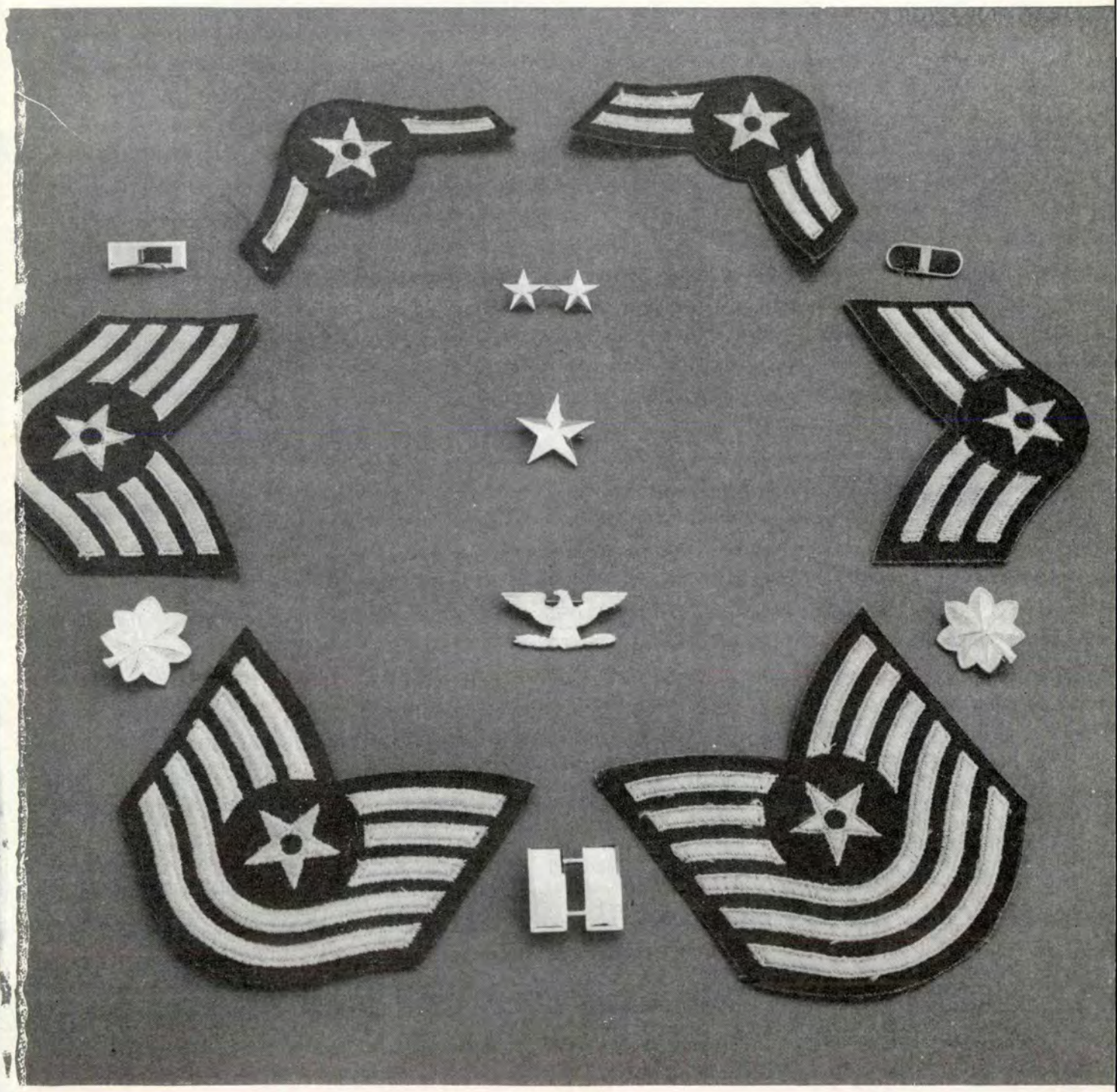
JANUARY 1959

FLYING SAFETY

UNITED STATES AIR FORCE

THE SUPERVISOR



...AT ALL LEVELS

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FILE THIRTEEN....

You won't have much difficulty guessing that our theme for the month is Supervision. Some still say they can prove that every aircraft accident can ultimately be blamed on supervision. If this is true, then proper supervision can keep them from happening in the first place. . . . Bits of paper still fly across the desk, many not long enough for full story treatment, but important, nonetheless. Here are some bits of the bits. . . . Pronounced porpoising resulted when a T-37A lost a canopy in flight at 210 knots. The IP took over, slowed the aircraft with speed brakes and power reduction. Control reaction was normal at 150 knots. . . . New Reg is out on cockpit and formation flight signals: AFR 60-15. Good one to commit to memory regardless of whether you normally fly formation or not. You may have to help or be helped one day. . . . AF Reg 62-7, subject "Reporting Operational Hazards" has been revised and distributed. Should be in your PIF. You may be surprised to see some of the items listed as potential hazards. The Reg lists thirteen. You'll be doing people favors by writing 'em as you see 'em. The hook blade-snap blade pocket knife we told you about some time ago is now available to aircrewmen. Designated the MC-1 (as what isn't), the knife combines safety and accessibility. Haven't seen many around. Where's yours???? Lots of people found the built-in errors on the sample Form 781 published in the November issue. Funny thing is that no one person has noted all the errors that appeared. We'll include the list in the February issue. Most talked-about point concerned flying while on leave. You can do it on local flights, but not for pay. . . . All hands should be giving special emphasis to NOTAMs these days. Lots of changes going on which may offer surprises at embarrassing moments. Best way to avoid is to make a positive check on all stations that may be used as navaids, destinations and possible alternates. Some of the modifications such as VORTAC are not progressing as planned and dates included in NOTAMs should be double-checked if the mod period has expired. If the Dispatcher doesn't know, he can always call Flight Service on the "hot line". . . . The fact that you do not have a Supplementary Flight Information Document or the Flight Planning Document which superseded it aboard your aircraft makes this more important than ever. You've got to know before you go.

'til February,

Vernon R. Stutts

CROSSFEED
LETTERS TO THE EDITOR

Notes on Nylon

Your article titled "Notes on Nylon" in the October issue of FLYING SAFETY pointed out the inherent deficiencies of the SA-17 parachute very well. I was very pleased to know that action has already been initiated to correct those problems.

In regard to the problem of the seat pack binding in the T-33 bucket seats, even though most T-33 aircraft within this command have been modified in accordance with T. O. IT-33A-258, the SA-17 parachute continues to bind. I feel that it should also be pointed out that the compliance with T. O. IT-33A-258 does not affect the binding problem. The binding, if the parachute is packed properly, is a product of the seat belt adjusting buckles.

Pilots within this command are being encouraged to place the parachute in the seat before entering the cockpit. To remove the parachute, the pilot should get out of the chute harness, leave the cockpit, and slip the chute out of the seat with both hands. I believe the use of these procedures would minimize the possibility of inadvertently jettisoning the seat or canopy when entering or leaving T-33 cockpits. The binding of the seat pack is not in any way a problem to the pilot when separating from the seat. Raising the armrests to perform the ejection permits the seat belt adjusters to move out far enough to let the seat pack slide from the bucket without binding.

Maj. Gen. Daniel W. Jenkins
Deputy Commander
Ninth Air Force, Shaw AFB

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Pylon Tanks

I am a USAF major assigned as a liaison officer with a major command of the Royal Norwegian Air Force. Members of the operations staff and I were discussing emergency procedures for the RF-84F. In particular, we were concerned with a malfunctioning gear system requiring the pilot to make a wheels-up landing.

We assumed the accepted procedure was to drop the pylon tanks and make a standard gearup landing on either a foamed runway to reduce fire hazards or land off and parallel to the runway. Not everyone agreed that the tanks should be dropped. Is it possible for you to forward any information to me on this subject via airmail? I would appreciate your attention on this subject.

Maj. Charles F. Nedbal, USAF
Air Commander Norway
Voksenlia, Oslo, Norway

To show you just what sort of aid is available in the Directorate of Flight Safety Research, the answer as prepared by the Project Officer for this '84F, is quoted below.

"In reply to your specific question, both the F and RF-84F should be landed on the pylon tanks, if they are empty, in case of malfunctioning gear. We have several cases on record where this was done, and the only damage was to the tanks themselves. However, the flight manual states that they should be jettisoned if they contain fuel, as tanks with fuel usually burst into flames on landing and can cause complete destruction of the aircraft.

Another item of interest along this line is whether or not to jettison tanks containing fuel in the case of an aborted takeoff. Again, the flight manual is quite clear that they should be retained if barrier engagement is anticipated. However, they should be dropped in case barriers are not available and the aircraft cannot be stopped on the runway. (If the pilot CAN stop on the runway, or if overruns can carry the aircraft, then keep the tanks.)

We ran a recent study on F/RF-84F aborted takeoffs and found that in most cases pilots were reluctant to drop their tanks in an aborted takeoff. This stems from a fear that the jettisoned tanks will catch fire and skid along behind the airplane and possibly set it on fire after the airplane has been stopped. In some cases this is true. Jettisoned tanks behave in different manners. Some never burst into flame. Some rupture immediately and catch fire, and stop well behind the aircraft—some may even overrun it. However, in nearly all cases when the tanks ARE retained and the aircraft goes off the runway and shears the gear, the tanks do catch fire, and since they are definitely still attached to the aircraft, the ensuing fire badly damages or even destroys the aircraft.

I'll send along some other F/RF-84F information. The current overall USAF accident rate for the F/RF-84F aircraft is running about 30 for 1958. Last year the overall rate was 52. Our biggest current problems are these:

- *Pilot factor—landed short or hard, Make sure your pilots know the flight manual recommended final approach speeds and power settings and are familiar with the power off, low airspeed, sink rates of this aircraft.*
- *Pilot factor—general. Lack of knowledge of emergency procedures, and lack of knowledge of flight manual takeoff distances, computation of line and refusal speeds and minimum stopping distances during an abort. Again, make sure your pilots know the flight manual by heart when it comes to the emergency procedure portion. Furthermore, assure that they are familiar with the charts in the back of the book pertaining to computation of all the takeoff factors.*
- *Materiel and maintenance factor—landing gear. We've had five accidents this year wherein heavy damage was incurred when the gear came down in flight. To date, only the F model has been involved. Make sure your pilots put the gear handle all the way up after takeoff, and assure that maintenance personnel are keeping all gear adjustments exactly as specified by the Tech Order.*
- *Emergency braking procedures. We've had several accidents this year due to lack of differential braking when the emergency brakes were applied. In some cases tires were blown and directional control was lost; in others, the first brake application resulted in a swerve and loss of control.*

Possibly all of your aircraft have been modified whereby directional control by foot brake application is available when emergency braking is used. If not, you should press for early modification of the emergency brake system to incorporate differential braking.

- *Engine failures. The majority of our engine failures this year have been from undetermined causes. We suspect the fuel regulator and dual fuel pump. Pilots can help a lot in preventing turbine bucket and compressor blade failures by monitoring closely the EGT and RPM restrictions as indicated in the flight manual.*

Should you run into any more difficulties please feel free to write us.

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Maze in Midair

Enjoyed "Maze in Midair." An additional error made by the hero of the article apparently went unnoticed by the writer.

In starting the T-Bird, he writes, "Automatically I reached for the ignition switch and hit the starter."

That must have been automatic. Naturally, the Dash One specifies that ignition is turned on only after the starter has delivered at least nine per cent RPM. Or does the author mean that this pilot always reaches for the ignition switch whenever he wants to hit the starter?

2/Lt Merrill A. McPeak
3575th Pilot Training Sq
Vance AFB, Oklahoma

Like most pilots, this one probably knew and normally follows the Dash One. But also like some, he allowed preoccupation.

★ ★ ★

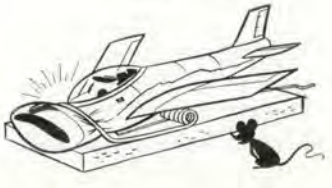
Better Mousetrap

We read with great interest your article entitled "Ever Been Arrested?" in the October issue of FLYING SAFETY. The article was well written and gave a rather comprehensive review of the runway overrun barrier picture as it exists today. We appreciate the fair and favorable treatment given our equipment.

As a "postscript" to your article and relative to the installations of two of our Model 250 overrun barrier engines at Van Nuys, California, for the Air National Guard, we would like to add the following information pertinent to your statement, "The pilots at Van Nuys hope it (the E. W. Bliss Model 250 Arrester) proves out, ... "

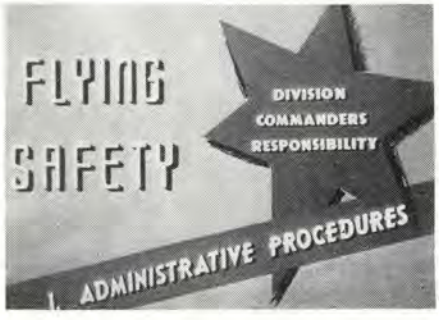
On the night of 30 September 1958, an F-86 Sabrejet engaged the overrun barrier installed at the south end of the runway at Van Nuys at 70 mph and 59 feet off-center. The aircraft was brought to rest in 200 feet, with very minor damage to the aircraft and no injury to the pilot. Apparently the Model 250 "is indeed a better mousetrap."

E. W. Bliss Company
by J. J. Byrne, Manager
Launching & Recovery
Equipment Department.
Int'l Airport
Philadelphia, Pa.



There is one indelible lesson I have learned in my seven years as a SAC Wing and Division Commander. The worst thing that can happen is an aircraft accident. For safety, here are my . . .

six



Brig. Gen. James W. Wilson, USAF,

About the time of the Korean War, we in SAC awakened to the fact that about ten per cent of our combat aircraft were being lost in accidents. At that time—1953—the USAF accident rate stood at the painfully dismal mark of forty, and the SAC rate was one half of the USAF rate, still unacceptably high.

I am of the opinion that the reason for SAC's figure being one-half of the Air Force's forty was the fact that SAC commanders and supervisors were much more conscious of the flying safety problem than were subordinate commanders in the other major commands.

We Wing and Division Commanders in SAC in 1953—as a matter of fact, well before that date—were acutely aware of General LeMay's approach to the problem.

From the time he took command of Strategic Air Command in the late 1940's, he had his Wing Commanders report personally to him whenever they were unfortunate enough to have an aircraft accident occur. Sometimes these sessions were a bit bloody and particularly so when the accident smacked of supervisory error.

I've made the long haul to Omaha myself a few times during the past seven years and I speak from experience. As a matter of fact, there is one indelible lesson that I have learned in my seven years as a SAC Wing and Division Commander.

From time to time you can get by with a bad AWOL rate, a large number of ground and air aborts, a poor OJT program or periodically a poor re-enlistment rate. But the worst that can happen is an aircraft accident.

So what can a Division Commander do to supervise his flying safety program? I have divided this subject of command supervision into a six-point program. Actually, this is our program in the 820th Air Division at Plattsburgh. It is rather difficult to classify or categorize all of my safety supervisory programs, but in an attempt to lend continuity to this discussion, I shall divide them like this:

- The Administrative Area.
- The Area of Crew Up-grading.
- The Operational Hazards Reports Program.
- My Personal Monthly Inspection Program.
- Our Supervisory Control Team.
- Our Flight Scheduling Procedures.

Let's analyze this six-point program piece by piece.

First, let's define certain administrative procedures applicable to flying safety.

In SAC, and I'm sure this is true in other major commands, we receive daily (at field level) a volume of command messages, directives and so on. I make it a habit to see most of these messages and I make absolutely certain never to miss one that pertains to safety. Normally, I route all safety messages and operations or materiel messages which tinge with flying safety to my Safety Officer. He may not be the primary action agency but he is required to brief me within 48 hours on the action taken with reference to these messages. This procedure serves a double purpose of assuring me that there is follow-up action on certain required Tech Order compliances and other safety items that higher headquarters are interested in. And it also assures me that the Flying Safety Officer is aware of these command-wide safety problems.

Many commanders talk about an open-door policy to these Flying Safety Officers. But I wonder how many unit Safety Officers are reporting to the Director of Operations, the Director of Maintenance or some other staff officer other than directly to the Commander?

This is most important in the administrative and organizational setup of any Wing, Group or Division: That the Flying Safety Officer can—daily or as frequently as necessary — consult personally with the commander. This fundamental concept should be practiced, and not just talked about.

Another of our administrative procedures worth mentioning, and one which I personally observe, is the monthly Wing and Group Flying Safety Meetings. I insist on a hundred per cent attendance at these meetings. Sometimes makeup sessions are necessary to assure this figure, but we have as many makeups as necessary to insure that once

steps to supervision

Commander, 820th Air Division, Plattsburgh AFB, New York

a month, every man gets the word! We insist on an interesting, well-planned program by the unit Flying Safety Officer which incorporates visual training aids. At most of these sessions, I encourage the Wing Commander personally to highlight safety lessons learned during the past month, or to present current operational problems dealing with flying safety.

I hold monthly Division Safety Committee Meetings. I hasten to add, however, that these are not merely perfunctory staff meetings or conferences. I require my Wing and Air Base Group Commanders, key staff officers in the Wings and Division to be present, along with the Safety Officers.

My Safety Officer prepares an agenda covering all discussion items. He submits his agenda two or three days prior to the meeting for my approval. No long-winded discussions or harangues are permitted in our meetings. We simply discuss each agenda item with the idea of arriving at a solution to each problem. Suspense dates are firmly established for the completion of all staff actions or installations construction. These suspense dates are printed in the minutes so that at each successive monthly division safety meeting we can check the status of all our safety projects. Another unique feature of our program at Plattsburgh insures that no commander serves on any court martial boards, BX inventories and so on.

We have stripped him of all these menial chores so that he can exert his command attentions and supervisory control over the important problems of taking care of his people, re-enlisting good airmen, getting his airplanes off on time, and last but not least, the prevention of accidents.

The next part of my six-point safety supervisory program includes a close personal look at our combat crew up-grading program. For the past year, SAC operations has put considerable pressure on the Wings and Squadrons in the field to form new B-47 and B-52 crews and up-grade them as soon as possible.

It is essential that all commanders take a keen supervisory interest in this up-grading program. Particular emphasis must be placed on flying safety aspects because of the obvious accident potential of new crewmembers. It is also important that the unit Standboard examinations, both on the ground and in the air, are thoroughly objective and do not allow weak crewmembers to slide through.

Almost everybody knows of an aircraft accident that might have been averted had Standboard evaluators been stricter in their checking procedures and perhaps placed a weak Instrument Pilot on student status. I try to fly with these new crews at least twenty or thiry hours per monh. There is no better opportunity to chat informally with new crew members. Then, too, I find out how effective the Wing and Squadrons have disseminated safety information, and I find out if the crews understand the instructions they've received. Oft times I ask a subtle question about a recent flying safety teletype with which all crews should be intimately familiar. On occasion I get that struck dumb look. This is also an ideal time for me to check on crew coordination. To see whether the Ops memos are current and are being followed, and if the Safety SOPs are serving their purpose. Each Saturday morning I am briefed in detail on the crew up-grading program by the Wing Commander and his staff.

I like to know intimately the progress of each newly formed crew. I want to assure myself that the crews get combat ready as soon as possible, but not at the expense of flying safety.

The third point of my six-point program is our operational hazards reports program. Most Air Force commands require their units to submit incident reports, or hazard reports when something unusual has occurred in the air that could have caused an accident or a near-miss. We at Plattsburgh have simply broadened our definition as to what constitutes a hazard. My definition of a hazard is anything that requires fixing or deserves looking into and is of interest to pilots and maintenance people.

Actually, at Plattsburgh, everybody participates in the hazard program. On nearly every flight, an Aircraft Commander is expected to turn in a hazard report. Mainte-

General Wilson was born in Rawlins, Wyoming, and educated in Bowling Green, Ohio, prior to attending West Point where he was graduated in June 1939. He received his pilot's wings in July 1940 at Randolph Field, and during WW II he completed two tours in Europe as a B-17 squadron and group commander. Now a command pilot, he is current in the B-47 and KC-97 aircraft. The General joined SAC in August 1952, and prior to his present assignment as Commander of the 820th Air Division, he also commanded the 370th Bomb Wing at Okinawa, the 305th Bomb Wing at MacDill and the 802d Division at Schilling. During his more than 5400 hours of flying, General Wilson has been awarded the Legion of Merit, the DFC, the DSC, the Silver Star with cluster, the Air Medal with four clusters, the Purple Heart and Commendation Ribbon.

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nance crew chiefs and aircraft specialists are also requested to submit them.

While our hazard report program emphasizes active participation, we insist on well-written reports which include a complete description of the incident and the corrective action taken or recommended. We also require complete and thorough distribution of reports, for they are needed by all crew and maintenance personnel.

During the last six months we have processed 505 operational hazard reports, whereas in the previous six months we processed only seventy-eight. How do we achieve this participation? We set quotas for each Tactical Squadron and place all squadrons on a competitive reporting basis. Hazard reports are evaluated for timeliness, completeness, thoroughness of the investigation and adequacy of the corrective action. At the end of the month I present a trophy to the leading squadron and a white elephant to the squadron which contributes the least. In the awards area, we also have a flying safety totem pole. Operational hazard reports figure prominently in the Base Totem Pole Award. I think it is of particular interest that all these items used in our totem pole program deal with accident prevention. In my six months at Plattsburgh, it has been my observation that the Unit with the most and best hazard reports usually comes out are needed by all crew and maintenance personnel.

After these hazard reports are submitted, they are carefully screened and separated as to type aircraft involved, and then further separated into categories such as maintenance, operations, communications, airdrome facilities, and so on. They are then reproduced and placed in attractive folders which are forwarded to the applicable activity of primary interest. These hazard reports are maintained by Squadron Safety Officers in current "Read and Initial" folders. They are located in comfortable lounges provided in each Squadron Operations and Engineering office. We require the Squadron Safety Officer to monitor these reports as they are received. He is also primarily responsible for currency and adequacy of these folders in each of the safety lounges. This cross-circulation of all squadron hazard reports at Plattsburgh is a stimulant to accident prevention.

The important point about our hazard reports system is that if there is some unusual happening either on the flight line or on the ramp, all of our maintenance and flight crews know about it and the information isn't confined to just the crew or individual who had the difficulty. We find that the reader interest is high because these incidents are happening to the people whom everyone knows, works and flies with.

The fourth point of Plattsburgh's Safety Supervision is my monthly inspection program. Each month I devote three entire days conducting inspections of every organization on the base. These inspections are announced at least two weeks prior to my visit, and I always include maintenance activities in this three-day tour. I go through all the field maintenance shops, the A&E shops, docks, ground power, and so on. I spot check aircraft maintenance records. I check in each squadron operations and engineering area to see that operational hazard reports are being read and initialed and properly posted.

In general I am concerned with the cleanliness and appearance of hangars, shops and squadron areas. I operate under the assumption that if the shops and hangars are clean and are painted, they are generally safe and orderly work shops.

The fifth important point of our safety supervisory program, and most intimately associated with actual supervision, is our concept of a qualified Flight Supervisory Team.

I think it is very important that we in the flying business insist on flight supervision seven days a week, 24 hours a day. In World War II, the squadron commander and/or his squadron operations officer, met all his airplanes landing and taking off. While a good squadron commander still does this, quite often it is tiring for any single individual to monitor all takeoffs and landings, day and night.

To supervise these after normal duty hour flight operations, we have at Plattsburgh — as a matter of fact, at many SAC bases—a qualified Flight Supervisory Team which consists of a Senior Supervisor of Flying, a Tower Officer, a Flight Plan and Briefing Officer and an Airdrome Officer. This qualified group of individuals, with the exception of the AO, are all experienced aircraft commanders and/or Instructor Pilots in base tactical aircraft.

We have a system wherein these are actually two shifts. Generally speaking, one four-man team functions during the daylight and one during the night. Before these four individuals go on duty, they must get together and be briefed formally by the Flight Planning and Briefing Officer. The briefing covers the latest information concerning the condition of the airdrome, status of local NAVAID facilities, weather information, scheduled flying during the tour of duty and recent emergency procedures and instructions. Although the master of ceremonies at the briefing is the Flight Planning and Briefing Officer, the key man of this team is the Tower Officer.

I am of the strong personal conviction that hundreds of USAF aircraft could have been saved during the past few years by more competent and alert supervision from the tower. I expect my tower officer to closely monitor all local traffic under tower control, as well as those aircraft being controlled by GCA. He is expected to know a great deal about the proficiency of the pilots who'll be airborne during his current tour of duty.

Frequently when I'm touring the line at night or early morning, I contact the tower officer by radio telephone and ask him such questions as the name of the aircraft commander of a particular aircraft, his total time, his type instrument rating, and so on. I also might ask the tower officer his procedure for launching a strip alert tanker, or the location of the wing tank drop area, or the forecast weather for the next four hours. If any of these questions are not answered to my satisfaction, I have been known to get with the Wing Commander, the Wing Director of Operations, Safety Officers, Squadron Commander and Tower Officer in my office the following morning. A couple of these sessions have motivated the tower officers sufficiently so that they are no longer reading funny books.

Another important facet of this Flight Supervisory Program is easy-to-read and current SOP books. They are properly indexed and are frequently reviewed and revised to keep them current. I require identical books to be kept at the base operations dispatch counter, in the control tower and the Wing control room. I require my Safety Officers to review these books at least twice a month to insure their neatness, correctness and currency.

The last and probably the most important point of my six-point supervisory program is proper scheduling and compliance with the published schedule. I am firmly convinced that proper scheduling pays off in safe aircraft and certainly safety in maintenance is a priority item. We feel that it is mandatory to have a planned monthly flying schedule which allows sufficient flying time for all maintenance inspections, operational checks, preflights and last, but not least, adequate time off for all personnel. Before the first day of each calendar month we publish a thoroughly coordinated flying and ground training

For operational hazard reports comes trophy or white elephant.

Key man of the Flight Supervisory Team must be the Tower Officer.

schedule and then follow it. This schedule is the result of a great deal of detailed planning by both maintenance and operations. It has a purpose. It is here that a Wing's operational requirements and maintenance capabilities are brought into balance to produce operational effective aircraft on a planned basis. To meet this schedule every individual in the organization must get the word, particularly NCOIC supervisors. For instance, we insist that all crew chiefs, flight chiefs and specialists carry a copy of the monthly and weekly schedules in their pocket.

At daily stand-up briefings held by the Wing Commander in his control room, and attended by Base Supply, Base POL and Base Munitions, as well as Wing Tactical Squadron Commanders and maintenance personnel, we critique each past and present day's flying with particular emphasis on following the published schedule. I attend most of the standups. As a matter of fact I spend much of my personal time seeing that the published schedules are followed. I feel that my main job as a Division Commander is not to tell the Wing Commanders what to do, but to insist that they follow through on what they say they're going to do. I have directed my Division Operations staff to note all deviations from the published schedule. A system of points for each deviation from the monthly and weekly flying schedules was developed. We pay particular notice to cancellations, late takeoffs and penalize heavily for sorties flown which are not scheduled. All schedule deviations are noted and computed. Results are announced at my weekly staff meetings. At the end of each month I award a suitably engraved trophy to the squadron with the least deviations.

This entire program has produced an awareness of the proper flight scheduling throughout the Division and has caused a concerted effort by all hands to adhere to the published schedule with as few deviations as possible. Firm schedules eliminate last minute chaos and also eliminate hurried helter skelter maintenance and in the end, produces safer aircraft.

To summarize, we commanders are waging war on accidents and certainly the supervisor is the key warrior in this war.

But we depend on you to help us. You must achieve the desired balance between accident prevention and getting our operational mission performed. This war on accidents can be won with active participation. It consists of

- Achieving the correct balance between safety and operations,
- Giving the safety word to all the troops, pilots and mechanics, alike,
- A continuing aggressive accident prevention program,
- And last but not least, the Commander's supervision or backing at all times.

I can never forget—the worst thing that can happen to me is an aircraft accident. ▲

Destination

Again on schedule the T-Bird flung itself from the runway and took up the heading.

"**Major,** this is Colonel Edwards," the voice crackled through the phone. "I'm going to make a T-Bird trip to the West Coast tomorrow and I want a pretty sharp boy to go with me. He'll be coming back by himself. Get me a green card, senior pilot with plenty of T-Bird time."

"Yes sir, Colonel. I've got a lad with almost as much time as you have in the bird, about 700 hours. I'll see if he can make it. At any rate I'll be sure that one is ready to go. What time will you depart?"

"Eight hundred, Major. Want to be there before dark, if possible."

In the Colonel's office, a tired Jake Edwards hung up the phone, slowly rubbed his hand over his face and heaved himself out of the swivel chair. I'd sure trade these eagles for a second helping of youth, he thought, as he put on his hat. That trip to the coast tomorrow is going to be a tiresome chore. Seems like that weatherman saves his best fronts for my takeoff times. But hell, I'm not so old. Hope that buddy of mine has a good dinner laid out though. No time for steak at these gas stops.

The T-Bird broke ground just three minutes behind schedule. Colonel Jake in the front seat pulled up the gear, pulled the '33 around to the climbout heading and settled down for the climb. Two and a half hours later, Halfway AFB lay before him as he let down for the landing.

"Let's get this bird refueled and checked over in a hurry, Captain. You go on into ops and do the flight planning. I'll have to check in with the base C.O., and I'll be ready to go in forty-five minutes."

Sure helps to have a competent pilot along to do all the dirty work, the Colonel mused. This flight planning these days takes all the joy out of flying. Getting so a pilot's just a damn bookkeeper. There just isn't time to get out of the flight gear. Maybe Joe will come down to the line to jaw while the plane's being serviced. Will be good to see Joe again. Haven't seen him since Korea, come to think of it.

"Yes, Captain, what is it? Excuse me, Joe."

"The forecaster is giving me a little trouble, Colonel. Says that Rocky Mountain bases should have 9000 feet scattered, high overcast, with one and a half miles in blowing snow. The surface winds will be from the west, northwest at 25 knots, with gusts to 40. With snow on the ground most of those airports in the hills are snowcovered and might be closed. He suggests we file into Flatground AFB and refuel so we can get a suitable alternate."

"Okay, Captain, we can do that and refile in the air if things go right." "Now what was it about Suwon you couldn't recall, Joe?"

Again on schedule, the T-Bird flung itself from the runway and Colonel Jake took up the heading. This going west is bad on one score, thought the Colonel. These headwinds sure cut the range and make for time-wasting stops. It helps when you're gaining three hours of daylight en route. Still should be able to make it just at dusk. Wonder if that Captain back

Fixation

The responsibilities of senior officers and supervisors are quite clearly defined by regulation. The disregard for these regulations constitutes a breach of these responsibilities.

there expects to go on tonight? Hell, he's young. If he wants to strap himself to this machine for a couple of more hours, he can have it. Not for me!

Let's see, two and a quarter hours into Flatground and then the fuel should be plenty to extend on over to Mountview and Highville. Only 40 miles from Mountview to Highville—after all and there's no sense in having Ernie drive over to Highville in all that traffic when I can be there in about five minutes. The Captain can stay with me tonight if he likes. Ernie can put him up. Guess I'd better get the weather for those two mountain bases. Metro said we could expect pretty good ceilings and the snow should have stopped by this time. Hope they've cleared that runway at Highville. Six thousand feet isn't too much on a slick runway even if we will be light on fuel.

Guess I'd better check in GCI for the latest weather. Let's see, what is that GCI site call sign? Oh yeah, Shirley. Well I'll have the Captain call in and see what the poop is.

"Captain, call Shirley site and get me the Mountview and Highville weather. We'll go on into Highville if things work out. I don't want to make another fuel stop if I can help it."

"Right, Colonel. Will do."

Let's see, the Captain mused. If we can get into Highville by 1730 I can go on tonight. I sure don't want to stay in that joint. And I can stop

in and see the folks tomorrow on the way back.

"Star Gazer, this is Air Force Jet four four three two three. Fifty miles west of Parkdale, heading two eight one degrees, IFR on top. Give me weather check on the Mountview and Highville areas. Over."

"Air Force four four three two three, this is Shirley. Have your request. The weather at both stations is almost identical with 2500 overcast, seven miles visibility and winds northwest at fifteen with gusts to twenty five. The runway at Mountview is clear. The one at Highville has been plowed to 6000 feet, 120 feet wide. Snowbanks on each side. Braking action is fair. Over."

"Go ahead, Highville. What's your message?"

"Air Force jet three two three, there are no parking facilities at this base and no starter units available. The snow has blocked all but one taxiway. Advise it would be better to land at Mountview. Over."

"Low on fuel, Highville. We're coming in. Clear me for runway thirty four, tower. And cancel my IFR flight plan, please."

"What you gonna do, Captain? Stay here with me or go on?"

"I think I'll just change seats and go on, Colonel. I can get some fuel over at Mountview then get on over to Portland."

The snow has blocked all but one taxiway. Advise it would be better to land at another base.

"Roger, Shirley, thank you and out. Colonel, looks like we can make it into Highville. If you say the word I'll change the flight plan with CAA."

"Go ahead, Captain. I'll make a letdown on Highville then."

I knew I'd get into Highville, thought Colonel Jake. Roast pheasant for me tonight. Maybe even some late late corn from the freezer . . .

"You've broken the ceiling, Colonel, Highville should be off to your left about thirty degrees off your tail."

"Yeah, I overshot a little. I'll swing around and land on thirty four."

"Up to you, Captain. Looks like there's plenty of fuel. I have a hundred twenty on my totalizer and I set it thirty gallons low when I took off. Should be a hundred fifty in there, far as I can figure. There's my friend waiting for me. You're welcome to stay with him too, if you like."

"I'd better go on, Colonel," said the Captain. "See you back at home base. Just leave 'er running, Colonel, while I get up front. By the way, what's the heading over to Mountview?"

"The map's here in the front seat, Captain, but I'll call you the heading and distance when I get in ops. See you later."

Colonel Jake Edwards bent against the cold wind and made his way into ops. Fifteen minutes later the Captain cleared the runway and received the course and distance from the Colonel on the ground, 249 degrees and 32 nautical miles. The time was 1750, twenty minutes after official sunset.

Six minutes after takeoff, Mountview tower received a call from 323 for direction finding assistance. The pilot advised he had 25 gallons of fuel remaining. He keyed his mike and was given 200 degrees, Class B, with zero wind. The Captain advised he was at 3000 feet and acknowledged the tower's transmission that the DF equipment was unreliable because of the surrounding hills.

A series of DF were given. The heading ranged from 190 to 210 degrees and all were acknowledged. At 1802 the pilot reported that he was down to eight gallons and was going to bail out. Mountview tower activated the crash circuit.

At 1805 the fire department at Rimfire received a call that an aircraft had crashed into a building next to Oak Hill road. There was no fire. Fuel is needed for fire. The Captain waited too long.

It may be superfluous to state that the accident board found that the operator, the Captain, and the supervisor, Colonel Edwards, shared the blame. It is interesting to note, however, that in the minds of reviewing authorities, the primary responsibility for this accident lay with the Colonel, not with the Captain who lost his life.

A high ranking officer, whose job it was to review the accident report, said in part: "The responsibilities of senior officers and supervisors are quite clearly defined. In this case, the duty of the senior officer involved was to abide by USAF and Command regulations. The disregard for these regulations and the advisories offered constitutes a breach of his responsibilities. The accident was set up when Colonel Edwards allowed the Captain to depart Highville with what he knew to be minimum fuel. Obviously, both pilots were guilty of "destination fixation" to the extent that it interfered with their judgment. I especially expect my senior officers to be above this common flight ailment." ▲

Know Your Limitations

In a recent major accident, eight men bailed out of a C-119 over mountainous terrain. Four of these men died of exposure before rescurers could reach them. All wore light clothing and none of the eight carried any survival equipment. Minimal survival gear should be carried habitually by crewmembers and passengers alike.

★ ★ ★

The leader of a flight of two F-100D aircraft was on a practice GCA final approach. There was a sudden marked increase in the sink rate of the plane and the wingman asked him to apply power. The leader advised that he could only attain 84 per cent and immediately ejected. The seat and pilot did not separate and the chute had only partially deployed at impact.

The cause of the engine malfunction was maintenance error. One clevis next to the fuel control was uncoupled. Inflight separation of the throttle linkage from the fuel control was the result. In addition to this the automatic lap bet failed to operate because washers were not installed as specified in the Tech Order.

Rex says—*Here is a case where all the preflight inspection in the world could not have saved a pilot's life. He cannot be expected to find such hidden maintenance error. Again a standard approach to the maintenance job would have saved a pilot and aircraft.*

★ ★ ★

The pilot of a T-33 was on a tactical flight plan from Elmendorf. Shortly after takeoff, when the aircraft had entered an overcast, the flight instruments began to behave erratically. As the climbout was continued, the situation became more critical until it was nearly impossible to control the aircraft.

Through the help of a GCI controller and the pilot of an F-102, the pilot was able to return to Elmendorf and land safely. Credit for the events which transpired before this was accomplished, belong to a skilled operator who has knit together the parts of team play: the radar controller, the rescuer-aircraft pilot and the rescued pilot.

First, accurate and reassuring directions brought the disabled aircraft back over land. Next, an F-102 in the area was accurately vectored to the position where it was possible for the two to join formation visually. After this, the aircraft were guided down through approximately 30,000 feet of clouds to the runway at Elmendorf. Throughout the proceedings there was no delay or hesitation in the voice which directed the aircraft and the instructions given were perfect.

Rex says—*Good supervision, teamwork and positive action pay off every time.*

★ ★ ★

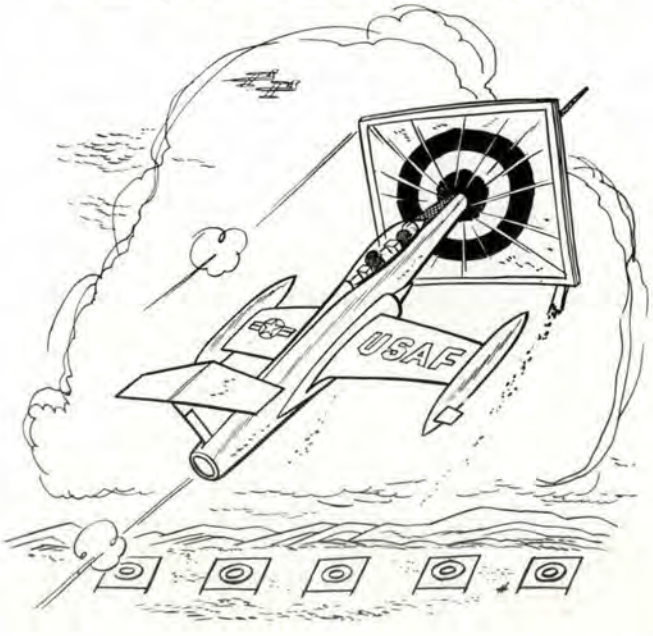
Following a midair collision of two B-52 aircraft at low altitude, the electric counter measure (ECM) observer of one aircraft successfully ejected at an estimated altitude of 50 - 100 feet, while the aircraft was in a diving attitude.

In addition to the M-12, a one-second lap belt initiator, and a modified B-5 parachute to include the C-9 (28 ft.) canopy, this crewmember was equipped with the zero second lanyard which deployed the parachute immediately upon separation from the seat. Touchdown was made very soon after the parachute opened, while the ECM observer was attempting to position himself properly for landing. The only injuries sustained were two small lacerations under the chin, which occurred as a result of his not having the oxygen mask fastened. The availability and proper use of low altitude escape equipment, particularly the zero second lanyard, undoubtedly prevented a fatality in this instance.

Of fifteen other crewmembers involved in this accident, two ejected but were fatally injured, due to extremely low altitude at time of ejection, and two completed conventional bailouts; however, only one survived. The remaining eleven crewmembers could not or did not escape and were fatally injured in the subsequent crash.

Rex says—*There's absolutely nothing (at the moment) like the zero lanyard—provided you have it hooked, and at a safe speed and altitude.*

Shouldn't we count the holes after we land, Smirdley?



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Lieutenant Colonel Mitchell J. Mulholland, USAF,

Supervision. What a magnificent nothing-word we have made of this one. It's one of these concepts that have been enshrined along with virtue, mother and the flag, to which we automatically pay obeisance and to whose real meaning we give little or no thought. We have quite a few brilliant bromides and scintillating shibboleths in our arsenal, but "supervision" is about the most overworked.

There's something else about it. It's a kind of concept of which we all avowedly approve, but which we actually don't particularly like. Deep down, it has an unsmiling, nasty quality about it that is somehow associated in our subconscious with traumatic episodes at the hands of upperclassmen at flying school or carnivorous colonels later on. We all agree that it is necessary, but a lot of us rather wish it weren't. Rightly or wrongly we blame a lot of accidents on the lack of it, so maybe we had better look at this thing a little closer and see what it really is.

Supervise—from the Latin "super" and "video"—to oversee. Heck, we have a perfectly good English word for the supervisor: The overseer. He's the character who watches other people to see that they do the job properly, and that in its simplest form is supervision. Why is it necessary? Why does work have to be "overseen?" Well, there are many reasons. They involve different kinds of supervision and different techniques. Let's look at them and give them name tags.

Quality Supervision. In general, this involves the supervision of the less-qualified or less-experienced by the better-qualified or more-experienced. This is the kind of thing you find in OJT programs, in flight training, in transition. To a certain extent we have it all the time in military organizations. The reasons for it are obvious. The man doing the job is inexperienced—is on the way up. In most military tasks the trial-and-error method of learning is out of the question; errors have drastic consequences. Therefore, we need an "old hand" around to keep the novice out of trouble, to make sure his work is up to standard. In most cases one "old hand" can oversee the work of several youngsters, so the outline of the familiar organizational pyramid begins to take shape. Our "old hand" may have an older hand higher up supervising him, and so on.

The prime requisite of quality supervision is that the supervisor must be in fact more highly qualified in the job than the people he is supervising, and also he must be able to evaluate their work. This kind of supervision can not be accomplished by a figurehead. Our objective here is to get more people qualified—unless the supervisor can raise their level it's a case of the blind leading the blind.

Managerial Supervision. This kind of supervision involves the overseeing of the efforts of others to keep them functioning smoothly. It is a matter of coordinating rather than leading. The traffic cop at an intersection exercises this kind of control, so does a commander. In this situation a number of people, presumably qualified, are doing their jobs. The supervisor coordinates the joint effort, sees that people don't interfere with each other, resolves conflicts, and in general funnels the efforts of all toward accomplishment of the end result.

In this type of supervision it is not essential that the supervisor be more qualified than those he is overseeing, at least where specific details are concerned. In fact he may not be able to perform any of the pick and shovel jobs himself. What is necessary is that he have "the big picture." He must clearly understand the overall mission and where the individual jobs fit into it. He must be able to recognize breakdowns when they occur and be able to adapt to changing situations.

Without effective managerial supervision even the most qualified group of people might as well be playing Blind Man's Buff. The right hand would not know what the left was doing and general confusion would result. One night a few years ago a batch of F-94s were scurrying into an Eastern base ahead of weather. There was no effective supervision in the pattern, and by the time the mass confusion was resolved, three aircraft had been destroyed and one fatality had resulted. The pilots were all qualified but nobody was riding herd on the operation.

Delegated Supervision. This is the kind where a supervisor, temporary or otherwise, is acting for somebody else. The O.D., Staff Duty Officer, Airdrome Officer, Tower Officer, C.Q., all exercise this type of supervision. Assistants and deputies get into this type of thing. Here a junior individual, of minimum qualifications, exercises temporary supervision of an activity during the absence of the boss. Generally, his ground rules and limitations are spelled out for him. He can't change policies or take drastic measures on his own initiative as a rule. His main job is to see to it that the old man's policies and directives are carried out, and to report deviations or troubles to those who know how to fix them. The responsibilities involved here may not seem at first blush to be earth-shaking, but they are very definite and important responsibilities.

Certainly the joker to whom this kind of supervision is delegated may feel and may actually be inadequate, but this is not the point. He may not have all the answers, but he is there to see that nothing goes unanswered. He may not be able to direct, but he knows where to obtain direction. If there is something the higher-ups should know, he is there to tell them. The greatest crime he can commit is the crime of omission. He has to realize that

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4050th Air Refueling Wing, Westover AFB, Massachusetts

if *he* doesn't stay on top of what's going on within his bailiwick, nobody will. You might compare him to a piece of temporary shoring to keep the structure of the pyramid together.

Evaluational Supervision. Here's where the inspectors come in. The gimlet-eyed boys who look under the rugs, the cold fish who ask nasty questions and write all the time. This is a delicate area. Unless this job is done properly we may find that our house is built on sand. Theoretically, the *inspector* should know the *inspectee's* job down to the last nut and bolt. It's the inspector's function to see that we're not kidding ourselves. If through no fault of his own he has to look into an area in which he is not an expert, at least he should become sufficiently familiar with part of the area to be able to make a valid spot-check.

The inspector has a fine line to walk. He's a policeman, it's true, but this shouldn't overshadow the fact that his sole raison d'etre is to keep the outfit *out* of trouble. Much as the average worker dislikes inspectors and checkers, he'll darned well be more painstaking in his work if he knows he can't get away with a sloppy job.

As far as possible, supervisors of this kind must support and *sell* the concept that the object of inspection is not to give a rating but to help the Air Force accomplish its mission. Where the reaction to inspection is a panic attempt to hide everything and put on a show, supervision has failed miserably. The report card becomes more important than knowledge, the paint more important than the building. When this point is reached we are really kidding ourselves, disastrously so, and the evaluational supervisor is largely to blame.

It behooves all inspectors, standardization people, quality control types et al to realize that their jobs are essentially unproductive, that they are only earning their pay if the results coming from the working troops are improved by their presence. Otherwise they might just as well put on working clothes and relieve the personnel shortage when the job is being done.

Individual Supervision. This is what's left. It is the kind of supervision that is the responsibility of everyone in the armed forces. When we see something going wrong, and we know it is wrong, and nobody is doing anything about it, we're not earning our pay if we sit there and let it continue to go wrong. This is most applicable in the areas of security and safety.

The peculiar personnel situation of the Air Force today makes supervision a top priority requirement, and it also brings problems in its wake. Instead of the pyramidal picture that a military structure usually presents, we have today a picture of two big layers. On top is a big spread of experienced people, World War II types and older, underneath a restive group of comparative youngsters. This means two things: We have a large group from which we can draw supervisory people, but we also have an awful lot of new raw troops that need close supervision in the demanding technical jobs we are asking them to do. You don't fix a 1958 model airplane with a monkey-wrench and needle and thread. Not only that, but our new birds are horribly vulnerable to little things that are not right. A bad electronic tube can have disastrous results, as can a wrongly torqued B-nut. Do-it-yourself maintenance or corner-garage standards have no place on an Air Force flight line. People have to be taught right, shown right, watched right, because there's only one right way.

On the other side of the coin, we can run into troubles. We have scads of experienced folks, mostly too old to do the pick-and-shovel work, who are behind the batteries of desks in our headquarters. It's easy to get so many people into the supervision act that the effect is stifling. The requirement for supervision comes from below, not from above. Supervision should be applied where it is needed, and by someone who can properly supervise. It should not be applied where it is not needed, just because there happens to be an old troop around who wants something to do.

What all this boils down to is the fact that we have an *organization* to do a job. If the job is left to individuals to do by themselves, without help and without recourse, the organization is simply not functioning. The Air Force structure is such that it takes about a hundred men on the ground to keep one man in the air. Once that man takes the wheel or stick in his hand and pushes the go-handle, that is *not* the signal for the other hundred people to drop the whole thing. The mission of that airplane is everybody's job—the efforts of all just happen to come to a focus in the person of the pilot. Personnel people, training supervisors, commanders, instructors, installations engineers, communications people, operations types, armament and electronics men, maintenance, gad, yes! maintenance people, procurement, inspection, safety specialists, on and on goes the list. When that bird starts its takeoff roll it represents the culmination of everybody's efforts and worries, which *don't* stop when the craft is airborne. At this point the pilot is the ball carrier but that doesn't mean that the rest of the team leaves the field. It's still a ball game 'til the last whistle.

In the flying safety picture it has been aptly said in SAC that the supervisor is the guy who can recognize a potentially dangerous or deteriorating situation and who can "pull the chain" and say "Stop!" This means that everybody up the line has to keep their eyes and ears open

and avoid like the plague the assumption that George is doing it.

Now where can we go wrong? Supervision is something like seasoning in cooking. We can ruin things by using too much or not enough. The evils of inadequate or insufficient supervision should be self-evident. They are manifest in the commanders or chiefs who couldn't care less, in slipshod maintenance, dirty ramps, people who don't answer the telephone, and of course, finally, in accidents. The unlighted road is the dangerous road, of that there is no question.

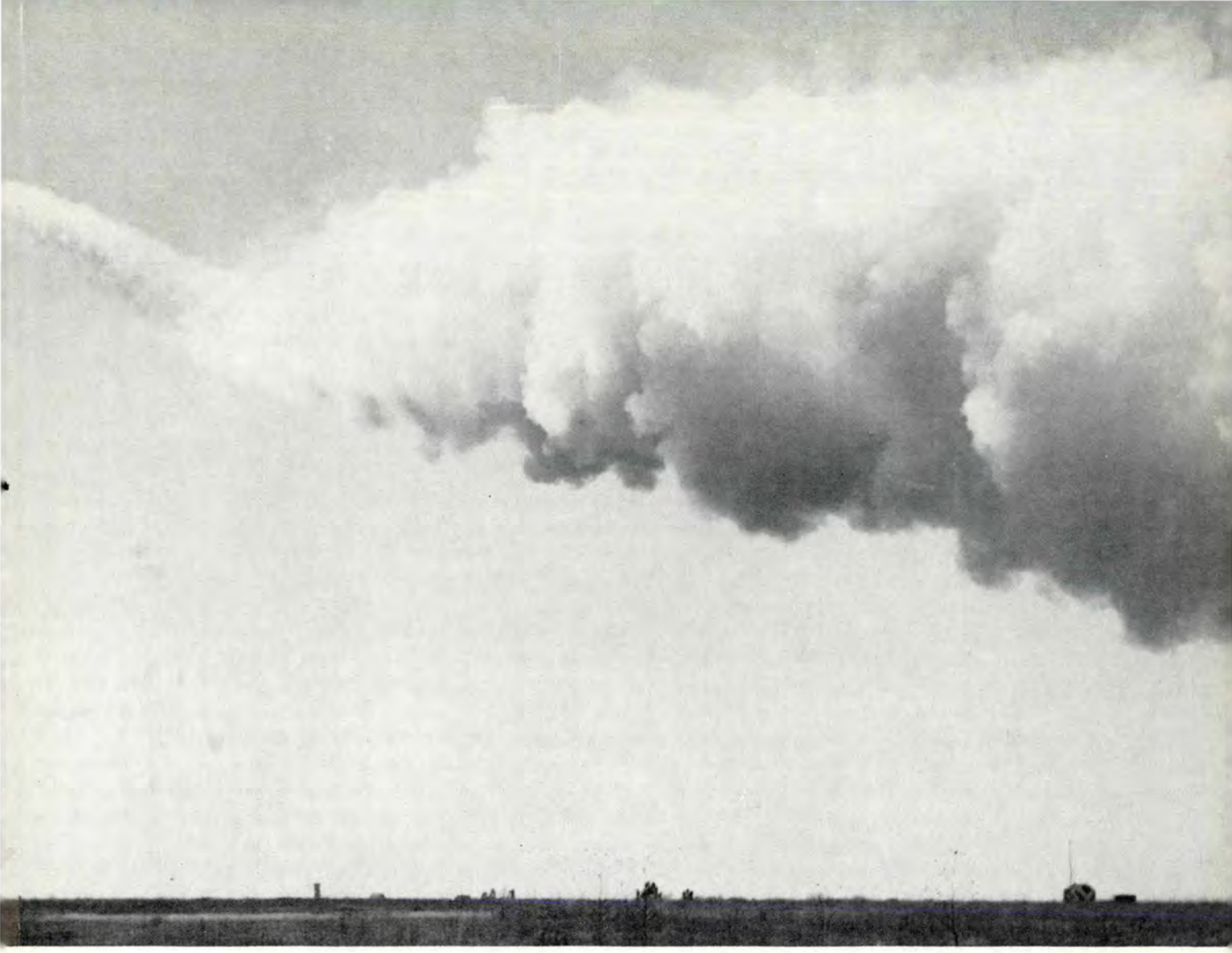
But how about the opposite? Is it possible to have too much, too thorough supervision? You bet your Aunt Tillie's apron strings it's possible. It can happen and it defeats itself. There is a natural tendency for commanders, when under pressure from higher up, to regard supervision as the solution of all their problems. So, first thing you know, boards and committees sprout like the flowers in spring, everybody who is anybody becomes a project officer for something or other, and every mother's son in the outfit has somebody looking over his shoulder. Everything that is done has to be reported in writing and passed up through echelon upon echelon of supervisors, and no one can take a step without a written okay from upstairs. This sort of business can really snowball, and it's harder to stop than it is to start. The trouble is nobody feels they can trust anybody, and people shy away from making decisions as though they were being asked to drink hemlock. The printed word is regarded as the Ark of the Covenant and is adhered to passionately whether it makes sense or not. Unilateral action by anyone short of the top dog is unthinkable, the committee is the vital organism, the meeting is the ritual, the chart the object of worship. "Carta vincit omnia," and the real key man in the headquarters is the draftsman.

Oversupervision takes blunt and bludgeonlike corrective action when accidents occur. Causes are eliminated by issuing regulations against them. Errors are eliminated by disciplinary action against both blunderers and supervisors. We find accidents treated more like offenses than like mishaps. Now this may have some salutary effects but in the long run, whom do we think we're kidding?

A classic case of oversupervision was the experience of one of our major commands with the innocent little C-45, the late-lamented "Bug-Smasher." In one form or another this little bird had been in the Air Force inventory since 1940 in large quantities without developing a bad reputation. It was well known for having rather nervous tendencies on the ground but nobody lost any sleep over it. At this late date a couple of embarrassing groundloops convinced the heirarchy that this was a dangerous airplane, and all kinds of restrictions were promptly placed on its operation. Takeoffs and landings in crosswinds became taboo, as did operation in any wind over 25 knots. Well, the net result was that nobody got any practice in crosswind landings, and in spite of repeated peals of thunder from Mt. Olympus the groundloops continued to happen, under less tricky wind conditions than before.

The moral of this story is, you can't remove all the hazards by legislating against them. If this line of approach were followed to its ultimate conclusion you could prevent all accidents by permanently grounding all airplanes, but you have to draw a line somewhere. These machines are built to be useful and flexible, and our sense of values tells us that we can't hamstring their operation to the point where they are useless.

Now a word about oversupervision as it pertains to the uncritical worship of the printed word. Standardization, we know, demands adherence to tried and approved procedures, the published poop. When we get to the point, however, where we accept the printed word as utter gospel, when we believe the book can't ever be wrong, then we are venturing into dangerous waters. When the book says our aircraft will unstick after 11,200 feet of ground roll, let's not for heaven's sake lose our human pilot's instinct to "crank in a little pad." Our airplanes may be as alike as so many peas in a pod, but when we get to figuring in margins of one knot one way or the other, or 200 feet of roll out of 11,000, we know the birds aren't all exactly alike. We have to stick to procedures these days, but let's not forget that there is still a little art to the science of flying. The pilot who loses sight of the art in his profession had better look for another job—with a UNIVAC maybe.



When the plane starts its takeoff roll it represents the culmination of everybody's efforts and worries. At this point the pilot is the ball carrier but the rest of the team is there.

The book *has* been wrong at times, and these are times when a pilot's good sense may mean the difference between life and death.

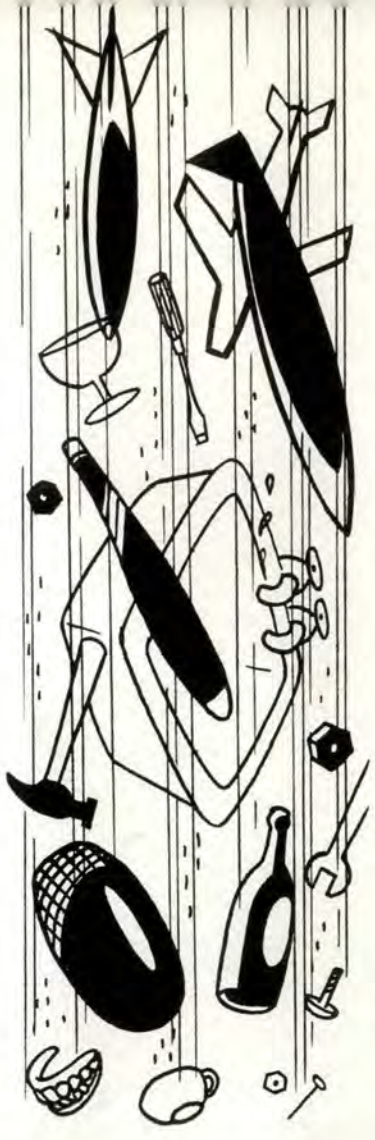
Which brings us back to supervision. Remember, the supervisor is not always going to be a better qualified man that the supervisee. The role the supervisor assumes must involve good judgment, which specifically includes the judgment as to when to give the supervisee his head. The supervisor is not normally called upon to be a mother hen, unless this is so directed by the nature of the job. There are going to be times when the job is clearly in the hands of the operator, when he should be left to handle it in accordance with his judgment and training, and when others should stay off his back.

There are some things, as we remember from Mother Goose, that all the king's horses and all the king's men are incapable of doing. When Joe Blow in his F-102 has a flameout, it's nice to have supervisors and commanders on the ground giving him body English, but all the colonels in the world can't land that bird for him. That's Joe's job, all by himself. If he can't hack it now, it's too late for supervision. Obviously that missed the boat earlier in the day, when the people who should have seen to it that Joe had the proper capability didn't really make sure.

If the Air Force loses this F-102, the soul-searching should be thorough, and Joe Blow himself should not necessarily have to carry the whole burden. As the man on the spot he is in a vulnerable position; it's easy to blame him. But remember, the spot he is in is the focal point. Behind him stand those hundred others whose job it was to get this flight accomplished successfully. The question of the hour is "Why?" Every one of these people should be required to answer, to themselves if to nobody else. We all have an investment in the job—nobody is just along for the ride. The monkey is on everyone's shoulders and he can't be chased away. ▲

Until Newton's law of gravity is repealed objects dropped from aircraft will continue to be . . .

A Deadly Rain



An old fable has it that a certain chicken was convinced the sky would fall down. While he had no ready proof that such a catastrophe would happen, he proceeded to inform all barnyard personnel within range of his drumsticks that everyone of them should take cover.

No one is sure, of course, just how this fable got started. What event might have happened to the original teller of this tale many hundreds of years ago is problematical. It is likely perhaps that some ancient was watching the night sky when he was impressed by the sight of meteorites burning their way toward the earth. With his limited ken of the universe, he was probably convinced that if pieces would fall, maybe the whole roof was in danger.

While there is no record of anyone ever having been hit with the residue of a meteorite, we can see large holes in this earth of ours where rather large chunks have survived the friction of entering our atmosphere. It is far more likely however, that lightning might strike or that a piece of hardware might fall from a plane passing overhead, and render you hors de combat before you know you've been in a fight. This last event happens far too often for the peace of mind of the defenseless groundlings.

The variety of objects that fall from aircraft and strike people on the ground is endless. The most common are tiptanks and access doors. Tow targets and their cables come in for their share of notoriety too. And many of the latter are, sadly enough, still attached to the airplane when the landing is made. They are thus dragged across power lines and highways on the final approach. Parts of landing gear which have been damaged on the takeoff or previous landing seem to fall with amazing regularity just where an unfortunate person is standing. Bombs, designed, of course, to be dropped are often off schedule when they reach the ground.

Sometimes it is the whole aircraft that falls uncontrolled to the ground with dramatic results. Other times it is only the wheels or tail of the aircraft which make contact with autos or other vehicular traffic just off the approach or far ends of runways.

Whatever part or parts that do fall are usually dislodged through human error. Tiptank brackets and fastenings that fail do so because the design is wrong or the limits of design are exceeded. Large G forces are responsible for many of these. Improper adjustment by ground crews can usually account for the rest. The aftermath of dropped tanks, especially with vast amounts of fuel aboard can be both tragic and spectacular. Sometime ago a tank was dropped from an F-89 two minutes after takeoff, about four miles from the runway. The tank was fully serviced and fell into a thickly populated area. The fuel ignited upon impact with the ground and sprayed over a home, completely destroying it. Two small children in the back yard were fatally burned. The right pylon center spar failed at the read shackle bolt and the pilot, of course, had no indication of the loss until he felt the plane lighten. At other times however, pilots have dropped tanks before reaching safe areas. Loss of life and property was again the result.

Too often a pilot has assumed that his tow target cable has been released from the aircraft and a landing or series of landings are made. Not long ago a pilot took off for a tow target mission. The target was lost on takeoff but 600 feet of the cable remained with the aircraft. This—the pilot did not know. Nor did he have another aircraft to clear behind him. He made a series of barrel rolls as he descended toward the field then a succession of flameout patterns, touching down on the last three. During one of these three touchdowns, the tow cable severed a power line and telephone line just outside the base. The cable further crossed a public road and struck two persons on bicycles. Both were fatally injured. A needless accident but no less tragic for that reason. At about the same time a golf caddy was startled to feel his burden jerked from his back. The tow cable of an F-86 had almost picked him clean. He was lucky to suffer only minor lacerations and an injured dignity.

As said before, sometimes it does appear to some hapless individual that the entire sky is falling. Picture yourself driving peacefully along a secondary road admiring the planes parked on the airbase nearby. Suddenly your auto seems to flatten out lke a greyhound on the home stretch. Detroit's finest sheetmetal is not stressed to take the weight of the C-119 landing gear, and you're lucky that a knot on the head is the only scar received when the wheel springs rebound angrily as the plane proceeds on to the proper landing area.

Examples of this kind can be cited far beyond the limits of this magazine. The point is that most of these can be prevented. More care on the part of everyone from designer to mechanic to pilot will eliminate this waste of life and property. There's no need for the deadly rain. ▲

Lend a Hand

FLYING SAFETY is YOUR magazine—you, the pilot, radar operator, flight engineer, all of you crewmembers. It is written for you and about you. Perhaps you have ideas for improving the book. You could help us do a better job if you'd take time to send us your ideas, suggestions and, yes, even your gripes. Maybe you have in mind some article that has a flight-safety slant. If so, write it and send it! Never mind the spelling or grammar —that's our job. Make a New Year's resolution to participate in the Flying Safety Program for 1959. We'd like to hear from you. How about it?

— The Staff —

Who in his right mind would voluntarily choose to spend the better years of his life in an uncomfortable machine which seems to do its best to kill him? The question is . . .

Why are

Read an article the other day about a fellow who made his living gluing false hair on dolls. Seems like a most peculiar way to earn a buck, but then he must have been happy at it—been doing it for sixteen years.

That brought to mind the two golfers walking down the fairway that bordered a lake. One of 'em said, "Look at those fools out there, fishing in the pouring-down rain."

Yes, it takes all kinds to make up a world as big as ours, and isn't this fortunate? It would be pretty rugged if we all chased the same blonde.

Speaking of peculiar tastes and occupations, how about the military flyer? Just what kind of a character is this guy, and why does he do as he does? Granted, animals seek strange pursuits sometimes, from burrowing in the ground to hanging by their tails, but few of them could seek a stranger pursuit than the one chosen by this "flying" animal.

Who in his right mind would voluntarily choose to spend the better years of his life closely associated with a noisy, uncomfortable machine which at times seems to be doing its very best to kill him? Does this supposedly most intelligent animal choose this way of life because it offers him more of the coin of the realm than a safer, saner, civilian pusuit?

Hardly. Because, regardless of where he fits into the Air Force structure crewmember-wise he can generally make more money on the "outside." Is this choice made then because of the prestige the job carries, the automatic position assumed in the community? Hardly. Let's face it; socially, this is just another job. The glamor then, the excitement, the fever-pitch of flying, clear-eyed, face-to-the-blue, unafraid—is this the concept? It might have been once, but not now.

If you've ever seen a crew stagger off a transport after 10 or 12 hours in the saddle, dogtired and half-blind and deaf—if you've ever seen a fighter jock complete an eight or nine hour mission with, say a couple of midair refuelings—this is glamor? This is romance? This is damned hard work. They land, and who cares, or even knows what they've done? Nobody. Nobody, that is, except their outfit and their families. These persons meet the exhausted animal at the base, or wait for him at home. They listen to his tale of woe, salve his wounds and help him crawl off to rest so that he will be able to go again another day.

Why then? Why do this? What is military flying but two things: Fly to shoot and/or be shot at; and fly to train to shoot and/or be shot at? Every flight an ordered flight; every flight a purpose, even if just to maintain proficiency. Always training, going to school, getting ready, keeping up on the latest, so if the balloon ever does go up again - - - - -.

Actually, the military flyer is a pretty ordinary guy; he's healthy and alert and steady. Chances are he built a couple of model airplanes when he was a kid; owned a motorcycle or two and tinkered with the family sedan—sometimes with disastrous results. He grew up the normal way, grade school, high school, couple of years of college, maybe more, maybe less. Possibly flew some, took a few lessons, nothing serious. Didn't really have any plans for the future, certainly nothing military. Definitely not the military, not for this kid. Take orders? And then one day it came, the realization that one and all, if in sound mind and body was going to have to donate a few years of his life to Uncle Whiskers. Boy, this was a shock. This had not been planned, but here it is! So now, a closer look. What's the best deal? The most fun? Fly!

you a military flyer?

Maj. Wallace W. Dawson, Fighter Branch, DFSR.

Why not? Looks exciting—those new fighters. Or the big jobs, to build up experience for an airline spot later on. Buy, beg or borrow a couple of hops down at the local pea patch, get the old hand in again, or "just to see what it's like" might help. Enlist now, get into cadets or mechanics school, sweat out the call, sell the jalopy, convert everything to cash. Then to reception center, an exhausted blur of physical agony. Primary, Basic, Advanced, fly, fly, fly, train, train, train.

And then the big day—Lieutenant or Sergeant. You're in. A crewmember—a part of the whole—a spoke in the wheel—and really now, aren't you pretty proud of that uniform? Didn't you have to kinda swell up when the band went by at graduation?

So a phase ends, and another begins. Graduation—home—folks—friends—sure spent a lot of dough, but it was worth it. But now, guess what?

First station. Fly, fly, ground school, fly—other jobs, not so good. Supply! "But, Major, I don't know anything about the mess hall, I'm a supply man, I mean I'm a pilot, I mean—I'm a mess officer now, I guess."

The months fly by, and time to transfer to another outfit. You say "Goodbye" the first couple of times it happens and then you say, "See you around, Mac," because you know you will. These months, twelve of 'em make a year, and four years make a hitch. How could it be so soon? But it is.

Time to make a command decision. Stay in? Get out? Still young yet, lots of good jobs on the outside. Yes sir, no doubt about it. Smart thing to do is get out, settle down, get established, put down some roots, *be* somebody. Mind all made up now, yes sir, no doubt about it. And go and sign up for another hitch just like you knew you were going to do all along.

But why?

Like most intangibles this one isn't easy to explain either. It might be one thing that keeps some people in; it might be many things to others. Whatever it is, it's there. Love of flying? Love the life maybe. Sense of duty. But let's not get gooey.

If you're like most, you're not sure why you are what you are. There are flashes of course, like the bright clear Saturday morning you tooled a B-25 down the West Coast from Seattle to L.A. You knew then that there never could be any other life for you. Or, like the time you and a guy from your flight in Advanced met in base ops at, of all places, Rome, New York.

Yes, this is part of it—the good part—the guys you've known and run into once in a while. There's pride too, pride of wearing the uniform and the wings. Pride of any accomplishment any Air Force man makes even though you never even heard of the guy before.

Security? For some—sometimes. Good retirement at 20, but who wants to quit that early? Travel? Oh brother. This is good. This is bad? Depends on how the cookie crumbles. Some good overseas spots, some no damned good at all. Kids been in a lot of schools, doing okay though. Travel's done them some good, that's for sure.

Money? Doing all right, saving a little now and then; drive two cars, buying the house, college fund coming along; could afford a new "first" car next year.

Job? Work? Some good, some bad. The older you get the less you fly (don't say that too loud; it might stick). True though, staff work, need your experience, more valuable flying an LSD than an F-100D. Oh well, it's all part of the job. A good job though, always a chance to go—overseas, school, up.

So why a military flyer? Who knows? Probably nobody, least of all YOU. ▲

the GUY In Charge

What is a "Supervisor?"

We have heard and shall continue to hear statistics quoted concerning aircraft accidents wherein supervisory error played some part. The oversimplified solution to this deficiency obviously, is *elimination.*

To eliminate this type of aircraft accident, I suggest that we look first at the supervisor himself. First of all, what is he? Just what do we mean when we say, "supervisor?" Everyone is familiar with the definition of this word but it all boils down to one thing: "The guy in charge." He may be the aircraft commander, the instructor pilot, the flight commander, the line chief, the crew chief or a guy by some other title.

How then would a squadron commander go about recognizing the supervisor? There is only one way to do this. The squadron commander has to know his people. He must get out of the Orderly Room and see what's going on. He must talk to his troops and pass the word along. There's more truth than humor in the old saying, "There is always some guy who doesn't get the word."

Not only must you see your troops—they must see you. They must see you fly the airplane, see you fly it often and fly it well. I think that we agree that if you gain the reputation of being a flying officer who knows the aircraft, its systems and procedures, you've accomplished 90 per cent of the task of establishing yourself as a commander in the eyes of your people. Once you get to know your people, you can identify the motivated, the intelligent and the "supervisor."

Of equal importance you'll be able to identify the one who is called "supervisor" but who is not supervising. Once you have found this man, you must take action, for a poor supervisor is worse than none at all. This is a critical area. It must be a critical area, since we've had far too many accidents resulting from supervisory error during the first six months of this year, and this type continues. It is only logical, therefore, that some supervisors obviously are not supervising.

When this deficiency shows up in an air crewmember, it is usually readily apparent. He's the one who took three passes to land out of a GCA with a 400-foot ceiling. He's the flight commander who failed to insure that his flight

A B-52 with 266,000 pounds of JP-4 is as dangerous a weapon as any.

Everyone is familiar with the definition of the word supervisor, but it all boils down to one thing: The guy in charge. Call him by any handle you like, he is still the man with the cat on his back — responsibility.

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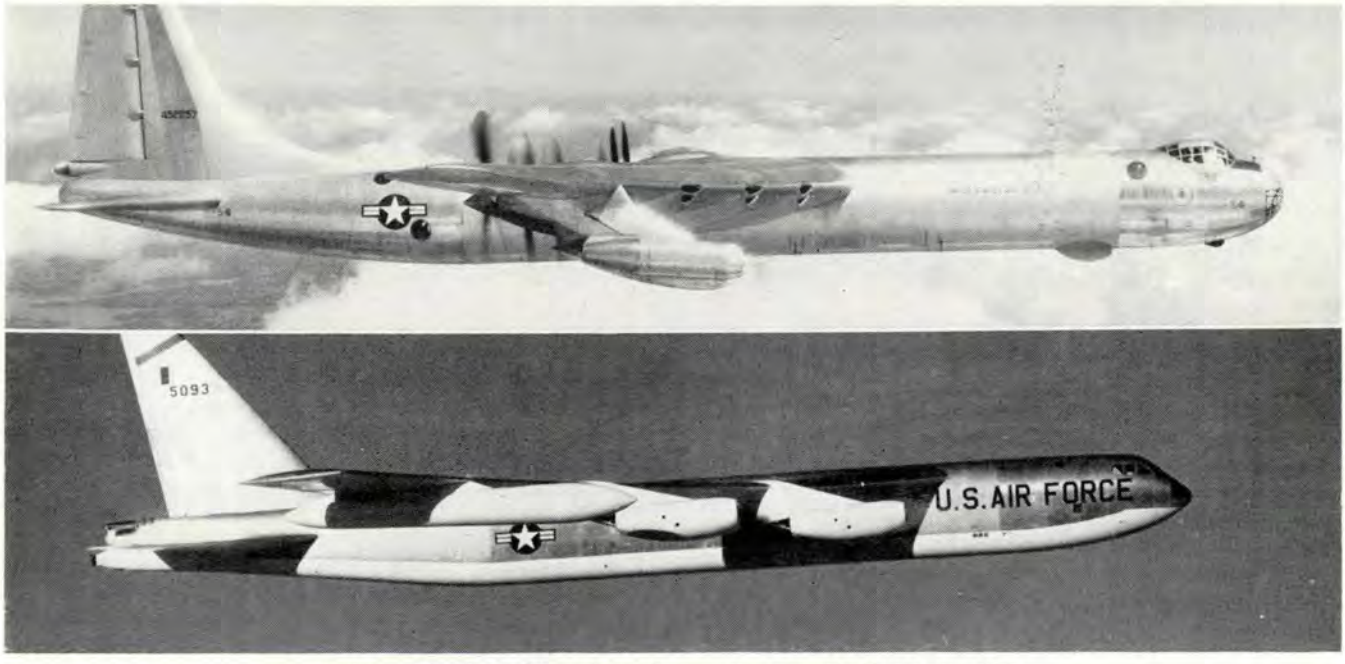
Lt. Col. Richard M. Hoban, Commander, 717th Bombardment Sq., Ellsworth AFB, South Dakota



Let's consider the problem of a unit converting from the B-36 to the B-52.

took proper spacing in the landing pattern. Whenever we detect these deficiencies we immediately take corrective action, either through standardization rechecks, by personally riding with the crewmember concerned, or by intensifying training along some other line.

However, unless we are out on the line, inadequacies in supervision in our ground personnel are not as readily apparent. These may show up in a high, late take-off rate, unacceptable abort or ineffective sorties. When we speak of ground personnel, nothing should disturb the squadron commander quite as much as the possibility of having one of his aircraft destroyed on the ground by some useless, stupid accident. A B-52 loaded with 266,000 pounds of JP-4, sitting in the middle of forty-four other airplanes, is as dangerous as any weapon in our arsenal today. A recent tragedy of this type happened at an eastern base when a B-52 was destroyed by fire on the ground. On its last flight, the aircraft was written up for an inoperative fuel flow indicator. On the day *before* the fire the engine was run up for check-out, and at this time a broken lead at the instrument was found and repaired.

On the day of the fire the crew chief was absent on leave and the assistant crew chief attempted a runup of the engine for check-out. During the first attempt, combustion was obtained and then the engine flamed out. It was determined that the fuel shut-off valve was in the OFF position and the engine had started from residual fuel. A second start was attempted but was again unsuccessful because fuel valve 13 was in the OFF position. During this attempted start, a fuel leak was discovered in the strut for the engine.

The assistant crew chief later decided to motor the engine to recreate the leak. The ignition circuit breakers were pulled and the engine motorized. The throttle was advanced in this configuration. Fire then destroyed this aircraft.

The assistant crew chief was not qualified by experience or training, and was not authorized to operate aircraft engines. Supervisory personnel did not provide a qualified replacement for the crew chief during his absence on leave. Result: An eight-million-dollar airplane was lost because of poor supervision, inadequate training, poor judgment, and a disregard for the explosive nature of JP-4 fuel.

The need for removing poor supervisors is readily apparent. By allowing these people to remain in positions of responsibility we not only deny ourselves full productivity but we thwart the ambitious, the "Goers," who are really trying to advance and who some day will make fine supervisors.

Former B-36 drivers have never been behind a tanker. In the B-52 their problems begin.

Before taking action against these poor supervisors, however, we must keep in mind that we bear the same responsibility to them as they do to us. Our responsibility is to train them to provide for their welfare and mental attitude and to keep them informed not only of the mission requirements, but of what is expected of them. And some of us need to be reminded frequently of our responsibility.

This reminding must be a continuing program. It can not be a "one shot" deal. It's a requirement that will never end, for with the advancements in technology, industry, transition to new equipment and conversion of units to new aircraft, what's true today does not apply tomorrow. This fact must also be kept in mind in the directives to our people. They must be reviewed and written with the thought in mind that "all things do not mean the same to all people."

Perhaps this can best be illustrated if we consider the problem of conversion of a unit to new aircraft. Let's take the B-36 unit converting to B-52 aircraft. Such a conversion was recently completed within my own Wing.

Here was a proven, dependable, combat-ready unit which had demonstrated its reliability on numerous occasions. Many of our air crews were select crews, spot promoted professionals. Our line chiefs, crew chiefs and other supervisors had been in the B-36 business for many years.

When this new aircraft was delivered to us, however, our *skilled* B-36 crew chief became an *inexperienced* B-52 crew chief, with the only distinguishing characteristic that allowed him to be placed in a position of responsibility—his experience and background. Here is a situation which requires the utmost in supervision if the conversion is to be completed as programmed and remain accident free.

New equipment, inexperienced ground crews, inexperienced flight crews, what a potential accident waiting for a place to happen! And if the commander isn't on top at this time, surely he is destined for failure.

Normally we look to our supervisors not only to supervise but to train the inexperienced personnel. In a conversion situation however, our supervisors are inexperienced too. We can not establish a set of ground rules, then sit back and wait for the conversion to complete itself. The problems are many and varied, not only in the ground crew but in the air crews. For example, there are several different qualifications among the assigned pilots (former B-36 pilots, Blue Flame, B-47 and fighter).

In the phase of aerial refueling alone, each man's qualifications require a different type and amount of supervision. The B-36 drivers have never been behind a tanker. As a matter of fact, it took a bit of doing to try to convince some of them that they could put the aircraft into a 30-degree bank, without their crews ejecting. On the other hand, former B-47 pilots, for the most part, are highly skilled in aerial refueling, but they too have a problem—one of crew coordination. For with their new role in the B-52 program, the size of the crew has doubled. Higher headquarters has dictated the broad policy concerning the minimum qualification in each area of their training. The squadron commander, however, must consider each crew individually and then closely monitor its training.

We talk about air discipline. Air discipline to my mind is nothing more than the results of proper supervision. To properly supervise our air crews, a commander must jump to his hard hat and parachute.

With our present operational requirements, such items as alert duty, reflex programs and getting the word to the people all become a real job. I cannot remember a single time that I've addressed my crews when attendance was 100 per cent. Therefore to insure that our crews are being properly supervised, a commander must fly often.

Last summer one of our B-52s crashed on a go-around after making a GCA low approach to a northern base. Approximately 64,000 pounds of fuel was on board at the time of the crash. The aircraft had descended to VFR conditions beneath a 400-foot broken ceiling and executed a missed approach procedure with the stated intention of

returning to 20,000 feet for another penetration. During the climbout, control of the aircraft was lost and it crashed just outside the airfield boundaries. It had a crew of nine.

The mission was briefed to fly a formal standardization check to evaluate its crew performance and qualifications for upgrading to combat-ready status. The flight was uneventful except that excessive time was used in attempting to refuel. Weather was 400 feet broken, 800 overcast, four miles visibility with light rain and fog. Solid overcast existed to approximately 36,000 feet. A VOR penetration and low approach was made to runway 01, followed by a GCA to runway 19. The GCA pattern was normal in all respects with a maximum of 15 feet variance on glide slope.

Visual contact with the runway was made one-half to two miles as the aircraft descended below the overcast on GCA glide path. Descent was continued to approximately 300 feet, at which time a missed approach procedure was initiated with the stated intention of returning to 20,000 feet for another penetration. As power was applied, the aircraft accelerated normally, and witnesses saw it re-enter the overcast over the south end of runway 19. Altitude at this time was 800 to 1000 feet when visual contact was lost.

GCA monitored the aircraft on surveillance radar to a point approximately four miles south of the runway where it disappeared from the scope.

The surviving crewmember, who was in the right seat as IP, reported that as climb was initiated, airbrakes were lowered and the gear retracted. As the aircraft accelerated to 190K, the IP cautioned the pilot to raise the nose to attain the flap retraction speed of 180, to prevent exceeding maximum speed for full flaps. Shortly thereafter, the airspeed dropped to 170 but was increased back to 180. The IP raised the flap handle to the UP position as this speed was reached. During flap retraction, the IP stated that he monitored the airspeed and flap indications and called them off to the pilot.

This is normal procedure because of the possibility of a split flap condition occurring. Throughout the flap retraction period, the IP reported that everything seemed normal with no unusual acceleration or G forces experienced. He stated, however, that as the flaps reached the full UP position, he looked over to the J-8 attitude indicator which indicated an "extreme" nose-down condition. The word "Dive" was even visible. He did not recall the readings on the other instruments (i.e., airspeed, altimeter, vertical speed indicator), except that he remembered reaching an indicated altitude of 2700 to 3100 feet at some time previously.

When he saw the "Dive" indication on his instrument, he immediately got on the controls with the pilot and pulled back on the control column and, at one time (to the best of his memory), reached full aft position. According to his testimony, their efforts didn't change the indication of his attitude indicator. He also recalled that during this time—although he didn't know who—someone said on the interphone, "Pull it out," or "Let's slow it down,"or words to that effect.

The IP stated that an instant later he faintly saw the ground and decided that recovery was impossible. He raised the right ejection level, waited a "minute" and squeezed the trigger. His chute blossomed and he landed "immediately" thereafter, receiving second-degree burns as he descended through the fire from the aircraft impact explosion plus major injuries from the force of his landing. He ejected just 2.15 seconds before the crash.

This is one of those accidents that can be attributed directly to supervisory error. The supervisor in this case was the Instructor Pilot. Certainly the requirement to monitor the flap position indicator during flap extension or retraction is a requirement, but as the fellow says, "There's a time and place for everything." Had this IP monitored the flight instruments to a degree necessary to initiate corrective action soon enough, this accident would have been averted, and probably his flaps would have come up together too!

After hearing about this one, I have made it a point on each pilot proficiency mission that I fly with my crews, to give them a low gross weight go-around, retracting the gear and flaps. I've been told by more than one qualified aircraft commander that they had never performed this maneuver and were amazed at the acceleration and attitude. This is one of those times when I believe the commander must constantly stay on top, and be in a position professionally to demonstrate and explain to his crewmembers. We are all too prone at times to assign responsibility according to rank and overlook the required background and experience, and worse than that, after such an assignment, to feel that person is qualified by virtue of the fact that he *holds* the position.

Rank, in most cases, signifies experience. All too often however, junior officers acting in a capacity such as Instructor Pilot are hesitant or apprehensive when correcting a senior officer. Our flight crews must be indoctrinated that when a crewmember is assigned to a flight as an Instructor Pilot, the safety of the aircraft and its crew is in his hands. Crewmembers so assigned must be fully aware that as IPs they are supervisors and their decisions based on sound judgment and professional knowledge, must be the same, regardless of the status or rank of personnel aboard. It only takes a little bit of complacency or relaxation to reap a grim harvest in accidents and fatalities.

I recall still another major aircraft accident which was directly attributed to supervisory error and complacency. This one involves a National Guard T-33 type. This T-Bird had been scheduled to provide transportation for a Light Colonel to a conference in some nearby city. The Colonel had requested a Second Lieutenant from his office to accompany him for the purpose of fulfilling 60-2 requirements. Since the lieutenant was requested to act as pilot on this flight, it was naturally assumed that he was a qualified T-Bird man. Through administrative

Assuming that a person is qualified is often a fatal supervisory error.

error, flight orders were not cut, so the possibility of checking on his qualifications was ruled out. The Lt. Colonel, who was not qualified in the T-33, signed the Form 175 and showed himself as being in command of the aircraft. When they arrived at the aircraft, he told the lieutenant to take the front seat for the trip out and that he would fly the return leg. Right here the lieutenant started assuming and *assumed* the Light Colonel was a qualified T-Bird driver. Result: Two unqualified people in a brand new shiny T-Bird. Nothing need be said about how this flight ended. Had anyone concerned with this flight exercised not only supervision but a normal amount of curiosity, the Air Force would still have two more pilots, plus one more T-Bird in stock.

The tendency also is to assume that because a person has performed his duty for some period of time, he is qualified and has managed to stay abreast. In tactical units where IP duty and flight commander duty are considered an additional assignment, this can become an extremely weak area. Because of the relatively few qualified IPs assigned to a unit, their flying requirement is far above that of the normal crew member. Special emphasis must be placed on keeping these people informed, since they are the ones who are laying the ground work and the foundation of training for our new crew members. Not only Instructor Pilot duties—but routine duties assigned should be reviewed periodically.

The other day I read of an aircraft accident concerning an L-20 pilot, whose duty was transporting passengers between several outlying detachments. Shortly after takeoff from an island airstrip, the engine failed because of fuel starvation.

We learned from the investigation that a checklist was not used and the pilot did not check the fuel quantity before takeoff. A summary of events leading to this accident showed that the pilot was subjected to a monotonous operation, consisting of frequent landings and short flights over the same route day after day. As a matter of fact, a review of his records showed that he'd made 596 landings and takeoffs in a seven-week period prior to the accident.

On the surface it would appear that there should be no better qualified "lander" and "taker offer" in the Air Force. Maybe so. But in this case, a monotonous operation plus complacency lost the Air Force an airplane.

Only through increased supervision can this type of occurrence be avoided. All critical areas of command and supervisory control must be explored to the fullest extent possible to insure optimum performance, consistent with the professional requirements of our Air Force.

In each organization the commander is the key man and has direct control over deficiencies in training, supervision and air discipline. The commander must reassure that firm guide lines and high standards are established; only these can prevent mediocrity in his organization. He must set the example and interject himself into the safety program at every opportunity. He must demand to the fullest extent that supervisors and subordinates have no doubt of their responsibility to safety of the mission.

During recent years our professional progress has paid dividends in a gradual reduction of the accident rate. But further progression is being retarded by irresponsible acts or omissions on the part of nonconformists. Personnel in this category, including supervisors and subordinates, are jeopardizing the professional ability of our combat force. We must use a yardstick based on qualitative standard in order to eliminate deficiencies which cause personnel error type accidents and incidents resulting in aircraft damage and fatalities.

Our over-all problem is one of education. A high degree of training, supervision and air discipline can be achieved through the medium of education. In those cases in which this system fails and nonprofessional job performance is evident, in direct conflict with the requirements of our profession, our course of action should be obvious.

We have an extremely hard job ahead of us which must continue until all personnel fully accept and comply with the basic principles of safety as a way of life. A complete acceptance of job responsibilities, together with decisions based on sound judgment, are the basic elements necessary to sustain a professional combat force.

To insure that we do sustain this professionalism, certain facts must be kept in mind by all supervisors, and especially the commander.

First, the squadron commander controls the safety program within his own outfit. Only by the establishment and implementation of an aggressive program aimed toward accident prevention, can the over-all wing efforts be totally effective.

Second, the standard must be set and conformance to this standard insisted upon if the established program is to be effective. All personnel must be imbued with the idea that *perfection is not the goal, but the standard.*

Third, we must keep in mind that the days of flying by the "seat of our pants" are in the past. In this day, there is only one way acceptable to perform our job, and that is the "right way."

The only right way is the tried and true, proven method which is contained in the applicable handbook and other directives which govern the supervisor in his particular job. If a situation arises, for which there is no procedure or directive, then sound judgment must prevail. It is the responsibility of the squadron commander to insure that the training of the supervisor has been so thorough that all are indoctrinated with this concept. Our accident and fatality rates of previous years should be constant reminders of what can happen again, unless we comply fully with the responsibility of our profession.

Quite often some of us are guilty of taking short cuts to speed up the process of training in order to fill the squares. When this happens, the individual receiving the training is deficient until he learns by personal experience. In our business this can be disastrous.

When a supervisor fails to do his job properly, as evidenced by short cuts, the lack of knowledge, noncompliance and so on, it is obvious that the training rendered has been of little value.

The next higher supervisor is also just as responsible for these deficiencies. If he has no knowledge that these deficiencies exist, he is not maintaining adequate control of his subordinates or staying abreast of his responsibilities. Deficiencies will not occur if each supervisor fully accepts his responsibility and is intolerant of mediocre standards.

I've been squadron commander now for five years and during that time I have come to the conclusion that this world of ours is made up of three kinds of people:

- The thinkers who never do anything.
- The "doers" who never think anything.
- The "in-between" group—and from this group must come our Supervisors. ▲

Tiger or Disciplinarian?

Air Discipline is discussed so often in both generalities and specifics that it has become quite trite. We feel that the subject becomes very untrite, however, when its application becomes a matter of everyday realities, 24 hours a day, seven days a week. Most everyone thinks he knows what effective Air Discipline is or should be. But how many of us can shake ourselves loose from being "one of the boys" every time corrections and sometimes disciplining are called for? How many of us follow up at the grass roots, by taking a few minutes after even the most insignificant of minor violations or oversights occur, to counsel the culprit, or when called for, to read him the riot act if carelessness, negligence, or worse, wilfulness is involved? Finally, how many of us take the interest, time and trouble to make a written note of such action for future reference if the need arises?

It is an unhappy, but inescapable fact, that some pilots do not learn from mistakes, unless forced to do so. It is even more unfortunate that a few others have a tendency to be Dr. Jekylls and then become Mr. Hydes as soon as they are out from under the supervisor's thumb. Fortunately, the numbers of these people are small but experience has shown they contribute to unit ineffectiveness and pranged aircraft out of all proportion to their numbers.

What does it all boil down to? Effective Air Discipline in our Wing is considered to be a question of attitudes—something over which every pilot has complete control. Parenthetically, we consider military, maintenance and supply discipline to have the identical origin.

Even among the most experienced pilots we have to be on the look out for occasional faulty attitudes towards authority, procedures, the Wing and the United States Air Force itself. These attitudes are often engendered by a completely false notion in the minds of many, of what it takes to be a tiger. In too many cases our Tigers fit the SAC definition of a tiger: "A fearsome beast with long, sharp claws and teeth, and no brains." Any student of jungle lore knows that the tiger plays all the angles in his favor which will insure his getting the job done and keeping a whole skin. The fact that the tiger is aggressive and often exposes himself in the act of making the kill does not detract in any way from the effectiveness of his disciplined habits in finding and stalking his prey. If the tiger makes a mistake once, and he survives, he will never make it again.

Now, the tiger is an animal who reacts to instincts and stimuli, not logic. If we would be tigers, let's use all the tiger's habits of self-discipline in stalking, setting up and making the practice kill. Let's save the ferocity and devil-may-care attitude for the live kill. Let's play it cool, like the tiger, using everything that the experience of ourselves and others has taught us while applying the self-discipline of the tiger.

But this isn't enough! Let's use our own God-given intellects to anticipate and prepare for trouble. To do so is to avoid it in most cases. When trouble does come, let's use that intellect again, to get out of it. Finally, and most important, let's employ this same intellect to control our natural inclinations toward laziness, carelessness and wilfulness.

In our book, Air Discipline determines both the success and survival of our tigers. ▲

Colonel Milton B. Adams, Commander, 3525th Combat Crew Training Wing, Williams AFB, Arizona

THE CASE OF THE

There is one AFROTC cadet who has pretty strong reservations as to the glowing future of an Air Force pilot. You might say that his indoctrination to the wild blue yonder left much to be desired. Consider what happened to this now disillusioned lad when he reported to his college airport one fine day for his orientation ride in an L-17B. He had nothing but joy to look forward to. His pilot, a "well-qualified" IP in the reliable little machine, had already shown his ability to get five other cadets up and down with no trouble. The skies were peaceful and the beautiful fall day in New England had but an hour to go. Fifteen minutes of flight and our cadet would have made the first of what he hoped to be hundreds of takeoffs and landings in Air Force equipment.

Let's follow these two now — the captain and his trusting passenger— to see what befell them in their routine fifteen-minutes hop. The takeoff was normal and a slow climb was made into the setting sun. The captain felt the glow of pride familiar to any pilot when he takes another human into the air for his first ride. The cadet felt elation and complete trust in this intrepid pilot who sat so confidently beside him.

The beautiful serenity of this pair was rudely shattered however, when a few moments later the engine began to cut in and out. What could be wrong? The day was fine, the aircraft reliable, the engine capable. The cadet watched still trustingly as the captain reached for the fuel selector and lowered the nose in a turn back to the little sod airdrome. Why such a short flight, he thought? And why the look of worry on the face of that superior being, his pilot?

Meanwhile the pilot was rightfully concerned. The main tank showed eight gallons remaining and the auxiliary showed the same. Could the gages be wrong? He had taken off on the main tank, but at the first engine miss he had turned the selector handle to auxiliary, and turned on the electric fuel pump. The engine did not return to full power immediately so he had returned the selector to main. Eight gallons left, why no steady roar in the engine? He had just one choice now—get back to the field and wind up this last flight of the day.

He estimated his distance from the field at three miles. The turn back was held until runway 19 was lined up comfortably. Yes, he could make it! Down with the gear and flaps. At this time the engine failed completely and the trusty L-17 began to settle rapidly. No time to retract the gear and flaps now. It was the orchard for them. The plane settled into the apple trees and brush, finally coming to rest against a five-inch tree trunk, 90 degrees from the landing direction. Luckily, our captain and cadet were none the worse physically. Mentally, however, they were both in an altered frame of mind. The pilot turned off the switches and both climbed down to the ground to take a look at the battered Navion.

The wounds to the aircraft consisted of major damage to the right wing, the horizontal stabilizer and propeller. The nose and right main gear had collapsed.

The cockpit was checked by the investigator and the fuel selector was seen to be positioned to the main fuel tank. The battery switches were then turned on and the fuel indicator

Pilot, Supervisor and also the maintenance man conspired to make sure that there was to be at least one ROTC cadet with a hairy story to tell back in the classroom. And he's lucky that he has lived to tell it!

CARELESS

showed eight gallons on both tanks. When the fuel filter caps were removed, the main fuel tank appeared empty and the auxiliary tank showed fuel remaining.

No further investigation at the scene of the accident was made. The aircraft was trucked to its home base for a more detailed analysis. At the base all components of the fuel system were removed and bench checked. The only discrepancies found were in the fuel indicator and the fuel selector valve. The fuel indicator from the main fuel tank, when empty, showed eight gallons. while the indicator from the auxiliary tank correctly showed zero. The fuel quantity transmitter in the main tank proved to be the culprit. The fuel selector valve had a leak. Reassembled in the aircraft the fuel system and engine were given an operational check. The engine operated normally.

Pilot records were the next items to be checked. The captain had been given a checkout in the L-17 in one hour and ten minutes. On this basis he had been made an IP and sent to the college airport to take cadets on orientation rides! He had a total of nine landings prior to giving these rides.

On the day of the accident the plane had flown three hours and 15 minutes before the last takeoff. Refueling had been done the day before and one hour had been flown at that time. When our captain took over, the aircraft had 50 of the 59½ gallons of usable fuel remaining. Four hours and fifteen minutes of flying, including eleven takeoffs and landings were on the books when the careless captain took to the air with one more cadet. And there was adequate servicing for light aircraft at the field!

At the time of the accident, there were six tech orders not complied with, three on the aircraft and three on the engine. These were not a factor. However, many discrepancies were found in the aircraft forms, indicating unfamiliarity or carelessness on the part of the maintenance personnel. There was no evidence in the forms of any enforcement or surveillance of maintenance practices since IRAN.

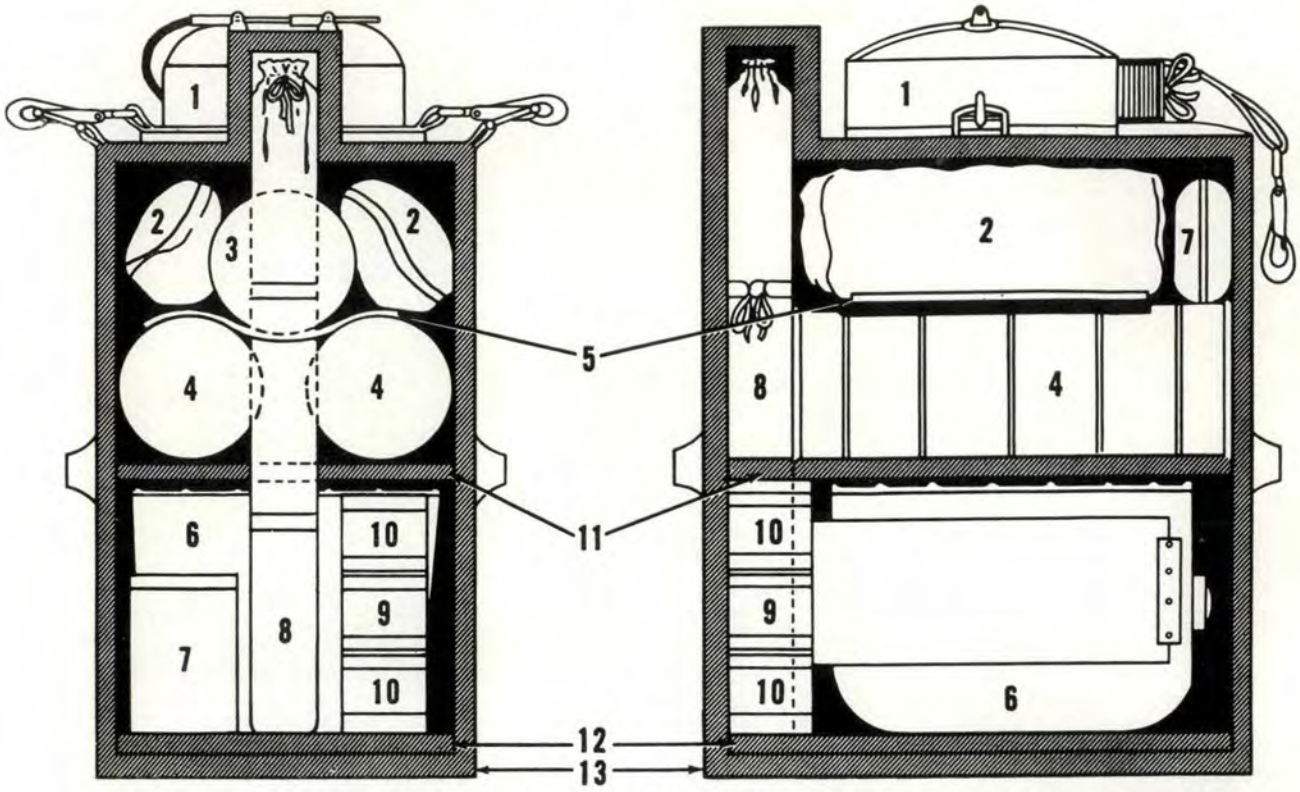
The accident board found that the primary cause factor was on the part of the operator in that he was not thoroughly familiar with the aircraft, its flight characteristics or its systems. Fuel consumption and management were no part of this pilot's training. Poor judgment in taking off with a known low fuel supply is inexcusable.

The supervisor came in for some well deserved blame on this one. Standards of proficiency for the pilot in this aircraft had certainly not been set properly when he was allowed to become IP after one hour and 10 minutes of dual flight.

Another contributing cause factor in this accident was maintenance error. Fuel quantity gauges were inaccurate and had not been properly checked. Maintenance records also were inaccurate and uncorrected, and the quality of maintenance and inspection was not adequately supervised.

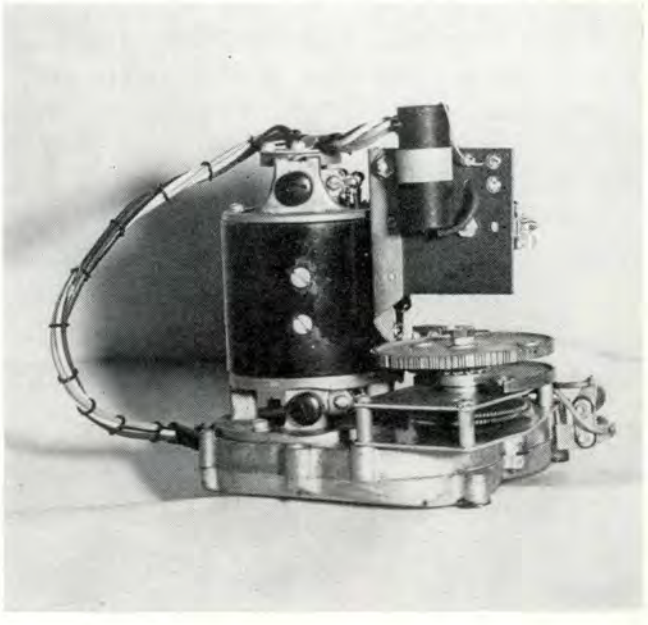
This accident—if we can call it that—just had to happen. Pilot, supervisor and maintenance men all seem to have conspired unknowingly in making sure that there was to be at least one ROTC cadet with a hairy story to tell back in the classroom. He's lucky he can tell it. ▲

Aboard every cargo or bomber plane during overwater flights, there is a highly useful piece of electronic equipment called the Gibson Girl. Its purpose is to save lives after an aircraft emergency at sea. To most airmen however, it has become a . . .



Schematic drawing of Radio Set AN/CRT-3. 1. Parachute M-390-A. 2. PAD (2 REQD) (Part of BG-155-A). 3. Balloon M-278-A (2 REQD). 4. Generator M-315-B Container (2 REQD). 5. Handbook. 6. Radio Transmitter T-74/CRT-3. 7. PAD (2 REQD) (Part of BG-155-A). 8. Bag containing Kite M-357-A Generator M-315-B inflating tubes (2 REQD). 9. Signal Lamp M-308-B. 10. Antenna Assembly AS-207/CRT-3 (2 REQD). 11 & 12. PAD (part of BG-155-A). 13. BAG BG-155-A.

The Gibson Girl is well padded as she should be, but her delicate innards, such as the signal coding wheel, can be badly damaged.



The soft aluminum case of the radio transmitter, though tough looking, is actually very fragile.

Forty Pound Football

When an aircraft comes into a depot for IRAN or crash repair, it is standard operating procedure that every piece of equipment aboard be checked for condition and reliability. If repairs are needed, they are made, and the piece of equipment is returned to the mother aircraft for more months of useful service. Sometimes the item under inspection is just worn out and a new one replaces it. The idea is to give the USAF pilot and crewmember the best available piece of machinery with which to do his job. He deserves this consideration and the Air Materiel Area concerned is charged with the responsibility.

Sometimes however, the men and women who work in the depot are convinced that the crewmembers of our USAF aircraft just don't care. They don't care enough to take reasonable precautions against damaging the equipment that is designed to save their lives.

In response to a phone call the other day, a staff member of this magazine went down to the Electronics Inspection Office of San Bernardino Air Materiel Area, here at Norton AFB, to take a look at the remains of some pretty high priced equipment. This equipment had never been in an aircraft accident, but it had been subjected to some rather unusual stresses. This equipment is commonly known as the Gibson Girl. To be more precise, it is the AN/CRT3 Radio Set.

The Gibson Girl is, or should be, a familiar and welcome sight to every man who has served as a crewmember aboard our larger aircraft. A shrewd guess would be that this is not the case, unfortunately. Judging from the treatment that this piece of survival equipment is exposed to, to many airmen it must be just another piece of junk which gets in the way.

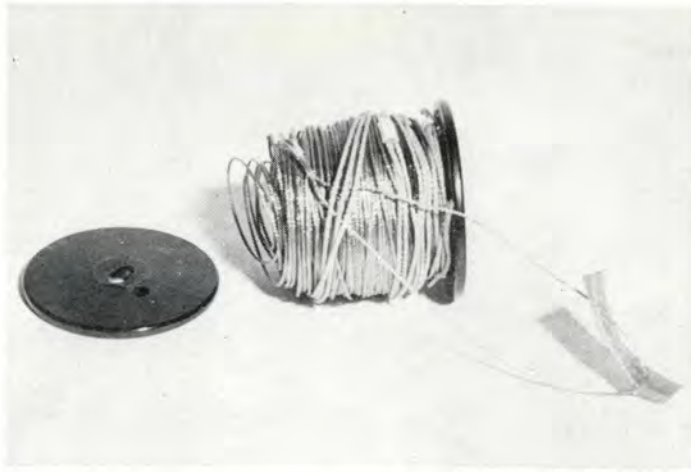
The pictures with this article can tell the story. The damaged components of the AN/CRT3 here at Norton fill a sizable space in the warehouse as they wait their turn to go into salvage. Take a look at the packaging diagram shown in Figure One. You will see that the transmitter itself is stored in the bottom of the padded bag. This is done for the simple reason that it is the heaviest item and anyone who has sacked groceries knows that the cans go on the bottom, and the eggs on top. Now the housing of the transmitter must be made as light as possible so it is fashioned of aluminum. In order for the aluminum to resist corrosion it must be of a special alloy. This alloy happens to be soft and easily dented. Tossing this bag out of the side of a C-124 onto the ramp is guaranteed to do the denting job.

To a person not familiar with the proper dimensions of the perfect Gibson Girl chassis these dents are sometimes hard to spot unless the yellow paint is chipped. But if these dents are not spotted during inspection, strange and terrible things happen to the inside workings. One of the most common malfunctions is that the coding wheel, the gear with spaced teeth to transmit your emergency message, rubs and jams against the case where the dent protrudes inward. Result: No message. No rescue.

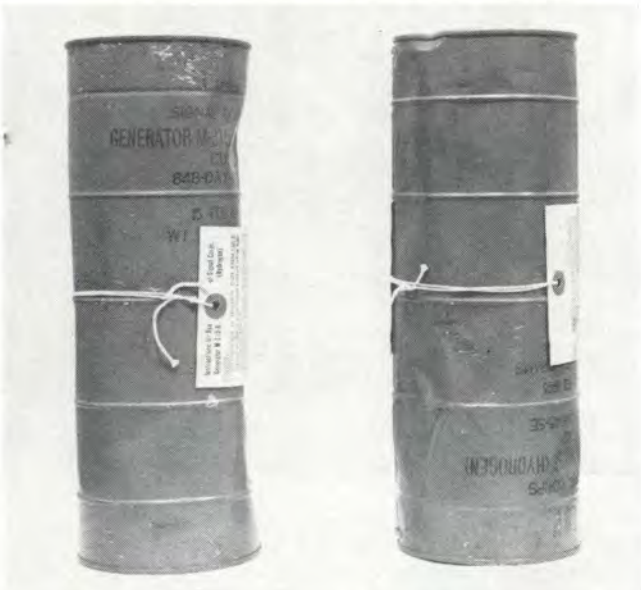
Every red-blooded American likes to know the score—whether it be a ball game or a shooting match. The score on damaged Gibson Girl radios goes like this:

From 15 June to 15 October of this year at San Bernardino Air Materiel Area, eighty-five AN/CRT3 units were processed through the Electronics Inspection Section. Within the whole bag assembly, with all the rest of the gear are two M-315B Hydrogen Generators, the gadgets that sit in the water and blow up your antenna balloon. So with 85 units being inspected there were 170 hydrogen generators involved. Eighty-nine of these generators were unusable because of dents in the sides of the cans, ranging from a quarter to one inch in depth. Go to one of your radio units right now, take out one of these cans, and the odds are that you won't be able to telescope the can in the proper manner to start the gas generating cycle. This means you would have to fly the kite to get the antenna airborne and on a calm sea this just isn't easy.

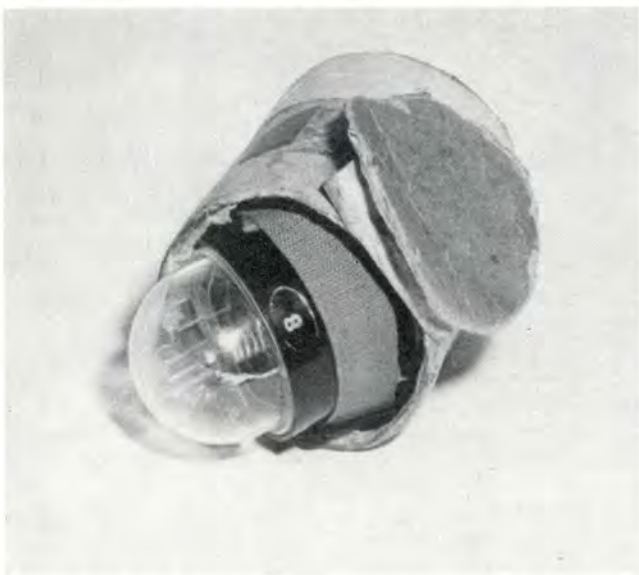
To go on with the score, one-third of all the transmitters themselves were damaged to the point that they were



Assorted items, such as the cans containing antenna balloons and the antenna wire spools are also being damaged.



Hydrogen generators, the gadgets that blow up the antenna balloons are unusable. The small signal lights are being crushed and cracked.



inoperative. Assorted items such as the small signal light and the balloon cans were smashed into uselessness. It takes no imagination to picture what the small fragile kite rods looked like when the bags were opened. It is rather difficult to straighten these rods out when the hands are cold and wet after a ditching at sea.

How are these sets damaged so badly? There is only one answer.

The crewmembers are guilty. They are using them for beds; the bags are being stored under heavy freight or parachutes; the bags are being tossed into and out of the cargo hatches. One crewman even testified that it was normal procedure to throw the bag out of the B-50, then jump on it to break his fall on the hard concrete. Now do you wonder? Check Section II, paragraph 2-5, of T.O. 12R5-2CRT3-2. It is very definite here that the proper installation in the aircraft is the only way to prevent damage to the radio set. Don't let the padded bag fool you. This piece of electronic equipment is fragile!

At San Bernardino Air Materiel Area, the quality control people are deeply concerned about this matter. They have submitted, through channels, two pieces of paper work. The first is a Time Compliance Tech Order change suggesting that a large decal be stamped on the bag assembly. This decal will give fair warning that the assembly is fragile. They have also submitted an Unsatisfactory Report No. 58-398, dated 2 May 1958, calling attention to the need for more adequate warning to crewmembers.

It would appear though that the crewmember himself should get into the act and take a good long look at the Gibson Girl. He should take a look at it when it is issued, prior to the overwater hop. Then he should take another good look at it at the end of every trip.

Personal Equipment technicians will be glad to go over the Tech Order with anyone. They can point out a good visual inspection checklist to follow. Within the large yellow bag itself are copies of the Dash One and Dash Two, covering the use and care of this Radio Set. The point to keep in mind is that the Gibson Girl is a piece of sensitive electronic equipment, which can save your life. Take care of it. It is not a forty-pound football! ▲

THE ESSENTIAL ELEMENT

Brig. Gen. Richard T. King, USAF
Vice Commander,
Air Proving Ground Center
Eglin AFB, Florida

It has been said that Safety is an essential element of good business, and regardless of its motive (humanitarian or economic), the cost is much more easily sustained than the price usually paid for the lack of it.

Let us examine this statement and apply it to the airplane operating business.

First, it says that Safety is an *essential element*. The dictionary defines the word "essential" as belonging to the very nature or essence of a thing and, therefore, incapable of removal without destroying the thing itself, or its character.

If we accept the idea that Safety is an essential element of good airplane operating business and that good airplane operating business is necessary to the efficient accomplishment of the Air Force mission, then we must be careful to insure that safety is integral in every phase and function of our operation; that we do not fall into the trap of ignoring safety completely, merely because certain phases and functions of our operation contain fewer elements of risk. On the other hand, no valid and essential mission should ever be restricted or inhibited solely in the interest of safety.

What is the cost of Safety? This is a little more difficult to analyze. First, we must recognize that no single human being is capable of synchronizing the many components and purposes of our complex airplane operating business into a single mission performing effort. This overall effort must be composite of the specialized efforts of many: maintenance, operations, personnel, communications, and, in a like manner, safety. The cost of Safety then, is much more than the costs of running a flying safety office. It is an inherent cost in the functions of all staff and operating components. We may never be postive that these costs guarantee the Safety of a specific airplane or crew but it is a fact that the money required to replace one of the most inexpensive of our late model fighter airplanes would pay all the costs of Safety for several years.

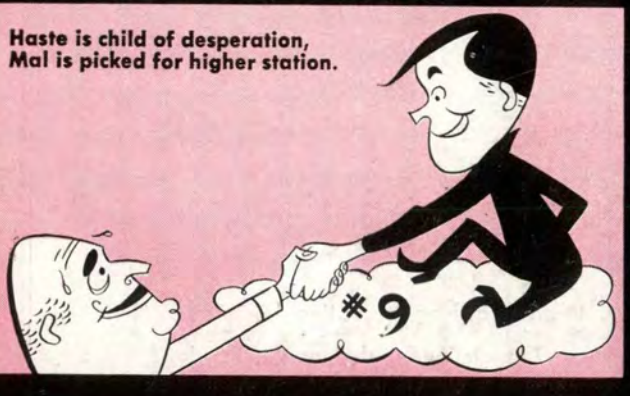
Safety then, in this perspective, adds up to efficiency; efficiency in our operation and, therefore, efficiency in the weapon systems we test and prove for the USAF combat capability.

New C.O. is worried lad,
Attrition's hurt him pretty bad.

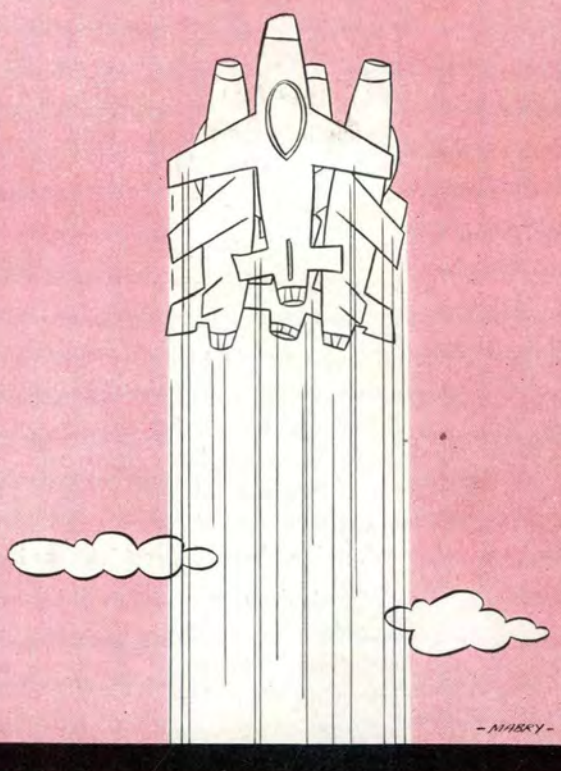
MAL FUNCTION

PERSONNEL STATUS

Haste is child of desperation,
Mal is picked for higher station.



Mal is filled with high elation,
Packs his boys in tight formation.



Trying bombshell, comes the grief,
Mal forgot to hold the brief.

New C.O. has size 12 shoes,
Mal has supervisor blues.

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