

TAC ATTACK

OCTOBER 1966



FEATHERED FRIENDS ?
... page 16

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TAC ATTACK

for efficient tactical air power

OCTOBER 1966

TACTICAL AIR COMMAND

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Feathered friends?

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Angle of ATTACK

THE CHALLENGE

Inexperience presents problems. When a work force lacks a normal balance of highly experienced supervisors, problems arise. This is true in a work force of aircrews, mechanics, GCA operators, or office workers.

Inexperience also presents challenges! When the work force is out of balance; when many of the experienced leaders are missing; every man in the force is faced with greater responsibilities! Those who are experienced must spread their understanding and knowledge farther. Those who are learning a new routine or are working with equipment new to them must take extra precautions. The challenge to safely and efficiently complete the job applies to all who are involved in it.

Much of our work force in TAC today is out of balance. Our experienced leaders are needed overseas. We are training new people in many fields. Many of our people are accepting the challenge of responsibilities which would normally be carried by men with a great deal more experience.

Too often, however, we in a supervisory position are not accepting the challenge. We expect a man to take full responsibility for a job only because the position he is filling carried that responsibility in the past. As a result, we sometimes ask too much of well-meaning but inexperienced people. We are not picking up the challenge to guide and watch those with less experience than ourselves . . . to insure the job is completed on time, correctly, and safely.

We must lead and train those in the force who are still gaining experience. We can not afford to allow training to stop when a man graduates from school, when he completes FTD, or when he has received a specified amount of instruction. We must continue to train each person through active supervision, briefings, procedures review, and discussion.

This is the challenge!



the challenge

Homer C Boles

HOMER C. BOLES, Colonel, USAF
Chief of Safety

Ever since we started thinking about escape from high performance aircraft we have accepted the catapult . . . ejection . . . as the best method. In recent years we have been reaching for true zero-speed, zero-altitude escape capability. And we've learned that the ejected mass, efficient and successful in a high-Q environment, is inherently unstable in low-speed, low-altitude situations. The ejection seat's center of gravity must be maintained with almost impossible precision to avoid tumbling and entanglement. Incorrect CG in the catapulted mass creates parachute deployment problems and undesirable trajectories. These limitations have opened the field to a completely new and different approach to the problem . . . Why push? Why not pull the pilot out of his airplane?

YANKEE, an industry-developed new approach to air escape, uses a tractor rocket extract a man from his aircraft instead of boosting him out in an ejection seat. This greatly increases stability and simplifies the problem of escape at the low and slow end of the spectrum. It can be installed in the A-1E with only minor modification to the canopy . . . the installation requires about two days per aircraft.

At this writing, qualification testing has been completed and installation of the YANKEE system in the A-1E fleet is to start this fall.

WHAT IT IS

The heart of the YANKEE escape system is the extraction rocket. An unusual type, it's nozzles are located on the leading end rather than the trailing end. It pulls (yanks) its payload instead of pushing it. The two nozzles at

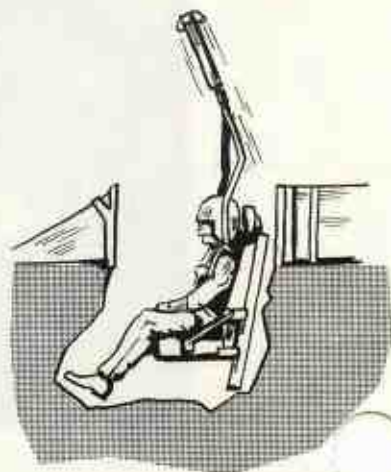


YANKEE SEAT

...extraction, not ejection, for the Spad

When the A-1E started coming out of mothballs and going into combat in Southeast Asia, the need for an aircrew escape system soon became apparent. The immediate answer was, of course, to install an ejection seat. But there were problems. Canopy area, the escape opening, in the A-1E was limited; cockpit area was limited.

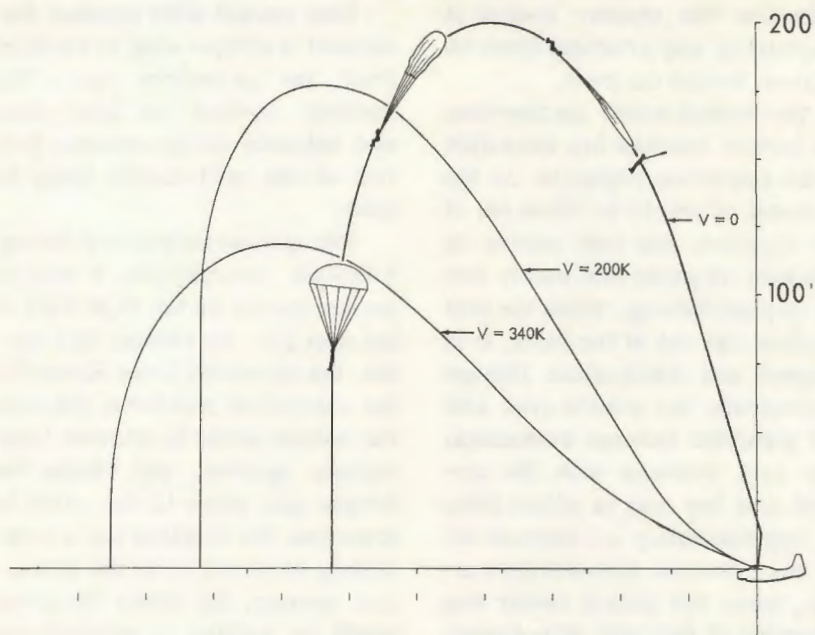
A conventional ejection seat would require major modification of the windshield, canopy, and seat. And most important, the A-1E operates in the low-altitude, low-air-speed regime where catapult escape systems have experienced the most troubles. The stage was set for introduction of an aircrew extraction system.



flected 30 degrees back from the leading end and twisted in order to rotate the rocket as it burns. The man being extracted is suspended in a torso harness twelve feet below the rocket by two nylon pendants, safe from heat, blast, or excessive noise.

Because of YANKEE's unique operation, the seat in this system is somewhat secondary. Actually, YANKEE is capable of lifting a man out of any seat. But to make escape safer through a small opening, the system comes with a seat whose bottom folds down during extraction. The man's body straightens as he is lifted and he leaves the airplane in an almost upright position.

Similarly, almost any standard personnel parachute may be used with the extraction system. But to give YANKEE a true zero-altitude, zero-airspeed capability, a ballistically deployed parachute is incorporated in the



TRAJECTORY PATHS AS INFLUENCED BY SPEED

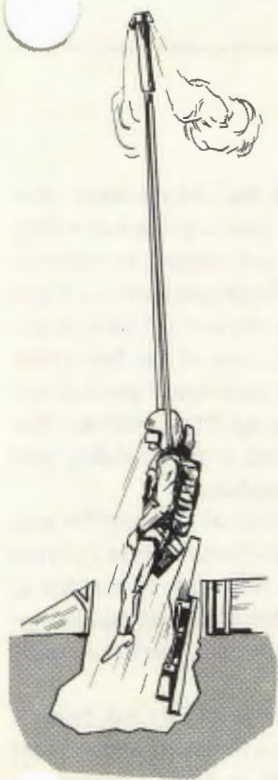
system. This provides rapid, positive parachute opening under all conditions at low altitude. In

high altitude escape, an aneroid control delays parachute deployment until the extracted man descends below 15,000 feet.

In the absence of an ejection seat to stiffen his spine, the extracted man must have some other means of keeping his torso reasonably rigid against airblast. Therefore, the parachute (either back or seat type) is designed with a back frame and a head rest. These remain with the man until he discards the parachute after landing.

HOW IT WORKS

YANKEE is a single-motion system, activated by either hand ... or both ... on a flexible, circular handle between the crewman's legs. This immediately fires small explosive charges which blow away the major portion of the sliding canopy. The extraction sequence may be initiated regardless of canopy position. One-half second after system



ATTACK



activation the tractor rocket is launched by gas pressure from its location behind the seat.

The rocket motor ignites when the rocket reaches full extension of the extraction pendants. As the crewman starts to be lifted out of the airplane, the seat moves up with him to guide him safely into the escape opening. When the seat reaches the top of the rails, it is stopped and mechanical linkage disconnects the pilot's seat belt and shoulder harness restraints. The seat remains with the aircraft and the man is pulled free.

Approximately 1.2 seconds after the crewman actuates the system, when the rocket motor has expended 95 per cent of its thrust, a guillotine severs the pendants. The rocket uses its remaining energy to leave the area. Immediately thereafter the pendants are cut loose at the parachute harness and fall away.

One second after pendant disconnect a drogue slug is expelled from the parachute pack. This forcibly deploys the pilot chute and extracts an appreciable portion of the main canopy from the pack.

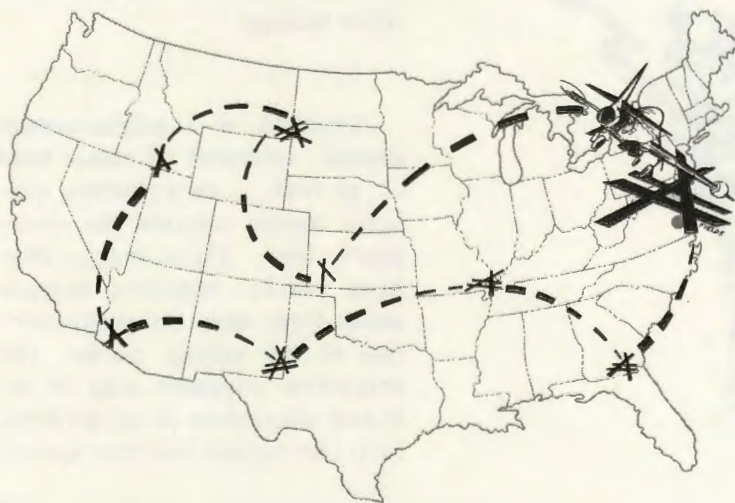
For manual bailout or ditching, YANKEE incorporates a manual escape handle on the right side of the seat pan. By raising this handle, the crewman frees himself of the extraction pendants, disables the rocket motor to prevent inadvertent ignition, and blocks the drogue gun from firing. After he abandons the airplane he is completely divorced from the extraction system. He opens the parachute by pulling a conventional D-ring.

An important advantage of the extraction system is that either tandem or side-by-side crewmembers may escape simultaneously. No special sequencing is

required because the rocket blast is well above them and deflected. In the A-1E installation launchers which eject the rockets for each pilot position are angled slightly away from centerline. The crewmembers are positively separated as soon as extraction begins.

Conversion of the A-1E to the YANKEE system involves minimum changes in the cockpit and uses existing hardware wherever possible. The rails which attach the seat to the aircraft are mounted to the same attach points as the original seat. The same electric seat-height actuator is used. Only a few circuit breakers and some armor plate need to be relocated. Due to the fold-down feature, there is sufficient fore-and-aft room to allow all pilots to wear a back pack parachute and a conventional survival kit.

SURVEYS OF PLACES



Back in the days when this writer was just a plain old safety officer... and subject to surveys by higher headquarters... I got caught in a corner I'd like to define for you. One of the few areas on the base that never gave us any trouble was the POL section. For years we had a relationship that was unbelievable.

The NCOIC of the section was a huge seven-striper who carried a big stick. Nobody tried to goof up on him because the subsequent rewards were very, verrrry, painful.

Well, we returned from a three-week overseas deployment one day just in time to greet the Numbered Air Force safety

... down for a look-see. Leaping out of our trusty safety vehicle, we immediately started off to show the visitor a good operation.

Two blocks later it started.

There at the pits was a young airman busily defueling his bird. Only trouble was that the ground wire was draped conspicuously over a nearby fence. And a hundred yards down the fence was the flight chief calmly observing the procedure. Several dozen bites later we left the bleeding supervisor braced against the self-same fence. Driving on, we busily assured the higher headquarters type that this was a once-in-a-million occurrence.

Hah! Ten minutes later we found a T-bird being refueled on the transient line... sans grounding of any sort. I couldn't believe it!

Forty minutes later we observed a third grounding violation! Completely crushed, we crept on to POL. Seems like Super Sarge had suddenly received orders to SEA. His replacement, just back, didn't believe in all that safety jazz. A believer he became, and quite suddenly! But it just goes to prove that safety is an everyday job in every corner of the base.

Recently, while touring a munitions storage area, we were intrigued to find a rocket assembly operation with the assemblers hand tightening the rocket heads. A little questioning revealed that all the torque wrenches were in for calibration. And the unit had to have some two-point-seven-fives for the day's operation. Did you ever try to put just sixty pounds of torque on something... using only your hands? And about that calibration schedule...

Another outfit we surveyed was doing extraction runs with their birds over an approach zone

which had a long, flat run-in. Result... long, flat, low approaches. There was some severe objection to our criticism of this technique until the unit became involved in a major exercise. Their extraction zone was just past some tall trees. The patterns which resulted (flown in front of some pretty big brass) produced several embarrassing comments. Those gas drums leaving the pallets and bounding across the terrain were really spectacular!

Still another base had a nice wooded area right off the end of their runway. Sooooo - the engineers built an obstacle course dead on centerline about 1500 feet from the end of the runway. Seems Base Ops and Safety were not read in on the plan until construction was completed. About those dropped tanks on takeoff...

Then we came across a unit dropping cargo with a parachute low altitude delivery system when a malfunction occurred. Three fifty-gallon fuel drums zoomed nicely across two aircraft of a sister service, parked near centerline beyond the DZ. Bombing our allies doesn't do much for good inter-service relations. But a good look at your escape routes beyond the drop zone might be in order. Those two aircraft weren't parked there when the DZ was established.

A final word on a survey subject which seems perennial. Incident reporting. Units are still reluctant to report all incidents. For instance, paragraph 4f(2) in the new AFR 127-4 includes foreign object damage as a reportable incident. Paragraph 4f(3) includes all items inadvertently dropped from aircraft which could cause injury or property damage. And item 4f(1) covers a host of items that must be reported when dam-



age occurs unless fair wear and tear can be proven.

Corrective action reported on incidents and accidents is still less than adequate. We continue to run into statements like "all pilots briefed not to land short," and "all pilots instructed not to land gear up." I won't be too surprised to see one telling all pilots to take off before they reach the end of the runway.

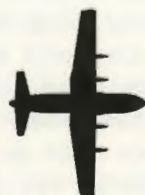
We are not asking the important questions: Why was the approach too low or too slow? What distracted the crew to the point that they neglected the gear warning horn? Why didn't the pilot abort earlier? These questions are not receiving the attention that should result from a complete investigation.

We will be checking on the adequacy of your investigations in our surveys. See you next month.

LT COL PAUL L. SMITH
Chief, TAC Safety Survey
Team

A

2ND LOOK



The C-130, with 35 passengers and a crew of three, was almost two hours out on a flight overseas when the AC generator on number three failed. The Aircraft Commander shut down the engine and received clearance to return to homebase. As he completed the turn, he saw rpm on number four begin to fluctuate. It started with about 1/2 per cent fluctuation and slowly increased to three per cent. The crew had to place it in flight idle to control the severe beat and yawing they experienced. Rpm on number four settled down to 98.5 per cent. And every time they tried to move the throttle out of flight idle, they got a three per cent surge.

Without hesitation, they changed their destination to the nearest friendly field and started descent under radar control. Losing altitude all the way, they managed to sight the 5000 foot runway at three miles and put their beast safely on the ground in the first 1000 feet. A whole crowd of anti-skid brakes brought them to a sane taxi speed in time to start a 180-degree turn before they reached the far end.

It was in the turn that they saw number one engine unwind! As it passed 50 per cent they shut it down.

With little option left them, they cleared the runway, shut down the one remaining engine, and decided

to do a little trouble-shooting. Number three... generator failed; Number four... leaking torque cylinders; Number one... cracked blue harness.

For corrective action, the report said: "All crews will be briefed."

After a second look at this one, we hesitate to touch the typewriter!

We've lost one engine in a two-turbine machine a time or two... the pucker factor is definitely present, but the bird flies home right nicely. We've never lost one-and-one-half! And three out of four gone on the Herk sounds like just a little more than we'd like to read about very often.

What in the world do you suppose the Ops guys briefed their crews on???

If only because the story would have read so tragically different had they been farther out over the cold, dark ocean... C'mon, fellas, can't we do a bit better than just brief the crews? How about learning why the generator failed, why the torque cylinders leaked, why the harness cracked? Then we can all get our heads together and do something constructive. Certainly, we haven't accepted engine ures... one at a time or all at once... as a necessary evil in aviation.



Climbing his Voodoo thru 12,000 feet at about 460 knots, the pilot felt a landing gear fall to the down position. The red light in the gear handle came on and the horn started to blow.

He immediately pulled the throttles to idle and put out his boards. As the airspeed decreased thru 250 knots, he lowered the gear handle. All three gear showed down and locked with no further incident.

When maintenance investigators took a look, they found the left inboard gear door, its arm and link assemblies, and the left main tire had to be replaced. Digging deeper, they learned that the left main gear uplock cylinder had been removed and replaced before that flight. When it was re-installed, a hex nut that should be on the outboard side was installed on the inboard side of the cylinder. This prevented the uplock

fingers from going all the way over center and positively locking the door.

Although the installers performed a retraction test, they failed to discover the murphy. Reason was they didn't remove the lower fairing door during the test . . . and you can't inspect the uplock when the gear is up with the door in place.

A second look at this brand of maintenance makes us wonder about the motivation and morale in the outfit. The maintenance troops' unconcern is apparent. Had they looked in the -2-6 for the bird, they would not have installed the cylinder improperly. And their unthinking approach to the retraction test that was not a test, implies they lacked interest . . . to be kind . . . or lacked understanding of their job, its importance, and its life-or-death impact on others.



Returning from a dual night formation mission, the TF-104 student pitched out for landing. His downwind and base leg looked excellent to the instructor in the back seat. On final the student was a little high, but he corrected promptly when the instructor mentioned it to him. Airspeed was correct for their fuel on board, and initial flare over the overrun was good. But as the student completed his landing attitude flare over the runway, the instructor saw they were rounding out a little too high.

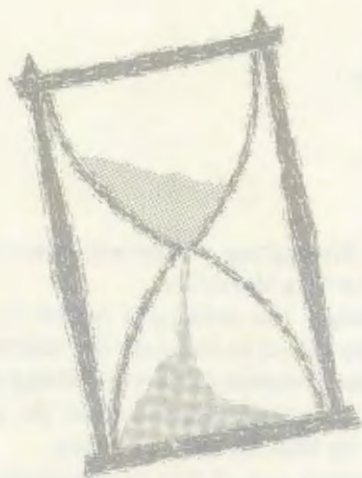
To keep the student from prematurely chopping power, the IP handblocked the throttle at 89 per cent. It looked as if the airplane would settle nicely to the runway. Then the student abruptly jerked the stick back, rotating the aircraft to a dangerous nose-high attitude. The instructor quickly overpowered the controls, moved both stick and throttle full forward. As they touched down in a nose-high attitude, the

nose pitched down, and the bird jumped back into the air. They landed from a closed pattern.

Later investigation revealed fuselage aft section and tail cone damage and some damage to the afterburner shroud. Without the instructor's very prompt and correct action, the damage could have been a lot more serious.

A second look at this close call reminds us that we are doing a lot of training in TAC today. Many of us who would prefer to be just plain fighter pilots are playing IP as a full time job.

The kind of cool professionalism displayed by this instructor goes on every day in the serious business of turning out combat-ready fighter pilots . . . often in a hurry. It is to our instructors' credit that no more of the close ones deteriorate into badly mangled airplanes or injured pilots who won't get into combat.



NO MORE FOUR

A lot of things can flash thru your mind while you're flying... sometimes your thinking gets tangled with problems outside the airplane.

I'm pulling mobile this morning, have been since 0400. So far it's been a quiet tour watching the fighters, T-birds, proficiency types, and transports come and go. No emergencies yet, so all airborne systems are operating OK. If there's a bash when one of these birds lands it will probably be a "Pilot Factor."

Pilot factor is one of the big problems in lowering the accident rate. If we could eliminate pilot factor accidents this year, it would be a major achievement in accident prevention.

I've been a safety officer in operational squadrons since 1956. The squadrons I was assigned to experienced seven accidents in that time. One was a mid-air and one was a gear that folded while the pilot was taxiing out. I may have been able to prevent these... but I still don't know how.

In the other five, the accident board found: "Pilot Factor, in that the pilot..." So he goofed. In the past that identification helped hold down the accident rate. From '63 thru '65 the percentage of pilot factor accidents in TAC stayed about constant. But this year they are increasing dramatically. It's time the boards started learning

why the pilot goofed. If he failed to follow procedures, WHY?

A guy can have a lot of things flash thru his mind while he's flying... some of them can tangle his thinking when his mind needs to be the least cluttered. Guess that's where most of the pilot factor accidents start.

In reviewing the five pilot factor accidents I was close to, I find that one pilot had financial problems; one was newly wed; one pilot's wife had health problems in her eighth month of pregnancy; another's child was seriously ill; and the last was in the process of settling his family after being separated during an overseas assignment. All five were killed in aircraft accidents.

To say their personal problems had caused these accidents would be as unfounded as saying their emotional stability was completely unaffected. The truth probably lies somewhere between. That's the trouble with pilot factor. It's hard to pin down. About all I can say is, had they not flown that day they would not have been involved in an accident that day. It's only conjecture to assume that if they had not flown until they resolved their personal problems,

they would not have been involved in an accident.

On the other hand, the fact that each of these five pilots was carrying serious problems around with him appears to be more than mere coincidence.

I try to keep up with those five families. Most of the gals have remarried. I also try to periodically review the circumstances that surrounded these accidents to insure that similar situations don't exist in my present unit.

I had no ideas about how to prevent these accidents in the past, but now this has changed. Four-for-pay every month is now out the window. This means our income is no longer subject to the vagaries of weather, scheduling, transfers, sickness, or schools every month of the year.

If something in your personal life has knotted up your thinking, you shouldn't be driving an airplane where your troubles can get in the way of the business at hand. Some cases should be automatic. When the wife is expecting a baby momentarily, or one of the kids has just had an accident, why try to fly father before things are squared away?

The squadron CO will

about most of these situations any-
r, but the guys should check in
him . . . thru their flight com-
manders . . . and be relieved of
flying duties until the pressure's
off. The CO and Ops Officer are
best qualified to tell when you have
things sorted out. They can then
give the green light to the sched-
uling people.

In short, this change in flight
pay rules may provide Command-
ers the most effective tool for
preventing pilot factor accidents

since someone invented the check
list. If I can get everybody to buy
the idea, it will be a real boost to
my squadron accident prevention
program.

*The author of this article, a squadron
safety officer in TAC, has asked to re-
main anonymous. And we don't mind that
. . . he has a good pitch, we're glad to
pass it along. In one or two places we're
tempted to say, "that's one man's opin-
ion," but his basic idea is very sound.
It needs repeated emphasis.*

The original responsibility for iden-

*tifying a pilot handicapped with personal
problems rests with that pilot himself. It
would be foolhardy for him to expose him-
self to the possibility of an aircraft ac-
cident when his mind is preoccupied with
serious personal troubles. But it is human
nature for him to play down the extent of
his preoccupation . . . fearing censure,
criticism, or ridicule.*

*Flight leaders, ops officers, and com-
manders must insure that no stigma is
attached to the pilot who is intelligent
enough to step forward and say he's not
emotionally fit to fly.*

- Ed.

TAC TIPS



INCOMPLETE

Waiting in Number One for clearance to take the
runway, the F-105 pilot completed his check list and
closed the canopy. His IP, in a chase aircraft, ob-
served the student's canopy locking lever on the out-
side flush with the aircraft skin.

But then there was a delay due to heavy traffic.
The greenhouse effect made cockpits unbearably hot
and both student and IP opened their canopies. When
takeoff clearance finally came thru, they both closed
the lids again.

Before he had accelerated to 250 knots after take-
off, the student's canopy smartly separated from the
aircraft. It wasn't locked.

This is a rough one. It can happen to any one of us.
But perhaps it's more likely to happen to the guy
who's still getting acquainted with his airplane . . . be-
cause the habit to check "closed, locked, light out" is
inflexible, and uninterrupted.

TAC ATTACK

SHALL WE DANCE ?

The Instructor Pilot was front-seating his T-bird
down the unfamiliar runway on takeoff roll when his
back-seat cohort informed him their heading indi-
cator had drifted 45 degrees in the first 500 feet of
roll. With questionable judgment, the IP fast-slaved
and pressed merrily onward. After all this was over,
he realized he had missed the 2000-foot acceleration
check point, decided to look at airspeed anyway . . .
and found it reading thirty knots!!

After he made some abort-takeoff motions like
chopping the throttle, the IP (?) found his trusty T
had misunderstood it all and left the ground, climbing
to about 20 feet. Immediately the airplane returned to
terror firmer, with less than 4000 feet of pavement
ahead, the front-seater clamped on the binders. The
left tire smartly blew.

The report goes on like this thru the overrun, a
collapsed main gear, a 180 degree turn some 700 feet

off the end, and an eventual... but hardly uneventful... stop.

Maintenance investigators were unable to find anything wrong with engine, brakes, or airspeed indicator.

Could it be that was really 130 knots?

The unit decided to rebrief all crews on using all the instruments available to them during takeoff.

BUT...

It was getting dark before the C-130 crew had their engines started. The check list went smoothly up to the point of start taxi. They would have to back out of the parking spot. Gross weight was about 150,000 pounds, and cg was within limits, but they had to rock the big bird to get it rolling because it was parked in a slight depression.

After he had rolled backwards about 20 feet, the AC saw his taxi director cross wands in the signal to stop. Because he thought the ground crewman gave the signal abruptly, the AC began worrying about a possible collision with something behind him. He placed some size thirteen pressure on the brake pedals and pulled the thrust levers out of reverse.

Herky reared back and whanged its tail skid against the ramp.

The taxi director, co-pilot, and loadmaster had seen no collision hazard. Neither did they remember any rapid or urgent signals. Damage was confined to the tail skid assembly and some sheet metal immediately surrounding it.

Seems there's a rather basic rule about using power alone... and not brakes... when reverse-taxiing the Herk.

LIKE A CANOPY

During a Functional Check Flight the RB-66 crew felt a jolt while they were making a descending turn at 28,000 feet and about .78 mach. All systems indicated the aircraft was functioning properly, so they completed the test hop and landed. When they climbed out of the bird they found the ECM crew compartment entrance door was missing.

It didn't take long to find maintenance men had attached a piece of wire to the aircraft structure and the interior locking handles to hold the door unlocked while they worked inside. When the crew placed a G load on the airplane the door opened and broke away.

The unit concerned emphasized to all crews their responsibility to check all systems for proper operation before takeoff... even door locks.

TOO CLOSE FOR COMFORT

After the overseas herder retracted his gear on takeoff, his wingman told him his gear doors were hanging out in the breeze. He extended his wheels, and all indicated down and locked.

When he retracted the gear again, the nose gear seemed to come up faster than usual... and it banged into the well under his feet. He decided to re-extend the gear, burn out some fuel, and land. But this time the nose wheel didn't show down and...

Wingman said the mains appeared down and safe, but the nose wheel was trailing about forty-five degrees. The herder then saw utility pressure fluctuating between 800 and 1300 pounds. When he used emergency gear extension, the nose roller still refused to go all the way down.

After his two wingmen landed, he started his approach to a foamed runway. He landed "firmly" in an attempt to jolt the reluctant nose wheel into place.

The rollout was uneventful.

Investigators found the nose gear upper drag brace link had failed.

WHAT'D HE SAY ?

During preflight for a rudder actuator change test flight, the pilot noted that the landing light was in extended position. After he started the engines, checked illumination of the light and placed the position light switch to OFF. His crew chief gave him an OK signal meaning the light was working, but the pilot took the signal to mean the light had also retracted.

While accelerating to 400 knots at about 10,000 feet, he heard and felt a thump. The extended light had sheared from the aircraft.

LIKE ID THE DZ

It was after dark when the C-130 crew left home base and started a low level to the drop zone. Their first drop was a successful 150 feet at one o'clock.

They went into a race track pattern for the second drop to attain spacing behind other traffic. As they approached the drop for the second time, they misidentified the DZ. Their practice load missed it by a cool 7.3 miles!

The navigator had not used his doppler navigator for the second drop, but the crew decided to drop anyway... it didn't seem to matter to them that they had not positively identified the DZ.

It matters to them now!

GET SMART

By Lt Col Carl E. Pearson
Chief, Safety Education
Hq TAC

The bungling spy, the inept private eye, the parody of what used to be serious drama, have captured the public imagination. Fantastic claims, heroic acts, audacious achievement are reduced in description until they reach the level of the "would you believe."

Almost any absurd act or attack upon the person of the Chief is explained and dismissed with a lame "sorry about that." And the advance notices of the fall viewing fare promise a rapid expansion of the tanglefoot touch into other lines of endeavor.

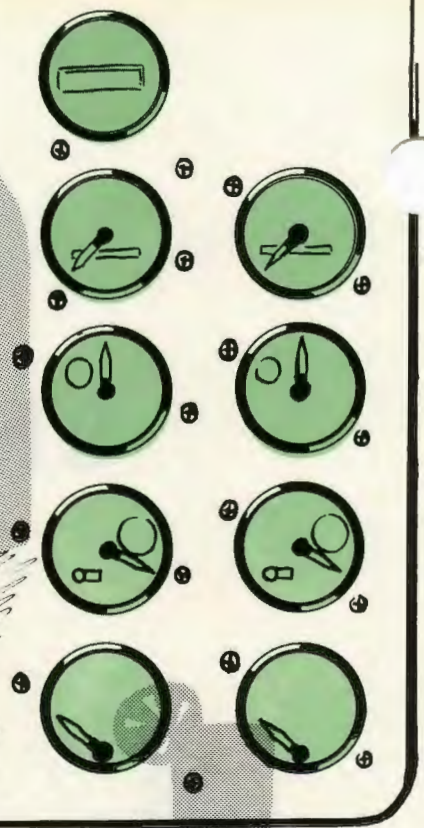
Predictably, the parody influence has appeared in several pilot performances described in recent aircraft incident reports. Their adventure while reverse taxiing an aircraft equal the handiwork of the awkward TV agent and his long-suffering supervisor. The plot makes you wish the cone of silence gadget could also make things disappear.

In a recent revival of a taxi act that we thought was laid to rest permanently back in the days of the silent movie, an instructor pilot backed his aircraft into another aircraft behind him. As in the television series, the incident report offered a few rationalizing, faulty defenses in an attempt to excuse what really can't be excused. The special pleading seemed to satisfy his supervisor. Corrective action was marked "not applicable" on the report without even a hint of "sorry about that."

The bungler, the inept, the brute strength and awkwardness type belong in the make-believe world of television. There, we can enjoy his antics without the real threat of death and destruction.

He has no place in the real world of Tactical Air Command.





HARDISON



ALCOHOL

friend or foe ?

RCAF FLIGHT COMMENT

By Squadron Leader

A. J. Berry, RCAF

There's no quick answer to this question (confirmed alcoholics and members of the Women's Temperance Association please sit down); it all depends on the circumstances.

Tradition has accorded the consumption of alcohol a unique position in the Armed Forces. The protocol of "dining-in" and the regulations governing the composition of a mess committee where the bar member is given precedence over his messing and housing colleagues, serve to demonstrate this. The result is an unfortunate anomaly where it is quite acceptable to drink but not to show much evidence of having done so. That's the general situation; now consider a few of the pros and cons.

ALCOHOL - THE FRIEND

In reasonable quantities alcohol is a unique social emollient; shyness and reserve-barriers to sociability loosen their hold and easier social contact is possible. (Take a few minutes out to watch a smooth operator at a cocktail party.) Alcohol relieves worry and stress, and has a place after hazardous experience. Taken with meals, it stimulates the appetite and generally increases an appreciation of food.

Alcohol has its place too as a medicine in certain vascular disorders. (You've got to play it by the book though... it wouldn't do to describe a stiff shot of Scotch as

a nightcap for your maiden aunt ... then again, it might.)

ALCOHOL - THE FOE

Alcohol impairs perception, judgment and performance. It induces addiction in susceptible individuals, with all the adverse consequences of excess. It slims one's pocketbook. It can cause serious liver damage. It causes hangovers.

EFFECTS OF ALCOHOL

Alcohol depresses the central nervous system, and with it your judgment, discrimination, co-ordination and consciousness are progressively reduced. The degree of this reduction depends on the concentration of alcohol in the blood and the individual's conditioned resistance to alcohol. The latter is largely dependent on the degree of prior exposure to alcohol (old soaks can withstand its effects better than beginners). Your blood alcohol concentration can be estimated by analysis of expired breath or actual measurement from a blood sample. In legal circles of level of 150 mgm/100 cc of blood is regarded as evidence of impairment regardless of other evidence.

Let's have a look at this hangover business! Hangovers afflict some individuals more than others, and tend to follow a similar pattern on repetition. The symptoms are caused by a disrupted metabolism due to an accumulation of aldehyde and ketone (useful in its proper place as a paint thinner) associated with fluid and electrolyte imbalance compounded by gastric upset and often lack of sleep.

Curiously enough, although hangovers are common (and often

severe) very little research into the condition has been done. This probably explains the variety of "guaranteed cures" available, ranging from lots of water through bromos and aspirins, 100 per cent oxygen, coffee, pep-pills and a hair of the dog.

It is too much to expect an individual, suffering from fatigue and a queasy stomach who is not firing on eight cylinders in the first place, to produce top-notch flying if put in a high-performance aircraft. Recently, one or two accidents appear to have been associated with a hangover state.

CFP 100* requires an eight-hour period of abstinence prior to flying. This limitation, however, is a MINIMUM and is a compromise between avoiding flying under the influence and unduly penalizing moderate drinkers. It in no way covers the diminution of ability during the hangover phase.

What is the answer to all this? I feel that both aircrew and supervisory staff are involved. It's up to the aircrew to organize their celebrations to allow sufficient time to get over both the acute phase and the hangover before the next airborne duty is due. The time required varies but after heavy drinking up to 30 hours is needed to recuperate fully. Equally, it's up to the supervisory staff to schedule the flying program making allowances for periods of high hangover incidence after mess dinners and squadron parties. ALCOHOL - FRIEND OR FOE? You've got the facts.

It's up to you!

**We have not found a regulation that specifically spells out a "period of abstinence" that applies to us in TAC, but the unit commanders we know have some strong feelings and individual policies on the subject.*



THE CAMPAIGN

... bird strike season

Early each winter, from Alaska across the Canadian Arctic to Baffin Island, great flocks of migrating waterfowl prepare for their annual assault on the lands to the south ...

The conference room is hushed. Nervous briefers, their opening remarks memorized, shuffle from one foot to the other. All members of the Central Committee and Battle Staff are seated behind their name plates ... the moment is near.

The air of expentancy is intensified when The Commander enters. He settles in his large leather chair, fishes a long black cigar from his blouse, inspects it thoroughly, bites off one end, and holds a flame to the other. When the acrid blue smoke has entirely enveloped his head, The Commander speaks:

"I am pleased to see that every member of the North American Waterfowl Defense Organization is represented at this meeting. It is of utmost importance that each of you understand the details of this year's campaign. The information you

carry back to your flocks from this meeting will affect the success of our migration to the south.

"Every year the opposition becomes stronger. There are more and more hostile vehicles in our flight paths. We must improve our tactics, sharpen our timing, and plan carefully to make the greatest number of our sorties effective."

The Commander leans forward and slowly looks at each delegate around the table.

"NAWDO represents the largest nations of migratory waterfowl in this half of the world ... through a carefully coordinated, combined effort, we are capable of doing significant damage to the forces that oppose us. We must do this! We must keep our lines of communication open between the summer nesting grounds and our winter sorts!

"Proceed with the briefing

With a wave of his hand, NAWDO turns his chair to face the large screen on the wall.

The Senior Briefer turns on the light at his podium, makes the few short shuffling movements that all speakers do before they start to speak.

"Commander, Members of the Committee, Staff, and Honored Guests ... the campaign to the south this year will be conducted in very much the same manner as in previous years. We have learned that our basic plan of assault is eminently successful ... each year we have generated grave concern within the ranks of the enemy. One of the supervisory agencies that governs the aircraft traffic along our routes, the Federal Aviation Agency, has set up a great hue and cry warning of the effectiveness of our autumn campaigns.

Similarly, another agency,

the Directorate of Aerospace Safety, has evidenced grave concern. Although they have relaxed a requirement to report each encounter between manned aircraft and our feathered forces, intelligence reveals they are still very worried. Several agencies are studying the effects of our suicide squads on airframe components and aircraft engines.

"As you will see in the presentations to follow, we will concentrate our assault in the lower altitudes. Detailed study and analysis has shown the enemy to be most vulnerable at 10,000 feet and below. Large numbers of their slow-moving aircraft are to be found along the low altitude airways. And traffic density around airports to the south is growing each year."

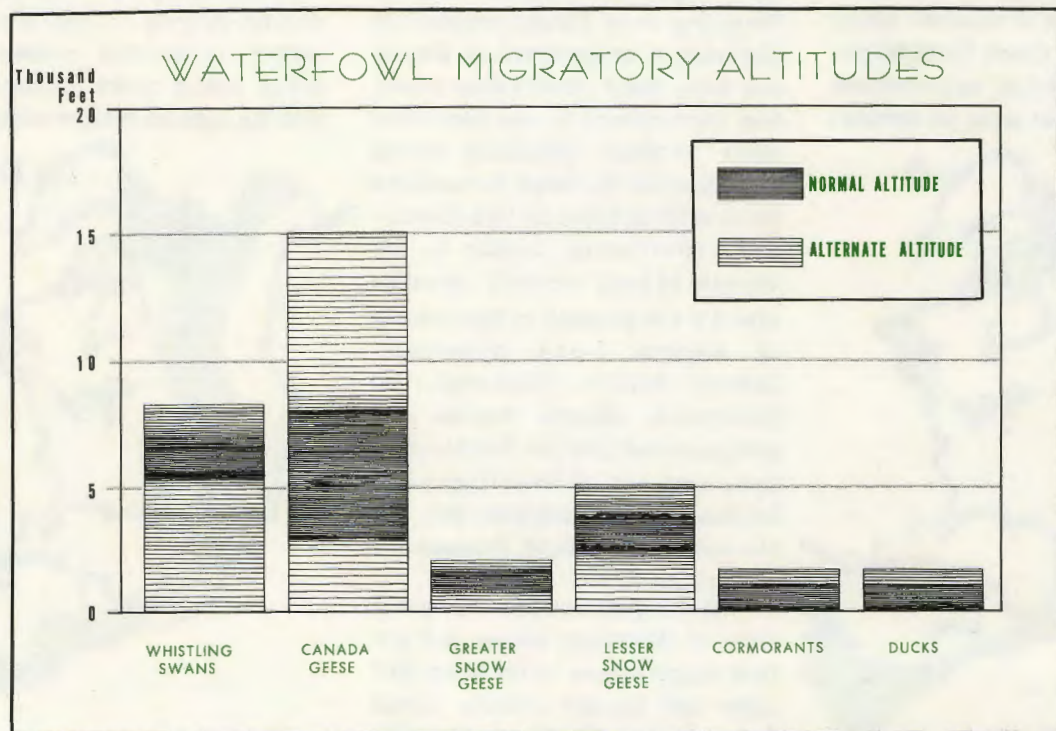
The Senior Briefer looks across his audience. When the introductory slide flashes off the screen, another to the right comes

to life with a map of the United States.

"This is the target area! It is criss-crossed with airways and dotted with airports! Each one presents a potential threat to the very existence of the North American Waterfowl Defense Organization! The forces at our disposal to counter this threat are legion!

"Our basic attack force will consist of approximately 24 million mallard and pintail ducks ... for saturation effect. Phased throughout the entire campaign period, the lightweight and versatile mallards will be deployed en masse into the Mississippi Valley and the Central Valley of California. A smaller force will foray down the Atlantic Coast.

"Pintails will sortie over an equally broad front across most of the western states. Main routes will be through the interior and the Pacific states, again covering



the entire campaign period from September through December.

"Lesser Snow Geese, originating from bases in the arctic, will be utilized through central Canada and into the Mississippi Valley to follow the first wave of ducks. Operating over a very large area, they will range across most of the airports in the Valley. Starting in early October, they will attack targets in Michigan, Ohio, and Indiana. The effect of this force will peak along the Gulf Coast in Louisiana and Texas during late October and November.

"We will employ Greater Snow Geese in a long-range role again this year. Their demonstrated ability to operate effectively on non-stop strikes makes this a natural assignment. These raids will be launched during November and December from bases on Baffin Island into targets along Atlantic coastal bays from New Jersey to North Carolina.

"Several squadrons of Canada geese have been alerted for action on the Atlantic Coast in the Maryland area from mid-October through the first week of November.

Other units of Canada geese will sortie down the Pacific Coast during the third week of October. However, penetrations into the interior by these units will commence as early as the end of September and continue into December. Due to their long-range capability and weight, which averages from eight and one-half to nine pounds, the Canada geese are considered one of our most effective weapon systems.

"Adding to the campaign on the Atlantic Coast will be units of middle-weight Double-Crested Cormorants. Operating in flights of approximately 200, they will be utilized to harass air traffic along the coastline, and penetrate to both coasts of the Florida peninsula. Some mass raids of up to 1000 individuals are planned. The Cormorant missions have been under way for two months and will continue into early December.

"Whistling Swans, our most effective heavies, will again be used against selected targets. Weighing over fifteen pounds and carrying a wingspread of five to six feet, their destructive power has been proven in one encounter after another. Whistling Swans will operate in large formations from mid-October to late November, interdicting traffic in the vicinity of busy airports. Specific attacks are planned in the vicinity of airports near Milwaukee, Detroit, Buffalo, Pittsburgh, and Baltimore. Special sorties are programmed into the Washington, D.C. area. All of these flights will terminate on Chesapeake Bay and the coastal sounds of Virginia and North Carolina.

"In the West, additional squadrons of Whistling Swans will attack target areas on the Great Salt Lake and on the Pacific Coast from Puget Sound to the San

Joaquin Valley. First sorties into Oregon will be in early October; however, their activity will peak from mid-October to late November."

As the last of his slides clicks off, the Senior Briefer looks pleased and relieved. His audience was interested and attentive. They will listen carefully to what follows.

The Tactics Briefer is a studious-looking bird, prematurely aged and scarred from several close calls. He explains the suicide-squad concept and describes the selection and training of these young heroes. He goes into detail on the vulnerability of various enemy aircraft:

"We have found that most of the very high-speed aircraft ... the smaller ones ... are equipped with a collision-proof windscreen. Direct frontal attacks are seldom assured of a kill. However, the aircraft are invariably equipped with an engine that is very susceptible to our attacks. The slower-moving ... and usually larger ... aircraft models normally suffer more damage from attacks against their windscreens.



Their propeller-type engines are difficult to damage. Our fier attack types have been trained to aim for empennage surfaces on the large, slow moving transports. Here again, Whistling Swans have had notable success!

"Analysis of data from previous campaigns reveals that the diving, head-on attack is particularly effective. Pilots of the enemy aircraft normally observe only attackers directly in front and above them. Their evasive action ... if any ... is invariably to fly down. Armed with this information, our attackers have successfully anticipated evasive action and pressed their attacks home.

"Squadron formations will remain the large V. Experienced flight leaders find the maneuverability, search capability, and defense of this formation better than any other.

"As you can see from this e," the Tactics Briefer continues, "careful planning allows us to cover virtually all altitudes below eight thousand feet. Some high-altitude penetrations are planned to keep the enemy off

balance." He pauses while the delegates study the details of the altitude tables.

When the slide goes off it is replaced with a slide showing weather expected during the campaign period.

"You will note that our campaign coincides with the first outbreaks of cold air across the United States. We have learned that by following these cold fronts as they sweep south, we are able to take advantage of favorable winds. In addition, we maximize the range capability of our larger weapon systems by allowing them to stay in the cool air as long as possible. This reduces fatigue as well as providing the beneficial aerodynamic effects of a denser atmosphere. Our largest mass-effort raids will be timed to operate 24 to 48 hours behind each outbreak of arctic air."

The Intelligence Briefer follows. His presentation covers the various defensive tactics observed in the vicinity of enemy airfields during past campaigns. He points out that most of these measures are aimed at the local non-migratory bird population. Therefore, they are seldom a serious threat to the NAWDO campaign.

He also covers the effect of small arms fire on the attack forces. While sportsmen have been known to occasionally disrupt a strike of the smaller attackers, these flights are usually able to get thru by the sheer weight of numbers.

"However, our information sources have detected a serious effort by some agencies in the south that threatens our long-range, heavy attack forces. Although information is fragmentary at this time, it appears that research and development work

has been under way for two or three years to track our raids on defense and air traffic radar. If the enemy is successful in developing techniques to accurately plot our movements, he may be able to provide effective warning to our targets. Such warning ... and subsequent vectoring of aircraft away from our flight paths ... will require us to rapidly develop counter-tactics for our forces. This year we are requiring each mission leader to include remarks in his final report of any activity that will aid us in assessing this threat."

The Intelligence Briefer leaves the podium. He is followed by the Senior Briefer who, with a few remarks in summary, returns the meeting to The Commander.

"You have seen the big picture, gentlemen," he thunders. His cigar is gone now ... he is directing all his attention to the delegates in front of him. "Carry the impact of this briefing back to your forces. We cannot afford to let up in our struggle!!"

The 1966 Campaign is on!



MISSISSIPPI FLYWAY



ATLANTIC FLYWAY



warrior's dilemma

In the back room of his castle a gaunt, tired-looking knight sits gazing at his armory work bench. Staring unblinkingly back at him from the bench is his helmet. Occasionally the knight reaches out, grasps the helmet visor, and moves it up and down. With a sigh, he lets the visor fall, cups his chin in his hands, and props his elbows on the bench in front of him.

Lady Jane, his wife, stands behind him in a traditional wifely pose . . . hands on hips, slippered toes tapping the floor, mouth opening and closing rapidly. The monologue is also familiar:

"If you haven't any pride in

yourself, at least think of the children and me!! We're the laughing stock of the kingdom!!! Our gowns are in tatters . . . my maid-servants are frolicking with the stable boys . . . the serfs refuse to work the fields . . . and you . . . you worm . . . all you do is sit there, fooling with that silly old helmet!!!!"

What is our hero's response (let's call him George) to this gentle remonstrance from his loving wife? George replies with an absent-minded sigh and a pre-occupied scowl . . . and continues flipping his visor up and down, up and down . . .

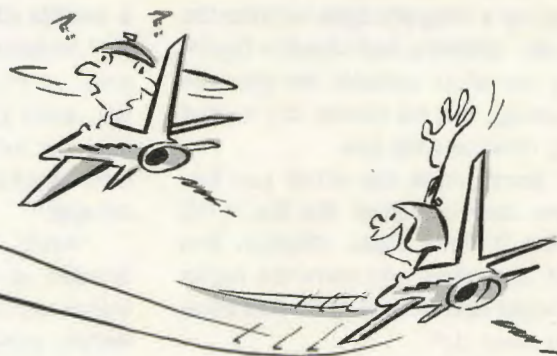
Life support equipment and rival people seldom agree on the date of this domestic scene, but they do agree that George's problem is still with us. Since the first warrior tried to devise a protective covering for his face, either visibility or protection had to be sacrificed to attain the other. To this day, no one has come up with a gadget that will sense approaching danger and lower the protective device in time to protect the wearer.

We have heard of some fighter folks in Southeast Asia who, in a George-like dilemma, are installing clear visors in their helmets for night operations and re-installing the shaded visor for daylight missions. We also heard that someone else has worked up a helmet with both clear and shaded visors, but at last report the people evaluating it were sighing and scowling because the visors become jammed in the case atop the helmet.

It is doubtful that George would have received much homage from Lady Jane, the kids, or his critical neighbors, had he invented a visor flipper-upper. They might have been fleetingly impressed, but more likely they would have shrugged, nudged one another, and snickered, "You'd think a grown man would have better things to do than sit around in his armory all day fooling with a visor."

Not so today! We in the cockpit are fully aware that dangers are ever present . . . in the form of ground fire, refueling difficulties, or plumed plane pounders (see preceding article) . . . and continue to flip our visors up and down, up and down . . . mostly down . . .

Sideslip



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 GREAT ICE MYSTERY

...when the engine failed to malfunction properly

He hadn't been particularly eager about the trip when it first came up, but when the Ops Officer pulled his name out of the hat... something about "you haven't had a trip in several weeks"... Sideslip decided to make the most of it. Besides, he hadn't been to Langley in a couple of years. He knew he'd get a chance to visit some of the guys he hadn't seen since Bien Hoa, maybe get a peek at his promotion folder... and lean against some of the Personnel guys at the bar. By the time he was airborne, he had decided it was all a pretty good deal.

Heavy Harry, in the backseat, had been a good help during the flight planning. Surprising how rapidly some of these old heads can whip up a 21a! Sideslip had never flown with the major before, really didn't know him very well... except to see him puffing

around the flight line once in a while. But everyone knew he was called Heavy Harry by his friends. Sideslip wanted to make a remark about giving the T-bird some extra nose-down trim for takeoff, but decided against it.

After a fast VFR pattern into Blytheville and a hamburger in Base Ops while the T was being refueled, they were ready for the last leg of the trip. It looked as though they would arrive at Langley after dark, but that was nothing to be upset about.

The weatherman at Blytheville had indicated a no sweat approach, 2000 feet broken and five miles. He had mentioned a slight possibility of freezing rain... almost as an aside, as though he didn't really expect any. Sideslip and the major discussed it briefly after they passed Knoxville, and decided to call for weather when they got

a little closer. But when they finally raised Langley Metro, the weather they received was just about the same as their forecast. Nobody seemed to be worried about freezing rain.

"Tell you what, Sideslip," Heavy Harry wasn't satisfied, "let's try to get Center to turn us over to Approach as early as possible. We'll be able to listen to a couple of birds in the descent and see if they pick up any. If we're going to coat this T-bird in ice, I'm all for being prepared for it."

Sideslip had no objections... he had been thinking about doing the same thing. Halfway between Flat Rock and Franklin, Washington Center told them to call Norfolk Approach Control. The controller descended them to penetration altitude and they went into the undercast at about 22 thousand. Somebody ahead of them was

making a long straight-in from the south. Sideslip had trouble figuring out what altitude the guy was passing, but he never did report any trouble with ice.

Harry took the stick just before they reached the fix. "I'll drive it down final, Slipper. You tell me when you have the lights in sight and wobble the stick when you want it."

The clouds closed right in around the tips as Harry turned and started down. It was good and dark now! Sideslip thought for a moment that it was a pretty heavy cloud, but decided he was becoming overly concerned. It was getting dark because they were descending! He reached in his pocket for his flashlight anyway.

"Bother you if I take a peek at the leading edges with a flashlight, Major?" Sideslip tried to sound unconcerned.

"Uh... no, Slipper," Heavy Harry had been concentrating on the gages and had not realized it was that dark. "Go ahead... won't bother me... and if it does, I'll let you know, don't worry."

He wasn't sure when he looked at the right wing, but by the time he spotlighted the left tip, he was sure. "Hate to tell you about it, Sir," Sideslip said sheepishly, "we're beginning to pick up a pretty good cone of white on the tips... not much on the leading edge right now... only about half an inch wide."

"Yeah, well keep an eye on it." Harry was matter-of-fact. "We'll be down in the warm air here in a minute. Ah... do you have the weather form? I don't remember if that guy said anything about the freezing level... it should be at least a couple of thousand feet this time of year."

Sideslip felt the T-bird wobble

a couple of times. "I think I have it," he said quickly. "You hold that pole... I'll look thru my pockets. Aw, nuts! I remember now... I put it in my breast pocket... and it's well buried under all these straps!"

"Well, forget it," Harry leveled at 1200 feet. "Looks like we're out of the stuff here... and we're either below the freezing level or we're not... doesn't matter much, because we're going to stay at this altitude until we're on the glide path."

"Whaddaya..." Sideslip could see nothing out the windscreen. "Hey, I didn't even realize we'd broken out of it... and you know what that means... like I've a real messy window up here."

"Like ice?"

"Like I don't even see blurred lights through it!"

The lights on the ground were bright and distinct through the canopy, but Sideslip found there was hardly any visibility through even the quarter panels.

"I turned on the auxiliary defrost when I first saw that ice on the wings, but it still hasn't made a dent on this stuff, Major." He checked the defog blower on full and turned the cockpit heat up a little more.

As they crossed the river, both pilots were twisting from one side to the other in an effort to determine how much of the opposite bank they would be able to see. Although Sideslip considered his visibility just about zero, Heavy Harry said between grunts that forward visibility through the canopy was better than he expected.

On final, Sideslip could not see the runway lights. A general blur started to show through the windscreen just before they reached minimums, but it turned out to be the approach lights.

"Take it around, Sir!" Sideslip knew he couldn't try to land. "I haven't even seen the runway lights yet!"

"I didn't realize it was that bad up there, Slipper... I could see the runway pretty well from here. Guess I was looking through the canopy... not the windscreen." Harry pushed the throttle up to about 90 per cent, closed the boards and leveled off. After he raised the gear, the bird was still accelerating slowly. As the flaps came up, both waited for the airspeed to build.

"All I'm showing is 155 knots," Harry was hoping Sideslip's indicator would show a higher airspeed. "I'm not sure I like what I'm suspecting."

"Well, if you expect me to say I've any more than that on my gage, you're out of luck." Sideslip was beginning to sound very unhappy. "I have a feeling we're carrying great groups of ice on this tip. And I'm not sure it's melting. What do you think?"

"I think you may be right..." Harry had pushed the throttle up to 98 per cent. "And it may not be too smart for us to wander out there over the bay on another GCA if we're still picking up ice." He started a turn as he leveled at 1000 feet.

"We're down to 160 gallons... do you think you can land this thing with the visibility you had on that approach?" Sideslip knew it would be touchy, but they had to do something fast if they were still accumulating ice. When he looked with his flashlight again, he found the cone of white on the tips had more than doubled. The leading edges of the wings were completely iced over... he couldn't tell how thick it was.

"Ahh... Yes, Sideslip." Harry's confidence grew a

spoke. "Yes... I can land it. Call Tower... tell 'em we've got deep serious and we want to get it on the ground!"

As Sideslip dialed in the tower frequency, his attention kept wandering to the airspeed and the tailpipe temperature. When he finished telling Tower about their troubles, and had received clearance to land, he asked the major:

"You're a maintenance type, Sir... tell me what's wrong with my thinking here. You're pulling 98 per cent and we're only showing 165 knots. You've got the bird cleaned up... there's ice all over us. I'd say the intakes are icing up. But the EGT is only 425 degrees. Something's wrong with this thing and I don't understand it."

"I'm glad you're snowed by it too, Slipper," Harry was very serious now, "because I was beginning to wonder what was wrong with my thinking. Sure as anything, the temp should go up if we have intake ice. But I can't think what else could be slowing us down like this. I've carried ice around on a T-bird before... looked about the same as what we have now... and it didn't do this to me!"

Harry pulled the power back a little as they passed the end of the runway on downwind. The airspeed dropped to 140 knots in short order. When he started the flaps down, he had to start a descent to hold the airspeed. On final, with the gear down and checked, he found it took 98 per cent again to hold the 140.

"I hope you can see what you're doing, Maj... because I can't," Sideslip had never felt more helpless. The windshield still a solid sheet of ice.

Just keep your head out of my

way, Slipper," Harry was beginning to breathe deeper and faster. "Just keep your head out of my way..."

Heavy Harry gingerly eased on the brakes. As he felt them taking effect, he slowed the airplane until it was almost stopped. Sideslip raised the canopy and taxied off the runway, peering around the opaque windscreen.

Once they were parked and shut down, both scrambled out to look over their steed. They found two inches of rime ice on the leading edge and the tip tank cones, three quarters of an inch on the windscreen! The engine screen was partially covered and the nose of the bird was one inch deep in ice... which reached back almost to the static ports.

And there was enough ice on the intakes to significantly restrict the airflow!

After they had pulled their clothes out of the baggage pod, the major went back to look at both intakes again.

"If that don't beat all, Sideslip," Heavy Harry stood scratching his chin and staring at the airplane. He shrugged in defeat and started to turn toward the car that was waiting for them.

"Wait a minute!" He whirled back toward the T-bird. "Yeah!

Lissen, Slipper... see if this makes sense... restricted airflow will not lower tailpipe temperature, will it? But that's what we had... lower temp than we should for the power we were pulling. How about if the altitude compensator in the fuel control iced over? Fuel flow at any given throttle setting would remain constant when we descended, wouldn't it? Rather than increase as it normally would at a lower altitude?

"So..." Harry jabbed his finger at Sideslip's chest. "We had reduced airflow because of the ice on the intakes. But the temp didn't go up because we had reduced fuel flow from the frozen sensor on the fuel control. Add that loss of thrust to the drag from all the airframe ice we were carrying, and we didn't need your windshield ice to be in a whole lot of trouble!"

Sideslip followed the major in to the car and closed the door. He didn't speak until they were moving.

"Major, with all your smarts... you just ruined one of the best Happy Hour stories I ever came across. I was sure the guys back home would set me up a couple of rounds to hear how Heavy Harry's weight and cube slows down a T-bird in the pattern."



BETTER MOUSETRAP

When an aircraft is stranded in the middle of the runway with a blown tire, you usually have a large-size traffic tie-up on your hands. No one knows this better than the people at Davis-Monthan AFB, home of the 4453d Combat

Crew Training Wing. When their one busy runway is closed more than just a few minutes, several flights must be diverted to other bases, the flying schedule is disrupted, and the routine of training is upset for several days.

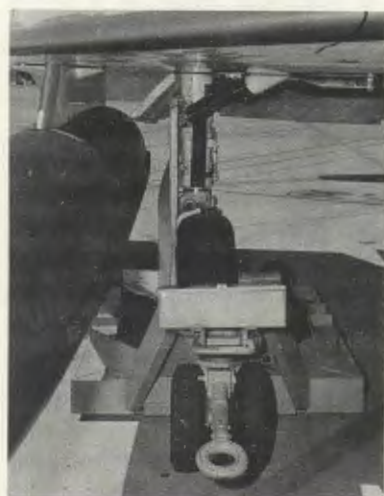
With this in mind, the 4453d made provisions to move a stranded Phantom from the runway as rapidly as possible. At first they used a ramp-type affair on wheels. The idea was to run the disabled F-4 wheel onto the ramp and tow the airplane and ramp away together. The system was far from the ideal rapid-removal rig they wanted. Next, they tried a modified F-105 lift-o-wheel, but this imposed a considerable strain on the Phantom's axle... and it could not be used on birds carrying a full fuel load, as would be the case in an aborted takeoff.

Dissatisfied with the equipment they had been able to round up, Senior Master Sergeant D of the 4453d Field Maintenance Squadron, started looking for a better way to rapidly clear the runway... a better mousetrap. Sgt Deitz designed a removal dolly of his own, and with the help of the unit's sheet metal shop, built it from materials on hand.

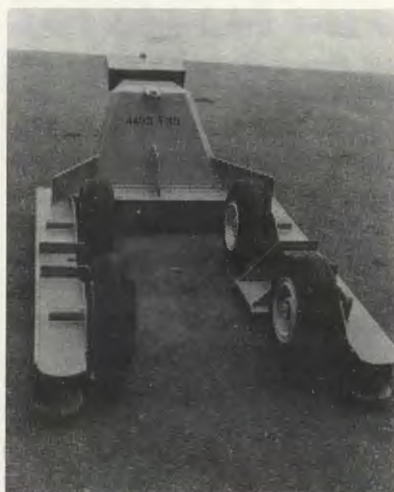
The dolly has worked exceptionally well. A U-shaped device which fits around the wheel of the F-4, it incorporates two 15-ton hydraulic jacks; is capable of handling an aircraft weighing up to 52,000 pounds. The beauty of the thing is that it takes only five minutes to install... the runway can be cleared in a minimum of time.

Sergeant Deitz says plans for his dolly are available to any unit that cares to write for them.

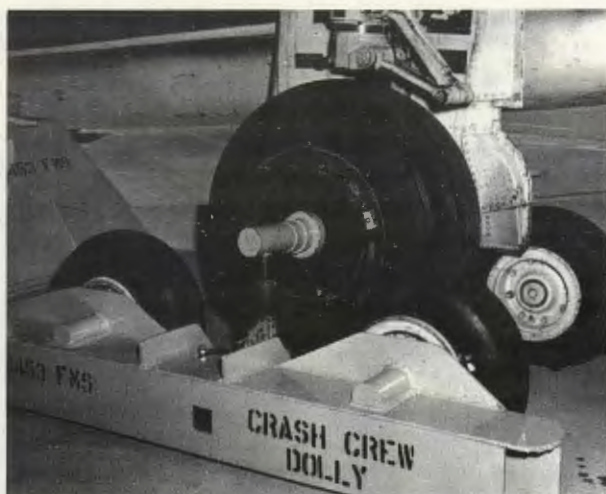
Good thinking, Sgt Deitz... looks like you came up with a good one!



F-4C wheel dolly, designed and built by 4453rd's SMS Deitz, uses Phantom nose wheels inflated to 180 pounds, carries two 15-ton hydraulic jacks, will support 52,000 pound airplane.



Towing arm and steerable front wheels make positioning simple, fast. However, when aircraft is towed with dolly on one wheel, the dolly tracks by itself, requires no steering.



Weight distribution and balance place no undue strain on aircraft gear struts.

that look



Occasionally a fighter pilot returns from a flight with a peculiar expression on his face.

The F-100 pilot looked down at the airfield as he passed over the end of the runway and leaned into the turn to downwind. He lowered the gear and measured the distance to the runway.

You only see this expression on a pilot's face when he has just recovered from an unusually violent, and unexpected, experience in flight.

As he started his turn to line up with the runway, the slat on his left wing failed to open and he found himself rolling almost inverted. He was staring at the ground less than a thousand feet below him.

This look on a man's face can only be generated by a very strong, very personal reaction to a very personal experience. You usually don't see it after the adrenalin has stopped vibrating through him. But flying a single engine fighter alone is a very personal thing. Much of what lies between success and disaster is personal . . . ability, judgment, proficiency, knowledge, and experience. The fighter pilot establishes a personal rapport with the hardware he operates . . . one engine with one throttle, one set of flight controls with one handle, one gunsight, one trigger, one bomb pickle.

He knows this hardware is capable of generating tremendous violence. He trains to direct this violence where he wants it to go. Where it will be effective in a fight. Part of the personal nature of his relationship with his weapon is his confidence that he can control it . . . alone. If the hardware will play straight with him . . . behave in an expected and predictable manner . . . he will control it to successful completion of the mission and bring it home.

To stop his F-100 from rolling, the pilot shoved his throttle forward and released back pressure on the stick.

When the hardware doesn't perform as expected, or worse when it does something completely unexpected, it has broken faith in a very personal relationship with the pilot. And the pilot may lose control over the potential violence he is riding.

This time the violence had come very close!

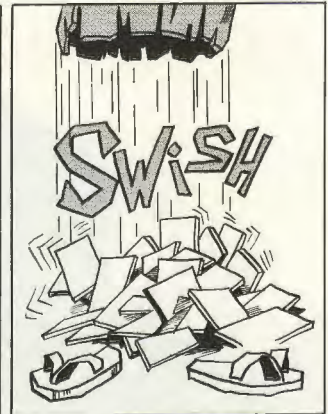
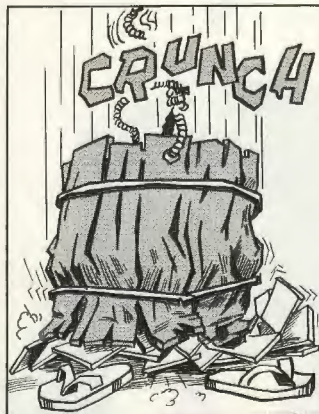
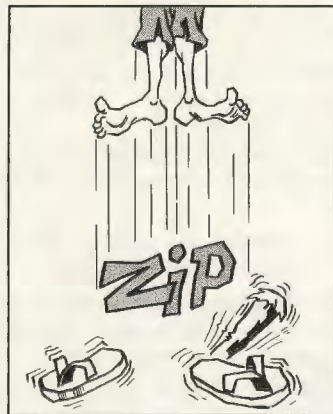
Usually the pilot retains, or regains, control. But too often the pilot learns later that his hardware's breach of faith was caused by error on the part of another human.

After landing from a straight-in approach at 210 knots to keep the other slat closed, he learned a bolt had worked loose and jammed the slat.

No nut had been installed on the bolt!

Those of us who know this look on a man's face after the violence has almost been wrenched from his control . . . whether we have worn the look ourselves, or met pilots at the ladder wearing it . . . we know what it means: "One of you #@*#&s just tried to kill me!"

THE BARREL



The ups and downs of life in South Vietnam were vividly recorded in a recent report by a Nguyen Van Teo, an employee of the U. S. Army in Saigon, when he submitted his request for sick leave. His report was as follows:

"When I arrived at Building T-1640 to fix it, I found that the rains had dislodged a large number of tiles on the roof. So I rigged a beam with a pulley at the top of the building and hoisted a couple of barrels of tile.

When I had finished fixing the building, there was a large amount of tile left. I hoisted an empty barrel up to the top and secured the line at the bottom. I then went up and filled the barrel with the extra tile. Then I went down to the bottom and cast off the line.

Unfortunately, the barrel of tile was heavier than I was and, before I knew what was happening, the barrel started down and I started up. I decided to hang on; half way up I met the barrel coming down and received a severe blow on the head.

I then continued to the top of the beam where I banged my head on the beam and got my fingers jammed in the pulley. When the barrel hit the ground, it burst its bottom allowing all the tile to spill out. I was now heavier than the barrel so I started down at high speed.

Halfway down I met the barrel coming up and received severe injuries on my shin. When I hit the ground I landed on the tile receiving several painful cuts from the sharp edges.

At this point I must have lost my presence of mind because I let go of the line. The barrel then came down giving me another heavy blow on the head and putting me in the hospital.

I RESPECTFULLY REQUEST SICK LEAVE!"

reprinted from *SAFETY IN ACTION*
Danang AB, RVN

R

ecognition

CREW CHIEF OF THE MONTH



Technical Sergeant David L. Wilson, 4 Tactical Fighter Wing, Seymour Johnson Air Force Base, North Carolina, has been selected to receive the TAC Crew Chief Safety Award for the month of September 1966. Sergeant Wilson will receive a letter of appreciation from the Commander of Tactical Air Command and an engraved award.

MAINTENANCE MAN OF THE MONTH



Technical Sergeant Lewis R. Way of the 479 Tactical Fighter Wing, George Air Force Base, California, has been selected to receive the TAC Maintenance Man Safety Award for the month of September 1966. Sergeant Way will receive a letter of appreciation from the Commander of Tactical Air Command and an engraved award.

Major Donald L. Oyer, 29th Tactical Reconnaissance Squadron, Shaw Air Force Base, South Carolina, has been selected as a Tactical Air Command Pilot of Distinction.

Major Oyer had reached 180 knots on takeoff for a low level training mission when the nose dome of his RF-101 aircraft became unlatched and opened upward into the airstream. He lost his airspeed indication because the pitot tube of the F-101 is located on the nose dome. Immediately after he retracted gear and flaps, while he maintained a normal climb attitude, the nose dome tore away from its hinges and struck Major Oyer's windscreen. The windscreen shattered and both side panels exploded inward. Most of the glass fell into the cockpit. Major Oyer was not injured because his helmet visor was down, but he did not have enough forward vision to safely fly the aircraft.

Because wind noise made it impossible to hear his radio, Major Oyer called in the blind for a chase aircraft. After reducing his fuel weight for landing, he flew wing position on another RF-101 which had responded to his call. Using the other airplane for an airspeed reference, Major Oyer made an otherwise uneventful approach and smooth landing.

Major Oyer's prompt, correct action and his demonstration of the highest professionalism in handling this serious emergency readily qualify him as a Tactical Air Command Pilot of Distinction.



Tactical Air Command
**PILOT
OF
DISTINCTION**

OCTOBER



CHOCK TALK

oops! another tank

Phantom maintenance officers, here is a little data for mental contemplation. A recent report indicates that during O&R rework of 600 gallon centerline tanks, approximately 25 per cent were found to have internally damaged or cracked stiffener rings. In almost all cases these tanks exhibited external damage or bruises in the area of the damaged stiffeners. There have been various aircraft incidents reported involving centerline tanks and it has been concluded that internal damage has contributed to complete failure of at least one tank.

Proper ground handling could have prevented this failure. Are all the line people aware of the possible consequences that can follow the dropping of any external tank? Any deformation, especially in the area of the joints between the front and aft cones and the main section of the tanks, can result in tank separation.

A recent survey of some of our assets reveals a few dents and bruises. A good and frequent briefing to all personnel handling these fuel tanks or operating AGE and vehicles in the vicinity of the tanks could prevent many of these "oops!"

time for a change

After an F-84 pilot lost his drag chute while on a low level, investigators found the left drag chute door cylinder had malfunked. When it failed, it allowed both doors to open. The unit reporting said their last three drag chute losses were caused by identical failures.

asked that the cylinder be placed on the 200-time change list.

steps three and four

The overseas F-100 pilot was in the turn out of traffic after takeoff on an FCF when his canopy smartly left the aircraft. Investigation after landing showed no damage to the canopy locking mechanism.

But when investigators dug deeper into the problem, they learned that the canopy actuator had been changed prior to that flight. The mechanics who reinstalled the actuator violated steps three and four in the tech order procedure which required them to check and adjust the canopy system for proper rig. The investigators found the emergency canopy release system completely out of rig . . . to the point that they could get the canopy warning light to go out when the canopy was actually not locked.

In their report the unit suggested that work cards be changed to provide more time and more definitive procedures for maintenance on the canopy systems. They are also tuning up their maintenance supervisors to insure closer adherence to the tech order.

tiny tailpipe torque

Just as his Tiny Airliner broke ground on takeoff, the pilot felt it yaw to the left and lose thrust. By the time the left overheat light came on he was definitely airborne, so he shut down the engine and came around for an uneventful single-engine landing.

Engine shop investigators found the T-39's tailpipe had separated from the engine and its tailpipe clamp was lying in the engine pod. When they reinstalled the clamp, they found they could tighten the two nuts on the clamp bolts five or six turns past their original position. Following the tech order pro-

cedure for torquing on another tailpipe, they found the tailpipe was not snug against the engine although both flanges were inside the clamp.

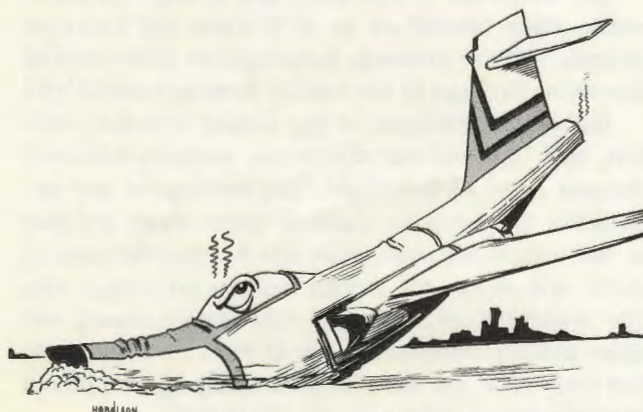
After tapping the tailpipe with a hammer, they re-torqued and took up another five or six threads.

phantom inspector

After the drag chute had been installed in an F-4, the inspector looked it over and signed off the work. But on the next landing, when the pilot tried to hang his laundry out in the breeze, he found he couldn't get the drag chute handle to budge.

QC investigators soon found that during installation, the release mechanism lock had been placed over the release mechanism link. In this condition it was impossible to pull the drag chute handle to the deploy position.

The drag chute installation inspector has been removed from red cross orders until he receives some retraining.



trunnion pin trouble

The overseas One-O-Wonder noted a slight shimmy on landing roll. After he turned off the runway and jettisoned his chute, he saw the gear handle light come on, the nose gear safe light go out, and lost his nose wheel steering. He called for down locks and a tow, and shut off his engines after the locks were installed.

Although the tow crew and the pilot made a visual inspection of the nose gear and the well, they found no obvious damage and started to tow the bird back to the ramp. When they stopped for clearance to cross the runway, the Voodoo assumed the collapsed nose gear position.

After maintenance men jacked up the F-101 and took a closer look, they found that the left rear trunnion pin had been improperly installed. One bolt had not been properly inserted in the pin.

In six flights since the faulty installation, the pin had worked loose. It came completely out when pilot turned off the runway. During taxi and to very little force was directed toward the pinless trunnion. But when the tow vehicle stopped, the weight of the aircraft went forward on the trunnion. The strut twisted and the lock link assembly broke, allowing the strut to fold rearward.

The individual who inspected the aircraft after the installation has been removed from flight line duties.

tow troubles-one

Because the weather was forecast to get pretty unfriendly during the night, the crew chief of the transient T-39 asked that his Tiny Liner be hangared for the night. Next morning, with the help of two transient alert troops, the crew chief started backing the bird out of the hangar. In the process of a left (backing) turn, the fender of the tow vehicle came in contact with, and cracked, the lens on the T-39 landing light.

Lacking a T-39 tow bar, they had been using a T-33 bar with a special adapter to disengage the nose wheel steering.

The unit involved has now ordered a tow bar for the T-39!

tow troubles-two

While backing an F-104 out of the radar calibration hangar, the crew chief and his assistant turned their tow vehicle to the left. The corner of the tow vehicle came in contact with the aircraft pitot head, bending it fifty degrees.

They were using a 265-inch tow bar instead of the 342-inch bar specified in the '104 tech orders.

The unit involved has taken their 265-inch tow bar out of service.

cold, damp & slippery

As the F-101 stopped in the parking spot, the crew chief reached under the nose. His poncho was sucked into the right intake. It caught on the accessory section and didn't go thru the engine, but several eyelets were stripped from it. They did go thru the compressor! Engine troops had to remove the engine.

The cold, damp, and slippery is just around the corner. It's time to tune up some briefings on the hazards of loose clothing around running engines. Better include something about the restricted visibility and reduced sound level when you're wearing a parka or rain hood.

Letters...

To The Editor

Reference the "Two F-100C pilots ..." article, pg 15, July TAC ATTACK, we find your "second look" conclusions ... a bald face indication that your research department was out to lunch. TACM 51-6... gives instructions on how to perform a confidence maneuver. A few months prior to (publication of) the TAC Manual, 9th AF published a similar manual giving similar instructions. This maneuver is part of the TAC Aerial Combat Training Program so sorely needed for these many years.

The pilots involved in the incident were briefed by two graduates of the Fighter Weapons School and the mission was conducted in accordance with the manual. The flight leader's only mistake that he did not reduce power in dance with the manual. Fighter pilots throughout TAC will be confused as to "What Gives?"

Maj William A. Stringfellow
Ohio ANG
Flying Safety Officer

To The Editor

Reference "A Second Look," July, 1966 issue, with regard to the commentary on the formation flameout of two F-100Cs. Apparently the author of the last paragraph has not read paragraph 5-4, TACM 51-6, "Aerial Combat Training," February, 1966 which authorizes and encourages the very maneuver described, and labels it "a confidence maneuver." Moreover, there is nothing in the Flight Manual prohibiting such a maneuver. As I see it, the only criticism that can validly be made against the flight leader is that he failed to reduce power 10-20 percent below full military.

Leslie D. Kampschrop
ANG, Andrews AFB, Washington, D.C.

To The Editor

Reference article in the July 1966 issue of TAC ATTACK entitled "A Second Look," second article on page 15 pertaining to F-100C. Your last paragraph states, "A second look at this incident makes us wonder if the flight leader was not already too confident. We don't know of any confidence maneuver that requires a 35 degree pitch attitude at FL 350 and 130 knots IAS or any reason to lead a wingman into that situation." Request you check TACM 51-6, paragraph 5-4. This may prove enlightening.

Major David L. Elliott
Flying Safety Officer
Nellis AFB, Nevada

Would you believe that incident happened 'way back in February and we reacted to it, wrote the piece, and forgot about it during March? Somewhere in there the new manual doubtless crossed our desk, but we never tied the two together. The rest of the story involves our very systematic and organized (??) editorial routine. Like it was the July issue before we found a hole in the magazine that was just the right size.

When we drew the manual from the library... with which to enlighten (beat upon) our F-100 research staff... we found it to be rather exciting reading. Yes, it does prescribe a maneuver pretty much as our two F-100 herders performed it. And they did keep their power at 90 per cent according to the incident report, although we managed to imply it could have been higher.

After reading the entire maneuver as it is described in the manual, we feel

there's a large size communication problem involved. We'd prefer to think that the people who wrote the thing didn't really want it to come out sounding the way it does to the average reader.

The fellows in this incident were perhaps trapped by altitude. The manual prescribes an altitude "at least 25,000 feet." Although the air is a good deal more dense at 25M than 35M, we're not yet convinced that was the only problem. The real communication problem arises in step (4) when the manual tells you to hold back stick as necessary to maintain the 30 to 45 degree climb angle. Then it says: "Once airspeed has dropped 20 to 30 knots below stall speed, it will be virtually impossible to maintain a climb if back stick pressure is even momentarily relaxed."

They can't mean stall speed!

We don't know of an airplane in the inventory that will have any climb left in it at stall... or one that will have anything other than one horrendous sink rate at 20 to 30 knots below stall. And there is no question in our minds that most jet fighters will have trouble getting enough air to keep the engine running at the airspeed, pitch angle, and resultant angle of attack we are talking about in this maneuver... even at 25,000 feet.

In short, a confidence maneuver that takes a student far enough out of the normal engine operating envelope to cause flameout will not instill much confidence in him. More likely, it will cause some apprehension about low airspeed operation.

Finally, we're talking to the people who can do something about clarifying the words in the manual. And we hope the confusion is cleared up before you read this.

The timeliness of TAC TALLY, which appeared on this page in the past, was seriously un-timed when we moved up our deadline to get TAC ATTACK out earlier in the month. The TALLY statistics required a good deal of processing. This takes time. More than we have with our new deadline. The info would have been three months old before you saw it!

In the future we will present a quarterly summary of accident rates and cause factor trends. We hope it will be more meaningful.

- Ed

71% of the TACmen killed this year in auto accidents would have lived if they had been wearing seat belts.

