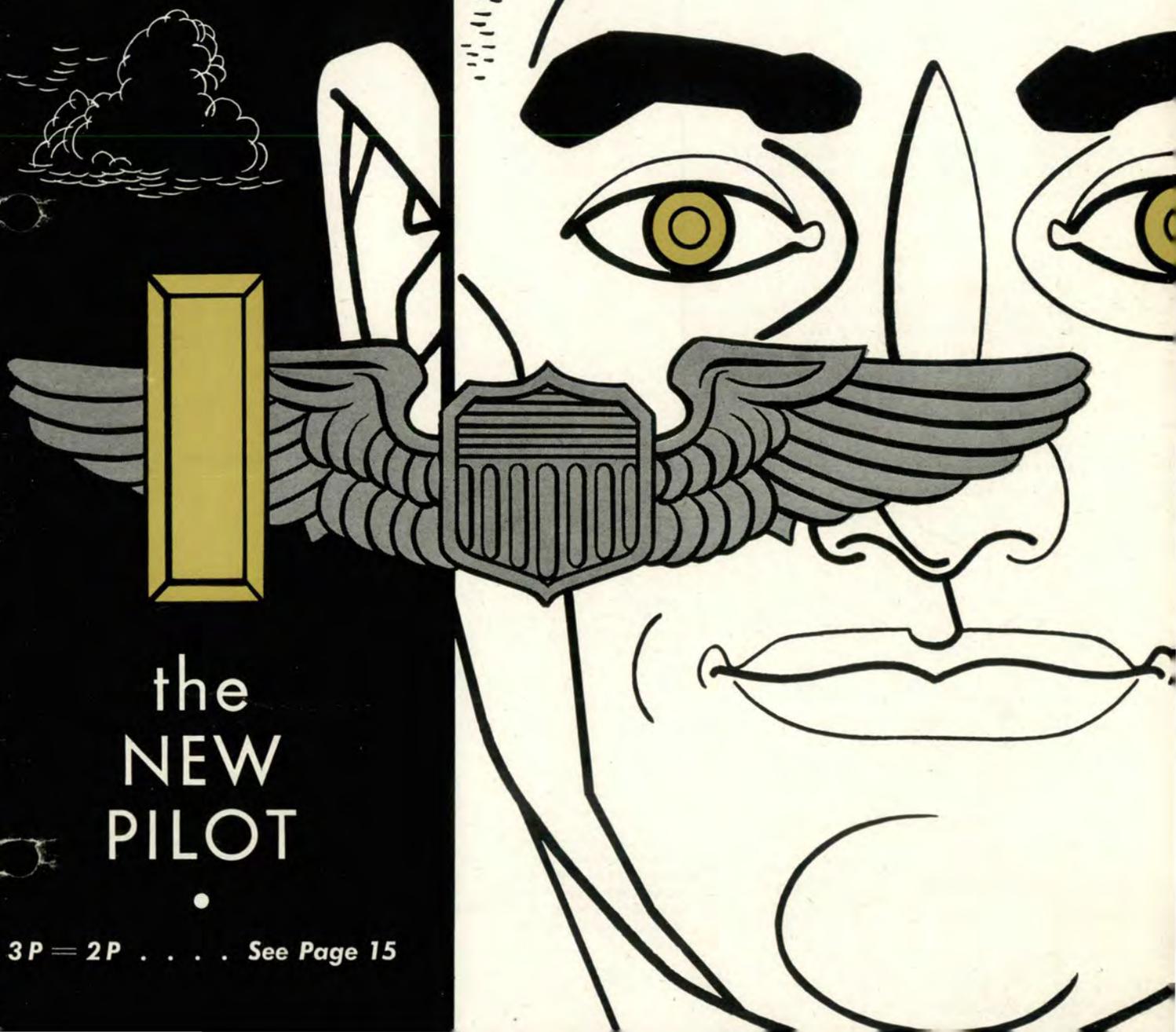


F E B R U A R Y 1 9 5 7

FLYING SAFETY

UNITED STATES AIR FORCE



the
NEW
PILOT

3P = 2P See Page 15



File Thirteen

This month our cover depicts the new pilot. And that is the theme of this issue of FLYING SAFETY. . . .

There have been some changes in AFR 60-22, the reg on ADIZ procedures. Formerly, any flight that originated in the eastern or western ADIZs had to be IFR or DVFR. Now such flights can be conducted without restriction if the flight path does not come closer to the adjacent defense area than the point of origin. Thus, if you take off from an ADIZ and do not proceed toward the defense area, you can file straight VFR. Also, you can penetrate or operate within a coastal ADIZ unrestricted when your flight path is always *away* from the land portion of the U. S. . . . Then there is the true account of Henry (Hank) Vendrig who was piloting an F-84F. His aircraft was second in a flight of two and was just airborne. Passing through 800 feet, indicating 250 kts, he received this transmission: "Hank, you're on fire. Get out!" So Hank reached down, pulled the trigger and got out. All neat as a bald head except for one thing. The message was actually sent to another pilot named "Hank" who was taxiing his aircraft when the compressor failed, resulting in a fire. It was sent by another pilot who was following the taxiing aircraft. Airborne Hank's comment: "Lucky there weren't more fellas named Hank flying around."

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VOLUME THIRTEEN

NUMBER TWO

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**LT. NEWHEAD
ANY AFB
USAF, WORLDWIDE**



Dear Lieutenant Newhead:



You've just completed a year of flight training. Everything you did was planned for you--when to go to bed, get up, eat, squat, fly and drink. It was "Mr. do this," and "Mr. do that," until you thought a few times it might be necessary to pop a few guys in the snoot if you were going to keep your senses. It all ended somehow and now your training becomes a matter for your own effort. You'll probably be wondering how people could think you were so stupid one day, and then consider you a capable fighter pilot the next and give you loads of responsibility. Because of this, I'd like to take a few minutes of your time to say something about flying safety or flying safely or, better, how to live as long as possible.



Did you get an assignment to ADC? Get ready to spend lots of time waiting in the alert hangar and then every now and then be kicked off into the cold, black night with nothing for illumination except occasional flashes of lightning. There won't be anybody there to help you fly the beast. How true were the words of the RAF fighter pilot when he answered Mr. Churchill's question concerning the mental strains of flying. His reply was that it was nothing but hours and hours of boredom separated by short intervals of stark terror. Or maybe you're being assigned to SAC. You'll probably find yourself jockeying an '84F or a '101 on long, simulated special weapons drops, operating as a wingman in a flight of two, capable of carrying more destructive power than all the World War II bombers put together. We pray that it will never be necessary to drop those things but if it is, you'd better be ready. Perhaps you are being assigned to TAC. That's good fighter pilot duty with a variety of missions--special weapons delivery--air superiority missions--conventional bombing and strafing. Doing all of these jobs well, using the latest supersonic fighter, will require a lot of effort on your part, Newhead. However, because I've seen your counterparts operate in the past, both during training and operational, I know you can hack 'em all. But I would like to try to warn you of some dangers and ask you to profit by the experience of others.



It doesn't matter much which of these assignments you get, one thing is sure in all of them. You, as an individual fighter pilot, will be required to accept more responsibility than your

counterparts of preceding years. Interceptors, although operating in the same area, are operating as individual aircraft. SAC and TAC fighters carrying special weapons will have specific targets assigned to each element and you will have to be able to get there with or without a leader. Even on tactical air superiority missions, you and your element leader will be a primary fighting team. All of these things add up to the fact that you must accept more responsibility for the safety of yourself and equipment.



Now, wait a minute--don't leave me and flip to the inside back cover to study the aerodynamic features of the Editor's latest. I've been jockeying this flying safety desk for two and a half years now, and I'm worried. Do you realize that at the present rate it is possible for the fighter pilot race to completely destroy itself before the black boxes that will replace us are ready. Before I came to this job I would take offense at the statement that a fighter pilot was a bomber pilot with his brains knocked out. After seeing what some of our clan do, I'm not so sure. Sixty-eight per cent of all Air Force aircraft accidents involve fighters and 45 per cent of these are caused by pilot error. On top of that, most of the fighter jockeys who have the accidents have less than 500 flying hours and are under 25 years old. As I said before I have confidence in your ability to deliver the goods in wartime, but some of the goofy things that you do on the so-called routine training missions amaze me. Let me show you what I mean by listing some of the fighter accidents that were reported to D/FSR on an average morning. Remember, please, that this happens with regularity.



Here's one. Pilot advanced power for a go-around, retracted gear and cleared the runway. He experienced compressor stall and bellied the aircraft in alongside of the runway. Do you remember your instructor telling you to continue your final approach and not retract the gear until you were sure you were flying after starting a go-around? I think it is common sense to be sure your engine is developing full power before changing your plan to land.

Another pilot executed a closed traffic pattern after go-around and declared minimum fuel on the downwind leg. The aircraft stalled on final and crashed inverted. The mission should be mighty important for you to stretch it to the point where you can't make a go-around without getting down to minimum fuel. It was common during the Korean War to have pilots queuing up to enter the flameout pattern but they had good reason. Give me a good reason for this type of operation in present day flying.

This next type of accident happens regularly to fighter pilots. During a navigation flight the radio compass became unreliable. The pilot was lost and the aircraft ran out of fuel and he bellied it in. Most of us have found out that nearly every time you poke your nose into a cloud the radio compass is immediately unreliable, that's why we try to plan our flights to provide for an alternate course of action. Most other fighter pilots won't think you're an odd-ball if you keep a check on your groundspeed, position and fuel consumption. Son, I say get out there and fly that weather, but get ready before you leave the ground.



Something in a similar vein but more gross is this one. The aircraft was in the traffic pattern when another pilot declared an emergency. Following proper procedures, the pilot cleared the pattern. Then while waiting to land, he became lost.



The "bird dog" wasn't working just right and he couldn't find the landing patch so he ran out of fuel and bellied it in. You wouldn't think that could happen in an area where three major airfields are almost within gliding distance of each other, but it did. 'Splain that to me, Newk.

Or, how about this one? As the lead aircraft pulled off the target from a firing pass, the tow ship caught fire. The tip-tanks, canopy and other pieces were seen coming from the aircraft. The pilot ejected but was lost in the water. The only thing I can say about this is that someday you'll probably be a tow pilot and then you'll hope that all concerned are abiding by the Golden Rule.

The final listing is as old as the hills but it still happens. It goes: With the flight in trail the leader pulled up into the sun and No. 3 collided with No. 2. Axiom: Unless you have enough sense to get out of the area when you lose sight of other flight members, sooner or later you will hit somebody.

Now, there is one thing that all of these pilots had in common: None of them expected or wanted to have an accident. From observation, I have concluded that most fighter jockeys have accidents when they get caught by the three C's, the first of these being Confidence. Don't jump at me yet--I know that a pilot must have confidence and aggressiveness. What I really mean is overconfidence, but it spoils the alliterative effect to write it this other way. As you accumulate flying time your confidence will increase. That's good, except when it increases to the point where you neglect important parts of your individual flights. When this happens you have reached the second plateau. Complacency. This attitude is like having a perpetual jag on. You get intoxicated with your own flying ability and feel as if you can make that airplane do everything except talk, come high or low weather. You're almost there now, because the next logical attitude is Carelessness. A derivative of the old expression "I couldn't care less." After reading approximately 500 reports of accident investigation, I am convinced that the guys who have accidents in most cases just get careless and neglect minor, but important, details of their flights. Someone once said "save the pennies and the dollars will take care of themselves." We can paraphrase this to say 'take care of the minor details and your flight will be successful.' If I wasn't sure of this I would have to turn in my wings because my chances of being next would be too great. So, for the mathematically minded, the formula goes like this: Confidence (over) + Complacency + Carelessness = Accidents.



Well, Tiger, congratulations to you for completing your flight training. Now, take your time and don't try to learn everything about flying in the next year 'cause, honestly, you have just scratched the surface and we would like to have you with us for a while.

Edward P. Mcneff

EDWARD P. McNEFF
Major, USAF
Fighter Branch, D/FSR

Last month, *FLYING SAFETY* outlined the structure and objectives of the Flying Safety Program for 1957. February is the month that brings the "New Pilot" into the picture. The following report has been extracted from a study made to see just where the pilot, with a limited amount of experience, fits into . . .

The Big Picture

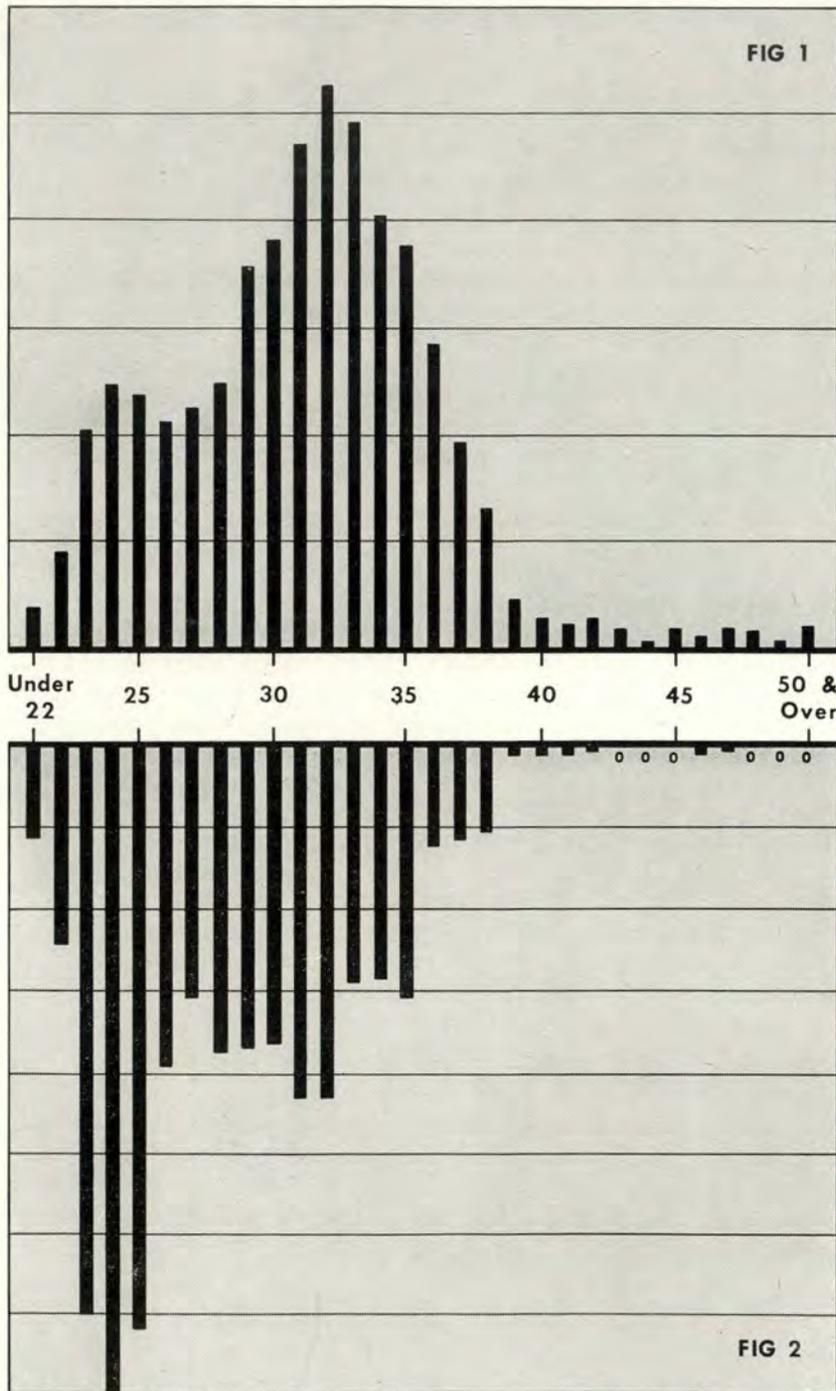


Figure 1 indicates the age distribution of USAF pilots. The average age is 31. Figure 2 shows the age distribution of pilots who experienced accidents: Average age, 28. Study the combination of both figures for a comparison of age versus aircraft accidents.

ONE OF MAN'S most apparent limitations is his inability to learn. There are vast differences in the time required by individuals to learn, but even with the most capable, learning is a time-consuming process. When the number of judgments, interpretations and procedures which the pilot must master are taken into consideration, it is not surprising that the time allotted for training must be of considerable length.

The pattern of jet fighter accidents related to jet flying experience during the past several years shows that almost half of all major jet fighter accidents are experienced by pilots with less than 150 jet hours. Approximately 60 per cent of these are charged to pilot error. (All references to flying hours are as a rated officer and exclude student time.)

Further consideration of the accidents experienced by pilots with limited flying time shows that accidents occurring during the second 50 hours of rated experience are considerably in excess of those happening during the first 50 hours. According to the standard concepts of learning, this is an abnormal situation. Ordinarily, in the learning of any task, the greater number of errors are experienced during the initial stages. Possibly this high accident rate for the second 50 flying hours can be explained since this is the period that includes tactical flying operations. Perhaps the pilot's previous experience has not prepared him for these assignments.

The records show that the greatest accident potential is in the early age groups. A graphic demonstration of the tremendous impact of accidents experienced by pilots under 25 years of age on the entire accident picture is shown in Figure 5. Although these pilots represented only 11 per cent of the total USAF pilot pool, they counted for 30 per cent of all pilot error fatalities. Because of the large

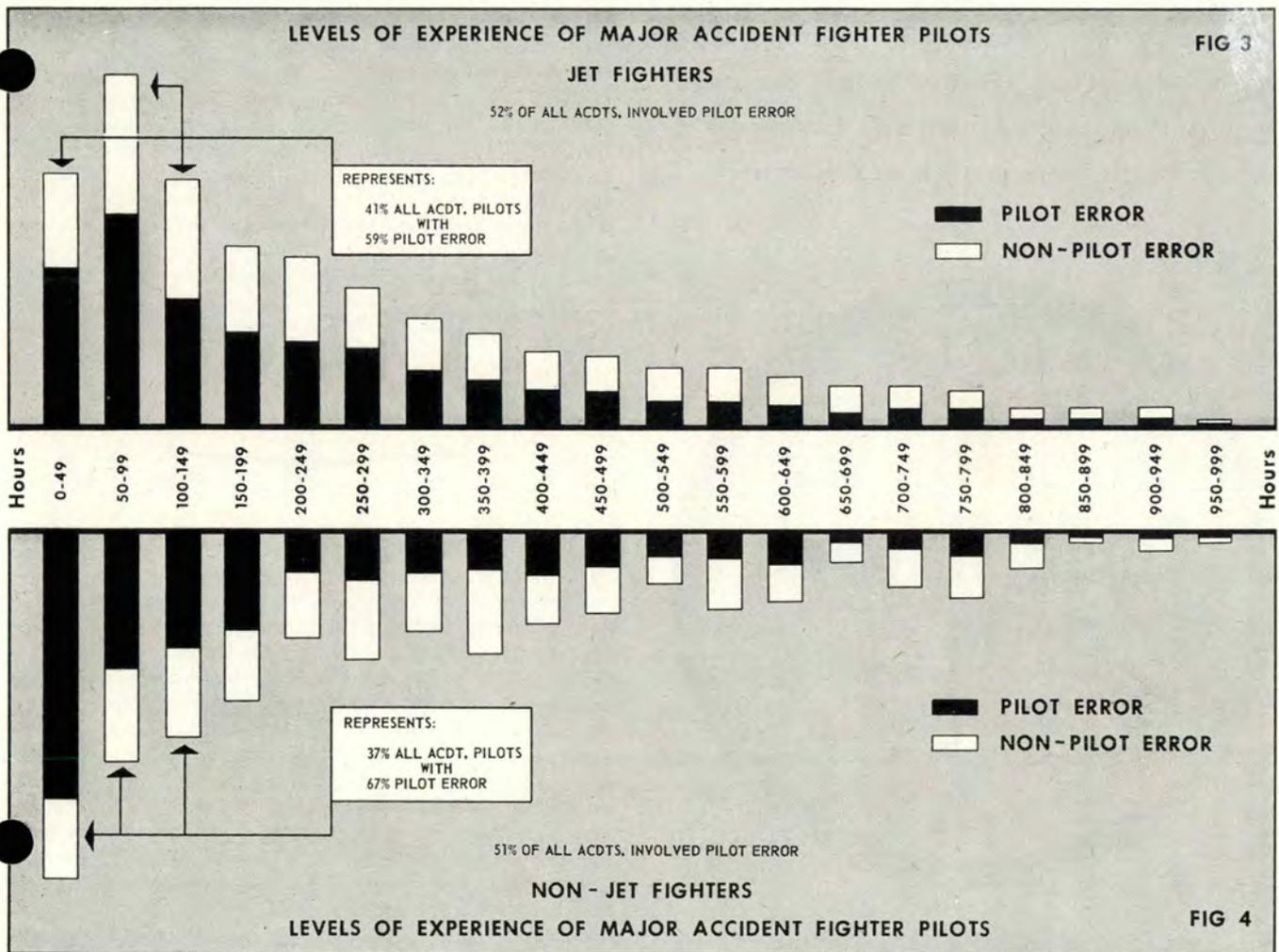
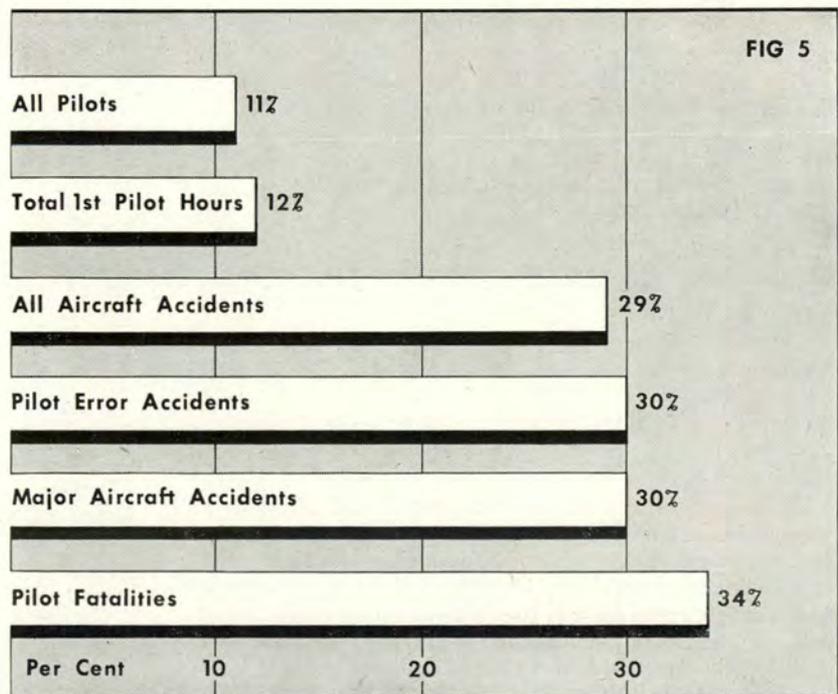


Fig. 5 shows impact of pilots under 25 years of age on the USAF aircraft accident record.

number of accidents experienced by these young pilots, it is in this area that the greatest gains can be made. Some gains can undoubtedly be realized by providing more adequate training. The recognition that training must be directed in every instance toward the pilot of lowest proficiency rather than toward the pilot of average or superior ability, is also a factor. This will impose restrictions on some of the more capable pilots but can be expected to result in a total gain by decreasing the accident potential of those pilots who are causing a great proportion of the accidents.

Finally, it should be recognized that during the early hours of operational flying, following training, careful supervision must be exercised. ▲



In keeping with the concept of "Learning from the errors of others," FLYING SAFETY requested reports of near-miss experiences from some of the old heads. Here are a few. Remember . . .



It
Could Happen
to
YOU!

ONE night I was on a T-Bird flight with another pilot and on the second leg it was my turn to navigate. We were filed 1000 on top and had to go to 39,000 to clear an area of intense thunderstorms. We obtained station passage and gave a position report but I was having difficulty re-tuning the radio to the next station. To be able to see the radio dial, I doubled over until my eye was near the dial. I completed the tuning, then turned the volume up for identification. I spread my WAC Chart and began to figure an ETA.

The next thing I remember was the pilot in the front seat discussing his impending emergency landing while descending through 15,000 feet.

Later, I remembered re-connecting my oxygen hose, selecting 100 per cent, and calmly asking the pilot what the problem was. After a few minutes on 100 per cent oxygen, I was feeling fine and we landed. The flight surgeon met the plane and I spent the night in the hospital, under observation.

My oxygen hose had been connected and clipped to my shoulder harness. I had evidently caught the alligator clip on my parachute harness and when straightening up, disconnected the hose. Of course, the proper way to connect the oxygen hose is to wrap the strap on the mask hose around the parachute chest strap and catch the end of this little strap with the alligator clip. This will hold the connection together. The pilot stated that he had in-

tentionally depressurized the cabin before takeoff. He did this because of losing a canopy several years ago and was afraid of decompression at high altitude.

After talking to the flight surgeon I was impressed with the fact that my life depended on the action by the pilot in the first few seconds after hypoxia occurred. He called me on the interphone just as I passed out and began an immediate descent. He declared an emergency and let down through the weather, continually telling me to check my oxygen. For this reason I connected the hose and went on 100 per cent before fully regaining consciousness.

We can't live without oxygen, so keep alert and watch that blinker! ●



WHILE a WB-29 Instructor Pilot back in 1950, I was guiding a student pilot in the performance of a series of power-on and power-off practice stalls. The student pilot had retarded the throttles and raised the nose of the aircraft to approach stalling speed. I noticed that the manifold pressures of the engines were uneven and busied myself with retarding all throttles sufficiently to obtain an even power on all engines. After all, the student was a newly recalled reservist and was rusty as the proverbial gate, and I didn't want the airplane to fall off on a wing when it stalled! As I pulled back No. 1 throttle, which had been several inches Hg higher than the other, the aircraft stalled. It not only stalled, it rolled sharply to the left beyond a vertical bank; the nose snapped down and suddenly we were headed 180 degrees from the initial heading.

My rusty reservist was trying to figure where he was, so I immediately assumed command and began a nervous recovery. We experienced a reversal of elevator control forces until a normal dive was established and a recovery completed. Luckily no damage was done, except that the engineer lost his brief case through the main entry hatch as he tried to bail out. The fault? Mine. The moral? Cockpit inattention is not only dangerous in intricate jet aircraft; it can be fatal in any airplane. ●



UPON reporting to a new station after 30 days leave and travel time, I found that it was necessary to get a field checkout in the T-33 before being permitted to fly the aircraft solo.

I reported to Ops, was briefed by an IP and filed a local clearance. We picked up our personal equipment and proceeded to the aircraft. After examining the Form 781, parts 2 and 3, and signing the exceptional release, I conducted (in my opinion) a thorough preflight.

Start, taxi and takeoff were normal, but I noticed that the airspeed indicator was very erratic and would not indicate over 120 knots. Further, I had no altimeter or rate of climb. At first I thought that I had neglected to remove the pitot cover; however, I distinctly remembered tying it to the entrance ladder by the cover's red streamer. I notified the tower of my difficulty and after burning fuel out of the tips, had another aircraft in the local area pace me in to a safe landing.

Postflight inspection revealed that a small piece of red tape covered each static port. It seems the crew chief had washed the aircraft prior to this flight and had placed the tape over the static ports to keep water out. The red tape blended in perfectly with a red decal on either side of the nose, and neither the IP, the crew chief nor I had noticed it during preflight.

Had instrument conditions prevailed, this story could have had a different ending, since making an instrument approach under conditions of no altimeter, airspeed, rate-of-climb would be tricky, to say the least. I believe that had I broken the glass in the rate-of-climb indicator and dumped the cabin pressure, I could have obtained an altimeter reading; however, I don't know how accurate it would have been. Needless to say, I do not overlook static ports on preflights anymore. ●



AFTER leaving my T-Bird parked at a transient base for several days I requested a thorough preflight inspection. This was accomplished by a qualified airman from transient maintenance.

During my walk-around inspection I commented to my passenger that a pilot can't be too careful when inspecting his aircraft at a strange base. The fuel level in tips and fuselage tanks was checked and the tank caps secured. All wing tank inspection plates were checked for security. All went well until takeoff. Just as the aircraft broke ground I noticed fuel streaming from all four internal wing tanks. It was obvious that the caps had been placed in the wells but not tightened and the covers fastened over them. Our first stop was one hour and 10 minutes away. With enough fuel in the tiptanks for one hour and 35 minutes, plus a full fuselage tank, I reasoned that we had no problem. Heavy local traffic and restricted visibility supported the decision to continue the flight. After 35 minutes of flying we were at 30,000 altitude, cleared 1000 on top and just about as far from a base as any point along our proposed route. At this time things began to happen pretty fast. The tips went dry, the wing



tanks were empty and we changed our flight plan for the nearest Air Force base. The base was approximately 120 miles away and reported 4000 feet overcast, 5 miles in haze. Thanks to DF steers, our heading was direct to the field. We let down for a straight-in approach, breaking out 17 miles from the end of the runway with 35 gallons of fuel indicated on the gage. A few seconds later the fuselage tank gage began to show an increase to more than 70 gallons.

The tower was notified of the fortunate turn of events and as they acknowledged, the cockpit suddenly became very quiet. There isn't much noise after a fuel starvation flameout. We prepared to eject and continued the approach. We still don't know how close it would have been because the first runway sighted was a civilian field four miles short of our intended landing point. With gear and flaps down our only real problem was to fly a pattern to kill off excess speed and altitude and not overdo it on either point.

Luck was with us and with zero fuel load we only borrowed about 3000 feet of runway. Total flight time was 58 minutes.

In the first place I assumed that because the tank covers were secure, the caps must be properly installed.

Next, I elected to continue the flight with four tanks siphoning when the Book says "land as soon as possible."

Then, last but not least, I learned the hard way that siphoning wing tanks can drain the tips. As an added attraction, the fuselage tank has been known to collapse slowly, giving a false indication on the tank gage.

Even though we didn't know our position during the IFR descent, it was a comfort to know that approach control was aware of it. We had declared an emergency as soon as it was evident and therefore all available facilities were alerted. ●



THIS one involves the loss of engine power with full carburetor heat "On" during a night takeoff from Kirtland, some years back. This non-reportable incident would and should have been a "pilot error" accident. With so many contributing causes, the code sheet would have been filled.

The flight was scheduled as a night haul to Wright-Patterson. The aircraft was a B-25 and had a passenger load of seven personnel. Crew and passenger briefing, ground inspection, baggage loading and checklists were properly accomplished.

This particular B-25 had manually operated carburetor heat rise doors which were properly checked prior to engine start. During taxiing, the left engine was not idling properly and finally flamed out. Attempts to restart the engine were unsuccessful. The starter shaft was sheared.

The aircraft was towed to the maintenance area and exchanged for another B-25 which was "in commission." The usual confusion of off-loading and reorganizing the flight took place until finally the engines were started and we taxied to runway 26.

Now comes the boo-boo. This replacement (the second B-25) was a different model. It had hydraulically operated carburetor heat doors. The control handles had (and some still do) three positions: Forward (for cold), rear (for hot), and neutral. Now, where was neutral? Approximately 15 degrees forward of vertical. In calling for carburetor heat control check, the copilot merely "felt" for the controls and found them in a forward (15 degrees) position and responded "cold." Neither the copilot nor I actually *looked* at the heat doors near the cowl flaps to see if they were flush with the nacelle. All power checks will not, and did not, reveal the existence of the "oversight." Soooooo, down the runway we proceed. (I might add, it was right cold out that night.)

At approximately 3000-3500 feet down the runway, the nosewheel was lifted and I patiently awaited the "usual" smooth departure from the concrete. But, Lo and Behold, the aircraft merely skipped airborne and then fell back to the runway. My first impression was "pretty poor take-off technique, Ol' Boy." It was not until the aircraft skipped the third time that the mental processes said, "Something is wrong." We checked the MAP and it was 38.5", 2500 rpm. The airspeed indicator was correct, for 115 mph (IAS) was the maximum reading.

At this time of mental alertness, an accident appeared inevitable. At the far end of the runway is nothing but arroyos. On the last skip (end of runway) the aircraft was literally yanked from terra firma and the wheels were retracted. Fortunately, the landing lights were on, for they aided in maneuvering the aircraft down the arroyos and streets (downhill) until the airplane was finally not descending quite as rapidly as the terrain. At this time the pilot (Yours Truly) was completely mystified and instructed the copilot to alert all personnel for a river landing—in the Rio Grande. The terrain clearance now was in excess of 20 feet and a glance to the left engine was chanced. And what did I see? Lots of exhaust flame "diving" into the nacelle, right where the carburetor heat intakes are. The carb heat was full hot. Motions by the pilot to correct the conditions were, to say the least, instantaneous, at this recognition. Airspeed? It literally jumped from the 120 indicated to 160 mph.

Of course, the tower was calling, advising that we had

descended too low over the City of Albuquerque. As if we had to be told.

Now, why did this happen? First, we had already worked nine hours during the day. Second, confusion and the associated mal-organization which resulted from the change in aircraft. Third, a poor visual inspection was performed on the second B-25. Fourth, neither the copilot nor I checked the actual functioning of the carburetor heat controls. Fifth, the carb doors were in the "hot" position in the first place merely because maintenance personnel were too lazy to place an intake scoop plug and streamer in the intake duct. (A check revealed that six other pilots had boo-boomed in the same manner, but their errors were made in daylight and caught on the roll.) This same lazy procedure of closing the carb controls after engine shut-down to keep dirt out of the intake scoops is still being followed on some B-25s today.

PS: The Dash One Handbook stated that only 10 per cent power would be lost with full carburetor heat. . . . Right or wrong, this figure does not consider that detonation may cost you another 40 to 50 per cent when you use the heat improperly. ●



MANY, long years ago (back in 1946, to be exact), this h'yar pilot had more downright luck during one short flight than the normal man has a right to expect in a lifetime. By the Grace of God Almighty—as you will perceive shortly—and with the help of a fine tower operator, an accident was prevented not once, but twice, during the same flight. So, with that introduction, on with the story.

The location: That postwar paradise of the Pacific, Okinawa. The mission: An initial checkout in that most venerable of aircraft, the old T-6D.

Oddly enough I had somehow missed an association with that paragon of wings. In fact, my only previous Air Force experience with one engine and no company was in the Stearman PT-17. And who doesn't have a tale involving those two wings with the narrow landing gear?

Well, I reported down to Kadena Ops that morning with eager anticipation of flying the bird. There was a delay in starting the ground checkout. There was no delay in finishing the ground checkout. Come to think

of it, there really *wasn't* any ground checkout. Oh yes, I did find out how to start the P&W while furiously working something they called a wobble pump.

Then off into the oriental blue for the flight checkout. Let me see. The flight checkout consisted of three flights around the pattern with two touch-and-go and one full-stop landing. All were wheel landings with no flaps. Seems there had been a rash of groundloops, and this procedure was instigated to preclude such unhappy events. Incidentally, it worked pretty well, as I recall.

Well, the landings were pretty smooth if I do say so myself. But somewhat to my surprise, after the full stop, the Instructor Pilot climbed out and yelled into my ears, "Okay, it's all yours. Think you can handle it?" My unhesitating reply was a confident "Roger," with an affirmative shake of the head.

It was mine, all mine! The checkout had lasted 15 or 20 minutes at the most. There was no questionnaire involved, and the Dash One, T. O. Handbook? What was that? But I could fly it; I could land it and it was mine!

So, away we went, just Thee and Me! Exhilaration was flooding the cockpit. I was sitting on top of the world.

I climbed, I zoomed, I flew straight and level. I also took the short Okinawan tour—Naha, Awase, Ishikawa (ah, Ishikawa). I couldn't have felt better or enjoyed life more if I'd been a charter member in the Teahouse of the August Moon Club. (Since I didn't know Glenn Ford or Marlon Brando, that was out of the question.)

But the time came, as it must to all airmen, to land. My 45 minutes of pleasure were drawing to a close. Although there had been no "hours and hours of boredom," reverie was nigh on to being punctuated by "moments of stark terror."

The pattern entry was fine, the wind was down the runway, the gear was extended and checked, and the downwind had progressed right favorably, albeit a little wide and long.

Suddenly, just before the turn to base, there descended on all of this peace and calm the rather terrifying noise of a sputtering engine. It was amazing how quickly that cockpit and I became unfamiliar—total strangers, in fact. What was wrong? It was hard even to locate the engine instruments. Finally, when I did, they seemed okay. The mixture was full rich, the prop was forward, and my meager altitude was rapidly going by the board. Deadstick it into the field? Too far out. Crash land? Where? The rough Okinawan terrain was totally unsuitable and the East China Sea was uninviting. The beach? Well, it wasn't inviting either, but that's all there was. And the geography was such that a landing on the beach would be with a brisk tailwind. By this time, actually probably only several seconds, my stomach was in knots, my throat was dry and I was scared—real scared. Of course, during the turn toward the beach I was, with pounding pulse, still searching for the source of trouble.

By some strange stroke of good fortune my left hand shot down to the fuel control switch. I'd only been up about 40 minutes and surely couldn't be out of gas, but anything—try anything in a pinch!

Oh, what sweet relief! With one small switch of that control, the engine caught and "Thee and Me" were back in business. I was overwhelmed with feelings of relief. No accident for this boy, no published embarrassment and no injuries. Everything was going to be all right!



Yep, you've put your finger on it. I ran the left fuel tank dry, above the little standpipe that was actually designed to help keep you from running out of gas.

So, with lightened heart and profound thanks, I turned onto the now-long final and started on it. I kept saying to myself, what luck, what wonderful luck!

With a voice as normal as I could muster, the tower was notified that I was on a long, final approach with wheels down and locked. So—on down the final I went, pleased as a clam at high tide that the day was saved. When—"816, your wheels are not down, your wheels are not down!"

Gad! How stupid can you get? I must have retracted the gear automatically during the emergency, a reflex action resulting from ingrained, previous training. My thoughts had been so consumed with the luck I'd had and gratefulness for an accident avoided that I had just plain forgotten to put the gear down again. Cripes, how could anyone do such a thing, particularly me? I was mad at myself and in conventional terms, "well shook."

Although there was still time to get the wheels down and land, I pulled up, took a little time to collect myself and made a thorough check of everything (to the extent of my meager knowledge) before coming in again. And the landing was finally okay.

That tower operator, bless his soul, was really on the ball. I couldn't face him that day, but needless to say, later on I paid him all sorts of flowery compliments. Certainly he saved the government an expensive accident and saved me much trouble and public loss of ego.

Obviously, these difficulties were precipitated by several errors and by several people. I've often wondered, had an accident occurred, what would the board have concluded regarding the cause or causes? My errors and those of others were certainly not erased simply because I was lucky in the cockpit and the tower operator was sharp. We were morally as guilty then as we could ever be—accident or not.

Of course, the errors are plain. I should have known about that reserve standpipe arrangement in the left fuel tank and a lot of other things about the ship I didn't know. I should have asked for a more thorough checkout. I should have read and studied the Handbook, and I should have put the wheels down. However, my emergencies could also have been prevented by a properly supervised training and checkout program.

Fortunately, the days of quick-and-dirty, round-the-field checkouts are pretty well over and done with. And pilots, either through training and/or experience, are not the fools that I was.

Experience has proved time and again that shortcuts during checkouts are much too expensive, regardless of who the culprit is. For, in spite of the number of times the Good Lord has been in our corner, he is, after all, a busy man. ▲

D O W N



Since the first concept of retractable gear, the big question has been: Where are they?

Major William H. Hornbarger, Jr., D/FSR.

"Bully Red One, base leg, gear down, pressure up."

"Roger, Bully Red One, recheck gear, clear to land."

THIS TRANSCRIPT was taken from a recording between a pilot and a tower operator. It was made just prior to Bully Red One's gear-up landing. The investigation which followed revealed no mechanical malfunction of the landing gear or warning system.

Having spent over six years in the Air Training Command, I have had my share of runway control. During that time I "saved" more than one iron bird from alighting with his landing gear tucked up under his wings. Many times it seemed as though nothing short of a hundred and five millimeters across the bow would alter the glide path of the earthbound gear-up aircraft. However, if the red flares held out and you were able to reload without dropping the mike, the gearless birdman usually saw the light or at least one of the flares.

Although it is agreed that the use of mobile runway control during training flights is effective in preventing gear-up landings, it is an intangible criterion and cannot be applied in all instances. There are many cases on record of mobile control's getting through to the pilot on final approach with gear up, even though the cockpit indications (unsafe indicators, red light and horn) failed to make an impression. For example, Air Defense Command, in its round-the-clock operation, accomplishes many landings during periods of darkness and bad weather and therefore can not use mobile control to the

same effective degree as does Air Training Command for example.

Not too long ago the F-86D gear unsafe warning light was relocated, placing it on the instrument panel as near eye level as possible. The idea was to make it next to impossible for the pilot to fail to notice an unsafe indication on final. In spite of the modification, however, F-86D aircraft lead the field in inadvertent gear-up landings. The basic solution to the problem appears not to be a simple modification of the gear warning or actuating system but rather a complete redesign or concept.

Since January, 1954, there have been 82 gear-up landings in jet fighter and T-33 type aircraft which were attributed to failure by the pilot to actuate the landing gear control. Thirty-two of these gear-up landings occurred during the calendar year 1954, and the F-86D was involved in 17, or 56 per cent, of the total. Only 23 such accidents occurred in 1955, and the 86 Dawg was involved in nine, or 41 per cent, of them. In 1956, the F-86D was involved in 17 out of the 27 such landings for a share of 63 per cent. The Dawg is accountable for 53 per cent of the total gear-up landings, yet flies only about 13 per cent of the hours and accomplishes a like percentage of the total landings. These figures include only pilot error accidents in which he failed to actuate the landing gear control. Gear extension failures or gear retractions after touchdown which resulted from malfunction of the landing gear system are not included.

Why is the F-86D outstanding when it comes to gear-up landings? Its landing gear system is similar to the A, E, F and H, and the gear position

control handle is in approximately the same location. The position indicator and warning system are basically the same as those in other jet aircraft. There are many similarities but only one big difference: The F-86D is our only operational single-place interceptor. (We're sweating out the F-102A for this reason.)

The frequency of gear-up landings in two-place interceptors (F-89 and F-94) is far less than in the F-86D. The frequency of gear-up landings in F-86A, E, F, and H aircraft also far less than in the D, although in many respects the aircraft are similar. Augmentation of radar and electronic equipment increases the complexity of the single-place interceptor cockpit considerably. This situation is alleviated somewhat by the radar observer in two-place interceptors. Stand-by alert and night and weather intercept missions are highly contributory to pilot fatigue.

In practically all accidents in which the pilot failed to extend the landing gear, an acknowledgment was made by the pilot in the traffic pattern to the effect that his gear was down and locked. Several accidents occurred during landings from a GCA and others after having had normal landing sequence interrupted.

To sum it up, the pilot task is becoming increasingly greater, and very little has been accomplished to aid the single-place fighter pilot in assuring that his gear is down on landing.

Recently we kicked around the idea to incorporate some sort of unsafe gear warning system in with the Identification, Friend or Foe (IFF). The idea was passed on to Convair who is very sympathetic to the gear-up land-

and LOCKED?

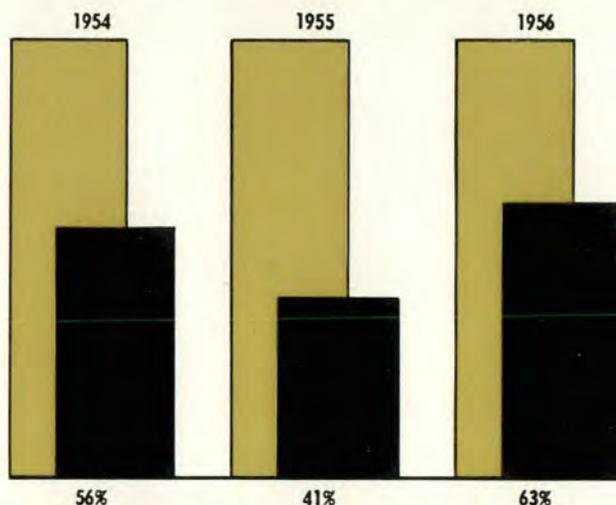
ing history (naturally since they have the F-102 going for them). Such a system might trigger a responder when gear is retracted. This signal would be received along the runway final approach path and would indicate on an interrogator in the control tower that aircraft on final had safe or unsafe gear. This system would even be effective in a four-ship flight on GCA if any one of the aircraft did not have gear extended.

As proven in the past, pilots are very much prone to agree automatically with the request to "recheck gear down and locked." A direct command over the radio for the pilot to "take it around, your gear is not down" is far more effective than an unsafe indication in the cockpit. Conair has requested an Engineering Change Proposal (ECP) for funds to develop and test this system.

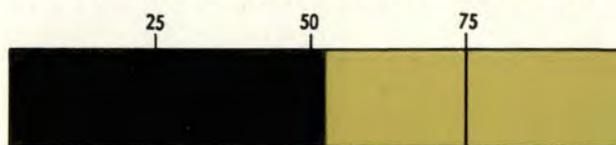
The British came up with another idea. Tie the gear-up warning in with the airspeed indicator. For instance, the average approach speed for a particular fighter is 160 knots. When the gear is retracted, a red flag or appropriate shield would cover the portion of the airspeed indicator between 150 and 170. This system is based on the belief that even fighter pilots check their airspeed at least once on final, and I believe this is a safe enough assumption. So when the pilot is unable to see the airspeed calibrations during approach, he merely extends the gear. Personally, I'll buy it. At least, we're going in the right direction. What do you think? We've got the problem—maybe you have the answer. ▲



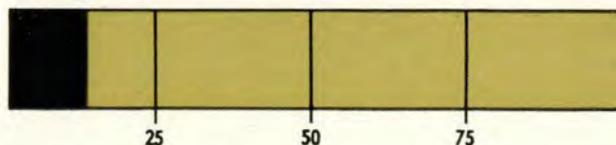
82 gear-up landing accidents occurred during 1954-56.



Study reveals that the F-86D was involved in majority of these



Compare landings, flying time below vs. gear-up accidents above.



ALL OTHER FIGHTER TYPES (Yellow) F-86D (Black)



Punctuate Your

Maj. David F. McCallister, 142d FIS, Delaware ANG, New Castle County Airport, Del.

Had any close ones lately? The higher and faster you and the rest of us go, the greater are our chances of piling up in a gory mess in the sky. Lots of people are giving the problems serious thought. Presented here is the same ol' problem with a couple of suggested solutions. They may have their drawbacks. There's no corner on the idea market. How about yours?

IF A JOCKEY hasn't had the nerve-shattering experience of suddenly looking up from his instruments to find his windscreen filled with an oncoming, six-engine lead sled (that appears to be approaching at something approximating twice the speed of light), then he can didactically state, "Bub, get your head out from where it's warm and dark and keep your eye on the skyroad." If he can state the latter in all honesty the

chances are he hasn't spent much time above 30,000 lately, because, brother in blue, it's crowded up there!

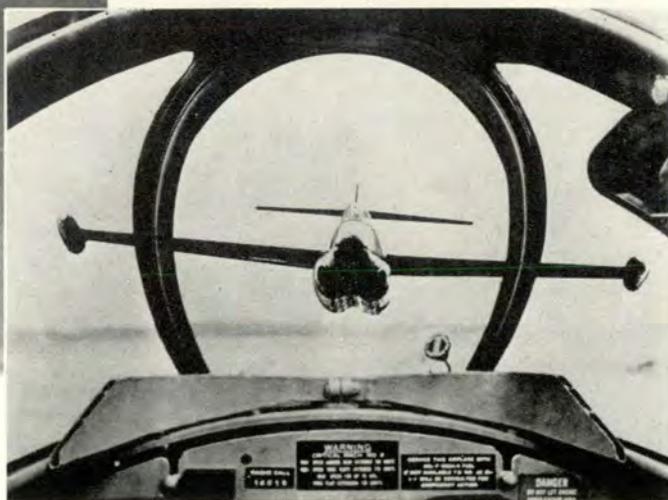
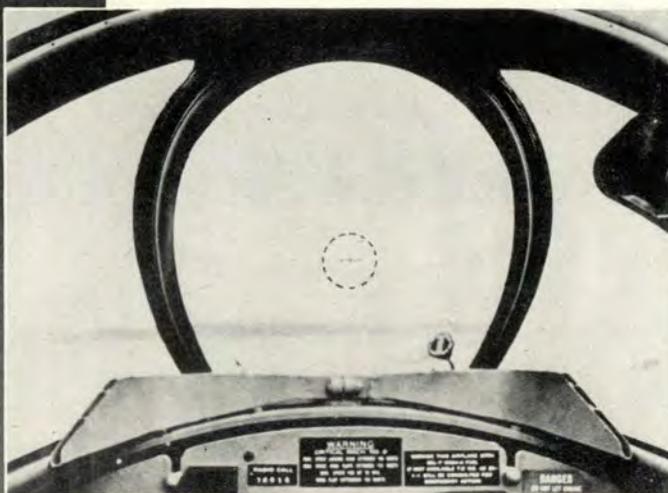
Although constant vigilance and sky scanning outwardly appear to be the solution to the midair collision problem at high altitudes, there are a few other things that must be considered before the fickle finger is pointed at the inadequacies of us who are determined to cheat the Grim Reaper out of his unjust dues.

It is generally accepted that a fair pair of 20/20s can detect an approaching aircraft at a range of approximately seven miles. When two jet fighters approach each other at a closing speed of 840 knots, at 14 miles, they are one minute apart. And not until the jockeys are thirty seconds apart can they visually detect each other. Presuming both are traveling at the same altitude, which occurs every day, there is a chance that they might make a perfect intercep-

tion and add another chapter to that voluminous true life drama entitled, "Just One Durned Form Fourteen After Another."

Flying through weather, in controlled areas, is infinitely safer than flying through clear air in the same controlled area. As an example, on Green 4 airway, between Columbus and Pittsburgh, when the upper air is solid cirrostratus, all traffic is flying at assigned altitudes. It sez here. On a clear day on the same stretch of airway, a jet flying west on an IFR flight plan at an assigned altitude of 31,000 feet can very easily lock pitot tubes with another jet flying east at 31,000 feet. Both pilots are legal but the marble orchards are filled with dead right jockeys who are now legally dead. The solution to this problem is to refrain from requesting an assigned altitude when flying we unless weather conditions dictate otherwise.

Position



Right, flyspeck or airplane? You have only seconds to make your decision, complete your action to "avoid."

Flying a jet fighter or jet trainer in clear air above 35,000 feet requires a pilot to fly half contact and half instruments because of the inherent longitudinal instability of his aircraft. This is specially true in the early stages of a flight when the aircraft is still heavily loaded with fuel. Some aircraft, such as the F-86E, are extremely critical in this respect. Unless flown very smoothly it will lose, at its best cruising power, its cruising Mach of .81 or .82. Once the Mach drops back to .77 or .78, it requires more power or less weight to get the aircraft back "on the step."

In view of this idiosyncrasy the pilot must spend considerable time monitoring his altimeter so that he can be guaranteed the best Mach per gallon. And although the solution may appear to be in flying the aircraft at a lower Mach, it is fallacious because as the Mach is increased the unstable condition is increased, re-

quiring even more attention to instrument flying by the pilot.

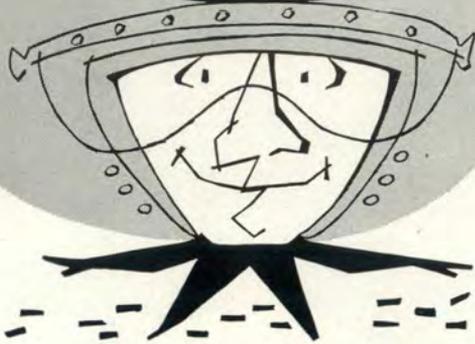
Aircraft instability at high altitude is something with which we must live for some time to come. But a partial solution to the overall problem of giving the pilot more time to scan the skies lays in teaching him to fly smoothly, and at the Mach of least instability.

Even if aircraft instability were ruled out as a problem, we are still left with only a 30-second margin in which a pilot must see and avoid another oncoming aircraft. With some of our jet aircraft, we could increase this slim 30-second margin to a matter of minutes by installation of a sky marker device. Many of our jet fighters and bombers are equipped with water injection tanks that are seldom used. Through the addition of a timing device and a line running back to the aft end of a jet's tailpipe the seldom used water injection tank

could serve a useful purpose on every flight. A one-second burst of marker fluid injected into the tailpipe of a jet flying at 420 knots would produce an exclamation point 616 feet long. This marking system has been used successfully to locate target towing aircraft on gunnery ranges and there is no reason why it cannot be used to promote flying safety in the "deadly thirties."

Mother Nature herself promotes flying safety by providing us with the elements needed for the manufacture of contrails. Pilots should take advantage of the contrail layer to punctuate their positions in the sky. Contrails can be seen from a distance of 100 miles under ideal conditions, and although flying in the contrail layer works against the combat tactical advantage of surprise, in a peacetime sky flying out of the contrail layer accentuates the age-old fighter pilot's byword . . . it's the one you *don't* see that will get you! ▲

the Ballad of
Jethead Jones



A Narrative by
 George M. Goldberg, ACIC

The day was clear as he grabbed his gear
 And Jethead's hopes were high.
 He'd stayed up late with an all-night date
 But couldn't wait to fly!

His hunch was right and a routine flight
 Was scheduled on the board.
 He made two stops, at Weather and Ops
 Where Aero Charts are stored.

They forecast rough with a front and stuff
 That made it IFR.
 You fly it brave on a radio wave
 To know just where you are.

"Best take a WAC," comments Airman Mac,
 "I'll get you one for free!
 "And here's a change in the radio range
 "I got from the RFC."

But Jethead smiled as he casually filed
 His flight plan for the trip.
 He waved aside with disdainful pride
 The Airman's worthy tip.

"To fly through soup, who can use such poop?
 "Just let me have the book!"
 So Jethead's fate, at an increased rate
 Was sealed with what he took.

He watched the crew 'til its task was through
 Then checked the jet himself.
 Old Jethead Jones never shook his bones
 Except to guard his health.

At ten past two, with his heading true
 His ETAs checked fine.
 But then the crest of a front due west
 Grew black and formed a line.

He hit the squall like a rubber ball
 The clouds were scalded steam.
 But Jethead grinned as he tuned her in
 And flew right on the beam.

His quick relief soon turned to grief
 His headset buzzed and died.
 His throat grew dry as alone in the sky
 A fear grew taut inside.

He throttled back as he reached for a WAC
 And nosed her towards the ground.
 But with a start he recalled the chart
 He'd scorned to have around.

His fuel was low, as he dipped below
 His pre-planned altitude.
 And soon broke through for a pleasant view
 Which helped to change his mood.

Right up ahead was a valley bed
 With hills to left and right.
 But clouds came down as he spotted a town
 And shut the land from sight.

In flying blind he couldn't find
 A way to save his neck.
 Nor did he learn that a valley can turn
 Without a chart to check.



EPILOGUE

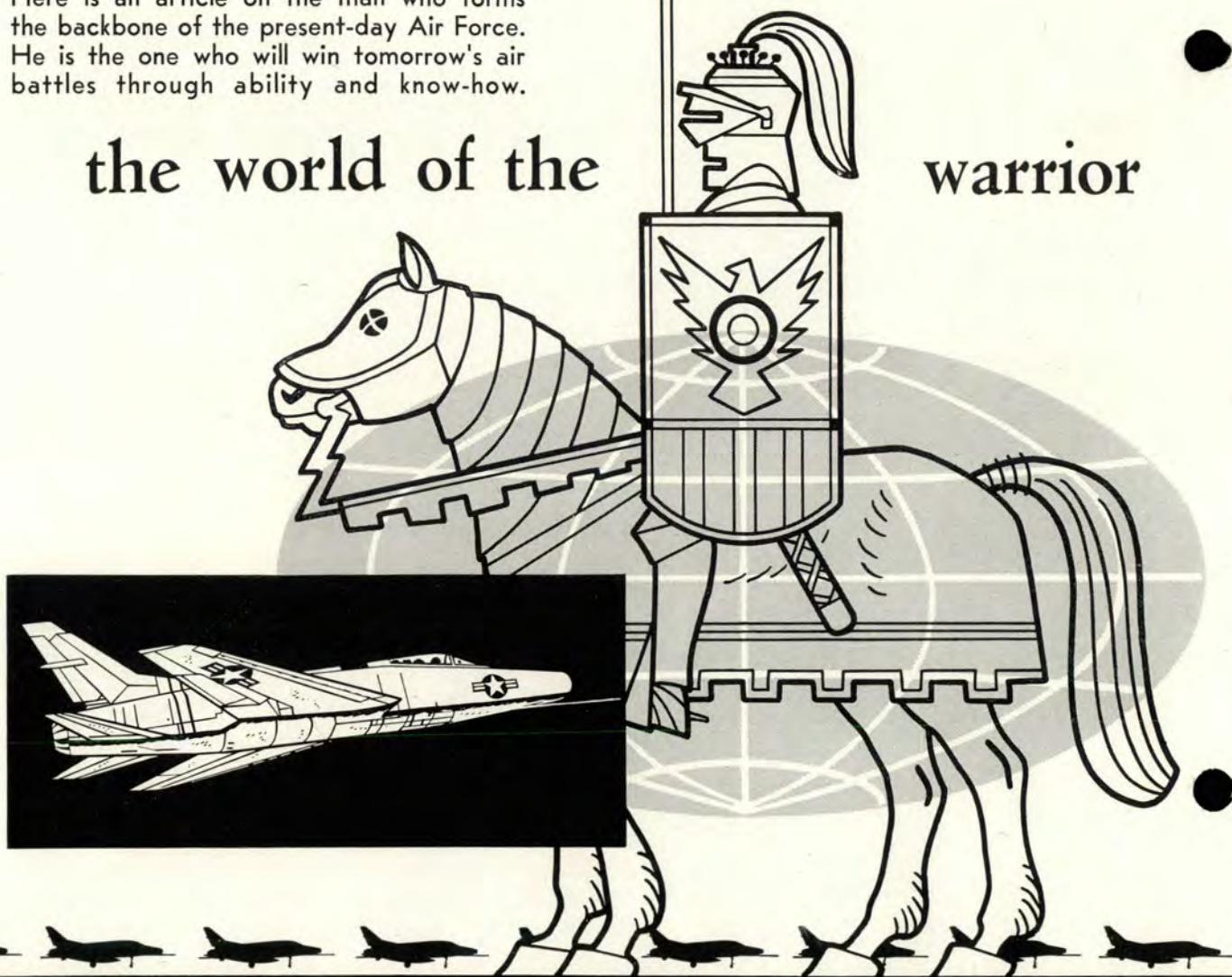
Old Jethead Jones, may they bless his bones
 Had guts and steadfast heart.
 No lack of skill made him hit that hill
 But lack of a proper chart!



Planning • Procedure • Pilot Techniques
=
Professional Pilots

Here is an article on the man who forms the backbone of the present-day Air Force. He is the one who will win tomorrow's air battles through ability and know-how.

the world of the warrior



Colonel Russell V. Ritchey, Office of the Deputy Inspector General, USAF

AT ONE TIME in world history the fate of nations hinged upon the outcome of battles between their selected representatives. The cost of training, arming and equipping was so expensive that the common man, not able to provide for himself, could only await the outcome and abide by the decisions. The time, the middle ages. The representatives, the armored knights. These things combined to create this armed corps: A high degree of selection, rigid training and an inviolable code of conduct.

Today, the common man, the statesman, the merchant and the moneylender must again place their lives, homes and future in the hands of a corps of young warriors. Having done so they must stand helplessly aside

awaiting the decision, once the battle is joined.

Once again, selection, training and equipment are the primary factors. The citizen finds the equipment and training beyond his financial capability to maintain. Today's warrior? Today's knight?—The pilot officer.

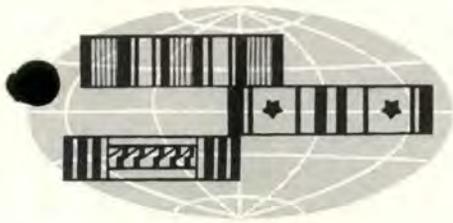
Even today the rigid requirements for the development of the air warrior are not fully recognized. Men introducing a new era are at the same time a part of the past era. As a result, their thinking must represent a part of both eras. For this reason it has been difficult for military men to give up the theory of mass. Quantity rules over quality. We sacrifice perfection for numbers. Men are selected

on the basis of capability rather than the will to use the capabilities.

Perhaps at no time in our history has attitude assumed such tremendous importance. It has reached the point that attitude becomes more important than aptitude. Will over skill.

The pilot officer—the man upon whom the free world must rely, the man who, alone in the air, thousands of miles from home, confronted by every kind of opposition the enemy can contrive—must drive home the attack if this nation is to survive.

Is he something special? Yes, he is. He is if he has been carefully selected. He is if he has been carefully trained. He is if he has been carefully led. He is, if he possesses the will!

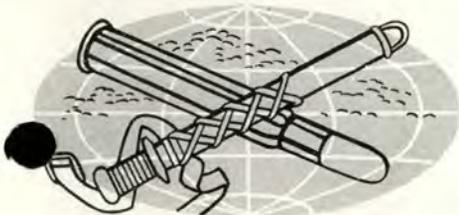


Let's look at the selection of this fighting man—the pilot officer of the nuclear age. First, for the identification of this very important man there is the weeding out of those who just like to fly; second, those who “just like the military life,” and, third, those who “don't intend to get into any fight.” Next, we must identify those who are in the service for an education, to serve their obligated service or to prepare for a job in civil life.

For those who are left there should be the moment of truth. Each must be dealt with frankly and honestly. He must be told that he will be flying combat aircraft, that he will carry the key to survival of this nation and the free world with him. That he will carry more power for war or peace than any other one man in the history of the world. That he may be shot down in hostile country, that, if he is captured, he may be made to suffer for his principles and for his country. That he may be wounded or killed in carrying out his duties.

He should understand that these things are the fundamentals of the profession to which he aspires. He should understand that education, housing, recreational facilities, retirement and dependents care are benefits accruing from honorable service but not an end in themselves.

He should clearly understand that when he accepts these conditions he is applying for training which will lead to the rating of combat pilot. He should thoroughly understand that he must be a pilot before he can be a leader. He must understand that the demands of self-discipline must be met before he can lead. That in this service the combat pilot must survive to lead and to survive requires rigid



discipline, attention to duty, great responsibility, judgment, courage and stamina.

Perhaps in the past we have dealt too much on the \$40,000 pilot and the \$6,000,000 airplane carrying a \$5,000,000 bomb destined to destroy \$500,000,000 cities.

The values with which we are dealing in talking to this potential pilot officer linger after all other things cease to have monetary value. The man who panics or lacks the will, can abandon a multi-million dollar aircraft just as quickly as he can abandon a cub. Courage and monetary value are not compatible bedfellows.

The young man who accepts training after being apprised of the responsibilities of this profession is not doing so from the standpoint of the material benefits alone.

By discussing the realities of the pilot officer's profession in the nuclear age, we discharge a responsibility to this young man.

However, we have another responsibility, a responsibility to the people



of this country, and to every member of the free world. We are responsible for insuring that the men receiving this vital training, who are later to be entrusted with the responsibility of defending the United States, are the best men our country can provide. To insure this not only requires that the aspirant be physically robust and mentally capable, but that he possesses the will to use the capability and the stamina to obey the will.

No theory or tests yet developed can predetermine the strength of the will as quickly and as accurately as do actual performances. Reactions to problems and exercises under varying degrees of physical and mental stress identify the characteristics desired in or possessed by the aspirants.

No effort should be spared to make effective selection of the potential pilot officer prior to training. The training of this man must not be wasted on the potential washout. Our ultimate combat mission and its vital purpose cannot wait for aborts and losses to weed out the unfit.



The man selected for training must be certain of his desire to serve. He must meet the most rigid requirements and be subjected to rugged and thorough tests to insure his reliability under the conditions he may be expected to encounter.

The next step in preparing the nuclear-warrior-of-the-air is training. The most important adjunct to successful training is the attitude of both the trainer and the trainee.

The trainer of the pilot officer of the nuclear Air Force must recognize this more than ever. If selection has been effective, the trainer is relieved of the necessity of “selling” the many welfare aspects of the Air Force to make it attractive. He is dealing with a man who is aware of his responsibility and is ready to accept the training necessary to prepare for it.

Perhaps the most important training requisite, outside of the skill itself, is discipline. He must live discipline in his training stage until he develops a high state of self-discipline which matches the pattern of discipline required of the Air Force.

The freedom enjoyed by the pilot of bygone days has died with the ages. The technical perfection of today's nuclear armed aircraft demands an attention to duty never before demanded of young officers.

Inattention, tardiness, vacillation, rationalization, procrastination, disinterest formerly tolerated or excused must now be dealt with as habits dangerous to the accomplishment of future missions the man might be called upon to perform.

Efforts during the training should be continuous to discover weaknesses which might endanger a mission.

Efforts to identify aggressiveness,





stamina, courage, decisiveness, obedience to orders and conformance to rules should be continuous throughout the training period, by subjecting the trainee to various problems under varying degrees of pressure.

Why? Why should we depart from our current programs to meet the challenge of the future?

Why can't any man be selected and trained to fly?

Because the new pilot officer is truly new. No longer will he just lose an airplane because of his pilot error. Nor will he miss the target because of weather, or navigation, or lack of flying ability. He will stop a significant element of an attacking force.

His lack of navigational ability could cause the destruction of a neutral city. His lack of flying ability could cause the destruction of New York City. His inattention, or lack of discipline could cause the wrecking of our war plans. He is a very important young man. He will enjoy a trust and responsibility never before given such young officers. This is, of course, what we require of him.

We, in turn, must provide him with every means within our capability to survive. By thoroughly training him in survival from the time of bailout until his return we insure a more confident man in the cockpit. A man who knows what he will do in an emergency is enabled to devote more time to what he is doing and less to what he'll do if trouble develops.

The attitude toward service, the skill of flying, and discipline for this new pilot officer must be tied together with training as an officer.

There is nothing officer-like in the skill of flying, but the qualities of an officer are involved in what he may be asked to do with the airplane.



- His duty—the attitude with which he performs and the understanding with which he prepares for it.
- His honor—the way he lives, his loyalty to his mission, his superiors and his subordinates.
- His country—his willingness to fight for it, to die for it.

These three truths are as important to the pilot officer as his ability to fly—more important, for his beliefs will determine what he will do with his achieved skill.

This man, the pilot officer, is no different than the pilot officer of the past. He, it will be noted, receives similar training, however, the difference lies in the degree of training. The selection is much more rigid. The gamble on the man's attitude must be removed. We must know. The training must be rigid, and intolerant of a lack of discipline in any degree. The dedication must be complete.

Why is this different? Why must the new pilot officer be so much more of a pilot, much more of an officer



than his predecessor? The answer is simple. The consequences of his actions in his position as a pilot officer in the nuclear Air Force are so great that any attempt to find a historical precedent is fruitless. Our country, our people, our service, demands the best of men, the best of training if we are to survive.

A young warrior must prepare himself for war. To do so he must expect war. If war comes he must expect to fight.

He must not be permitted to let other objectives blur his purpose. We, his superiors, must not create doubt in his mind of his primary purposes, his faith in his fighting prowess. Else he will only view his airplane as an interesting vehicle, and not as a weapon in which he gains greater proficiency and skill as a fighting officer.

This new pilot officer must, during the combat phase of his career, prepare personally, spiritually, physically and professionally for war. During the time he represents the fighting



man of his country he must be so treated. He should not be confused by career incentives, educational opportunities, retirement benefits and a myriad of other items which today interferes with his primary purposes. These things can come later. This is the requirement. This is the challenge. We know there are such men and we must find them. ▲

★ ★ ★

The Author

Colonel Ritchey has served in the Infantry, Cavalry, Medical Corps, General Staff, Armored Corps and Air Force. As an USAF instructor at the RAF Staff College at Bracknell, England, in 1948, he studied officer military education and training in seven European countries. He has served as Commandant of the Air Tactical School and as Assistant Commandant of the Air Command and Staff College. He is the founder of the Squadron Officers Course at the Air University.



REX



SAYS

I DEPARTED a Midwest base in an F-84G, IFR. On climbout I found that I couldn't transmit by voice but I continued on flight plan route in accordance with the last acknowledged clearance.

I didn't want to go all the way with an inoperative voice transmitter so I tried a CW message "in the blind," using the tone button on my UHF set. I requested a change of flight plan to a closer airfield and was surprised to get answers from several CAA stations. One had copied my message verbatim. I asked all except this station to stay off the air and worked him exclusively. He informed me that stations down the line had been notified and approach control at my new destination was standing by for my arrival. An undesirable condition began to look brighter, with this outstanding assistance.

Some five minutes out, RAPCON called me, requesting a mode 3 squawk. Since this had to serve as my only acknowledgment of their transmissions, they had me squawk all the various modes until I was positively identified. Using IFF, this required two minutes at a range of 100 nautical miles and enabled them to give me navigational assistance into their radar penetration pattern. RAPCON was operating several other flights, since the control tower was inoperative, and blowing dust had lowered visibility to near IFR conditions.

Each flight used different IFF modes which gave RAPCON better radar returns, and permitted them to work several flights at once.

My penetration took less time than a normal type letdown, and I was handed off to GCA on the downwind. The GCA controller took over with a very reassuring tone to his voice, carrying on the theme "Keep the pilot informed." The letdown was so well planned that I only had to make three azimuth corrections on GCA final approach and became VFR about three out on final, lined up with the runway.

This was the first actual CW message I have ever sent and that CAA station that picked it up was really on the ball.

REX SAYS—*Ingenuity by the pilot and outstanding vigilance by the CAA stations involved, teamed up on this one. It is reassuring to all airplane drivers to know the high calibre of the controllers who run the airways and approach controls. Congratulations to all concerned on a real, heads-up job.*

THIS BASE experienced a near-accident recently which I thought might be of interest to all.

Not too many moons ago, a pilot in a T-33 departed his Northwest base for this one and when he arrived here and extended his gear, the right main indicated unsafe. He declared an emergency, then made a fly-by. Sure 'nuff, the right gear was tucked in real nice. After the fly-by, he pulled up and shortly thereafter, the right gear indicated down and locked. By now, fuel—like time—was of the essence. He landed okay.

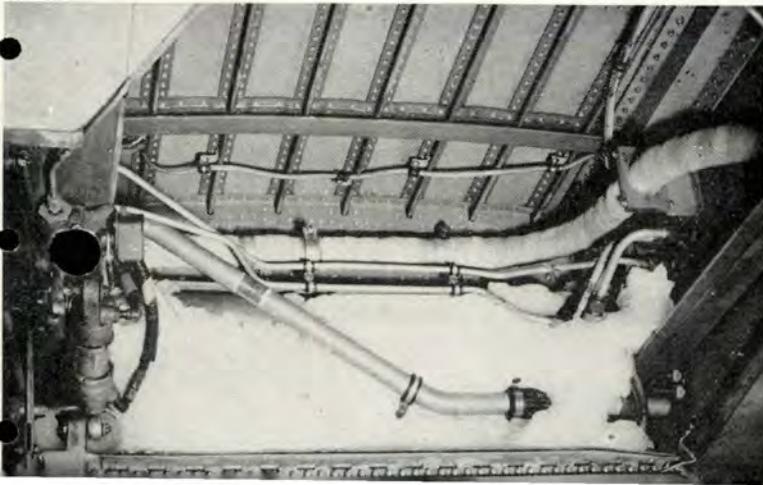
The accompanying photos speak for themselves and show the reason for the gear's failing to extend until the warm air had melted enough ice to release them.

The pilot stated that the ramps and runways were knee deep to a dinosaur in slush when he took off. Apparently quite a bit of this had been thrown up into the wheel wells during the taxi and takeoff.

The Dash One says to recycle the gear several times after takeoff from slush-covered runways and here is proof of what happens if you do not.

REX SAYS—*Thanks for the account. I'm sure happy that you made reference to the Dash One. In most of these near-misses it seems like I am the only one who mentions it and I was beginning to feel like a bore.*

When you take off from a slush covered runway, here is the result.



Before attempting a letdown, best you know what to expect in the way of weather. Here is how to do it.

Dial Channel



A PAIR of F-86s were bound for one of our midwestern bases flying IFR 1000 on top. They were cleared to descend to 20,000 feet and proceed to the range station. The weather was reported to be 5000 overcast with 15 miles visibility. Thunderstorms were reported in the area. Upon reaching 20,000 inbound they were on instruments and the radio compass needle was doing nip-ups, because of the thunderstorm activity.

During the descent to 20,000, the ceiling was reported as 1000 feet and it was later revised to 300 feet. Both started the penetration but never became VFR. The leader managed to make it to a nearby base. The wingman lost the leader in the soup, became hopelessly disoriented, ran out of fuel and bailed out.

There, folks, are the fast facts. Both of these troops had their share of troubles. For one thing they were both inexperienced, had very little instrument time and had never flown heavy

weather or thunderstorms. It appears evident that these two young tigers goofed in attempting a letdown and landing under such conditions. All of these facts, statistics and conclusions appeared on the Form 14 along with the question, Why didn't they use the Pilot to Forecaster Service that was available at that field? (If they had known about the deteriorating weather conditions, it is doubtful if they would have attempted a letdown.)

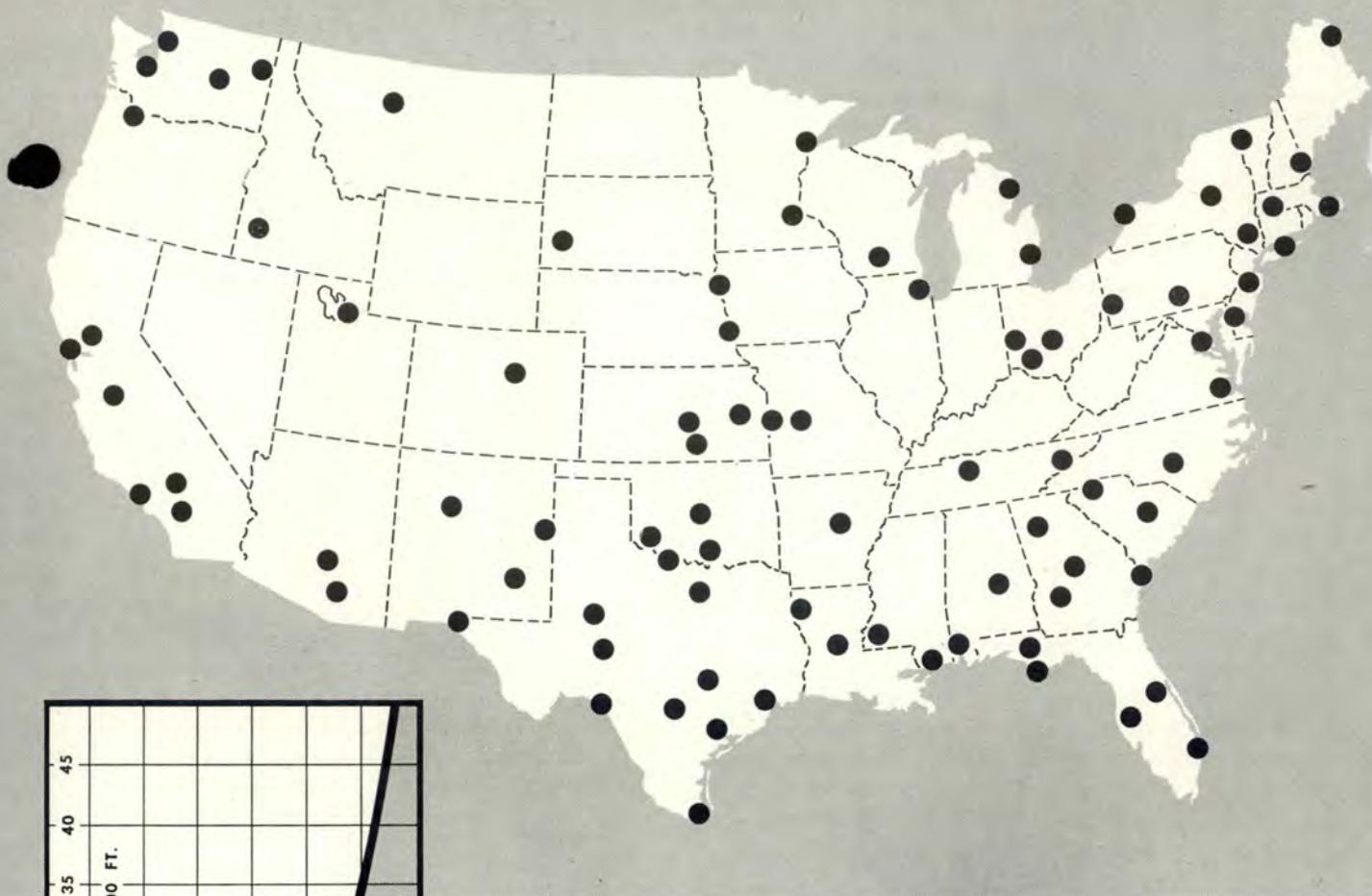
The answer: They both believed this service to be more for the benefit of the weather section than for the pilot. They did not understand it to be a means of getting current landing time weather.

This, incidentally, is not an isolated case and I have the Form 14s to prove it.

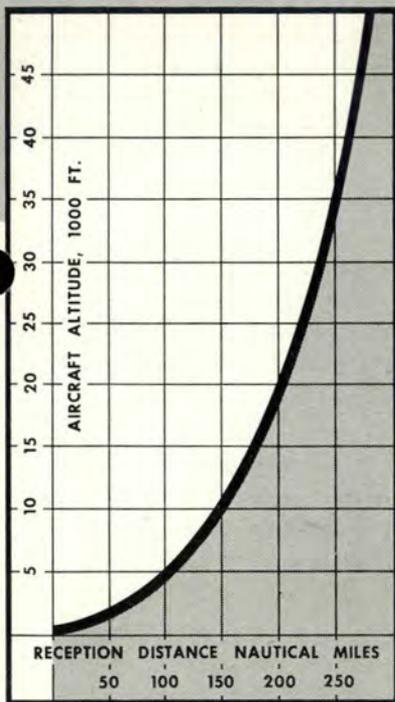
There is no doubt that the modern air-bird requires a considerable amount of support, including maintenance, navigational assistance and adequate weather information. Of

course, with jet type aircraft, and their rapid fuel consumption, accurate terminal and en route weather information is imperative. There are two basic types of information that a pilot can receive from a weatherman. One is an observation and the other is a forecast. Picking up the observation while tooling along is old hat. I think everybody is indoctrinated on listening to the weather reports given by the range stations 15 or 45 minutes after each hour. Also, pilots call a station periodically and get the latest terminal weather. What you receive, of course, is the latest observation and must not be confused with a terminal forecast. (You can, of course, specifically request a forecast.)

Also, your weather briefing prior to takeoff includes the observation for your destination and alternate, along with a forecast for your ETAs. I don't believe any weather heads will get "shook" if I say that occasionally a forecast is busted. (See "Weather or



Above, is a map showing the coverage of PFSV throughout U.S. At left, notice the UHF range you can expect at various altitudes.



latest one, and the way to do that is to use the Pilot to Forecaster Service.

It matters little if the weather is reported as VFR when you are some 20 minutes out, the important thing is: What will it be when you are completing your letdown and looking for the hard surface?

A fast look at the map accompanying this article gives you an idea of just how many PFSV stations are available. They have been located so that you are always within range of at least one.

It figures that the forecaster cannot originate this service, so the responsibility rests with the pilot. Since you must guard the appropriate ARTC frequency, first get permission to switch to channel 13, then have at it! The "Remarks" section of the Radio Facilities Charts, both the bound volume and the Special Edition, carry the information on facilities available. Incidentally, it is a pretty fair idea to check this during your preflight. Make an entry on your navlog of what stations en route will provide this service. Then, when needed, it will be real handy.

A sample of the correct transmission procedures follows:

"Scott Forecaster, this is Air Force Jet 12345, over."

"Air Force Jet 12345, this is Scott Forecaster, over."

"This is Air Force Jet 12345, request Scott weather and landing forecast for 1510C, over."

"This is Scott Forecaster, Roger, stand by."

"Air Force Jet 12345, this is Scott Forecaster. The latest Scott observation, 1430C is 4000 ft scattered, 10 miles visibility, surface wind SSW-14 gusts 22 knots, altimeter setting 29.98, line of thunderstorms 3 miles to northeast. Landing forecast for 1510C, 800 ft broken, 1/2 mile visibility in rain showers, surface wind N-40, altimeter 29.96 with thunderstorms in all quadrants, over."

"This is Air Force Jet 12345, Roger, alternate is Grandview, request latest observation and landing forecast for 1525C at Grandview, over."

"This is Scott Forecaster, Grandview observation at 1430C is 5000 ft broken, 10 miles visibility, surface wind

Not," FLYING SAFETY, October 1956.) Anybody with any flying time at all can recall the time he leaped off to a place destined to be VFR and upon arrival had to change to IFR and shoot a letdown. It is common knowledge that our forecasters do a good job with what they have to work with. However, the science of forecasting weather just hasn't advanced to the stage where you can expect 100 per cent accuracy.

Your best chance of obtaining an accurate forecast is to get the very

U. S. STATIONS WITH PILOT-TO-FORECASTER SERVICES AVAILABLE

Altus Air Force Base, Oklahoma	Loring Air Force Base, Maine
Amarillo Air Force Base, Texas	Lowry Air Force Base, Colorado
Andrews Air Force Base, Maryland	MacDill Air Force Base, Florida
Ardmore Air Force Base, Oklahoma	Malmstrom Air Force Base, Montana
Barksdale Air Force Base, Louisiana	March Air Force Base, California
Bergstrom Air Force Base, Texas	Maxwell Air Force Base, Alabama
Biggs Air Force Base, Texas	McConnell Air Force Base, Kansas
Brookley Air Force Base, Alabama	McChord Air Force Base, Washington
Burlington, Vermont	McGhee-Tyson Airport, Tennessee
Carswell Air Force Base, Texas	McGuire Air Force Base, New Jersey
Castle Air Force Base, California	Mountain Home Air Force Base, Idaho
Clinton County Air Force Base, Ohio	Minneapolis-St. Paul Int'l, Minn.
Clovis Air Force Base, New Mexico	Niagara Falls NAS, New York
Davis-Monthan Air Force Base, Arizona	Offutt Air Force Base, Nebraska
Dobbins Air Force Base, Georgia	O'Hare Int'l Airport, Illinois
Donaldson Air Force Base, So. Carolina	Olmsted Air Force Base, Pennsylvania
Dover Air Force Base, Delaware	Otis Air Force Base, Massachusetts
Duluth, Minnesota	Oxnard Air Force Base, California
Eglin Air Force Base, Florida	Paine Air Force Base, Washington
Ellington Air Force Base, Texas	Palm Beach Air Force Base, Florida
Ellsworth Air Force Base, South Dakota	Pinecastle Air Force Base, Florida
England Air Force Base, Louisiana	Pope Air Force Base, North Carolina
Fairchild Air Force Base, Washington	Portland Int'l, Oregon
Forbes Air Force Base, Kansas	Portsmouth Air Force Base, N. H.
Foster Air Force Base, Texas	Robins Air Force Base, Georgia
George Air Force Base, California	Selfridge Air Force Base, Michigan
Grandview Air Force Base, Missouri	Sewart Air Force Base, Tennessee
Greater Pittsburgh, Pennsylvania	Shaw Air Force Base, South Carolina
Goodfellow Air Force Base, Texas	Sheppard Air Force Base, Texas
Griffis Air Force Base, New York	Sioux City Air Force Base, Iowa
Hamilton Air Force Base, California	Smoky Hill Air Force Base, Kansas
Harlingen Air Force Base, Texas	Stewart Air Force Base, New York
Hill Air Force Base, Utah	Suffolk County Air Force Base, New York
Hunter Air Force Base, Georgia	Tinker Air Force Base, Oklahoma
Kelly Air Force Base, Texas	Travis Air Force Base, California
Keesler Air Force Base, Alabama	Truax Field, Wisconsin
Kirtland Air Force Base, New Mexico	Turner Air Force Base, Georgia
Lake Charles Air Force Base, Louisiana	Tyndall Air Force Base, Florida
Langley Air Force Base, Virginia	Walker Air Force Base, New Mexico
Laredo Air Force Base, Texas	Webb Air Force Base, Texas
Larson Air Force Base, Washington	Westover Air Force Base, Massachusetts
Laughlin Air Force Base, Texas	Whiteman Air Force Base, Missouri
Little Rock Air Force Base, Arkansas	Williams Air Force Base, Arizona
Lockbourne Air Force Base, Ohio	Wright-Patterson Air Force Base, Ohio
	Wurtsmith Air Force Base, Michigan

NW 10 knots, altimeter 29.99, landing forecast for 1525C, no change in remaining elements from observation given, over."

"This is Air Force Jet 12345, Roger, I will land at Grandview, when do you forecast Scott to have 2000 ft and at least 3 miles visibility, over."

"This is Scott Forecaster, Scott will have 3000 broken, 5 miles visibility by 1630C and continue to improve, over."

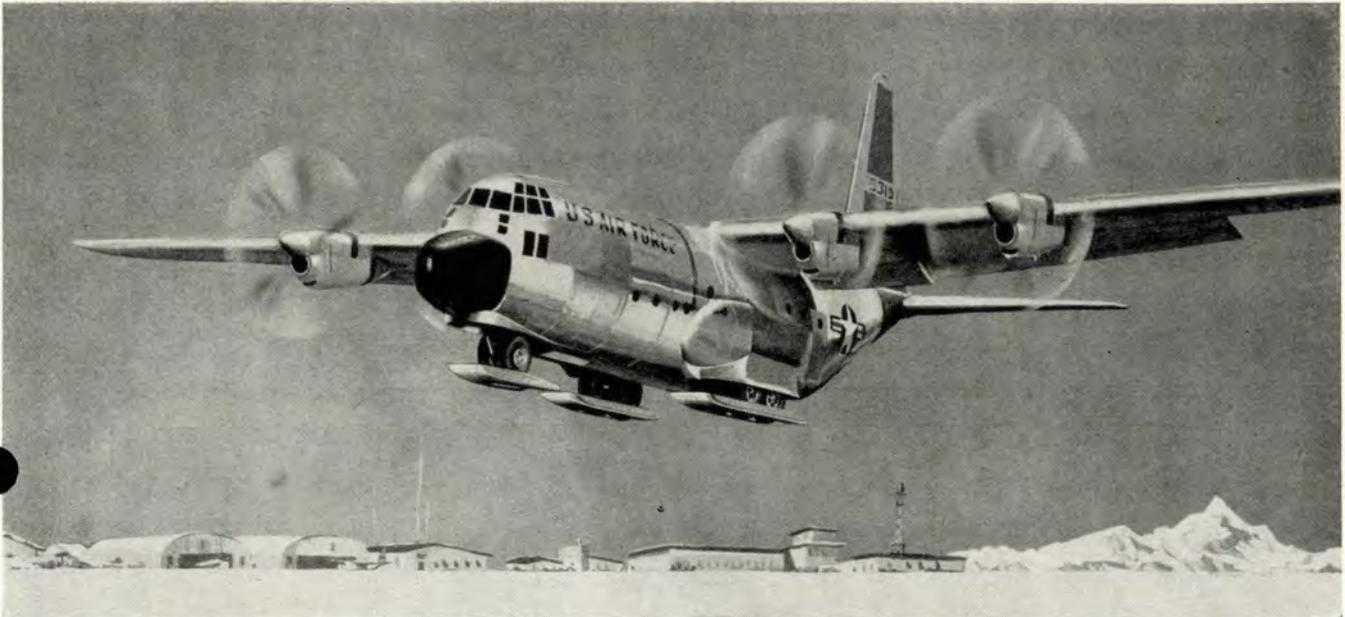
"This is Air Force Jet 12345, Roger, and out."

Well, there you have it. Just re-

member, get that current forecast prior to committing yourself to a let-down, monitor your destination and alternate weather while flying en route and live to be part of the crew selected to take the first flight to the moon in 1985. ▲

Keep Kurrent

NEWS AND VIEWS



Above, design engineers evaluate the C-130 skis on the assembly line. Below, is the aircraft in flight without the versatile ski configuration.

TAC's Workhorse — The largest skis ever made for aircraft are being fitted on the C-130. They are designed for use in the Arctic and Antarctic regions. The installation includes a "knee action" that will serve as a cushion when the big, prop-jet-powered transport touches down on the ice. The "knee action" simulates the absorbing effect which the aircraft would get from tires in a normal landing on a concrete runway.

With the skis, this new workhorse of the Tactical Air Command's 18th Air Force will have the ability to land on any type of terrain from rough, hastily prepared fields to sand and ice caps.

Each ski resembles a small landing craft. A mere flick of a switch by the pilot will change the landing gear from conventional wheels to the skis, or from skis to wheels. This arrangement will enable the pilot to take off from a dry concrete runway and land on any type of snow from deep, soft slush to hard, weathered snow of the polar ice caps. Or, he can make a ski takeoff and then land where he needs conventional wheels.

Each of the main landing gear skis are 19½ feet long, ½ feet wide, and weighs 1700 pounds. The nose ski measures 9½ feet long and 5½ feet wide. All three skis add 4000 pounds to the net weight of the C-130. Even



with this additional weight, this aircraft will still maintain its outstanding performance.

Its speed, which is better than 370 mph, is not appreciably reduced. For ground operation, the nose ski turns and acts just like nose gear steering. It will turn 30 degrees in either direction.

IT WAS a hot, August day at Hamilton, and Lou was up for his second ride in the recheck series after having recently reported in from Tyndall. Checkout for him had been the long route via Blueflame. They teach you a lot about the Dog down there and even more about the all-around function of an ADC pilot. The fact is, you spend about 10 hours at the related functions for every hour you get in the '86. This was all behind now; a routine unit recheck would launch Captain Lou Wilson on his new career of jet pilot.

A part of the adjustment, of course, is accepting the inevitable status of "Junior Birdman," which comes with every new flying assignment. In this instance, it was going to be a long road because Lou was 35 years old and had no previous jet experience. The initial reception had been cordial enough but the overall attitude was unmistakably cool. It seems that some line drivers consider the Blueflame

program to be a good one for MATS and SAC but hardly the thing for lead slots in fighters. Lou was deep in these thoughts when he heard himself being paged to the briefing room.

The briefing was thorough but concise. He was given a mission card outlining the entire flight. Captain Jones said that he was going along. He'd be minding his own business off to one side, but if Lou needed any help at all, to give him a call. He was told to use a 30-second spread on takeoff. Loose formation would do on the way out, just to get the feel.

Lou moved into position on the upwind side. Runup checkout, looks okay, he thought. Afterburner lit, everything looks good, 30 seconds plus, let 'er go . . . 100 knots, lift the nose just a little now, let the speed build. Okay, now fly. Gear coming up and all's well. As he glanced forward, he noticed that lead would soon be turning.

Returning to the panel, Lou saw that it was time to get the flaps up. After lifting them, he looked up again to locate the leader for turning reference. As he did this, he heard some excited but garbled voices on the air. At the same instant, his attention was commanded into the cockpit by that big red light. The radio came in again—this time five square.

"Red, Two—you're on fire. Red, Two, do you read?"

"Roger," answered Lou, in a tone as disgusted as he was over his loss of hope for a light malfunction.

Hope they scramble the boats, he thought, as he pulled the nose up sharply. This will be my first swim this year. Easy now, Dad, stay cool and stay awake. This one has to be fast. Heavy G momentarily, eh? Well, I can still put a good squeeze on the old gut. Speed 140, nose nice and high, better go! Lifting the handle, he squeezed everything.

Bailout!



Capt. Harry J. Tyndale
666th AC&W Sq.
Mill Valley AF Sta. Calif.

To leap or not to leap may be your question.
Here is a tale about an old pro who figured out the answer.
What he did will work for you—if you're sharp.



Get out of this seat, quickly, he commanded himself. Never mind where you are. Get that 'chute open.

Realizing that the D-ring was free, he concerned himself with the parachute. "Come on, dammit. Pop! Ooooh! And some people say you never even feel it. Let's see now, don't try to swim, just get a good breath and slip the harness under water." This didn't seem too difficult, he thought, as he wriggled out and pulled both cartridges on his Mae West. He wondered if he'd come up under the 'chute. He didn't. As a matter of fact he hadn't even noticed where it was. I'd better get to a phone—quick, he thought. Helen will flip if anyone else calls. A swamp glider was bearing down on him by now and Lou discovered that he could only wave one arm and still stay afloat.

Everyone was smiling and they really crowded him as he climbed to the dock. In unison, they asked the same question: How had he made it

from such low altitude? Lou had the distinct feeling that he had been given credit for a miracle.

The investigation and board will be a mere formality, he was told. After all, what can they learn from an accident like this? A fire on takeoff and the world's luckiest pilot. That's all there is to it. Lou recalled these words as the first hour went by at the board hearing.

"Why did you bailout instead of ditch?" had been the lead question.

"I won't ditch unless I have to," answered Lou.

Didn't he feel that he was too low to bailout, he was asked.

"No, I had plenty of speed and power and I knew I could make it if I stayed awake."

"Are you aware of the statistics regarding ejection fatalities?"

"Yes, Sir, I've read some dope on the subject. The trouble with the stuff I read was that they didn't give the

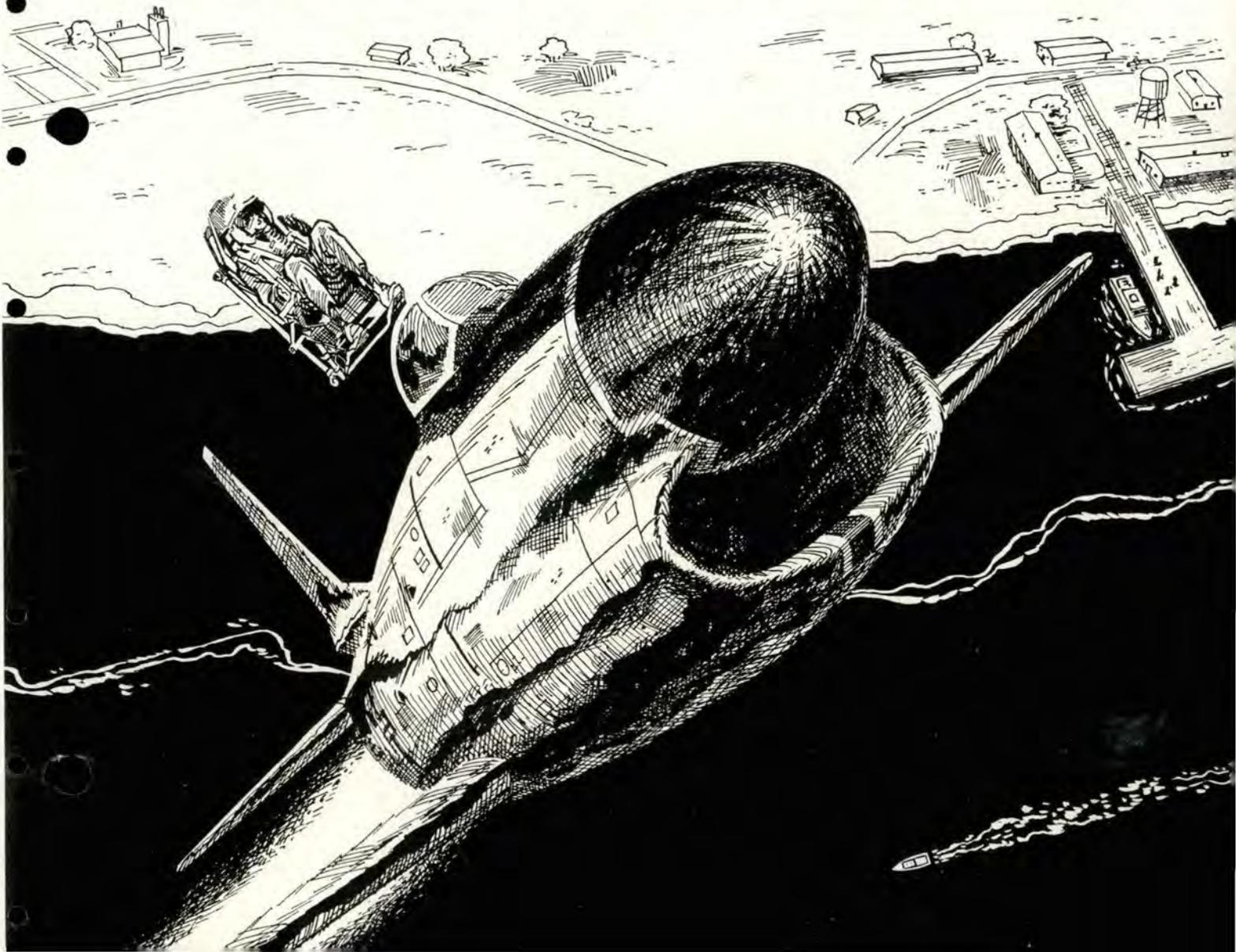
full story behind each attempt. They probably didn't have the story. All I know is that you can't mould your actions around dry statistics."

"Just what is your minimum altitude for bailout, Captain Wilson?" asked the investigating officer.

"I don't have one, Sir, at least not in those terms. The way I figure it, you don't jump from an altitude; you jump from a situation."

"Please continue, Captain Wilson," invited the president.

"Well, Sir, altitude is a meaningless dimension in many cases. It is not the prime factor for bailout decisions in many cases and most certainly is not in the case of bailout on takeoff. After all, it's a foregone conclusion that you don't have altitude during the early stages of climbout. The two things you do have are speed and power. These, after all, are nothing less than altitude potential in an airplane. All of you must realize that



it isn't really altitude that opens a parachute; what you need is time in an airstream. The time element is the key to survival because it takes time to free yourself and release the 'chute to the airstream. If you have the minimum amount of speed and power you can give yourself time in the air. The question then becomes, 'What is the minimum situation?' This, of course, is a very difficult one to answer. The biggest variable is the amount of time required by the different pilots.

"I can only speak for myself because this is one of the many areas where each pilot must make his own decision. The way I see it, the dangers are over-rated. Many people consider themselves critical until they pass 1500 feet, or some other figure. Presumably, if they get in trouble below this, they will return to the field. To me, this is not only unrealistic but dangerous. I figure that I'm critical until my flaps are up. This cycle is completed while still over the runway. If anything goes wrong before this, I'll set it down at all cost. The flaps clean up at a pretty good speed. The worst thing that could happen would be a flameout. In this case I doubt that you'd have any choice but to go in straight ahead. So, we'll consider this as the beginning of the real critical zone of operation. Now you must select the speed which would give a few hundred feet of pull-up without power, as in a flameout condition. I think you'll all agree that in jets the recommended climb speed will do this easily. This means then that you're really only critical between flaps up and climb speed. This conclusion is drawn with one important assumption—that bailout will be accomplished in fast time."

The board president raised his hand to ask, "Do I understand that you have a firm speed, above which you'll attempt a jump?"

"No, Sir, the decision rests with the speed-power combination. A little speed with a lot of power or more speed with less power. I simply pointed out a convenient speed which I believe to be a safe minimum in case of total power loss. For example, 300 knots with no thrust might provide a rising exit at 300 feet, in a 45 degree trajectory. While 200 knots with full power might provide the same thing."

"Since you're talking in terms of feet now, tell us, do you consider 300 feet to be sufficient for bailout?"

"Under these conditions, I certainly do. You leave the aircraft traveling at a good angle upward and at a good speed. You will continue upward for some time before you start down. There is ample airstream present because you have a good horizontal speed component. All you need is the time to free yourself and turn the 'chute loose."

"If it's that simple, I can't see why so many people were unsuccessful," commented one of the board.

The Individual

"Well, Sir, I've been talking about what can be done by a man who knows beforehand what he intends to do. I think you will all agree that a large number of our pilots presently have different views than I, in this regard. When an emergency occurs at a time not covered by pre-planning, or if the pre-planning does not call for bailout, then you have a completely different problem. You must then consider the human delays such as reevaluation of the situation, decision and the coordination delays which accompany spontaneous moves. In addition, you must recognize the strong effect of subconscious fear which is bound to be present in the mind of a person who is ejecting."

Lou paused to offer an opening for any taker. There appeared to be none.

"Gentlemen, it is my opinion that a pilot who actually believes that he needs 1500 feet would probably kill himself if he were forced to jump from any lower altitude." (This statement brought all of them to the edge of their seats.) "Suppose one of these pilots had just taken off and his engine blew as he was passing through 1200 feet. What would he do? His mind was made up that he wouldn't jump below 1500 feet. He knows that indecision is a very dangerous thing so he would make his move as pre-planned. The moment he rolls into his turn for the field he is committed to the ground. This is so, because the turn will consume any excess of speed that he has. In addition, if you're going to ride it in, you must reduce the power to avoid aggravating an already bad situation. We now have an airplane in a low speed descent at reduced power, somewhere below 1200 feet. This pilot no longer has an option and I will agree with anyone who says he wouldn't have a chance. Bear in mind, gentlemen, we are analyzing the actions of a pilot who

had no intention to jump at this time. Only complete catastrophe could drive him from the cockpit. If it did, how effective would he be in his attempt? I believe that there is every probability that his fear would come forth in panic to some degree. Such cases as failure to get free of the seat, opening the 'chute before unbuckling and other such tragedies lend strong support to my belief in this regard."

It was obvious by the expressions that the entire board was in agreement with this logic. The president was first to break the silence.

"Yours is a particularly keen insight to the problem, Captain Wilson. Can you think of any effective way in which we might present your opinions to others who are concerned?"

"No, Sir, I can't. Judgment is very personal property. It's not transferable. Each pilot must develop his own around the facts which apply to each situation. I might accentuate the word 'fact' however, because there is a great quantity of conjecture and opinion in this business. It's not a healthy situation when many people are betting their lives on 'impressions' or 'opinions' of other persons."

"Do you think there is enough guidance material in the field?"

"Sir, so much has been written and so much has been required reading that some pilots get mental indigestion at the sight of a new piece of paper. If there is a short circuit in the information system, I believe it to be the destructive effect that our 8 to 5 schedule has had on the old 'hangar flying' schedule."

"Thanks very much, Captain Wilson. We'll try to find a way to cause our pilots to think about this subject."

With that, Lou was excused from the meeting.

Lou sensed an entirely different atmosphere as he entered operations this time. He knew from the smiles and horsing around that he had suddenly been accepted as a full fledged jet pilot. The smile that crept to his face however was actually the result of reminiscence. It was just about 12 years ago that Lieutenant Lou Wilson had crashed an equally tight fraternity . . . the order of Red Hot Fighter Pilots. The only real difference was that the plane he left in '44 had thrown a rod. This one threw a few turbine blades. ▲

CROSS FEED

LETTERS TO THE EDITOR



★ ★ ★

How True

We read Major Robert E. Fuerst's article "The Voice From Below," (FLYING SAFETY, June 1956) on a "save" by Naha GCA, and enjoyed it immensely as we believe that AACS organizations do not receive enough credit for the number of aircraft that are "saved." However, we feel that the Major has included a little fiction in his story when he implies that the aircraft was saved because of GCA Circular Polarization at Naha.

Naha GCA gave a Surveillance Approach to Kadena by use of Surveillance Radar. To our knowledge Circular Polarization is available on Precision Equipment only and not on Surveillance. Gilfillan Brothers, Inc., would be greatly interested in Naha's Circular-Polarization if said approach was made with Surveillance Radar.

**M/Sgt Maynard R. Claussen, AFSC
27270**

**M/Sgt Donald W. Hubert, AFSC 27272
Tainan ABAT, Taiwan**

Oops! . . .

★ ★ ★

Touched

After reading the article by Tony LeVier in the November issue, I know a lot more about the F-104 now than I did before. It certainly seems like a pilot's aircraft from his description.

From a maintenance standpoint, the aircraft represents a step in the right direction, the way I see it, as to simplicity of the modern fighter plane. It is very good to see examples of good maintenance design like the fold down hydraulic panel, simple nonpowered canopy and such features. If the F-104 is as easy to keep in the air as Tony LeVier says it is to fly, we should have real fighter. Incidentally, when is it expected to be in squadron service, and with what commands, or is that classified?

Please do not let Colonel Mulholland escape completely from writing for the magazine. His "Recognition of Error" was a gem. The style of writing he employs with its overtones of humor, and what he says make for extremely interesting reading. I especially enjoyed the OA-12 incident, and the way he used it to make his point.

About the errant prop control he said, "On a hasty pre-takeoff check, the knob appeared to be in the full forward position." This illustrates the folly of visually going through your checklist on movable engines control knobs. When flying as an engineer on C-54s on the Berlin Airlift, and sometimes tired and drowsy, I was guilty of not touching (and/or trying to move to their required position) certain checklist items like we were always taught to do, and just taking a quick glance at them as the copilot called them out. This can get you in serious trouble, as Colonel Mulholland points out, especially at night.

I think you are making FLYING SAFETY very interesting; so please keep up the good work.

**M/Sgt Harry E. Lyon
P. O. Box 77
San Marcos, Texas**

Your kind words are appreciated. Lt. Col. Mulholland 'flew the coop' and is now assigned to Westover. Everybody enjoyed his fine articles.

★ ★ ★

Paper Parade

Referring to the article "The Down to Earth Approach" (FLYING SAFETY, October 1956), may I make a brief comment on behalf of aviation operations personnel in all the services?

The bound type publication is far superior to the loose leaf type inasmuch as countless manhours will be saved by receipt of a revised book

each month in place of a seemingly endless parade of loose leaf changes.

In addition to the labor-saving aspect, there is also the advantage of maintaining a complete and up-to-date publication, not a book which has been raided by individuals who need a certain page but don't care to carry or handle the entire book.

Adoption of the bound type publication for Instrument Approach Procedures would certainly be welcomed by aviation operations personnel as a great boost to efficiency as well as flight safety.

**T/Sgt Albert S. Greene
584792 USMC
NAS Atsugi, Japan**

Anyone else care to comment? The pros and cons on loose-leaf vs. bound type is shaping up into quite a battle.

★ ★ ★

A Kit for a Dane

We were very glad here in the 729 FB Sq when we saw in your magazine that you wanted our direct mailing address. We, the pilots, want the topics "red hot" but you can imagine they seldomly are if they go through the ordinary channels from California to Denmark, so here is my address:

Incidentally, Sir, if you want to hear of the good shows that are put up over here I shall be very glad to furnish you with information. For example one of our boys, Lt. B. G. Pedersen landed no sweat without elevator control quite some time ago, after having read in "Flying Safety" how Colonel Bodecker did it at Luke in the same type aircraft.

**2/Lt Per Alkaersig,
729 F-B Sq Skrydstrup AFB
Royal Danish Air Force**

You've been put on the mailing list. FLYING SAFETY would welcome some of your "Good Shows."

Air Discipline is something we must have. Here is a word on just how important it is—along with how it should be achieved.

(This article is reprinted from COMBAT CREW.)

the Word on Air Discipline

Major General Archie J. Old, Jr.,
Commander, 15th Air Force, March AFB, Calif.



Major General Archie J. Old, Jr., Commander of the 15th Air Force, is particularly well qualified to write on the subject of air discipline. Among other outstanding accomplishments, he was DCS/O of the Strategic Air Command when it was transitioning from B-50s to B-47s. This was highly successful. Without strict air discipline during this period, it could have been a real hairy affair. More recently, General Old was Air Commander of the first round-the-world flight of B-52s. The success of this mission alone demonstrates the efficacy of his doctrine.

THE ONE FIELD of aircraft accident prevention which demands the closest attention and at the same time has the potential of yielding the greatest results is the minimizing of accidents caused by a lack of discipline. Many factors are involved in accidents which have been assessed to this lack of discipline: Deviation from established procedures, lack of crew discipline, insufficient knowledge of emergency procedures, faulty mission planning. No one cure-all will totally remedy or remove these cause factors, yet the very existence of these flaws is indicative of an over-all deficiency, a lack of discipline.

There are a number of definitions for discipline. But the two words I feel most significant are "compliance" and "obedience."

Discipline is the result of training, supervision and experience. If our crews are to operate Air Force aircraft with a high degree of safety and with consideration for personnel and equipment under their direct control, it is absolutely essential that discipline be maintained to the highest degree. It is a proven fact that discipline will greatly reduce the accident rate and save costly equipment. The cost of our annual equipment losses amounts to a staggering sum. But let us consider the most important point—human life. We cannot replace human life nor can we place a price tag on it. This loss of life depletes our nation's vital resources and cannot be justified.

Whenever a pilot feels that he has complete mastery of the air and a supervisor or commander feels that his unit has reached the acme of perfection, their value to the Air Force has ended. An attitude such as this is a false sense of security and cannot be condoned. I say this because complacency reaps a grim harvest.

We must ask ourselves the question, "Is there a difference between air discipline and ground discipline? If discipline means "compliance and obedience," then air and ground discipline are basically the same.

If discipline is demanded on the ground and becomes part of our daily routine, then air discipline will be automatic. I use the terminology "air discipline" because it is this lack of discipline in the air that has cost us such severe loss of life and equipment.

I would like to review briefly a few of the items which are directly related to air discipline: Knowledge of directives and standard operating procedures. Application of knowledge and training. Sound judgment. These are the main points which have been cause factors in many of our accidents. What is the answer? Why are our crews failing in this area? The answer is obvious: Commanders and supervisors are failing to demand "compliance" and "obedience"—the fundamentals of discipline.

The aircraft commander is a commander and supervisor and must exercise control of his crew. If he fails to comply with the principles of discipline, he certainly cannot expect discipline from his crew. Noncompliance is a direct result of lack of self-discipline. This lack of discipline casts reasonable doubt upon our Air Force's capability to execute its ultimate mission when crews will obviously be confronted with extremely difficult obstacles requiring a high state of discipline.

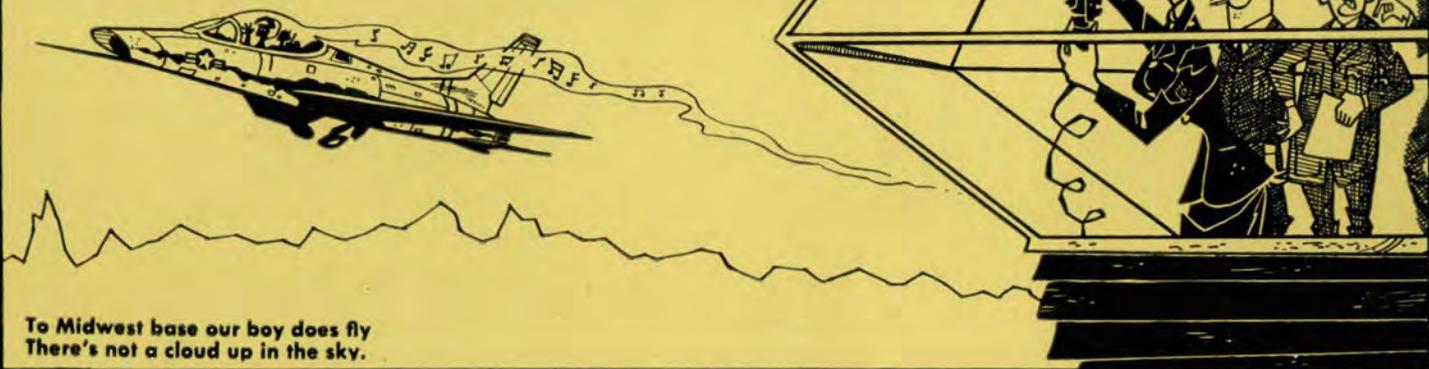
Can we afford to waste manpower and equipment which are so vital to the maintenance of global security when this loss is attributed to a violation of the fundamentals of discipline? We are all directly responsible for maintaining the highest degree of combat potential possible. This can only be achieved through our complete acceptance and practice of AIR DISCIPLINE. ▲



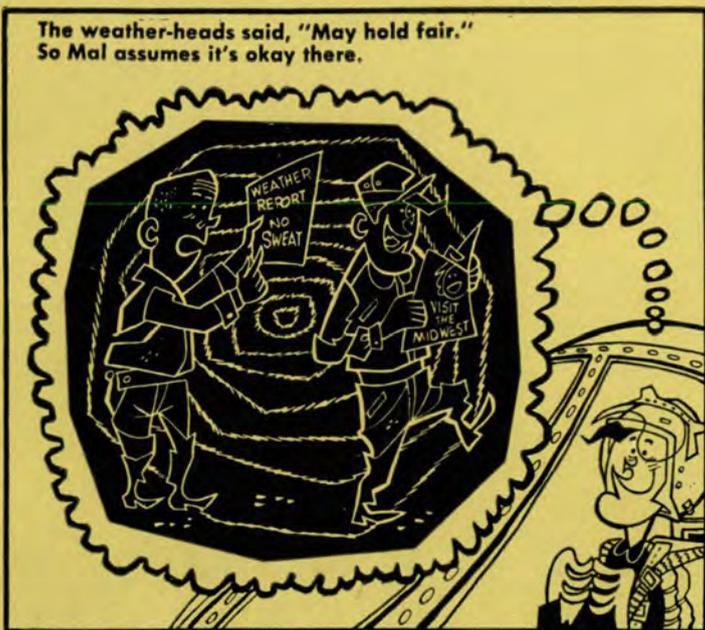
take a look..

at page 4 to see how the new pilot fits into the aircraft accident picture. These young officers are the backbone of our striking power. They are also the ones having the majority of our aircraft mishaps. That is why they are featured as February's part in the Aircraft Accident Program for the year 1957.

Mal Function



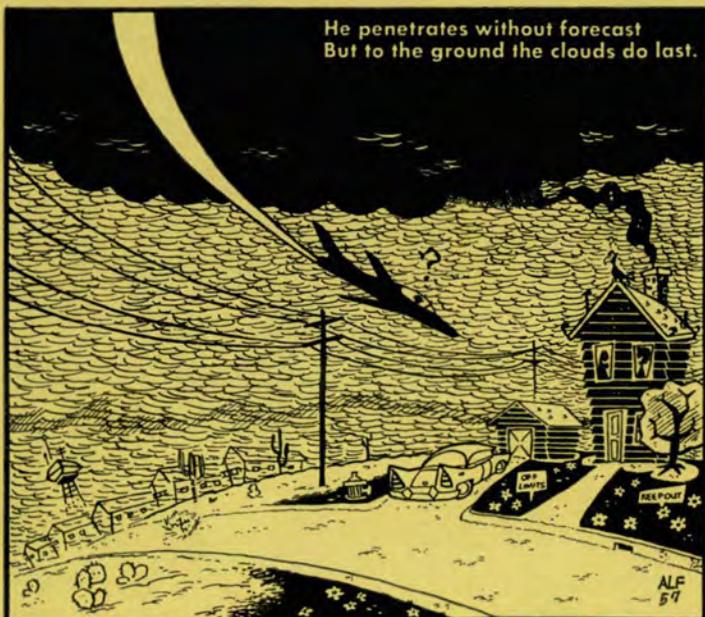
To Midwest base our boy does fly
There's not a cloud up in the sky.



The weather-heads said, "May hold fair."
So Mal assumes it's okay there.



He soon is flying—"One on top."
So IFR he now must hop.



He penetrates without forecast
But to the ground the clouds do last.



If he had used old Channel 13
There'd been no crash at this here scene.

BASE COMMAND