

TAC ATTACK

MARCH 1967

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ARRESTED LANDINGS
...page 18

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TAC ATTACK

for efficient tactical air power

MARCH 1967

TACTICAL AIR COMMAND

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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

THE DEFENSIVE APPROACH ... prepare for the unusual

Every task or job you perform involves preparation. It may be conscious or subconscious. You may call it training, study, briefing, or review. It all boils down to preparing yourself to complete your part of the mission. Whether you prepare yourself during formal training, in your car on the way to work, or in a pre-flight briefing, it is an integral part of getting the job done. We all prepare for our work in one way or another.

But HOW do we prepare ourselves? Do we review the routine steps from start to finish? Yes, that's a big part of it. But reviewing the routine alone is not enough. It only prepares you for the basic job ... not for the random happenings that make each day different from the last. Some of these occurrences have little effect on the outcome of your job. But others may have a dramatic and far reaching effect! These are the accident-producing variations from routine that you must prepare for.

If your preflight briefing is a mere recitation of the events and conditions that will be "as usual" during the flight, you are missing half the preparation you need. Or if a new man on the flight line isn't told what he should do when an airplane taxis in with hot brakes, he hasn't been fully prepared for his new duties.

At one TAC base recently, we found the people in fuel cell repair far from prepared for emergencies. There were three respirators on hand in case someone was overcome by noxious fumes. But there was only one regulator available. And no one could find it!

You could call the preparation I have in mind a defensive attitude. We can borrow from the defensive driving idea ... a defensive approach to your job is being fully prepared for the unexpected, unnatural, or irrational situations that may confront you.

The thorough and efficient ... and therefore safe ... approach to any job lies in being prepared for the unusual as well as the routine occurrences in a day's work.



Homer C Boles

HOMER C. BOLES, Colonel, USAF
Chief of Safety



A PARABLE OF TWO SONS

... an engaging allegory

by Lt Col Paul L. Smith
Chief, Flight Safety Div.
Hq TAC

Long, long ago, yea, verily, before the Gooney Bird received the name Dragon, lived a great ruler who had many sons. These sons lived throughout the kingdom as chiefs of war camps. Some commanded groups of the large vehicles used to convey soldiers and equipment to distant trouble spots. Other sons commanded fast unarmored steeds that could make lightning sweeps to reconnoiter territory of the enemy.

All of these were valuable units to the king, but his pride was most evident when he visited with his fighting men, those stalwart warriors who went forth to do battle with his enemies. So the king was greatly disturbed when one of his sons, Ben Hurt, started

losing equipment because of accidents. Wheels fell off during charges. Horses lost their horsepower and had to be dispatched during battle. Lives were needlessly lost when fighters had to bail out of their chariots.

The king drew forth his papyrus and goose quill and sent out a messenger with a letter. The king asked why Ben Hurt was having such tribulations while another son, Victorious, having the same mission and equipment, had lost no chariots, horses, or men in mishaps for over a year.

"Verily, my chariots are the same as those of my brothers!" Ben Hurt wailed when he received his father's epistle. He rent his robes, heaped ashes upon his head, and clothed himself in sackcloth.

"Even my horses are those of my brothers," he continued his lament. "For after my losses, they sent me these replenishments from their own stocks. But surely they chose the worst... I have naught but troubles with them:

"The saddles come ungirthed on the horses before they reach halfway to their goal.

"I am having chariot tree failures in less than 100 hours.

"Bolts are falling by the wayside, and armor is coming loose.

"The Philistines my father hath sent to repair my chariots needeth much training.

"Verily, I am beset by plagues and bad fortune. My quartermaster sweareth at his men. And he sweareth to me that he worketh them two shifts a day and cannot long continue!

"Hie thee back and tell my sire," Ben Hurt commanded the messenger, "Wouldst that we have no more mishaps, but there is no other way. He must expect losses!"

When the king received word of his son's predicament he sent for the historian, that he might study the scrolls. He pored over them, burning the midnight oil, in order that he might resolve these dire happenings and once again bring his forces to a combat status. As the king studied the scrolls his countenance darkened. The prophets of Ben Hurt were giving him bad advice!

Then the king dispatched his aide, Rexrighter, who was wise in the ways of misfortune, to talk to his son. This aide had vast knowledge of the activities and ways of the king's other sons.

"Forsooth, sire, I wouldst talk to thy Prophet of Mishaps." The aide approached Ben Hurt in a manner appropriate to a field commander and a king's son. "Hath thy Prophet foretold of these occurrences which plague thee so?"

"Alas," spake Ben Hurt, the king's son, "my Prophet of Mishaps is old and of no use for other tasks. I have placed him there 'til he doth reach the age for retirement. Rather wouldst I, that thee seek out my quartermaster, for the mishaps have involved his area of prophecy. He hath told me that until he receiveth more people, he canst do naught to combat this curse upon my house."

Then spake Rexrighter, the king's aide, saying, "Doest thou, Milord, conduct an acceptance inspection of full value on thy incoming horses and chariots? Doest thou insure that thy horses are not spavined or windbroken, that thy saddles are not rotted with sweat? Doest thou inspect thine chariots to insure their wheels cometh not loose from the carriage when thou commence an attack? Thy brother, Victorious, does these things!"

Thereupon rose the quartermaster in great wrath, waving his arms and shouting.

"Thou higher headquarters types understand not the problems we face in the field! Yea and verily," quoth he, "we examine our horses and saddles and chariots when they arrive. But we have not time to peer under carriages, or inspect leathers, or gaze upon a steed's teeth lest we find no time for other things."

Forthwith, the king's aide queried again, "Then, Milord, doest thou look at thy equipment before it goeth to battle, that thy cinches are tight, thy harnesses fastened, thy armor in place? Thy brother's quartermaster does!"

Again the quartermaster leapt forward, gnashing his teeth and tearing his hair. "Aha! Dolt! Hast thou thought wherefrom I shall find these inspectors? I say to thee again, I canst not!"

Thereupon Rexrighter turned and addressed Ben Hurt. "Sire, thou canst surely see... should thy equipment fail thee in the heat of battle, thy tenure here can not be long. Take thou thy resources and do these things of which I spake. Thy mishap rate will decrease and thy fortunes will abound. Counsel thy prophets that they advise thee of those things which must be done. For as field commander, thy will shall be done. Stir up thy Prophet of Mishaps that he beget ideas instead of snores. Thou knowest thy quartermaster as an able man beset by sore troubles. Give him that which he must have and thy forces will again mete thundering punishment to thine enemy."

And Ben Hurt took the advice of Rexrighter, and lo, his mishap rate tumbled as fast as his enemies.

And the king's countenance softened toward his son.

A

2ND LOOK

A 2nd Look



That ten knots feels comfortable as you turn final, but it's more than the book calls for. You pull off a little power and let airspeed bleed off as you descend. You watch your landing spot. Just about the time you decide to rotate into a flare, you notice that airspeed has settled right down to the figure you wanted. What beautiful precision!

You ease back on the stick. The nose comes up the way it always does . . . the same distance and at the same rate. Airspeed starts to bleed off. That's normal too. You want it to do that. To all outward appearances, everything is normal, right by the book.

And then suddenly, inexplicably, you're sinking.

You rotate farther, add a little power . . . and sink faster! You feel helpless. The hard landing is anticlimax.

Your attitude . . . rate of flare and pitch angle against the horizon . . . looked normal and proper. But you weren't carrying enough power to offset the increased drag you picked up in the flare. And that excess drag quickly showed itself as excessive sink.

A second look at that approach shows that while you were concentrating on airspeed, you overlooked the thrust and drag effects your airplane encountered.

Remember? You pulled power off out there on final. Airspeed looked okay when you checked just before the flare. It didn't occur to you to bring power back up to a normal approach setting.

The people who fly the Phantom have a meter in the cockpit that tells them how much drag they're pulling around with them. That's right, you can learn to think of the angle of attack indicator that way. But the rest of us must hang our hats on final approach speed formulas based on gross weight. These formulas play the variables of weight and airspeed to hold lift and drag in a predictable relationship. They don't consider thrust a variable. And once you introduce a thrust figure other than that in the formula, none of the other factors will work out the way you expect them.

There's another way you can tangle with excess drag on final approach. It's a thrust deficiency problem too. This one you encounter when you fly too steep an approach.

Let's go back to the rule of thumb again. Not only is it based on a certain thrust value, it is worked out for a specific rate of descent. And just as with thrust, if you vary from the intended descent rate, you throw

off all the other factors. In order to get all the way through the flare, you must adjust throttle setting or airspeed . . . or both.

The flare's the thing that gets you after a steep final. You must rotate farther before you're ready to make that smooth landing. In the process of eating up your airspeed, it induces more drag than a normal flare from a normal approach. And the increased drag demands that to avoid trouble you must carry more power than usual. Although you can slide down a steep final at reduced power and hold airspeed right where you think you want it, you'll never get through the roundout unless you add some power . . . and that means add more than you would carry through a normal roundout. Remember, you pick up more drag than usual when you flare from a steep approach.

So with everything normal except for a thrust deficiency, and its attendant drag excess, you find yourself in that sink hole. And it's clear that the worst possible recovery from this sinking sensation is to raise the nose any farther. That only puts more wing up into the wind . . . increases angle of attack . . . and aggravates the drag problem. Although it may

feel like the opposite of what you want to do, it would actually help to lower the nose . . . decrease the angle at which your wing meets the relative wind. Decrease drag!

Instead of easing the power up a little, you want to pour on all the power you have . . . and fast! Anything, everything that's at your command to offset that drag!

If you get the bird flying again before the jarring contact with runway or overrun, you have two choices: leave power on and go around, or judiciously reduce power and plant your chariot on the runway. If you elect the latter, you'll probably be landing with a good deal of runway behind you.

Often, however, you will not be able to completely arrest that sink before you contact the runway. But you soften the touchdown considerably if you react correctly and in time. It's probably best to call the whole thing off at that point, slow the bird to taxi speed, turn off the runway, regain your composure, and try again another day . . . keeping the effects of drag and thrust in mind.



The C-130 crew fired up and started to taxi out of their parking place on their way to the runup pad. They had made a couple of right turns when they began to hear a loud thumping noise. They stopped the aircraft where it was and waited until maintenance specialists could check out the trouble. In short order they learned that the left front main wheel had failed internally. After defueling the aircraft, they towed it back to the parking area.

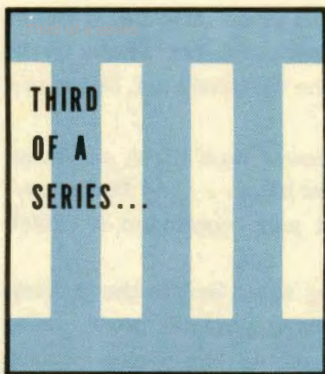
When the maintenance people tore down the wheel and got a good look at it, they found that the brake assembly had caused the trouble. Whoever assembled the brake forgot to reinstall a spacer. This allowed the entire assembly to move on the axle. The wheel assembly, brake housing, and lower gear strut as-

sembly were all damaged, requiring 50 man-hours to put the Herk back in shape.

The unit involved realized that this was more than a simple case of maintenance oversight. They took a second look at the atmosphere that allowed this incident to occur, and had some words for their maintenance supervisors . . .

"Effective immediately, during all maintenance on red cross conditions, where assembly of a unit may affect safety of flight, the maintenance supervisor authorized to clear the red cross will monitor the complete maintenance from beginning to end . . ."

Come to think of it, on a job of this nature, how can a responsible man sign the release with a clear conscience . . . unless he has watched the entire assembly operation?



COMMUNICATIONS

Reprinted from Kaiser Aluminum News

IN
SEARCH
OF
THE
MEANING
OF
MEANING *



From now on we are going to talk about common words in everyday use, and not about all the other types of symbols and symbol systems that we use for communicating with each other... we also will try to explore what is meant when we talk about "meaning"... for it is the transfer of meaning that is the goal of interhuman communications.

Some new technologies that add
new experience for us to report

There are believed to be about 600,000 words in the English language today. The number is constantly growing, as we add new human experiences to be reported upon (through the use of extensions of our natural senses... telescopes, microscopes, spectroscopes, etc.) or as we coin new expressions to describe present experiences... hula hoops, me-tooism, high camp, etc.

The number of words (other than technical ones connected with a business or profession) that an educated adult uses in daily conversation is about 2000. Of these, the 500 most frequently used have 14,000 dictionary definitions.

This is a pitifully small number of symbols to describe the infinite richness and diversity of individual human experiences.

There are about 298 million English speaking people alive in the world today. To some extent, their individual experiences differ from all others. Every fraction of a second in their lives, they are experiencing something they have had before, or that anyone else has had. Yet they have the same meager store of accepted symbols to use in reporting to each other what they have experienced.

Each common word/symbol must therefore, necessarily be used to cover a wide range of meanings.

* With apologies to C. K. Ogden and I. A. Richards who wrote a book called "The Meaning of Meaning." They found 16 groups of meaning for the word "meaning" in the English language.

Cinematography

Cybernetics

Miniaturization

Microbiology

Cryogenics

Biocenology

Electrochemistry

Old technologies we no longer
draw experience from, whose
words are disappearing from
common use

Alchemy

Chandlery

Heraldry

Blacksmithing

Falconry

Cannony

Old words once used to de-
scribe one experience, that are
now used to describe other ex-
periences

Missile

Compact

Spectacular

Twist

Carpetbagger

Maverick

Gauntlet



These are some of the most commonly used nouns and verbs in our language. Each one must serve to convey a vast number of different meanings...

RUN CUT GO COME LIE
TELL TABLE WELL MAN DOG AIR

Let us look at one common word... perhaps you have used it once or more today... and see what a dictionary says it means. Having glanced at what Webster's Unabridged International Dictionary has to say about the meaning of LEAD... can you write down here the real meaning of the word?

“ ”

Of course you can't

When talking about everyday words... the kind we use in talking to our family and friends, and to our business colleagues, it does not get us very far to ask of a word that has just been used...

“What does it mean?”

It may get us farther along the way toward understanding each other, if we ask the speaker (or writer... they are the same thing using different wave-length systems)...

“What do you mean?”

(A dictionary does not tell us what common words “mean.” A dictionary is a history of how a word has been used most frequently in some contexts and at different times. A dictionary indicates various areas of meaning, at various periods of time.)

Lead \léd\ *vb* **led** \léd\ **lead** \léd\ **leading** \léd-*ing*, -*dēŋ*
leads \lédz\ [ME *leden*, fr. OE *lidan*; akin to OHG *leitan* to lead, ON *leitha*; causative fr. the root of OE *lithan* to go, OHG *lithan* to go, pass, ON *litha*, Goth *leiþan*; akin to Av *raðō-* to die, Toch A *lit-* to go away] *vt* **1 a** : to cause to go with oneself : take or bring with use of duress (*led* the condemned man to the scaffold) (*led* them captives to a distant land) *b dial Brit* (1) : to convey (stone, coal, or other materials) in a vehicle (2) : to convey (a crop) from the field (as to a place of storage) **2 a** (1) : to guide on a way : show the way to a place esp. by going with or in advance of (*led* the officers to his hiding place) (can a blind man ~ a blind man —Lk 6: 39 (RSV)) — often used in the phrase *lead the way* (he *led* the way and we followed) (2) : to serve as a passage for : conduct to some place or in some direction (a road ~ing the traveler to the heart of the city) (3) : to guide by indicating the way : mark out or show the way to (*led* through the fog by the distant lights of the city) (4) : to direct or draw the gaze or attention of (we are *led* on from page to page —R.S. Hilmyer) (a straight line ... can ~ the eye in two directions only —C.W.H. Johnson) *b* : to guide or conduct with the hand or by means of some physical contact or connection (a third native ... to ~ your pony —James Stevenson-Hamilton) *c* (1) : to guide or constrain in its passage or course (a rope is *led* around the curve) (2) : to conduct or serve as the way or channel for (pipes ... *led* the water into canals —G.W. Murray) **3 a** : to go through (life or some other period of time) : PASS, LIVE (there he *led* a very peaceful existence) (*led* one of the most dramatic careers of criminal history —Anne Brooks) *b* : to cause (another person) to pass a life of a particular kind (*she led* him a dog's life) (such a life as that man *led* me) **4 a** (1) : to go with, at the head and direct the operations of (an armed force or other expedition) (*led* a cavalry group in a raid behind enemy lines) (*led* a safari into little-known territory) (2) : to march in front of : go at the head of (a tall drum major *led* the band) — often used in the phrases *lead the way* (*led* the way in the adoption of social legislation) and *lead the van* (*led* the van in solving problems susceptible of certain knowledge —G.C. Sellery) (3) : to have the first place in (~ the world in the production of steel) (*led* the league for the most double plays —Current Blog.) (4) : to have a margin of advantage or superiority over (*led* his closest

opponent by 200 votes) *b* (1) : to take a principal or directing part in : have charge or direction of (*led* a successful campaign to suspend import duties —Current Blog.) (*led* the minority party in the senate) (2) : to guide by performance of one's own part (*led* the congregation in prayers) (*led* the audience in singing the national anthem) (3) : DIRECT, CONDUCT (*led* the orchestra in a poor performance of the overture) (4) : to guide or direct in a course of study, discussion, or similar group activity (~ a Sunday-school class) (~ a discussion group in foreign affairs) *c* : to suggest to (a witness) the answer desired by putting leading questions (counsel is ~ing this witness, putting the words in her mouth —Erle Stanley Gardner) **5 a** (1) : to bring by reasoning, cogency, or other influence to some conclusion or condition (a heart-shaped Venetian map ... *led* him to the happy belief that the land he discovered was in eastern Asia —Tad Szulc) (reflection *led* him to a better understanding of the problem) (2) : to prevail upon : CAUSE, INDUCE (situations which can ~ an inquiring mind to engage in aesthetic thought —Hunter Mead) (his reasoning ~ed him to propose the creation of a new profession —Jour. of Accountancy) *b* : ENTICE, ALLURE (*led* him into evil courses) (*led* him astray) *c* : to play as the first card or suit of a game, round, or trick (going to ~ trumps) **7 a** : to aim a weapon in front of (a moving object) (~ a duck) (~ an airplane) *b* : to pass a ball ahead of (an intended receiver) so that it can be received on the run *c* : to be in advance of in phase (in a capacitive circuit the current may ~ the voltage) *d* : to direct (a blow) at an opponent in boxing ~ *vt* **1 a** (1) : to guide or conduct someone or something along a way (you ~ and we'll follow) (2) : to guide or direct someone in reference to action or opinion (follow the truth of scholarship wherever it may ~ —New School for Social Research Bull.) (that sort of project ... ~s on to new fields of endeavor —B.G. Gallagher) *b* (1) : to serve as a passage (flagstone walks ~ to the gateway —Amer. Guide Series: La.) (a narrow covered bridge ~s across the river —Amer. Guide Series: La.) (short lanes that ~ to the water —C.R. Sumner) (2) : to have a specified terminus, course, or direction : RUN (a long valley ~ing up into the heart of the main range —E.E. Shipton) (swampy canals ~ on either side to vast bayous —Tom Marvel) (does the road ~ uphill all the way —O.W. Holmes 1935) (rang by means of a thick yellow rope which *led* down from the belfry —Grace

Metalious) (the line ~s as if the whale were ahead of the boat when in reality he is right under it —M.A. Chippendale) (3) : to serve as an entrance, channel, or connection (ran to the door that *led* to the kitchen —Kenneth Roberts) (his eyes on the glass window ~ing into the reception room —Jane Woodfin) **2 a** : to be first or foremost in some respect (this state ~s in wealth and population) (the incumbents were ~ing in all races) *b* (1) : to begin or open a passage or course of action (*led* with “What a superb literal translation” —Bennett Cerf) — usu. used with *off* (*led off* for the southern opponents of the measure —Current Blog.) (will ~ off with a Christmas story —Richard Bissell) (*led off* at bat for the home team) (2) : to play the first card of a trick, round, or game (3) : to direct the first of a series of blows at an opponent in boxing *3* : to tend toward a definite result : EVENTUATE — used with *to* (his plan need not ~ to fresh delays —Kenneth Fairfax) (~s to overgrazing and the destruction of vegetation —W.B. Fisher) (study ~ing to a bachelor of arts degree) *syn* see GUIDE — **lead by the nose** : to cause to obey or follow meekly or submissively (*leads* her husband by the nose) — **lead into** : to lead so as to permit the last play to the trick to be made from (a specified hand, high card, or combination of cards) — **lead one a dance** : to subject one to irksome or exasperating experiences : put off or thwart one by delays or time-consuming artifices (*led* her boy friend a fine dance) — **lead one a merry chase** : to cause one extreme difficulty by speed or evasive tactics (*led* his pursuers a merry chase over hill and dale) — **lead one up the garden path** also **lead one up the garden** *Brit* : to pull the wool over one's eyes : DECEIVE, MISLEAD (so you *led* us up the garden path ... you cooked up a beautiful story —William Sansom) — **lead through** : to lead so as to force a play from (a specified player, high card, or combination of cards) before one or more other players play to the table — **lead toward** : to lead so as to force one or more opponents to play before (a specified player, high card, or combination of cards) — **lead** \léd\ *n* ~s [ME *lede* action of leading, guidance, fr. *leden*, *v.* — more at LEAD] **1 a** (1) : position at the front : VAN (the bowmen were in the ~) (took the ~ on the dark winding road) (2) : INITIATIVE (took the ~ in fighting the measure) (3) : the act or privilege of playing first in a card game, round, or trick (your partner has the ~); also : the card,

So far, we have talked about small words .. these give us quite a bit of trouble when we use them in trying to express what we have experienced.

Big words seldom give us much trouble ...

LOOK UP

ICOSAHEDRON

IN ANY DICTIONARY. IT WILL SAY "A GEOMETRIC FIGURE HAVING 20 SIDES."

WE MAY HAVE TROUBLE SPELLING

ICOSAHEDRON

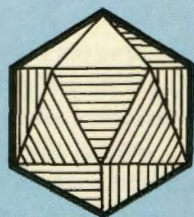
WE MAY HAVE TROUBLE SAYING

ICOSAHEDRON

BUT WE HAVE NO TROUBLE UNDERSTANDING WHAT IS MEANT WHEN SOMEONE SAYS THAT SOMETHING IS AN

ICOSAHEDRON

HERE IS A BETTER WAY OF SAYING



WHY DESCRIBE SOMETHING WHEN YOU CAN SHOW IT?

One reason for this is that big words are frequently labels. They define themselves and these definitions are nearly always "circular." Most of the technical terms used in the professions and sciences fall into this classification.

Little words often tell us what is meant by them from the context in which they are used...

When your secretary says, looking ruefully at her hose "I've got a run," we are pretty sure she does not mean the same thing Willie Mays does when he says "I've got a run."

The medium-sized words give us the most trouble because:

country	patriotism	society	government
democracy	republic	people	experience
business	management	leadership	objectives
politician	natural	virtue	morals
communism	delinquent	criminal	insanity
etc.	etc.	etc.	

"Too much supervision is bad for production!"

This statement may mean something to the person who used it... but it is utterly without effective meaning to the person who hears or reads it.

You can lose a friend, but clarify the statement, by asking a few questions:

What supervision do you mean? Direct, indirect, local? From the home office?

Where is the supervision you mean? In Nigeria? Athens? Outer Slobovia?

What time are you talking about? Today? Last month? In the

* We get little or no comfort from looking them up in a dictionary.

* We sometimes cannot figure out what the speaker means just from the context in which he has used the word.

Here are a few medium-sized words that we use nearly every day which can give us trouble...

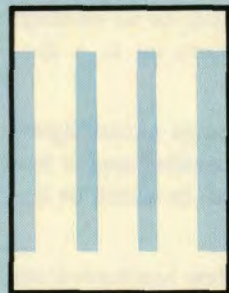
Here's just one example: you will run into dozens of others every day, if you listen or look for them. Yet people actually believe they communicate when they use words in this way:

Age of Pericles? During the American Colonial Period?

Your friend may then rephrase his statement: (I feel that) (he won't say this, but it is what he means) "The policies of (what?) the Committee of Ten (where?) in Carthage (when?) in the 4th Century, B. C. were destructive ("bad" in what way?) to the growth of commercial competition."

(You may either agree or disagree with the speaker... but at least you know what it is you agree or disagree with. Sometimes it is useful to know that.)

At this point, you might be tempted to ask... "Why didn't you say so in the first place?"



Don't Do It !

It's a sure-fire way to make people mad at you.

But it may be a good question to ask yourself when people don't understand you.

Think a moment, before you make profound statements like "_____ " ... then, fill in the what, the place, and the time.

Sometimes you will discover that you don't know the what, where, or when ... in fact, you haven't the slightest idea what you are talking about.

This is always a rather interesting discovery.

Or, you go ahead and say, it, with names, places, and dates. Perhaps nobody will agree with you, but at least they won't ask, "Why didn't you say so in the first place?"

You already have ...

Common words do not have meanings -

Only people do.

And sometimes they don't, either.

This series covers one of the biggest problems facing us in the flying business ... or anywhere:

- I. In the Beginning Was The Word ... AND
How Is It We Know Something To Communicate? Jan 67
- II. The Trouble With IS, is IS
The Parable of The Blind Men and the Elephant Feb 67
- III. In Search of the Meaning of Meaning Mar 67
- IV. It's a Mad, Mad Maze
This Is The Beginning ... Not The End

It is appearing in four issues of TAC ATTACK through the generous permission and assistance of Don Fabun, who had the idea in the first place, did the research, wrote the material, and published it in the Kaiser Aluminum NEWS, which he edits.

chock talk

CHOCK TALK

the rub

After landing, the phlyer wrote up his Phantom for a hard afterburner light. He had seen a warning light flicker when he came out of burner, but was unable to tell which light it had been. All his engine instruments were normal, the fire warning circuit checked okay, and his wingman said the bird looked normal from the outside.

The engine shop people took the airplane to the trim pad. They found the fire warning loop in good condition and no leaks in the engine bay. During run-up everything was satisfactory until the man in the cockpit selected fourth stage of afterburner. The fire warning light came on and the ground observer called that number two engine was on fire.

They promptly shut down and extinguished the fire.

This time when they checked the engine bay, they found the low pressure signal line from the afterburner fuel pump was chafed through. It was spraying raw fuel into the engine compartment. A little more checking revealed that the line had been secured by only two clamps ... where the tech order called for four clamps!

all together, now

The flight mechanic had lowered the forward nose wheel door of his C-130 during a thru flight inspection so the radar folks could perform some maintenance. At the same time ... and not thinking about the effect that one operation would have on the other ... the loadmaster loaded a cargo pallet on the aircraft. The big bird settled with the load and the nose gear strut compressed. It didn't stop until the lowered gear door had bent and popped some rivets.

There's a lesson here somewhere about ... talk to each other, guys!



keep it clean

The F-4 crew was making a dry rocket pass across the range when the practice bomb on station 6 of their SUU-20 dispenser up and left the airplane! All switch settings in the cockpit were proper and the pullout had not been over 3 1/2 G. Something was obviously wrong with the machinery, so they called it a day and went home.

After landing, the armament troops found the rack hooks on station 6 open, but the cartridge had not fired to eject the bomb. When they tore down the unit, they found so much soot on the locking mechanism that the rollers could not lock in place. In this condition, it took only a few Gs, normal aircraft vibration, or the jar of a landing to dislodge a bomb from the rack.

The unit involved decided to clean the release mechanisms every day that the SUU-20 dispensers are used.

stop, whoa, halt!

One rainy night at an overseas base, an airman second class was towing an MD-3 power unit with a tractor. To save time, he was filling out his dispatch record as he drove. He didn't notice that one blade of the C-130's prop was in his way until he struck it with the cab of his tractor.

It took three man-hours to file out the nick on the blade, and 45 dollars to put the tractor back in shape.

latch check

The T-bird crew noted the travel pod on their bird as they preflighted for an instrument check. Beyond seeing that the latches were closed and cotter pins in place, they didn't pay much attention to it. After about an hour of flight, the IP heard a loud and unusual

thump under the bird as his student extended speed brakes. When they landed, they confirmed that the travel pod was missing. The jettison latches were unlatched and the cotter pins had been pulled into the latches. The jettison T-handle in the front seat was still in and safetied.

With interest centered on the latches, investigators took a good look at them. They found the jettison latch sears badly worn. Air flow against the pod in flight had forced the latching mechanism to rotate and release the pod.

They also noted that latch condition is an inspection item on the T-33 pre- and postflight cards!

strange, but true

The Phantom crew had just entered the supersonic corridor and accelerated to about 1.9 Mach, when they heard a loud bang. Although all instruments indicated normal, and aircraft control didn't seem to be affected, they decided to call off the speed run and go home.

When the crew chief came up the ladder after they parked, he told them door 82R was missing! From all appearances, the hinge pin had been missing from the door before they took off. No one is quite sure just how that came about, but they are going to be a lot more careful about things like that in the future.

turtle trouble

Shortly after takeoff, the F-105 pilot heard a loud thump. Calling his wingman, he asked for a visual check, and soon learned that his turtledeck panel was missing. After burning down fuel to landing weight and returning to the ramp, he reconstructed the sequence of events that led up to the incident.

The bird had returned from a cross-country flight the night before. After the crew chief helped the pilot get his clothes from the turtledeck, he forgot to completely secure the panel. The loose dzus fasteners went undiscovered on the morning preflight the next day, and the pilot also failed to check them when he crawled up the ladder.

It's easy to check panels when you walk around the airplane by slapping them with your hand. Any loose fasteners will pop out at you. But the turtledeck isn't that easy to reach . . . you have to crawl back on the intake. If you can't take the time to do this, you can eyeball the dzus fasteners from the ladder . . . the slots should all be lined up.

I. OPERATIONAL HAZARD REPORT (Indicate recommendations on reverse)															ANONYMOUS			
															YES	☒ NO		
TO: Flying Safety Officer										FROM: Capt Gary R Blake, 4518 CCr Tng Sq								
LOCATION OF OCCURRENCE/HAZARD Luke AFB/ Releasing Parachute Leg Straps in Aircraft										TIME OF OCCURRENCE								
										DATE 12 Jan 67		HOUR 1205		☐ DAWN ☒ DAY		☐ DARK ☐ DUSK		
IF HAZARD OCCURRED WHILE IN AIRCRAFT, COMPLETE THE FOLLOWING:																		
DEPARTED FROM Luke AFB, Ariz					DESTINATION Range #3					MISSION AGG								
ORGANIZATION AIRCRAFT ASSIGNED 4510 CCr Tng Wg										AIRCRAFT								
										TYPE F-104		ACFT SERIAL NO. 258		RADIO CALL SPUD Lead				
CLEARANCE					COMMUNICATION DIFFICULTIES					ALTITUDE		WEATHER CONDITIONS						
☒	LOCAL	☐	VFR DD 175	☐	IFR DD 175	☐	YES	☒	NO	-		-						
CREW POSITION																		
☒	PILOT	☐	CO-PILOT	☐	INSTRUCTOR PILOT	☐	NAVIGATOR	☐	ENGINEER	OTHER (Specify)								
PHASE OF FLIGHT																		
☐	PRE-FLIGHT	☐	STARTING	☐	RUN-UP	☐	TAXI	☐	TAKE OFF	☐	CLIMB	☐	CRUISE	☐	DESCENT	☐	LANDING ☒	POST FLIGHT
DESCRIPTION OF OPERATIONAL HAZARD																		
After shutdown, prior to climbing out of the aircraft, I had released my parachute leg straps from the hooks. The left strap clamp fell down and around the ejection ring, and when I stood up caught onto the ejection ring, stopping my upward progress quite suddenly. The next half second was one of the longest I have suffered through as I carefully assured myself that my seat pin was properly inserted. I feel that the procedure of unlocking the leg straps prior to getting out of the aircraft is a definite and serious hazard, and a procedure that is practiced by many of the pilots in the wing, both students and instructors. This item should be made a mandatory portion of each flight briefing and the Transition Phase briefing. Recommend that all F-104 units be advised of this situation. Photos attached.																		
DATE 12 Jan 1967					SIGNATURE OF REPORTING PERSON (Optional) GARY R BLAKE, Captain, USAF													

AF FORM 457
JAN 62

PREVIOUS EDITIONS ARE OBSOLETE.



A CLOSE ONE

The OHR is self-explanatory. And the picture makes it painfully clear that Captain Blake's experience could easily be repeated. When some of the F-4 type phlyers in the office saw this, they vowed as how the same thing has happened in the Phantom. If you have the lower ejection handle guard down it could be disastrous!

Stamp Out FOREIGN

Returning from a good day in the drop zone, the C-130 pilot used full reverse and minimum braking on landing. He put numbers one and four in low speed ground idle on the taxiway. Just after it stabilized, number one flamed out. He feathered it and taxied in.

Maintenance specialists inspected the engine, but couldn't find the problem on a visual scan. When they started number one, the rpm hung up at 46 percent. After shutdown they opened it up and found FOD damage in the first and second compressor stages. The engine was only 53 hours out of overhaul.

Whatever descriptive term we hang on the front of this problem called Object Damage, be it Foreign, Forgotten, or Fallen ... it always comes out Failure. Failure of an important part of our accident prevention and maintenance programs to eliminate preventable object damage from aircraft operations.

When we use the word Foreign to describe object damage we suggest something far away, beyond our control. It gives us an excuse, an out, to avoid facing the fact of our own contribution to object damage. As a result, the FOD program often lacks continuing emphasis. We allow it to degenerate into object damage thru Failure or Default.

Stamp Out Foreign!

by L/Col Carl E. Pearson
Hq TAC (OSP)

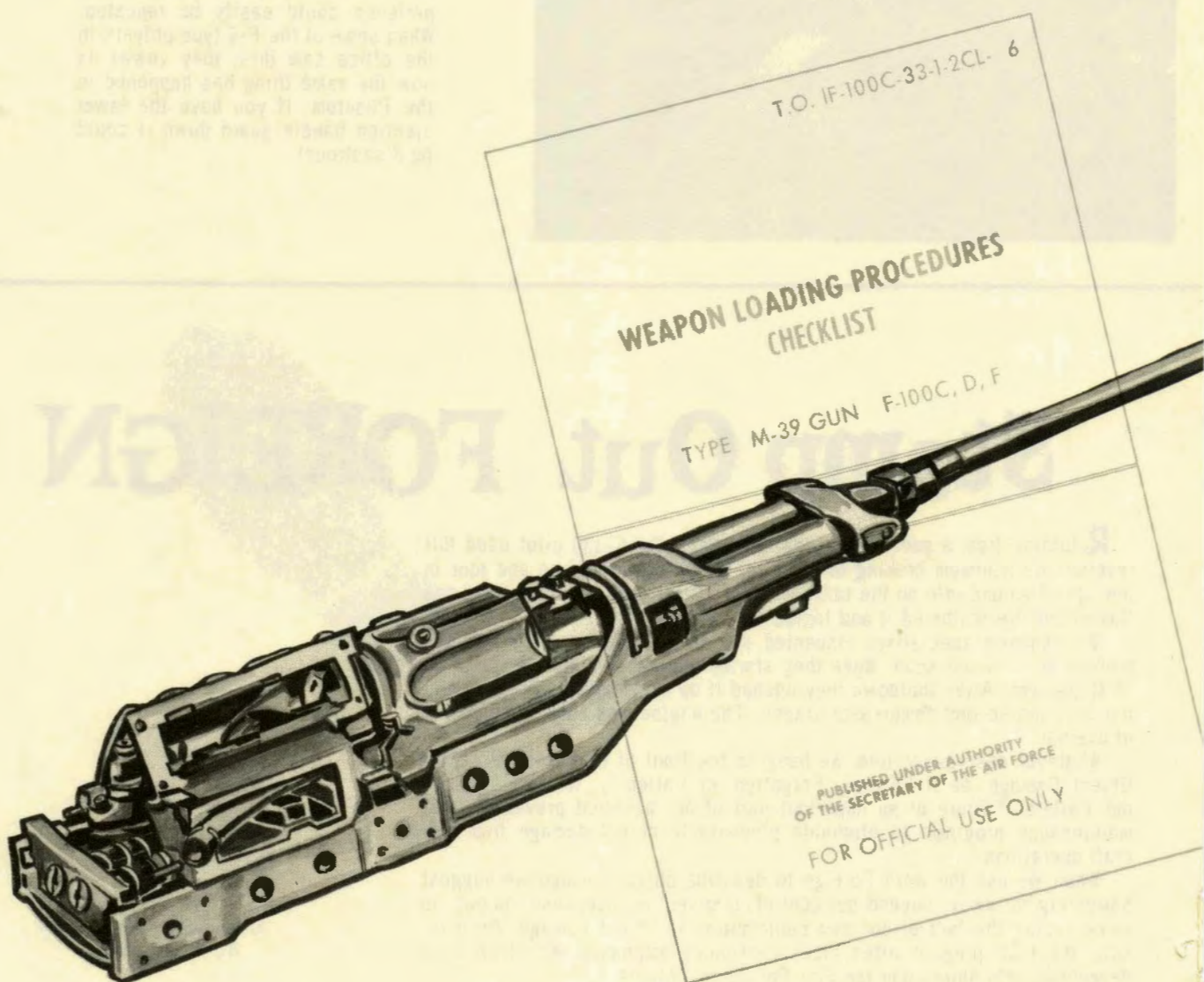
Forward Firing Weapons

...equal danger! Handle with care!

by MSgt Harold M. Rodland
HQ TAC (OSMEN)

In a little over one year, TAC aircraft have accidentally fired forward-firing weapons eleven times while they were landing, taxiing, or parked.

In four accidents, F-100 weapons maintenance teams failed to follow their check lists during ground checks of the M-39 gun system. Each time, someone pulled the trigger while power was applied to the airplane with the weapon armed. In one case, nine rounds of 20mm API struck an-



other aircraft and set it on fire.

A faulty relay in a B-26 caused an accident in a high explosives loading area. When the pilot turned on the battery before start, seven 2.75-inch rockets launched from the aircraft. They barely missed a crew chief and started several fires when they impacted in an open field.

Two 50-caliber guns fired while they were being charged in arming areas. No damage occurred. Both were caused by materiel failure.

On two occasions 2.75-inch rockets fired from the left outboard wing pylon while F-100s were landing. Both times, the left outboard station was loaded with three rockets and only the outboard rocket had been fired. All armament switches were off and the rocket circuit breaker was pulled. When the nose gear touched down on landing, the center rocket fired. Both were caused by rocket intervalometer failure.

One of the most spectacular accidents occurred when an armed F-105 started to turn onto the runway. A 2.75-inch rocket fired, traveled down a taxiway, skipped across a parking ramp, went through a 55-gallon FOD barrel, and penetrated the side of a Dempster Dumpster 2500 feet from the aircraft. Probable cause was personnel error... a particle of loose solder in a cannon plug had shorted across two pins.

Another accident occurred while an A-1E crew chief was preflighting his aircraft. He was checking the guns (not part of his preflight check list), when two 20mm cannons fired four rounds each. Happily, the rounds impacted in an uninhabited area. The ammunition had been inadvertently left aboard from an earlier flight.

After the Bien Hoa flight line catastrophe in May 1965, Headquarters USAF directed a complete review of all parking and orientation plans for explosives-loaded aircraft. Each TAC organization reviewed their flight line explosives operations and accomplished their parking plans. Headquarters TAC analyzed each operation and furnished guidance to organizations where explosives criteria violations existed.

Most TAC flight line explosives operations now comply with the explosives safety distance (quan-

tity-distance) criteria of AFM 127-100. However, aircraft on many parking ramps are oriented in such a manner that forward firing weapons are pointed at another row of aircraft. Limited space precludes positioning aircraft in a manner that will meet minimum safety standards.

Safety surveys and weapons loading standardization teams have found several hazardous situations involving aircraft armed or loaded with forward firing weapons:

- At one base vehicles, towed aircraft, and taxiing aircraft were all passing in front of aircraft loaded with 20mm ammo and 2.75-inch rockets... while they were being dearmed!

- During a hangar inspection, an aircraft undergoing maintenance was found with hot guns!

- At another base aircraft were being armed while they faced toward a busy public highway.

- From time to time, armed aircraft have been seen sweeping an entire base, down a major highway, through a nearby town, and across a public golf course.

All of our explosives accidents emphasize the need to point aircraft with forward firing weapons in the direction of least concentration... away from other aircraft, equipment, facilities, or living quarters. We must improve aircraft orientation whenever possible. In any case, all aircraft loaded with forward firing weapons, regardless of where they point, must be kept in a non-firing configuration.

Personnel error accidents again stress the absolute need to continually enforce the use of approved check lists.

So far we've been real lucky. No one has been killed... yet!

The number and frequency of intentional barrier engagements by Air Force aircraft have increased dramatically in recent months. F- and RF-4 aircraft have made most of them. The procedure has become a routine recovery for the Phantom after hydraulic problems. In Southeast Asia where wet aluminum matting runways have presented serious directional control problems for the F-4, an arrested landing has often been the answer during inclement weather. There is little doubt that it will soon be common for Phantom crews to experience an arrested landing in the first few months they fly the airplane.

A discussion of the techniques and procedures involved in this revolutionary (for us) concept is in order. And happily, we recently came across a discussion of the problem by Captain Robert S. Kan. The following article is based on his observations and comments. Captain Kan is well qualified to speak on arrested landings. He recently completed an F-4 tour in Southeast Asia, and he has made at least 40 ...



ARRESTED LANDINGS

Arrested Landings

In the past, barrier engagements have been a private matter between the pilot, his airplane, and the equipment on the runway. And they have been a minimum-notice thing. Often the pilot himself had only a very few seconds to prepare for this maneuver... one he had never attempted, and seldom thought about.

When we talk intentional arrestment as an almost-routine landing technique, all this must change. First and most important, is coordination and understanding with the barrier crews. Although they can't help you get into the barrier, they are invaluable in helping you get out of it. This is important because in many cases other birds, still airborne, want to use the runway... in a hurry.

Barrier crews should meet with aircrews on the base to discuss procedures and problems. On several SEA bases, the barrier crews stand by their equipment during inclement weather. But on any base, they can come out to assist you if you give them reasonable notice and if procedures and understanding have been established in advance.

There's the matter of hand signals or light signals. For instance, after an engagement the ground crewman will want you to raise the hook, hold brakes, and taxi forward. You can use standard pilot-to-marshaller signals, but it sure helps when everyone concerned has reviewed them and agreed on the exact meaning of each signal.

BEFORE LANDING

Notify the Tower as far in advance as you can. Give them your estimated landing weight... or fuel weight and external store configuration, if that's easier. This will give Ops a chance to check the barrier charts and determine if you can make a safe engagement. Of course, you want to reduce your weight as much as possible. Max safe gross weight for the BAK-9 and BAK-12 arresting gear is 40,000 pounds. Max engagement speed is 190 knots. But these conditions should not exist concurrently. See the article, About Barriers, in the January issue of TAC ATTACK for more detail on this.

If you are flying anything other than an F-4, and contemplating an arrested landing, you must consider the engagement speed limit imposed by the strength of your hook. For details on this, see the article on page 16 of Aerospace Safety, December 1966, on hook strength.

It's important that you lock your shoulder harness. Tests have

shown that the occupant of the rear cockpit in an F-4 is more likely to be injured. The aircraft commander will lean forward with the deceleration of arrestment, but he's not as likely to hit his head on the instrument panel...as often...or as hard. At any rate, look harnesses!

And stow loose equipment. The deceleration is unusual, you don't experience anything like it in flight. Loose gear does strange, unexpected things as you come to a stop.

The pattern you fly will have to be dictated by the weather conditions and the nature of your emergency. In the Phantom, all your patterns will have one thing in common: a well-established "on speed" final approach. This is the only way to pinpoint your touchdown. Your gear call should be: "Gear, flaps, hook, and harness checked."

Of course, you want to have your hook down early. It doesn't affect flight characteristics in any way. If you have utility failure or problems with gear extension, it's best to wait until your gear are all indicating down and locked before you lower the hook. With nose gear up or unlocked, you probably do not want to use the hook...or the barrier.

LANDING

Aim for touchdown 300 to 500 feet short of the arresting cable. Most runways, even in SEA, have rectangles painted 500, 1000, and 1500 feet in from the end. If the barrier pendant is 1000 feet down the runway, for example, it is simple to aim for one of these sets of stripes. When the cable is installed at the runway threshold, a good reference is half-way down the overrun. If you have time, it's

smart to ask someone the actual length of the overrun...some are less than 1000 feet!

Make a firm, positive touchdown. In the F-4 you don't want to grease it in holding the "on-speed" light (use the Dash One procedure). Your point of touchdown is more important than a smooth landing. The hook will normally contact the runway before your gear. It will force the nose down and give you a "firm" landing anyway. Although not recommended in any bird, it is possible to engage the barrier while your nose gear is off the ground without causing damage. But try not to do it. In the F-4, again, if you land at the correct speed, you won't be able to hold the nose off at all.

During your short landing roll, concentrate on engaging the center of the cable. And once you bring power to idle, take your hand off the throttle(s). Rapid deceleration can cause you to stiff-arm the throttle, and this inadvertent increase in power will only stretch the tape out further. When the hook picks up the cable, it will be pulled up and point straight back like a good hunting dog's tail. The F-4 hook can swivel from side to side a few degrees to compensate for asymmetrical deceleration from the BAK-12 brakes.

Once the tape has reeled out as far as it's going after a high speed arrestment it will return you from whence you came like a slingshot. If you roll back over the cable it may become entangled in your gear. You should brake to a stop after rolling back a few feet...say five or ten. Unless you are prepared for it, you will not be able to steer. If you become confused, don't attempt heading corrections during the roll back. But if you decide to try nose wheel

steering, a good rule of thumb is: when the nose swings left, use left rudder to straighten out the aircraft...and vice versa.

If you made an approach-ender because of utility failure in the F-4, you won't be able to brake your roll back...that is, unless you and your pilot have discussed the problem in advance. It's best to have the back-seater pull the emergency brake handle right after barrier engagement. And, like the book says...hold it!

Of course, with utility failure you'll just stop the airplane and shut down...no question of trying to taxi off the runway.

AFTER ARRESTMENT

Raise your hook as you roll back, if possible. This will simplify the ground crew's task. If you forget, the cable will probably lodge firmly against your hook. If you've pre-briefed the procedures with the barrier crew, free the hook by adding power until you've stretched the tape out just enough to pull you back again. Then cut your power, and raise the hook as you roll back. But be sure the ground crew knows what you're going to do!! Hand signals are important. They expedite the entire operation...and your ability to rapidly free the hook from the cable may save airborne aircraft from diverting to another base.

Finally, we all need to "hangar-fly" the subject of arrested landings. Every crew that experiences one should discuss their reaction, problems, and lessons learned. Discuss each one at pilot meetings, briefings, and in conversation. Certainly, every Phantom crew should be thoroughly familiar with the techniques of arrested landings.



Surveys Of Places



On a recent safety survey we saw an F-100 out on the ramp, unguarded, on a set of jacks. Even the usual caution signs, to warn passers-by of the potential hazard, were missing. Looking closer, we found additional evidence of the 3-level thinking that set this one up: The bird was anchored in place by an MA-2 power unit . . . unchoked, but plugged securely into the airplane. Evidently, with this arrangement even a high wind wouldn't blow the bird over!

When the survey team met that evening and discussed that particular incident, the general subject of anchors and hold-downs led to seat belts. So it was that the following morning, the ground safety members of the team positioned themselves at the base POL farm to see how widely these lifesaving belts were being used. After checking vehicles for about an hour . . . and batting almost zero . . . they spotted a super sergeant driving a pickup truck.

This one obviously would have his belt fastened . . . and the team would be able to report to the commander that all was not lost. Smiling with anticipation, they

approached him and asked, "Are you using your seat belt?" The super-giant gave the answer we hear all too often, but with a new twist. "No, I'm not . . . but then, this isn't my truck!"

There's nothing new in the statement that an accident is a total waste if you can't learn something from it. However, we shouldn't have to bash an aircraft, clobber a "guy in a white hat," or level a little red schoolhouse to learn the lesson. Every possible type of accident and incident has already happened. The twist may be new, as well as the time, circumstances, and personalities involved. We can all see these accidents in the making, but active prevention doesn't occur until we react to each situation as we see it.

Two members of the survey team had a harrowing experience returning from a recent trip. They recognized the problem . . . and did something about it on the spot. Climbing through Flight Level 230 under positive radar control, they suddenly saw, and passed, a T-38. It had come within about 100 feet! When they queried the radar controller about it, they learned that

the T-38 was not IFR traffic and was not squawking IFF . . . radar was not painting it! Our shaken T-bird drivers asked that the controller attempt to contact the T-38 and tell him that his IFF was not operating.

Under these circumstances, I'd prefer to come up against a smaller caliber 38!

And an additional lesson learned in this one, of course, was to keep the old head swinging . . . all the time!

But our friends' problems didn't end there. Letting down to GCA, under IFR conditions, they heard the controller caution them about a bogey at one o'clock, four miles. Continuing their approach, they broke out at 2000 feet . . . and came face to face with a light civilian aircraft! They had to take violent and immediate evasive action to miss the flying FOD . . . that had been cruising just below the base of the clouds. Again, our T-birders asked the local control agency to attempt to identify the offender . . . so that someone could make that ?0/0*#!; aware of the hazard he had exposed himself to.

We find during our surveys of

places that many people think of a safety survey as merely an inspection with another name. This is not so. A safety survey is meant to help prevent accidents through the free exchange of information and ideas. We are often able to take action that has a direct effect in solving problems, reducing hazards.

At one base we learned of a runway approach that badly needed

repair. The centerline of the overrun had been severely gouged by a tail hook during an approach-end arrested landing. The washboard effect in the critical center of the landing area could easily cause the next hook to bounce . . . and result in a missed engagement! The host base people freely identified this problem to us . . . they took us out and showed it to us. And when we returned to

Langley, we were able to support their request for funds to repair the overrun. The project was approved within a week.

We can help you . . . but we need and solicit your help. Let's not wait for an accident to identify the hazards!

See you next month.

LT COL BEN B. BENIGNO
Chief, TAC Safety Survey
Team

Recognition

CREW CHIEF OF THE MONTH

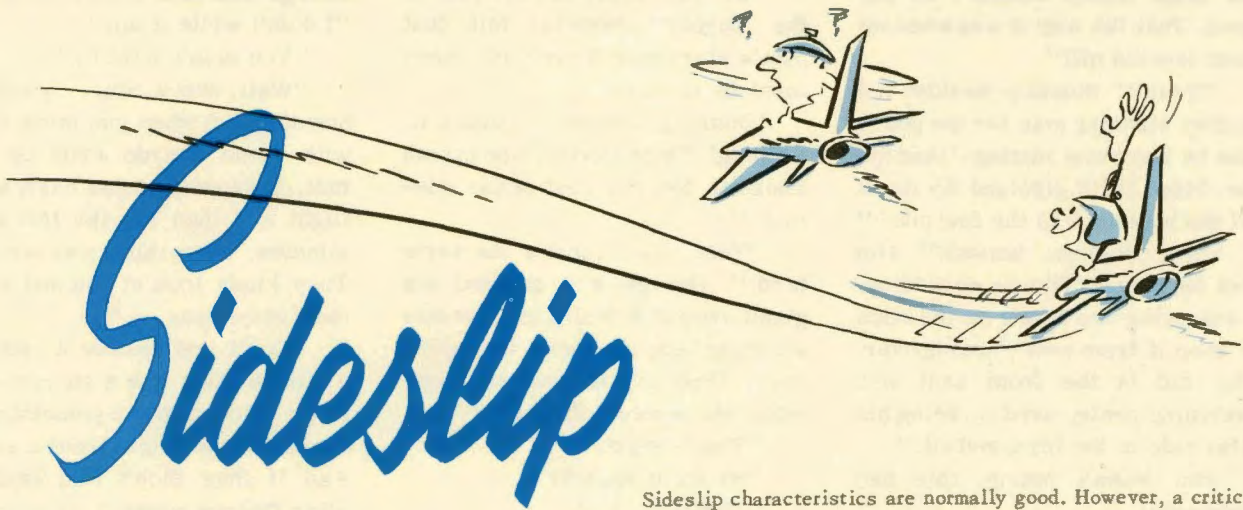
Staff Sergeant Arvel R. Holditch of the 4442 Combat Crew Training Wing, Sewart Air Force Base, Tennessee, has been selected to receive the TAC Crew Chief Safety Award for the month of February 1967. Sergeant Holditch will receive a letter of appreciation from the Commander of Tactical Air Command and an engraved award.



MAINTENANCE MAN OF THE MONTH

Staff Sergeant Terrance W. Rowley of the 427 Munitions Maintenance Squadron, Cannon Air Force Base, New Mexico, has been selected to receive the TAC Maintenance Man Safety Award for the month of February 1967. Sergeant Rowley will receive a letter of appreciation from the Commander of Tactical Air Command and an engraved award.





Sideslip characteristics are normally good. However, a critical limit exists beyond which the maneuver may progress into uncontrolled flight. The out of control condition is severe.

THE LOSERS

"One horse on you," Sideslip grinned with victory in his eyes, "and you're staying on trip' fours in one?"

Sideslip took the leather cup and went through his elaborate ritual of shaking it at the ceiling, the brass foot rail, and the mirror, before he gave it one last flourish and rolled the cubes out on the mahogany.

"Okay, okay," he exaggerated the irritation in his voice, "horse a piece... I'll come back at you."

His next three rolls only produced three threes. He was reaching for his wallet before Jim Watson finished shaking the cup.

"I was just starting to tell you about that wild one I had today when you insisted on losing another round to me, Slipper," Jim obviously had to talk about this experience, so Sideslip resigned himself to listen it out.

"When we leveled at about

35,000, I took the bird and let the student relax for a minute. As we accelerated, I was trimming forward, bit by bit... you know, the way you always do."

"Uh-huh," Sideslip grunted, waving two fingers at the bartender. "D'you suppose that guy'll ever look over here, Jim? What a loser! I can't even get the drinks after I lose the roll to you!"

"Well, it didn't feel like the trim was doing anything... stick was getting heavier and heavier." Jim continued, ignoring Sideslip's interruption. "Then, all of a sudden... the stick was moving forward all on its own... after I stopped trimming!"

Sideslip turned toward him, raising an eyebrow.

"Honest... I wasn't touching the trim and the stick just drove forward by itself. And when I tried to trim it back again... like the thing was too far forward now..."

the trim button wouldn't do any good. Just the way it was when we first leveled off!"

"Yeah!" Sideslip decided not to play straight man for the punch line he knew was coming. "And did the funny little airplane fly itself all the way back to the fuelpits?"

"No, Slipper, honest!" Jim was serious. "This is no kidding. I was using two hands on the stick to keep it from really nosing over. The kid in the front seat was breathing pretty hard...being his first ride in the bird, and all."

Jim wasn't joking, this had been real!

"Even when I had the stick all the way back, the bird was still going down. So I told the kid to try trimming on his stick...it didn't do any good!"

"So what'd you do? You didn't bail out, did you?"

"No, let me tell you...all I could do was honk back the throttle and pop the boards. I was still holding the stick all the way back. And after we'd lost a couple of thousand feet, she began to come out of it. Ailerons were normal the whole time, but for some reason...well, I guess the slab wasn't moving...or something."

"So you pulled out of the dive," Sideslip wanted to hear the rest of the tale, "and then what happened?"

"That was it...just like that!" Jim snapped his fingers. "Trim was normal again and everything...strangest thing in the world!"

"Couldn't help overhearing you, Jim." George Lambert leaned over Sideslip's shoulder. "What bird was that you had the trouble with?"

"Ohh...let's see. We were supposed to take 452 and it didn't come in on time so we took the spare. That was...573. That's right! 573."

"So what happened the rest of the flight?" Sideslip felt that Jim's story wasn't over yet. There must be more to it.

"Nothing, Slipper...that's it. Nothing! Trim worked fine in both cockpits for the rest of the mission."

"Yes! 573...that's the same bird!" George had carried his glass around Sideslip and was now standing between them, facing the bar. "You say it went ape right after you leveled off, right?"

"That's right."

"At about 35,000?"

"That's right."

"How about that!"

"How about what?" Sideslip knew he wouldn't like what George was going to say.

"Why, I had the same thing happen to me a couple of days ago...in the same bird." George said it.

"I'd sure like to see how they cleared your write-up, George." Sideslip was working up a good mad. "You wanna bet it was signed off: 'Unable to duplicate malfunction, checked in accordance with some damn TO...' just because they can't get away with 'ground checked OK,' any more!"

George was silent.

"What did they tell you when you talked to the flight control people in debriefing, Jim?"

"I didn't see any flight control people in debriefing, Sideslip," Jim sounded almost sheepish.

"So did the crew chief remember anything about what they'd found on George's write-up?"

"Nope."

"Well, did he say anything about it?"

"Nope."

"What'ja do? Just write it up in the Form and walk away?"

"No, Slipper," Jim looked at

George and then back to Sideslip. "I didn't write it up."

"You didn't WHAT?"

"Well, cheez, Slip...you know how they act when you come down with some weirdo write-up like that. It happened once early in the flight and then for the last forty minutes, everything was normal. They kinda look at you and shrug their shoulders..."

"Don't you realize it could be a simple thing like a shorted wire in the stick grip, or something? It wouldn't take long to trouble shoot. And if they didn't find anything after George wrote it up, your experience would just make them look that much harder. Jim, I..."

"Slipper," George interrupted, "at this point I probably shouldn't open my mouth, but I didn't write it up either...for the same reason. It happened once, early in the flight. It could have been the student with his big hooks where they shouldn't be...or anything! And nine times out of ten, they'll never find a malfunction unless you land with it still malfunctioning."

Sideslip was at a loss for words. This he had not expected! Not from two fellow instructors!

He turned to the bar, carefully placed his empty glass on the far side and picked up a full one. He took a long, slow drink. Then he turned back to his two embarrassed friends.

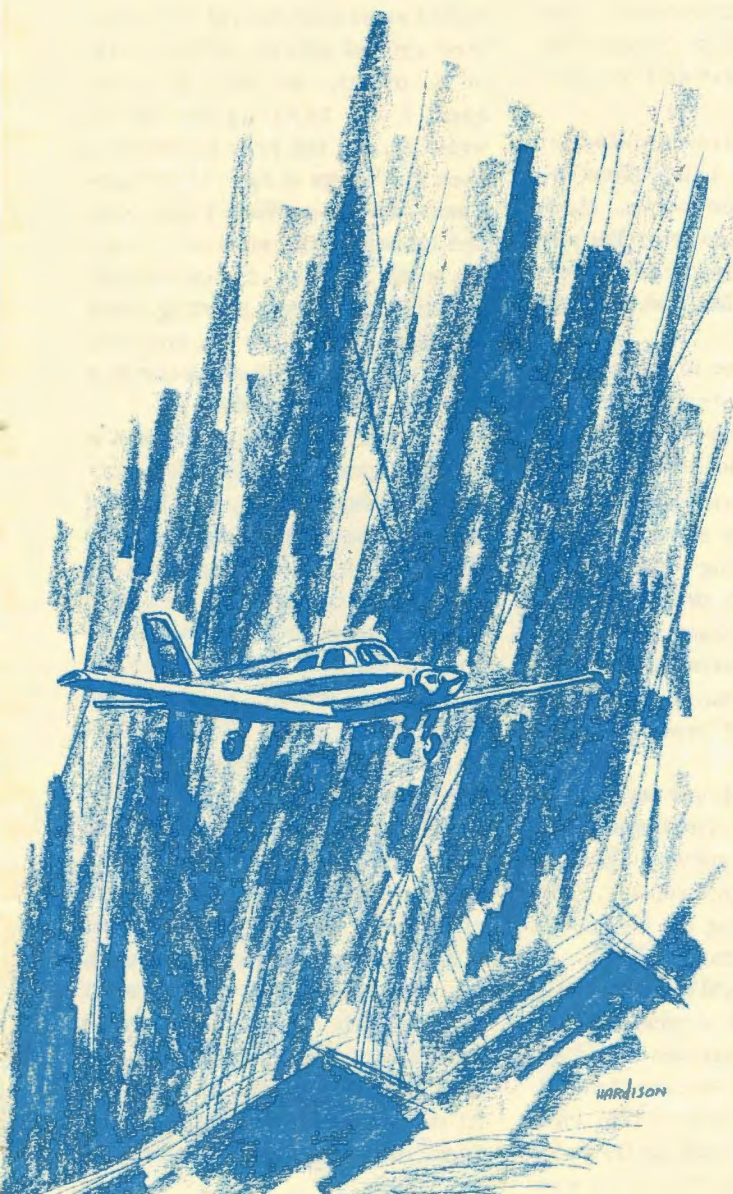
"And I thought I was a loser!" Sideslip found his voice. "This is the way you handle the airplanes I may fly right after you! You guys scare me!"

Sideslip picked up his hat from the table as he went through the door. Outside, he paused to see if George or Jim was coming with him. Then he turned and strode off toward Maintenance Control.

my only ERROR

An aero club incident that miraculously avoided tragedy... told simply, honestly, by the pilot.

Do you agree with his decisions?



I had flown the route twice before and looked forward to the holiday. My buddy decided to go along as a passenger. With 120 hours of light plane experience behind me, I had no qualms about mountain flying.

When I phoned Flight Service from home for the weather, they gave me a route picture of 5000 feet scattered and 10,000 overcast. There aren't a lot of reporting stations in that area, but one station off my route reported a 600 foot ceiling. My destination was 10,000 broken. They gave me winds at 290 degrees and 18 knots at 8500 feet. I assured myself that it was good VFR flying.

When I arrived at the aero club I called Flight Service again. They gave me the same weather and forecast a cold front with considerable moisture moving into the area by early evening. I planned to get off about noon and I estimated my time enroute at two plus thirty. I'd beat the front, and the existing weather still sounded like reasonable VFR to me. I filed my flight plan while I still had Flight Service on the phone.

I did a little flight planning while my buddy serviced the airplane. The route was a straight line and I computed a 304 degree wind heading. The highest terrain along my route looked like 7000 feet. I noted a 7800 foot peak a short distance off my track. Flight planning finished, I started my preflight. My friend had loaded the baggage, topped off the tanks... about six and one-quarter hours of fuel... and added a quart to the oil tank. He even cleaned the windows inside and out. I double-checked his work, ran a full preflight, and we climbed on board.

During taxi I noticed the altimeter was 80 feet off as usual, but the rest of the flight instruments and engine runup checked okay. The high, light overcast was clearing. Tower gave me winds calm and takeoff clearance. I contacted a Flight Service station as we climbed thru 3000 feet and opened my flight plan at 1205 hours. On my 304 degree heading, I observed two layers of clouds directly ahead. The lower layer was slightly cumulus and very thinly scattered. The upper layer definitely was a ceiling with sizeable cumulus.

About 50 miles out I climbed thru the lower layer at 6500 feet. I leveled at 8500 feet, trimmed the bird, and leaned the mixture for 2500 rpm cruise.

After 30 minutes and 70 miles the lower deck was still light and scattered and I passed under the first of the estimated 10,500 foot ceiling of cumulus.

Another ten minutes and the lower clouds increased to broken and started to build. The upper deck was solid. I thought I could see all the way thru the front. Occasional glimpses of the ground convinced me we were about four miles north of course. I corrected to 300 degrees. Ten more minutes ... a total of 50 minutes out ... the ceiling above was still solid and the lower clouds were broken and building. As a precaution I started climbing to 9500 feet.

An hour now, and the clouds below had only occasional breaks. The ceiling overhead remained solid. Cruising at 9500 feet and seeing a few clouds at our level, I contacted an FAA radio station and described the cloud layers and their altitudes. In a few minutes I was dodging clouds, with only occasional glimpses of the ground. I contacted another radio station and made certain they knew I was flying at 9500 feet.

Almost immediately, I had to hunt holes in the clouds at my level. The ground had almost disappeared from view. I knew I was near a 7800 foot peak so I stayed on course.

One hole proved a dead end. I made a one-eighty and held my altitude. Heading in an easterly direction for a minute, I found a big opening on our left. It looked a lot better than the first one, so I tried it. I followed it on a 350 degree heading for several minutes. Then it closed.

Another 180 degree turn and I headed southeast until I found a hole in the lower deck. I was boxed in!

The only VFR way out was down

thru the hole and follow the terrain. It was a tight descending turn. The closeness of the ground surprised me.

We were farther north of course than I realized. At 7000 feet we had a few hundred feet between us, the ground, and the clouds. While we descended my friend helped tune a VOR station. We were on the 090 degree radial. But, I didn't have a plotter and could only guess how far north of course we were.

We skimmed the ground, still heading north, and descended below the rim of a large canyon. The canyon looked clear so I followed it west.

In the canyon I transmitted our first MAYDAY on 121.5. I flew below the rim of the canyon, close enough to climb up over the rim and land if the clouds got worse.

I transmitted MAYDAYs every two minutes.

Turning a bend in the canyon, we faced a rain storm filling the canyon and spilling over the sides. I climbed out and headed south.

Just over the rim we spotted a runway. When the runway passed under my right wing I circled left and rolled out on downwind. My close-in base leg was a continuous turn and the crosswind blew me off the runway heading. I decided to try for the road leading to the runway.

When I got a closer look at the road and the surroundings, I decided to try the runway again. I looked back at the runway. The clouds were closing in. We landed on the road ... straight ahead.

As far as I could tell there was no damage to the airplane. I figured the wheel fairings would be clogged with mud. Because I didn't want to miss a break in the weather, I taxied back up the road toward the runway. The road was

muddy and slippery and the shoulders were a foot, sometimes two, above the roadbed. Our main gear was wider than the ruts in the road and the nose gear rode between the wheel tracks. We taxied about a half mile and came to an intersection. Not knowing which road to take, we shut down and walked to the top of a hill. We couldn't see the runway, but decided on the direction to taxi.

When we started up and taxied over the hill, we encountered small trees close to the road. We taxied around some and pulled the bird around others. After a mile or so of this, we hit a dip in the road. I was taxiing too fast to avoid it and the prop picked up a rock and threw it against the nose wheel fairing. When I shut down and inspected the airplane, I found the nose wheel fairing almost touching the wheel. Starting about six inches from the tip, one prop blade was deflected about one inch from its normal profile.

I started the engine and ran it up to full power, looking for vibration, unusual sound, or loss of power. I noticed nothing unusual except a slight hissing sound. So I continued taxiing, avoiding bushes, trees, and washouts in the road. About two miles farther, we encountered small trees on both sides of the road. We finally got around them by pulling and pushing the airplane.

The road was lined on both sides with rocks too big for our wings to clear, so we left the airplane there while we walked about a half mile up the road. When we reached the runway we found it very muddy and covered with tumbleweed. Heading back to the airplane, we decided to wait until dark for clearing weather and spend the night in the airplane, if necessary.



The road to the runway looked like our best bet for takeoff. We paced 360 paces from the runway to a tree close to the road, and 270 more paces beyond the tree to the airplane. We had almost 1900 feet available and some of it was downhill. I thought this would help compensate for the road condition and the bent prop.

While we waited for the clouds to clear, I checked takeoff tables in the airplane. I figured we needed about 1200 feet of runway to clear a 50 foot obstacle at our 7000 foot altitude.

Pretty soon we saw a good size break in the weather coming toward us and decided to take off. I started the engine, ran it, checked mags, pushed it up to full throttle... alert for vibration... set half-flaps, released brakes, and tried a downwind takeoff.

I aborted. We weren't accelerating fast enough to make it.

I taxied up the hill toward the runway, turned around, and tried an into-the-wind takeoff downhill. This time I waited until half way down the road and set three-quarter flaps.

The airplane leaped off and I turned to avoid the trees. As yet, I had no airspeed indication. I did get an airspeed reading after level-off. As we accelerated I raised the flaps and headed toward the clearing in the weather.

I contacted an FAA radio station and told them we were airborne. We flew above the terrain and below a scattered cloud layer to our destination, landing at 1843 hours. Braking was uneven on landing, but seemed to correct itself. I didn't experience any excessive vibration from the bent prop... only the slight hissing.

After tiedown we found both wing tip lights missing. The next morning transient alert told me about a crease in the left wing tip. It was my opinion that the weather would be too bad for a VFR flight back home even if the airplane was airworthy.

I believe that my only error on this flight was in not returning directly home upon encountering the first dead end in the front. I trust that my previous inexperience with any type of clouds will not be held against me.

For the many thousands of us who call ourselves aviation enthusiasts but don't fly Air Force airplanes, the aero club is a wonderful opportunity to experience the thrill and challenge of piloting an airplane. And the decreased cost to the individual makes it possible for many to participate who would otherwise be unable.

Among the many advantages that make aero club flying attractive, are the experience, training, and guidance that is available from the professional flying organization that is the Air Force. But sometimes we take too much for granted... should we use the word complacent? We allow the local club, organized with a great flurry of optimism and support from all hands, to deteriorate. We forget that the help and guidance must be constant and continuing.

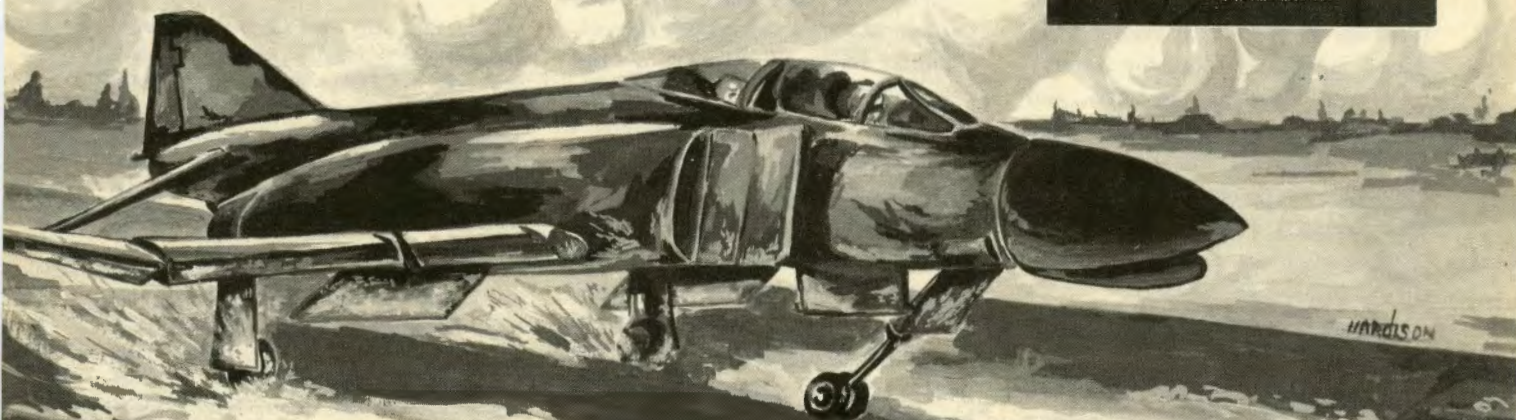
The professional aviation community, both military and civilian, long ago graduated from the Saturday-afternoon-stick-and-rudder-club approach to flying. But time and again, our aero clubs have been brought up short by a terribly close call like this one... or a tragic accident. Only then do they take a long look inward, reorganize, and retrain.

We do our club members a great disservice when we allow them to practice their avocation with less than a complete understanding of all the lessons we have learned about flying... our vocation!

-Ed

TACTICAL AIR COMMAND

PILOT OF DISTINCTION



Captain Robert H. Irwin, 47 Tactical Fighter Squadron, MacDill Air Force Base, Florida, has been selected as a Tactical Air Command Pilot of Distinction.

Returning from his first solo formation mission in an F-4C aircraft, Captain Irwin lowered the landing gear and heard and felt a mild explosion. His flight leader reported that the nose wheel was only partly extended and hydraulic fluid was streaming from the well. Although Captain Irwin applied positive and negative G forces, and executed the emergency gear lowering procedure, his nose gear did not extend. He was faced with imminent failure of the utility hydraulic system which would result in loss of normal braking and boosted rudder control, leave him with only half flaps available, and the possibility of

engine auto acceleration. After making one touch and go landing in an unsuccessful attempt to jar the nose gear loose, he asked that the center of the runway be foamed. Captain Irwin landed with less than 2000 pounds of fuel remaining and held the nose off until it dropped below normal position. He then deployed the drag chute and started braking with the emergency system. He stopped the aircraft 800 feet beyond the end of the foamed strip. Damage to the aircraft was very minor.

Captain Irwin's prompt and correct actions when faced with a serious emergency on his seventh flight in the F-4C indicate the highest degree of professionalism and readily qualify him as a Tactical Air Command Pilot of Distinction.

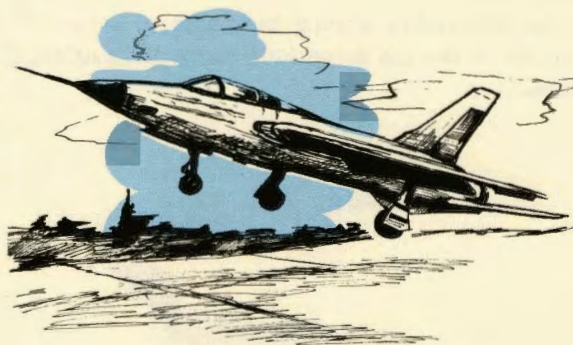
TAC TIPS

holy sink hole!!

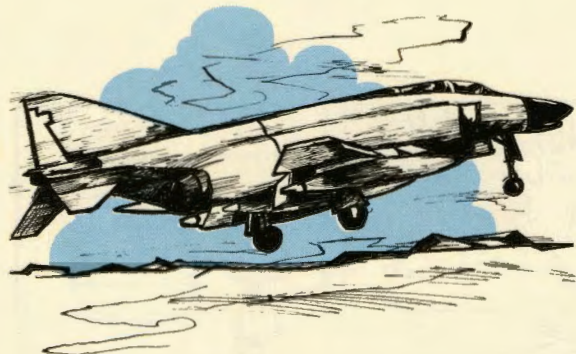
While attempting to land in high windy surface gusts, the F-105 pilot found himself sinking on final approach faster than he thought he should. Easing back on the stick, thinking this would correct his problem, he shortly found himself very nose high... and still sinking. His touchdown was three point. Two main gear and the aft section!

The unit reporting this one said they had rebriefed this particular pilot on his incorrect ways and now consider him above average in this phase.

Wonder if they impressed him with the fact that the only way you avoid that sinking feeling... or recover from it once you find yourself there... is power? Sufficient and timely power!



premature panic



After his sixth pass across the range, the overseas F-4 pilot noticed his utility hydraulic pressure at 1800 pounds and PC-2 at 1650. While he watched, the utility pressure dropped to 1600 pounds. He immediately declared an emergency and landed on the strip at the range. Throughout the pattern his hydraulic readings remained unchanged. He used emergency systems for flaps and gear, and pulled the emergency brake handle.

But on the rollout he realized that his nosewheel steering was working! And after he parked, he found that the speed brakes worked okay. No telelight panel warnings were illuminated!

When the crew checked around the aft cockpit, they found the number two hydraulic and pneumatic pressure circuit breaker popped. They reset it. Both the utility and PC-2 gages came back to life.

lessons

A C-130 from another command ran off the runway recently when its nose wheel cocked on landing. Damage to the aircraft after it struck obstacles close to the runway placed the mishap in the Minor Aircraft Accident category. Maintenance investigation revealed contaminated hydraulic fluid in the nose wheel steering system. The steering control valve had positioned the nose gear approximately 45 degrees to the right prior to touchdown.

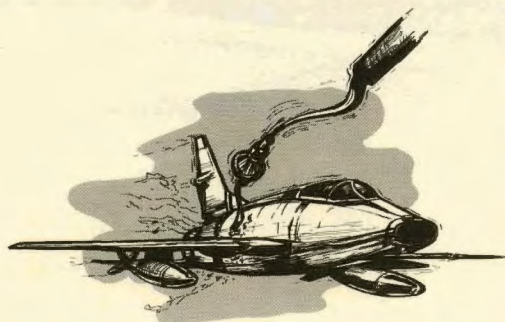
Some of the lessons learned:

- It pays to check the nose wheel position indicator before landing.
- When you know your nose wheel's cocked and you must land, try turning the nose wheel steering in the opposite direction as far as you can. It would have helped in this case.
- Remember during moments of stress that the test switch on the ice detection panel will not extinguish engine fires.

by Capt V. C. Hughes
HQ TAC (OSF)



snap the whip



The tanker and the F-100 leveled off at the bottom of their block altitude. The Hundred herder had followed the tanker toboggan without strain but dropped back after level-off. He slowly reached full extension on the boom hose. The hose whipped vertically twice and tore off the probe. The broken probe went over the wing and past the slab. Both tanker and receiver pilots agreed to try again some other day.

Maintenance troops found the refueling probe failed aft of the coupling. The whipping hose had overstressed the probe beyond design limits. They checked the IFR probes on the rest of their birds... all checked okay.

PEANUTS



Courtesy of Daily Press, Newport News, Va.
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TAC TALLY

1 JANUARY

thru

31 DECEMBER 1966

These charts, a synopsis of our accident prevention efforts for the past year, furnish some food for thought:

...TAC active units were successful in reducing their combined accident rate, but only slightly. Pilot Factor leads the list of cause factors, but the effect of low-experience students in intensive training programs doesn't seem to be a complete answer. Only half of the Pilot Factor accidents involved RTU or CCT students!

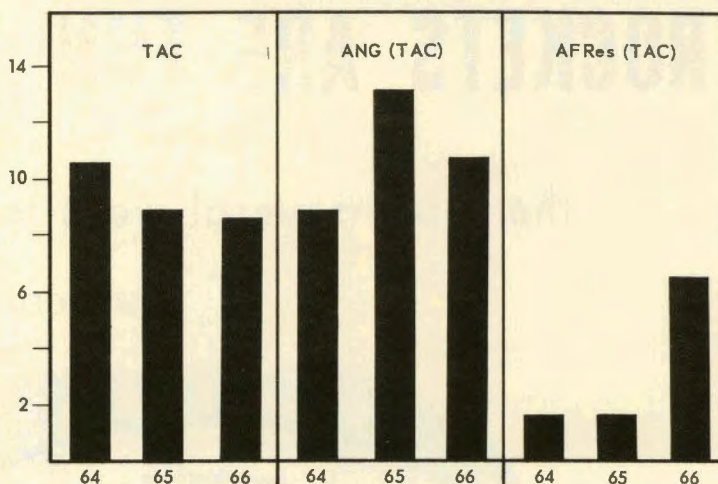
...The ANG units assigned to TAC did a commendable job of reducing their collective accident rate. This reflects the increased professionalism of all concerned and the happy results of conscientious supervision.

...TAC-gained AFRes units, on the other hand, tumbled from their impressive safety record of several years running with a 275 percent increase in accident rate. Here, personnel factor mishaps predominated, indicating a decreased emphasis on supervision and control.

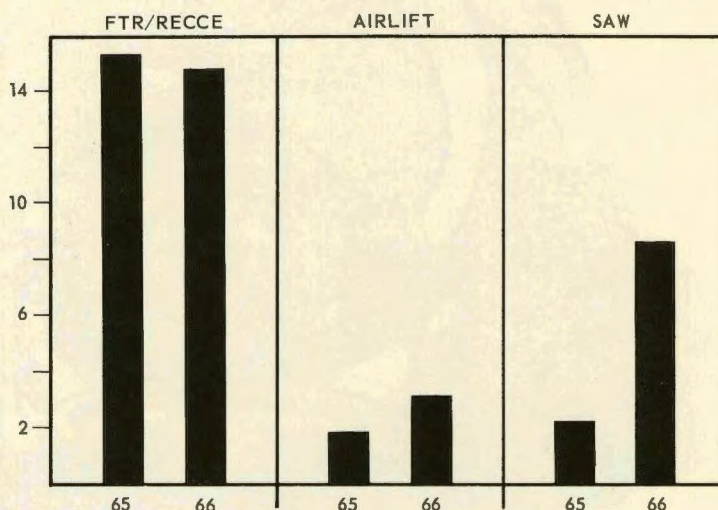
...Comparing the accident rates by mission and equipment confirms past history. Our greatest exposure and largest losses occur in the high performance fighter-type aircraft. Obviously, this area demands maximum attention to all phases of accident prevention...systems design, air and ground crew training, facilities, and supervision.

...The combined causes of all the major accidents reported to TAC show a traditional pattern: Aircrews and hardware lead the list and an unsatisfactory proportion of the accidents remain unsolved. But the contributing causes are revealing... personnel error (pilot, maintenance, and supervision) outweighs all other factors by a hefty margin. This indicates that even when hardware, facilities, or other factors have failed, the people involved could have prevented...or decreased...the accidental losses we suffered.

MAJOR AIRCRAFT ACCIDENT RATE

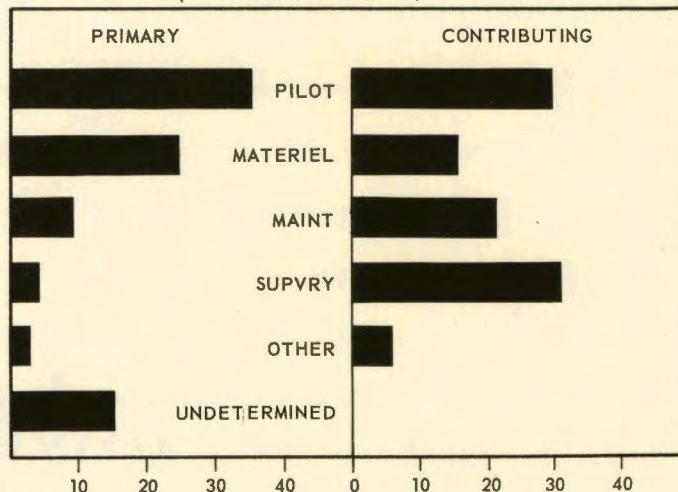


MAJOR AIRCRAFT ACCIDENT RATE (ALL TAC Active & Reserve)



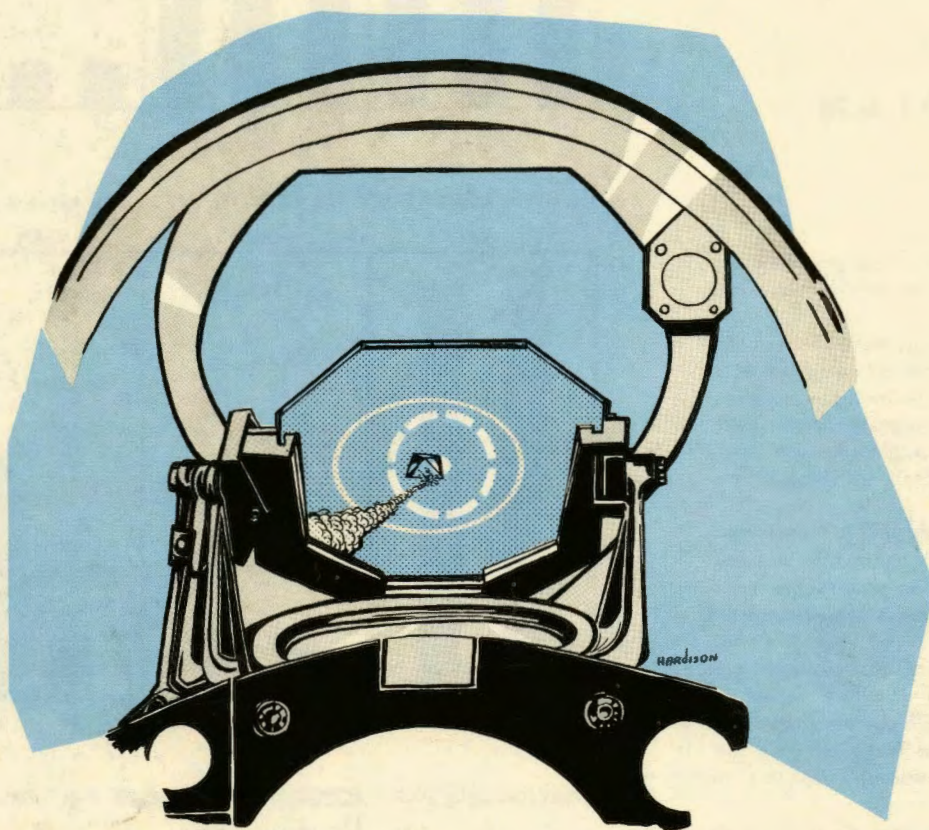
MAJOR AIRCRAFT ACCIDENT RATE CAUSE FACTORS 1966

(ALL TAC Active & Res)



ROCKETS ARE FUN TO WATCH !

there are several ways to end a rocket pass
...unscorable at 12 o'clock



...too steep ...too fast ...late corrections
...watching your rocket

....but please don't !