TAC ATTACK

AUGUST 1972

HARDISON

A-7D...Pg 16

for efficient tactical air power

TAC ATTACK

AUGUST 1972

VOL. 12, NO. 8

Tactical Air Command

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THE COVER

A-7D Hydraulic Failures-Deferred Emergency? Page...16

CURRENT INTEREST

DEPARTMENTS

TACRP 127-1

Angle of ATTACK

It's A Fact - Not A Promise

As the new TAC Chief of Safety, I welcome both the challenge to serve in this capacity and the opportunity to use this page to make a pitch for accident prevention.

During my interview with the Commander shortly after moving into this job, I learned firsthand who the real TAC Chief of Safety is. I was not surprised, for that is the way it should be in every outfit, no matter how large or how small, including yours. The unit commander must be the safety officer and every individual in the unit must be his assistant if the organization is to accomplish its mission safely.

It seems appropriate that in my first comments on this page I should address the way I feel about safety. My philosophy is uncomplicated. If you do it the right way the first time, you'll have done it the safe way. It's a simple philosophy, but a difficult one to get across to all people.

We're in a new fiscal year and, as you well know, money will likely be more scarce than it was last year. This means that we all have to bear down more to conserve the valuable resources that we have. We just can't afford shortcuts, procedural compromises, or wasteful haste. There's no room for people who can't do it right!

I am soliciting your full support for the Safety Program within TAC and in turn this office will give you the best program that we can devise. That's not an election year campaign promise; it's a fact.

E. HILLDING, Colonel, USAF
Chief of Safety

another ten commandments

I

Turn from thy appointed way hurriedly when instructed by him, lest ye find thyself making merry with thy fellow birdman's appendage, for the controller's sight encompasses that which thine eyes cannot see, yea, even unto thy wildest dreams.

II

When the controller sayeth unto thee with the voice of urgency "Hold," holdest thou with the greatest expediency and without argument lest this be the final opportunity for thee to hold.

III

Should the voice from the air, which is the controller's, clear thee to takeoff, go thou like the wind, for perchance there is a machine of flight on short final which planneth to use the very surface upon which thou sittith, in a very short time, yea even unto seconds.

IV

Should conditions surrounding thee be that which are known as IFR, ask him not for VFR takeoff, for should he allow it, he will find himself in sore trouble with that agency known as FAA, and the law of the land adjureth harsh penalties upon these happenings.

V

Speak unto him with a voice of honey. Use him as a brother lest he become excited, confused, loseth his wits, and give thee a right turn out, when a left turn out benefiteth the occasion, for lo, a controller loveth a calm, courteous pilot above all things.

VI While in his area, keep thy controller informed well in advance of thy every intention, and believeth not that he readeth thy mind, in spite of popular opinion, he is human, even as thee and me.

VII When thou hearest the words from the little black box saying, "Unable to approve on account of traffic," beseecheth thou not from thy lofty position to challenge his decision for, lo, had not the traffic been there the words would not have been uttered; for he hath the eye of an eagle and sees all without restriction.

VIII When thy clearance is of the VFR stay ye from the proximity of thy brothers who are holding, for, lo, the poor controller is sorely tried to explain to his IFR charges the presence of strange birds.

IX Asketh for instructions in a voice that is calm and clear so the controller will understand thy wants; confuseth him not lest he clear thee for final on 07 while clearing one of his brothers for takeoff on 25.

X Since thy controller is of human mold, he may perchance not view all that transits upon his field of concrete. So watch thou closely for all four-wheeled earthbound vehicles. They are numerous and unpredictable, yea, even as a whirlwind. Treat them with fear and respect while taxiing, lest they charge upon thee with the speed of a lion and the fury of a tornado, for their drivers may be uninstructed in the ways of the birdman.

Possess thee of EMPATHY!!

author unknown
circa unknown
courtesy 316 Tactical Airlift Wing
Langley AFB, Va.

TACTICAL AIR COMMAND
AIRCREWMAN of DISTINCTION

MAJOR HOPPE

Major Lawrence G. Hoppe, 356th Tactical Fighter Squadron, 356th Tactical Fighter Wing, Myrtle Beach Air Force Base, South Carolina, has been selected as the Tactical Air Command Aircrewman of Distinction for June 1972.

Major Hoppe was number two in a flight of four A-7Ds scheduled for air-to-ground gunnery. After completion of the gunnery mission, the flight returned to Myrtle Beach Air Force Base and separated into two ship flights for practice instrument approaches in IFR conditions. Major Hoppe led the first GCA approach and during the second approach, while on downwind, he reassumed the wing position. When he attempted to advance the throttle to maintain wing position, it would not move. Major Hoppe reassumed lead of the element and declared an emergency with Myrtle Beach RAPCON. Power was sufficient to maintain flying speed in a clean configuration but insufficient to maintain final approach airspeed on GCA final. By using brute force, Major Hoppe was able to advance the throttle to a power setting that would provide excess airspeed on final; however, it would not maintain flying airspeed in a landing configuration in level flight. After evaluating his situation, Major Hoppe advised RAPCON to land all aircraft in the GCA pattern since he would close the runway with an approach end barrier engagement. Major Hoppe configured the aircraft with landing gear and partial flaps until intercepting the glide slope. After glide slope interception with gear and full flaps, final approach airspeed remained too high for a safe approach and landing. The emergency gear lowering system was activated so the speed brake could be used to control airspeed on final approach. The speed brake was retracted over the overrun and the approach end barrier was engaged. After landing Major Hoppe managed to move throttle to the cut off position, however, the engine continued to idle and engine was shut down with the fuel shut-off lever. Maintenance analysis determined that a failure of the controlex push-pull throttle cable caused the problem.

Major Hoppe's demonstration of professional airmanship during an inflight emergency under IFR conditions qualifies him as a Tactical Air Command Aircrewman of Distinction.

TACTICAL AIR COMMAND

Maintenance Man Safety Award

Staff Sergeant Curtis Strode, Jr., 27 Field Maintenance Squadron, Cannon Air Force Base, New Mexico, has been selected to receive the TAC Maintenance Man Safety Award for June 1972. Sergeant Strode will receive a letter of appreciation from the Commander of Tactical Air Command and a Certificate.

SSGT STRODE

TACTICAL AIR COMMAND

Crew Chief Safety Award

Sergeant Richard B. Carlson, 834 Field Maintenance Squadron, Hurlburt Field, Florida, has been selected to receive the TAC Crew Chief Safety Award for June 1972. Sergeant Carlson will receive a letter of appreciation from the Commander of Tactical Air Command and a Certificate.

SGT CARLSON

TACTICAL AIR COMMAND

Ground Safety Man of the Month

Technical Sergeant Clifford C. Uranga, 363 Security Police Squadron, Shaw Air Force Base, South Carolina, has been selected to receive the TAC Ground Safety Man of the Month Award for June 1972. Sergeant Uranga will receive a letter of appreciation from the Commander of Tactical Air Command and a Certificate.

TSGT URANGA

FAREWELL

The Editor
TAC ATTACK
HQ TAC (SEPP)
Langley AFB, VA. 23365

Dear Sir,

The 524th Tactical Fighter Squadron, Cannon Air Force Base, N. Mex is the last operational F-100 Squadron in the United States Air Force. The month of June 1972 ends the operational activity of the "Super Sabre" in the active duty Air Force as the 524th TFSq begins its conversion to the new Mach 2 Fighter, the F-111D.

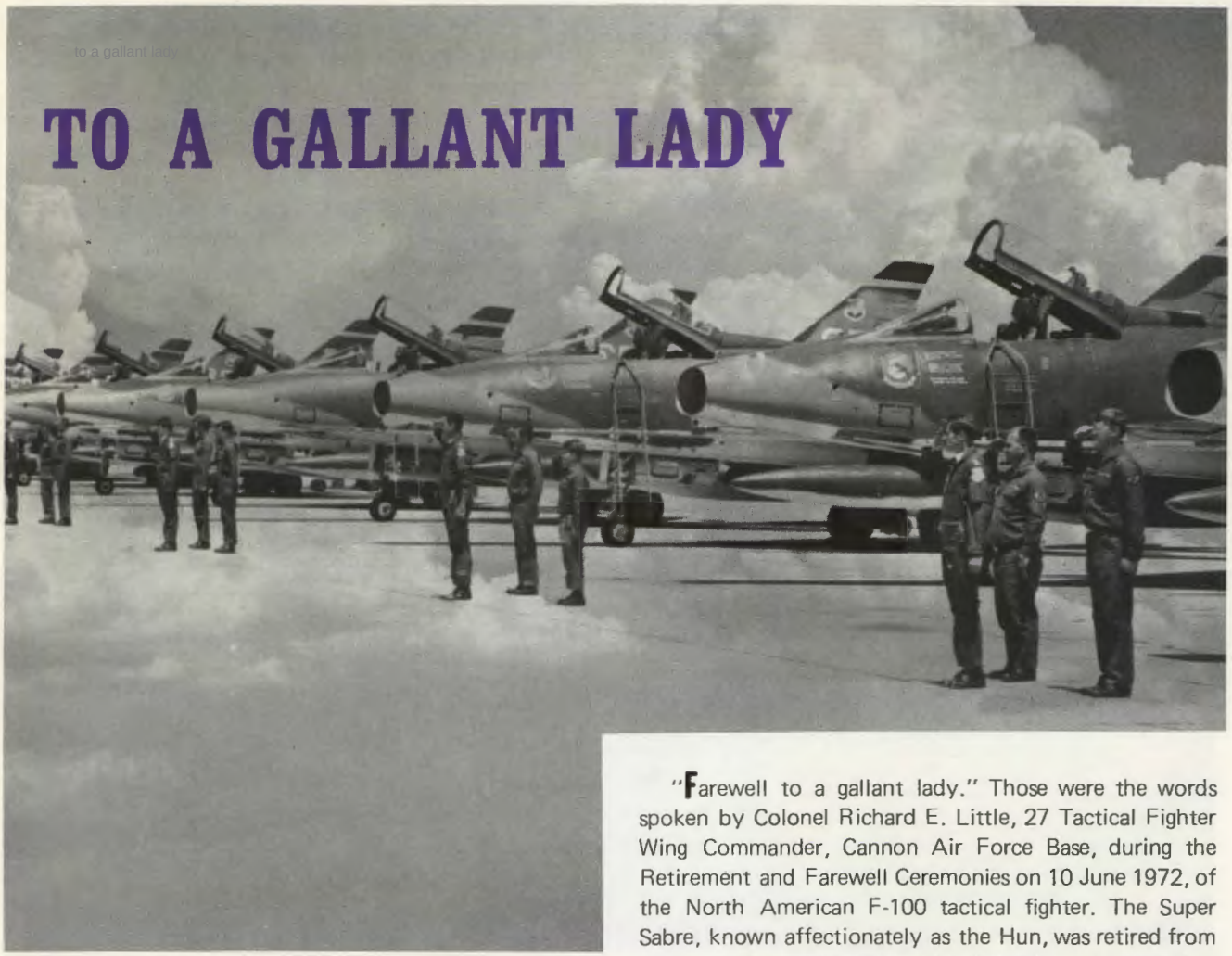
Literally thousands of Fighter Pilots and millions of other personnel throughout the world have learned to love and respect "Mr. Hun"; the TAC Fighter with the longest operational career in the history of the United States. Its operational service is far from over as it now becomes the backbone of our Reserve Tactical Forces, but its retirement from "Active Duty" certainly should not pass unnoticed. It did not - for here at Cannon on 10 June 1972 - "Mr. Hun" had his Retirement Ceremony.

This ceremony was advanced in date and unfortunately many, up and down the ranks of the Air Force, were unable to make the ceremony on short notice. The members of the 524th TFSq "Hounds of Heaven" would like to share the story of the Official Retirement of our beloved machine with all other Fighter Jocks, so they too know that "Mr. Hun" didn't pass from the active ranks unceremoniously. The logical place to do this is through your publication - The Fighter Pilot's Magazine - TAC ATTACK.

Ronald M. Clements

RONALD M. CLEMENTS, Lt Colonel, USAF
Commander

TO A GALLANT LADY



by Captain Bud Jackson and
First Lieutenant Cam Dooley

Aircraft 56-3730 "Spirit of St. Louis II," now assigned to the Colorado Air National Guard.

"Farewell to a gallant lady." Those were the words spoken by Colonel Richard E. Little, 27 Tactical Fighter Wing Commander, Cannon Air Force Base, during the Retirement and Farewell Ceremonies on 10 June 1972, of the North American F-100 tactical fighter. The Super Sabre, known affectionately as the Hun, was retired from active combat ready status with full military honors, thus ending the longest operational career of any fighter in Air Force history. The F-100 was the Air Force's first aircraft to fly supersonic in level flight, and was fully operational from October 1954 to June 1972. The Super Sabre was first delivered to TAC in September 1954, and the 524th TFS has maintained the aircraft since 1957. During a special ceremony conducted by the 524th Tactical Fighter Squadron and narrated by Captain Bud Jackson, a squadron pilot, the numerous achievements garnered by "the aircraft that made the Air Force supersonic" were summarized.

The Hun has a proud and impressive history:

● On February 3, 1949, the evolution of the F-100 design began with attempts to improve the F-86 Sabre in order to achieve an aircraft capable of supersonic speed in level flight. On September 14, 1949, the first design version of the F-100, known as Sabre 45, was completed. It was an advanced F-86D interceptor featuring a 45 degree sweptback wing, sweptback tail surfaces, and a countoured fuselage. The Air Force awarded North

"farewell to a gallant lady"

American an initial contract to build two prototypes of this design.

● On April 24, 1953, the first Sabre 45 designated the YF-100A was completed on schedule. The very next month the speed of sound was exceeded on the first flight of the Super Sabre by chief test pilot George Welch, at Edwards Air Force Base, California. Air Force pilots commented, "The YF-100 outperforms any other production fighter in the USAF at this time."

● On September 25, 1953, the first F-100A was completed and in October was accepted by the Air Force. On October 29, 1953, Lt Col F. K. (Pete) Everest, Chief of Flight Test Operations Laboratory at Edwards Air Force Base, set a world speed record of 755.149 miles an hour.

● On December 30, 1953, the Air Force designated a new model as the F-100C and improved it further as the F-100D. Both the C and D models had inflight refueling modifications which gave the Super Sabre worldwide deployment capabilities. The first Air Force tactical unit to receive the F-100A was the 479th Fighter Day Wing at George AFB, California, on 29 September 1954. The first

The Calypso Pass of the famous USAF Thunderbirds flying the F-100.

The entire squadron starts simultaneously.

TAC unit to receive the F-100C was the 322nd Fighter Day Group at Foster AFB, Texas. On August 3, 1956, pilot Alvin S. White made the first flight in the F-100F, a new two-seat version of the F-100 model.

● The F-100F made its debut on a flight to Paris, commemorating the thirtieth anniversary of Charles Lindbergh's history-making flight. Aircraft number 563730 was delivered to the Air Force in early 1957 and was selected to be an exhibit at the 1957 Paris Air Show. It was appropriately christened, "Spirit of St. Louis II" and plans were made for Lindy himself to ride in the rear seat. General Lindbergh could not make the flight, so Major (now Colonel) Robby Risner, the ranking POW in North Vietnam, took the Spirit of St. Louis II to Paris, a flight of 6 hours and 37 minutes, compared to Lindbergh's 34 hour flight. The "Spirit of St. Louis II," still going strong, was flown to the retirement ceremony by Brigadier General Walter Williams and Major Dale Dodd.

● All the models of the F-100 (A, C, D and F) have served extensively in TAC, USAFE, PACAF, ADC, ANG, and in the Nationalist Chinese, Danish, French, and Turkish Air Forces.

● On June 14, 1956 the Thunderbirds were equipped with the Hun and made it famous throughout the Free World. Many children, now adults, will long remember the precision formations, exact timing, and thrills of the red, white, and blue marked Super Sabres as they streaked through the skies.

● Forward air controllers serving in SEA will long remember the accuracy of the LITTERS, ELECTS, SABRES, BLADES, HAWKS,and many many more, for at one time there were four bases in SEA equipped with the F-100s. The record speaks for itself, with some 350,000 combat sorties and over a half million combat hours to the F-100's credit.

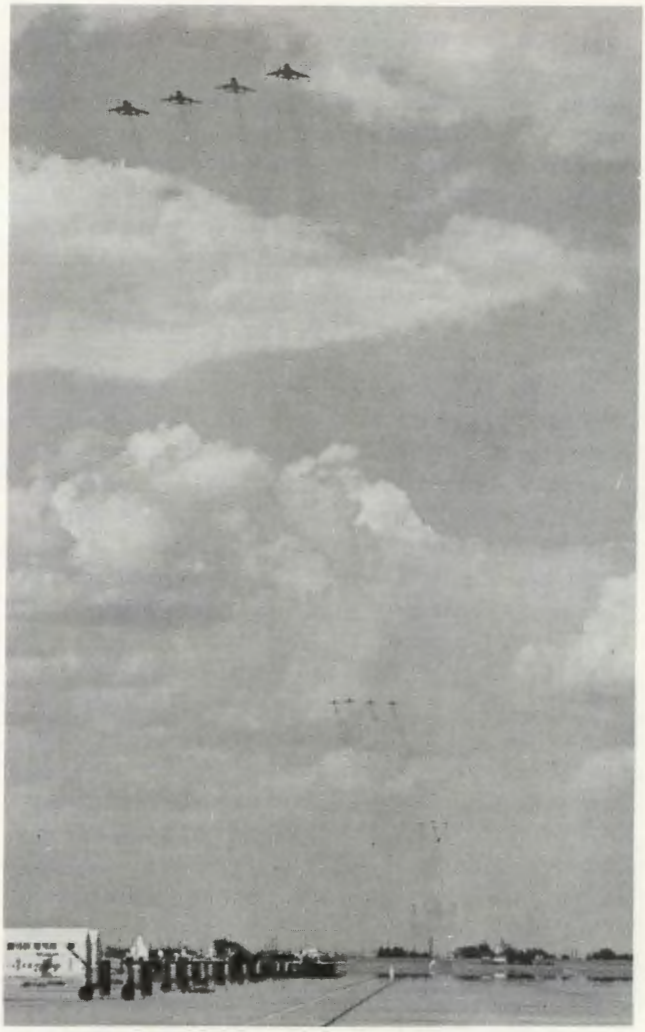
The Retirement ceremony featured opening remarks by the Wing Commander followed by an inspection of aircraft and crews by General Robert V. Spencer, 832nd Air Division Commander. The Squadron Commander then led his pilots and ground crews through a precision start and taxi routine, and as the crowd of over one thousand watched, the 524th launched their Sabres at minimum takeoff intervals.

As the flights were forming into their respective formations the narrator explained the four traditional formations flown by tactical fighter pilots. With the band playing the Air Force song and precisely on the designated target time the Squadron Commander led his flight, formed in echelon, by the reviewing stand. At 1000 foot intervals came the succeeding flights. The second flight was formed in fingertip formation and the third flight flashed by in the famous diamond formation. The last flight was the symbolic "Missing Man Formation" flown as a tribute to all POW/MIAs.

Following the last flight the solo aircraft passed the reviewing stand, then pulled up and winged over "Into The Sun," symbolizing the retirement of the Super Sabre from active duty and the passing of the "LAST OF A BREED." With the Hun disappearing into the sun and the band playing "Auld Lang Syne," a serenity fell on the audience, a serenity that announced, "Farewell Super Sabre – It's been great."

The 524th Tactical Fighter Squadron, "LAST OF A BREED," has given the F-100 Super Sabre its active Air Force farewell. But the Hun is far from retirement as a flying, fighting machine. Many Reserve Force units are equipped with the F-100 and will carry on in the traditions set by the Active Air Force.

"Ole Fighters Never Die – They Just Fly and Fly and Fly!"



The 524th TFS passes in review flying each of the traditional formations.

the 'can do'

the 'can do' attitude

In 1905 Czar Nicholas II of Russia charged a reluctant admiral with a mission to the Yellow Sea to defeat an upstart Japanese Navy which was threatening the eastern reaches of the Russian empire. He said, "You CAN DO it." When the Russian fleet encountered the numerically inferior Japanese Navy in the waters off Korea, one of the shortest naval battles in history took place. Forty-five minutes after the first shot was fired, the entire Russian fleet was lying on the bottom.

From this example can we assume that the Czar had the CAN DO attitude?

In 1961 President John F. Kennedy pledged to the American people that the United States would be on the moon before the end of the decade. This pledge challenged the American people, led by NASA, to accomplish a tremendous scientific and technical feat. The response to the challenge was, we CAN DO it.

On July 20, 1969, Neil Armstrong stepped from the lunar lander, Eagle, onto the surface of the moon.

The CAN DO attitude?

In 1960 Captain Jones, who had just completed a tour in F-100s, was checking out in a base-flight C-45 (much to his dismay). The instructor pilot demonstrated a normal landing in the tail-dragging, prone to ground-looping bird after which Captain Jones got his turn with a confident I CAN DO it statement. The C-45 touched down in a near three point attitude, veered to the right slightly, snapped sharply back to the left after an over-application of rudder, whipped back to the right after another too generous helping of rudder, then ground looped twice before the IP could forcibly grab the airplane and apply loads of asymmetric power to get her going straight again.

A dynamic portrayal of the CAN DO attitude?

In 1940 Sir Winston Churchill took the helm of the English government and inspired the English people with a willingness and resolve that enabled them to withstand the power of the German air armada. The underlying thought in his speeches was, 'we CAN DO it.'

Was this an example of the CAN DO attitude?

In 1972 the pilot who was a recent UPT graduate was checking out in weapons delivery in an AT-33. He made two passes on the range with each pass becoming increasingly more difficult because of a known control problem apparently caused by a fuel imbalance. On the third pass he lost control of the airplane in the base-to-final turn and ejected successfully.

Was this an application of the CAN DO attitude?

In 1968 Major Smith was leading a flight of four F-100s on a cross-country mission. At the third en route stop the weather forecaster informed the pilots that a solid wall of thunderstorms had formed along the flight path and would not be dissipating until several hours later. Major Smith decided to RON and give it another try the following day.

Is this the CAN DO attitude?

The CAN DO attitude is a philosophy that is essential to the objectives of Tactical Air Command. But what kind of a philosophy is it? Is it a narrow beam of mission vision that sees the departure point at one end and the objective at the other with no thought of what lies adjacent to the departure point, surrounds the objective, and litters the path between the two? Is it the brash arrogance of a man who tosses everything aside for the sake of the mission, at the expense of the mission?

Of course the proper definition is found in neither of those two questions. The CAN DO attitude is the knowledgeable pursuit of duties to the maximum of one's abilities. And the definition applies whether you are torquing a bolt, flying a mission, or leading a unit.

The definition doesn't reach right out and grab you,

attitude

does it? But let's examine it a little closer. The words 'knowledgeable pursuit' carry a deep meaning. Knowledgeable used in this manner means that you know your own limitations, the limitations of your equipment, the environment in which you're operating, and the relative importance of the mission. Pursuit means that you apply your knowledge to achieve the objective. In other words, you go after it with your eyes wide open. Without the necessary knowledge the pursuit is too often fruitless and the mission becomes compromised. The knowledge of yourself, your machine, and your environment enables you to make the necessary judgments to achieve the goal.

Duty is a word that has undergone some radical changes of meaning in recent years. True? Hogwash! To the dedicated fighting man of today it means the same thing as it meant to the military man two hundred years ago. Your duty is to apply yourself to the task of achieving whatever goal you have been assigned. How far you go to achieve that goal at the risk of your own life, the lives of others, and the equipment you operate depends upon your knowledge of the importance of the mission weighed against all of the other factors. The same balance of risks cannot be assigned to a stateside training mission as it would be in a combat mission. In training the objective is to learn how to hit the target; learning is the goal, the target is secondary. In combat the target is the goal.

The rest of the definition reads "to the maximum of one's abilities." Maximum in this case means stripping yourself of all lethargy and backward inertia. It means chopping away all the laziness and hitting on all eight all of the time.

Ability is used rather than the word capability. There are many who can perform at the upper limits of their capabilities and for those people the words ability and capability are synonymous. By the same token there are those who, for some reason or other, cannot perform as they are capable of doing. For those people their abilities are somewhere below their capabilities. It sounds like doubletalk but it boils down to the statement, know what you can do and do it.

Let's apply the definition to the examples in the beginning of the article:

The Czar incorrectly assessed the strength of his own Navy as compared to the Japanese armada. The CAN DO attitude? Hardly. Let's call it OVERCONFIDENCE stemming from a lack of knowledge.

President Kennedy correctly judged the spirit of the American people, and the abilities of this country to achieve the goal he established. The CAN DO attitude? You'd better believe it.

Sir Winston Churchill and the English people during the Battle of Britian? A superb example of the CAN DO attitude.

Captain Jones in the C-45? OVERCONFIDENCE again which was the result of an incorrect assessment of his own knowledge and abilities.

The young UPT graduate in the AT-33? Apparently he incorrectly judged the importance of the mission because of a lack of knowledge of his abilities and the goal.

Major Smith with his flight of four F-100s? It's another excellent example of the CAN DO attitude. He equipped himself with the knowledge to make the correct decision and saved the mission instead of potentially losing the flight.

As stated near the beginning of the article, the CAN DO attitude is a philosophy that is essential to the objectives of TAC. But how does all this fit in with safety?

Imbedded in the meaning of the CAN DO attitude is the definition of efficiency. And EFFICIENCY IS SAFETY!

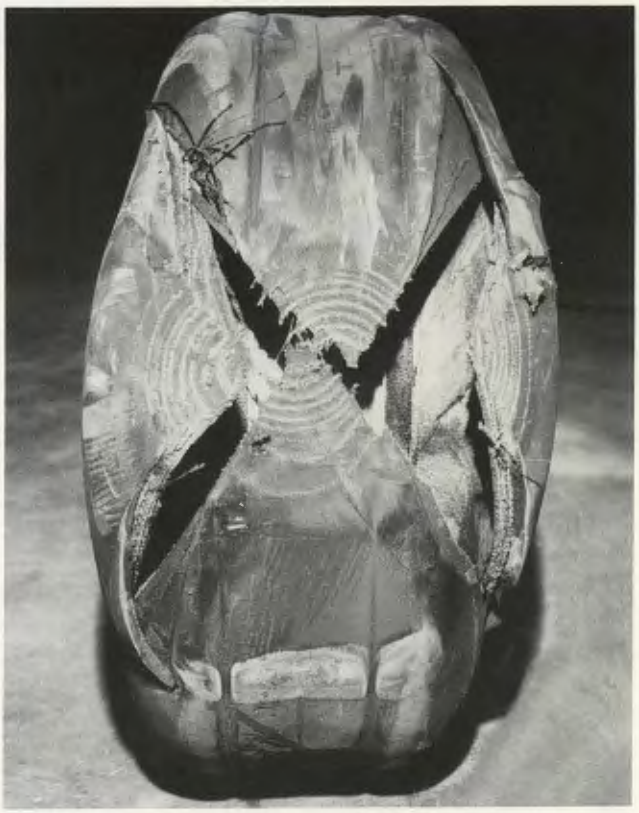
CHOCK TALK ...incidents and incidentals

chock talk

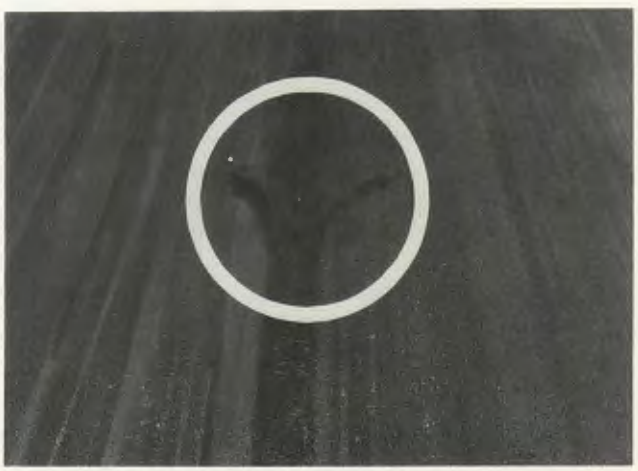
BLOWOUT

Thanks to the 57 FWW at Nellis we have some photos depicting an aircraft tire blowout sequence. The aircraft, an F-4, touched down with both wheels locked and skidded for about 200 feet before the left tire blew. A few feet later both wheels unlocked and the aircraft was brought to a stop with no further difficulties. The left tire had disintegrated during the landing rollout and the right tire had a large flat spot which had worn through all the cords (1st photo). Shortly after the photo was taken the right tire blew out (2nd photo). This photograph shows exactly what a tire looks like before it disintegrates during the rollout. The triangular flaps on the side explain the characteristic "feather" skid marks that are left on the runway at the instant of tire blowout. The "feather" skid marks are shown in the third photo.

NOTE THE WORN SPOT WITH ALL CORDS EXPOSED.



THE TIRE IMMEDIATELY FOLLOWING BLOWOUT.



NOTE THE CHARACTERISTIC "FEATHER" SKID MARKS.

with a maintenance slant.

ROCK AND ROLL

The crane operator had just picked up his first load of rubble with the crane bucket when the big machine started to rock. The operator released the brake to let the bucket drop to the ground in order to stabilize the machine but the brake failed to release and the crane rolled over on its side. Fortunately no one was injured and the damage to the crane was slight.

The investigator concluded that the crane operator picked up the load in a too exuberant fashion which started the sequence of rock and roll events. The brake failed to release, most probably, because of moisture in the brake system.

Outriggers were not being used at the time (they weren't required for this operation). Had they been used the accident could have been prevented. This unit now has an OI that requires the use of outriggers.

Additionally, the crane operator did not put the machine through an exercise period to insure that all systems were functioning normally. Again had he done so he would have found out that the brake was on the fritz and could have had it fixed.

THE BUCKET ROCKED AND THE CRANE ROLLED.

OUTRIGGERS WOULD HAVE PREVENTED THIS.

CHAFFED

After landing, the AC-119 pilot brought the props into reverse to slow the machine. When the throttles were moved forward, out of the reverse range, the aircraft continued to decelerate. The pilot then moved the throttles to idle and both recips loaded up and quit. When the props failed to come out of reverse, the circuit breakers for the prop controls popped and could not be reset. The airplane was brought to stop on the runway and turned over to maintenance.

Troubleshooting pinpointed the problem as insufficient electrical power being supplied to prop controls because of chaffed wires. The wires had been rubbed by the manual gun crank located on the right hand side of the cargo compartment.

Chaffing of electrical wiring by various moving aircraft components has been a problem since day one. The problem becomes more acute after TCTO action in which equipment is added, deleted, or moved to a different position in the aircraft. The positions of wiring bundles may be changed and the eventual results not completely foreseen.

Close inspection of wiring bundles after an aircraft equipment change with one eye looking for chaffing sources is just good maintenance.

A-7D HYDRAULIC FAILURES deferred emergency ?

by J. D. Eaton, System Safety Engineer
Vought Aeronautics Company

All A-7 drivers know that a failure of one hydraulic system need not noticeably increase the existing "pucker factor." The only immediate action required is a check of the flap handle to ensure it's in ISO UTILITY. There is time to break out the abbreviated checklist, peruse the emergency procedures while en route to landing, and perform them under controlled conditions. The appellation appropriately applied to this type of inflight emergency is "deferred." Single hydraulic system failure procedures are relatively simple, generally standardized for various types of failures, and, in short, "no sweat." Dual hydraulic system failure is a different story, and in a two PC system aircraft an immediate nylon letdown is recommended if the RAT fails to restore control. (For those who speak flight manual-ese, two PC system

airplanes are A-7D [1]➡[16] and [18]➡[26].) The A-7D aircraft with three PC systems, however, can be returned to base and landed with any dual hydraulic failure.

Dual hydraulic failure procedures for three PC system aircraft differ somewhat from single failure procedures because loss of two systems will result in unpowered hydraulic actuators. Loss of PC-1 and PC-2 will, for example, result in unpowered right aileron and spoiler actuators. Similarly, loss of PC-1 and PC-3 will result in unpowered left aileron and spoiler actuators. Recent wind tunnel tests at Vought Aeronautics Company have disclosed that loss of pressure to both sides of an aileron actuator may subsequently result in destructive aileron flutter at speeds above 200 KIAS. A forthcoming revision to the Dash One will limit airspeeds with any dual PC failure to this 200 KIAS maximum figure. Once airspeed is reduced and external stores are jettisoned, the procedures for PC-1 and PC-2 failure and PC-1 and PC-3 failure resemble the deferred single failure procedures. The third possible dual failure is a real sticker, however. Combined PC-2 and PC-3 failure is not a "deferred emergency"! Immediate reaction and a good knowledge of the A-7 lateral flight control system are required to ensure the safe return of aircraft and occupant. For this dual failure your pilot's abbreviated checklist lists four BOLD FACE steps:

1. FLAP HANDLE-ISO UTILITY
2. AFCS-CONT AUG
3. EXTERNAL LOAD-SALVO JETT
4. AIRSPEED-200 KIAS MAXIMUM

Put yourself in the cockpit and imagine yourself bottoming out in a combat bombing run. A few tracers straddle the cockpit and then you feel that unlucky whomp. The master caution light illuminates. The machine is still flying, so you get the nose pointed skyward. A quick check of the caution panel directs you to the hydraulic pressure gauges, where you observe the PC-2 gauge hovering at 1000 PSI and then drop smartly to zero.

Step one(all PC failures): FLAP HANDLE-ISO UTILITY

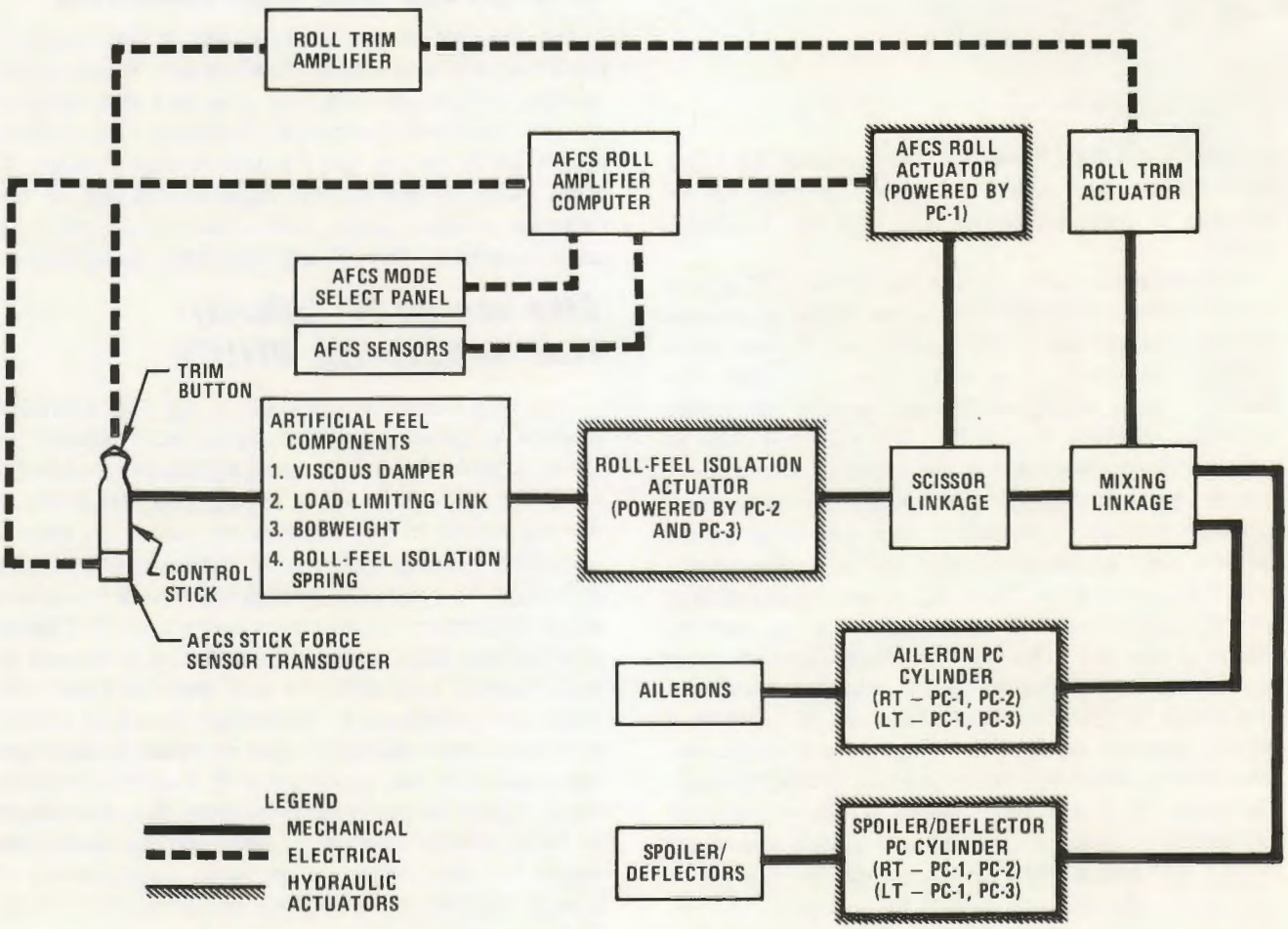
The flap handle is normally in the ISO UTILITY position to protect the PC-2 system from leaks in the utility systems. If, for any reason, the handle is not in ISO UTILITY and a PC-2 failure occurs, rapid placement of the flap handle in that position will isolate any leaks in the utility systems, and possibly restore system pressure (if enough fluid remains) for flight controls. For purposes of our illustration, however, let's assume your PC-2 failure is irrevocable. But a single hydraulic failure is no sweat, so you transmit your difficulty and head for Divert AB. Don't get complacent! Remember, failure of another hydraulic system will NOT trigger the master caution light again. Aware of this, you monitor PC-1 and PC-3 while en route, hoping for no further excitement. But, you guessed it, PC-3 twitches a couple of times and the needle falls slowly to zero. Here's where your understanding of aircraft systems and emergency procedures are critical. There is no time to break out the book.

A-7D HYDRAULIC FAILURES ...

Step two: AFCS-CONT AUG

Contrary to occasional rumor this step is not included solely for increased AFCS control deflection throw or to "make the aircraft fly easier." CONT AUG is essential to give you lateral control – period. A few minutes' study of Figure 1 will make the reason obvious. Essentially, there are two modes of lateral control available – normal manual control stick inputs and electrical inputs from the AFCS stick force sensor. (A third, the roll trim system, will be discussed later.) Manual operation of the control stick is transmitted by mechanical linkages through various components which provide artificial feel and then to the roll-feel isolation actuator. The purpose of this actuator is to isolate the control stick from high breakout forces and downstream feedback from the AFCS and trim system. Its importance to this discussion, however, is that it is a hydraulic actuator, powered by PC-2 and PC-3, and must operate to transmit control stick inputs to mechanical linkages downstream. These, in turn, operate lateral flight control actuators and surfaces. With PC-2 and PC-3 failed, the actuator is inoperative and moving the stick does NOT move the ailerons or spoiler deflectors. Forces applied to the stick grip, however, will generate electrical outputs in the stick force sensor. These signals are processed by the roll computer and, if CONT AUG or ATTD is selected, are transmitted to the ROLL AVCS actuator. Note that this actuator is powered by your operable PC-1 system. ROLL AFCS actuator outputs are transmitted mechanically through scissor and mixing

SIMPLIFIED BLOCK DIAGRAM OF 3-PC SYSTEM A-7D LATERAL FLIGHT CONTROL SYSTEM



linkages, downstream of the roll-feel isolation actuator, to the lateral flight control actuators and surfaces. You have, in effect, bypassed the inoperative roll-feel isolation actuator – and you're back in the flying business. (Complete schematics of the system can be found in TO 1A-7D-2-8.)

Step three: EXTERNAL LOAD-SALVO JETT

Jettisoning external stores will preclude the possibility of uncontrollable roll due to asymmetric load. Asymmetric store loadings generate yawing and rolling moments which must be counteracted with aileron and spoiler, and/or rudder control. With PC-2 and PC-3 unpressurized the rudder is inoperative and the only control available is through the roll AFCS. Maximum AFCS control authority is limited to 10 degrees of aileron throw and 24 degrees of spoiler deflector throw (less than half the normal maximum throw). In some flight conditions the limited control may be insufficient to stop a roll due to asymmetric external load.

Step four: AIRSPEED-200 KIAS MAXIMUM

Like the roll-feel isolation actuator, the rudder actuator is powered by PC-2 and PC-3. With loss of both of these systems, check valves in the actuator will delay evacuation of fluid from the actuator and give you time to slow to an airspeed below 200 KIAS. Actuation of the rudder pedals will evacuate fluid from the actuator faster and should be avoided. As a result of extensive flutter analysis and wind tunnel model testing it is known that once the actuator is drained of fluid, destructive rudder flutter may cause sudden catastrophic failure of the rudder and vertical stabilizer at speeds above 200 KIAS. No one has flown the aircraft in this condition but the aircraft has been successfully flight tested to over 500 KIAS with fluid trapped in the actuator. There is no way for you to ascertain that the actuator contains trapped fluid and if flutter occurs, structural failure follows so fast it is impossible to prevent. Don't start your own test program. Believe!

Back to the cockpit. PC-3 was added for increased combat survivability, and that's exactly what you get. If you reacted correctly to your dual failure, you are heading for Divert R & R center in ISO UTILITY, clean-winged at 200 KIAS, and getting Uncle Sam's money's worth out of the AFCS system. Now you've got time to break out the book and see what comes next. The remaining steps will look like the familiar "deferred" procedures: Anti-skid – OFF, land as soon as possible, Landing gear – EMER DOWN, Flaps – EMERG DOWN. Realizing that combat damage may have caused other structural failure or malfunctions, you perform a slow flight stability check at a safe altitude to make sure you can control your battered bird in the landing configuration. A straight-in approach makes good sense due to the limited lateral control authority.

The next step you encounter is not so familiar: RAT – extend on final if desired. (A forthcoming change to the Dash One will delete the words "if desired.") The RAT is not normally extended in other single or dual hydraulic failure procedures since extension may compromise PC-2 or PC-3. In the case of a "PC-1 only" machine, you have nothing to lose (PC-2 and PC-3 are already compromised), and everything to gain (RAT may restore PC-3 if PC-3 failure was caused by pump failure and not system fluid depletion). And there's one thing further to consider. In the landing approach you must exercise extreme caution to avoid high angles of attack. A LARGE gust or moment's inattention may cause you to exceed 22 units AOA – and, you guessed right again, your "anti-spin" feature will function and ROLL AFCS will automatically disengage. The consternation that this will cause will be unmatched by anything that has occurred previously. Complete loss of lateral control is unhealthy in a landing approach. If you were fortunate enough to restore PC-3 by extending the RAT, a ROLL AFCS disconnect will just be a bothersome light. You can fly it home on the roll-feel isolation actuator. Try it – you'll like it.

This is a happy ending, to be sure, but does not cover all the possible contingencies of your combat damage PC failure. Back up to the initial pull off target. PC-2 and PC-3 have failed and you are en route to home plate. Air whistling through the flak holes pulls a wire loose and the ROLL AFCS light comes on. All possibilities have not been exhausted, however, as a check of Figure 1 will show. The third lateral control system available is roll trim. The roll trim actuator is mechanically connected to the mixing linkage, downstream of the roll-feel isolation actuator and independent of the ROLL AFCS actuator. Marginal roll control may be availabile for cruise airspeeds but is inadequate at approach speeds. If cycling the CONT AUG switch fails to restore ROLL AFCS and extending the RAT fails to restore PC-3, a landing utilizing only roll trim for lateral control is not recommended. But roll trim just may get you to an optimum rescue area.

It should be evident from this discussion that not all hydraulic failures are deferred emergencies. Leisurely perusal of your pilot's abbreviated checklist is a luxury you cannot afford when PC-2 and PC-3 fail. Rapid execution of your BOLD FACE steps will enable you to effectively utilize the increased survivability capability of the A-7D.

TAC TIPS . . . interest items,

COMING ATTRACTIONS

Next month, the September issue of TAC ATTACK will vary its safety oriented format in order to salute the 25th Anniversary of the Air Force. It will be a special issue dedicated to the history of aviation and will include articles such as, "How We Made The First Flight," by Orville Wright, stories of World War I, World War II, the beginnings of the Jet Age, the history of the Air Force, and much, much more. It's going to have as much history and nostalgia as we can cram into thirty-two pages.

Don't miss it!

Ed.

IF IT WON'T MOVE-DON'T MOVE IT !

Shortly after takeoff in the A-37, the pilot attempted to raise the gear but the handle wouldn't move. He turned out of traffic and made another attempt to get the gear up. This time the handle moved and the gear began to retract. Before the gear fully retracted the handle fell out of the up position and back to the down position. (Can you see it developing?) The main gear came down and locked, as evidenced by the green lights, but the nose gear was indicating unsafe. Another bird in the area looked him over and confirmed that the mains appeared down but the nose gear was only partially extended. The jock pulled the emergency gear extension handle with no luck . . . the nose gear wouldn't budge. Next came various amounts of yawing, G forces, and a few touch and gos. Still no luck. The runway was foamed and the pilot landed on the mains and speed brake. Damage was limited to the speed brake.

Over-servicing of the strut was at the root of the problem but the pilot set himself up for it when he didn't listen to what the gear handle was telling him. It was announcing, by its refusal to move on the first attempt, that something was wrong. It would have made more sense to leave the gear handle down, burn off some fuel, and land without further ado.

UNSCREWED

The C-7 IP was giving an upgrade check ride to a new aircraft commander candidate. Upon turning downwind, the IP glanced at the number one engine prop feathering button (for some reason) and noticed that it appeared to be in the unfeather position. Since the button was supposed to be in the neutral position, something appeared to be amiss. He pushed the button to what he felt was the neutral position and the prop feathered smartly. He then tried to pull the button out to the unfeather position in order to get the engine going again, but no luck.

Seems that the button had become unscrewed to the point where it appeared to be in a position that it wasn't and thwarted all attempts by the IP to put it there. A single engine landing followed.

The cause factor listed in the incident report may prove to be an all time classic: "Primary cause factor is operator factor in that the IP failed to identify the prop feathering button in a partially unscrewed position."

It's for sure something is unscrewed, somewhere.

WHEN THE DUST SETTLED

The TAC troop was well onto the Interstate off ramp when an animal suddenly darted in front of the car. The airman swerved instinctively and lost control of the car which slid off the pavement onto a graded embankment, glanced off a guard rail and rolled over, skidded another 48 feet and rolled again, skidded 27 more feet and rolled a third time, then came to rest on the wheels.

You would expect the next sentence to read something like, "The airman and his passenger were thrown from the car and received fatal injuries."

But here's what really happened. When the dust settled, the airman and his passenger stepped out of the totally demolished car UNINJURED.

Why? THEY HAD THEIR SEAT BELTS FASTENED!

Why? Perhaps they enjoy living.

mishaps with morals, for TAC aircrewmen

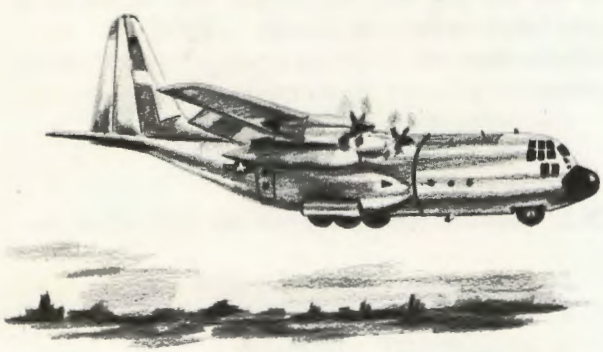
BRAKES

Six men were killed in a recent C-130 accident when the left wheel assembly exploded in flight, damaging hydraulic lines, igniting the escaping hydraulic fluid, and causing an immediate and intense fire in the cargo compartment.

The crew was on a training mission and had accomplished several touch and go and stop and go landings. The final series of events was a full stop landing, followed by a short hold on the runway, then an aborted takeoff. Next came the taxi-back on a down-hill taxiway in which extensive braking was used. On takeoff, the gear was retracted immediately and the aircraft turned onto downwind. With no cooling air to reduce the brake temperature in the retracted wheels, heat built up in the wheel, causing the explosion and resulting fire.

While a recommendation has been made to install fusible plugs in C-130 wheels to relieve excess pressure caused by heat, a fix is far down the road.

What can we do now? Educate! Talk it up! Make sure everyone in your outfit understands the C-130 brake system and how to reduce the hazard potential of hot brakes. Know when to retract the gear and when to leave it down in order to cool the brakes.



COMBAT OFF LOADING

It's a rare situation when TAC C-130 crews have to use combat offloading as a method of discharging cargo . . . just rare enough to get you into trouble when you attempt it.

At best the combat offload trick is potentially hazardous and requires a perfect picture of crew coordination to get it done without hurting anyone or damaging anything. To illustrate the point, a C-130 loadmaster was injured recently by a moving pallet while using method "B" (one pallet at a time).

The list of checklist omissions in this particular accident is lengthy and had any ONE of the missing items been performed, the accident would have been prevented.

Here's a partial list:

The pilot did not brief each crew member prior to commencing the offload operation.

The loadmaster did not attach tiedown devices to each successive pallet.

The loadmaster and copilot did not use the dual-rail cover as a walkway while pushing the released pallet.

There are several more items that were omitted from the checklist but the most important one is the checklist itself . . . it was omitted!

Aside from the fact that the checklist is required to be used in combat offloading maneuvers, it's just good common sense to brief all crewmembers to insure that they understand their duties.

Better'n dinging an airplane or mauling a foot.

THE RULES

Just when you think you have a problem kicked in the head, an incident like this one comes along.

The pilot of an O-2 was flying on a VFR flight plan on the second leg of an out and back. While navigating (sightseeing?) along a river the airplane struck a power line damaging the nose gear doors and the vertical stabilizer. The pilot then climbed the machine to 1500 feet and flew on to destination without further incident.

There's no doubt that the incident could just have easily been a major accident and fatality. Why? Because the pilot yielded to the temptation and broke the rules.

The temptation to do just that is always around, always lurking in the background. But it's the mature man who has his "fun" within the limits of the rules.

OVER-EDUCATION

The flight of four F-100s was scheduled for a 1400 takeoff for a local formation training flight. The flight members had attended a pilots meeting earlier in the morning and later the flight leader had conducted a thorough mission briefing approximately an hour and a-half before scheduled takeoff time. Included in the mission briefing was an emergency procedures quiz wherein members of the flight fired random emergency procedure questions at each other.

The flight filed a local IFR clearance and a check of the charts indicated that takeoff roll would be 4800 feet with a 2500 foot line speed check of 124 knots.

Start and taxi were normal and the flight lined up for a 12 second interval takeoff. Numbers one, two, and three rolled on time. Twelve seconds after three's brake release, number four began his roll. AB light was good and at 2500 feet the speed was 121 knots, well within the ballpark. At approximately 140 knots the fire light illuminated. The jock made a quick check of the EGT, stopcocked the throttle, and lowered the hook in an attempt to engage the mid-field barrier (the departure end barrier was known to be out of commission). The hook missed the cable and the pilot began max braking while announcing abort over the radio. Shortly afterward he transmitted that he was going off the runway. The aircraft passed through the asphalt overrun and onto the sod overrun, collapsing the nose gear. The Hun slid a few more feet on its nose and main gear before coming to rest. In short order the pilot opened the canopy electrically and egressed uninjured.

The fire department raced to the scene and quickly cooled the smoking brakes. Not too long afterwards a maintenance inspection of the engine found the trouble. A hot air duct had failed allowing 16th stage bleed air to enter the engine compartment. Had the pilot continued the takeoff, this escaping hot air would most likely have caused failure of the hydraulic system and subsequent loss of control of the aircraft. Without question, the pilot's decision to abort was a good one.

So we can say that the accident was caused by a materiel failure of the bleed ducting . . . right?

Unfortunately not. Let's take a look at the jock's abort procedures for a minute. Here's the way they line up:

1. THROTTLE – OFF
2. ARRESTING HOOK – RELEASE
3. MAX BRAKING

Okay, now let's look at the boldface items in Section 3:

1. THROTTLE – IDLE (OFF FOR FIRE)
2. SPEED BRAKE – UP
3. DRAG CHUTE – DEPLOY

If it appears there is insufficient runway for a normal stop, do the following steps, in addition

to using brakes as necessary to stop the airplane.

4. EXTERNAL LOAD – JETTISON (IF NECESSARY
5. ARRESTING HOOK – RELEASE

A quick comparison of the two procedures points out a few irregularities in the jock's actions.

The obvious question is why did the pilot skip from step 1 directly to step 5? Before we wag an answer to that one let's analyze each procedure, the one the pilot used, and the one the book calls for, to see if it was possible to stop the airplane on the remaining runway.

From the witness statement by the RSO and the fact that the pilot lowered the hook in anticipation of engaging the mid-field we can assume that the abort occurred very near and most probably not past the mid-field barrier. Assuming that the aircraft was positioned 500 feet from the end of the runway when he commenced the takeoff roll, a total of 7500 feet of runway was available at brake release. Blending all of these together, along with the speed of 121 knots at the 2500 foot point, would have given the aircraft a ground speed of 139 knots (9 knots headwind) at the barrier with 4250 feet of runway ahead of the airplane. It was at this point that the pilot initiated the abort. Thumbing through the charts, we find that this was enough concrete to get the airplane stopped using brakes alone but perfect braking technique would have had to be used. And who (but you and I) is perfect? So, at best, getting the airplane stopped on the runway using the pilot's procedure was marginal.

However, if the pilot had used the correct procedures and deployed the drag chute, it would have been no contest. There was more than sufficient runway to stop the airplane.

The next question that surfaces is why didn't the hook engage the cable? Two possibilities exist. The first is that the aircraft was practically on top of the barrier when the hook was deployed and consequently, the hook didn't extend until the airplane was past the barrier. The second is that the hook extended normally but bounced over the cable. Making another trip to the Dash One we find the following quote, "The arresting hook should be released approximately 2000 feet before the barrier cable to allow hook bounce to dampen." It's obvious that the 2000 feet was not available.

Now let's see if we can determine why he didn't use the correct procedure.

During the pilot's meeting, which was held earlier in the day, it was pointed out that the departure end barrier was out of commission and that rapid lowering of the hook would have to be accomplished to engage the mid-field barrier in case of an aborted takeoff or a drag chute failure on landing. That same point was also emphasized later during the flight briefing.

Since the requirement for prompt action on the hook had been emphasized to the pilot twice that day, he may have over-channelized his attention on getting the hook down, at the expense of everything else.

Can we call it over-education? Perhaps. But that's making a whopping assumption. More likely it was a misapplication of the information at hand. The pilot remembers thinking about jettisioning the stores and deciding against it. So the emergency procedures were bouncing around in his head. Perhaps because he changed the sequence, the logic of the procedure was destroyed and in the pressure of the situation he simply forgot to deploy the chute.

Whatever the explanation, one point remains clear. Had the pilot accomplished the bold face procedures IN SEQUENCE he could have stopped the airplane on the runway and you wouldn't be reading about it now.

What about drag chute failure, you say. Okay, let's kick that one around. If he had accomplished the procedures in sequence and if the drag chute had failed the airplane would most probably have wound up in the same place. There would be one difference, however, the accident report would read 'materiel factor' and not 'pilot factor.' And, Gents, when the only thing that's dinged is the airplane, that's a big difference.

The book may not always be right and if it isn't that's what the good Lord made pencils, paper, 847s, and stuff like that for . . . so you can take some action to have it changed. If you choose to ignore the procedures, you'd best be right.

To preclude an accident of this nature from happening again the following message was dispatched from Headquarters TAC:

"Mid-field barriers will not be considered compatible barriers for takeoff, if a compatible arresting system is not operational at the rollout-far-end of the runway."

A BETTER CHANCE THAN THE BIRDS

by Lt Col William R. Barrett
Hq TAC/SEW

Some aircraft emergencies require rapid reaction and some require drastic action. The latter was vividly demonstrated some years ago by an incident report submitted by an aviation cadet while flying an AT-6 from a training field in Arizona. At this time training aircraft were painted yellow and, for some reason, attracted hawks, which inhabited the nearby mountains and were famous for buzzing these big yellow birds. During this time it was AT-6 procedure to open the pilot's canopy when in the traffic pattern. Such was the situation when the AT-6 was on final and a hawk with a bad sense of timing failed to complete a buzz job and entered the cockpit through the open canopy. It was immediately evident to the cadet that the hawk didn't consider the AT-6 safe for air travel. In trying to get out, the hawk smote the cadet with beating wings and flairing talons, inflicting bruises and lacerations about the cadet's head and shoulders. Not being able to eject the hawk from the cockpit and with aircraft control becoming shaky, the cadet took drastic action. As reported in the cadet's words: "The hawk became even more aggressive, but after strangling same, aircraft control was regained and a safe landing accomplished." Although we don't provide egress systems for birds in the cockpit, we do have better than adequate means for aircrew ejections. But the way some people treat egress systems is for the "birds."

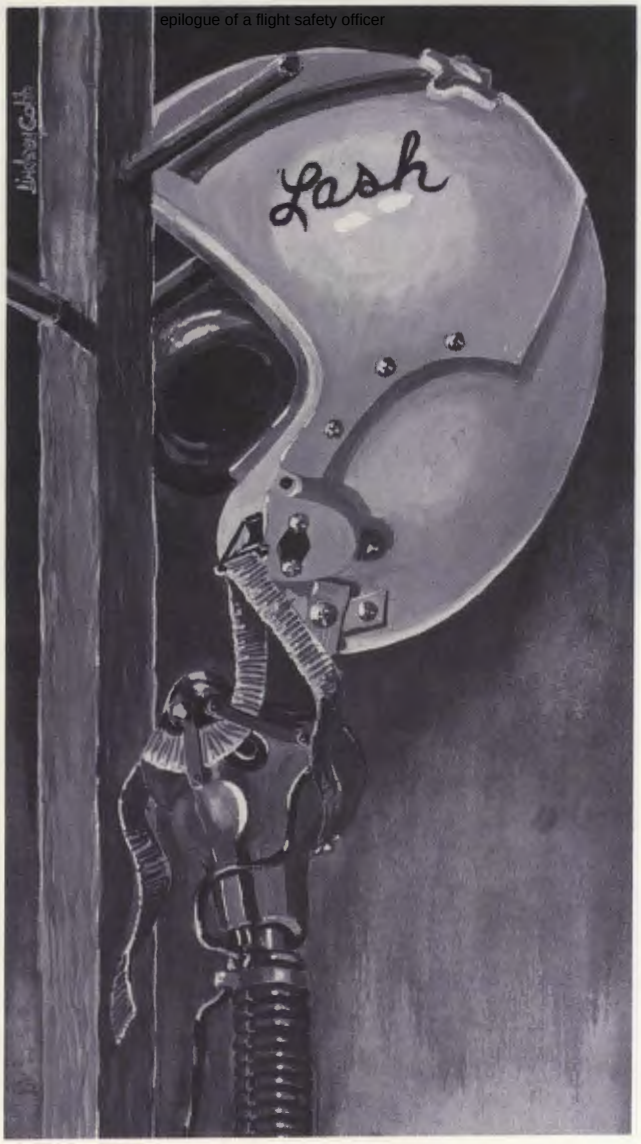
One-hundred-eighty-eight TAC aircrew members used emergency systems to egress from their aircraft in flight during the period 1968 through 1971. A typical yearly ejection experience was the 24 successful and one unsuccessful in 1971. The ejection systems operated as described in the TOs and without a materiel failure. This is the level of reliability every aircrew member has the right to expect and every ground crew member is expected to help maintain.

It, therefore, was difficult to visualize why explosives mishap data indicated that both ground crew and aircrew personnel frequently treated egress systems with indifference or showed an amazing lack of procedural discipline when performing maintenance on these systems. Twenty-one of the 24 explosives mishaps involving egress systems reported in 1971 were a result of personnel factor, aircrew, ground crew, or supervisory error. The 1972 pattern looks the same. TAC has experienced 10 egress system mishaps of which eight have been caused by careless personnel actions.

The statistics support one conclusion: Safe care in handling and expert repair in egress systems are areas requiring additional emphasis. Flying Safety meetings are "prime time" to have your unit's egress shop personnel make a presentation about the safety hazards and peculiarities of the egress system in your UE aircraft. Overexposure to egress system safety is not the problem; preventing personnel from downgrading reliability through carelessness, is.

WEAPONS MISHAPS

TAC			EXPLOSIVE	ANG		
JUNE 72	THRU JUNE 1972			JUNE 72	THRU JUNE 1972	
9	41		TOTAL	3	19	13
2	11		Personnel	3	12	9
3	17		Materiel	0	7	4
4	13		Other	0	0	0
1	2		MISSILE			
0	2		NUCLEAR			



EPILOGUE OF A FLIGHT SAFETY OFFICER

by Major Ralph T. Lashbrook
67 Tactical Reconnaissance Wing
Bergstrom Air Force Base, Texas

In a few days I'll hang up my flying gear for the last time. But before I do I want to get in one last plug for my company product — Flight Safety.

During my military flying career I have been catapulted off aircraft carriers in the back seat of SB2C Helldivers ; photographed atomic bombs at Bikini through the waist gun ports of PBM Mariners; slid off the runway in a T-6 Texan; saw three classmates collide as their four-ship T-33 flight turned onto initial at Willy Air Patch; flamed out during landing roll in an F-86E at Nellis because of poor fuel management; made a gear up landing in an F-89 at Scott because of materiel failure; missed a head on collision by less than 100 feet when the other jock forgot to check a runway change; almost lost an RB-66 south of Cuba in a violent tropical thunderstorm; and snagged the midfield barrier at Udorn after a utility failure. Do I know about flight safety? You bet your bippy I do.

I have seen the flying game move from relatively simple machines to highly complex integrated weapons systems and aircrews progress from devil-may-care flying fools in 50 mission crush caps and long white scarfs to highly skilled airmen in pressure suits and fishbowl helmets. Hold on, before you old timers get up in arms about being called 'flying fools', there were professionals in WW II (the big one) just as there were in the Spads and the Nieuports and there are in the Thuds and the Phantoms.

In my association with military aviation from 1944 to 1972 I have had many satisfying experiences. If asked to select one above all the others, I would have to say my assignment as Flying Safety Officer was the most gratifying experience in my aviation career. Flying will always hold a special place in my memories but that was primarily the efforts of myself and my crew. But a good flying safety record is possible only through the combined efforts of everyone associated with flying operations: the approach controller, the crew chief, the dispatcher, the flight engineer, the flight surgeon, the navigator, the operations officer, the pilot, the systems specialist, the tower operator, the weather forecaster, the commanders, and many, many others.

As I put my hard hat on the shelf for the last time, I would like to thank each and every one of you who, as true professionals, have made my assignment as your Flight Safety Officer a very pleasant high point of my military career. May all your days be CAVU, your nights starlit, and your sunsets golden.

FLY SAFE.

SPO COR

SPO Corner is the direct line from the Systems Project Officers at TAC Safety to you. Since every TAC aircraft type is represented by a SPO you'll be seeing something about your machine, something which may save you some grief. This direct line has a phone at both ends to answer your questions and suggestions (Autovon 432-7031). Or if something is bugging you and you want to write, the address is TAC/SEF, Langley AFB, Va 23365. We need your feedback.

HUMM-CLICK- @*&!*×#£ -CLICK

Frustrating isn't it? You're sitting there in the holding pattern in your single seat (or more) ARC-34 equipped jet fighter (includes F-33) and the UHF starts cycling. Humm-click, humm-click, humm-click. You change channels, try manual, fiddle with the volume, cycle the function selector back and forth, press the tone button, switch antennas, but nothing helps. Humm-click, humm-click. Finally you turn the volume down, select 7600 on the IFF and (if you remember and have it) turn the omni volume up or select 121.5. While you *are* doing this, you mentally review your *radio* out approach procedures and wish you *could* get your UHF back for at least one more transmission.

Don't despair — sometimes — repeat — sometimes — you can get it back — for a few minutes at least. It all depends on what is causing the channelizing. It may just be a part in the radio that has failed because it got hot. How do you fix this? Simple, the radio isn't working anyway so turn it off — let it cool for a few minutes, then try again. If this doesn't work, try a slight wing rock or porpoise (a gentle way of kicking the set you can't get at). The problem may be a loose crystal — this can cause channelizing (and did in a recent accident).

If something other than channelizing has put your UHF on the fritz, there are other actions you could and should take — they include checking the mask (mike) to helmet connection and checking the mask to aircraft connection and checking your circuit breakers.

While you are at it, make sure you haven't inadvertently selected a manual frequency below 225.0 MHz. The ARC-34 cannot tune this frequency but does not know this and after about 90 seconds of trying will automatically shut down. Once again, if this happens turn it off — let it cool, then try again on the right frequency.

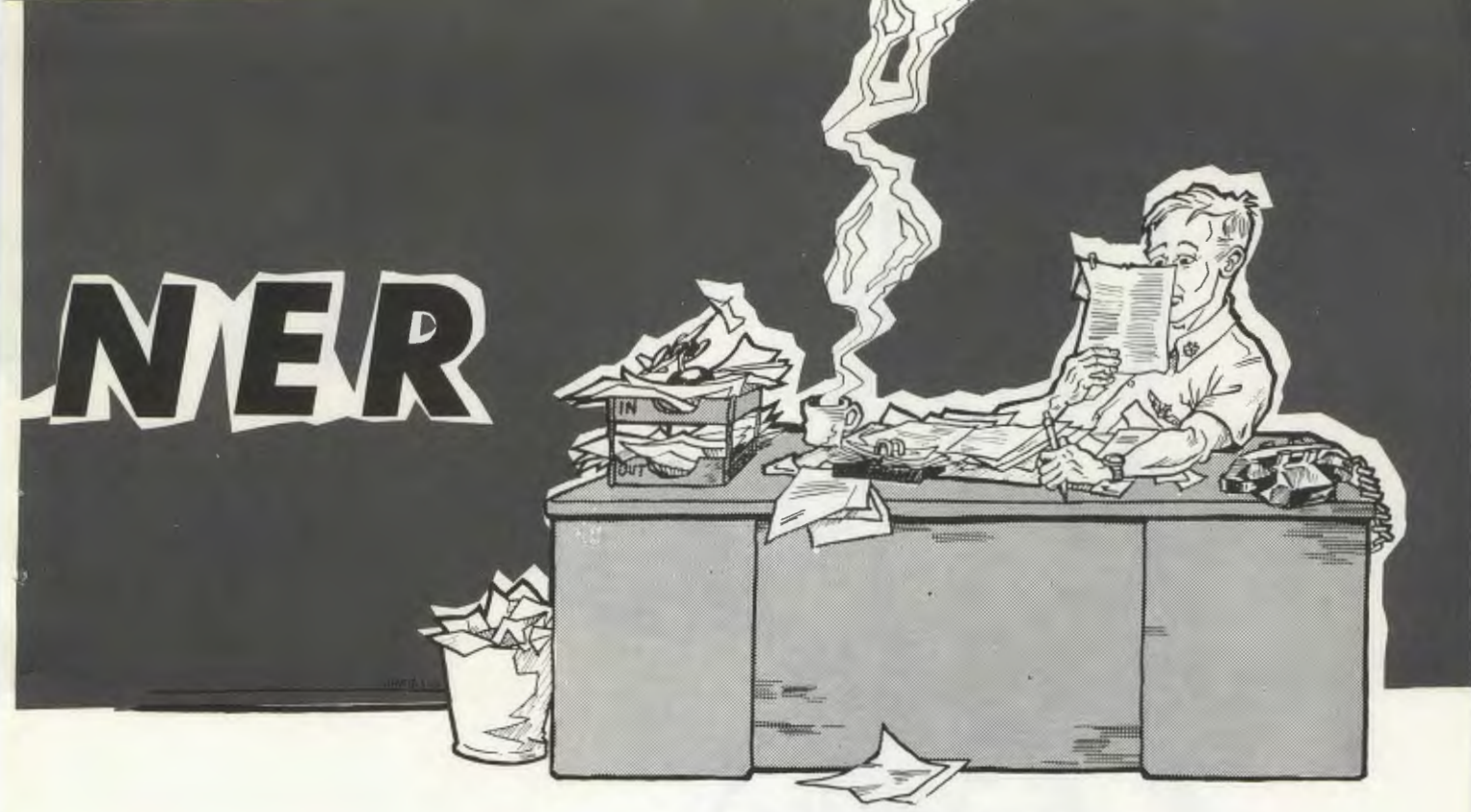
If all of this fails, leave the UHF on, check the function switch in both and hope the guard receiver (it's separate remember) works or that the ARC-34 will finally fix itself (not likely). Unfortunately, if the UHF is channelizing the guard receiver won't do you any good.

Last, but not least, as you make that radio out approach, try a call or two in the blind whether you have side tone or not. It just could be that your transmitter is OK.

Lt Col Lou Kenison

AERO CLUB ANTICS

Two recent TAC aero club major accidents bring to light some interesting facts which I'll pass on. In both cases the accidents involved student pilots, during the landing phase at auxiliary landing sites. The reports mention the pilot factor aspects of the accidents. But, how about the supervisory factors? How soon is a student pilot able to take on and cope with the added attractions of navigating to an aux field, determining the landing runway, winds, etc., and after accomplishing his stop and gos, returning to the home drome. As an instructor pilot, I would much rather be in a position to observe the student's first few solo stop and go landings, such as, out at the end of the runway. Follow these with a short post flight critique and you have a much more effective



learning situation than when you merely — "turn 'em loose!" It's hardly a "supervised solo" if the IP is at another airport or in the pilot lounge sipping his coffee.

Capt Al Mosher

LACK OF PROPER SUPERVISION CAN LEAD TO THIS.

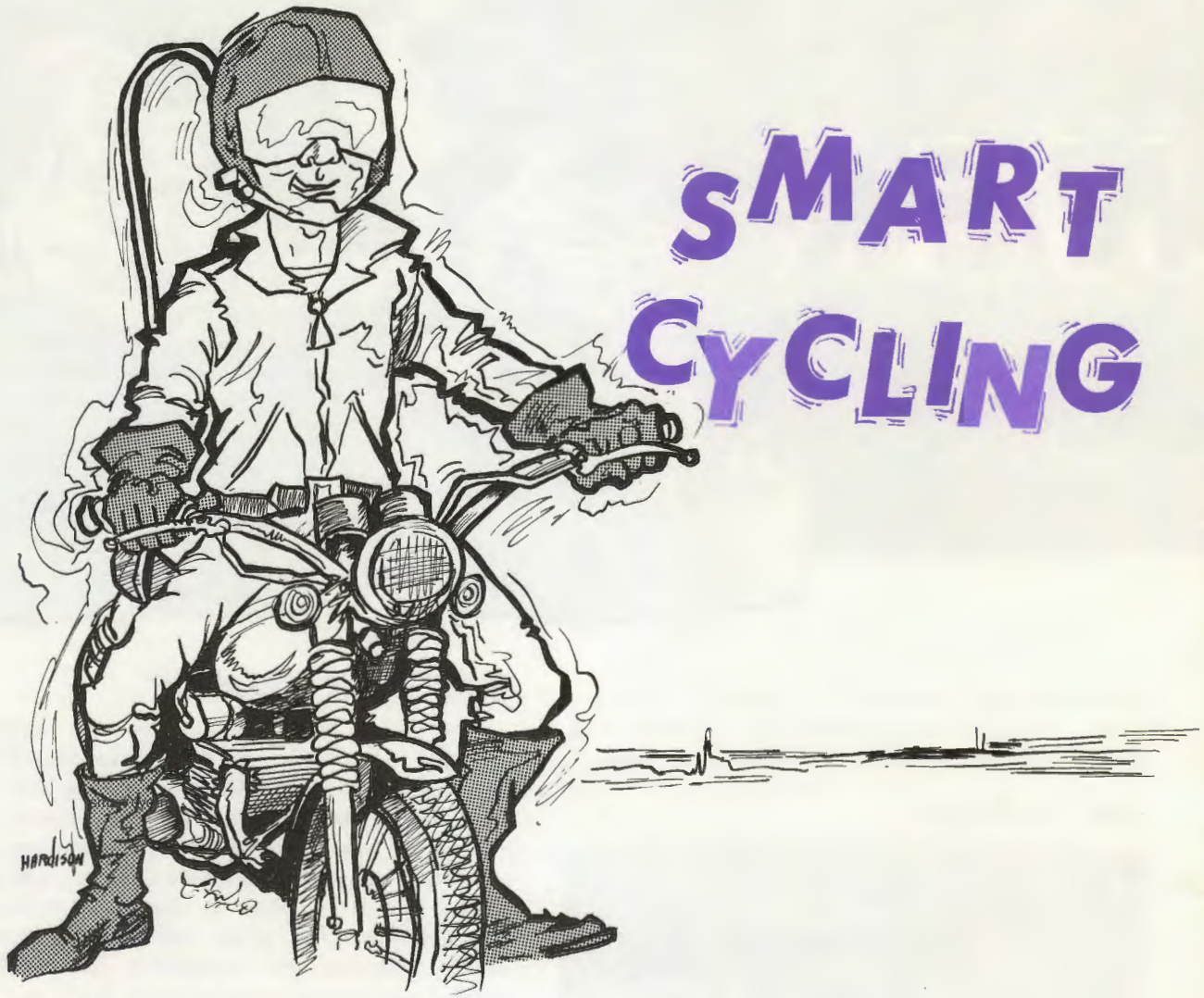
WHAT'S THE "SHEAVE"?

A recent TAC accident and the subsequent investigation pointed out that some of our able F-4 drivers (and a couple of MAJCOM desk jocks who used to fly jets) aren't all that knowledgeable about the BAK-type barriers we have scattered around our modern fighter bases. Although all concerned are quick to rattle off the various barrier locations at approach, midfield, or departure ends of the runway, and the proper procedures and/or limitations for engagement, not many have actually seen the hardware up close. A trip out to the runway to look at the devices at your base might be very worthwhile and educational. Check the actual equipment. Take a look at the pendant, the support disks, the tape and the connector. Most important, note how close the deck sheave assembly or the fairlead beam and the concrete enclosures are to the runway edge. It's not too difficult to visualize how a pilot who gets his main gear and tire too close to the edge of the runway and hits this hunk of concrete and metal could expect to have immediate control difficulties.

An examination of these gadgets and their location and composition may reenforce your desire to touch down well within the designated limits of that prepared hard surface.

PS: If you can't get out to the barrier or need pictures to expand your expertise, or if you just like barriers, take a look at TO 35E8-2-5-1 or -4.

Maj Burt Miller



SMART CYCLING

The need for safe practices in the operation of two-wheeled vehicles is not limited to motorcycles. Motor scooters, trail bikes, and motor bikes also have a high potential for accidents, especially if the operator fails to follow proper maintenance and driving procedures or ignores the rules of highway courtesy.

As the owner of a cycle, bike, or scooter, you may feel that many laws and directives discriminate against two-wheeled vehicle operators. But in truth, these rules are not overly restrictive; rather they are designed for operator protection. In addition to written rules, there are a few common sense rules that are just as important to safe operation, and, in turn, contribute to the pleasure of cycling.

In motorcycle riding, as in most sports, appropriate equipment and clothing are essential. A football player would not likely stay in the game long if not properly protected. A fighter pilot wears a "G" suit as well as helmet, boots, and other items for his protection, and astronauts fully depend on appropriate clothing for survival in space. Likewise, the use of proper protective equipment by the cyclist may well mean the difference between life and death should he become involved in an accident.

A helmet is the best life insurance the bike rider can have. Air Force regulations require the proper wear of a protective helmet and many states require helmets, yet many cyclists and passengers are killed in accidents because they do not wear helmets or fasten chin straps.

Goggles or a face shield can be just as important as a helmet. Getting hit in the face or eye by a stone kicked up by a vehicle ahead of you, or even by an insect, can cause

serious injury, possibly resulting in loss of control. Protect your head and eyes; it could be the difference between a pleasant ride and a last ride.

Certain other simple items of protective clothing can prevent nasty and painful injuries. How much protection do you think a "T" shirt provides if you spill at 20 MPH, or even at 5 MPH on gravel or pavement? The jackets used by members of many infamous motorcycle gangs serve as protection and are worn for that reason.

One of the major causes of motorcycle accidents is that automobile drivers simply do not see the cyclist. To help eliminate this problem, brightly colored clothing should be worn. In addition, keep your bike lights on even in the daytime, since this will make it easier for the other vehicle operators to spot you. Finally, ride where you can be seen. Don't hide behind other vehicles.

Equipment on the cycle itself is also important. Crash bars which are usually on the heavier machines can do a lot to protect your legs should you be forced off the road or lose control and dump the bike. Two mirrors will provide you a better field of rearward vision and are especially handy when riding on a multi-lane highway.

Riding double on a motorcycle can be enjoyable, especially if the passenger is a female friend. However, before you try any double riding, be sure your bike is properly equipped with seating and footrests for passengers. Instruct your rider on passenger procedures since you can do a better job of controlling the bike at low speeds if the passenger stays a part of the machine.

Good lighting for night operation is a must. You must be able to see the road clearly and a properly aligned bright headlight is the only way. Bright tail lights and brake lights are equally important. Turn signal lights will help, too. Remember, while driving at night, you and your cycle project a small silhouette. Do all you can to be seen.

The importance of the mechanical condition of your machine and the necessity for routine maintenance cannot be overemphasized. Brake adjustment, clutch adjustment, tires, wheel alignment, and chain adjustment are some of the essentials to safe operation.

The amount of brake lining remaining on a mechanical expanding brake is one thing that must be frequently checked. If the lining is worn too much and you adjust the cable, the cam can go over center. If this happens, the brake will lock and not release.

Clutch adjustment is important for long clutch life and for ease of riding. If there is no free play in the clutch mechanism, there will be a constant slipping and the clutch will soon wear out. If the clutch mechanism binds or grabs, you will not have an easily operating system.

To insure the carburetor closes completely, there should be a little play in the accelerator control. Not much is needed, just enough to close the carburetor to the throttle stop. Also, the throttle mechanism must operate smoothly to permit smooth acceleration and deceleration.

Tires can cause accidents. Smooth, unevenly worn, cut, or bruised tires are dangerous. Some states require more than 1/16 of an inch of tread on a tire at the time of inspection. Smooth tires offer no traction and are more easily punctured because there is no rubber cushion to absorb shock or prevent the penetration of stones, glass, nails, and other sharp objects. There are many different types of tires that can be used on motorcycles. Hill climb treads or trail tires don't work well for highway travel, nor do highway treads work well on trail bikes. Each tire is built for a specific purpose. Use the right one!

Don't neglect the wheels. Unlike car wheels, your bike wheels can be adjusted for trueness. A wobbly wheel can cause high-speed vibration and possible loss of control. In addition, the wheel must run centered on the axle since an off-centered wheel can also cause control problems.

Although there are a few drive shaft models available, most of the motorcycles in use today are chain driven. On chain-driven models, there are certain chain adjustments which must be followed to insure safe operation. A chain that is too tight can bind and break. A loose chain can jump off the sprocket. In either case, the chain could wrap around the rear sprocket, become wedged, and lock the wheel. At road speeds, a locked rear wheel can cause rapid loss of control. Check the chain often for tension and wear.

The safe operation of a motorcycle requires a little effort, but the end result is worth it. Wear the necessary personal protective clothing, install the proper equipment, keep the machine in good mechanical condition, and enjoy a pleasant and safe ride.

Adapted from ADC Ground Safety Bulletin, August 1971

Ed. Note: A quick look at the two wheel vehicle accident statistics for this year, as of 30 June, when compared to the same period last year indicate the need for concern, individual efforts, and personal involvement at all echelons to turn the trend around.

	1971 (thru June)	1972 (thru June)
Number of Two Wheel Vehicle Accidents	**44**	**63**
Number of Injuries	**46**	**65**
Fatalities	**4**	**5**

Letters to the Editor

THAT'S ROG?

Reference your TAC Tip, "That's Rog," page 10, May 1972 issue. The phraseology "HOW DO YOU READ" goes back way before my time. In those days you received a reply of 5x5 or 4x3 to indicate the strength and readability of the transmission. The strength was received from a meter. The correct phraseology is "HOW DO YOU HEAR ME?" Reference FAAH 7110.8B, para 151, FAAH 7110.10A, para 92.

JAMES D. ADAMS, MSgt, USAF
Training & Standardization Specialist
2146 Communication Group, APO SF 96570

You've caught me between a Federal Rock and an International Hard Spot. Section III, International Rules and Procedures, of the DOD Flight Information Publication, Planning lists the phraseology "HOW DO YOU READ." The United States is, of course, a member nation of the International Civil Aviation Organization (ICAO) and abides (generally) by its guidelines.

To settle the issue a quote from page III-2 (document referenced above) is offered, "Air Force policy is to support the activities of ICAO SARPS in International Airspace over the high seas."

If you're over the high seas – "HOW DO YOU READ? "

In the U. S. of A. – "HOW DO YOU HEAR ME? "

Loud and clear?

Ed.

HELP!!!

Somebody invaded the office of the TAC ATTACK and made away with two issues of TAC ATTACK from our permanent file.

We are looking for someone, somewhere, who can provide us with a copy of the December 1961 and February 1966 issues of TAC ATTACK, so that our permanent file will once again be complete.

Anyone who will supply us with either (or both) of these issues of TAC ATTACK will be forever in our debt.
Ed.

BRONCO REUNION

Attention OV-10A FACs! The first Bronco Reunion will be held at Hurlburt Field, Florida, 6-7 October 1972. For further poop write: Bronco Reunion, Box 517, Mary Ester, Florida 32569.

36th, 49th, & 50th REUNION

The Annual Reunion of the 36th, 49th and 50th Tactical Fighter Wings will be held at the Union Plaza Hotel in Las Vegas, Nevada, 6 – 9 October (3-day holiday weekend). Request all present/former members send current addresses to P. O. Box 9766, Nellis AFB, NV, 89110; or telephone Project Officer, Col "Dag" Damewood at AV 682-2655; or Information Office secretary, AV 682-2750.

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TAC TALLY

MAJOR ACCIDENT RATE COMPARISON

	TAC		ANG		AF Res	
	1972	[illegible]	1972	[illegible]	1972	[illegible]
JAN	0	1.6	0	16.7	0	0
FEB	0.8	1.6	0	11.6	0	0
MAR	1.6	3.1	6.3	7.0	0	0
APR	2.8	2.7	8.1	4.9	0	0
MAY	4.0	2.5	6.3	5.7	0	0
JUN	4.9	2.6	5.1	6.9	0	0
JUL		2.9		7.1		0
AUG		2.7		7.8		2.7
SEP		3.2		7.4		2.4
OCT		3.2		6.9		2.1
NOV		3.3		6.9		2.0
DEC		3.2		8.4		1.6

AIRCRAFT ACCIDENTS

UNITS

*Estimated

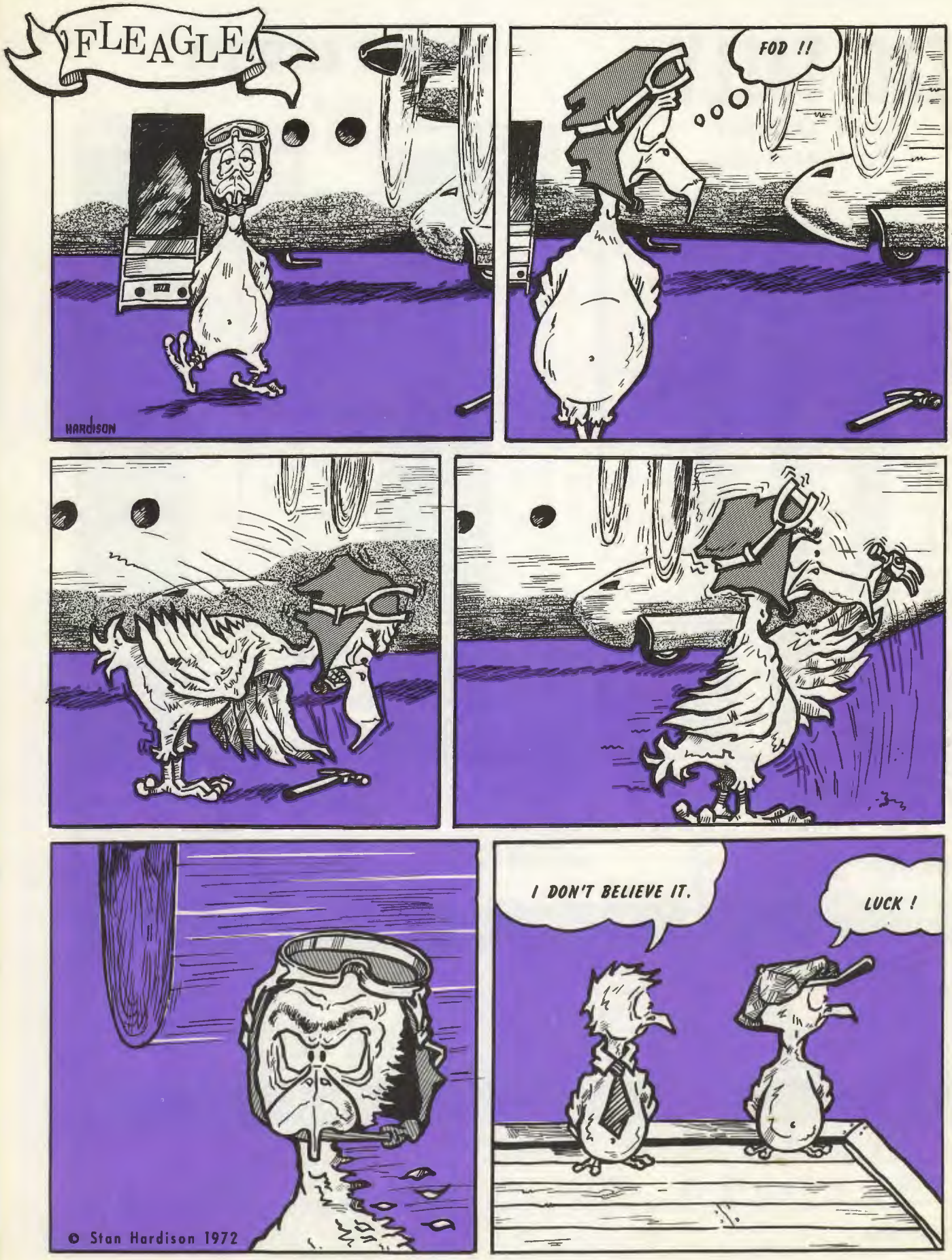
	THRU JUNE 1972 ACDTS	THRU JUNE 1972 RATE	THRU JUNE 1971 ACDTS	THRU JUNE 1971 RATE
9AF	4	3.2	4	3.1
1 TFW	1	5.5	0	0
4 TFW	0	0	0	0
31 TFW	1	7.8	1	8.9
33 TFW	0	0	0	0
68 TASG	0	0	0	0
316 TAW	1	5.3	0	0
317 TAW	0	0	0	0
354 TFW	1	8.5	1	8.6
363 TRW	0	0	0	0
4403 TFW	0	0	2	24.2

	THRU JUNE 1972 ACDTS	THRU JUNE 1972 RATE	THRU JUNE 1971 ACDTS	THRU JUNE 1971 RATE
12AF	10	5.0	2	1.1
23 TFW	1	9.8	0	0
27 TFW	1	9.1	0	0
35 TFW	1	6.3	0	0
49 TFW	2	9.5	0	0
58 TFTW	2	6.7	1	3.8
67 TRW	0	0	0	0
71 TASG	0	0	0	0
313 TAW	0	0	0	0
314 TAW	0	0	0	0
355 TFW	0	0	0	0
347 TFW	1	15.5	0	0
463 TAW	0	0	0	0
474 TFW	2	11.8	0	0

TAC SPECIAL UNITS									
1 SOW	1	3.7	2	6.1	4410 SOTG	2	12.5	[illegible]	[illegible]
2 ADG	0	0	0	0	4485 TS	0	0	0	0
57 FWW	0	0	0	0	4500 ABW	0	0	0	0

SUMMARY

TAC JUN 72	TAC Thru June 1972	TAC Thru June 1971		ANG JUN 72	ANG Thru June 1972	ANG Thru June 1971
9	30	[illegible]	TOTAL ACCIDENTS	1	10	9
6	21	10	MAJOR	0	7	9
10	28	6	AIRCREW FATALITIES	0	1	4
5	20	7	AIRCRAFT DESTROYED	0	6	8
6	21	5	TOTAL EJECTIONS	0	5	6
2	13	5	SUCCESSFUL EJECTIONS	0	5	4
33%	62 %	100%	PERCENT SUCCESSFUL	0	100%	66 %


FLEAGLE
HARDISON
FOD !!
I DON'T BELIEVE IT.
LUCK !
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