last year (1969) from auto accidents than from mishaps involving their hundreds of flying machines!

In 1969, reported private motor vehicle (PMV) accidents involving TAC personnel totaled 330, resulting in 49 fatalities and 329 injuries; 270 were TAC drivers, 101 were TAC passengers, and seven were TAC pedestrians. Members of TAC families and friends, and persons in other autos are not included in these statistics. Of the total accidents, 194 involved only one car, and of all judgments, TAC drivers were held entirely or equally responsible in about 80 percent of the cases. Alcohol was a leading factor in 40 percent of the accidents, and 50 percent of the fatalities. These statistics, and many more, lead to an unexpected conclusion: mile for mile in TAC, a person is about twice as safe in the air as on the public highways!

Most jocks will readily credit command emphasis for a large part of their flying safety record. In other words, if commanders did not exercise gobs of influence, and spend lots of time proclaiming the merits of responsible flying, would-be-aces would be tumbling out of the skies about as fast as they could climb into the blue.

It stands to reason then that with similar command emphasis, private auto and two-wheeler accidents could be reduced drastically. There's only one hitch. When a PMV leaves the air base for public roadways, commanders lose control. And unless the driver is personally concerned about his survival, the vehicle is simply looking for an accident to happen. Loose talk, you say? Then a random look at several of last year's accidents will show that the drivers really weren't concerned ... before the accident happened!

Two airmen, both 20 years old and high school graduates, finished their maintenance shift about midnight. At their barracks, each consumed a six-pack of beer. They drove to town at daylight for breakfast. That's when they decided to make it a day of frolic, so they went back to the base, put their quarters in order, and about 0800 hours, headed for a resort nearly 100 miles up the turnpike.

There, they had more beer, played pinball machines, and headed back home early in the afternoon. A few miles

HOURS OF OCCURRENCE OF ACCIDENTS

| HOURS | ACCIDENTS | PERCENTAGE |
|-------|-----------|------------|
| 00-03 | 77 | 23.3 |
| 03-06 | 25 | 7.6 |
| 06-12 | 27 | 8.2 |
| 12-18 | 94 | 28.5 |
| 18-21 | 49 | 14.8 |
| 21-24 | 58 | 17.6 |
| TOTAL | 330 | 100.0 |

TAC experiences more than three times as many PMV accidents during afternoon hours than during a similar period in morning hours. A high percentage of mishaps occur from midnight to 0300 hours. During both periods, fatigue is a dominate cause, and in the post-midnight period alcohol is a prominent factor.

down the pike, the car owner said he was sleepy and asked his buddy to drive. They changed positions and continued on their way at a moderate speed. A few minutes later, the car edged off the highway with both occupants sound asleep and struck a culvert with such force that the engine and transmission flipped from the vehicle as it spun through the air. The driver never woke up, and his buddy had 15 days in the hospital to consider their problem. Besides consuming quite a bit of beer, he and his friend had been awake more than 24 hours before the accident. But concerned about it? Hardly...until after the accident! That's when he must have wondered aloud, "Why didn't somebody stop us?"

Here's another. After an evening of fun, an airman offered to take a mutual friend home. The girl was a waitress at a night spot the men often patronized. What followed can be credited to ego, anger, booze, or a combination of all three, but we'll never know for sure.

Shortly after leaving the club, with the girl in the rear seat and two airmen in front, the car was seen driving at a high rate of speed . . . with all lights out! Less than a mile down the four-lane highway another car made a left turn in front of the speeding but unseen auto. Both airmen and the girl were thrown from their car and killed. The other driver sustained fatal injuries, and his two passengers were hospitalized. Had the speeding driver felt concern, and

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DISTANCE FROM BASE OF ASSIGNMENT

| DISTANCE | ACCIDENTS | PERCENTAGE |
|---------------|-----------|------------|
| ON BASE | 19 | 5.7 |
| 0-15 MILES | 193 | 58.5 |
| 16-25 MILES | 24 | 7.3 |
| OVER 25 MILES | 94 | 28.5 |
| TOTAL | 330 | 100.0 |

Nearly three out of five accidents involving TAC personnel happen less than 15 miles from the base.

CAUSE FACTORS

| EXCESSIVE SPEED | 167 |
|-----------------------------|-----|
| FAILED TO CLEAR/INATTENTION | 54 |
| FAILED TO YIELD | 55 |
| FOLLOWING TO CLOSE | 17 |
| IMPROPER PASSING | 6 |
| DEFECTIVE VEHICLE | 11 |
| INCLEMENT WEATHER | 18 |
| LOST CONTROL | 166 |

Defensive driving would eliminate most cause factors involved in TAC's 1969 PMV accidents.

exercised control, there would be little cause today for the concern known only to his survivors, and the survivors of his victims.

In both cases, the drivers responsible for the accidents had been drinking. Though booze is often given as a valid excuse for causing responsible persons to be careless, the really responsible person never forgets that in auto accidents, a drunken casualty can be just as dead as a sober one. Though alcohol is a factor in nearly 50 percent of all TAC PMV accidents, it's not required to cause carelessness behind the wheel. Here's a good example.

A sergeant had the day off to process for PCS,

STAYIN' ALIVE...

including paying utilities to close his apartment. Coming back from town, he selected an asphalt secondary road and apparently decided to "see what it would do." Soon after, while rounding a right curve on the outside at about 80 miles-an-hour, he met another Air Force driver head-on. Neither driver had time to apply brakes or take evasive action. Though both cars telescoped to a fraction of their normal length, both drivers survived, possibly because they were using seat belts. The other driver's wife, riding in the front seat with belt unused, died instantly.

Why is it that an auto driver sees his vehicle only as a means of convenience, not the killer that it is proving to be. Is it because he's careless? Is it because of foolhardy stubborness that he refuses to think about it? Is it because he thinks his "good intentions" will always carry through? Regardless of why, one thing sure can be predicted. Until TAC drivers accept and demonstrate the same kind of responsibility expected of TAC pilots, deaths resulting from PMV accidents will climb.

Perhaps that's the key. Auto accidents will decrease when drivers adopt a few basic qualities seen in most old pilots. Very few pilots are careless, even less are stubborn to being foolhardy, and you can't hardly find one that has survived only on "good intentions!"

ACCIDENTS BY DAY OF WEEK



Weekend driving demands increased attention to driving techniques in TAC. Chances for an auto accident are two times greater than week days.

| GRADE | TAC PERCENTAGE | ACCIDENTS/PERCENTAGE | FATALS/PERCENTAGE | |
|--------------|----------------|----------------------|-------------------|--|
| E-1 THRU E-3 | 27.7 | 112/33.9 | 15/30.6 | |
| E-4 | 24.9 | 116/35.0 | 14/28.6 | |
| E-5 | 18.2 | 59/18.0 | 9/18.4 | |
| E-6 THRU E-9 | 17.4 | 27/8.4 | 8/16.3 | |
| O-1 THRU O-2 | 2.7 | 6/1.7 | 1/2.0 | |
| O-3 THRU O-6 | 9.1 | 10/3.0 | 2/4.1 | |
| TOTAL | 100.0 | 330/100.0 | 49/100.0 | |

ACCIDENTS BY GRADE

Odds of surviving a year without an auto accident do not favor grades E-1 through E-4, who make up half of TAC's personnel but are involved in nearly 70 percent of total annual PMV accidents.

TAC TALLY AIRCRAFT ACCIDENT RATES

* Estimated

UNITS

MAJOR ACCIDENT RATE COMPARISON

| | TAC | | C ANG | | AF | Res |
|-----|------|------|-------|------|------|------|
| | 1969 | 1970 | 1969 | 1970 | 1969 | 1970 |
| JAN | 6.8 | 4.8 | 28.9 | 5.9 | 0 | 0 |
| FEB | 6.2 | 3.9 | 12.8 | 2.6 | 0 | 0 |
| MAR | 6.8 | 4.6 | 12.6 | 1.7 | 0 | 0 |
| APR | 7.4 | 4.9 | 15.1 | 2.4 | 0 | 0 |
| MAY | 7.5 | 6.2 | 12.9 | 3.9* | 0 | 0 |
| JUN | 7.2 | | 12.6 | | 0 | |
| JUL | 7.4 | | 11.3 | | 0 | |
| AUG | 7.3 | | 11.5 | | 0 | |
| SEP | 6.9 | | 10.5 | | 0 | |
| ост | 7.1 | 194 | 9.9 | | 0 | |
| NOV | 6.6 | | 9.4 | | 0 | |
| DEC | 6.8 | | 9.5 | | 0 | |

| ſ | THRU MAY | | | THRU MAY | |
|-------------|----------|---------|------------|----------|------|
| t | 1969 | 1970 | | 1969 | 1970 |
| 9 AF | 2.9 | 2.6 | 12 AF | 9.7 | 10.2 |
| 4 TFW | 8.8 | 0 | 23 TFW | 13. 1 | 9.1 |
| 15 TFW | 0 | 5.5 | 27 TFW | 0 | 8.3 |
| 33 TFW | 22.5 | 0 | 49 TFW | 0 | 12.5 |
| 4531 TFW | 0 | 9.4 | 479 TFW | 9.4 | 16.4 |
| | | | 474 TFW | 33.6 | 0 |
| 363 TRW | 6.7 | 6.8 | 67 TRW | 0 | 17.4 |
| | - | | 75 TRW | 8.7 | 0 |
| 316 TAW | 0 | 0 | 64 TAW | 0 | 0 |
| 317 TAW | 0 | 0 | 313 TAW | 0 | 0 |
| 464 TAW | 0 | 0 | 516 TAW | 0 | 0 |
| | | | 58 TETW | 15.0 | 24.3 |
| 4554 CCTW | 0 | 0 | 4442 CCTW | 0 | 0 |
| | | | 4453 CCTW | 0 | 0 |
| | T | AC SPEC | CIAL UNITS | | |
| 1 SOW | 2.9 | 8.6 | 2 ADG | 0 | 0 |
| 4409 SUP SQ | 0 | 0 | 4500 ABW | 9.1 | 0 |
| 4410 CCTW | 14.6 | 0 | 57 FWW | 21.2 | 0 |
| 4416 TSQ | 0 | 0 | | | |

1060

THRU MAY

10 -

TAC SUMMARY

| | | 1969 | 1970 |
|----------------------|----|------|------|
| TOTAL ACCIDENTS | 8 | 33 | 23 |
| MAJOR | 8 | 28 | 22 |
| MINOR | 0 | 5 | 1 |
| AIRCREW FATALITIES | 7 | 14 | 18 |
| AIRCRAFT DESTROYED | 7 | 20 | 19 |
| TOTAL EJECTIONS | 4 | 16 | 13 |
| SUCCESSFUL EJECTIONS | 3 | 13 | 8 |
| PERCENT SUCCESSFUL | 75 | 81 | 62 |
| | | | |

MAY 1970

