

TAC ATTACK



SEPTEMBER 1966

DAMMIT! GET OUT!!
...page 16

HARDISON

VOL. 6 NO. 9

TAC ATTACK

for efficient tactical air power

SEPTEMBER 1966

TACTICAL AIR COMMAND

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VICE COMMANDER

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Published by the Chief of Safety
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THE COVER

The crucial moment...
will ejection be in time?

... pg 16



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TACRP 127-1

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

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Distribution F, Controlled by OSEPA - TAC Publications Bulletin No. 22, dated 3 June 1966

Angle of ATTACK

THE BUILDUP

The next aircraft accident in TAC has already started.

Few, if any, aircraft mishaps originate close to the time or place we call the "scene." There is always a buildup which we must learn to recognize, leading to the final catastrophe.

In the past year, our maintenance skill level and experience have been seriously reduced. We recognized this potential hazard and started action to correct the problem. We are making special efforts to increase supervision over inexperienced mechanics and stressing careful inspection of their work. We place special emphasis on maintenance training and continually press for improved manning.

As the aircrew training function in TAC accelerated, we recognized it as increased accident potential. Over the years, pilots in transition have been involved in more accidents as their time in the aircraft increased. We are applying the same safeguards of supervision, training, and inspection (flight checks) to counter this threat.

But in the first seven months of 1966, ten per cent of TAC's aircraft accidents were grouped in one area of flying. We had missed the signs of increased accident potential in our maintenance test flights. By the end of July a very definite trend had been established. In two days three Functional Check Flights ended as major accidents with all three aircraft destroyed. Fortunately, all three pilots ejected successfully.

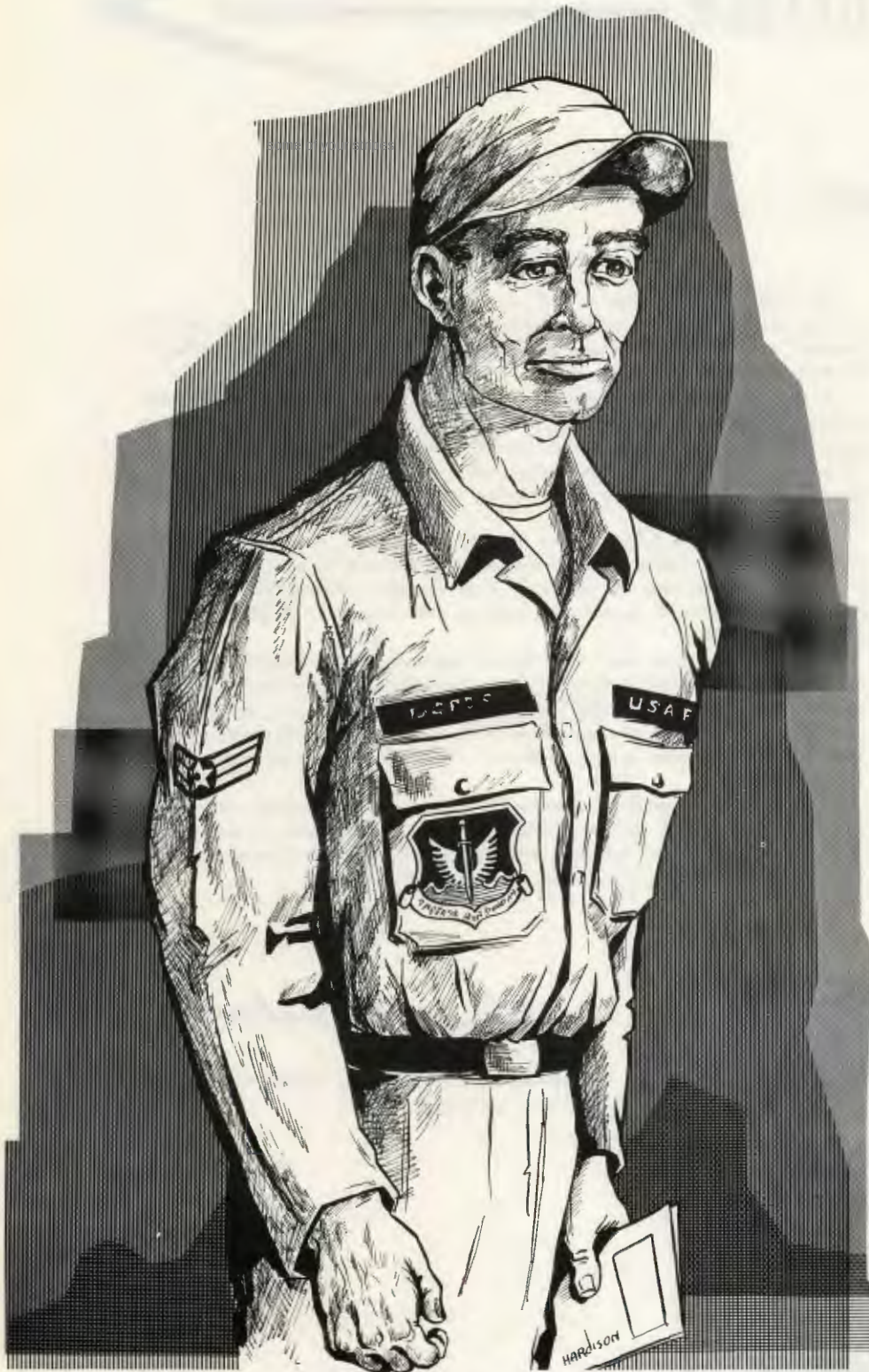
Although we take precautions where new pilots and inexperienced maintenance personnel are involved, we cannot afford to overlook their impact on our routine, familiar functions. We can seldom control all the conditions that start an accident, but we certainly can stop the sequence...once we recognize it.



Homer C. Boles

HOMER C. BOLES, Colonel, USAF
Chief of Safety

SOME OF YOUR STRIPES



he trusted his friend...
and did him a great disservice.

I really felt bad about it when I heard. You know, it's hard to explain how it hits you when you hear that one of the birds went in. And this was one of the bad ones. I first heard it on the radio when I was coming home from the drug store.

Mike had been helping me put

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e new transmission in... he's a real good mechanic on cars as well as airplanes... and we had gone for some late ice cream when we quit working. As we got back in the car the radio came on with music and before we were out of the parking lot the announcer broke in and said there had been a big explosion on the edge of town and they didn't know what it was yet.

Mike and I looked at each other... like, do you suppose it could be...? And before we'd driven the six blocks home the announcer broke in again and said it was an F-100 from the base. No more... just real cold and impersonal like he was announcing the ball scores.

We didn't talk about it going in the house, but I know Mike was wondering, like me, if it was a bird from our flight and whether the pilot got out.

When we got in the house Sarah asked if we'd heard. She knew the answer before she finished asking from the looks on our faces.

We just kinda sat around for a while... I guess we were just waiting for another announcement on the TV. Like I said, Mike comes over pretty often and I treat him just like he was my kid. It isn't like we have to entertain him. Both of us just sat there with our own thoughts, not really looking at the television.

On the late news they said the pilot didn't get out of the airplane, but didn't say who it was. Mike started to get up to call the base, but then he sat down again.

When the news and weather was over he went home. We had to be to work early in the morning. We'd find out then. I went to sleep still wondering if it was one of my birds.

When the phone rang I thought it was the alarm clock and started

to go in to take a shower, but when Sarah picked it up I knew what it was about. The Captain wanted me to come in right away. It had been Mike's airplane.

Yes Sir, I'd pick up Mike on the way in.

I looked at the clock when I hung up... I'd been in bed less than an hour.

Mike heard the details when he got back to the barracks and talked to some of the guys. When I got to his room he was feeling pretty bad. He hadn't undressed or gone to bed or anything... just sitting there on his bed.

He told me what he knew of it while we drove across the base to the flight line. The pilot had reported that the controls didn't feel right while he was on the tanker and decided to abort the mission and come home. The flight leader came back with him and they were getting ready to land. The pilot said once that it felt like the elevator was sticking... that it didn't move when he moved the stick. Then, just as they were about a mile from the runway, the flight leader saw him nose over real sudden and dive right into the ground. The pilot didn't say anything on the radio... it was over in a second.

The Captain grabbed me and Mike as we walked in the hangar and took us into the flight line office. He had the forms that Mike had pulled just after he finished preflight for the night flying. He didn't say anything until we all found a chair and he lit a cigar. He only does that when he's got a real big one on his mind.

And he did! He had the forms where we had pulled the aft section for the engine shop. Really, Mike had worked on it. I have enough problems with the guys we're getting now, I let Mike do his own

work. Sure, he's only an airman first class... but I haven't seen a better mechanic in twenty-two years around airplanes. Some of these jokers that we're retraining to be crew chiefs can't tell a socket wrench from a cross point screw-driver.

And so I told the Captain how we'd had this write-up on the engine and the engine shop had run it on the trim pad. When they brought it back Mike replaced the aft section. After he had reassembled all the control linkage and everything, he ran the form over to me to sign off the Red X. I guess I never did really inspect his work before he buttoned up all the access panels.

But, I told the Captain, this was no time to try to cover anything up... Mike and I had worked this way for months. If I trusted anybody in the flight to do the job right, it was Mike. And I saw his style often enough... on the airplanes, on cars, on my neighbor's outboard motor... Mike's just a natural mechanic. And he's careful and thorough. That's probably what makes him so dependable.

The Captain leaned back and puffed on his cigar a couple more times. I'd expected him to be pretty mad, like he gets out on the line when things are getting tight, but he seemed calm.

Then he shook his head a couple of times. "You're not telling me anything new, Sarge. I've seen you and Mike in action. I know how much you depend on Mike. And there's many a time that I've been awful glad we had Mike around." He looked at Mike for a few seconds without saying any more.

"But in a few minutes," the Captain went on, "I must take these forms over to the accident board. They're going to see this write-up on the aft section removal. And they're going to see

who did the work and who made the inspection."

He started to gather up the forms and put them back in the manila envelope. "I don't know what they're going to find when they start going through the wreckage out there in the morning, but I know they'll be looking for elevator control linkage and quick disconnects. And whether the board decides this accident

was caused by flight control problems... or a bolt out of the blue... I've learned one big truth from it already.

"Sarge... you and I have been forcing Mike to wear the responsibility that goes with some of your stripes and one of my bars. When you let him button up his work without inspecting it... and I let you get away with it... we're placing 100 per cent of the re-

sponsibility for error-free work on his back."

The Captain paused to puff on his cigar again.

"I know what you mean, Sir," I was looking at Mike as I said it. "Mike may be one hell of a good mechanic... but I've never seen anyone who doesn't make a mistake or omit something once in a while. That's why we inspect all critical work."

After takeoff and climb to altitude for about 50 minutes of familiarization maneuvers, the student on his third solo jet flight descended to 6000 feet. He removed his left glove, disconnected the left side of his mask, and lit a match "to get rid of some raveled ends on the parachute harness chest strap."

The positive pressure oxygen system generated a burst of flame from his mask. He held his breath, closed his eyes, and held the torching mask away from his face. After some struggle, he managed to remove his helmet and turn off the oxygen at the console. Altho badly burned, he managed to land the aircraft without further incident.

The pilot was a heavy smoker... he carried cigarettes and three packs of matches in his flight suit. He suffered second and third degree burns on his face and hands. Plastic surgery is indicated.



AGAIN

adapted from USNASC CROSSFEED



**OUTSTANDING NUCLEAR
SAFETY OFFICER**

Captain Charles F. Mourning
317TCW, Lockbourne AFB, Ohio



**OUTSTANDING MISSILE
SAFETY OFFICER**

1st Lt Joseph L. Candela, Jr.,
354TFW, Myrtle Beach AFB, S.C.



**OUTSTANDING FLIGHT
SAFETY OFFICER**

Captain Alva E. Beers
479TFW, George AFB, California



**OUTSTANDING CONTRIBUTOR
TO MISSILE SAFETY**

MSgt Norman C. Green
4520CCTW, Nellis AFB, Nevada

TACTICAL AIR COMMAND UNIT ACHIEVEMENT AWARD

*The following units have distinguished themselves
with a record of 12 months accident-free flying*

943 TROOP CARRIER GROUP, March AFB, California

912 TROOP CARRIER GROUP, Willow Grove Air Reserve Facility, Pennsylvania

914 TROOP CARRIER GROUP, Niagara Falls Municipal Airport, New York

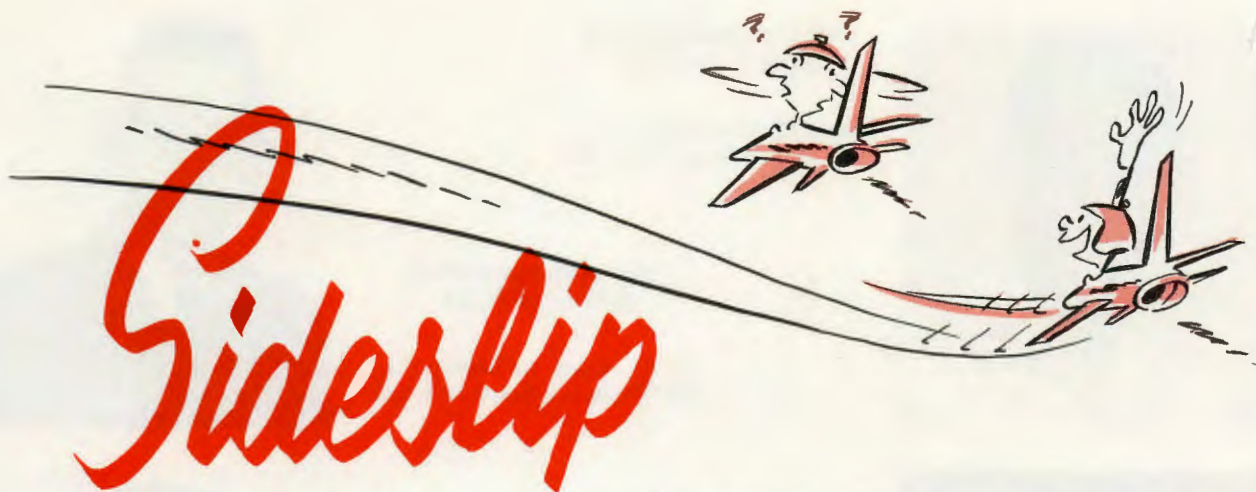
186 TACTICAL RECONNAISSANCE GROUP, Key Field, Meridian, Mississippi

130 AIR COMMANDO GROUP, Kanawha Airport, West Virginia

1 AIR COMMANDO WING, England AFB, Louisiana

178 TACTICAL FIGHTER GROUP, Springfield, Ohio





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.

Brownbagger

Sideslip encounters the hazards of a cross-country parts pickup.

"It's for you again, Captain." The dispatcher held the telephone out toward the center of the room.

Sideslip worked himself up from the depths of the overtired upholstery, tried to shake out his flying suit a little, and sauntered over to the counter.

"Yes . . . ready again . . . and did you check it out?" This routine was getting to be almost automatic, he thought. How many times in the past five days had he been thru this with the transient alert flight chief?

"Okay . . ." Sideslip motioned towards the flight line with his head. Lt. Ned Nieuguye started to get up from the other chair in the Base Ops lounge. "Okay, we'll come out and try it, Sarge . . . mebbe taxi around for a while and see if it still works."

This had been a parts pickup to end all parts pickups. The trip

to the depot had been uneventful. They had changed cockpits when they stopped to refuel, and taken turns flying the letdowns and GCAs. Making a fast turnaround when they picked up the part, they planned to get home in one long flight with the tailwind going east.

The trip had been unscheduled, last-minute. Since they expected to be home that night, they didn't bring clothes or shaving kits for a night away from home.

Then, about three minutes after take off from the depot, the aft overheat light started to flash. It stayed on when Sideslip pulled off some power, so they had gone back and landed.

It was dark before the engine crew replaced the offending overheat detector and the aft section was back on the airplane, but Sideslip had tried to get away anyhow. Ned had the clearance copied,

and Sideslip had started the engine. When they called for taxi instructions the radio was dead!

"If it checks out this time we'll come back in and file." Sideslip picked up the blank Form 175 from the counter and placed it in his pocket. At this point he was reluctant to go thru the motions of getting weather and winds, figuring a new time enroute, and filing . . . only to find that the radio would give up when they started the engine.

Of course, that one time yesterday the radio lasted until they were at the end of the runway, awaiting takeoff clearance. The other six times it had been some kind of magic about the engine start that cooled the radio.

"Your turn to carry the sack, Ned my boy." Sideslip shook his head as Ned offered him the

rinkled brown paper bag. Neither of them wanted to be associated with this symbol of their frustrations, misery, and anger. It contained the personal possessions they had accumulated during their extended stay.

The tube of toothpaste had been a necessity the second day. Sideslip explained his method of using a toothpick for a toothbrush, and Ned had agreed they could share a tube. Later that day when both of them began to scratch at their darkening beards, Sideslip consented to go half on a razor with Ned. In a burst of generosity, he told Ned he could keep the razor to start his collection of TDY toiletries.

Sideslip already had acquired five or six razors under similar circumstances. In his medicine cabinet at home were five packages of blades to go with his electric shaver . . . and four toothbrushes.

On the third day the command people stopped replacing radio sets and started changing control boxes in one cockpit and then the other. At lunch Sideslip and Ned noticed people were giving them an unusually wide berth in the snack bar. Their repeated showers were becoming ineffective against the advancing age of their clothing, so they decided to buy some shorts and tee shirts. BEMO had refused to trade their flying suits for clean ones . . . even when they offered to throw in their TAC patches and plastic name plates. There was some technicality about their Forms 538 which, of course, were resting securely in the supply house back home.

While Sideslip was trying to explain to the saleslady that they needed only one pair of shorts in each size, Ned slipped away to buy a large squeeze bottle of after-

shave and some spray deodorant. Since the saleslady couldn't help him, Sideslip went to find the BX manager. After going thru the whole unhappy story again, he finally received permission to break the packages of three shorts and pay for only one pair apiece.

That afternoon, feeling fresh and clean in their new underwear after another shower, Sideslip and Ned were all optimism when transient alert told them the airplane was ready again. That was the time they got all strapped in, started, and out to the end of the runway before the radio quit.

Although they hovered over the technicians for the rest of the day, their presence failed to add anything constructive to the situation. No one could understand what was causing the radio to act so strangely. By now everyone agreed it had something to do with the aft section removal . . . it hadn't acted up until the engine people replaced the faulty overheat detector. But they had checked and rechecked the cable connections going to the antenna in the tail. They even tried shaking the connector while the engine was running. Sideslip had suggested replacing it . . . but Supply didn't have some.

That night Sideslip changed his order from two hot dogs and a chocolate shake to a cheeseburger and a chocolate shake. And Ned stopped grumbling about the no-flying-suits rule at the club. He wouldn't even go in the stag bar without a clean flying suit.

The fourth day was similar to the ones before . . . except that they took turns going out to the bird to start it. Each time they had to tell the expectant faces on the ramp below that nothing had changed.

That was also the day the Command Post back home started to get nasty. When Sideslip called after the second unsuccessful engine start of the day, the major remarked that a bad radio was only supposed to be good for two days. They'd better come up with a better story, he said, if they wanted to stay the rest of the week!

Ned went to the BX that night and bought the remaining shorts and tee shirts from the packages they broke open the day before. On his return he reported that there was a new Playboy on the magazine rack . . . if they needed more toothpaste in the morning, Sideslip could make the trip.

For lack of anything else to do that night . . . or maybe to change their luck . . . Ned occupied himself for two hours working out all the return route variations he could find.

"I don't really, Slipper," Ned offered as they approached the airplane, "but let's feel like it's going to work this time. I'll stay



here on the ramp. As soon as you taxi around and decide the radio is going to work, I'll zip in and file one of those clearances I worked out."

Sideslip couldn't think of an appropriate answer. He just nodded to the crew chief, climbed the ladder, and dropped into the seat. He swept his eyes around the cockpit while Ned gave the intake and the underside of the airplane a cursory preflight. When the engine settled at idle, Sideslip donned his helmet and turned on the radio.

Tower answered!

Getting clearance to taxi, he motioned for chocks out and nudged the throttle. When he glanced at Ned Nieuguye, Sideslip found him grinning from ear to ear. And after five minutes of taxiing around the ramp Sideslip realized he was smiling too. The radio was still working!

"Don't touch anything," Sideslip bounced down the ladder and trotted after Ned. "Just top off the fuel . . . gently . . . and we'll get out of here."

The tailwind they were counting on had changed to a ninety-degree crosswind . . . they would have to make two flights. But Ned had planned for that contingency too, and it took only a few minutes to make all the marks in the appropriate blocks.

On the way out of Base Ops Sideslip relieved Ned of the brown paper bag. He reached in, found the razor, ceremoniously handed it to Ned, and with a look of triumph, dropped the bag in a trash can. Ned quickly retrieved it . . . and unceremoniously reminded Sideslip that it still contained two sets of new underwear, along with the collection of soiled laundry.

Once they were in the air, Sideslip's old confidence returned full force. He allowed himself the luxury of a burner climb to twenty thousand feet. And Ned's flight planning worked out beautifully. After they corrected the fuel used in the climb, their time and fuel figures were right on the nose.

Over the fix for letdown, Sideslip told Approach Control they would make one GCA low approach and land from the second one. It was good to be flying again. And there was plenty of time to turn the airplane around and get home before dark . . . they might as well fill the training squares.

"Okay, Ned, you fly 'er like you know what you're doing. Get yourself lined up good on the second one and I'll show you how far down the runway we'd land if we broke out at minimums."

"Sideslip . . . this is Approach," the controller interrupted, "Tower advised they have an aircraft inbound with an emergency . . . request you land out of the first approach, over."

"Rog, Approach . . . understand," Sideslip acknowledged. "We'll land from this one."

As they passed minimums Sideslip shook the stick and took over, easing the throttle back.

"You have been cleared to land," the GCA operator continued his spiel, "on glide path, heading two-zero-two . . . on centerline. Now going below glide path . . ."

"Now . . . can you see well enough from back there?" Sideslip wanted to make sure Ned got the point. "We look real high. Too high to land where we normally would from a VFR pattern. Watch the vertical speed now . . . I've only pulled off a little power."

"Okay, I'm impressed, Slipper," Ned sounded concerned.

"You'd better break that sink or the gear struts will come up through the wings."

"There you go, Buddy," Sideslip was making gentle adjustments in power, gaging his sink rate, airspeed, and the end of the runway. "You see, as I come back in with power, we're going to land about 2500 feet down the runway, anyhow. There's no such thing as a thousand-foot touchdown from a GCA unless you cheat before you get to minimums . . . and that ain't healthy!"

Sideslip saw the movement out of the corner of his peripheral vision.

"Sideslip! Go around!!" GCA sounded very excited. "GO AROUND, Sideslip! Acknowledge . . ."

Sideslip had jammed the throttle forward when he realized the T-29 was pulling onto the runway. His wing tip cleared the T-29's nose as they passed, but Sideslip knew it had been close. About mid-field, as he was cleaning up the gear, Sideslip heard the controller come back on the air.

"That T-29 just told Tower he wanted to take off before the emergency aircraft landed. He . . . he pulled out in front of you without clearance . . . nothing we could do about it. You are cleared to tower frequency for landing . . . IFR canceled at 47."

"Ned," Sideslip tried to sound calm as he pulled up to downwind, "You did bring that brown paper bag, didn't you?"

"Yeah Slipper . . . why?"

"I hate to tell you this," Sideslip eased the throttle back, "but I've had an overheat light blinking at me ever since I clobbered the throttle on the go . . . and it hasn't gone out!"



... who needs 'em

The other day Super Sarge grabs me by the collar and says, "Phinque, I wanna talk to ya." He says, "Somebody blew the whistle on the old man about his seat belt program... and I think I know who it was."

I show him a full set of my pearlies and answer, "Aw, now, Sarge you're pickin' on me. Do you think I'd pull a sneaky trick like... Ah...yah...I guess you do."

"I know one thing, you punk." The big slob's gettin' loud. "You ain't put seat belts in that heap of wreckage you call a car yet. Besides, I hear you been spoutin' off at the NCO Club about how a guy can get killed quicker wearin' a seat belt...like burnin' to death or gettin' trapped in the car. Whereinell do you pick up junk like that?"

"C'mon Sarge, I know...well I heard about a guy that got throwed clear of his car and never got a scratch on him."

"Phinque," he was starting to roar, "so help me, I'm gonna..." I left.

Well I sneaked over to the club for a cool one. Those two airman seconds can handle things while I'm gone and besides a guy gets thirsty always pulling night shift. A couple of the troops are there so I get one of 'em to cover for me on the job and three of us start off for the city...to ease the strain we been under.

When we get to the main gate the Air Police don't wave us thru. Would you believe who was there checking on who's wearing seat belts? Nobody else but Super Sarge! I try for a quick U turn but he sees me and I get the whistle. What else I got ain't fit for print.

Well, last night is my night off see, so I have a few belts (excuse the expression) and we head off for town again. First I call the main gate to make sure ol' super snoop ain't there. We buzz on thru and make the scene downtown in a big way...Whitey and me and Pete. I'm still pretty burned at Sarge for what he called me at the gate. And that crack about my heap of wreckage gets to me. Boy, that

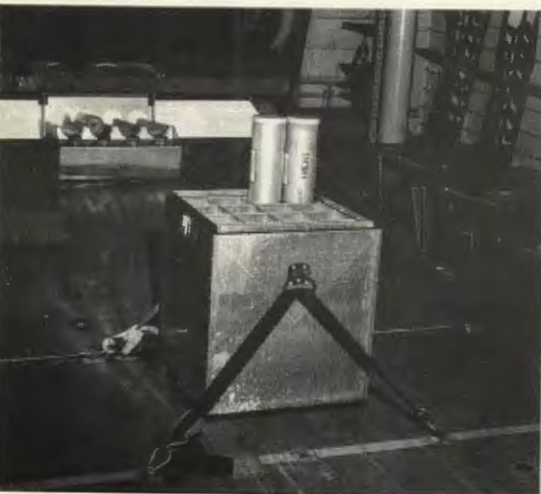
canoe will hit 60 in second so fast you wouldn't believe it. I keep biting on that one and it sticks in my craw til finally I get the other guys and we decide we'll show that big slob whoose...whosh got a pile of heat...I mean, a heap of junk.

Sure enough she hits 60 in second and I'm jush about to let'er out when thish LOL comes rumblin' out of a side street. I guesh mebbe I din't have my lights on...but anyway we clip her in back and my lights all go out.

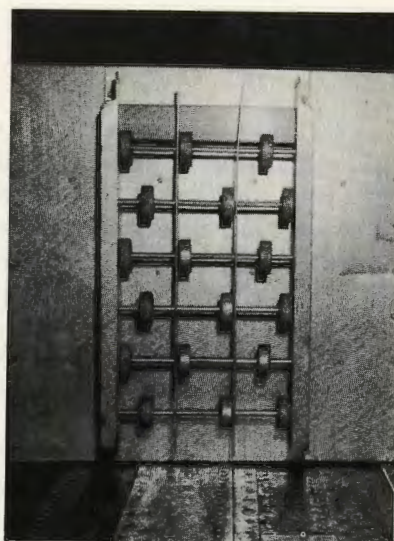
* * *

When I come to today old Super's sittin' there lookin' at me, real bent out of shape like. He tells me Whitey's gone and Pete's got to lose his leg and the little old lady got it too. I'm gonna get thru alright but then he's talking about a kidney I don't have no more. He also rants and raves about had we been wearin' seat belts we would have all made it. What does he know?

Gee, too bad about Whitey and Pete.



Sergeant Kearney's flare container may be easily tied down, or moved on rollers, to position it for economy of movement when flares are moved from the container to the launcher.



BETTER MOUSETRAP DEPARTMENT

By Capt Kenneth C. Goold, Jr.
IACW

For several years the USAF Special Air Warfare Center's 1st Air Commando Wing has been the major user of air-dropped illuminating flares. As the Commandos developed their tactics and procedures for employing the flares, they discovered a definite need to improve their flare handling procedures to reduce explosive

hazards both on the ground and in the air.

The original handling procedure was inconsistent with safety, accountability, and efficiency. Completely crated flares were delivered to the aircraft, the flares unloaded on the ramp, the vendor's crates carried into the aircraft, and the flares restacked in the crates which were then tied down. Before the actual flare drop, the aircrew removed tie-downs from the crates and carried the flares individually to the drop position.

When the mission was over, all the unused flares had to be re-crated and stacked on the flare trailer . . . in the dark! This often involved loading as many as 180 flares and unloading 100 of them at the end of the mission.

Realizing that this procedure was tedious, time consuming, and hazardous, Senior Master Sergeant Allan P. Kearney, an old hand at the research and development routine, designed and built an aluminum flare container which solved many of the problems. Holding 16 flares, the container is compatible to igloo storage and still light-weight for aircraft use. It is designed to allow handlers to fuze the flares without removing them from the container. It also allows immediate availability of the flares for dispensing. Two lead seals give protection from tampering, and the water-tight rubber seal around the cover allows the container to be stored in the open for short periods.

Sergeant Kearney's method has been highly successful in reducing man-hours, assuring strict control and accountability, and reducing the former hazard potential to almost nil.

Congratulations, Sergeant Kearney, for a good idea!



Tactical Air Command

PILOT OF DISTINCTION

Colonel Harry L. Cochran, 121st Tactical Fighter Wing, Lockbourne Air Force Base, Ohio, has been selected as a Tactical Air Command Pilot of Distinction.

Colonel Cochran was flying an F-100 on a dart tow mission at 25,000 feet when his aircraft was struck by two 20mm projectiles from one of the firing aircraft. One projectile shattered the rear half of his canopy. It traveled forward into the left side of the headrest, grazed the side of Colonel Cochran's helmet, tore off his visor, and shattered the left quarter windscreen. It also made the drag chute inoperative when it struck a cable pulley housing. The second projectile entered the right wing, severed gear position indicator wires, struck and ruptured hydraulic lines to the right brake, and went into the gear strut. Colonel Cochran was injured on the face and neck by flying plexiglass. After jettisoning his dart tow rig and external fuel tanks he landed at the nearest field. Despite the windblast, loss of right wheel braking, a collapsed right main strut, and no drag chute, Colonel Cochran kept the aircraft on the runway. He lowered his tail hook and engaged the center of the barrier without further damage to his aircraft.

Colonel Cochran's calm reaction to this series of emergencies averted the possible loss of a valuable aircraft. His outstanding airmanship readily qualifies him as a Tactical Air Command Pilot of Distinction.



A

2ND LOOK



The pilot had his F-105 in a 45-degree bank to the left and moved the stick to the right to roll level. As the bird passed about ten degrees of bank it suddenly rolled to the wings level position and the stick locked in roll. He hit the emergency AFCS disconnect paddle, and control returned to normal. He had only stab aug engaged at the time of the incident.

After an otherwise uneventful landing, the aircraft was impounded for investigation of the flight control and AFCS systems, but no stab aug or autopilot discrepancies turned up that could have caused the difficulty. When the investigators checked further, they found six broken clamps that were supposed to be securing wire bundles in the wings. The bundles were sagging and binding on the aileron actuators.

Incidents of this nature have occurred in the F-105 before. As a result of Unsatisfactory Reports, a project was established at the depot to correct the clamp problem. These things take time, and to date no fix has reached the field.

The unit involved in this particular failure was well aware of the problem, and had instituted a 50-hour inspection of clamps and wire bundles until the official fix comes out. But this time the clamps failed only 29 flight hours after the last inspection... and there was a total of 36 broken clamps in the bird!

Your first reaction to this might easily be, "Boy! Why doesn't somebody get hot and do something about this clamp thing before one of us gets hurt?" A second

look, however, illuminates two courses of action that are on the positive side.

The first is early identification and thorough documentation of problems of this nature. In this case, we assume this was done... the agencies and people who are in a position to take corrective action were notified promptly of the exact details of the problem. The time required for testing, evaluation, design, contract, manufacture, and finally distribution... lead time... is allowed to start as early as possible.

The second positive step we in the field, the operators and maintainers, can take is to insure the fix-makers understand we are very serious about the fix we require. After initial discovery and documentation of the trouble, we cannot afford to sit back and say, "Aw, it's been identified to the depot already, why bother them with it again?"

We are doing ourselves a definite disservice if we fail to report every single failure. Every failure, whether it is discovered in flight or in the hangar... during phase inspection or preflight. This requires the active participation of each man working around our airplanes. Sure, Flying Safety and Quality Control send the reports, but they can only submit reports on situations they are aware of.

It behooves each one of us to be aware of the current problems, be on the lookout for them, and

be sure that someone who can and will take action is notified when we come across an occurrence of

failure... whether it is a new and unknown failure, or one that has been identified long before.



As the Phantom became airborne on the seventh touch-and-go landing of a student checkout flight, both engines flamed out from fuel starvation. Happily, the aircraft was only ten feet in the air with gear and flaps still out in the breeze. The startled crew landed on the remaining runway and managed to stop before they got to the barrier. Recap of the events leading to the big surprise revealed that after reading both the counter and tape values on his early fuel checks, the student abbreviated his fuel calls to the back seat, giving the fuel counter reading alone. While he concentrated on his landing patterns, he failed to see the master caution light or the fuel level low light. He continued to see only the counter on his fuel checks altho the tape indicator was decreasing to zero. He had left the external fuel switch in the outboard position... preventing transfer of internal wing fuel to the fuselage tanks.

This instructor threw away his only opportunity to detect the student's fuel mismanagement when he assumed the single fuel reading meant both tape and counter were showing the same value.

After another phlyer experienced afterburner

problems on a heavy weight takeoff, he called it quits, hauled back on the throttles, and dropped the hook. The Phantom engaged the BAK-9 at about 100 knots with the pilot standing on the anti-skid all the way. The barrier should have stopped his 51,000 pound chariot in 900 feet, but the Phantom rolled past the end of the 950-foot overrun and went another 110 feet before the soft sand brought it to a stop.

When the experts took a careful look at the barrier mechanism, they found paint and corrosion causing a valve to bind. The barrier had not been used since it was installed. But more significant, they also found that the barrier was set for a 1000-foot runout. Apparently, since this is the normal runout distance, no one had bothered to specifically check the length of overrun available. Most overruns are about 1000 feet... the barrier installers assumed this one was.

A second look at this pair of near-catastrophes takes us back to Preflight and Primary days... with an upperclassman shouting in our faces, "Mister, in aviation you NEVER ASSUME ANYTHING!"



After you've been reading aircraft accident and incident reports for a while you begin to realize that many of them are worded in a strange manner. This quirk doesn't catch your attention on just one report. But when you've seen several of them worded this way, you begin to feel uneasy... the reports are thorough and complete, they contain all the normal and accepted statements, but there's something wrong.

Finally you spot the trouble... the reports leave the people out!

"The aircraft was conducting touch-and-go landings."

"The aircraft touched down fast."

"It is impossible to determine when the foreign object got into the tank."

You begin to get the feeling that we don't have a human factor involved in our mishaps any more.

Alright, it's just the style of writing, you say... but a second look at this impersonal treatment reminds us that it can easily lead you to ignore the most important factor in accident prevention. The human factor.

Even though we classify a mishap as material failure, there is usually a human cause factor in it somewhere. Would a more thorough preflight or QC inspection have detected the imperfection that led to the failure? If we had kept better records of the history of that part, would we have been warned that it had been subjected to stresses it wasn't designed for? If the pilot understood the problem better would he have taken it around instead of landing fast? ➤

DAMMIT !

get out !!

In 1964 TAC fighter pilots faced the life-or-death situation of evacuating a crippled or uncontrollable airplane 73 times. Forty-four of these pilots ejected successfully. Twenty-nine TAC fighter pilots did not get out and live!

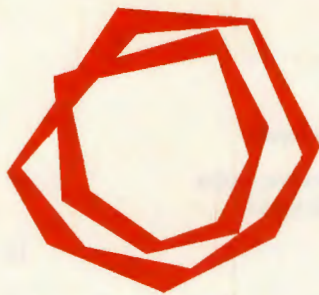
In 1965 TAC fighter pilots faced the life-or-death situation of evacuating a crippled airplane 88 times. Forty-eight of these pilots ejected successfully. Forty did not!

From 1960 to 1965 the percentage of fighter aircraft accidents which resulted in a fatality increased by almost one half.

We in TAC had been proud of the way we reduced the fighter aircraft accident rate from 1960 to 1965. The combined major and minor rate for fighters in the command dropped from 30 in 1960 to a rate of 18 in 1965. We improved, became more professional. Our equipment was better. We handled it more efficiently. And we killed more pilots!!

These figures came to light in the course of a recent study made by Captain George Wood, of the TAC Office of Safety. George, an F-105 pilot who has himself ejected from an uncontrollable aircraft, wanted to know how this startling situation developed, how the fatalities occurred, and what caused them.





While he was working on the study, we often saw George at the coffee pot. He didn't talk much. Sometimes he looked flushed. His hair was usually mussed. George runs his hand through his hair when he's working hard, bothered, or mad. He often seemed to be all three.

One day George came into our office with a sheaf of papers in his hand. He shook the papers across the desk and we could see he was really irritated.

"Here's the first time through the ejection study," he muttered almost threateningly. "I wouldn't believe this if I didn't dig it all out of the reports myself. Read it and see what you think."

It was an order. We read.

During the two year period George concentrated on, almost three-quarters of the TAC fighter pilots who died in aircraft accidents rode their aircraft into the ground or water.

There were 59 pilot-induced accidents which resulted in either a crash fatality or an attempted ejection. Forty-two lives were lost in these accidents.

There were 102 non-pilot induced accidents which resulted in either a crash fatality or an attempted ejection. Only 27 lives were lost in these accidents. Put another way, your chances of surviving such circumstances were almost three times as great when the pilot was not the motivating factor in the situation that caused

the accident. When the pilots felt they were responsible for the impending crash, it appeared they either failed to eject, or stayed with the aircraft too long.

"That isn't the whole story," George said when we looked up, "but it's the most important part. It looks like whenever a guy gets himself into a bad situation through his own fault, he'll kill himself trying to keep from breaking the airplane."

George ran his hand through his hair and pulled a cigarette from the pack on the desk.

"Look at these," he leafed through the pages. "Stalls, spins, late pullouts on the range, vertigo, low altitude acro... we've all done a little of each. But you and I always recovered and flew the airplane home. These are the guys that let one get over their heads.

I'm not damning them for that. What I wonder is how many of them would be flying fighters right now if someone had kicked them in the rear and hollered, 'Dammit, GET OUT!!' It's so easy to get wrapped up in correcting your own goof that you just don't use good sense."

He stopped and looked quizzically at his papers for a minute. "Here... 112 pilots tried to eject during '64 and '65. Ninety-two of them lived. Twenty didn't make it. Almost three out of four of the guys who tried were ejecting from birds that were in trouble for some other reason... not the pilot's fault. And 92 per cent of them survived. Remember now, only one out of four ejection attempts was from a pilot-induced accident. And only 57 per cent of them survived!"

"Look at it this way," George continued, "there were twice as

TAC FIGHTER EJECTION EXPERIENCE

Category	1964	1965	TOTAL
Crashed Fatal	21	28	49
Ejected Fatal	8	12	20
Ejected Successful	44	48	92

Crashed Fatal Category

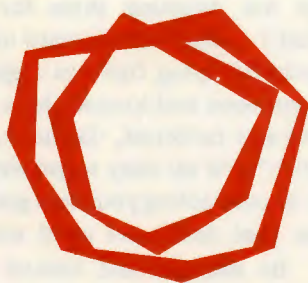
Cause Factor	Nr of Fatalities
Pilot	29
Material Failure	13
Undetermined	7

Ejected Fatal Category

Cause Factor	Nr of Fatalities
Pilot	13
Material Failure	7
Undetermined	0

Ejected Successful Category

Cause Factor	Nr of Ejections
Pilot	17
Material Factor	75
Undetermined	0



many unsuccessful ejection attempts in pilot accidents... yet there were one-third as many attempts made."

He put down the papers and saw the look on our faces.

"Okay, take your time... read the whole thing. There's a lot more in there for you to chew on."

George left the study with us and went out to Nellis to get re-current in the Five.

We learned more unpleasant facts:

In case after case, when the pilots had no doubt that a mechanical failure made continued flight impossible, they ejected without hesitation. But when the pilots knew they had induced the emergency situation... buzzing, stalls, late pullouts, head in the cockpit on a low level... they appeared reluctant to admit defeat. They

As the aircraft descended through 2000 feet the pilot raised the armrests and jettisoned the canopy. He squeezed what he believed was the ejection triggers. Nothing happened. He squeezed again. When he still did not eject, he decided there was something wrong with the seat and started to roll inverted for a manual bail out. When he looked down to release his seat belt he saw the trigger. He had been squeezing the armrest releases.

He placed his feet back in the stirrups and ejected.

stayed with the airplane too long. When they did try to eject, they were too low, too late, and perhaps too slow in their ejection procedures.

In nine of the 20 fatal ejections the pilot delayed until there was insufficient time for the ejection sequence. That means they waited until they were less than four or five seconds from riding it in before they started to eject. Or else they fumbled trying to reach the correct handle. We found plenty of evidence of fumbling in the section about successful ejections.

But there were other causes for the failures, as well. Four fatalities were caused by flailing during high-speed ejections. These were the pilots who found themselves going down hill... and accelerating. For one reason or another they realized they couldn't save the airplane and placed their lives in the hands of an ejection system that wasn't built to protect a pilot in a very high-speed (high-Q) environment. It was the only out and it wasn't a good one.

Two fatalities were caused by flight control failure at too low an altitude for ejection. And two were caused by the seat striking the pilot on the head during, or after separation. The study found 30 per

In 36 ejections the survival kit was not deployed:

Sufficient time but forgot or elected not to deploy (3 pilots had elected not to attach the kit)	19
Insufficient time/low altitude	12
Dazed or incapacitated	2
Kit malfunction, would not deploy	2
Unknown, not brought out in investigation	1

cent of the fatal ejections could be attributed to escape systems incompatible with the performance envelope of the aircraft, or to design deficiency. But these were the unfortunate cases that we in the cockpit have little immediate control over.

The ones we can do something about are like the fatality in which the pilot had only one side of his survival kit attached to his harness. The kit jammed in the seat but the zero lanyard deployed his parachute, which tangled in the seat and was prevented from fully deploying.

It is significant that three-quarters of the fatal ejections occurred within 2000 feet of ground level in a high rate of descent. Over one third of the successful ejections occurred below 2000 feet, but the aircraft was either in level flight or climbing at the time

The pilot had attended jump school and completed six jumps. When he assumed the position and raised the handles the ejection system worked as designed. The entire system was automatic.

The butt-snapper forced him to let go of the seat.

ejection. There were several of these ejections at altitudes as low or lower than the unsuccessful attempts.

These successful low-altitude escapes are the best convincer in the world that you can learn the system... how to operate it and how to take the most advantage of it.

Among the pilots who survived ejection we found several problems that caused delay:

- Fourteen pilots had difficulty finding or actuating the ejection triggers.

- One pulled the survival kit release instead of the armrest.

- One was just unfamiliar with the seat and tried to pull the wrong handle.

- Another pilot failed to raise the armrests all the way.

- One pilot's ejection was delayed because the yellow paint was worn off the ejection D-ring and he didn't recognize it!

These eighteen pilots were very fortunate... their ejection situations gave them a lot of room for trial and error. They probably would not have survived one that demands everything exactly right the first time.

George's study examined the flying time of each pilot involved

When the aircraft flamed out on a night low-level, the pilot zoomed from 1500 to 2500. He transmitted on guard that he was ejecting on the West Low Level. After jettisoning the canopy he had to look down to see the ejection triggers. He encountered no other difficulties during the ejection and separation from the seat.

When he saw that he was drifting over some trees he covered his face with his arms. He did not think to lower his visor.

During nose wheel lift-off the stick came full aft and the aircraft leaped into the air. The pilot could not correct the nose high attitude. He ejected at 150 knots and 200 feet in a nose high, stalled, descent. The seat did not fire immediately and he leaned forward to look at the right trigger just as the seat fired. He suffered two fractured vertebrae.

The Flight Surgeon's conclusions were not included in the findings or recommendations of the accident report. One of his recommendations was to investigate the delay in the seat firing.

In eleven other ejections during 1964 and 1965 the Flight Surgeon's findings and recommendations regarding ejection difficulties and malfunctions were not included in the findings or recommendations of the accident investigation board. Therefore, these identified discrepancies were not brought to the attention of commanders when the reports were reviewed.

in a fatal accident during 1964 and 1965. After reviewing their records for total time, and time in their respective types of aircraft, we found no significant correlation in experience levels. No one was immune. Whether experienced or inexperienced... old heads or new guys... they made the same mistakes.

Our conclusion, after reading through the study again and reviewing all the charts and tables, is that most of the fatalities were pilot induced. The pilots did not know their equipment, how to use it, and most important... when to use it! A fighter pilot doesn't hesitate to leave an airplane that is mechanically unsound. But let him suspect that he failed in some way... and he'll kill himself in a futile effort to save the airplane.

These are pretty strong words, perhaps, to direct to men who have bet their lives they can master the very complex machinery of a TAC

fighter today. But somewhere along the line we have slighted ourselves by not training to master the escape machinery when the situation gets out of hand.

It takes the same kind of sharp that the strafe target takes... procedures review, discussion, and practice. Practice reaching for the handle... the right one... so you can find it every time. It should never matter that the paint is worn off!

Our practice seldom includes

It was extremely cold and the FCF pilot was wearing personal gloves that were lined. He could not actuate the parachute quick release and was dragged 500 feet before the chute collapsed on its own. He may have been squeezing the cover and not the release buttons. They checked out OK.

He was not aware that there were two quick releases on his parachute!

After he decided to eject the pilot connected his zero lanyard. While he was wasting his time at this, the aircraft pitched up and rolled over. He had difficulty finding the armrest handles. After he finally raised the right one he couldn't reach the trigger. He looked for it, found it, squeezed it, and ejected.

He became concerned about his oscillations, but was unable to stop them. He had intended to deploy his survival kit, but became concerned over his drift and forgot it.

He couldn't locate his canopy quick release (he had only one, on the left) during the descent, so he gave up and decided to release his chest buckle instead.

He was dragged 200 yards before two civilians ran up and collapsed the chute for him.

deploying the survival kit... actually dumping it while you're hanging in a harness! Few of us can really describe how we would control drift or oscillation in a parachute descent.

Many of our ideas about the entire subject of ejection are pretty hazy... only because we haven't concentrated on them.

A couple of nights before George left for Southeast Asia he sat cross-legged with us in front of the stereo while the women did their gabbing in the kitchen. George hadn't mentioned his ejection study since he returned from Nellis. He was too busy telling us how it felt to fly an airplane again. We relived each mis-

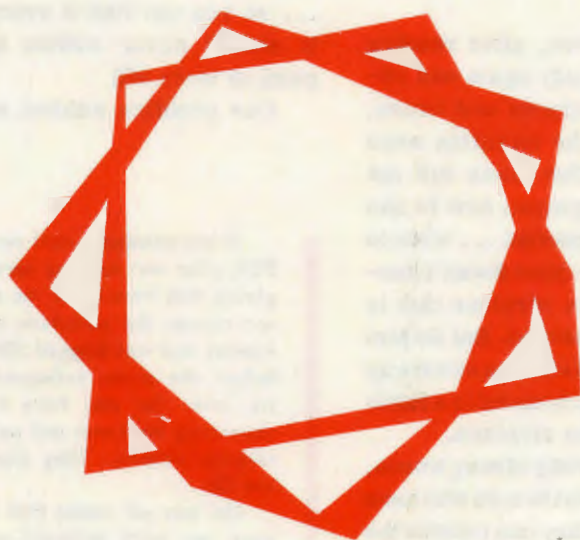
sion with him as he told us about his little triumphs out there... the times he showed some of the kids how to find a target or how to drop bombs.

But the conversation finally turned to how you get out when your contract with the airplane has expired. He said he was more concerned than ever because he was realizing how many new fighter pilots we have flying these airplanes. Some of them are old heads as far as rank and total time goes, he said, but we've got to make them think like good fighter pilots. And we know that too often even the old head fighter pilots don't think enough about getting out in a hurry.

It was the hurry part George kept emphasizing.

George wanted us to spread the word... "Tell the guys to get out fast when the situation gets out of control."

Okay, George, we're telling them...



DAMMIT, GUYS, get out !



CHOCK TALK

chock talk

phantom object

Just as the Phantom broke ground on takeoff, the phlyer saw his canopy unlocked light come on and noted an unusual increase in cockpit noise. He could see daylight between the windscreen and the canopy bow. He held airspeed below 200 knots and checked the canopy closing lever in the full closed position while he bent the airplane back into the pattern and landed.

When the bird got back to the ramp, investigators found a foreign object on the front canopy locking mechanism. It appeared to be the male fitting of a "lift-dot" snap fastener. Nothing like that was missing from either cockpit and no one could figure out where it came from. With the fastener removed the canopy worked just the way it was supposed to.

sharp quarter

The crew chief found the FOD damage during postflight. Neither of the phlyers had noticed anything wrong with the engine during flight, but there it was . . . cuts and dents on all visible stages of the stators and the rotors.

In checking for the source of the FOD the crew chief determined that it hadn't come from any hardware on the aircraft. All the panels, bolts, and nuts in the duct area were in place. Although the engine folks tore down the engine, they never learned what actually caused the damage. But the marks in the compressor indicate that it was a sharp-edged object about the size of a quarter.

parted dart

It happened three times in a row . . . on three different airplanes. While the F-100 dart tow pilot was reeling out his dart the cable snapped and the dart fell free.

On the theory that improper winding was causing the cable to hang up on the reel, the unit completely re-wound all their reels. This time they gave careful attention to proper winding procedures.

The next six launches went without a hitch.

torque again

As the Hundred herder terminated burner after takeoff he saw the overheat light come on steady. The light went out when he reduced power, but he made a precautionary pattern and landed without further trouble.

When the engine people looked into it, they found the aluminum heat shield over the drag chute compartment was burned thru. There was also some damage to the web assembly covering the stabilizer actuator. The fire apparently came from two pigtails. Investigators found the aft fittings on both pigtails were loose. Although the B-nuts were properly safety-wired, it appeared that the fittings were not properly seated when they were torqued after installation. Leaking fuel over a period of several flights had caused the burn damage.

The report closed by reminding all hands that it is possible to get correct torque readings on the pigtail fittings without having them properly seated.



personal briefing

When the F-84 driver raised his gear after take-off, the horn continued to blow and both the MA shifter light and the red light in the gear handle stayed on. When he recycled the gear in an attempt to get a safe up indication, the right gear outer fairing door fell off. After he re-extended the gear, all three showed safe down. He left them that way, burned off some fuel, and landed.

The investigators called it maintenance error. They found that when some work had been performed in the right gear well, the outer door link had been detached from the door by removing the attaching bolt. When it was all put back together, the bolt was re-installed but not torqued. Normal vibration and gear cycling caused the bolt to come loose and fall out. Then the door was free to tear off at the hinge.

The individual responsible was personally briefed on his responsibilities as a maintenance man...by the Chief of Maintenance!

emergency radio quality

When a fighter wing survival equipment type discovered four ACR RT-10 emergency radios inoperative, he took a closer look and found the power plug from the battery broken on each one. On one unit, both the power plug and the receptacle were

broken. The power plugs on the battery cables had been broken when they were attached backward.

To be lost only because your emergency radio was mangled on the production line, after surviving an inflight emergency and ejection, can spoil your whole day. Should you find yourself in this predicament and manage to walk out, let's hope you get to meet the quality control guy that passed your radio.

A close look now can save a lot of painful searching later.

oops...again

The F-105 had just returned from a mission. As the pilot went thru his check list prior to shutting down the engine, his crew chief and assistant started securing the bird. A main gear down lock pin slipped from the assistant's hand while he was up near the nose. The 17 to 20 knot wind moved pin and streamer fast enough that he was unable to catch up with them. They were drawn into the intake. Both N1 and N2 compressors of the idling engine were damaged beyond repair.

crimped

The F-101 had just passed his last target on hi-lo-hi when the pilot saw the number one engine overheat light blink about three times. Then it came on steady. Once the pilot had the engine shut down, the light changed back from steady to blinking.

Since there was no other evidence of fire, the One-O-Wonder headed home and landed uneventfully on his remaining engine. The overheat light continued to blink thru the remainder of the flight.

Troubleshooters called it maintenance factor after completing their investigation. When the engine people last removed number one they allowed the overheat sensing element to catch on the engine. The element was crimped and eventual wear and vibration in flight caused a short in the element at the point it was crimped.

who's clear?

It was to be a normal cartridge start...the Phantom was scrambling from alert. AC power came on the line as the right engine reached 58 per cent and the phlyer toggled the left cartridge. Immediately, the crew chief started making frantic signals to shut down.

After placing the throttles and master switches off and climbing down from his cockpit, the phlyer learned what had happened: The assistant crew chief

... taken smoke from the right starter exhaust as a sign that the left starter had fired also. He began closing the left starter exhaust door before that one fired. Altho he had secured one Dzus fastener, the microswitch that would keep the starter from firing had not made contact. When the left cartridge did fire it burned a hole thru the exhaust port door and burned some wiring in the area. Fortunately, the young man was not injured.

In retrospect, the unit decided their assistant crew chief had not been adequately briefed on his duties and procedures during a cartridge start. His presence in the starter exhaust area was in direct violation of local instructions.

Hmmm-mm, who gave the pilot the all clear to start his second engine?

adjusted?

On the go from a touch-and-go, the phlyers found they had complete hydraulic failure. They landed their Phantom uneventfully after blowing down both flaps and gear.

When the pneudraulic crew investigated, they found the emergency landing gear selector valve improperly adjusted. No work had been performed on the valve since T.O. 1F-4-580 was completed. That called for inspection and adjustment of the emergency gear valve!

'chief chief

The landing was normal and the F-105 pilot reached up and pulled his drag chute handle. Nothing happened.

After the bird had taxied in, the Line Chief found the pilot chute caught on the door locking mechanism. It had been improperly installed.

That 'Five now has a new crew chief.

one-way feather

The C-123 pilot had a good thing going until he arrived at the feathering portion of his engine change test hop. He punched number two feather button and it worked as advertised. Coming out of feather he had to work harder, and perserverance paid off... it finally unfeathered. Undaunted, he re-feathered the engine with the T-handle. This time there was no unfeathering. Reflecting that he should have quit while he was still ahead, the pilot made a single-engine landing.

Prop types found brushes in the propeller brush block assembly worn, dirty, and unable to make contact... except to the feather position.



personal property

The electrician had been hard at work in the intake of the F-100 replacing the ram air turbine switch. When he crawled out to take a break, he left his tool bag, parka, and part of the engine accessory panel lying in the intake.

While the electrician was away, the assistant crew chief came along and started the engine! He made no intake inspection before the start and he didn't check the forms.

Damage to the compressor, from the tools and parka that were drawn into it, was extensive.

The report closed by saying: "It has been restressed and emphasized that the crew chief owns his aircraft and he must at all times be aware of work that is being performed on it." That goes for the assistant crew chief, too!

spiked crunch

The C-123 lined up on the very narrow runway, released brakes, and started to roll. As the aircraft approached 60 knots there was a report that sounded like a gunshot or ricochet, and the bird veered sharply to the left. A few feet left of the runway number one prop clipped a barbed wire fence and crunched a few fence posts. Finally the busy pilot found the right combination and got the bird stopped.

When they got under the airplane to look at the nose gear steering actuator, the crew found it deflected to the hard left turn position. The eyebolt of the actuator was torn and stretched about two inches.

At the point on the runway where the nose wheel steering failed, they found an eight inch spike! FOD... which is controllable... can start that chain reaction that becomes uncontrollable. Crunch!

DRIVER TRAINING

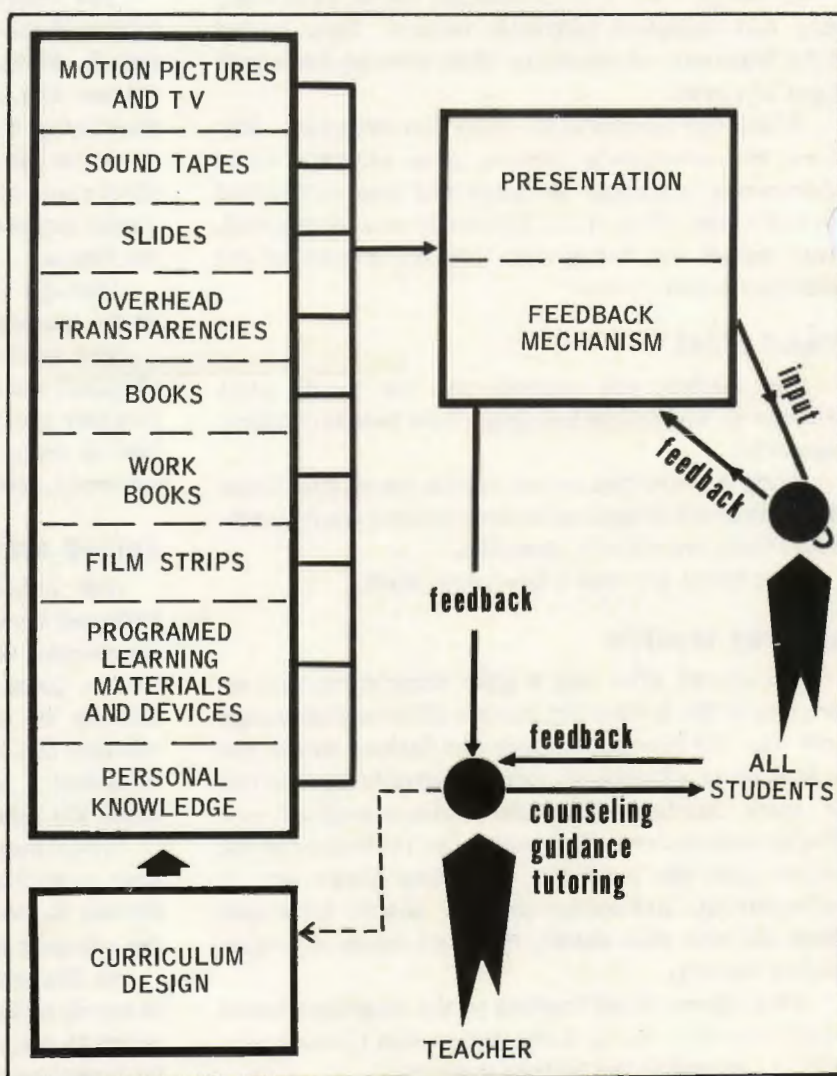
THE SYSTEMS APPROACH

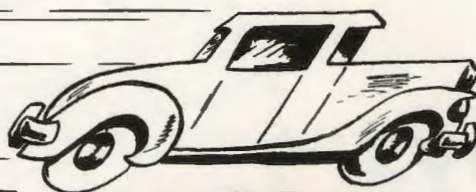
The trouble with driver training is the training!

That's what the Air Force concluded recently when the decision was made to take an entirely new approach to the vehicle accident problem. The old, traditional base driver training school just wasn't producing the kind of drivers that would stay out of trouble. Air Force (and TAC) vehicle accident rates weren't getting any better.

The new approach consists of an integrated... and semi-automated... system of teaching aids that gives the instructor a better chance to get his message thru to his students. Called a Multi-Media teaching system, it combines motion pictures, sound tapes, slides, and film strips in a systems approach to instruction. But the most important innovation in the new instruction is a feedback system which requires the student to report periodically on his understanding of the material presented to him.

The feedback device is called a responder. It is a simple device at each student's desk with five buttons. At various points throughout his presentation, the





instructor asks for response, and from a response recorder at his position, the instructor sees which button each student pushed... indicating his degree of understanding as the lesson progresses.

This serves many purposes. The students, knowing they will be quizzed in this manner throughout the lesson, are motivated to pay attention. It also allows the instructor to immediately identify a student who is not up to speed with the rest of the class and single him out for special attention. Should a majority of the class fail to give the correct response, the system figuratively blows the whistle on the instructor... or his methods... and he knows he must go back over the material in more detail or with more clarity.

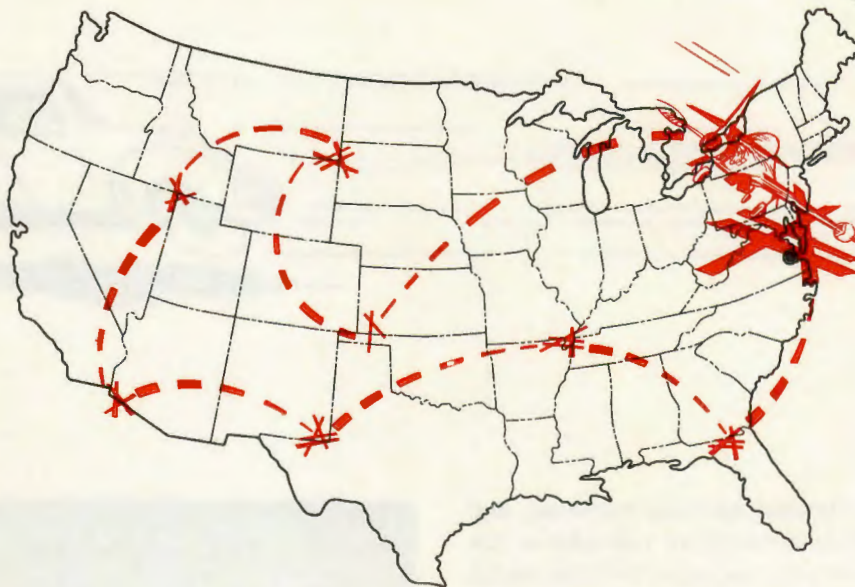
The end result is that less time is lost to ineffective communication between instructor and student. You don't have to wait for results from end-of-the-day or end-of-the-week written quizzes to find out if the training time has been productive. And misunderstandings can be corrected on the spot... before an incorrect idea has an opportunity to register very strongly in the student's mind.



In mid-July Traffic Safety Instructors from fourteen TAC bases met for three days at Langley AFB to work out the finishing touches in their local training programs. The primary interest was in the quality of their local base orientation programs. These programs will supplement the base Air Force Driver Training Program that is being distributed with the multi-media equipment.

Designed to give new arrivals... and new drivers... an understanding of the peculiarities of the local driving area, they highlight specific hazards as well as giving a travelogue-type introduction to the area. Hazardous intersections, or stretches of road that are known to have a high incidence of traffic accidents, are not only discussed in class, the student sees them on the screen.

Surveys Of Places



We on the survey team have started to see some rather startling flight line practices on recent surveys that appear to be the result of reduced experience and skill levels in the maintenance organizations that we visit.

In one recent instance, a young feller neglected to fasten the right front portion of a saddle back on a century series fighter. Although the airplane received an end-of-the-runway inspection, the inspectors there also failed to notice the error. The pilot didn't fail to notice it, however, when his aircraft started to come apart. By throttling back he was able to bring the bird home without losing the mission though . . . through carelessness.

At another base, the maintenance member of our team was cruising along the line when he saw an oil servicing unit. Closer viewing resulted in immediate withdrawal of that unit from serv-

ice. It was filthy! The lack of experience contributed to this, but you still wonder how the supervisor missed it.

Still another instance of low time on the job that we ran across involved a series of goofs. First, a lad installed two tip tanks . . . but he failed to insert safety pins after he had the tanks mounted. Later on the tanks were filled . . . still no pins. Someone else then ran up the engine but failed to lower the gear doors after he completed the runup, as required by the check list. After this our original hero returned, noticed the gear doors were up, climbed up to the cockpit, and smartly pulled a handle. This handle said something about emergency jettison, and the system worked as advertised. Both tanks promptly splattered! It took a lot of special effort to create this situation.

Part of the problem is a common deficiency throughout TAC

. . . we are short of qualified middle supervisors. Since we are going to be faced with this problem for a while yet, we must impress our young troops with the need for reading and heeding the check lists.

Another base was undergoing temporary runway repairs and the hot brake area had been moved. One of the local birdmen didn't get a chute on landing and stopped in the hot brake area. Immediately thereafter, a four-ship flight pulled in right behind him. To his complete dismay, they were dearmed while all four were pointed right at him! Seems as though someone didn't coordinate with Ops on the location of the new hot brake area.

A Phantom unit had not been installing all their safety* pins in their birds. Before the survey team had an opportunity to spot the

* He did that, we didn't . . . Ed.

...ential ... it happened! A seat
retaining bag got tangled in the
egress system. When someone
pushed the canopy button, the can-
opy caught the bag which ...
caught the initiator which ...
fired the canopy which ... hit the
tail which ... ad nauseum. The
report we received said super-
visory error, for failing to insure
compliance with post flight in-
spection cards.

Would you believe that flight
line supervision is going to get a
lot of attention from our team? It
sure looks like it needs it.

We had an interesting time
with a nuclear training device that

had been on one of our bases for
several years. It was so old there
was no accountability for it. Un-
fortunately someone had made un-
authorized modifications to it
which resulted in some pretty
frightening electrocution poten-
tials. In addition, due to severe
spalling, there was a potential
radiation hazard.

So if, by chance, you have a
museum piece around, may we
respectfully suggest you take a
second look at it ... before it
becomes a problem.

A final note on flight line oper-
ations. We still see people drive
up to an aircraft and get out of the

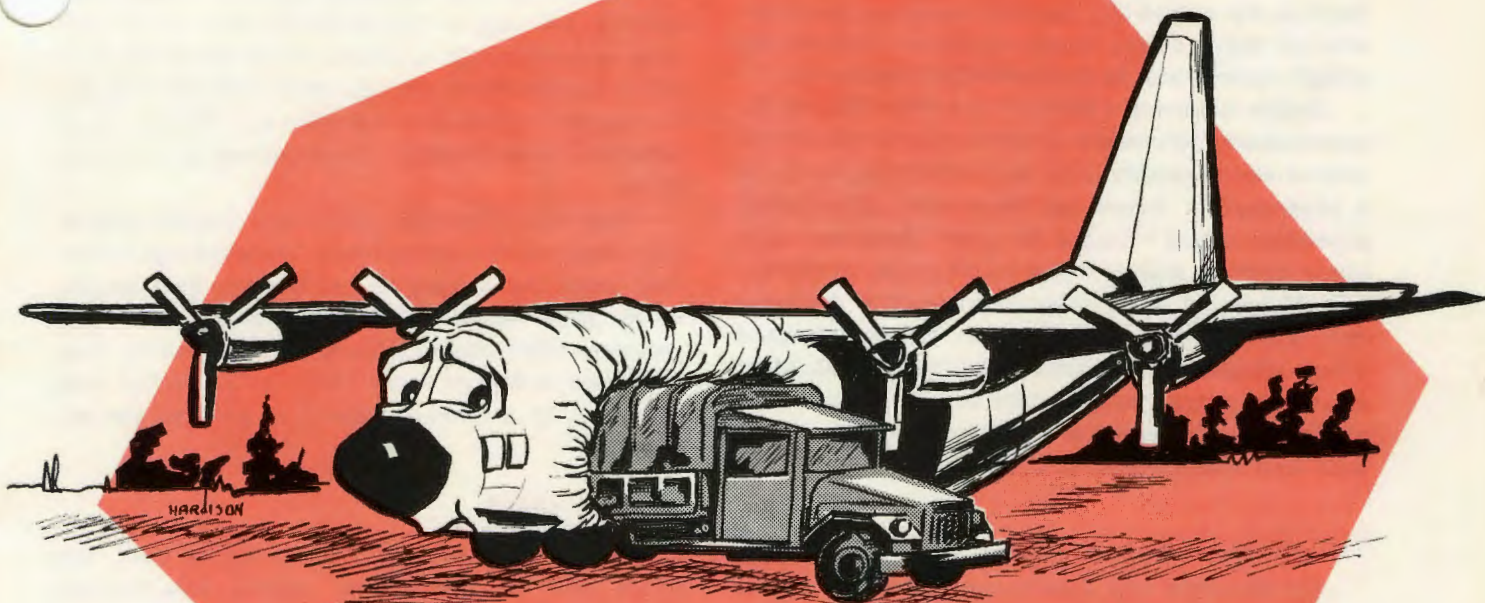
vehicle without shutting off the
engine or chocking the wheels.

It's been a couple of years
since an airman did this only to
have the gear shift jump into re-
verse. The vehicle backed many,
many yards ... into the Trans-
portation Officer's office!

Now imagine a truck-sized
dent in the side of one of your
favorite aircraft! Uh huh!!

See you next month.

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



TAC TIPS



NON-STANDARD PROCEDURE

Eight minutes after takeoff and eight miles from the field the Boxcar driver reduced power to climb settings. When number one responded with a bark, the pilot yanked the throttle back. Then he slowly reapplied power. It barked again and he pulled the throttle again. This time he inventoried mixtures, carburetor heat, and fuel tanks, but to no avail. As he turned old twin boom back toward the runway, his crew chief suggested they place the prop in full decrease rpm and manifold pressure at 20 inches.

After this rude treatment the engine backfired continuously until the pilot shut down the engine. Earlier, the engine had required max manifold pressure to reach reject torque on takeoff roll, so the inflight failure was an understandable follow-on.

Engine failure is a potential we live with, but the non-standard procedure of prop control in full decrease and 20 inches MAP on a backfiring engine is a head-shaker. Years ago there was a discredited procedure called "loading the prop" that some recip types tried to sell as a fast oil warm-up procedure on cold days. It worked the same way. Full decrease rpm and 20 inches. It would make the temperatures climb alright . . . and cause the plugs to foul. After all these years, and all this standardization, the shade-tree mechanics are still with us . . . along with their non-standard procedures.

DON'T RISK IT

The shooters had done some good work . . . their dart was pretty well chewed up. On the way back home it appeared to be towing well, and Dart Tow lined up on the drop zone at the base. As he approached the field, the cable suddenly broke and the dart fell in some woods six miles from the runway.

In the future the unit involved will jettison darts with extreme damage on the range . . .

BOXED IN

The fighter pilot, from another command, was on an instrument cross country flight when he canceled IFR half way to his destination. Some 125 miles beyond this point, a civilian helicopter pilot saw the fighter make three passes over a high mountain lake. Following the last pass, the fighter pilot found himself in a box canyon. After about 160 degrees of turn, pilot and aircraft stalled and mushed into the steep, rocky hillside. Neither survived.

FAILURE FORECAST ?

The C-123 was cruising serenely along when number two engine backfired and lost power. The crew noticed torque oil pressure, manifold pressure, and oil pressure fluctuating. They reduced power, but the engine continued to backfire and vibrate rather severely, so they feathered it and landed at the closest field.

When the propulsion people got into the engine, they found a broken rocker arm. But more significant, they found that the engine had recently been written up for poor torque recovery in cruise. When they reviewed other engine failures in the squadron, they found that in almost every case, the failure had been preceded by a similar history of poor torque recovery.

PHLYERS SHOOK

The Phantom was in a thirty-degree bank, two miles from the runway after takeoff, when the baggage pod fell from the aircraft. The converted BLU-1B had been mounted on the left inboard pylon. When it separated from the aircraft it hit the left drop tank and broke in two. One piece went harmlessly under the tank, but the other piece rolled over the tank, hit the pylon, and went into the leading edge flaps.

After the bird was back on the ground, investi-

ors found the pod had not been locked on the pylon when it was mounted. The flight line troops who mounted it had not used a ground safety pin to secure it. The aircrew shook the pod, but failed to check it visually for a positive lock.

The phlyers involved were briefed on the proper way to check pylon-mounted stores for a positive lock.

LOOK LIVELY

On his first attempt to make a refueling contact, the receiver's system went to Contact Made, but the tanker system remained in Ready. While all hands were studying this problem, the receiver aircraft moved into the inner boom limit. Boomer called for a disconnect and actuated his disconnect switch. However, as his boom retracted from the receptacle, he saw it strike the receiver's receptacle doors. Damage to the boom precluded any further refueling.

A little less delay in retracting the boom might have avoided the damage... and embarrassment.

POWER PROBLEM

On his first touch-and-go landing in the Phantom, the student phlyer allowed his bird to develop an excessive sink rate prior to touchdown. He leaned back with the stick to raise the nose instead of adding power to reduce the descent.

When he touched down in a nose-high attitude, both left and right stabilators scraped the runway. Stabilator tips had to be replaced and the leading edges required repair.

The instructor phlyer in the rear seat could have saved the day by being a little closer to the throttle when his student failed to add power.

SHORT SUPER HOG

The flight of two F-84s was cruising peacefully at 5500 feet when Number Two heard a loud bang and felt a thud. Unable to find anything wrong on his cockpit instruments, he asked Lead to look him over.

Lead promptly reported that Two's left pylon tank was missing.

When investigators looked into the MB3 bomb rack, they found it secure, but a voltmeter check showed battery power on pin M of the left pylon pull-out receptacle. Tracing the schematic to the K-4 bomb jettison relay, they found a three-eighth inch flat metal washer lying across two of its terminals.

Nobody knows how it got there.

TAC ATTACK

PARKING NON-PLAN

The One-O-Wonder from another command had parked his steed for the night where the transient crew directed him. As he climbed the ladder after preflight the next morning, the ground crew asked that he move his Voodoo as soon as possible after engine start. Seemed his exhaust would be pointing right at the tail surfaces of a Gooney behind him. The Base Flight C-47 had been parked going the other way!

The Wonder eased his throttles forward, started rolling, checked his brakes, and eased into the turn toward the taxiway. His jet blast blew the control locks off the Goon and damaged the right hand elevator, breaking the outer and intermediate hinges. Later investigation showed that some trim pulleys in the tail section were damaged, too.

The Base Ops people quickly worked up a new parking plan for both transient and base birds.



OUT TO LUNCH

The C-119 crew was enjoying a quiet lunch in the coolness of their air-conditioned cockpit when a few sandwich wrappers departed the bird through the pilot's open window. The litter loss was followed by a sudden torque loss in number one. The no-longer-hungry pilot leaned on throttles and mixtures... and passed up dessert...but to no avail. Bouncing torque and surging rpm needles convinced him the picnic was spoiled. The single-engine landing was, as they say...uneventful.

Maintenance troops found sandwich wrappers on the carb air intake.

R ecognition

CREW CHIEF OF THE MONTH

Technical Sergeant Frank A. Rowe of the 479th Field Maintenance Squadron, George Air Force Base, California, has been selected to receive the TAC Crew Chief Safety Award for the month of August 1966. Sergeant Rowe will receive a letter of appreciation from the Commander of Tactical Air Command and an engraved award.



MAINTENANCE MAN OF THE MONTH

Airman First Class James A. Eng of the 404th Munitions Maintenance Squadron, Seymour Johnson Air Force Base, North Carolina, has been selected to receive the TAC Maintenance Man Safety Award for the month of August 1966. Airman Eng will receive a letter of appreciation from the Commander of Tactical Air Command and an engraved award.



T-33

MAJOR - Aborted takeoff, collapsed gear off end of runway.

A-1

MAJOR - Gear up landing.

A-26

2 FATAL - Impacted 1 1/2 miles from runway on GCA.

F-84

MAJOR - Entered spin from stall series on FCF. Ejection successful.
MAJOR - Inflight fire. Ejection successful.

F-100

FATAL - Struck ground on simulated dive bomb run.
FATAL - Flameout. Airstarts unsuccessful. Ejection unsuccessful.
MAJOR - Engine failure, apparent oil starvation. Ejection successful.
MAJOR - Lost elevator control on FCF. Ejection successful.
MINOR - Lost brakes on landing. Dropped hook too late for BAK-9.

F-101

MAJOR - Pitched up behind tanker. Ejection successful.

F-104

FATAL - Struck ground on strafing range.
MAJOR - Engine fire lite, smoke in cockpit, acft nosed down. Ejection successful.
MINOR - Overrotated and bounced on landing.

F-105

FATAL - Flameout after takeoff. Ejection unsuccessful.

F-4

MAJOR - Flew into ground 1 mile short, off runway on nite GCA. No injuries!

C-119

MAJOR - Engine fire inflight. Crew & passengers bailed out successfully

TAC TALLY

AN ANALYSIS OF TAC ACCIDENT EXPERIENCE

for july 1966

MAJOR ACCIDENT RATE			
TYPE	TAC	# ANG	AFRES
ALL	8.6	12.6	5.6
O-1	0	0	0
A-1	12.2	15.7	0
F-84	-	15.6	15.8
F-86	80.1	0	0
F-100	14.6	16.3	0
F-101	47.0	65.2	0
F-104	28.3	0	0
F-105	23.5	0	0
F-4	8.2	0	0
B-57	0	0	0
C-47	0	0	0
C-97	0	0	0
C-119	0	0	5.9
C-123	0	0	0
C-130	0.8	0	0
T-29	0	0	0
T-33	0	10.3	0
T-39	0	0	0

ACCIDENT FREE

ACTIVE	MONTHS		ANG/RES
401 TFW 4 TFW	5	9	122 TFW
27 TFW	4	8	117 TRW
33 TFW 15 TFW	2	3	123 TRW
4500 ABW	61	72	349 TCW
4442 CCTW	44	47	403 TCW
516 TCW	23	37	459 TCW

JULY

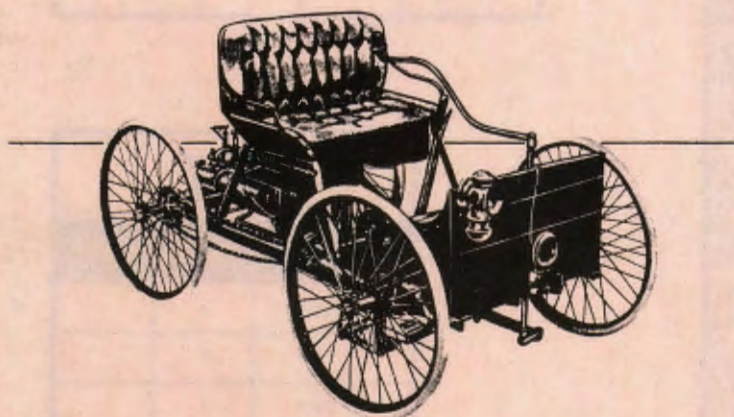
UNIT	MAJOR	MINOR
1 ACW	1	
23 TFW	1	
31 TFW	1	
67 TRW	1	
102 TFW	1	
108 TFW	1	
113 TFW		1
127 TRW	1	
140 TFW	1	
354 TFW	1	
363 TRW	1	
446 TCW	1	
479 TFW	1	
4410 CCTW	1	
4510 CCTW	2	1

* estimated due to non-receipt of ANG rates at presstime.

thru july 66

1965

in the beginning ...



... Henry's horseless carriage was no doubt one of the most important creations in the progress of technology. Gas and oil replaced hay and oats. The parking space in front of the general store replaced the hitching rail. America was fast moving toward a new way of transportation.

As Henry's followers improved his auto, made it go faster and made it stronger, they realized a need to make it more reliable. They began the search for a stronger tire and installed shatter-proof glass. They developed bright headlights so they could see and be seen. And as they improved the machine, they found a need to improve their roads and highways.

When you compare today's automobile to Henry's horseless carriage, you might say offhand that we've gone as far as we can. But after reflection, you'll agree the improvements will continue.

Our grandchildren will wonder how we managed with today's crude buggy. But they will accept and use the accessories we have added to Henry's invention. In the beginning of their experience the family auto will be as it is today. It will have headlights, turn signals, and backup lights...everyone will use them. The drivers of tomorrow will not question their use. They will understand the logic of windshield wipers and limited access highways. And see the need for effective brakes.

They will use seat belts.