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FLYING SAFETY

UNITED STATES AIR FORCE

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THE EDITOR'S VIEW

When the "Rags to Riches" story was making the rounds of coordination, discussion started in the shop about *why* the accident rate for certain commands had shown such a marked improvement over last year. You might say that the thing to do is just count our blessings and not question the "why" too much. But it is just as important to know what we are now doing *right* as it is to know what we have been doing *wrong*.

The Directorate of Flight Safety Research is not meant to be just a storehouse for accident reports. Without analysis of these reports and an application of the lessons learned therefrom, the Directorate might as well close up shop. Filing cabinets might look neat and efficient, all lined up in an office, but it's the *insides* we're interested in. If our files should show that there are 50 less T-33 accidents this year, as compared to last year, this is really news. Why is it so? Have the boys finally got the word? If so, what was it?

Reasons for improvement are not easy to pinpoint. For example, no one can tell us why the four-minute mile barrier, once broken, has proved to be fairly easy to break again and again. Has the human body all of a sudden become more efficient? Or is the training method better understood now?

It is most important that the Air Force learn exactly why the accident rate is coming down year by year. Obviously, our total efforts are beginning to pay off. But isn't it possible that if we knew precisely which of those efforts were most effective, we might show even more marked results on the positive side next year?

Scientists are coming closer to the answer of which came first, the hen or the egg. One geneticist's answer is that "a hen is only an egg's way of making another egg." In other words the egg is prime mover, the "raison d'etre" as the French say. Within the egg, in its chromosomes, are all the answers. The chicken is just an elaborate piece of machinery, or factory if you will, which is set up to make more eggs. The fact that fried chicken is enjoyable to eat is a fringe benefit.

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What we must do is take a look within the Air Force egg, our flying accident record. All the answers are there, good and bad. Careful selection of the good factors within the egg will result in a better strain of eggs to come and the fringe benefits can be many: fewer accidents, fewer fatalities, a stronger Air Force, a sounder economy, a nation strong and prepared for any eventuality.

From the various commands the Directorate of Flight Safety Research must get some of the answers. What are the commands doing right? Is it more interest from the top —the commander himself? Is it all out effort by the command standardization board? Is it better training on a day-to-day basis by all echelons of command? Whatever it is, the answers are available. Analysis will bring them out. The Directorate of Flight Safety Research would like to know when you find out what your command is doing right. We'll pass the word so that the whole Air Force may benefit. . . .FDH

Tips from the Top on . . . .

vigilance

In March of this year Mr. E. R. "Pete" Quesada, Administrator, Federal Aviation Agency, solicited the cooperation of the Air Force in his continuing crusade against mid-air collisions. In a letter to the Honorable James H. Douglas, Secretary of the Air Force, Mr. Quesada, himself a noted Air Force pilot, points up the need for pilot vigilance. We quote: "I feel compelled to call your attention to the increasing number of reported near-misses of recent weeks. I know that you are well aware of this problem and *the responsibilities we all share* relating to it and feel certain that the Air Force, by constant emphasis on the importance of vigilance, can materially assist us in their prevention.

"The current rash of near-miss incidents forcibly points out that all pilots must be more vigilant to the presence of other aircraft in the airspace. This is particularly true when operating IFR under VFR conditions. An IFR flight plan, as has so often been indicated, in no way reduces the necessity for continual visual surveillance.

"We must all candidly recognize the existing limitations of our control system and cockpit visibility, as well as the vast mixture and speeds of modern aircraft. We must also recognize that *there is no substitute for maintaining a thorough and vigilant watch for other air traffic at all times.*

"I am convinced that beneficial results will be obtained from again enlisting the support of the Air Force in a program designed to bring forcefully to the attention of all pilots the necessity for constant vigilance and continuing awareness of this pressing problem.

"While I fully realize that pilot vigilance alone is not the entire answer to the near-miss problem, I am confident that it will serve to lessen the hazard until the positive and constructive program we now have under way to expand and improve our air traffic management facilities becomes effective.

"I want to point out that a similar letter has gone to the other military services and civil aviation organizations to insure that this message reaches all users of the airspace. I am sure that we can reduce the exposure and alleviate to a considerable extent the near-miss hazard."

In answering Mr. Quesada, the Secretary says, in part, "The Air Force is in full agreement with the need for increased pilot vigilance by all users of the airspace. Your letter complements the strong measures, including continual emphasis of pilot vigilance, currently in effect throughout the Air Force.

"While your correspondence is primarily directed toward air operations in the United States and possessions, the Chief of Staff has directed that your letter will be brought to the attention of all Air Force aircrew members and air operations personnel world-wide. . . . You may be assured of continued Air Force emphasis on this subject, and of our full cooperation in your efforts to reduce air collision potential."

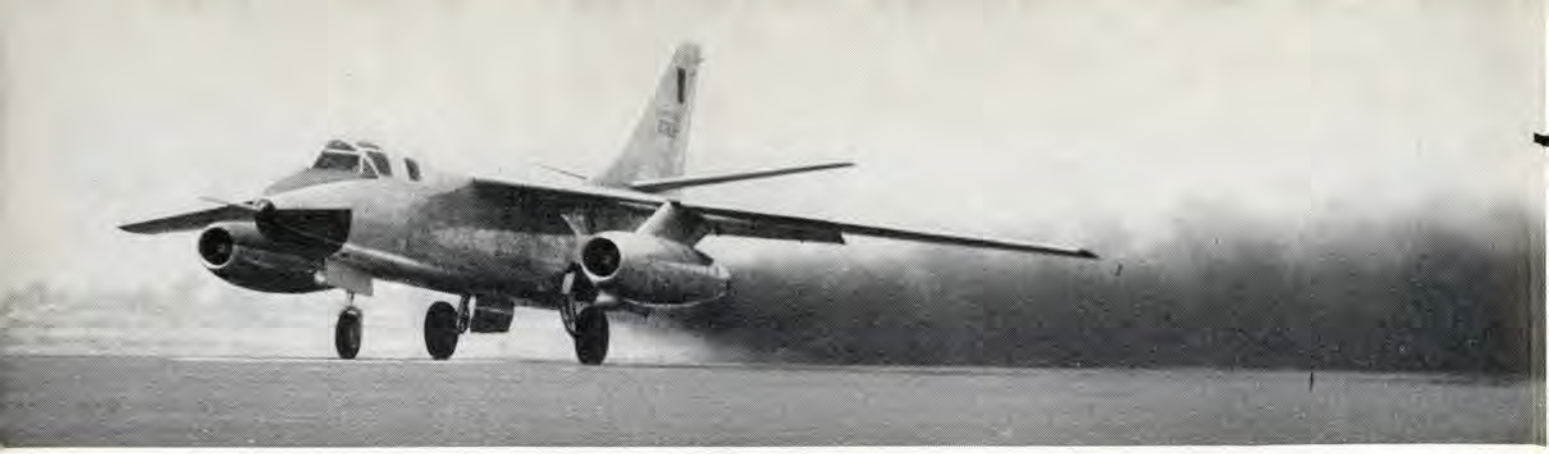
In passing the word to Air Force personnel world-wide, General Curtis E. LeMay, Vice Chief of Staff, notes that, "The 'see and be seen' concept has recognized limitations. This concept, despite these limitations, will remain a fundamental means of collision avoidance in the foreseeable future of world aviation. Constructive progress is being made in Air Traffic Management; however, the most sophisticated system of air traffic control and airspace management will never entirely replace the requirement for maximum aircrew vigilance.

"The primary responsibility for vigilance rests with the pilot at the controls of the aircraft. Equally important, to offset cockpit visibility and aircraft control limitations, is the vigilance support given to the pilot by his crewmembers and the air operations personnel who control and advise him."

As General LeMay points out, all the concern and emphasis in high places will go for nothing if the individual crewmember doesn't conform. As usual, pilots, it's up to you! To be vigilant is to be awake and on the alert to insure safety or to discover and ward off danger. ▲

"The most sophisticated system of air traffic control and airspace management will never entirely replace the requirement for maximum aircrew vigilance."

General Curtis E. LeMay



Of all the aircraft accidents within the Air Force each year, one fifth of them occur during the preparation for flight phase—preflight, taxi, runup and takeoff. According to General Spicer, a vigorous and imaginative accident prevention program is the only answer if we are to stop losing our combat potential to this . . .

FATAL FIFTH

Brig. Gen. Prescott M. Spicer, Commander, 27th Air Division, Norton AFB, California.

The Air Force, by achieving a phenomenal reduction in the number of aircraft accidents, has made an important contribution to the combat effectiveness of our weapon systems. But much remains to be done in this field which will severely test our management efficiency.

Since 1922 we have reduced our aircraft accident rate from 467 per 100,000 flying hours down to the incredibly low figure of 10.4 in 1958. Although this is a significant achievement in itself, it is not the end of the line. As our aircraft become more complicated and their operations more challenging, we will have to pursue our accident prevention program with vigor and imagination in order to keep the rate at the present level or, preferably, reduce it during the next reporting period.

Of all phases of flying, probably none is less glamorous but more demanding than preparation for flight. We still suffer approximately one fifth of all major accidents in this area. In fact, the number of takeoff accidents has been increasing in the past five years. This trend shows not only that this phase of flight is becoming more complicated, but also that seriously renewed emphasis must be placed on it to avoid an increase in accident rate.

From the beginning of our aviation records, takeoffs have produced some of the most unfortunate incidents in aviation history. When Langley designed his first aircraft for takeoff on the Potomac River, he and his pilot Manley failed to allow sufficient clearance between the aircraft tail and the launching platform. As a result, this flight, practically the first in aviation history, failed on takeoff with a catastrophic crash into the river. More recently, the mass flight of KC-135s from Westover to England was marred by a takeoff crash which destroyed the lead aircraft and killed a SAC general officer. Of course, not all takeoff accidents are this tragic and momentous. But whether spectacular or not, each accident reduces the potential of the Air Force, compounds maintenance problems, and in some regrettable cases, loses us valuable and experienced aircrew personnel. While an airplane at the beginning of our military aviation history might have cost us 40 to 50 thousand dollars, a major accident today may lose us a three-million-dollar airplane.

For maximum success in reducing taxi and takeoff accidents, pilots, supervisors and flying safety personnel must know the causes of accidents and how to anticipate where they may occur in the future. Knowledge is the best safeguard against trouble. All aircrew members should realize that appropriate information is available in some publicized form. Our discussion, however, is of the early phases of flight, including flight preparation. Pilots and supervisors must recognize the need for concentration on the complicated series of steps related to the preflight inspection of an airplane. They should realize that diversion and delay can not only cause serious omissions in preflight checks but can also induce a thoughtless impatience in aircrews that goads them to actions contrary to their normal behavior patterns.

Preflight accidents and incidents occur from the time when the pilot first approaches his aircraft through the takeoff itself. Some result from the pilot's failure to observe the most obvious danger signals. For example, last winter a C-45 pilot completed his preflight inspection, totally ignoring the heavy layer of frost covering the wing and tail surfaces. The pilot removed heavy frost from the windshield and shortly thereafter applied power for takeoff. Unfortunately, only a few feet of altitude was obtained before the airplane pitched up to a high stall angle and crashed just off the edge of the runway.

Many pilots have overlooked less obvious danger signals, such as the T-33 driver who failed to see that the

armament doors were not locked. Following the takeoff he made one emergency radio call from an altitude believed to have been less than 400 feet, then crashed inverted a short distance from the end of the runway.

These accidents and many others prove the need for exhaustive information and systematic method in checking the aircraft for flight. Starting with the status of the aircraft itself, this information is obtained largely from the Form 781. Entries can be verified in part by the actual preflight inspection. The combination of the two provides the pilot with the necessary facts concerning fuel servicing, maintenance status and armament. Failure to obtain complete information on these conditions can lead to incidents ranging from the embarrassing to the catastrophic.

An F-102 pilot recently overlooked a live armament load, and during a practice run on a target aircraft accomplished a wholly unintended missile test. The mission was successful only in the sense that he accurately and precisely shot down the target aircraft. The two crewmembers fortunately escaped without injury. Although less common today, our history of aircraft accidents is replete with examples of aircrews coming to grief because they failed to verify by inspection that the aircraft had been serviced with fuel, oxygen or hydraulic fluid.

While integrated crew training and passenger briefings have been developed to a high degree of precision and method, no aircraft commander can risk failing to check the personal equipment of the aircrew members or passengers prior to flight. The crewman who fails to provide himself with adequate personal and survival gear is a menace to the safety of his fellow crewmembers. In case of emergency, non-standard escape procedures must be adopted in order to protect the negligent member. This can jeopardize the success of the most carefully calculated ditching, crash landing or bailout plan. Records this past year have been filled more with accounts of skillfully conducted survival episodes than tragedies resulting from preflight errors of this type. On the other hand, there are incidents almost daily in which crews realize too late that they failed to have with them the necessary maps, handbooks or flashlights.

The current requirement that aircrews use standard checklists appears to be the best solution to the problem of errors and omissions during preflight and engine runup. Supervisors, however, must still assure themselves that the checklists are being used. What is required and what is done are often two quite different matters.

Supervisors and commanders should also make certain that checklists are revised and kept up to date as new information is disseminated about aircraft improvements and modification. One sound idea concerning checklist use that should be universally adopted is that when an aircraft is manned by a crew of two or more, one pilot should read the checklist while the other performs the designated operations.

The job of compiling checklists has assumed the status of a minor science. Keeping them to manageable proportions should be one of the aims of those engaged in this new discipline. For example, the checklists used with SAC's huge aircraft are necessarily long and elaborate. But they are thorough, and when used conscientiously, leave almost no chance of any component of the aircraft being skipped or missed in the preflight.

But whether the checklist is simple or elaborate, there is always the possibility that the man using it will not use it properly. If he is interrupted, diverted, delayed or otherwise prevented from following his habit sequence, he is likely to overlook some item or component. And as fate so often has it, the thing overlooked is the nail for which the kingdom was lost. Some omissions, like failing to remove safety pins from ejection seats, have no effect whatever on flight routines. No, the presence or absence of the pins doesn't affect the plane's functioning at all. But if they're in when they should be out, and the pilot has to go, he won't be functioning in the future.

Almost all pilots have experienced those disturbing delays or changes in clearances which can have a far more serious effect on the flight than might at first be anticipated. For example, a B-47 crew already delayed by servicing difficulties, became so concerned with ATC clearance delays that they attempted a five-engine takeoff in order to join the balance of the formation which had taken off sometime before. Takoff problems were compounded by an improper weight-and-balance determination and ice and snow on the runway. The predictable result of these errors in judgment was a crash which cost the crew their lives. Each day we probably have dozens of lesser incidents where pilots, hurrying to meet takeoff or weather clearance expiration time, have taken off with improper control settings, seat pins still in place, or other deficiencies which place them in a marginal condition for flight.

Taxi accidents have been reduced about one-third in the past five years. In general, taxi accidents are less costly than the average of other major accidents since speeds aren't as high and even a direct collision does not involve the loss of the entire aircraft. Although some taxi mishaps are caused by careless or myopic wingwalkers or inaccurate signals from ground crews, most are charged as operator error. The typical taxi accident is caused by the "heads down" pilot who starts his engine without brakes or chocks, or completes part of his checklist while taxiing.

Some aircraft checklists permit certain cockpit checks to be accomplished while taxiing. As an example, T-33 fuel and emergency fuel checks are frequently checked with the aircraft in motion. While no specific T-33 accidents have been attributed to this cause in the past year, we are obviously dealing with a situation fraught with inherent hazards. Recently, the Training Command had a series of inadvertent gear retractions in the T-28 because of a requirement to raise the flaps while taxiing. Deletion of this requirement from the pilot's checklist stopped these accidents.

Airfield construction hazards and natural obstacles like ice, snow and soft shoulders continue to contribute to the ground toll. Almost all commands which have operated aircraft in northern regions have some record of aircraft striking snowbanks while taxiing, although the most serious aspect of ice and snow hazards is loss of control of the aircraft at high speed following the landing.

When taxiing, visibility from the cockpit is usually poor. If the pilot is taxiing at night on a strange field and has an unlighted taxiway to contend with, accidents seem almost inevitable. Supervisors must recognize the need of briefing all pilots thoroughly, with schematic diagrams, to relieve this problem. Taxi accidents, after all, could theoretically be totally eliminated if pilots would heed the briefings, stay alert and reduce taxi speeds.

Other cases of outright carelessness add to the total in this category. An L-20 pilot taxied behind a C-119 running up for a mag check, and was blown over onto one side by the blast from the C-119 engines. A similar accident occurred when a C-123 attempted to taxi behind a C-130 and, despite its relatively large size, was similarly damaged by the high velocity airflow from the C-130's turbojet engines.

In 1954, takeoff accidents accounted for 14 per cent of the total of all USAF major accidents. By 1958, this figure had risen to 16 per cent, a two per cent increase in four years. Poor technique and faulty judgment in marginal and aborted takeoffs played a large part in increasing this percentage. There appears to be a special problem of anxiety among those crews flying aircraft requiring long takeoff rolls. In takeoff-abort accidents involving these aircraft, investigation sometimes revealed that the acceleration speed reached just before the decision to abort was made was within a few knots of the pre-computed figure with more than 2000 feet of runway remaining for gathering the extra speed. These pilots, when questioned later, explained that the airplane "didn't feel right," or they simply "didn't think it was going to fly." Perhaps there is some value in the old joke about adding extra airspeed in the landing pattern for wives and children that can be applied to takeoff. A few extra knots on takeoff roll might make pilots less worried about getting their birds into the air.

The failure to establish proper takeoff attitude brings many pilots to grief. Several accounts of B-47 accidents describe the big bombers leaving the runway in an excessively nose-high attitude. They were actually in a stalled condition. The subsequent, inevitable crashes merely underscored the problem; jet aircraft must not be pulled off the runway before they are ready to fly. This unhappy temptation occurs when pilots have not precisely computed their takeoff rolls and distances. A large toll of both planes and pilots testifies to the necessity of knowing these figures down to the precise foot of distance and knot of airspeed.

In the early days of jet aviation there was no requirement for takeoff distance and speed to be computed. The critical inter-relationship of thrust, temperature and field elevation was not widely known. As a result, pilots were driving airplanes off the ends of runways, through irrigation ditches and up telephone poles because they didn't stop to compute takeoff distances when the temperature went up and/or they flew from airfields with a higher elevation. The same jet aircraft that can take off handily on a 7000-foot strip in the cool of the early morning may wallow right on out into the boondocks and a bad crash when attempting takeoff from the same strip in the heat of noon.

After regulations were written requiring that takeoff distances be computed, pilots were still driving off into sagebrush country because of insufficient acceleration on hot days or at high field elevations. The solution was to correlate the computed takeoff distance with acceleration checks that would let the pilot know, as he used up runway, if the available thrust was going to be sufficient to get the bird off the ground. Strangely enough, not much emphasis was placed on the necessity for meticulous takeoff computations until 1957, when it became apparent that the volume of takeoff accidents could be cut down by enforcing this practice.

The high frequency of takeoff accidents still with us suggests, however, that making takeoff computations is not enough. This flight planning habit should supplement the positive readings of an acceleration measuring device that could be used along with torque meters and pressure ratio gages for a more certain indication of power output. The combination of these things would inform the pilot, without an instant's hesitation on his part, that his aircraft was accelerating properly. This might help cut down the number of aborted takeoffs attributable to slower than normal acceleration.

Once the airplane is off the ground and the gear is coming up, it would seem that one hazardous step in the flight is successfully completed. But is it! Some missions are terminated within the field boundaries shortly after takeoff because—it's almost too embarrassing to repeat—the gear was pulled up too soon. Think of it! A second or two of delay in slamming up that gear handle might have saved many a man's life and untold numbers of high-priced flying machines. One tragic example of this dangerous impatience involved a B-57 pilot who prematurely retracted his gear just after the aircraft left the runway. It settled back, caught fire, and became a roaring inferno. From all evidence, this accident could have been prevented if the pilot had just waited a few moments until the aircraft was clearly airborne, and then yanked up the gear.

Apparently, aviation will have to suffer an occasional accident of this kind until some ingenious soul favors the less astute pilots with a proximity apparatus that won't let them retract the gear until a safe altitude has been reached.

There are some all but uncontrollable takeoff situations which, when encountered, allow the pilot no time to think. He must *act* instantly, instinctively. There is no time for a checklist. Each muscular movement in the emergency procedure must be a kind of instinctive response, the result of hours of thought and practice which have grooved this course of action deep into the brain and nervous system. Engine failure shortly after takeoff, for example, is perhaps the most perilous emergency that can confront the pilot. The pilot must react instantaneously lest a moment be lost. This is a time when a single second can literally mean the difference between life and death. Supervisors, and of course the pilots themselves, must constantly drill and re-drill in the practice of emergency procedures. Then, when the chips are down, the pilot may have a royal flush to back him up in his battle against the odds.

Remarkable success has been achieved in reducing the number of aircraft accidents per unit of flying hours. But the cost per accident has increased, and in some cases, reached truly staggering figures. Today's complex jets with their dazzling performance characteristics represent hundreds of thousands of skilled manhours of thought and labor, and millions of dollars of taxpayer earnings. But more important, they are combat potential, the instruments with which this nation is preserving freedom throughout the non-communist world. An aircraft destroyed in an accident is not only a shameful waste of national wealth, it is a weakening of this country's vital strength. To help preserve this strength by decreasing the accident rate is certainly an enterprise worthy of our finest efforts. ▲

from TINKER to EDWARDS by CHANCE

What could go wrong? A T-33 with over 800 gallons aboard, 900 nautical miles to go and only 55-60 knots of wind just off the nose. Should figure about two hours and 40 minutes en route and the destination was 10,000 broken, 30 miles visibility.

Sure the flight would be in the weather most of the time with the 31,000-foot flight altitude given me by ATC, but I'd been over that route so many times all the headings and radio frequencies were a matter of memory. I figured I'd have about three hours and five minutes in the air and that gave me a bulge of 25 minutes to play with at Edwards. I'd been at Tinker for a week on business and decided to stop in at Altus just for an hour to see an old buddy, then get on out to lizard land. This made the long flight distance less anyway. Against the wind, the Oke City to Edwards jump was just a little too long.

As so often happens, the first clearance ATC offered me was out of the question as far as climbout instructions went. By the time I could have performed all the gyrations they wanted, the fuel counter would have had a sad tale to tell. Finally, I got an acceptable clearance which had me making a 180-degree right turn after takeoff to intercept the 260-degree radial from Lawton Omni. Then I was to remain below 4000 feet until this interception, climb out on the 260 radial to 15,000 feet and contact Fort Worth Center for further clearance. I had to waste about eight minutes at 15,000 feet before I got my ATC clearance for climb from that point. The frequency was overloaded, of course. I had wanted to fly at an on-top altitude (over 35,000 feet) but I ended up going direct to Amarillo at 24,000 feet as far as Childress and then got 31,000 on over the Amarillo VOR facility.

Thirty-one thousand was my assigned level all the way to Albuquerque and at last I got up to my 35,000 after that point. About this time I finally got a good ground speed reading and found out I was running five minutes slow on the Prescott leg. I was pulling 96 per cent and had a calibrated airspeed of 245 knots. From the time-check and turbulence I figured I was meeting headwinds over the expected figure. Thirty knots over to be exact. My groundspeed was coming out at 310 knots or thereabouts. Too slow!

Needles could not give me any winds aloft information but I figured that either a change in altitude or course was indicated. The original forecast of increased winds at higher altitudes was the clincher for me. I decided to drop down to 31,000 and go on into Edwards. Terminal weather was holding good for I now had 12,000 broken. The area I knew like the palm of my hand, and even though darkness had now set in there was no worry on the terminal end.

ATC approved my 31,000 request and I cut back to 94 per cent for the rest of the way. Over Daggett I had an indicated 85 gallons showing in the fuselage tank, and the groundspeed had picked up to 345 knots. ATC cleared me to leave controlled airspace now and I was to contact Edwards for further clearance so I did this and reduced my power for descent to the Edwards Omni 50 miles away. At 20,000 feet I got a rapid penetration approval from Edwards tower and started down. The fuselage tank was showing 45 gallons now, but during the penetration I saw the indicator needle fall rapidly from 40 to 10 gallons. My passenger called this to my attention as I was mumbling to myself about this development. Things were falling away!

I had about 7000 feet now to play with and I was northeast of the Auxiliary Test Site. I pulled the nose up to establish an optimum glide speed of 150 knots and throttled back to idle. I was trying to make runway 22 on the main base but realized I would possibly have to make a precautionary landing on the dry lakebed. The lakebed lights came on as I declared an emergency. The landing gear came down but just before all three wheels locked into place the engine surged slightly and I cut it off entirely. One hundred thirty-five knots glide speed brought me on in to the lakebed and a smooth landing. I didn't make it to Edwards but I came close!

As you can guess, I caught all kinds of particular hell about this one. The investigating officer agreed that according to Pilot's Handbook performance data, the aircraft carried sufficient fuel at takeoff to complete the flight in accordance with paragraph 41, AFR 60-16. But he went on to say that at some undetermined time during the flight, remaining fuel became less than that required for compliance with the same regulation.

A contributing factor, according to this gentleman, was that I conducted the flight at altitudes and power settings other than those shown in the Pilot's Handbook for best range and/or maximum total distance. He suggests that more careful preflight and inflight planning might come in handy. I for one won't argue the point. But I *could* wish for more accurate wind forecasting. Meanwhile, back to the classroom. This refresher course the General ordered might be all right after all. ▲

THE CHECKLIST

✔ Control systems should be so designed that incorrect assembly or reversed operation of controls is impossible.

Installation of aircraft systems and components should be designed to prevent maintenance personnel from inadvertently reversing or mismating fittings and couplings, mechanical linkages, instrument leads and electrical connections.

All parts that must be installed in one position only should be so designed that inadvertent reversal at assembly or during maintenance work will be impossible.

Superficial markings such as scribed lines, decals or color coding (are aids but) are not acceptable as positive insurance against inadvertent reversal of parts at assembly.

✔ Flash item. A T-33 pilot suffered a case of hypoxia when the oxygen mask facelet (Fed. Stock No. 5509-1660-535-3312) became unglued around the section that fits over the nose and allowed oxygen to escape from this area. A check of all masks on the base revealed three more in like condition. If your mask has a facelet, inspect it right now. In future additions of the facelet, rough up the surface of the mask to assure positive adhesion of the mask and facelet with the glue.

✔ Air Training Command performs a "without warning" type spotcheck on its crewmembers while the engines are being run up. And even as the aircraft is taxiing out, the FSO actually stops the airplane and takes a look into the cockpit. Invariably, almost every unannounced spotcheck has revealed these discrepancies:

- Proper flying boots not being worn.
- Zero lanyard not connected.
- Lanyard not connected from aneroid automatic chute opener. This one usually goes unobserved once the pilot settles into the seat, so he forgets it. It should be included in his checklist *before* crankup.

Now for the good side: No seat pins have been found left in. This may be the result of a practice adopted from the Navy, whereby the crew chief will *not* remove chocks until the pilot holds up the pins.

✔ In the event the nose compartment doors of a T-Bird come open during flight or just after takeoff, proceed as follows:

- Speed brakes—**DOWN.**
- Airspeed—Maintain between 130 and 215 KIAS.

CAUTION

Nose compartment doors opened in flight will disrupt the flow of air around the pitot masthead causing erratic airspeed indications.

- Drop tiptanks if they contain fuel.
- Maintain 20 KIAS above normal final approach speed. Use a wide traffic pattern making all turns gentle and easy. Bring the aircraft down very cautiously on final. Do not attempt to spike the aircraft on the runway and do not allow the aircraft to balloon.

✔ The Annual USAF Flight Safety Conference is scheduled to meet at San Bernardino, California, during the week of 14 - 18 September 1959. This conference will have USAF world-wide representation to establish a productive flying safety program for the year 1960.

A planning conference attended by representatives of Air Force major commands convened at Headquarters, Flight Safety Research on 28 April 1959 to develop the agenda for the September meeting, which is as follows:

- Approximately 75 key tactical unit commands will be invited for opening day for the purpose of discussing ways in which the commander can more firmly relate safety to flight operation and the command function.
- The remainder of the conference will be spent in 12 seminar meetings. Major commands have been requested to name their participants. The comprehensive program to be developed will include these subjects:
  - Command and Supervision
  - Aircrew Professionalism
  - Air Traffic Control Procedures
  - Maintenance and Materiel Standardization
  - Command and Supervision—Safety
  - Man and the Flight Surgeon
  - Flight Preparation
  - Maintenance and Materiel—Facilities
  - Education
  - Air Traffic Control and Flight Techniques
  - Survival
  - Missiles.

✔ For the few doubters who might remain, the zero lanyard on the parachute assembly has two more mighty grateful converts. These two pilots were forced to eject from their respective F-100s last April and both had the lanyard properly fastened. One made it from about 500 feet and the other from 2500. The files of the Directorate of Flight Safety Research continue to confirm the value of this safety device, and you get it at no extra cost.

✔ Just after takeoff as the B-47 entered its climb, the left wing began to drop. Corrective control pressure failed to compensate for the wing-down tendency. Visual inspection showed the front end of the left external tank and strut hanging down from the wing, from which it immediately separated. Relieved of this 8800-pound load on the left wing, the aircraft instantly rolled into a 50- to 60-degree bank to the right. The pilot swiftly actuated the right wingtank jettison switch, and the right wingtank dropped away. Airspeed at this time was approximately 185 knots and altitude about 400 feet. The aircraft was levelled out, climb resumed, and the flight continued.

This pilot's split-second reaction to a low-level emergency condition was the result of mental conditioning and thorough knowledge of emergency procedures. He had lived through this emergency before—in his imagination! Instantaneous recognition of the problem had triggered off a chain of mental and muscular responses that enabled him to do the right thing at the right time, almost without thinking. He not only knew his emergency procedures, they had become part of his reflexes. Reviewed your procedures lately?

✔ Picture two pilots in a T-33 during a test flight after engine change. Everything is normal, with engine instruments reading as prescribed. This flight should have been the maintenance man's dream—no write-ups on the form and an early supper for the crew chief. But somehow things were going too well for the pilot. Not enough excitement to suit him. At 20,000 feet, 92 per cent, takeoff and landing fuel switch properly OFF and fuselage tank booster pump ON, our pilot for some reason decided to actuate the emergency fuel checkout switch. (Yes, the one on the right side of the cockpit.) The RPM dropped to 85 per cent and fluctuated from 84 to 89 per cent. Without moving the throttle, the checkout switch was released. The RPM dropped to 15 per cent and the TPT to zero. He did it! He got a successful flameout! Several airstart attempts later, still no flame. A forced landing in the sagebrush and one main landing gear change, completes the story. It is not yet known why the airstarts weren't successful, but the flameout surely was. Let's complete the preflight checklist on the ground and not at 20,000 feet.

✔ A recent F-101B canopy loss led to doubt in the field as to the ability of the rear seat occupant to position himself for ejection while being buffeted by airblast. It is reported that the R/O was forced forward and was unable to position himself to eject. As a result a series of flight tests were conducted at and by McDonnell Aircraft Corporation during the week of 16-20 March of this year. A review of sled test film was also made. Subsequently, a conference was held at Wright Field between representatives of the Air Defense Command, WADC and the Weapon Systems Project Office. They unanimously concluded that there is no force gradient created by the airflow with canopy off which will force the rear seat occupant forward or which will prevent him from properly positioning himself for ejection.

Part of the McDonnell findings show that: With the canopy off at 8000 feet and an indicated airspeed of from 200 to 364 knots, a crewmember in the rear seat can, without undue physical exertion, position himself in the normal ejection position. Film coverage shows the R/O moving from the full forward to the ejection position. However, tremendous mental determination is required because of the physical discomfort experienced due to air loads and buffeting in the erect position. Speeds above 364 knots were not evaluated with the R/O in the rear seat since time for acceleration to and deceleration from higher speeds would expose the test subject to buffeting for time intervals far in excess of those normally required for ejection. The tested R/O is of the opinion that he could have moved to ejection position without difficulty and could have withstood buffeting at much higher speed if the time interval were limited to that actually required to move into position and eject. A review of sled test film verified that airflow remained turbulent at much higher speeds and that the dummy was buffeted but not forced into any particular position.

✔ During the past 15 months, eight F-100 drivers have come to grief because they failed to abide by the fine print written in various sections of the Flight Manual concerning flight with external loads. These eight accidents occurred because the pilots engaged in maneuvers beyond the capability of the aircraft in the condition in which it was loaded. The loads involved consisted of both pylons only and various asymmetric tank configurations. The Mark IX missile pylon was on aircraft involved in three of these accidents.

The Flight Manual contains several references to the poor lateral stability of the F-100 with both asymmetric loads and with inboard pylons installed. It is particularly sensitive to low airspeed, high G maneuvering while it is so loaded. Any use of aileron is very likely to result in a spin under these conditions. The ailerons on F-100 aircraft produce what is called adverse yaw at low airpseed. This means that when the stick is moved to the left, for example, a tremendous drag is exerted by the deflected aileron on the right wing, causing the aircraft to yaw right at the same time the pilot is saying "Go left, you fool." He ends up in a spin if he persists.

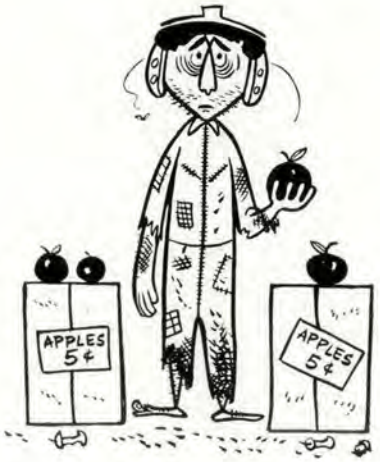
Unfortunately, once a pilot gets in a spin he often forgets to jettison external stores. If these are not jettisoned, the aircraft probably won't recover from the spin. A large variety of stores cannot be jettisoned for reasons too numerous to mention here. The big thing to remember is that when the F-100 is loaded with stores and/or inboard pylons, it becomes nothing more than a big, lumbering bomber and must be treated as such.

Fighter pilots must be provided a vehicle in which they can practice their trade. In the F-100, this means a clean aircraft. Unfortunately, the mission is such that clean aircraft are scarce as hens' teeth. In some cases, therefore, just to keep their hands in, pilots engage in maneuvers which shouldn't be performed with external stores. A pilot with a clean aircraft who has nothing better to do sometimes engages an aircraft with external loads whose pilot is on another mission. Everyone knows this is a breach of discipline on the part of both pilots and should not happen. The pilot who refuses engagement under such conditions is smart, but rare.

One unit has solved this problem by letting each squadron have one week during each month with clean aircraft and no alert commitments. This provides the pilots a period in which they can practice their trade without fear of getting into trouble. Maybe this is a solution. At the rate the aircraft are spinning out now, however, things can't go on this way much longer. Look for more restrictions and prohibitions to come if each individual doesn't use common horse sense.

✔ The 75,000 member Aircraft Owners and Pilots Association has proposed to FAA that speed limits be set for flights in the Continental Control Area. They advocate 180 mph below 2000 feet, and 350 mph from 2000 to 15,000 feet. According to AOPA, "There is no more excuse for an aircraft to fly at low altitude and high speed in a terminal area, or close to the ground anywhere, than there is for the Queen Mary to steam up the Hudson River at high speed." Any comments?

✔ ARDC sends news of a reactor gun being developed for the future space voyager. In weightless space a man's slightest effort or motion will tend to propel him in the direction opposite to the motion. By use of the reactor—a package of high-pressure air bottles, short hose, nozzle and discharge valves—the future pilot can control his movements. He simply aims it directly away from the point to which he wishes to go and presses the valve. Now we're caught up, Buck Rogers. What else is new? ▲



RAGS to RICHES

Hard work and tight supervision was the formula for success used by the 115th Fighter Squadron, ANG, in its drive to become a top safe flying unit.

When a fighter squadron flies in "bad luck" for years, then wins a Flight Safety Award for an outstanding accident-free record, there's more to it than a change of fortune. Other units can profit from the measures employed by supervisors to make the 115th Tactical Fighter Squadron a credit rather than a debit to the Air National Guard and the U. S. Air Force. The question is, what did they do right?

For years the 115th Tactical Fighter Squadron had either led the accident parade or been right in there pitching for the runner-up honors. "Bad Luck" seemed to dog the footsteps of each succeeding C.O. and operations officer. SOPs were rewritten. Pilots were harangued, grounded or hanged as befitted their offenses. Corrective action was always promptly initiated—after the fact, after the bent or charred F-86 or T-33 was assigned to the base fire detachment for practice drills. Letters were written and conferences held to explain the discouraging succession of accidents. But none of these measures filled the bill. Accidents seemed to keep right on happening and the hole in the dike was always plugged after the hangar was afloat.

Then suddenly, two years ago, mid-March of 1957 to be exact, the grim parade of accidents stopped. Missions were flown as briefed and the birds came back unbent and unbroken. Month after month went by without so much as a scratch except for the fairing around the landing gear when the barrier caught a couple of strays. Deservedly, the 115th was nominated for the Flight Safety Award and proudly accepted the honor. Here was news in capital letters. News on the positive side for a change. Not the kind of news that makes the front page, of course. But the kind of news that makes commanders and supervisors all up and down the line happy, contented and ulcer-free. But more than the surface news that all was well, there must be a story underneath. Why had the 115th become the model unit instead of the black sheep? What had this outfit done right?

Colonel Robert D. Campbell, Commander of the 146th Wing, ANG, at Van Nuys, California, and former commander of the 115th Squadron had the ready and obvious answer to the why of the change. "Improved supervision at all levels has brought the 115th out of the woods," was his brief comment. Nothing startling here, of course, and yet it is the unarguable answer to the question of why any unit makes progress in efficiency and flight safety. Of course, this is easy to say. The details of how this improved supervision came about, just what steps were taken to improve supervision, are more to the point. So with the thought that other organizations might profit from the hard won lessons of the 115th, Colonel Campbell decided to call together all the supervisors involved in the rags to riches story of the 115th and put on paper the actual day-by-day measures taken to do the job.

Looking back to the period just before the accidents stopped, the assembled supervisors agreed that the first step in the right direction came from a basic policy change within the 146th Wing. At that time it had been the policy of the Wing that all rated staff members be current in the tactical aircraft assigned. This means that the 115th and the other squadrons assigned to the Wing were carrying an insupportable load of attached pilots. The 115th itself had 81 assigned or attached pilots to fly in the 25 assigned F-86s, and two T-33s. Simple mathematics, a little multiplication in this case, showed that there just wasn't enough time to go around. If the available time were prorated, none of the pilots could comply with the minimum 60-2 requirements. Furthermore, the tactical, or seat pilots had not the least chance of flying the 110-plus hours required annually by CONAC Training Directive 10-12. The result was, of course, that pilots would come out to fly time after time and find no airplane available. This in turn meant that re-checks were needed for those who did not maintain currency. And the IP

load on the two full-time flying training supervisors became ridiculous.

Therefore, the first step, a policy change by the Wing, was the decree that only the assigned tactical pilots, their C.O., ops officers, group and wing commanders, two flying training supervisors and the Air Force Adviser would fly the unit's aircraft. In the case of the 115th this brought the pilot load down to a workable 39 total. The admittedly loose supervison now had a chance to tighten up.

The order then went out to "weed out" all the "unlucky" pilots, and all those who were not fully participating in the program for one reason or another. A review of the available records was made and check rides started on the grand scale. Heads started to fall.

In the process of weeding out pilots, flight commander qualifications now came under close scrutiny. And changes were made here. Higher qualification standards were set up and the new flight commanders had to measure up to some pretty exacting requirements. When the smoke cleared, all the flight commanders appointed had been through Nellis gunnery training, or had been instructors at Nellis; had had Korean combat experience, and had been through, or instructed at, the Air Force Instrument School at Moody Air Force Base, Georgia. It goes without saying that the flying training supervisors were also of comparable experience.

An analysis of the past accident records showed that 60 per cent of all major mishaps had occurred on cross-country flights. Pilots had, in the past, been authorized flights beyond their individual capability and as a result had been dotting the landscape with smoldering heaps of F-86 aluminum. Poor weather flying technique turned out to be the main cause factor, and cross-country flying was suspended for all pilots until they were put through a complete instrument training program. For four months the squadron pilots stayed close to home and flew hood and Link until things shaped up.

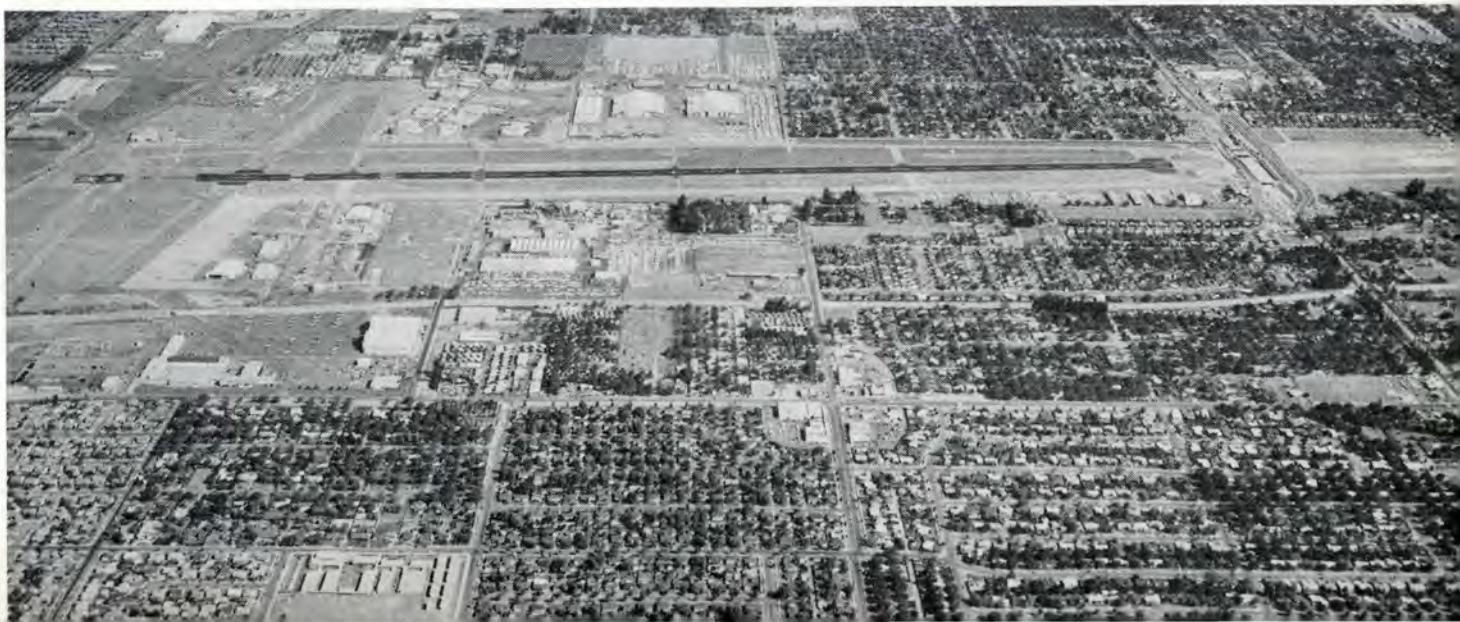
The briefing guides and methods now came in for their share of attention. The guides were revised, the PIF brought up to date, and flight leaders were re-trained to brief according to a strict and comprehensive method.

Next, the squadron standardization board was rejuvenated and the old "double standard" days were gone. The older pilots now no longer flew according to the old 8th or 5th Air Force rules. As the C.O., Major Charles Nelson says, "The boys found out that they were no longer going to fly according to Hoyle or Goren. They were going to fly according to me!"

For the reader who knows little about ANG operations it might be wise to digress for a bit and review the bidding on Guard operations and the men who fly with the Guard. Contrary to the opinion of some, the ANG is a full-time operation and is assigned operational duties by the Air Force, through the major commands. These duties augment the overall operations commitments of the Air Force. The standards of training set up for the ANG through CONAC are fully as demanding as those set up for regular units. The individual pilots fly as many hours annually as the regular Air Force pilot and all this in spite of the fact that almost all of them have outside civilian jobs. Only two pilots, the flying training supervisors, are assigned full time duty to a Guard fighter squadron. In the last six months of 1958 the 115th flew 2455 F-86 hours, 352 T-33 hours, 275 C-45 hours and 173 C-47 hours.

The planes are maintained according to the same tech orders the Air Force uses and the average Guard squadron maintenance records compare very favorably with those of the Air Force in such things as in-commission and AOCP rates. As Colonel Campbell says, "I've never had any kick about the maintenance done by my Guardsmen. Our troubles were always primarily in the opera-

Coming home to roost on a 6000-foot runway at an airdrome surrounded by homes and factories poses special problems in jet operation.



tional field. But just to tighten up everywhere along the line, we looked into the maintenance-operations relationship. Maintenance now, in effect, schedules operations in that planes are flown according to inspection schedules and with this better planned inspection program we get better quality control. There's no pushing of maintenance by our ops people. Furthermore, the maintenance supervisors are always included in our flying safety meetings and contribute greatly to the safety effort."

The Guardsman pilot must spend most of his otherwise free time in ground and air training at the various sites and many of them commute well over 100 miles to their stations. In the Van Nuys setup, the average commuting distance is about 25 miles.

Naturally, this creates problems at home because the little wife takes a dim view of the absentee husband routine. Recognizing this, Colonel Campbell has suggested that the Guardsman keep his Guard pay separate and show the little woman just what it will buy. Anything from a mink coat to a washing machine, bought solely with Guard pay, is a real persuader, according to him.

To go on with the operational changes, a hard minimum of 10 hours per month was set up for the tactical pilots. A pilot can miss this one month but the second month will see him getting the fish eye from the C.O., and his days in the Guard are numbered. A re-check is automatic if for any reason the pilot gets less than two hours per month.

A full time AO is on duty at any time the planes are in the air. At a drome such as Van Nuys where the runway is only 6000 feet long and the surrounding area is well built up with residences and factories, it is especially important that airplanes do not attempt any get-home heroics. When an emergency exists the AO generally orders the pilot to another airdrome. It must be noted here that there is no radio landing aid at Van Nuys airport. Furthermore, their fine record has been made in an area of poor visibility and high air traffic density.

The flying safety officer duties were given to one of the full-time flying training supervisors, Captain Henry J. "Jack" Williams. According to Jack, "There's no such thing as a part-time FSO and the practice of having one of the part-time pilots carry on this job had to stop."

With the short (6000-foot) runway at Van Nuys, special operational restrictions were put into effect. The F-86 would no longer be flown with external tanks when the temperature climbed to 80 degrees or over. The T-Birds were cut down to 100 gallons maximum in the tip-tanks, and the barrier was raised on every approach. Two saves of '86s have been recorded so far and served to preserve the safety record.

A special operational problem arose when a USAF policy change resulted in Guard units getting new pilot trainees direct from basic flying school with no F-86 time under their belts. Fifteen of these young pilots came to the 115th during the past two years, and five of them were eliminated through the stringent training requirements which were imposed. These five, though badly needed by the squadron, were potential accidents and had to go. The other 10 are today fully operationally ready with fine gunnery records. And this in spite of the fact that the 115th cannot at any time schedule gunnery missions from the home drome. Most of the missions were flown from George and Williams Air Force Bases, the latter 300 nautical miles away.

The 115th has set up a comprehensive quarterly exam on emergency procedures. In addition to this the daily flight briefings include one or more questions on emergency and normal procedures. Furthermore, attached to every clearance, local or cross-country, there is a mimeographed emergency procedure question which the pilot must answer and the AO must check, before the pilot takes off.

The training folder system on each pilot has been closely watched. In this way the flight commanders or check pilots have access to all mission reports, the standardization mission profiles, the ops readiness certificate, all exams and questionnaires, and the Link trainer grades. Nothing in a pilot's record is left to the memory of the supervisor. A bad trend is thus quickly spotted and a check ride scheduled.

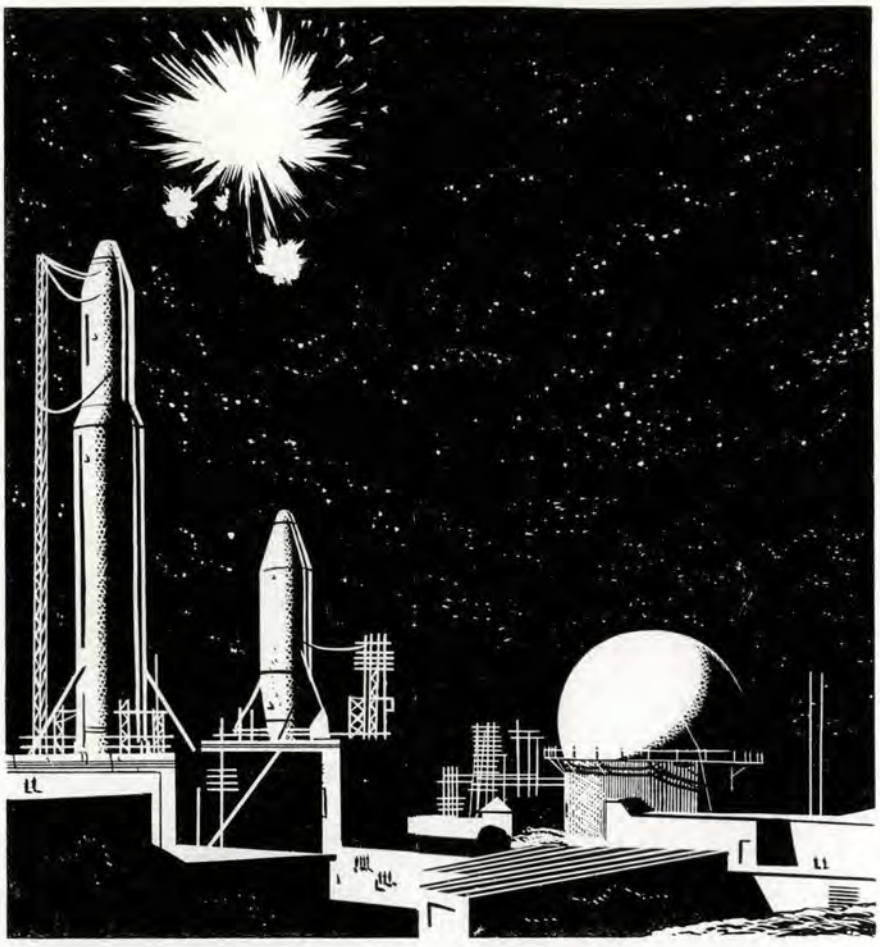
On cross-country flights, the F-86s are not allowed to fly alone. Two or more aircraft are always scheduled. The T-33s have two pilots aboard unless the mission is transition solo. The tactical pilots are required to be current in the F-86 only. The IPs and supervisors are the only pilots required to be current in more than one aircraft. Further than this, since the squadron has had the F-86A, E and F models at one time, a pilot flies only the A or the E and F. One checklist at a time is enough, according to Captain Jack Williams.

Supervisors tightened up on the "boring holes" method of flying. Every hour was made to pay off in solid training with specific mission assignments. Individual instrument minimums were placed on each pilot of the organization according to his ability. One pilot might be allowed to file into an away-from-home airport with the published minimum weather prevailing. Another might be required to sit on the ground until the weather picture improved. This one requirement has caused a lot of hurt feelings but no hurt flesh.

Two years ago the Wing Commander requested a visit by the Operations Safety Survey team of the Directorate of Flight Safety Research. Within three months of the team's visit all recommendations made had been complied with. Colonel Campbell is enthusiastic about the help given him by the specialists who accompanied General Caldara on this visit.

In a high density area such as Van Nuys the midair collision is always a threat. To combat this, special corridors for approach and departures were set up locally in cooperation with Burbank and the Federal Aviation Agency. Today, near-miss incident reports are infrequent. And the pilots at Van Nuys fly from an airport which lies under two Victor and three low frequency airways!

To wrap it all up, according to the supervisors at Van Nuys, the Safety Award came as a result of making every pilot a flying safety officer, aware at all times of his individual responsibility toward an accident-free record. To be a flying safety officer the pilot of course had first to know how to fly and to take pride in his individual ability. In June of 1957, the 115th had only one pilot qualified ready, according to AFM 335-25 and CONAC Training Directive 10-12. Today, 29 of the 31 assigned seat pilots are so qualified. The other two are now at Air Force schools receiving additional specialized training. The 115th is now a firm unit of competent, responsible pilots, average age 26, who are prepared to join the Regular Air Force on an equal basis when the need comes. ▲



A NIGHT TO REMEMBER

Capt. James E. Murphy, 2523rd Instructor Sq. (Nav. Tng.) Dobbins AFB, Ga.

1st Lt. A.F. Reggs slipped the strap of his armband through the epaulet of his shirt. It was 1900 hours and the old AO had just gone home. AO duty came around fairly often now since the recent cutback, but Reggs didn't mind. In fact, he sort of ate it up. It gave him a chance to review regulations and to browse through the NOTAM file. Also, he could re-read the PIF and maybe even revise the AO instruction book a little, if he had time. Later perhaps, when traffic slowed down he could go out to the line shack and check up on the latest Tech Order compliances. In a word, as if you didn't already know, he was eager.

Lieutenant Reggs went to the window and looked out onto the launching racks. The mechanics and technicians were scurrying about, preparing the launchers to accept their vehicles. The cool winter desert was black in the background and the lights moving and flickering around the racks made the Lieutenant feel as if he were looking in on some vast, earthly peep show. Young Reggs sighed once at the trigonometric beauty of the scene and then turned to thumb through the flight schedule.

At that moment the door to base ops burst open and none other than the well-known, well-padded and frequently well-oiled Captain William (Blast) Hoff, waddled into the room. He slapped his clearance on the counter and said, "Sign this, dad, and I'll be on my way."

Lieutenant Reggs picked up the form and began to examine it in his detached, deliberate, and, if the truth were known, somewhat maddening way.

"What are you doing, sonny boy, memorizing it?" Blast queried.

Reggs didn't even look up.

Blast stood there, hands on hips, legs slightly spread. The smoke from his cigar curled up past his nose and made his left eye water, but he didn't move. He was being patient.

Finally Reggs raised his head, looked the little round Captain blandly in his open eye and asked, "Did you check the NOTAMS, sir?"

Blast Hoff opened his mouth. His cigar tumbled down his ample belly, sparks and ashes cascading after. It fell into a spitoon and with a hissing sigh, expired in the murky contents.

After a while his words started to become coherent ". . . doesn't even know what JP-4 was . . . been making this Lunar supply run for the last six years . . . flying since the old days of runways and afterburners. Why I pioneered Lunar Route Two. Give me that paper, I'll sign it. Have I checked the NOTAMS? . . . Do I drink whiskey?"

The furious Captain spun on his heel, aimed at the polished brass can on the floor, and, not waiting to see whether he hit or missed, strode back out into the night.

Young Reggs blinked, and tried to reconstruct what had happened. The pieces slowly fell in place. Great galloping galaxies, but that little man was mad, he thought.

There was a low vibration in the sound-proofed ops building. Outside the old space freighter lifted itself, gained speed and disappeared into the sky.

The AO went to the NOTAM file and flipped open the tab marked "MOON." He moved his finger down the sub-headings until he came to "Lunar Route #2," and pulled out three yellow slips of paper.

Let's see, here's a frequency change on a stellar tangent impulse point . . . transient quarters extremely limited at Crater Terminal . . . oh, oh, "CAUTION. LUNAR ROUTE 2. On 6 Dec. a pride of cosmic meteors will cross Lunar Route 2 at 14 Delta 9 Galaxy Time and at Segment .16, sine 24 of Omega Complex."

Regg dashed to the window and looked up. Better try to get him by radio, he thought. Just then he saw in the far night a brilliant flash, followed by a cascade of lesser lights and then there was nothing, nothing but the stars.

Lieutenant A. F. Reggs walked over to the inscriber, sat down, took a deep breath and began to send his report. ▲

CROSSFEED

LETTERS TO THE EDITOR

Today's Pilot

Major General Doubleday's article entitled "Air Traffic Control Problems" (FLYING SAFETY, May 1959), has been read with great interest.

It is agreed that the indiscriminate adoption of some of the recommended activities that distract from the efficient accomplishment of the AACS mission should be avoided. However, I should like to throw the following comments into the kettle.

The workload imposed upon the pilot has steadily increased to the point that today it is rapidly reaching his maximum capability. This is especially true in single-place jet fighters. If safe operation is to be maintained, more and more help from the ground will be required. One means of providing this help is through AACS facilities. Some of this help could be provided without distracting from efficient mission accomplishment even though it is not strictly an air traffic control problem: for example, a 10-second warning prior to intercepting GCA glide slope and prior to reaching GCA minimums. The GCA final controller is required to transmit continuously with no more than a five-second break while the aircraft is on final approach. Some controllers are hard pressed to find something to say to fill in between corrections and come up with information that is of no use to the pilot. It is of much more assistance to the pilot to know that in 10 seconds he will intercept the glide path or reach minimums than it is to know that he is "on glide path on centerline." The fact that no correction is required indicates to him that he is progressing satisfactorily.

Today's pilot requires all the help he can get to safely control the monster he has strapped to him. Let's give him all the assistance we can and still accomplish our mission. Remember, it boils down to the fact that our sole reason for existence is to keep him operating effectively. Doing a little more than is absolutely required may mean the difference in losing a bird and crew or safely accomplishing this mission and many more to come.

Maj. S. O. McPherson, Jr., USAF

★ ★ ★

Zulu Time

I'd like to comment on the letter from Major Lerner about the use of "Zulu Time" over Channel 13. I read it in the Mar. issue.

Primarily, "Z" time was devised to give us a standard reference. Prior to this, all was chaos. Even today, when local option permits communities in the same time zone to choose standard or daylight time, confusion reigns. Confusion, or "cockpit fog," is certainly a commodity we can do without in today's high-speed aircraft.

From the forecaster's viewpoint, when he gives "Z" time, he is sure that the pilot knows exactly what reference he is using. A case in point would have a pilot flying from coast to coast. On departure, he sets his watch according to the local time. Enroute, he wants to know what the forecast weather is for destination. Thus, we have three time zones involved in the problem. The pilot's watch shows one, the forecaster's clock shows another and the destination has still a third; yet, they are all the same in "Z" time. How much simpler to use the standard reference time. The pilot wouldn't leave the ground without the proper grade of fuel, why leave without knowing the proper time?

Since clearances and flight plans are filed in Greenwich Mean Time, why shouldn't the flight be flown that way? After all, preflight planning will show the pilot his position in Greenwich Mean Time all through the flight. The conversion can be worked out prior to departure. Better yet, set your watch for "Z" time *before* you leave the ground. It leaves less room for error, and that is how we achieve safety, both on the ground and in the air.

T/Sgt Donald C. Brasel
Det 18, 12th Weather Sq
O'Hare Int'l Aprt, Ill.

★ ★ ★

How Hard

Your article "How Hard" in the March issue was excellent. However, I feel one point should be stressed and that is the problem between instinct and body position on impact. Just before landing you have a very strong instinctive reaction to pull your legs up when you notice the ground starting to move up fast.

I realize the correct procedure is to look toward the horizon. Yet even with your eyes focussed on the horizon you can still see enough of the ground moving up toward you (from approximately 200 feet up) to cause you to flinch and draw your feet up in an attempt to ward off the fall. The only place left to land is on your spine. Incidentally, I mention the ground moving up toward you because just before impact you experience the ground coming up rather than you moving down.

I have found that by forcing myself to look up into the canopy after selecting my landing spot, I could not anticipate my landing and therefore did not stiffen up or attempt to raise my legs.

Francis N. Coyle
1st Lt., USAF
Commander

★ ★ ★

UHF Control Head

Recently our Unit converted from F-80C to F-86D type aircraft but retained our T-Birds. After gaining experience in the F-86D, it became obvious to us that placing the UHF control head on the glare shield in front of the pilot (standard in the '86D series) was far superior to its location on the console in the T-Bird. Here is a photograph of our installation.

During a low approach in weather when a channel change is required (for example, from approach control to GCA), the time lag is considerably cut down. Of outstanding importance is the advantage of not diverting attention from the instruments at relatively low altitudes. Also, it seems that the chances for vertigo are cut down by the pilot's not having to turn his head to change channels. Aeromed people may shed more light on this.

Approximately four manhours were required to move the control head. No changes have been made in the location of the control head in the rear cockpit.

Your comments and criticisms are invited.

Capt. Robert D. Waller
FSO, 181st FIS, Texas ANG
US NAS, Dallas, Texas

★ ★ ★

MD-1 Survival Kit

I've read Captain Charles F. Timberg's letter in the April issue of FLYING SAFETY and would like to pass some information on to anyone who might be interested. The 64th Fighter Interceptor Squadron here at McChord has in use right now an MD-1 survival kit with a quick-release mechanism for fast escape in case of a ground-borne emergency.

This kit was designed by a 64th FIS Personal Equipment man and locally manufactured at Elmendorf AFB, Alaska. We had F-89s at that time. The 10th Air Division saw it, bought it, and we've used it ever since. When our squadron moved to McChord, we brought these kits with us and we still use them in our F-102s that don't require Firewell-type kits. The mechanism is simple, substantial and very easy to operate. In fact we've never had a failure, and many of our pilots breathed easier when they strapped that kit on. Some of them wouldn't even hook the old one up, and as a result they lost their survival gear during a couple of winter bailouts in Alaska. Needless to say, the troops were pretty cold when finally, and luckily, picked up.

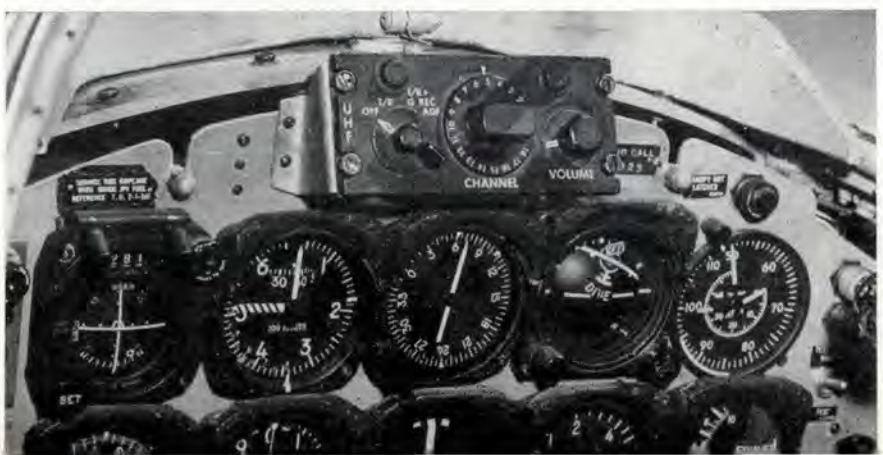
We'd be happy to answer any questions concerning our quick release kits.

A/1C J. R. Smith
Personal Equipment, 64th FIS
McChord AFB, Washington

★ ★ ★

Sled Tests

This refers to the article "Slam, Bam, Thank you, Sam," which appeared in the March 1959 issue of FLYING SAFETY. On page 20 is a statement about B-52 ejection seat high speed sled tests, apparently referring to tests of the aft-facing B-52G ejection seat which were conducted at



Hurricane Mesa, Utah, during the period May-August, 1958.

Three tests were made with the aft-facing ejection seat at 450 knots effective airspeed (EAS).

The first test was unsuccessful because of seat structure failure at the point of catapult attachment. This resulted in deficient catapult "push" which would have allowed the seat to collide with the vertical fin.

The seat structure was strengthened for the second test which also proved unsuccessful when the seat lap belt opened prematurely during ejection, causing the test dummy to partially separate from the seat, being held only by the shoulder straps. This abnormal condition set up an undesirable aerodynamic drag-lift position, indicating that the seat would have made contact with the vertical fin. The experimental lap belt was replaced with the present production type, and subsequent tests have proved it satisfactory and reliable.

The third 450-knot EAS test was completely satisfactory, resulting in a 12-foot clearance of the vertical fin. Seat trajectory matched within one foot of that previously calculated by Boeing. Similar tests were run, using a B-52E forward facing seat with almost identical results.

In view of the above information, which can be corroborated by actual test results, the statements found in the March 1959 article are felt to be misleading, since no mention is made of the type of adverse conditions that were met during testing of B-52 ejection seat tail clearance problems.

Charles A. Miller
Chief of Field Service
Boeing Airplane Company
Wichita, Kansas

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Is This Your Base?

About three months ago I landed at a certain base to visit a Fighter Interceptor Squadron and was really "impressed" by the complete lack of interest displayed by transient alert and operations personnel—from the time of landing 'til takeoff.

Upon landing my T-Bird, the tower asked if we needed a "Follow Me" and we replied that we did. We were then told to hold off the runway until it arrived. After a considerable delay, the "Follow Me" arrived and led us to the parking area. After putting the chocks by the wheels and obtaining information regarding servicing our aircraft, the alert crew departed. But—no entrance ladder was placed on the aircraft, no ground safety pins were installed, and no transportation to base ops offered.

After completing my business I returned to base operations to complete my flight plan.

Base ops here employs a rather strange control over the documents necessary for flight planning. Everything required — Forms 21a, High Altitude Charts and so on —must be obtained from the dispatcher. This is the only base ops I've seen where a High Altitude Planning Map is not displayed under glass, and other necessary forms are not available in the flight planning room.

Upon preflighting the aircraft, here's what I discovered:

- The fuel caps had been forced off and on by using a screwdriver or similar instrument. This made them virtually impossible to move by hand.
- The de-icing alcohol tank had not been serviced, although such a request was made.
- Still no entrance ladder.
- Approximately 15 minutes after I filed my Form 175 with base ops, the alert crew —with APU—arrived at the aircraft.

I walked over to the transient maintenance officer to report these discrepancies and the lack of de-icing fluid. He accompanied me to the aircraft and I showed him what the refueling crew had done to the fuel caps and openings. About 30 minutes after I had reported the need for de-icing fluid, the system was serviced. The reason given for this delay was that the alert section had no de-icing fluid and when they asked for some, the can they got, supposedly containing the correct fluid, contained—instead—JP-4.

I landed at this base once before, about five months ago, and the service offered transient pilots has not changed during that time. I suggest that action be taken to improve such service; it's the worst I've seen in my traveling about the country in T-33 aircraft.

Lt. Col. Thomas W. Queen, Jr.
Asst. Chief, Actft & Equipment
Maint. Div., Hqs ADC, Colorado

This letter was sent to the commander of a ZI base, with a copy to DFSR. Printing the base name would serve no good purpose. The transient crew there has no doubt already gotten the word. Also we hear that Duncan & Heinz are giving them the eyeball. It is inexcusable for a situation such as this to exist. Can you imagine the pilot flying safely after getting steamed up about such treatment as this?

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Guard Channel

I am writing this letter because of the apparently widespread careless use of guard channel frequency 243.0.

On a transcontinental flight in a T-33 from Travis to MacDill, and return, I experienced many interruptions of broadcasts by people who were talking on guard channel. This discourages aircrews from keeping their radio receiver switch turned on to the TR/G position on their UHF set.

I have always understood that there were very definite and strict regulations concerning broadcasting on guard channel. I've also understood that broadcasting on guard channel sets up a series of alarms within the range of the broadcast. Yet, at many bases where I have landed I find frequently that broadcasts are interrupted by the overriding broadcast of guard channel when someone is merely "checking" on guard channel.

There are specific ways to check a radio transmission without emanating a broadcast all over the place which will override everybody else. This is especially disturbing when an aircrew member is receiving landing instructions, and it is dangerous when he is on final approach on GCA.

On my arrival at Barksdale when I was in the traffic pattern and receiving landing instructions, the tower broadcast was interrupted by some communications man who was "checking on guard channel."

Then when I was enroute from Barksdale to MacDill many times aircraft were speaking on guard channel to receive instructions simply because they had not received immediate response on the normal frequency in talking to an enroute radio station or to a center. This was not an emergency situation in any instance and on two occasions during this flight I had to request a center to repeat its instructions to me.

During my penetration and approach to MacDill, I was interrupted twice by crew men who were "checking guard channel." I was approaching MacDill under actual instrument conditions and made a GCA. Although the ceiling was 1500 feet I found that my visibility was greatly restricted because of smoke in the cockpit, thus presenting an emergency situation. Therefore, in order to find the field I had to continue the GCA. Had the same careless individuals called while I was on final in GCA under these circumstances, I might not be here to write this letter.

I returned by way of Offutt AFB and my takeoff was in a snowstorm. While climbing through the deck of clouds during my climbout, instructions from Omaha Center were blocked out by somebody calling this Center on guard channel when no emergency existed. He called only because he had not received them on the assigned frequency.

It has been my experience in recent months that this indiscriminate and careless use of guard channel has been on the increase. I am convinced that it is a dangerous trend and one which should definitely be stopped.

Apparently all Air Force personnel who handle communications equipment need a thorough indoctrination in the use of guard channel and how to check the guard frequency without a broadcast emanation.

Another example which comes to my mind occurred when I was leaving Davis-Monthan. Tucson Center or Davis-Monthan Approach was controlling an aircraft on guard channel under conditions where there was 100-mile visibility and no emergency. My contacts with the tower and my contacts with Tucson Center on departure were continually interrupted by an unnecessary guard channel broadcast controlling an aircraft which did not need such a control.

Here are my recommendations:

- That the Inspector General make this unnecessary use of guard channel a special subject.
- That vigorous action be taken throughout the U. S. Air Force to quell the bad habit of "checking" guard channel in the open.
- That AACS establish intelligent monitors capable of tracking down the originators of unnecessary guard channel broadcasts.
- That major air commands be required to take disciplinary action against culprits established by the above monitoring.

Col. O. B. Steely, USAF
Director of Materiel
Hq 323d AD, Travis AFB, Calif.

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About the Cover

Close attention to preflight details played a large part in preventing accidents within the 115th Fighter Squadron. Here, Lt. Patrick McGirl outlines the inspection procedures under the watchful eyes of his Flight Training Supervisor, Captain Henry J. Williams. Read "Rags to Riches" page 8, for a great comeback story.

THE KOLLIGIAN TROPHY AWARD

General Curtis E. LeMay, Air Force Vice Chief of Staff, presents the Kolligian Trophy to First Lieutenant James E. Obenauf, 1958 award winner.

FIRST LIEUTENANT JAMES E. OBENAUF

Mr. Koren Kolligian established this award in memory of his son, First Lieutenant Koren Kolligian, Jr., USAF, who was declared missing in his T-33 aircraft off the Farallon Islands near San Francisco, California, in 1955. The award is presented annually to the aircrew member who most successfully dealt with an inflight emergency during the preceding year. General Thomas D. White, Air Force Chief of Staff, selected Lt. Obenauf as the winner from among 32 nominations submitted by the major air commands. He received the trophy for his outstanding performance in handling an inflight emergency in a B-47 on the night of 28 April 1958. Lt. Obenauf, copilot, was ordered to bail out when the aircraft was disabled by explosion and fire. Unable to eject, he started for the alternate exit where he found the instructor-navigator unconscious, lying in the crawlway. With a gallantry in the finest traditions of the U. S. Air Force, he returned to his post and battled the crippled aircraft for two hours until a safe landing could be made. This splendid achievement will be long remembered in aviation history.

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