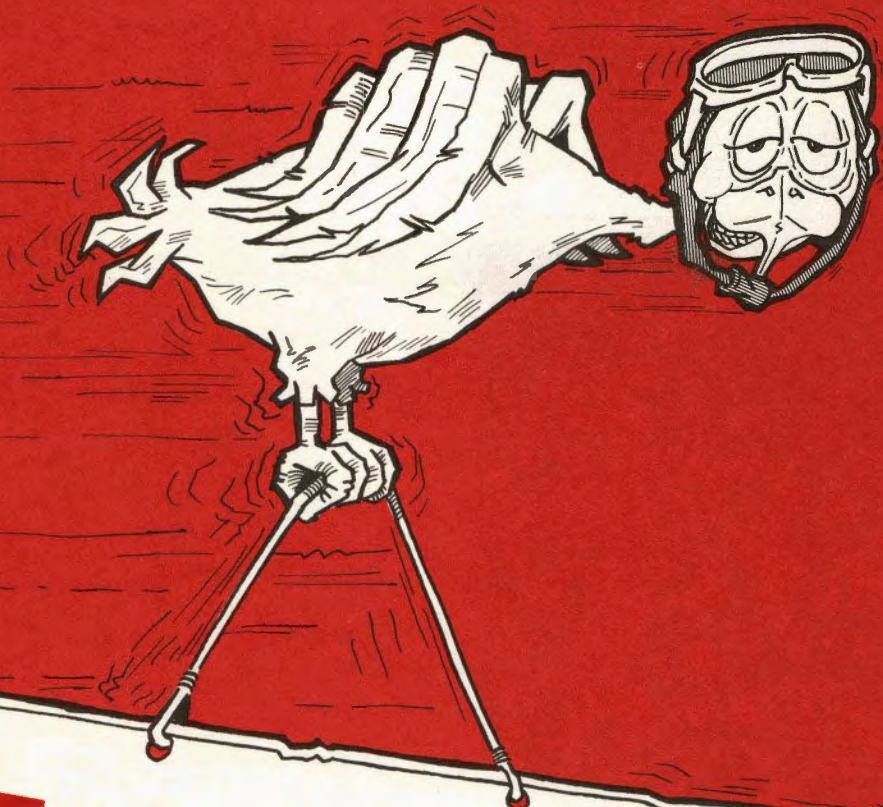


23

TAC ATTACK

DECEMBER 1971



Merry Christmas

for efficient tactical air power

TAC ATTACK

DECEMBER 1971

VOL. 11, NO. 12

Tactical Air Command

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VICE COMMANDER
LT GEN JAY T. ROBBINS

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TACRP 127-1

Articles, accident briefs, and associated material in this magazine are non-directive in nature. All suggestions and recommendations are intended to remain within the scope of existing directives. Information used to brief accidents and incidents does not identify the persons, places, or units involved and may not be construed as incriminating under Article 31 of the Uniform Code of Military Justice. Names, dates, and places used in conjunction with accident stories are fictitious. Air Force units are encouraged to republish the material contained herein; however, contents are not for public release. Written permission must be obtained from HQ TAC before material may be republished by other than Department of Defense organizations.

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Angle of ATTACK >

LOOKING AHEAD



The Thanksgiving turkey is no more than an unwanted bulge at the waistline and Christmas shopping now plagues the nerves and bank account. Following Christmas joy comes the time for New Year's cheer and New Year's resolutions, and time for a quick check at 6 o'clock before setting our sights on future targets.

The 1971 final score isn't complete, but we are well on our way to a new low in TAC aircraft accidents. The savings in TAC assets should be a warm source of pride to everyone. The success of your efforts points out the obvious answer for the future. And so do the failures. We had enough bonehead accidents and incidents in 1971 to provide the foundation and incentive for a fine preventive program in 1972. There's no special magic about it, just plenty of hard work and constant alertness.

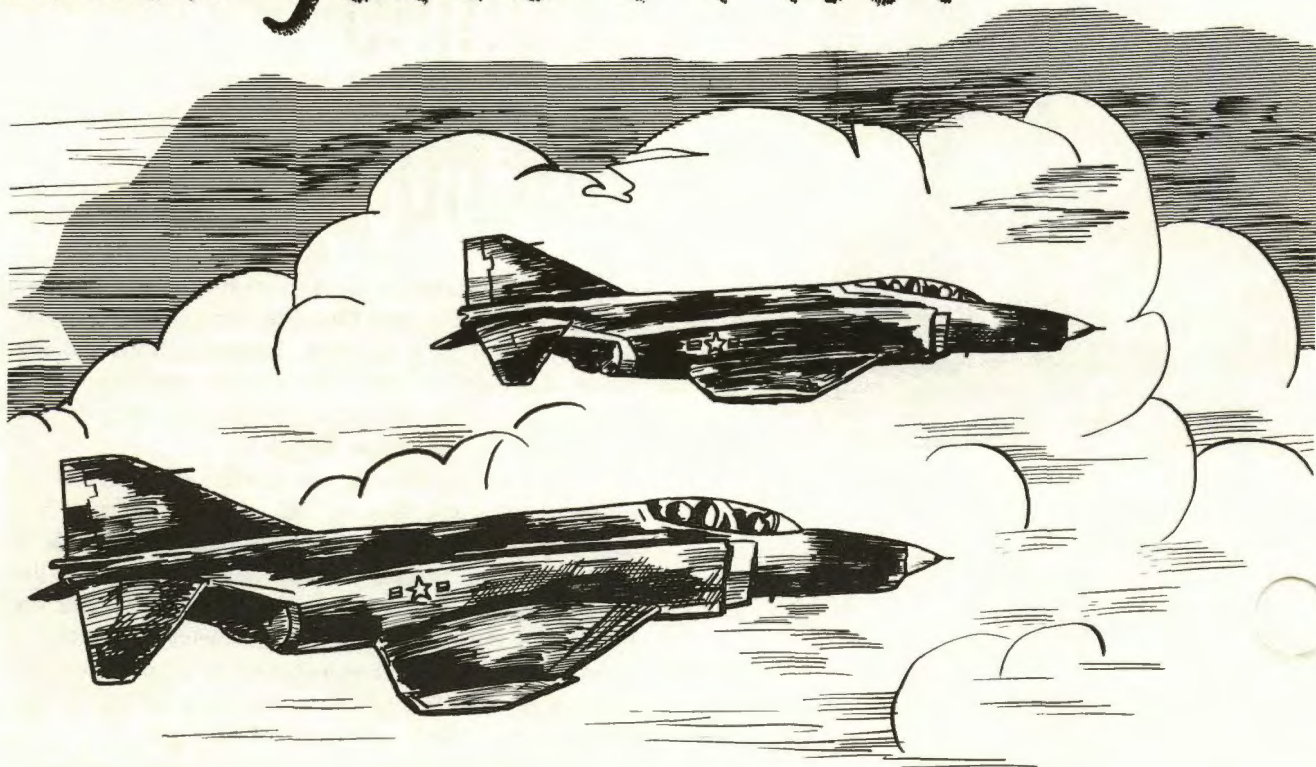
TAC's face will change in 1972 — hasn't it always — but even faster now. Our aircrew experience level will drop and opportunities for leadership will increase. Funds for needed projects grow less and less, while the need for astute management grows more and more. Conservation of resources ceases being a platitude and becomes a hard necessity. There just isn't any other way. That's looking ahead.

But for now, to Blue Four and all his bosses, and to all their families and friends, Fleagle and the TAC Safety staff send warm wishes for a blessed and safe holiday season. Merry Christmas and a Happy New Year!! ➤

A handwritten signature in dark ink, appearing to read "Gerald J. Beisner".

GERALD J. BEISNER, Colonel, USAF
Chief of Safety

It's easy when you're a PRO!



By: Capt Al Manweiler
67 TRW, Stan/Eval Division
Bergstrom AFB, Texas

Hand signals... We all use them at one time or another to "talk" to a wingman or a crew chief. Most of us know enough to get our point across. And, of course, there's always the UHF.

But what about emergency signals? You know, the ones you use when your radio quits and everything else is going to hell.

Air Force Manual 60-15 lists normal formation and emergency distress signals and all jocks ought to be familiar with them. But, if you're like me and don't like to memorize much more than your name and social

security number, maybe an inflight crutch would help.

Ask your friendly Stan/Eval troops about incorporating formation and emergency signals into your local aircrew checklist. You never know when they'll come in handy.

Here's a short story I hope will get my point across. Fill in the blanks as you read it and see how well you know your signals.

It was late in the afternoon and the weather was field grade. Colonel Smiling Jack had just finished a rigorous low level (at 3000') and he was skyhooking his way home in his trusty Phantom. While scanning the horizon for bandits (an old habit from Korea), his eyes suddenly narrowed as he spotted another F-4 which had cleverly snuck into tight formation on his right wing.

Regaining his composure, Jack saw the other jock frantically wave his hand back and forth in front of his face and left ear. Puzzled, the colonel called to his navigator, "Harry, what the hell's wrong with that g

Startled, Harry dropped his crossword puzzle and
ed the other aircraft. "Jeez, Colonel, I think he's got
blems with his (1) _____."

1. a. *Muscle Control*
- b. *Helmet*
- c. *Radio*
- d. *Navigator*

When Jack looked over at the other pilot again, he saw
the guy put his clenched fist to the top of the canopy,
then raise five fingers.

"What's that, Harry, the new peace symbol?"

"No, Colonel. He's using the (2) _____ system to
tell you he's got problems with his (3) _____."

2. a. *EFTO*
 - b. *HEFOE*
 - c. *NOGOE*
 - d. *DUMBO*
3. a. *Engine*
 - b. *Navigator*
 - c. *Hydraulics*
 - d. *Electrics*

"Oh, is that all!"

The colonel looked over at the other bird. Now the
pilot had his hand at the top of the canopy, palm down,
fingers extended, and he was moving it forward and down,
like a roller coaster.

"Look at that, Harry! His face is purple and his eyes
are bugged out. I guess he's got trouble with his G-suit."

"No, no, Colonel. He wants to (4) _____ because
he's got (5) _____ problems."

4. a. *Eject*
 - b. *Split-S*
 - c. *Descend*
 - d. *Dump fuel*
5. a. *Navigator*
 - b. *Oxygen*
 - c. *Bladder*
 - d. *INS*

"No kidding? How'd you know that?"

"It's all there in your Aircrew Aid, Colonel. Why don't
you look it up for yourself."

"I . . . I forgot mine," said Jack sheepishly.

After taking the appropriate action, Jack checked the
pilot again. His color looked normal and his eyes
back in place, so Jack relaxed a bit.

A few minutes later the colonel noticed the other jock
pat his left shoulder with his right hand and hold up two
fingers.

"Hey, Harry," said Jack, "now he wants to fly some
wing acro."

"Come on, Colonel," said Harry disgustedly. "He's
trying to tell you that he wants to (6) _____ at an
airspeed of (7) _____ knots."

6. a. *Eject his navigator*
 - b. *Land on your wing*
 - c. *Jettison his tanks*
 - d. *Lower his gear*
7. a. *130*
 - b. *140*
 - c. *150*
 - d. *160*



It's easy when you're a PRO!

"Just kidding, Harry," said the colonel, knowingly. "Well, in that case I'd better find out how much (8) _____ he's got."

- 8. a. *Guts*
- b. *Oxygen*
- c. *Time*
- d. *Fuel*

Jack fumbled around for a few minutes, then finally said, "Say, ahhh, Harry, how about passing your Aircrew Aid up here?"

"Forget it, Colonel. I'll find out."

Harry raised his left hand, fist closed with thumb extended and performed a drinking motion with his thumb touching his oxygen mask.

The other jock held up two fingers horizontally, closed his fist, then one finger vertically.

Jack said, "Boy, he's hurtin'! We're 150 miles from home, it's getting dark and he's only got 2100 pounds left. We'd better get him on the ground!"

"Jeez, Colonel, relax! He's got (9) _____ pounds."

- 9. a. *1,200*
- b. *21,000*
- c. *7,100*
- d. *17,000*

There was a pained silence in the front cockpit as the colonel turned toward home.

It was dark by the time they arrived back in the local area and the colonel decided he might as well log a little night time. So he throttled back and began making lazy turns around the area.

All of a sudden the other pilot began making circles on his canopy with his flashlight.

"He's blinding me with that flashlight, Harry. How do I get him to turn it off?"

"You can (10) _____, Colonel."

- 10. a. *Punch out*
- b. *Close your eyes*
- c. *Land*
- d. *Put your visor down*

"Oh, sure," said Jack. As he turned toward the back he called approach control and informed them of situation and his intentions.

At 15 miles on final Jack confidently announced, "I'll just drop my tailhook now to tell him we're about to lower gear and flaps."

"Arrrgh!" groaned Harry. "Look, pull up the hook and turn your (11) _____ to (12) _____. Then switch to (13) _____ and lower the gear and flaps. Got that?!!"

- 11. a. *Formation lights*
- b. *Anti-collision lights*
- c. *Position lights*
- d. *Flashlight*

- 12. a. *Dim/steady*
- b. *Bright/steady*
- c. *Bright/flash*
- d. *Off*

- 13. a. *Dim/steady*
- b. *Bright/steady*
- c. *Bright/flash*
- d. *On*

"Sure, Harry . . . Thanks."

Gear and flaps were lowered and the approach begun. Halfway down final, the wingman dropped back about a ship length. When he pulled into position again, his landing light was flashing on and off.

"I guess there's a short in his landing light," said the colonel, tentatively.

"There's a short, all right," thought Harry, "but not in the other airplane." (Harry knew that the other jock was signaling that he wanted to make a (14) _____.

(Local Procedure)

- 14. a. *Low-approach*
- b. *No flap approach*
- c. *Barrier engagement*
- d. *Bail out*

"OL' Smiling Jack is sure going to be surprised when he turns off the runway alone," mused Harry.

The landing was completed safely and, sure enough, Jack began looking around furtively. "Harry, what happened to our wingman," he asked perplexedly, "and whaddaya make of all those flashing red lights back there around the barrier?"

Harry switched to cold mike so the colonel wouldn't hear him laughing.

As Jack taxied back to the ramp he said humbly,
 "ry, I sure do want to thank you for all your help. I'd
 made a real mess of it without you."

"Without my handy Aircrew Aid is what you mean,
 Colonel. Next time please remember to bring yours!"

As Jack pulled into the chocks and shut down, a staff
 car came screaming up.

"Great job, Jack!" shouted the Wing Commander. "I'll
 remember this in your next E.R."

"It was nothing, Sir," Jack called back. "It's easy when
 you're a pro!"



ANSWERS

1. C
2. B
3. A
4. C
5. B
6. B
7. C



8. D
9. C
10. C
11. C
12. B
13. A
14. C

CHOCK TALK

...incidents and incidentals

chock talk

IT'LL GIVE YOU THE JITTERS

Everything was normal until the flaps were retracted after takeoff in the VT-29B. At that time the flight controls began to vibrate violently. Airspeed rose slowly; power adjustments had no effect on the vibration. A quick check of the engine instruments said everything was OK in that department. The pilot sent the flight engineer aft to see if he could find out what was causing all the shaking. Meanwhile, the pilot declared an emergency and began a turn to downwind for an immediate landing. As the aircraft rolled out on downwind the engineer returned to the cockpit and informed the pilot that the ailerons were fluttering rapidly. By using min safe airspeeds the pilot completed the landing without further difficulty. During taxi back the trim tab on the right aileron was noted hanging free and flapping in the breeze. Total flight time was ten minutes.

A close look at the trim tab actuator showed that a bolt and castellated nut that holds the whole thing together were lying in the bottom of the aileron. The cotter key was missing.

The hole in the end of the bolt, which is reserved for the cotter key, was filled with dirt and grease, indicating the key had not been installed or had been out for an extended period.

No maintenance had been accomplished in this area since the aircraft had returned from IRAN.

It's interesting to note that during this particular IRAN one of the inspection items was to remove moveable control surfaces and inspect, clean, perform corrosion control treatment, and repair as necessary.

One must assume that an additional requirement is to put it all back together . . . correctly.

PLUGGED POWER

The C-130 required an engine run after a prop change on number one. During the max power run for all engines, the operator noted that number three was low on power. After the run was completed number three was inspected to determine the reason for low power. An INTAKE

PLUG was found jammed against the inlet guide vanes. Damage was caused by a safety streamer and attached hardware.

This one happened in another command; let's profit from their mistakes.

A-7 OIL

This A-7 pilot observed his master caution and engine oil lights illuminate while on a low level mission. He declared an emergency and IAW appropriate flight manual procedures made a safe recovery. Post flight maintenance troubleshooting revealed an oil leak at a connection that had evidently been improperly torqued. It should be emphasized that it is doubly important to torque properly for several reasons. First of all, the A-7 oil quantity indicating system is deactivated in many A-7s because of problems with the instrument. New ones are under development but are not operational. Secondly, the A-7 only has 1.45 usable gallons of oil, so a very small leak can quickly deplete the oil supply. Let's do it right the first time. Otherwise, the next incident may not turn out as favorably.

A SNAGGLETOOTH SABRE

Adjust the rudders and blow the canopy? Seems like this unlikely combination is possible. One F-100 pilot ground checked the above combination and found it works.

Here's how. It seems that there is a round head rivet on the bellcrank assembly cockpit enclosure ejection initiator (a mouth full) that can be snagged by the rudder adjustment tension spring causing the bellcrank to move forward enough to fire the initiator.

This outfit found that one-third of their aircraft had round head rivets in the bellcrank, while the other two-thirds had flat head rivets. They also found that one-third of the aircraft with round head rivets showed signs of rubbing. Seems like the ole Super Sabre still has a few tricks up its sleeve.

with a maintenance slant.

SAME OLD STORY

How many times have you seen a catchy title for incidents such as, "Loose Screw" or "Loose Nut" or something of that nature. Usually they are lead-ins to a tale of a nut or bolt being found in a place where it isn't supposed to be. We all shake our heads and murmur, "What a shame!" or "That's inexcusable." Hardly a day passes, however, without something of this nature happening. Here are two that occurred within an hour and ten minutes of each other.

The first case was an F-4 that had an engine vibration. A bolt or screw of undetermined origin went through the engine.

The second case was another F-4 that had a nut wedged between the nozzle actuator pump input lever and the engine casing, resulting in a nozzle stuck full open.

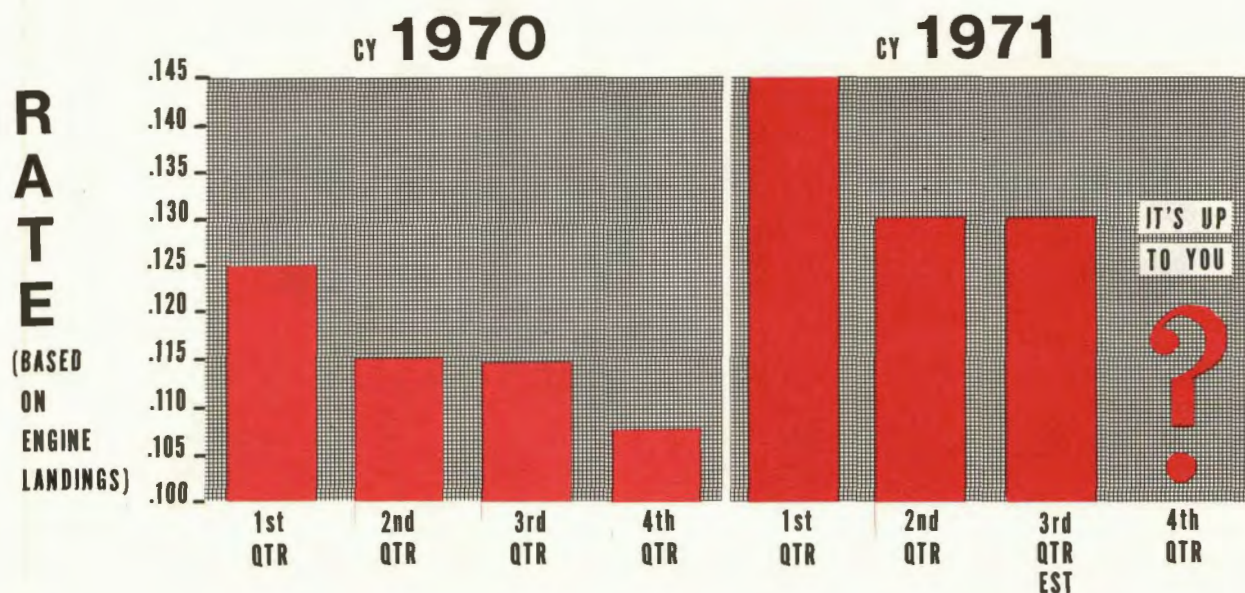
The results are obvious. The cause is well known. F O D !!

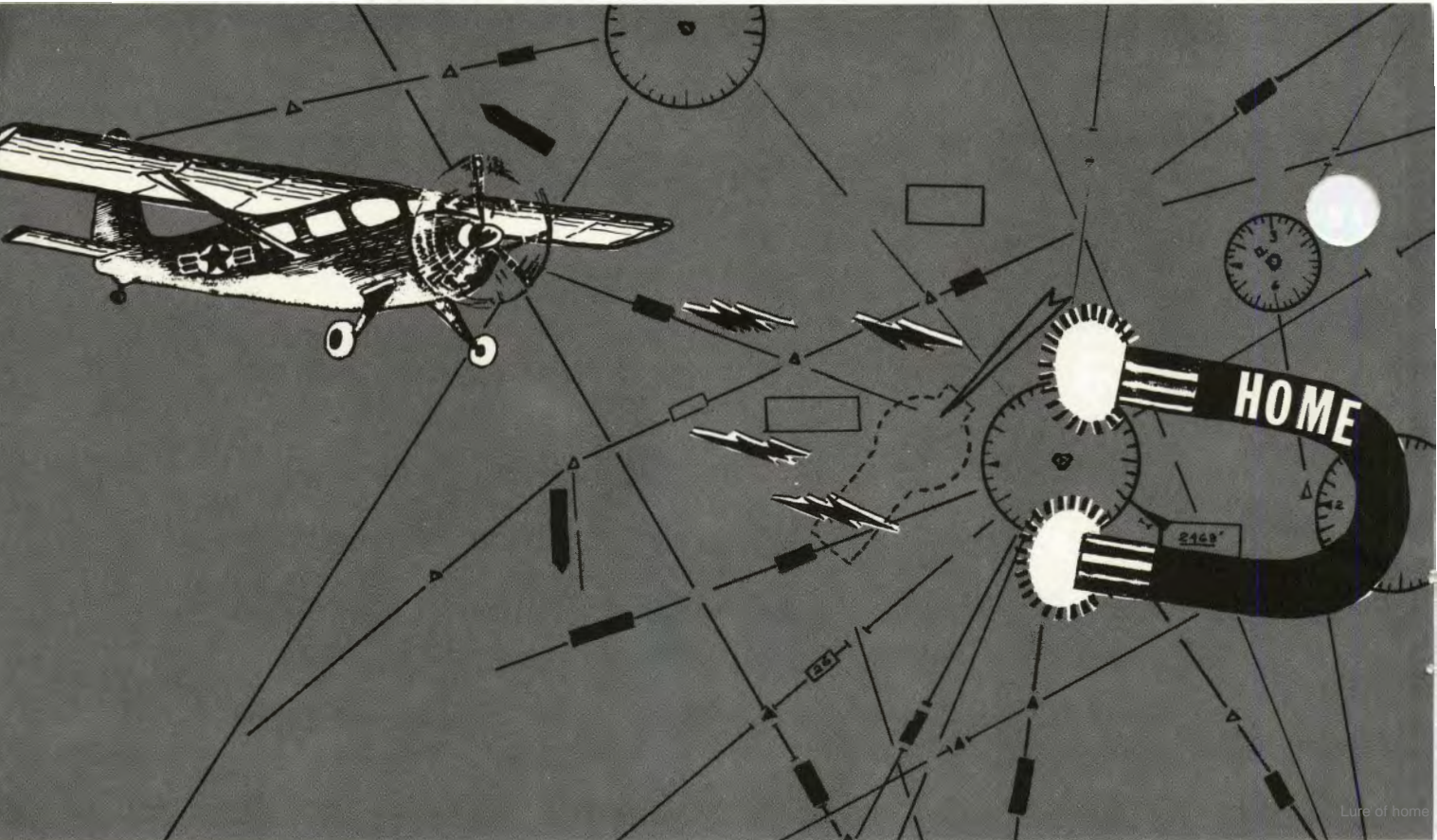
The chart below shows our (TAC) FOD performance during the first three quarters of this year as compared to last year. Reduced to a word our performance this year has been lousy.

When all the statistics are in for the third quarter it will show that we have already surpassed last year's record in numbers of FOD incidents.

Gents, let's turn this trend around in the fourth quarter. It's up to you.

F O D





THE LURE OF HOME

The accident report read, "Primary Cause: Operator factor; the pilot continued to fly in icing conditions which resulted in loss of power and aircraft control. Contributing Cause: Operator factor; the pilot disregarded the Flight Manual, filed and flew into forecast icing conditions."

Why?

What were the underlying drives that prompted

the pilot to defy common sense, the Flight Manual, and his aircraft's capabilities?

The absolute truth may never be known. The men who could tell us, the pilot, co-pilot, and passenger died in the crash. But we can look back through the mission history and find some answers.

The mission was briefed as a cross country proficiency flight for the pilot and co-pilot.

During the briefing the ops officer went over the proposed routing and checked the long range weather forecast. At the time of the briefing it appeared that the trip out would be in advance of a weather front and the trip back, four days later, would be behind the front. The ops officer briefed the two pilots not to fly in actual instrument conditions.

The trip out went pretty much as planned.

Four days later, on the trip back, it was a different story. The weather didn't live up to the long range forecast, as is its inconsistent fashion, and as a result the pilot had to change the routing.

While enroute to the first stop, the weather forced the crew into an unplanned enroute stop where they refueled and refilled. The second leg of the trip was completed routinely. After reaching the second stopover point the pilots checked the weather for the final leg; again the weather had turned sour so they decided to RON.

The next day the pilots checked the weather for the return trip home and again it was lousy. Another RON was necessary. The co-pilot called the squadron ops officer on the hom and informed him of the decision. He concurred and advised the co-pilot to check the weather the next day and give him a call before leaping off.

That night the pilot made a long distance call to his wife. The following day was to be their tenth month wedding anniversary and they were anxious to be home. The wife offered to drive the distance separating the two bases so they could be together but he told her that the weather was improving and that he would be home the next day.

The pilots flight planned for 6000 feet for the trip home. During the weather briefing the weather man forecast light rime icing between 3000 and 10,000 feet. Minimum freezing level was 3000 feet. The pilot filed his flight plan ignoring the flight manual warning which states, "Do NOT fly the aircraft into known or forecast icing conditions." He did not telephone the squadron ops officer as he had been instructed.

At the aircraft the co-pilot was completing the preflight and the pilot was putting the bags in the aircraft when a transient alert sergeant came out to assist. He asked the pilot if he didn't want to stay instead of flying in this weather. The pilot responded that he preferred not to fly but he had to get back home.

Shortly after takeoff, while climbing to 6000 feet the aircraft started to ice up. Rather than return to the departure point the pilot requested 3000 feet and pressed on. Nine minutes later the pilot requested the lowest altitude available and was advised by center that he was "at it."

Ground witnesses reported hearing the airplane passing overhead (still in the clouds) with the engine acting up,

probably indicating that the carburetor had iced up.

The combination of a severely distorted airfoil, increased weight, and an impaired engine, all due to icing, probably forced a descent. Ground witnesses observed the aircraft banking and yawing erratically with the engine running rough.

The aircraft had exited the clouds at about 500 feet AGL but the pilot had extremely limited forward visibility due to windscreen ice. The erratic maneuvering was probably an attempt, on the pilots part, to gain side visibility in an effort to find a forced landing site.

The ground witnesses then observed the aircraft to nose up abruptly then pitch down sharply, diving into the ground . . . it stalled.

The Dash One for this airplane states that with the control wheel held full aft there is no stall or loss of control such as is normally associated with an aircraft in a stalled condition. Following that statement is a warning: "With slats inoperative the aircraft may stall abruptly followed by a strong nose down pitching moment."

In all probability the slats were rendered inoperative because of structural ice.

If the pilot had turned around when he reported picking up ice he probably would have been able to make a safe landing at the departure base.

If he had not disregarded the flight manual and taken off into forecast icing conditions he would not have encountered the difficulties.

The pilot let the lure of the home fires enter his judgment to a commanding degree. He wanted to get home.

The situation is not without parallel. Dropping back a couple of thousand years into the imagination of Homer we find a well known figure, Ulysses, pursuing a similar goal. After the battle of Troy, Ulysses, in following the urge to return home, had to endure a hurricane, overcome the lethargic well-being offered by the Lotus-eaters, battle Polyphemus (the one-eyed Cyclops giant), flee a cannibal race of island dwellers, escape the embrace of Circe (belatedly), ignore the mind boggling song of the Sirens, battle the monsters Charybdis and Scylla, endure the eight-year affections of the nymph Calypso, and upon return to Ithaca he had to wipe out a score or so of his wife's suitors. Old Ulysses had the urge.

Ulysses' adventure is mythology but the urge to return home is not. It is a very real thing, something we all have. That's fine as long as we let it take its proper position. When we don't; when it reaches the forefront of those things that influence judgment, we place our lives and those of others in jeopardy.

Get-home-itis has no function in the decision making process when the decision involves the airplane and the mission.

THE SOUND OF



PROGRESS

by Lt Col Roger Scott
Hq TAC (DOVL)

-Whap-Whap-Whap !!!

Lawnmower? Piledriver? Steamroller? Haymaker? Guess Again! That gentle slapping of the morning air is the new sound of progress at many of our TAC bases. Several bases have recently been assigned UH-1 (Huey) Helicopters for range and mission support operations. Other bases will soon have the Hueys there (assigned to MAC/AARS) as primary rescue aircraft. Therefore, it behooves all of us to become familiar with some of the idiosyncrasies of these "frustrated palm trees." By following a few basic rules and precautions when operating in the vicinity of Hueys, you will find they are a welcome addition to the local "fleet."



PILOTS . . . Follow the "good neighbor policy," that is: STAY AWAY! The Huey not only throws out a strong blast of wake turbulence, but is susceptible to prop/jet blast during ground operations. Since it doesn't have wheels, all "taxi" operations are performed in the flight Needless to say — if one is tooling along behind

your bird, heading for his parking space, throttle down if possible. In any event, hold back on any burst of power until he is well clear of your blast area. He will avoid flying close to you when possible. As stated, his "rotor wash" is pretty tough on control surfaces and is also one of the better FOD scatterers around.



PASSENGERS . . . Not to belabor the obvious, but the tail rotor on this bird is dangerous. To preclude any sorrowful events, approach and depart the machine in view of the flight crew. (Forty-five degrees either side of the front of the helicopter.) The Huey rotor blades can droop to within five feet of the ground during starting and shut-down operations. So unless you happen to be about 4'10" tall, it is advisable to wait for an "All Clear" from the flight crew prior to walking under the blades. The crew will give you a passenger briefing prior to flight, however, a few pointers for the unfamiliar:

There is no emergency alarm system installed in the cabin area, therefore, one cabin occupant should be on intercom at all times in flight to relay any instructions from the pilot.

Never leave the helicopter until cleared by a flight crewmember. This applies for normal operations, forced landings, and even ditching. (It is amazing how many persons have been struck by a rotor blade while swimming away from a ditched "chopper.")

Keep your seat belt fastened at all times in flight.



SUPERVISORS . . . The helicopter is a marvelous machine; but it does have its limitations. Wind, temperature, altitude, and gross weight all have an effect on performance. Your helicopter pilots know and understand these limitations. The flight procedures used by them have been developed over many years of USAF helicopter operations. On occasion the risk factor in a particular mission may not be apparent. This is particularly true in high altitude and confined area operations. To alleviate the risk, the pilot may request an alternate landing site, smaller payload, or delay for more favorable weather conditions. Supervisors should consider the judgment of their helicopter crews prior to committing them to an operation that may be marginally safe.

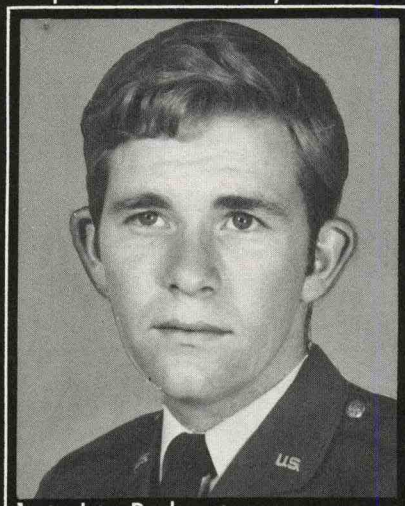
Remember, whap — whap — whap — whap . . .



Aircrewmembers of Distinction



Capt Norsworthy



1st Lt Roberts

Captain Morris E. Norsworthy and First Lieutenant Ronald J. Roberts of the 4535th Combat Crew Training Squadron, George Air Force Base, California, have been selected as Tactical Air Command Aircrewmen of Distinction.

Captain Norsworthy (Instructor Pilot) and Lieutenant Roberts (Combat Aircrew Trainee) had completed a night ground attack training mission in an F-4C. The mission had gone as planned and the final approach for landing was normal. Upon touchdown the aircraft immediately swerved hard right. Lieutenant Roberts applied full left rudder and aileron in an attempt to keep the aircraft on the runway but the right drift continued. He then engaged nose wheel steering turned off the anti-skid, and lowered the tail hook. Captain Norsworthy confirmed the procedures, backed up the nose wheel steering and anti-skid disengagement, and applied left brake pressure from the rear cockpit. The right drift was stopped; however, the aircraft continued to skid down the runway in a left crab. Sparks which had issued from the right

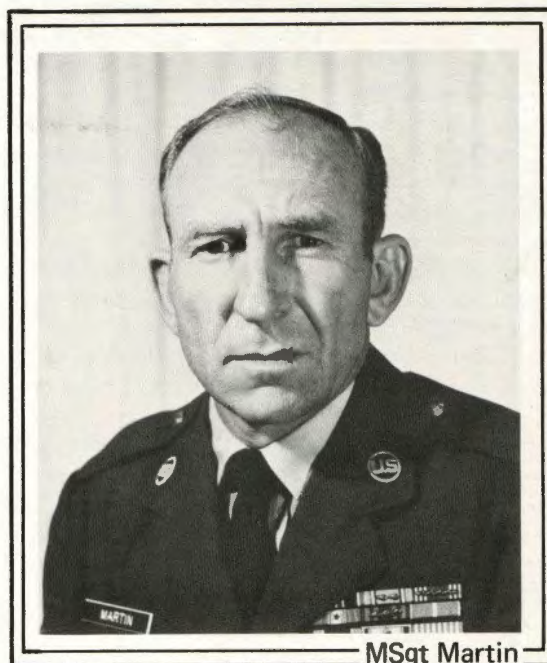
wheel immediately after touchdown had progressed to an intense fire. By judicious use of nose wheel steering and left brake in a combined effort Captain Norsworthy and Lieutenant Roberts were able to bring the aircraft to a stop on the runway. Both crewmembers quickly egressed over the nose of the aircraft and the flames were extinguished by the fire department. Later examination of the skid marks showed that the right main strut had come within two feet of the right edge of the runway.

Unknown to the pilots the main gear from the strut fork down had fallen from the aircraft on takeoff. No cockpit indications of this situation were available to the crew. Their excellent knowledge and application of the correct emergency procedures kept the aircraft under control and on the runway.

The professional competence displayed by Captain Norsworthy and Lieutenant Roberts during this critical emergency qualifies them as Tactical Air Command Aircrewmen of Distinction.

Maintenance Man of the Month

Master Sergeant William F. Martin, 834 Field Maintenance Squadron, Hurlburt Field, Florida, has been selected to receive the TAC Maintenance Man Safety Award. Sergeant Martin will receive a letter of appreciation from the Commander of Tactical Air Command and a Certificate.



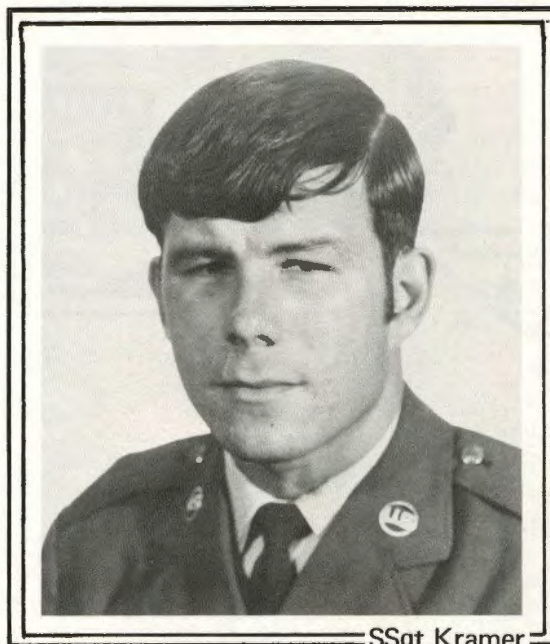
MSgt Martin



TACTICAL AIR COMMAND

Crew Chief of the Month

Staff Sergeant Richard K. Kramer, 27 Tactical Fighter Wing, Cannon Air Force Base, New Mexico, has been selected to receive the TAC Crew Chief Safety Award. Sergeant Kramer will receive a letter of appreciation from the Commander of Tactical Air Command and a Certificate.



SSgt Kramer

The month of December 1971 may prove to be a hallmark month for TAC ATTACK. Admittedly we have been remiss in not bringing to light Fleagle's background and lineage. This month we'll rectify that oversight.

Fleagle was born on Pea Island, North Carolina, the elder son of a Ruddy Duck and a Common Loon. Scoffers were quick to point out that the product of such a union was doomed to a life of mediocrity, however, he soon proved them to be wrong.

Fleagle won his wings at an early age. During his first flight he traveled a distance of fifty feet... straight down... as he was attempting to explain the "Labs Maneuver" to his father. He was quick to learn, however, the next time he only fell forty feet... a ten-foot advance in knowledge.

Fleagle's childhood was punctuated by similar advances in knowledge. This unique educational process continued throughout his life bringing us the Fleagle we know today... hardly mediocre.

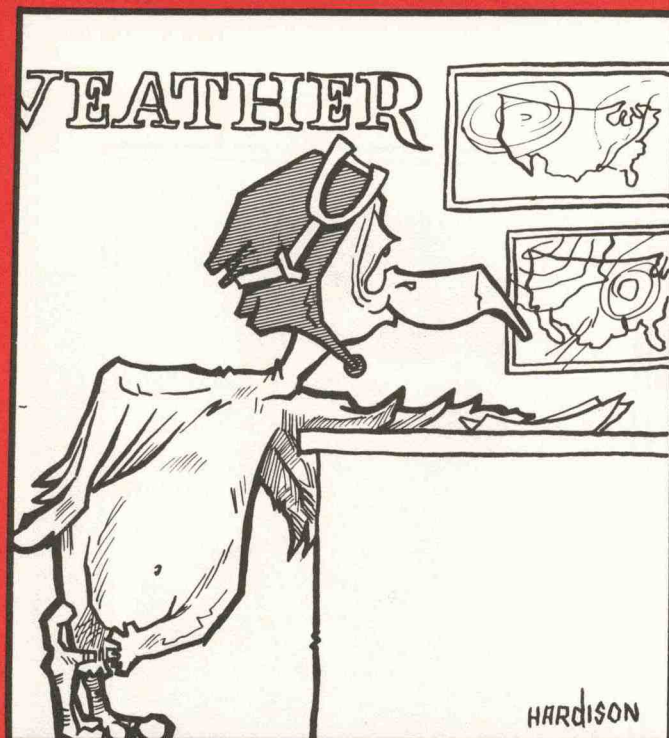
This year Fleagle, and his younger brother, have given in to the pleadings of their mother and are returning home for Christmas.

TAC ATTACK presents...

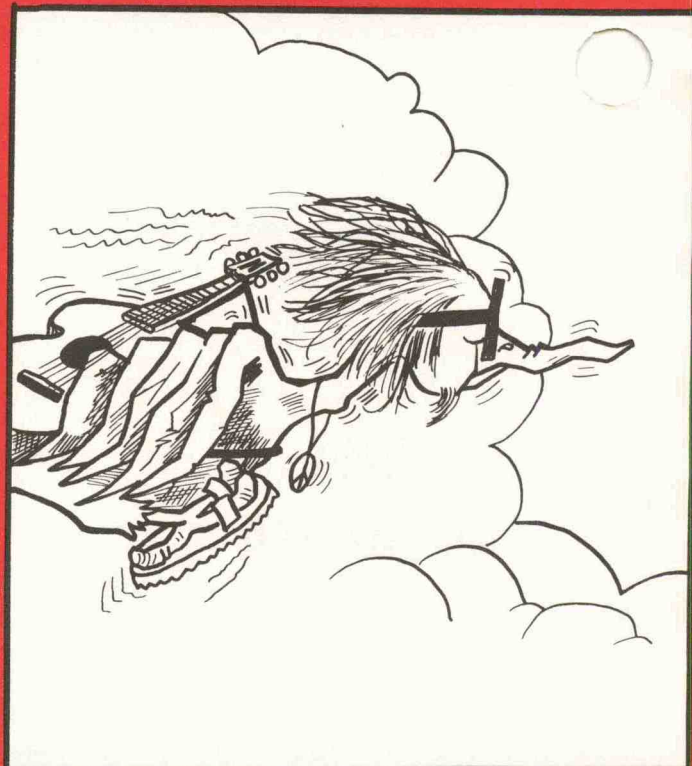
FLEAGLE'S HOMECOMING



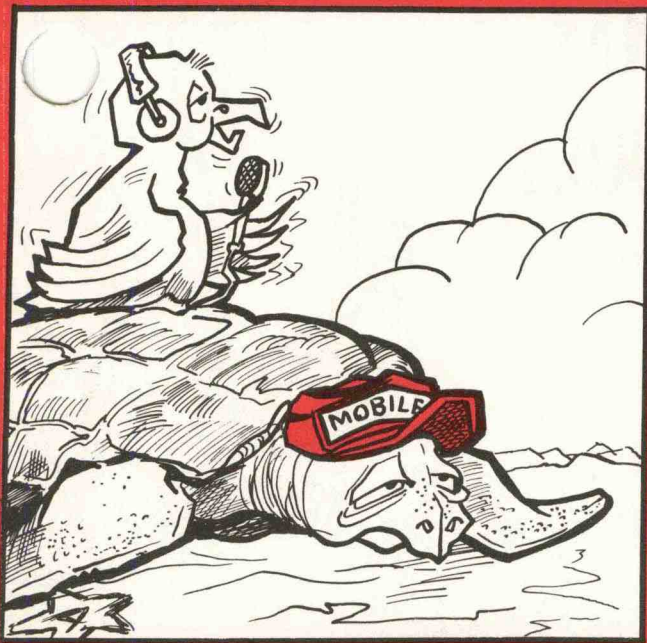
2. *Settle down Mama, we've got time for one more drink before the boys get here.*



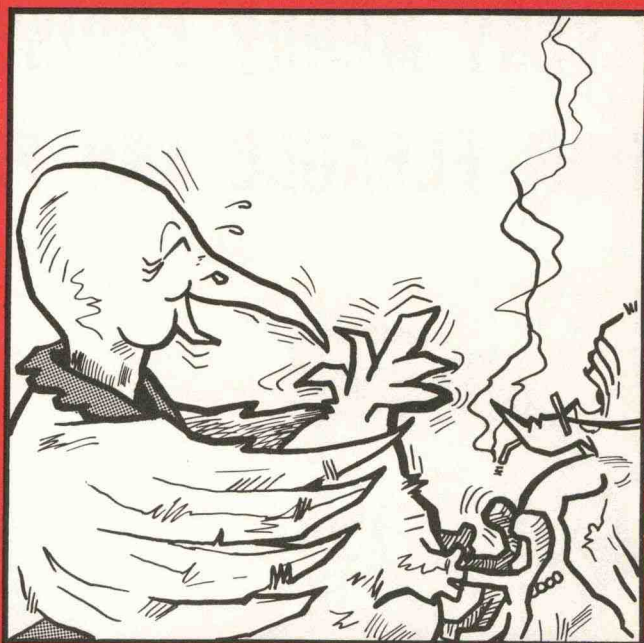
1. *Hmmm-WOXOF at Pea Island ?
No sweat...gotta get home for Christmas !*



3. *Man that campus gig was getting me uptight. A few days in cheersville with the senior citizens will put me right*



4. Aw Rodger, Fleagle, This is Pea Island Mobile, You're cleared to land behind departing Condor, caution wake turbulence.



6. Fleagle....My Baby !



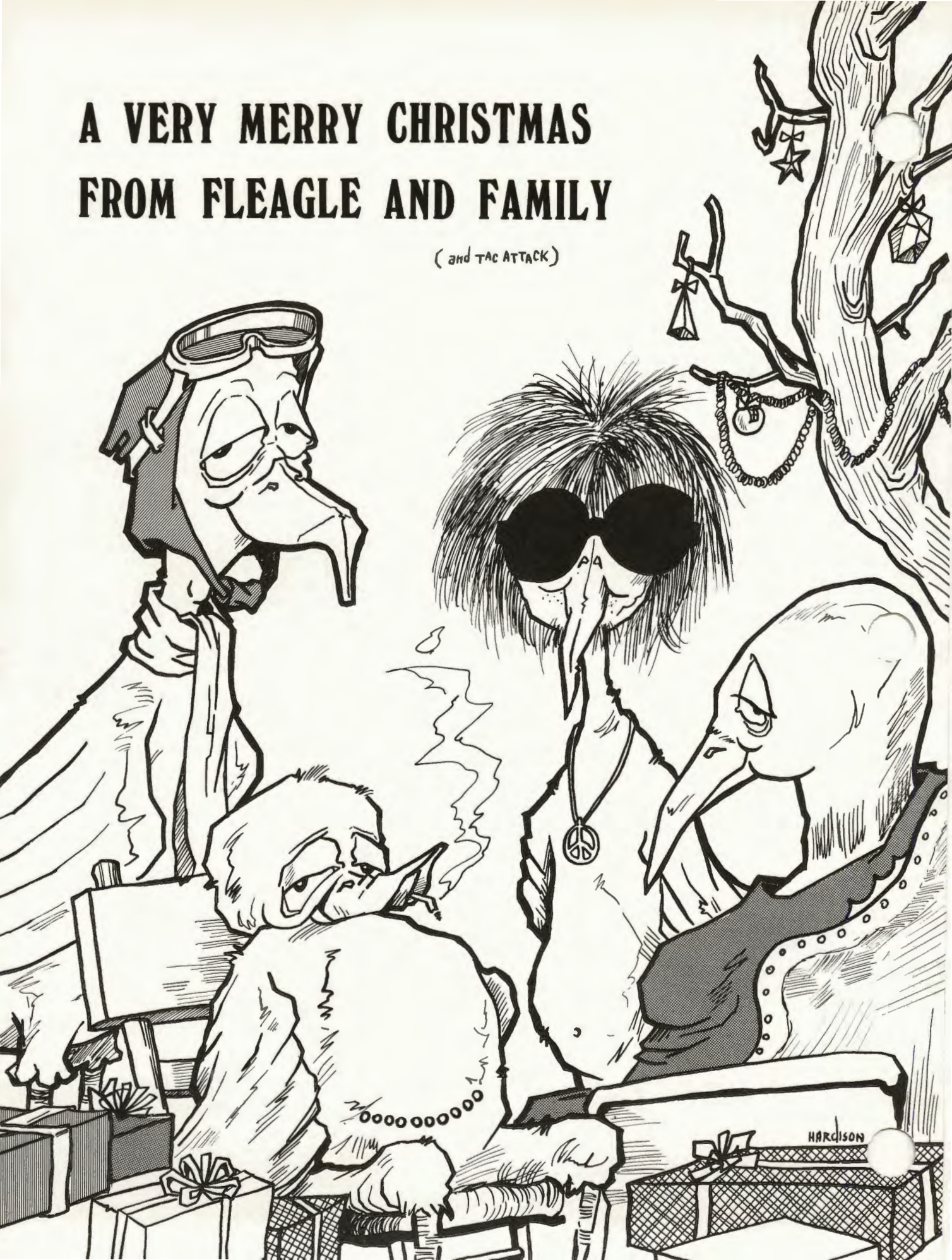
5. OOPS - Porpoised again !



7. Papa... it looks like our other son has arrived.

A VERY MERRY CHRISTMAS FROM FLEAGLE AND FAMILY

(and TAC ATTACK)





CONTROLEX PUSH-PULL ASSEMBLIES

In keeping with the philosophy that TAC ATTACK offers something for everybody, this article is principally for the benefit of those who maintain and fly the newest addition to the TAC fighter fleet . . . the A-7.

Several recent discrepancies of A-7 throttle stiffness have been reported which should be of specific interest to all A-7 mechanics. In many cases the throttle stiffness results from improper handling of the Controlex push-pull assemblies used throughout the A-7.

To provide for a better understanding of Controlex assemblies the following article reprinted from LTV's 1970 issue of MAINTENANCE DIGEST is

Ed.

by C. A. KNIGHT
LTV Maintainability Engineer

Some publications refer to Controlex units as cable. Controlex is not a cable and cannot be handled in the same manner as a cable within a conduit, such as a "teleflex cable." Controlex is a precision, ball bearing, flexible push-pull control assembly and it can be damaged, or its operation impaired if it is not handled properly; however, when handled and installed properly it is extremely durable and dependable. Figure 1 is a cross

Controlex Push-Pull Assemblies

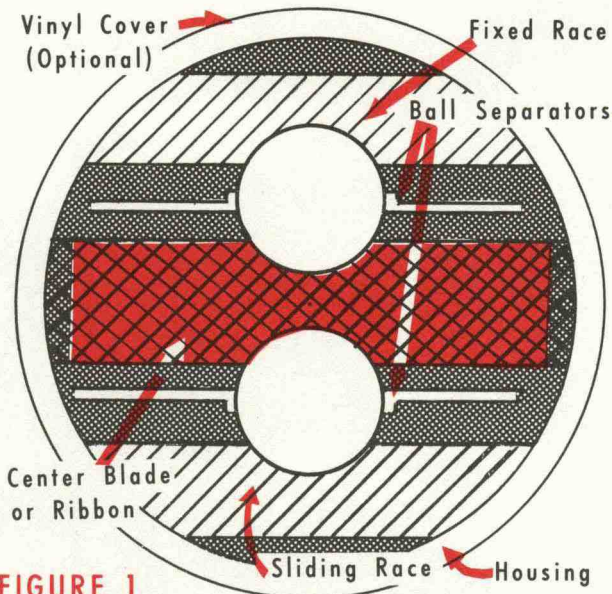


FIGURE 1

Ed Note... The center blade (ribbon) rides between closely spaced ball bearings and transmits the force (push-pull) from the input to the output linkage.

section of the Controlex push-pull assembly.

It is not obvious in Figure 1; but, the fixed race is completely restrained by anchor pieces in the housing. The sliding race is slotted in the rigid housing, permitting movement of approximately 0.38 inch along the length of the control. This construction allows the assembly to bend approximately 180 degrees when the fixed race is on the inside of the bend.

This is the natural direction of bending. The center blade is free to glide on the ball bearings between the two outer races, and it is through this blade that movement is imparted from the input linkage to the output linkage. The whole internal assembly will helix (spiral) inside the housing within the degree permitted by twisting of the fixed race between its attached ends. This ability to helix permits multiple and/or out-of-plane bending in the longer installations.

Personnel working on Controlex installations are urged to become familiar with the characteristics of Controlex prior to attempting installations. The following tips/precautions should aid in this familiarization:

1. Do not force the Controlex to bend in a direction other than the direction of natural bend. A hump or "crank" handle formed in the Controlex will make out-of-plane bends easy to install.

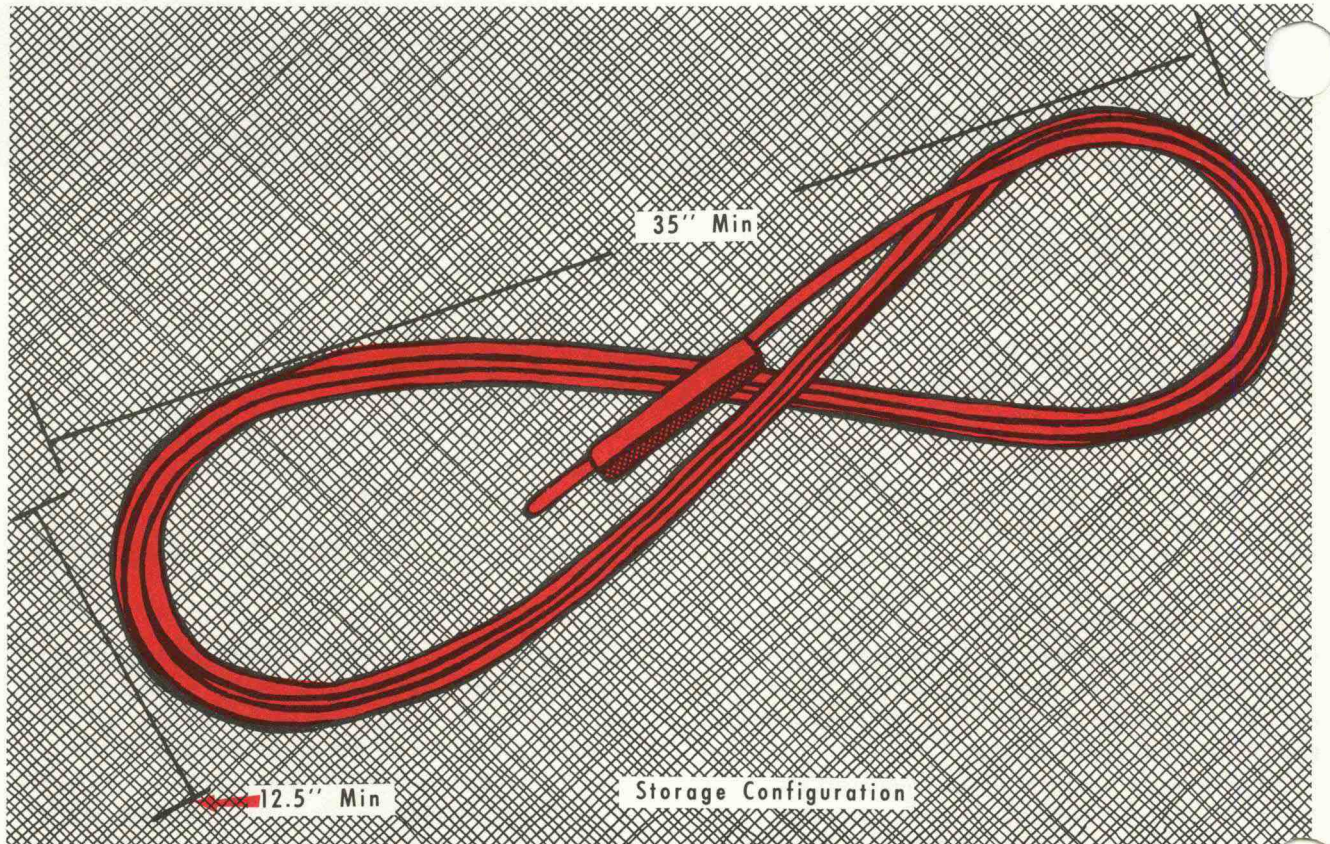


FIGURE 2

2. Do not twist the flexible housing. This will result in shrinking the diameter of the housing and possible abrasion where it is swaged into the rigid end fittings. This is not to preclude permitting the internal assembly to helix, which may be necessary to make certain bends in the installation.

3. **DO NOT COIL CONTROLEX IN A CIRCULAR COIL.** This will permanently damage the internal races by stretching. Coiling in a "figure eight" is proper and eliminates stretching. (Refer to Figure 2.) The "figure eight" essentially limits the angle of bend to 180 degrees since each second loop is subtractive from the first in computing the angle of bend.

Control assemblies should be uncoiled in the flat plane of the "figure eight." Two men are required to properly uncoil or recoil an assembly. (Refer to Figure 3.)

4. When installing the control in an airframe, uncoil the control in the plane of the "figure eight" and feed it through the airframe aft and/or forward, keeping the loops in a vertical plane as shown in Figure 4.

5. Controlex can be bent to a radius of 3 inches if necessary during installation, but the installed assembly should have a minimum radius of 6 inches.

6. Controlex does not bend equally well in both directions in the plane of bending. If one end resists bending in a plane it will be necessary to either reverse the direction of bend (short assemblies) or crank in a helix to overcome the condition (long assemblies). **DO NOT HELIX EXCEPT AS ABSOLUTELY NECESSARY.**

7. Controlex does not need clamps or other restraints

to operate. Clamps are used to prevent fouling of adjacent installations. Do not, therefore, add clamps or reduce the size of oversized clamps which may have been installed to permit oscillations of the Controlex end sliders. The intent, when clamping the housing, is to restrain the control in space, not to crush or squeeze it. The control assembly should be free to move through the clamp.

We cannot overemphasize the importance of proper handling of these push-pull assemblies. With careful handling and installation, a Controlex assembly will function efficiently and effectively for an indefinite time period. ➔

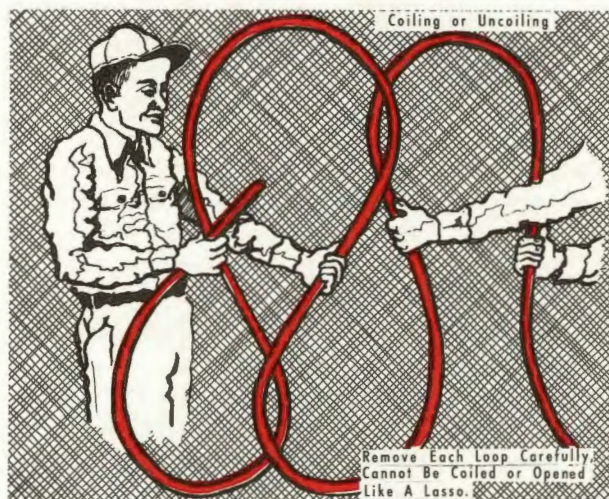


FIGURE 3

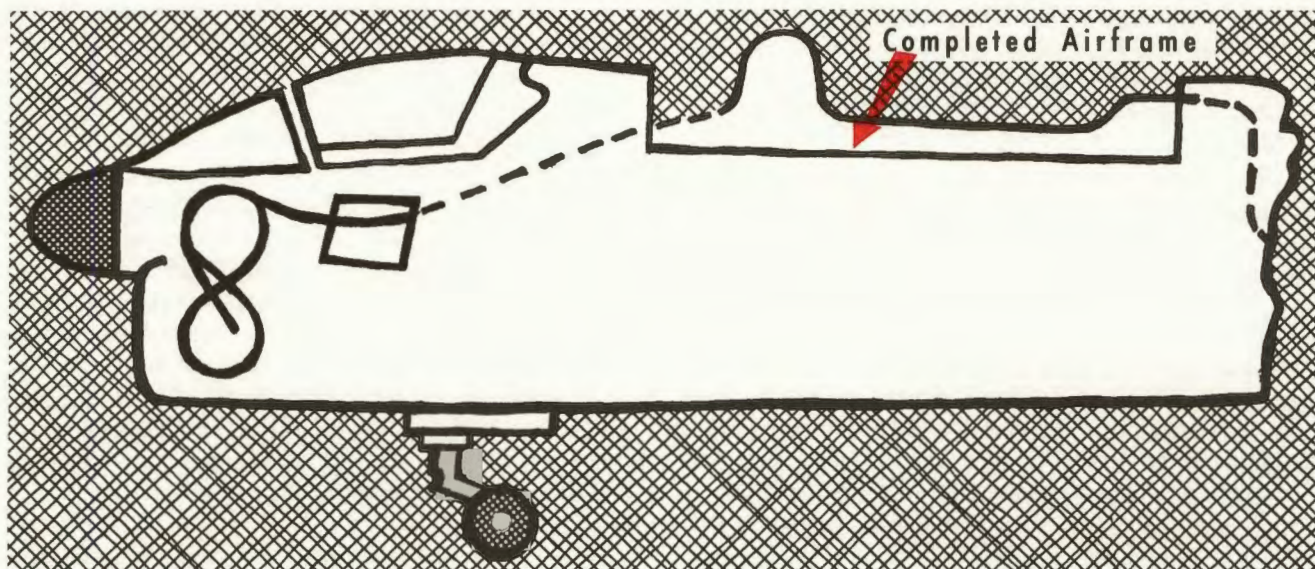


FIGURE 4

CAUTION: If binding or throttle stiffness occurs, do not attempt to lubricate the Controlex system; no lubrication of A-7 Controlex systems is permitted.

TAC TIPS

...interest items, mishaps

A Lesson Learned

The T-39 was cruising at FL 350. Center was queried about the weather situation and replied that thunderstorms were ahead on the planned route, but that an alternate route was reported clear by other aircraft operating between FL 310 and FL 390. Clearance was received for the alternate route at FL 390 and then to FL 410. While at FL 410, in a cirrus layer, a sudden updraft carried the machine to FL 450. Center was accommodating and cleared the aircraft to maintain FL 450. Shortly afterward number two engine flamed out, followed within moments by number one.

Airspeed at the time of flameout was 160 KIAS. An unusual attitude resulted and recovery was accomplished on instruments 10,000 feet later, at about FL 350. An airstart was attempted on number two which resulted in an engine fire indication. The restart was terminated. At FL 305, an airstart was attempted on number one which also resulted in a fire. The restart was discontinued and the fire blew out. Number two engine was still giving a fire indication, so the fire emergency T-handle was pulled. At FL 210 a second airstart attempt of number one was successful.

Meanwhile, center was unable to assist in navigation to the nearest emergency airfield because their radar had been knocked out of commission by a lightning strike. The VOR at the nearest AFB was tuned. The field was acquired visually and a pattern was set up to land on the north runway using the ILS as a backup.

Rainshowers and gusts obscured the runway during the approach. A normal single engine approach was accomplished with touchdown 1000 feet down the runway at 114 KIAS. During the rollout the airplane hydroplaned for 5000 feet and at the 3000 foot remaining point both main tires blew. The aircraft veered to the right and continued the rotational movement (ground loop) for 240 degrees. During the turn number one engine was shutdown. The aircraft finally came to rest on the right side of the runway and the crew and passengers quickly egressed.

Damage consisted of two blown main gear tires and the

left wheel rim ground flat. There was no structural damage.

Looking at the factors involved provides a lesson for us all. The pilot entered cirrus clouds while attempting to avoid the weather in an area of known thunderstorms. Light turbulence, coupled with an attempt on the pilot's part to maintain altitude, caused the airspeed to drop to 160 KIAS. These factors caused the inlet airflow to be disrupted and subsequently dual engine flameout. There were other factors that ganged up on the pilot. The weather briefing received during preflight and later through flight service indicated that FL 350 would clear all weather along the proposed route. Information from ARTC led the pilot to believe that the alternate route of flight would present no weather problems. Looks like they were wrong. Just more proof that the weather situation can change mighty fast.

The Thud that didn't

The pilot was cruising his trusty Thud on a low level nav mission at 400 knots and 1000 feet AGL with autopilot on when the Thunderthing started to make like it was boss. It began a rapid roll to the left. The jock disconnected the autopilot and stab aug, then applied right aileron and rudder pressure. However, the stick would not move to the right and the Thud continued the roll to 100 degrees left bank. The pilot then reduced power and applied bunches of back stick. The machine slowly recovered to 60 degrees left bank, but when power was reapplied the left roll increased. The pilot established a climb and reduced airspeed to below rudder lock-out speed where he was able to maintain wings level flight with nearly full right rudder. He continued the climb to above 18,000 feet, declared an emergency and received assistance from an airborne IP, mobile control, and a Republic tech rep.

After the conversations the jock turned on stab lock switch and lowered the left flap (only) to relieve heavy rudder pressure. The stick still refused to move to the right but the pilot could establish a 10-15 degree right bank with rudder.

The pilot experimented with left flap positions

with morals, for the TAC aircrewman

min control speeds with the gear hanging to figure out the best landing configuration. Final flap setting was: left flap 48 percent, right flap up. The jock landed the Thud from a straight in approach at 235 KCAS touching down 2000 feet from the approach end of a 12,000 foot runway. The pilot didn't have any problems stopping the machine using aero braking and the chute.

After parking the right aileron was full down and the left aileron was neutral with both spoilers closed.

The maintenance folks found a support bracket with a clamp attaching bolt and broken clamp ears lodged in the right aileron power control unit which had locked the control valve in the extended position driving the right aileron full down.

Hats off to the pilot for a great job.

The Wake

We've all sat through movies, listened to lecturers, and read studies of wake turbulence. Volumes of data have been published concerning its evils and what we can do to avoid them. Somebody didn't listen . . .

The O-2 (another command) returned from an uneventful mission and entered the pattern for Runway 07 on the downwind leg. A C-130 was on final. The O-2 turned final behind the C-130 for a normal full flap landing. Tower cleared the O-2 to land behind the 130 calling the winds 220/04 and citing possible wake turbulence. The O-2 jock acknowledged the call. At a point fifty feet up and 1000 feet from the approach end of the runway the O-2 entered the turbulence. The pilot applied full power and fought the controls but it was too late. The aircraft continued to descend and the left wingtip struck the ground thirteen feet to the right of the overrun. The aircraft skidded for 220 feet and was demolished in the process.

Wake turbulence is a reality. You can't see it, smell it, or hear it, but you can avoid it by knowing where it is and putting to practice those things you learned in the movies, lectures, and volumes of reading material published on the

t.

TAC ATTACK

...and here's the Kicker!

During a multi-bundle drop (another command) two C-130 loadmasters were secured to the aircraft floor by restraining straps attached to their parachute harnesses. The loadmasters involved in the airdrop were: a kicker, a hooker, and two feeders. The feeders push bundles to the hooker who attaches the bundles to a static line and the kicker pushes (kicks) the bundles out of the aircraft. Both the kicker and the hooker were equipped with the restraining straps. The feeders did not have any restraining gear since their job didn't call for them to operate aft of the paratroop doors.

During the airdrop the kicker lost his balance and fell, breaking his arm, then bounced off the aft edge of the ramp and into the slip stream, dangling by his restraining strap.

The hooker (the man nearest the kicker) was apparently wearing a shorter restraining strap and could not reach the kicker to pull him in.

One of the feeders, who was wearing neither parachute nor restraining harness, rushed to the kickers aid and pulled him inside the airplane.

One of the recommendations is to make the restraining straps of sufficient length to allow the kicker enough line to do his job but not enough so that he can fall out of the airplane.

The kicker, most likely, agrees.

Definition

SELF-INFLICTED GIG (self-inflikt'ed gig) n. 1. In military, an IG or Safety survey write-up for not complying with a locally-imposed directive, plan, etc. Such gigs generate paperwork which contribute little or nothing to accident prevention. Example: A higher hq requires monthly inspections to be performed by certain unit Safety personnel. Local plan requires weekly inspection and written report; however, procedure is not enforced. 2. SYN, see unnecessary. 3. Moral: If a supplemental local procedure is desired, it should be performed as required, otherwise, deleted (colloq: CYA).

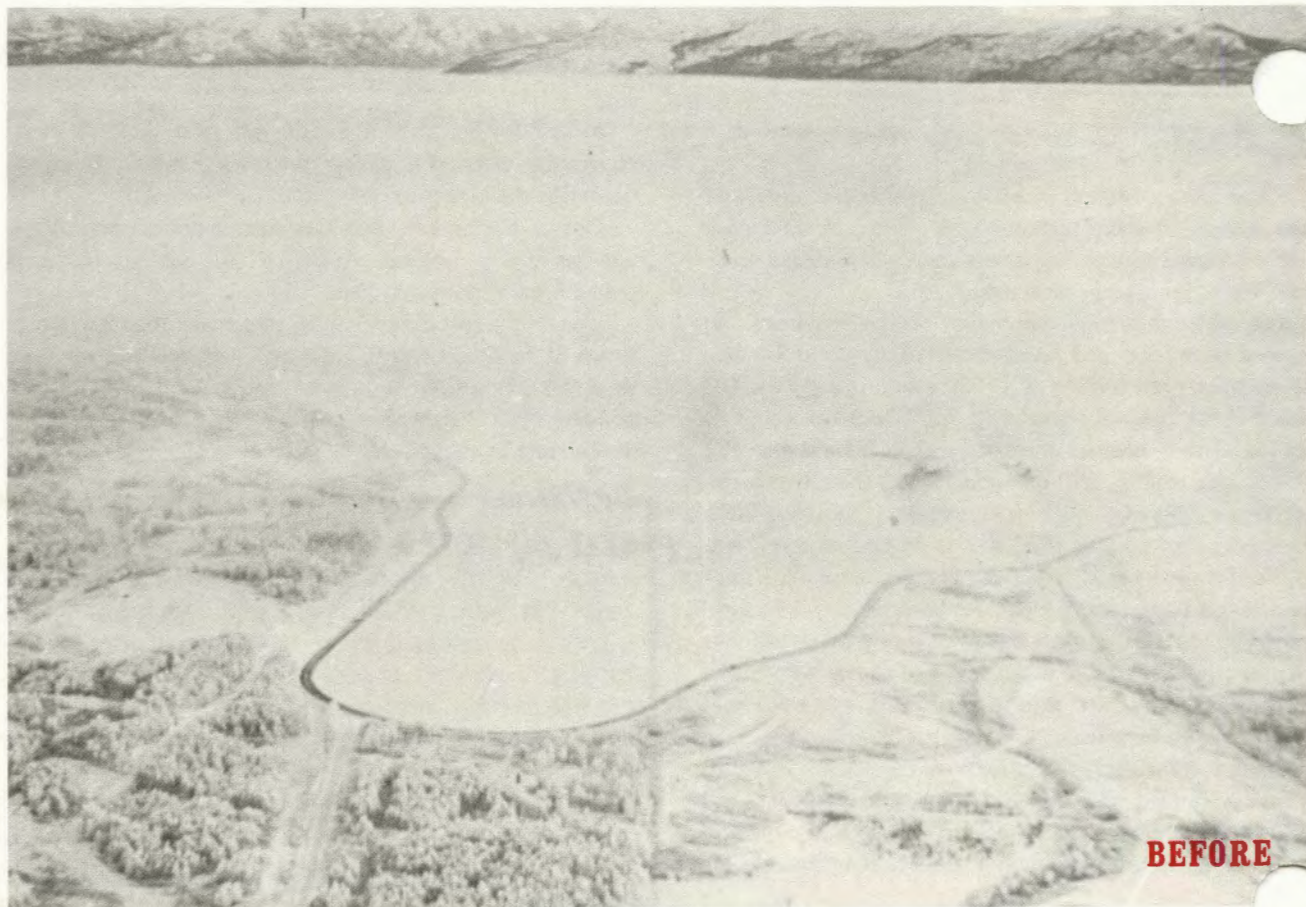
The FOG KILLERS

By Captain John C. Lease

Every now and then a significant advancement is n in weather technology that grabs the attention of flying community. This article written by Captain Lease, who has the imposing title of Assistant Chief, Aerospace Modification Division, Office of the AWS for Aerospace Sciences, reports on such an advancement. It will be of particular interest to European rotational aircrews and dual-based fighter units. Ed.

How many times has your mission been delayed, altered, or cancelled due to fog at either home plate or the terminal field? Until recently nothing could be done about it except wait for it to clear, or if you were airborne, divert to your alternate. Now, due to a unique function provided by Air Weather Service, there is another alternative: fog dispersal.

There are three different types of fog. Warm fog is the most common type that affects military operations. It consists of liquid water droplets and occurs at temperatures above freezing. Promising investigations in warm fog dissipation are being conducted in the United



AFTER



States and abroad, but success has been limited and techniques are not ready for operational application. The second and rarest type is ice fog, which is composed of very small ice crystals and occurs in the Arctic regions when temperatures fall below -30°C . Like warm fog, no practical technique yet exists for dissipating ice fog. The third type of fog, supercooled or cold fog, is composed of liquid water droplets at temperatures between 0°C and -30°C . Although cold fog accounts for less than 5 percent of the fog that occurs in the world, it does significantly interfere with military operations in Europe, Alaska, and the northwestern United States during the winter months. However, unlike warm fog and ice fog, we now have techniques that can create dramatic visibility improvements in cold fogs.

The method to dissipate cold fog has been known to scientists since the 1940s. Schaefer and Vonnegut demonstrated in controlled laboratory and field experiments that coolants could be used to trigger the growth of ice crystals and the evaporation of water drops in supercooled clouds. The technique, known as the Bergeron-Findeisen process, relies on the vapor pressure difference between water and ice. The vapor pressure over a water droplet is greater than that over an ice crystal.

Therefore, if a large number of ice crystals can be produced in the fog, the crystals will grow at the expense of the water droplets, eventually falling out as small snow flakes, thus improving the visibility. To produce the ice crystals it is necessary to "seed" the fog with an agent capable of drastically cooling small areas in the fog. Common cooling agents are dry ice and liquid propane. After the ice crystals have formed, they diffuse throughout the surrounding fog by the natural turbulence of the air. The complete process from seeding to clearing requires 30 to 60 minutes.

In 1967 Air Weather Service was assigned the mission to conduct weather modification to support Air Force operations. As a result of earlier efforts there was little question that cold fog could be dissipated; the real problem was how to do it operationally. In the winter of 1967-68, project Cold Cowl was initiated at Elmendorf AFB, Alaska, to conduct an operational test of an airborne fog dispersal technique. The results of this test were encouraging enough to prompt the initiation of a second project the following year.

The objective of the second project, Cold Crystal, was to provide weather modification support to Air Force bases in the Eifel area of Germany. Both projects used

THE FOG KILLERS



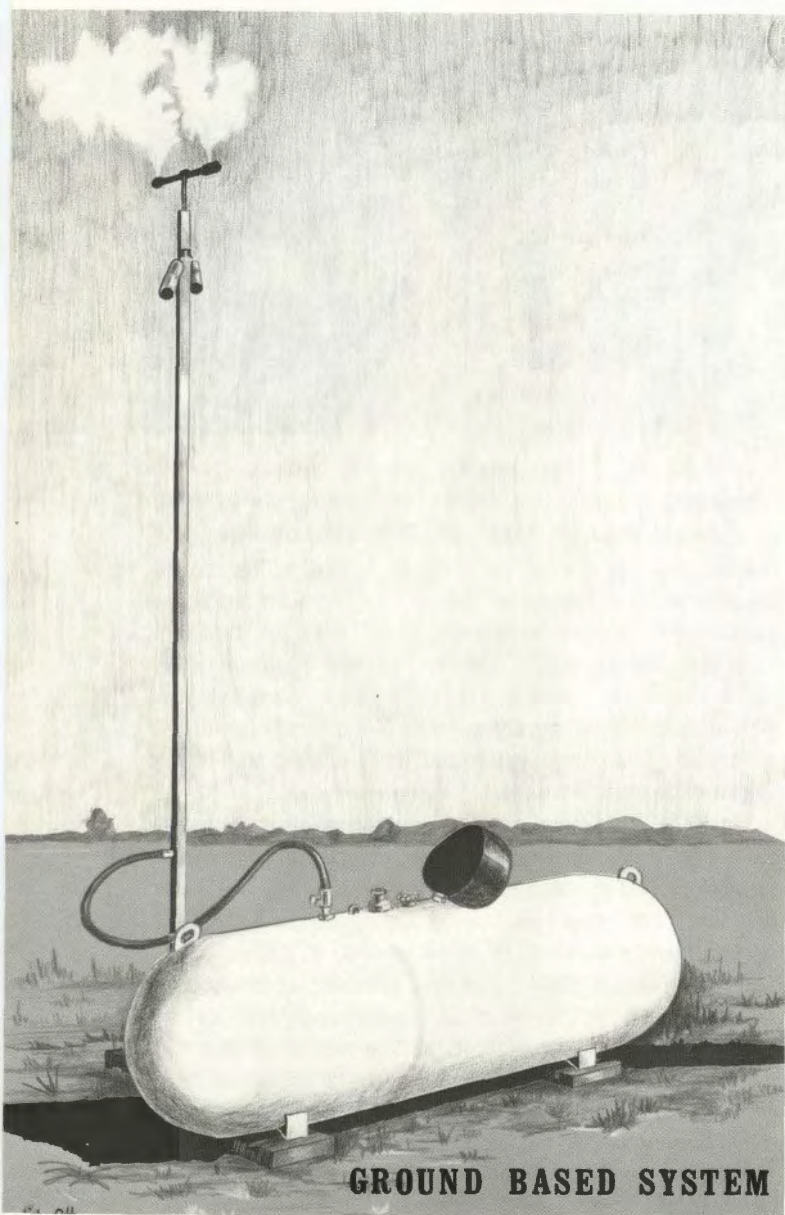
AWS WC-130s as the seeding aircraft. These aircraft are used for hurricane and typhoon reconnaissance in summer and fall and are thereafter available for other tasks. The WC-130 employs an ice crusher/dispenser to crush blocks of dry ice into pellets and then dispense them into the fog through a hole in the bottom of the aircraft. The seeding patterns vary in size and location according to wind speed and direction, desired duration of clearing, and existence of terrain obstacles. The typical seeding pattern consists of 5 to 30 lanes, 4 to 15 miles long, spaced one-half to one mile apart. Seeding rates range from 15 to 30 pounds per mile, depending on the depth of fog and the temperature. The patterns are flown an hour upwind of the runway (based on wind velocity) to allow time for ice crystal spreading, growth, and fallout.

Airborne seeding has been very successful. In the last two years over 600 takeoffs and 500 landings have been assisted. This year, operational support will again be provided from 15 November to 15 February at Elmendorf AFB in Alaska and Hahn, Bitburg, Ramstein, Rhein-Main, Zweibrücken, Mildenhall, Wiesbaden, and Spangdahlem in Europe.

Shortly after the development of the airborne system, work began on developing a ground-based cold fog dissipation system which was envisioned as the eventual successor to the airborne system in providing fixed support. In 1969-70 the first system was installed at Fairchild AFB. It consisted of an array of propane dispensers located in an arc around the runway complex. Each dispenser is capable of vaporizing 10 gallons per hour of liquid propane into the fog. (The liquid propane acts in the same manner as dry ice in dissipating the fog.) During a fog dispersal operation five or six dispensers located directly upwind of the runway are turned on one hour before the scheduled arrival or departure of any aircraft and left on until all flying operations are completed.

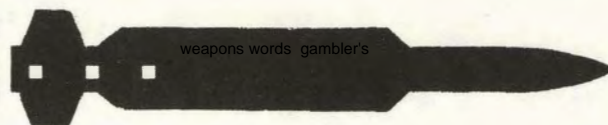
The results of the ground-based fog dissipation support have been equally as effective as the airborne system. In the first year of operation at Fairchild, the Strategic Air Command documented a cost savings of over \$232,000. Since that time another ground-based system has been installed at Hahn AB and is now undergoing a checkout. Presently a radio-controlled system is being installed at Elmendorf which will replace the airborne operation after a checkout period.

Cold fog dissipation is now an operational reality. It is available for use by any aircraft at the above listed bases. The only thing required of you, the pilot, is to give the weather people two hours' notice prior to your arrival so they can have the field above minimums when you arrive.



GROUND BASED SYSTEM

WEAPONS WORDS



too little knowledge- too little thought

We in the Weapons Safety business thought the extensive publicity given to accidents caused by "unloaded," "safe," weapons had everyone wary of accepting anything less than positive proof that the "gun is empty." But, several individuals recovering from their wounds prove everyone hasn't gotten the word so we will try one more time.

During a recent field security evaluation exercise at one of our TAC bases, a senior NCO was injured as a result of an explosives mishap. A part of the NCO's duties during the security exercise required the use of M-119 whistling booby trap simulators to simulate the sound of incoming rounds. As the exercise progressed the NCO was handed an M-117 flash booby trap simulator which has physical characteristics ALMOST identical to the M-119 whistling simulator. The NCO, thinking he was holding an M-119, activated the device and was injured by the resulting flash explosion. The unit was unable to determine how the unauthorized M-117 flash device entered the evaluation site but the painful burns suffered by the NCO should make all personnel more cautious during future training and evaluation operations.

Not long ago, a 40mm grenade round used as a paper weight was knocked off a table where some people were playing cards. It functioned upon impact with the floor; end of card game and no winners!

An NCO was visiting a nearby base to assist in phase-down operation for base closure. A FRIEND gave him a BLU-26/B souvenir that had been used for over a year as a paper weight. The bomblet, just smaller than a tennis ball, is a blue sphere with four aerodynamic flutes, and to say the least it made a handsome desk ornament. The NCO returned the bomblet to his home base by government vehicle and placed it on his desk for display. Other personnel visiting the office noted that the bomb did not have holes drilled in it or the word EMPTY or INERT impressed on the outside surface as required by TO 11A-1-53. The area was evacuated and EOD assistance requested. Examination of the BLU-26/B bomblet disclosed that the handsome paper weight was LIVE and dangerous.

Reports of safe items resulting in accidents causing death, maiming, and destruction are numerous. Suffice to know the requirements of TO 11A-1-53 for marking

explosives items as safe for display and training. The only safe way is to have positive proof the souvenir, memento or gun is NOT LOADED before you treat them casually.

If your souvenir hasn't been drilled and marked as required by TO 11A-1-53 and you're not positive it is inert, better check with your EOD section to have them verify its status. ➤

gambler's regret

Luck ran out for one of our munitions loadcrews that decided to gamble against the odds. As we all know, the "gamble" is scrubbed out of our operations by use of easy-to-follow checklists. However, this loadcrew elected to gamble by not following established procedures, not just once, but three times before losing to an errant 2.75 rocket.

It all started when an aircraft returned from a ground attack training mission with unexpended munitions. Our loadcrew didn't waste time before testing their luck. First, during dearm they ignored part of the checklist and as a result communication between the aircrew and the weapons crew chief was not established. Also, the aircraft was not properly checked for unexpended munitions during installation of safety devices. Second, the same loadcrew failed to use their checklist properly when downloading the SUU-20 from the aircraft; as a result, the unexpended munitions remained in the SUU-20 dispenser. The loadcrew tried once more for an accident by not accomplishing that part of the checklist requiring removal of rockets and bombs when they installed the same SUU-20 dispenser on another aircraft. Although too late, it was at this point the loadcrew decided to follow checklist procedures and all were properly positioned for the electrical checks. This placed the number three man directly behind the dispenser, but, instead of voltage readings, he saw from too close a range the exhaust blast of a 2.75 rocket.

Bad luck? Not really! The loadcrew blew three chances to use the checklist properly, any one of which would have shown this SUU-20 was lethal. The accident report shows primary cause was personnel error in failure to use the checklist properly, with a contributing cause of poor supervision. We must look beyond these cause factors to see the price someone inevitably pays for a gamble against the odds! We must look to the man who received the full blast from the 2.75 rocket, to see his burned arm, his burned shoulder, and sightless eye. ➤

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IT KIND OF MAKES YOU WONDER	MAR	17
CT — IT'LL GIVE YOU THE JITTERS	DEC	9
T-33		
TT — WHO'S CHECKLIST?	JAN	23
CT — DEADLY BATTERIES	FEB	24
T-33	MAR	17
CT — T-BIRD CONTROLS	APR	15
CT — CHECKLIST AGAIN	NOV	
TT — AN OPEN COCKPIT — AND NO SCARF	NOV	

T-37

CT - JAWS

MAR 27

T-28

CHOMP CHOMP CHOMP

MAY 25

TT - A LESSON LEARNED

DEC 22

ABORT

TT - F-100 ABORT

FEB 14

ANGLE OF ATTACK (OPERATIONS)

SWING WING DEPARTURES

JUN 4

ANGLE OF ATTACK (EDITORIAL)

A CHALLENGE

JAN 3

WHAT HAVE YOU DONE FOR BLUE FOUR TODAY

FEB 3

WHOA!! WE'RE MISSING THE TARGET AREA

MAR 3

A TIME OF CHANGE

APR 3

TOO MANY DEAD!

MAY 3

ISOLATED CASE?

JUN 3

THE "I's" HAVE IT

JUL/AUG 3

KNOCK ON WOULD

SEP 3

"FOR THE NORTH WIND DOTH BLOW..."

OCT 3

READ THE SIGNALS

NOV 3

LOOKING AHEAD

DEC 3

ATC

ADDITIONAL SERVICE

FEB 8

TT - ATTENTION MILITARY PILOTS...

SO YOU WANT TO LAND YOUR AIRCRAFT?

MAR 10

TT - POSITIVE CONTROL AREAS (PCA)

JUN 8

TT - CHECK BEFORE YOU SQUAWK

JUL/AUG 11

YOUR TWO CENTS WORTH

NOV 4

TT - PCA

NOV 25

AUTOMOBILE SAFETY

WHOA!! WE'RE MISSING THE TARGET AREA

MAR 3

TOO MANY DEAD!

MAY 3

TRAGEDY AT CASTELLO

MAY 16

LET'S TALK MUSCLE MACHINES, VEHICLE

INSURANCE AND TRAFFIC VIOLATIONS

JUN 16

THE WINTER DRIVING SEASON

OCT 26

SO YOU GOT A TICKET MISTER, YOU BREAK MY HEART

OCT 30

THE SIGNALS

NOV 3

S AND ARRESTING GEAR

SECOND LOOK

JAN 15

ARRESTING GEAR?

MAR 28

BIRDSTRIKE

TT - FORTUNATELY

JAN 23

TT - BIRDSTRIKE

APR 11

THE FEATHERED MISSILE

OCT 8

BRAKE SYSTEM

CT - F-4... NO BRAKES

APR 15

CT - LOOPED GOON

SEP 23

TT - GIVE YOURSELF A BREAK WITH THE BRAKES

NOV 25

COMMAND AND SUPERVISION

THE "I's" HAVE IT

JUL/AUG 3

KNOCK ON WOULD

SEP 3

COMMUNICATIONS

HOW ABOUT A SYSTEM?

FEB 22

IT'S EASY WHEN YOU'RE A PRO

DEC 4

EJECTION

TT - LUCK!

JAN 22

GROUND EGRESS ALA 1918

FEB 30

TT - INTIMATE FAMILIARIZATION

JUL/AUG 11

CT - TWO WRONGS DON'T MAKE IT RIGHT

JUL/AUG 19

TAC LIFE SUPPORT PROGRAM

JUL/AUG 26

ENGINES

TT - WINDMILLING WANDERER

FEB 14

FLAMEOUT VS POWER LOSS

MAY 22

TT - JUDGMENT

SEP 12

TT - BUSTED STANDARD

SEP 13

FIRE

CT - IF

JAN 26

TT - F-100 FIRE IN FLIGHT

MAY 10

CT - FIRE-IN-THE-HOLE?

MAY 24

FIRE FIRE...

SEP 20

THE EXTINGUISHER AGENT DISCHARGED

NOV 24

FLEAGLE

FLEAGLE - FLYING

FEB BC

FLEAGLE - FLIGHT SAFETY

MAR BC

FLEAGLE - WEATHER

APR BC

FLEAGLE - BUZZING

MAY BC

FLEAGLE - HAIL

JUN BC

FLEAGLE - PRESSING

JUL/AUG BC

FLEAGLE - MIDAIR

SEP BC

FLEAGLE - ATTITUDE

OCT BC

FLEAGLE - VERTIGO

NOV BC

FLEAGLE - MIDAIR

DEC BC

FLEAGLE'S HOMECOMING

DEC 16

FLIGHT CONTROL

TT - F-4 FLIGHT CONTROLS

MAR 10

TT - F-4 PITCH UP

MAR 11

TT - F-4 FLIGHT CONTROLS

MAY 10

TT - FLIGHT CONTROLS

JUN 9

TT - F-4 FLIGHT CONTROLS - AGAIN

JUN 9

TT - GEORGE REVOLTED

NOV 24

FLYING SAFETY

THE TEAM

SEP 4

THE INCIDENT REPORT... WHAT GOOD IS IT?

NOV 26

IT'S EASY WHEN YOU'RE A PRO

DEC 4

THE LURE OF HOME

DEC 10

FOD

TT - WHO'S CHECKLIST?

JAN 23

CT - BUTTON IT UP

JAN 26

CT - ETERNAL VIGILANCE

JAN 27

CT - BIG BLAST

JAN 27

TT - NO CHECKEE - NO LAUNDRY - TIMES TWO

FEB 15

CT - F-4 FOREIGN OBJECT

FEB 24

CT - F-4 JAMMED STICK

FEB 24

CT - A FIRST???

FEB 25

CT - F-4 FOD

FEB 25

CT - FOD

MAR 26

CT - WOULD YOU BELIEVE?

MAR 26

CT - NEW FOD

MAR 27

TT - F-4 FOD

APR 11

CT - F-4 FOD

APR 14

TT - F-4 COCKPIT FOD

MAY 10

TT - F-4 FLYING FOD

MAY 10

CT - PREFLIGHT - WHO, ME?

MAY 24

CT - THEY'RE FOR THE EARS!!

JUN 24

CT - F-4 FOREIGN OBJECT

JUN 25

TT - A HAIRY STORY

JUL/AUG 10

CT - TORQUE AND G

SEP 22

CT - PANEL FASTENER FOD

OCT 20

CT - TWO LOOSE NUTS

NOV 14

CT - SCREWDRIVERS AREN'T EXPENSIVE

NOV 15

CT - PLUGGED POWER

DEC 8

FUEL AND FUEL SYSTEMS

SECOND LOOK

JAN 14

IT KIND OF MAKES YOU WONDER

MAR 17

T-33

MAR 17

TT - A PAT ON THE BACK

OCT 12

GENERAL

OUT OF THE PAST

JAN 4

WHAT HAVE YOU DONE FOR BLUE FOUR TODAY?

FEB 3

TT - LET 'ER RIP...

FEB 14

BREAKTHROUGH

FEB 16

CT - WATCH THE KNIFE

MAR 27

MOTORCYCLE SAFETY

APR 8

TT - THE WORM SQUIRMS

APR 11

TRAGEDY AT CASTELLO

MAY 16

FOTO FOLLY

JUL/AUG 12

DROWNPROOFING

JUL/AUG 14

CT - YELLOW DOTS

JUL/AUG 19

CT - RELIABILITY PROGRAMS

JUL/AUG 19

TT - THE USAF HAZARD REPORTING SYSTEM

SEP 12

NARCOLEPSY

SEP 24

THE HUNT

OCT 5

ARCHEOLOGIST UNCOVERS ENGINEERING MIRACLE

NOV 8

TT - PCA

NOV 25

1971 TAC ATTACK INDEX

DEC 28

GROUND SAFETY

EIGHT DOWN - ONE TO GO!

FEB 12

MOTORCYCLE SAFETY

APR 8

SAFETY AT STAKE FOR STEAKS

JUL/AUG 8

CT - BENT BOOM

SEP 23

THE HUNT

OCT 4

READ THE SIGNALS

NOV 3

HOLIDAYS FROM DANGER

NOV 16

GUNNERY

LET'S GO DROP SOME BOMBS

JAN 30

TT - F-4 RICOCHET

MAR 11

TT - IT PAYS TO HAVE A GOOD AIM

JUL/AUG 10

ON TARGET

OCT 16

HELICOPTER

HELICOPTER RESCUE LIMITATIONS
THE SOUND OF PROGRESS

MAY 28
DEC 12

INSTRUMENT & INSTRUMENT FLYING

ADI PROBLEMS
TT - F-4 ADI
DOOLITTLE'S INSTRUMENT FIRST

MAR 4
MAR 11
NOV 20

INVESTIGATION AND REPORTING

ISOLATED CASE?
THE INCIDENT REPORT... WHAT GOOD IS IT?

JUN 3
NOV 26

LANDINGS

THE SINK HOLE
TT - LESS LIGHT
TT - LEFT PHILANK
TT - THE SINKHOLE REVISITED
ANOTHER WILD RIDE
WHY "TEST" THE ANTI-SKID?
TT - IT WENT THATAWAY
THE TECHNIQUE OF LANDING
THE TEAM
TT - A STERN ADMONISHMENT CIRCA WWI
CT - A-7 STEERING
TT - CHECKLIST COMPLETE?
TT - GOOD MOVE
TT - REMEMBER THE TAIL WHEEL
YOUR TWO CENTS WORTH
TT - THE WAKE

JAN 8
JAN 23
JAN 22
MAR 10
MAR 16
MAY 26
JUN 9
JUN 10
SEP 4
SEP 12
SEP 22
OCT 12
OCT 13
OCT 13
NOV 4
DEC 23

LIFE SCIENCES

NARCOLEPSY
THE CROWN PRINCE OF ILLUSION

SEP 24
NOV 12

LONG REACH

P-38
P-47
P-47 and P-51
P-47
P-47
P-47

FEB 26
MAR 23
APR 20
MAY 18
JUN 20
JU/AUG 20

MAINTENANCE

OOOOPS!!
CT - PUTTING ON THE PRESSURE
CT - BUNDLE TROUBLE
CT - DEADLY BATTERIES
CT - HURRY HURRY HURRY
CT - BLOCKED PEDAL
CT - BANG BANG
TT - F-4 TURBINE
CT - SURPRISE
CT - F-4 FOD
CT - SET THE BRAKES
CT - T-BIRDS CONTROLS
CT - F-4 HOT SECTION PROBLEMS
CT - CHOMP CHOMP CHOMP
CT - BURNED BATTERY
CT - F-4 THROTTLE LINKAGE
CT - FOR WANT OF A PIN
CT - PANELS AGAIN
CT - C-7 OVERBOOST
CT - FOR WANT OF A PIN
CT - HOW NOT TO BE HELPFUL
TT - F-4 CANOPY
CT - RF-4 BENT FLAPS
CT - SECURE THEM
CT - C-130 CONTROLS
CT - TWO WRONGS DON'T MAKE IT RIGHT
CT - FOXED BY LOX
CT - SIGHTLESS WINDOW
CT - WHO'S BOMBED?
CT - CPI
CT - TECH DATA
CT - FORMULA FOR AN ACCIDENT
CT - LUGS
CT - LUGS AGAIN
CT - CHECKLIST AGAIN
CT - WHAT HAPPENED TO THE BOOK?
TT - AN OPEN COCKPIT - AND NO SCARF
CT - IT'LL GIVE YOU THE JITTERS
CT - A SNAGGLETOOTH SABRE
CT - A-7 OIL
CONTOLEX

JAN 24
JAN 26
JAN 27
FEB 24
FEB 24
FEB 25
FEB 25
APR 11
APR 14
APR 14
APR 14
APR 15
MAY 24
MAY 25
MAY 25
MAY 25
MAY 25
JUN 24
JUN 24
JUN 24
JUN 24
JUN 25
JU/AUG 10
JU/AUG 18
JU/AUG 18
JU/AUG 18
JU/AUG 19
SEP 22
SEP 22
SEP 23
OCT 20
OCT 20
OCT 20
NOV 14
NOV 14
NOV 14
NOV 15
NOV 25
DEC 8
DEC 9
DEC 9
DEC 19

MATERIEL FAILURE

CT - THE NOSE KNOWS

NOV 14

MIDAIRES

THE FORMATION MIDAIR REVISITED
MIDAIR! MIDAIR!

APR 4
SEP 16

MISSILE/EXPLOSIVES SAFETY

CT - EXPLOSIVE BOLTS BITE
A BOMB BY ANY OTHER NAME
CT - WHO'S BOMBED
CT - GAMBLER'S REGRET
WEAPONS WORDS

MAR
JU/AUG
SEP
DEC
DEC

27

OPERATIONS

SUNDAY DRIVER
THE SINK HOLE
MORE ON TURNING THE F-4
TT - CARBURETOR ICE
THE LOSERS

JAN 6
JAN 8
JAN 16
JAN 22
JAN 28

PERSONAL EQUIPMENT

TT - F-4 CIRCUS
TT - AND HERE'S THE KICKER

FEB 15
DEC 23

PREFLIGHT

CT - JAWS

MAR 27

PROFESSIONALISM

A CHALLENGE
TT - SAFETY THRU EXAMPLE
BREAKTHROUGH
A TIME OF CHANGE

JAN 3
JAN 22
FEB 16
APR 3

SEAT BELTS

THE THINKER
SAFETY AT STAKE FOR STEAKS
SEAT BELTS - - - UPPING THE ODDS FOR LIVING

JAN BC
JU/AUG 8
SEP 8

SECOND LOOK

FUEL AND BARRIERS

JAN 14

SURVIVAL/RESCUE

FOLLOW-UP ON SURVIVAL
TT - CHECK THOSE KITS
SO YOU WANT TO FLY IN A THUNDERSTORM?
HELICOPTER RESCUE LIMITATIONS
WINTER SURVIVAL

MAR 12
APR 10
MAY 4
MAY 28
OCT 22

TAKEOFF

TT - WINDMILLING WANDERER
TT - IF AT FIRST YOU DON'T SUCCEED
TT - BLASTED CANOPY!

FEB
MAY
NOV

24

TAXIING

TAXI ACCIDENTS... AGAIN!
TT - TAXI ACCIDENT
TT - TAXI TROUBLE

MAR 18
APR 10
OCT 13

TIRES

CT - PUTTING ON THE PRESSURE

JAN 26

TOWING

TT - PILOT ERROR?
TT - TIGHT PARKING

JAN 23
MAY 11

WATER SAFETY

KILLER WAVES
JUST BECAUSE IT'S SUMMER
DROWNPROOFING

APR 24
MAY 12
JU/AUG 14

WEATHER

SUMMER FLYING
SO YOU WANT TO FLY IN A THUNDERSTORM?
JUST BECAUSE IT'S SUMMER
THE GREATEST STORM ON EARTH
A WEATHER OBSERVATION
BEWARE THE SUN
TT - ROLLBACK... OR NOT?
TT - SNEAK PREVIEW
TT - I GOOFED
FOR THE NORTH WIND DOTH BLOW
WINTER WEATHER
WINTER SURVIVAL
THE WINTER DRIVING SEASON
THE COLD IS A SNAP FOR THE PREPARED
TT - A LESSON LEARNED
FOG KILLERS
THE LURE OF HOME

APR 16
MAY 4
MAY 12
JUN 26
JU/AUG 22
JU/AUG 28
SEP 13
SEP 13
SEP 13
OCT 3
OCT 10
OCT 22
OCT 27
NOV 28
DEC 22
DEC 24
DEC 10

ZARK AND TINK

ZARK AND TINK LOOK AT THE F-111
ZARK AND TINK LOOK AT THE F-4
ZARK AND TINK OBSERVE A RECALL

SEP
OCT
NOV

TAC TALLY

AIRCRAFT ACCIDENT RATES

* Estimated

MAJOR ACCIDENT RATE COMPARISON

	TAC		ANG		AFRes	
	1971	1970	1971	1970	1971	1970
JAN	1.6	4.8	16.7	5.9	0	0
FEB	1.6	3.9	11.6	2.6	0	0
MAR	3.1	4.6	7.0	1.7	0	0
APR	2.7	4.9	4.9	2.4	0	0
MAY	2.5	6.2	5.7	3.6	0	0
JUN	2.6	5.5	6.9	3.6	0	0
JUL	2.9	5.1	7.1	6.1	0	0
AUG	2.7	5.0	7.8	6.9	2.7	0
SEP	3.2	4.7	7.4	6.6	2.4	0
	3.2	4.5	6.7	6.8	2.1	0
NOV		4.6		6.7		0
DEC		4.6		6.6		0

UNITS

	Thru Oct			Thru Oct	
	1971	1970		1971	1970
9 AF	3.7	1.8	12 AF	1.9	7.1
1 TFW	6.3	6.2	23 TFW	0	4.7
4 TFW	0	0	27 TFW	5.3	8.3
31 TFW	10.3	4.9	49 TFW	0	11.6
33 TFW	0	0	347 TFW	0	N/A
354 TFW	4.7	0	355 TFW	0	N/A
4403 TFW	14.8	0	474 TFW	0	0
			35 TFW	2.9	11.0
363 TRW	3.9	3.3	67 TRW	0	3.9
316 TAW	0	0	313 TAW	0	0
317 TAW	0	0	314 TAW	0	0
			516 TAW	0	0
68 TASG	0	0	58 TFTW	7.4	14.7
			4453 CCTW	5.2	3.8
			71 TASG	0	0
TAC SPECIAL UNITS					
1 SOW	7.4	5.9	4409 SUPSQ	0	0
2 ADG	0	0	4410 SOTG	4.6	0
57 FWW	6.1	0	4500 ABWG	0	0
			4485 TTS	0	N/A

TAC SUMMARY

	OCT 1971	THRU OCTOBER	
		1971	1970
TOTAL ACCIDENTS	2	27	35
MAJOR	2	21	30
MINOR	0	6	5
AIRCREW FATALITIES	4	14	26
AIRCRAFT DESTROYED	2	17	27
TOTAL EJECTIONS	0	16	25
SUCCESSFUL EJECTIONS	0	16	19
PERCENT SUCCESSFUL	0	100	76

