NOVEMBER 1955

# FLYING SAFETY

UNITED STATES AIR FORCE




## Charts Have Changed Since the Dark Ages

see page 16

# FLYING SAFETY

VOLUME ELEVEN NUMBER ELEVEN

- A good example of safety through standardization is the story on the "Shakedown Artists" starting on page 4.

- A real hair-raiser begins on page 10. An ADIZ violation results in one each "Dog in the Drink."

- The Aeronautical Chart and Information Center prepared an article on maps and charts which tells what charts are available, along with the requisitioning procedures.

- Page 22 carries an article on the differences in operating the extended and slatted winged F-86 aircraft.

- Our cover is an ancient chart, drawn about the 13th century. It shows a continent in the Southern Hemisphere called Antichthon, believed uninhabitable because all survivors from the Flood landed north of it on Mt. Ararat.


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SUBSCRIPTIONS—FLYING SAFETY is available on subscription for $3.00 per year domestic; $4.25 foreign; 25c per copy, through the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Changes in subscription mailings should be sent to the above address. No back copies of the magazines can be furnished.

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USAF PERIODICAL 62-1


# Flight Safety

# Awards

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To earn is to receive. Engraved Flying Safety Plaques have been awarded to the twelve organizations listed below, in recognition of their exceptional accident prevention records from 1 January through 30 June 1955. These presentations are a compliment to the efforts of each officer and airman for his part in advancing the aims and objectives of a constant and integrated accident prevention program.

## Jan. through June 1955

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**9th Bombardment Wing, Mountain Home AFB, Ida.**

**AF Cambridge Research Center, Hanscom Fld, Mass.**

**1st Weather Wing, Tokyo, Japan**

**Iceland Air Defense Force, Keflavik Airport**

**3604th Combat Crew Training Sq, Luke AFB, Ariz.**

**456th Troop Carrier Wing, Charleston AFB, S.C.**

**479th Fighter Day Wing, George AFB, Calif.**

**8th Fighter Bomb Wing, Itazuke AB, Japan**

**34th Air Division (Def), Kirtland AFB, N.M.**

**406th Fighter Interceptor Wing, Manston, Eng.**

**482d Fighter Bomb Wing (2589 ARFC), Dobbins AFB, Ga.**

**133d Fighter Interceptor Sq, Grenier AFB, N.H.**

# SAFETY

## *a Product of training*

Colonel R. K. Gallagher, Director of Flying Safety, ATC

THE REQUIREMENT for safety of operation is implicit in the mission of all commands; however, Air Training Command has in addition the special responsibility for safety as a direct product of its training programs. This is true because Air Training Command is the prime source of personnel for other commands, and as a result our approach to accident prevention must be dual in nature.

First, we have the responsibility of preventing accidents while the student is undergoing his flight training, and, second, we must instill in the student the skills, techniques and practices that are essential for safety after graduation. These two objectives guide our accident prevention program and are basic to our efforts to graduate only those students with the necessary ability, knowledge and confidence to perform the tasks that will be required of them in their future assignments in the Air Force.

To achieve our objectives we are continually evaluating the training programs through a system of close supervision, analysis and frequent standardization checks of instructors and students. By these methods and by striving to improve the quality of instruction, we are working towards our goal of a safe program and a safe and capable graduate.

In the pursuit of our twin objectives, we have required flight safety and supervisory personnel to remain operationally qualified in the mission aircraft. I feel that the best approach to accident prevention is to require these people to have a complete understanding of the training mission and to remain active in the program so that any hazardous condition or unsafe technique can be immediately detected and corrected.

We are continually making objective evaluations of each maneuver and mission to reduce the hazards and improve techniques that will achieve greater safety and not reduce the combat capabilities of the graduated pilots. With this concept we intend to remain operationally minded and are continually looking forward to meeting the problems rather than to have an "after-the-fact" approach to accident prevention.

Both Crew Training Air Force and Flying Training Air Force have organized strong Wing Standardization Boards which are used to monitor the quality and standardization of instruction throughout the training programs. Flying Training Air Force, through its central standardization boards at Craig Air Force Base and Reese Air Force Base, assures command-wide standardization in the primary, basic single engine and basic multi-engine programs. Thus, weak points in the training programs can be spotted and changes put into effect command-wide with a minimum of time and effort. For example, when compressor stalls were recognized as a general problem area, particularly in the F-86, the corrective effort in teaching proper throttle technique was not limited to the graduate schools but was taken all the way back to the source, the contract primary schools, where greater emphasis was placed on smooth throttle manipulation.

The flying safety efforts of the Directorate of Flying Safety, Air Training Command, are directed primarily to assisting bases of this command in the recognition and elimination of any condition that may affect the accident potential.

This program is accomplished through flight safety surveys and staff visits by personnel of the Directorate of Flying Safety, by making on-the-spot recommendations of deficiencies in the training programs, traffic patterns, operating conditions at the bases and by assisting base commanders and Training Air Forces in obtaining the aid that is necessary in preventing further aircraft accidents. The concept under which flight safety surveys and staff visits are conducted is to take an active interest in the mission of the base by participating in their flying program, attending briefings and discussions with base personnel from the supervisors down through the buck instructor. Participation in the flying program is accomplished by flying with student pilots if dual control aircraft are used in the program, or as a member of a student formation training flight in a position other than lead. The pilots flying these missions and evaluating the training program are highly qualified operational pilots. The combined experience of this office represents a pilot qualification in every operational jet aircraft in the Air Force.

Recent flight safety surveys have revealed the following major areas requiring and receiving additional emphasis in our training programs:

1. The tight power-off traffic pattern has been a major factor in many Training Command accidents in the past. The power-on concept has been adopted command-wide, not only as a safety measure, but as a teaching method to allow easier transition of the student to heavier and faster operational aircraft after graduation. Acceptance of this concept has been

An impressive and effective device for promoting flying safety is this F-86 of the Training Command.

largely a job of selling the power-on approach to supervisory personnel by actual demonstrations. It is a technique that requires their own adherence and constant backing if the principle is to be observed throughout the training programs. During flying safety surveys conducted by our Directorate, these approaches are being checked, and the selling job continues to eliminate the few remaining nonconformists in ATC.

2. Fuel mismanagement, particularly in the T-33, has contributed its share to the Air Training Command accident total. Accidents of this type happen mainly to inexperienced pilots and result from inattention to fuel supply or improper manipulation of the fuel switches. The present solution to this problem lies mainly in the area of operational techniques and sound training. Formations are being spread during fuel and oxygen checks to allow the students time to thoroughly check all instruments and to determine the actual fuel remaining as well as to make accurate tank selections as required.

3. Air Training Command has always firmly believed that navigational proficiency flights are an essential part of a pilot's training. Successful completion of missions of this type add immeasurably to a pilot's confidence and to his ability to perform his job under a variety of conditions. However, indiscriminate release of pilots on cross-country flights has resulted in an unacceptable number of accidents. Many of these were caused by the complacent attitude of many new instructors or combat returnees. The new instructor had plenty of time in the traffic pattern but limited experience in planning and flying a cross-country. The combat returnee had very little Stateside or single plane cross-country experience. It was realized that restricting cross-country flights would stop the accidents, but would not correct the deficiency that caused them.

The Air Training Command's policy is to encourage navigational proficiency flights and supervise them closely. This supervision means more instruction and practice in planning and flying a good flight plan. Now, a pilot must show adequate planning, good judgment in selecting a route of flight and refueling points before a navigational proficiency flight is approved for him.

Also, several accidents have resulted from pilots landing on strange

*A veteran fighter pilot with 260 combat missions during WW II and Korea, Col. Gallagher has 1300 hours in jets, with 5400 hours total time.*

*He has flown every type of fighter in operational use in the USAF today.*

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5000-foot, wet runways with jet aircraft. In most instances the tower advised that the runway was wet, but the pilot did not know how much braking action he could expect. Since each runway surface offers different braking action when wet, we have recommended that all bases rate the braking action as good, fair or poor on wet runways and that this information be included in the remarks section of the Radio Facility Chart. This will assist the pilot in selecting a landing field if precipitation is reported or forecast for a given base.

4. One problem receiving much attention Air Force-wide as well as in Air Training Command is VFR separation of traffic. Although other commands have their own problems in this area, we feel that ours are unique and much more serious. One need only visit an Air Training Command base, some of them flying 10,000 to 15,000 hours per month, to realize the tremendous amount and variety of training going on within a relatively limited area. This training load imposes hazards not normally found at bases outside of Air Training Command and requires that utmost care be taken to avoid mid-air collisions.

Within Air Training Command, this problem can be separated into two major categories: The separation of VFR instrument training and the control of formation flights. Several of our bases have instigated VFR approach control systems operated in a manner similar to a normal IFR approach control, which through centralized control of altitude and time separations have helped reduce the accident potential. Although the problems differ at each base, making it impossible to use one standardized procedure throughout Air Training Command, studies have been initiated to adapt variations of this system to all Air Training Command bases.

The second major collision category is that involving formation training. Formation collisions are generally of three types: collisions within a formation, collision between non-associated flights or elements and collisions during simulated combat missions. Although all the hazards associated with formation flying cannot be eliminated without compromising the quality of training, some steps can be taken. We have recommended the separation of flights by altitudes and areas, the loosening of formations during cockpit checks and the addition of an instructor pilot in either the Number 3 or Number 4 position of a simulated combat mission.

Training cannot be a one shot affair for either the student or the experienced pilot. It requires constant follow-up action by the training activities and each individual pilot must do his part in maintaining his own proficiency. I believe that one of the best examples of the necessity of this continuation training is the apparent increase in the number of accidents resulting from flameout patterns and approaches in the graduate schools, while in undergraduate training the student practices these approaches constantly and achieves a high degree of proficiency.

Upon graduation and after completion of the initial check-out phase in their tactical aircraft, this subject is neglected with a resulting lack of proficiency and knowledge of emergency procedures. Training must not stop with the acquirement of initial proficiency.

I have attempted here to outline only a few of the items where training produces a safe operation and a safe and efficient product. It is my belief that training is the key to flying safety and that efficient training is dependent on careful planning and close supervision. Although the instructor pilot is the backbone of our training programs, the key man in the accomplishment of our mission and in the quality of our graduates is the training supervisor. The future of our Air Force is in his hands. ●

Here is a story of flight safety at work. Object . . . crew proficiency.

# Shakedown Artists

By Maj. Joseph P. Tracy

IN JULY 1954 FLYING SAFETY published a Well Done for Major Samuel W. Tyson of the 374th Troop Carrier Group. To refresh your memory a bit, all Sam Tyson did was bring a C-124 in for a successful landing after losing an engine. It just happened in this case that he actually lost the engine. Gone. Missing. Departed from the aircraft. In fact he did such a good job, the airplane is flying today, none the worse for the experience. This article deals largely with Sam and his people.

Recently we took a swing through the Far East in quest of material and were fortunate enough to get tangled up with the 374th Troop Carrier Wing, commanded by Col. Adriel N. Williams, and had a chance to observe their exceptionally fine operations, first hand. What impressed us most was their triple-barrelled program featuring crew integrity, a standardization flight crew and an aggressive maintenance organization, all integrated to produce safety of flight by providing proficient crews to operate near-perfect aircraft according to sound procedures.

Our interest here is in the flying game; consequently we will cover only crew integrity and standardization. (For the maintenance side of the story see "Rx For Engine Longevity" in the December issue of *Aircraft Accident and Maintenance Review.)* Sure, we've seen standardization programs before and plenty of good ones, but we feel that this program has certain facets which well might be adopted by other transport organizations within the Air Force.

### Must Know Their Job

The 22nd and the 6th Squadrons of the 374th are equipped with C-124s, and many of their missions are devoted to carrying passengers and lots of them. Every crewmember has a tremendous responsibili these men must know their job.

Naturally, the 374th has been operating under a standardization set-up for some time, but recently it was decided that even more emphasis should be placed on getting each air crewmember standardized to the nth degree. Literally, this means that any crewman can be interchanged from one crew to another if need be, to a point where all procedures are identical, even down to interphone phraseology and techniques.

Credit for recognition of the need, conception of the program and master minding it to successful fruition goes to Col. Hollis B. Tara, Commander of the 374th Tactical Group. Col. Tara appointed Capt. P. G. Smith as head of the original standardization flight crew team. He was given carte blanche as far as picking his men went; needless to say, he combed the organization to get the finest available for each crew position.

However, they didn't start operating immediately in a haphazard manner. Instead, they sat down and wrote the book; the publication contains every SOP for each crew position, from preflight to engine shut-down. After it was drafted it was sent to the squadrons concerned for review and comment. After everyone had had a crack at it, suggestions and procedures were thrashed out by a committee composed of the top brass, squadron commanders, IPs, engineering officers and operations personnel. After that, all agreed-upon changes were incorporated in the manual and the standardization board was ready to roll.

At this point, Capt. P. G. Smith, his Flight Engineer, M/Sgt. James W. Weightman and Radio Operator A/1C Calvin Green had reached the end of their tours in the Far East theater. Maj. Tyson, a Squadron Flight Commander, was selected to take the ball from this point. After thirty days of coordination and stabilizing standardization check flight procedures with Capt. Smith and his crew, Maj. Tyson was ready to roll.

As the system is now programmed, each flight crew receives a proficiency check at least once every six months. It's a thorough shake-down that is accomplished while performing an actual mission. Further, after the flight is over, every crewmember is given a written examination, covering all phases of his particular duties. There it's rough, but believe us, it pays off in the long run.

We decided the only way to get a good picture of this operation was to take a trip with the standardization crew and observe them in action. Consequently, we got ourselves put on crew orders for a mission to Okinawa and return.

We arrived at the squadron operations shack at 0530 and stood in the rear of the ready room while Capt. Ernest W. Frost, Aircraft Commander, briefed his crew. We noticed that while the stand-crew members listened attentively, no one took notes. This struck us as odd, and we queried Maj. Tyson as to how discrepancies were noted.

Sam told us, "It's our experience that it is poor psychology to make notes in front of personnel being checked. We have checklists for every phase of the operation. Whenever the opportunity presents itself, we bring our notes up to date. It's a progressive thing. We've worked with this thing long enough now so that we catch discrepancies fast, file 'em away mentally and jot them down later. It's surprising the number of mistakes we pick up at positions other than our own."

### Individual Checklists

After the briefing, the crew proceeded to the aircraft and started the preflight inspection. Each crewmember had his own checklist to accomplish and was accompanied by a member of the stand-crew.

The preflight inspection is a combined effort by the engineering and communications maintenance crews, plus the flight crew assigned to the aircraft. Normally the maintenance crews accomplish their phase of the preflight prior to the flight crew's reporting to the airplane. Accomplishment of the aircrew preflight inspecton checklists completes their responsibilities of the Dash Six Tech Order.

During the inspection we noted that several minor discrepancies were brought to the attention of the crew chief for necessary action. Upon completion of the inspection, each individual initialed the Dash Six worksheet in the appropriate column. We asked Master Sergeant Stanley Hall, Flight Engineer of the stand-crew, how this system worked when the aircraft was away from its home station.

"Well, sir, it's like this," said Hall. "When the plane remains overnight, away from the home station, the flight engineer and the assigned crewmembers will accomplish the radio and ground crew's flight inspection requirements and certifications. At intermediate stops, the flight engineer and crewmembers accomplish the through-flight inspections and the flight engineer accomplishes the necessary forms and certifications. It's up to the squadron maintenance officer to furnish an up-to-date Dash Six worksheet prior to each flight, and, of course, we have to keep it current at all times."

### Passenger Briefing

Once the inspections were completed and minor discrepancies cleaned up, the aircraft was ready to go. At this time, passengers were brought to the plane for loading while the flight crew proceeded to base ops for final weather briefing and to file clearance. The stand-crew Loadmaster, T/Sgt. James E. Stewart and the Flight Mechanic, T/Sgt. L. E. Beddow, remained with the aircraft to observe loading technique of the assigned crew.

Maj. Tyson and the two navigators assigned to the stand-crew on this mission, Maj. Joseph H. Wehrle and Capt. David D. Tracy, accompanied the crew to the weather briefing. Wehrle is currently taking over from Tracy, hence the two navigators for this particular trip. This was almost a case of the checkers checking the checkers.

Needless to say, the complete flight planning by the crew was closely

Major Samuel W. Tyson heads up the standardization board for the 374th crewmembers.

Following a complete preflight check the pilot makes a last minute instrument panel inspection while a standardization board member observes closely. Short cuts are taboo in this outfit.

Navigators also get a thorough route check to insure the highest degree of proficiency.

observed by Maj. Tyson and the two navigators. We got sort of extra interested, too, as the weather wizards casually informed us that not one but two typhoons lay between Tachikawa and Okinawa. But, after some close checking, it was firmed up that we could pass safely between the two storms, though it was obvious that some dirty weather was in the offing.

Returning to the airplane, we got in on the last of the passenger briefing, then leaped aboard and shortly thereafter were airborne in the great iron bird.

As soon as things settled down to routine flight, the stand-crewmembers got together to compare notes and fill in their own checksheets. This was an especially sharp crew being checked and there appeared to be a dearth of discrepancies.

The trip to Okinawa went off smoothly in all respects. As we progressed along the route, it was soon apparent that the crew had almost forgotten that they were being checked. These men knew their business and weren't the type to get their wind up easily.

After breaking out over the island about 2000 feet, Maj. Tyson put the aircraft commander under the hood for the remainder of the run. GCA picked us up and brought us in for a landing. This is SOP. In this outfit all landings are made from a GCA run, regardless of the weather.

We off-loaded, had a bite to eat and returned to Ops to file for the return trip. Despite PIREPS to the contrary, the weather boys told us that the typhoons would behave themselves and we could get home with no great amount of sweat.

Tyson informed us that on the return trip, the aircraft commander would be checked as an IP flying in the right seat while instructing his assigned pilot. That is just another wrinkle in the program. In reality, Capt. Frost was getting a double dose.

The first hour went along smoothly, then the radio operator came up with a rather disconcerting report. While he was informing the pilot, the stand-crew radio operator, S/Sgt. Robert J. Schmidt, gave us the gist of the message. It seemed that Tachikawa, our destination, was then carrying "Condition One," which in typhoon language means that the base was being evacuated. We were given Nagoya as an alternate and Tyson left the decision up to the aircraft commander. Return to Kadena or proceed to the alternate. Capt. Frost elected to continue, and we finally arrived at Nagoya where we RONed.

Humorously enough, we found that the typhoon had veered off at the last minute and the Tokyo area had not received even a drop of rain although aircraft had evacuated. Such are the antics of the beasties.

### Crew Critique

After getting back to Tachi, we sat in on one of the most interesting phases of the operation. This was the crew critique.

Starting with Maj. Tyson, each member of the stand-crew discussed the discrepancies as well as very satisfactory operations for their respective crew positions.

Out of the many checklists and SOPs for each phase of the mission, only a relatively few minor discrepancies were noted. Just to show how thoroughly this standardization business is being taken, the aircraft commander and pilot were reminded that they should always check for fuel service immediately after landing and not wait until departure time approaches. Another minor discrepancy was noted during the power stabilizing check. The pilot was also informed that the gear and flap handles should not be moved to neutral, but should be left up after takeoff until the aircraft is completely squared away, especially under IFR conditions. Finally, they were referred to the manual on low visibility approach procedures.

The engineer's discrepancies were very minor. However, he didn't get with the scanner and go over the 781-2 and 3 of their checklist together. He failed to check the aircraft heaters on the ground. When he questioned the latter he was informed that the possibility always exists that conditions might indicate the necessity for a climb to high altitude. Heat then might well be necessary. Also as a safety-of-flight item he personally should have checked that the jettisonable life rafts were locked in place.

The scanner was complimented on his performance. It was noted, however, that prior to initial takeoff, the ADI tank was empty. Admittedly, he

Engine analysis procedures are performed by the Flight Engineer as a stand-board member looks on. Discrepancies in techniques are discussed later during post-flight critique.

had ordered it filled, but he didn't visually check for proper level or security of the cap afterwards. During the climb-out he crawled down to check the security of the "P" compartment. This was okay except for the fact that he had to take off his headset to do so without getting a crewmember for stand-by. The manual requires that all stations are covered at all times.

The radio operator didn't check interphones while performing his part of the preflight inspection, and the cockpit clocks weren't hacked.

The loadmaster did an excellent job, generally. He failed, however, to check the emergency equipment that is specifically set aside for the crew and didn't double check the jam latches after closing the nose doors. He also overlooked the open hatch in the main cabin that provides entrance to the "P" compartment. This should always be closed while loading passengers.

### No Short Cuts

All in all, this was an excellent crew. The few discrepancies noted could be attributed to just one thing. Failure to completely follow their checklists and the manual. This, then, is where the real value of the standardization flight crew shows up. Although none of the oversights were of any appreciable consequence, the fact remains that once one starts to take short cuts, or to skip even minor items, then as surely as the sun will rise tomorrow, such actions will lead to greater carelessness. Eventually they can become deadly. By catching these items, the stand-crew keeps all concerned on their toes.

The last part of the stand-crew check took place on the following day when each crewmember was given a closed book examination. These exams cover a multitude of subjects applicable to any given crew job and are based on everything from common sense to highly technical aspects that must be understood thoroughly to be answered properly.

We're glad to report that everyone passed with flying colors. And it makes you feel pretty good to know that we've got an Air Force full of real sharp guys.

We were very impressed with the whole operation, but we still wanted to observe a crew in action without a stand-crew watching over their shoulders. Col. Tara suggested that we accompany a special mission to Thailand to see just how well standardization worked in every-day operation.

As a matter of interest, this mission was actually a back-up for the first jet aircraft to be given to Thailand by the U. S. Air Force. Our part in it was carrying a refueling unit to Saigon, where the T-Birds were to stop before proceeding to Bangkok.

Each jet was flown by a Thailand officer and an American IP. Our aircraft, of course, leaped off ahead in order to pick up the refueling trailer at Clark Field for ultimate delivery to Saigon. In addition to this little dude, we had a fairish load of JP-4 in drums, 18 passengers, a couple of tons of baggage and the usual assortment of odds and ends.

CW messages received by the Radio Operator are monitored for speed and accuracy.

Right from the start, the crew functioned just as though a standardization crew was breathing down their respective necks. Their procedures were the same as we had observed on the previous flight and our interphone contacts with them indicated that the SOP for such minimized chatter was being religiously observed at all times.

Capt. Ralph A. (Doc) Mills was the aircraft commander, and they don't come any better than this lad. He had a really sharp crew composed of 1st Lt. Robert W. Schmeling, pilot; 1st Lt. James W. Visscher, navigator; M/Sgt. John F. Bistrick, engineer; A/2C Billy R. Dickey, scanner; A/1C Robert D. Gavich, radio operator and A/1C J. O. Corral, loadmaster. This outfit proved that under nasty conditions they could really function at high speed and at top efficiency. But more about that a little later.

Our arrival at Saigon was heralded with considerable arm waving on the part of the local troops. In

Above, after landing a visual inspection is performed as part of the post-flight procedures. Below, even the Loadmaster is checked for compliance with SOPs.

fact, they tried to wave us through a narrow gate within their barbed wire enclosure that was just too close. Doc Mills finally cut the outboard fans and we crept through, but it w touch and go. It seems that some of the immediate neighbors take a dim view of military operations and the old fencing took us back to the 1940-odd era elsewhere.

Once inside, the crew found they had to exercise considerable ingenuity in getting the tank trailer off the plane. There was a decided lack of equipment available to make the job easy, and consequently everyone turned to and assisted in easing the thing down the ramp. The spectators were giving a great deal of advice but that would be true in Saginaw as well as in Saigon. Finally, we got the cantankerous piece of equipment on the ground, and all breathed easier.

### Crewmen Aren't Porters

To digress for a moment, we noticed something here that really scalds us. We've been traveling around via military air, either as crew or passenger, for a good many years, but there is one thing that continues to be a source of constant amazement to us. Many passengers on these flights seem to feel that the crew should and will handle their perso baggage for them. True, you won find many aircrew passengers that pull this caper, but the people who evidently don't travel much by air sort of assume that the flight crewmen are their personal lackeys in the baggage department. This trip was no exception. Quite a few of the troops scurried off the plane, leaving the unloading to the crew. Needless to say, the offenders were quickly disillusioned by the AC and in no uncertain terms either.

The next hop into Bangkok was strictly routine. Inasmuch as we had kept one jump ahead of the annual monsoon, the weather was good but the T-Birds that followed were not so fortunate. It took them three days to catch up. Finally, we got off again and returned to Saigon to pick up that infernal trailer.

While getting loaded, we ran into a safety tip that's worth passing on. It's just one of those little things that you should paste in your hat for future reference.

Sergeant Bistrick got out his slipstick, figured the load and computed fuel needs for the hop to Clark. came out pretty much on the plus sid

of the ledger. About two hours of surplus gasoline after arrival at our destination. However, the weather being what it was, Capt. Mills decided to take on a thousand pounds or so as a safety cushion.

Securing fuel at Saigon was quite a feat in itself. After getting about a dozen assorted military and civilian people into the act, we finally convinced the local fuel merchants that some go-juice was needed. This apparently upset their normal day-long siesta.

In due time a decrepit old truck chugged up with the refueling nozzle bumping along the ground. A couple of natives dismounted, looked up at the C-124 and then shook their heads. They were far more impressed with the airplane than we were with them.

Doc Mills came down the ramp, looked at the truck, then yelled at his crew to hold it. He scrounged around and found a small glass jar, filled it with gasoline from the truck and held it up to the light. It looked more like dirty water than fuel.

Next he looked around the ramp until he located a short length of wire, stuck it in the jar and started to agitate the fuel with a swirling motion. In a moment the liquid was turning like water down a drain. Immediately the foreign matter in the gasoline collected in a column, gradually dissipated in speed and settled to the bottom of the jar. Over a teaspoon of dirt and grit had collected in this one spot.

Doc didn't need an interpreter to say "No, thanks!" The truck crew shrugged, climbed back into the vehicle and went off down the road with the nozzle of the hose still bumping on the ground.

Maybe you'll never get stuck for fuel in a like spot but if so, remember this easy check for contamination.

After some more backing and filling, we finally got the trailer aboard, cranked up and headed for Clark. The weather, to coin a phrase, was alternately good and then lousy. Mostly the latter.

This wasn't too important until about half way out when, without warning, we lost almost all of our instruments. There was no turning back now, and the only thing left was the old needle-ball and airspeed. Oh yes, the stand-by compass. Fortunately, the electrical failure didn't affect the radios.

### Practice Pays Off

This was where the constant practice, featuring basic instrument flying, so thoroughly followed by the 374th, really paid off. Doc Mills settled himself down to the basic stuff, told everyone to sit still, watched the weather carefully and let the old girl buck and bounce. If you happen to be an artificial horizon watcher, take heed, this flight proves the point.

Up to now there actually had been no sweat. We had a good man running the show, and he was doing a fine job. But, naturally, luck always runs in any one given direction. Now, it seemed, ours was on the downhill track. Not too long after the gages went on strike, the flight engineer reported that the oil quantity on No. 3 was going or gone with the wind. We all took a look. He was right. Doc told him, "Shut down and feather." He did, and there we were.

The whole crew continued to perform their assigned duties in a quiet and efficient manner. The aircraft commander, pilot and engineer set up the plane for 3-engine operation. The radio operator and navigator got together, established a firm fix and alerted ARS at Clark. The loadmaster and scanner broke out the Mae Wests and distributed them immediately. Passengers were directed to remain in their seats and rebriefed on ditching positions and evacuation.

A quick computation with the old slipstick showed that the aircraft could not maintain its altitude on three fans without using high power and unacceptably high fuel consumption. A further check indicated that at approximately 5500 feet, three engines would hold altitude, pulling 2100 BHP each. This was correct. At 5700 feet the altimeter stopped the slow, downward crawl, and we were in level flight once again. We can't speak for the flight crew, but we breathed easier.

The entire operation took only a few minutes and was impressive, mainly by the lack of hubbub and the quiet way in which everything was handled. We never expect to see a finer example of crew discipline. These boys knew their job and did it. Period.

About an hour out an SA-16 came homing in on us with unerring accuracy, swung around in a wide, sweeping arc and settled down on our right wing. The Dumbo pilot, 1st Lt. Dennis R. McConigle, chatted with us for a moment, looked our C-124 over carefully, then dropped a couple of miles astern. The SA-16 followed us all the way in to Clark. Very comforting.

To us, the two missions we flew with the 374th proved that crew integrity and a tight, constantly monitored standardization program pays off in terms of flight safety. And in its most important aspect, that of accident prevention. The crews we observed fly together in their own aircraft; they know each other's abilities and reactions, and they follow SOPs compiled by top men in the troop carrier business. To us, this all adds up to a safety program that is really hard to beat. ●

Prior to holding critique with the crew, stand-board members put mental notes on paper. Normally, most discrepancies result from failure to follow the checklists.

This violation resulted in a . . .

# DOG in the DRINK

By Capt. Homer A. Tripp, McGuire AFB, N.J.

*Save This Article—Five years from now you may RON in some out-of-the-way place and get into a bull session about the most amazing accident you ever heard of and if you repeat this story without documentary proof the guy who started the bull session is sure to say "The first liar doesn't have a chance."*

IT ALL STARTED at 0037 EST when Hurbert, a GCI station, placed two F-86D aircraft on stand-by for possible interception of an aircraft penetrating the ADIZ on an unknown track. Five minutes later the aircraft and track were still unknown and Hurbert scrambled both 86's for an active ADC intercept.

After becoming airborne, radio contact was established between GCI and the two aircraft. They were about 10 miles apart, and Hobnob 21, the second aircraft off, stayed in afterburner all the way attempting to join up before the target area was reached.

About 12 minutes after takeoff the lead aircraft began having radio transmitter trouble and apparently was not receiving all target information. Hobnob 21 called Hurbert and stated that he would take the intercept. Hurbert acknowledged and at this time the lead aircraft requested a heading home and aborted.

Now the guy flying as Hobnob 21 was an Irishman through and through; and sur r r r e the luck of the Irish was at full strength this dark, murky night.

The target information given was that the bogey was holding 340 degrees, 20,000 feet with an airspeed of 240 knots. This placed the point at which the interception would be made about 20 miles out over the Atlantic. Hobnob 21 made radar contact with the target and from the rate of closure he judged that the intercept was being made head on. Hobnob 21 turned and placed the bogey on his starboard wing and as he did so the bogey began a descent. This information was relayed to Hurbert who acknowledged and requested a fuel check. A check of fuel remaining revealed that Hobnob 21 still had 3300 pounds of fuel and the intercept was continued.

On a new vector from GCI, Hobnob 21 let down to 17,000 feet and again made radar contact with the target. This pass also was head on, and no visual contact was made with the target. A third pass was begun, this time closing on a quartering stern attack and letting down to 9000 feet. This time visual contact was made and with full flaps and dive brakes extended, Hobnob 21 began to close for positive identification.

Up to this point 'twas just a routine intercept, but hold your hats—from here on in the operation is anything but routine. At 130 knots with full flaps and dive brakes extended and while approximately 200 feet to the starboard and 30 degrees behind the target, the pilot felt and heard a crash or explosion. It sounded like metal on metal and simultaneously the canopy either exploded or left the aircraft and all the lights went out.

The aircraft began a spiral to the right. Attempts to right the aircraft were unsuccessful and the pilot decided to eject.

He couldn't see but believed that a portion of the canopy was still on and to avoid ejecting through broken glass, he actuated the canopy removal handle and then he triggered the ejection seat. No results! The aircraft continued to spiral to the right and the pilot decided to go over the side. He unfastened the shoulder and seat belt. He stood up but the wind forced him back into the seat. He tried again and was forced back once more. He then twisted around until he was backwards in the seat standing in a crouched position. As he crouched to dive for the wing on the right side, the aircraft struck the water.

Standing up in an F-86D when it strikes the water right wing first on a dark night does little toward creasing chances of survival. But survive he did—and without a broken bone in his body.

The events from the time the aircraft first struck until the aircraft came to rest are not too clear in the pilot's mind but from the position of the cuts and bruises he apparently was thrown into the left forward corner of the cockpit backwards with the back type chute distributing the shock up and down his back.

After it came to rest he stood up once more and released the chest chute harness and inflated one half of his Mae West. As this was accomplished the aircraft sank and the pilot went under with it momentarily. He managed to free the one-man dinghy and one leg of the chute harness and pushed toward the surface.

By the light of a fire on the surface of the water he was able to clear the rest of his chute harness and to deploy and inflate his dinghy.

Remarkable that he survived the initial impact, wasn't it? But he isn't rescued yet. He was still in the water 16 miles out in the Atlantic on a da night, and visibility was less tha

The siren sounded and the loudspeaker blatted scramble Hobnob 21. The Dog roared out of the hangar and off the runway on an actual intercept.

The seat wouldn't fire, so he stood up in the cockpit to go over the side. Then he hit the water.

good. Then too, he had no time to tell anyone that he was in trouble or to give a position. But Dame Fortune still smiled on this young fellow.

A GCI operator at Dora who wasn't even running the intercept noticed his target fade from the scope. He immediately marked the spot on the scope with a grease pencil and called the coordinates into the Coast Guard. A search was begun at once.

Up to this point luck has played the lead role. Now knowledge of rescue procedures and equipment on the part of the searchers and the pilot were needed to make a speedy rescue possible.

The pilot climbed into his dinghy and took an inventory of the survival gear available to him. The most important things he found were three day-night flares. Using his head he did not fire the flares with the vain hope that they would be seen. He did not fire them at the first sound of an aircraft overhead either. He sat and waited until he judged that a search aircraft was in position to see a flare and then fired his first one. It was seen, but the aircraft lost sight of it and he turned and dived on his position. While not successful with the first flare the search area was reduced by the new location on the pilot's position. The second flare was fired at just the right time to be seen by the pilot of an SA-16. Flares were dropped from the search aircraft boxing the area and the SA-16 started to orbit over the raft. Signals for homing were sent and a Coast Guard crash boat used the D/F bearings to home in on the position of the raft. The pilot was picked up and a remarkable rescue was an accomplished fact. Whew!

Fantastic! Sure, it is. Could the conditions be duplicated? It's not likely that they could but there are several things about this accident that we could profit by reviewing.

First, this is an excellent example of just how expensive an ADIZ violation can be. This small error in navigation cost us one good aircraft alone. Add to this the cost of rescue and the unnecessary risk of life and the entire matter becomes appalling. Certainly avoiding such costs are worth the best efforts of each of us, especially in penetration procedures.

Then there is the matter of knowing your emergency equipment and procedures. Keeping your head and investigating your survival gear. Knowing just what you have to work with. A calm analysis of your position and a knowledge of procedures is your most important survival gear.

Also very important to this whole story was the action of the GCI operator. Now you can't expect these operators to notice every target that suddenly disappears, but if they are contacted and advised that you are in trouble, they can help in many ways. A steer to the nearest airport, a position report to rescue agencies if you go down, assistance during loss of communications and even PPI approaches to nearby airfields. Being acquainted with GCI and knowing how to use their services is important. A good practice is to know the location of GCI along your route, in case of an emergency.

Then, too, it doesn't hurt to have the luck of the Irish! ●

*Shortly after WW II, Major Mazza was assigned as project engineer on ejection seat development at the Aero-Med Laboratory, Wright Field, Ohio. He served as a test subject on catapult development and followed this by flying the test aircraft during the initial dummy ejections. Realizing that many pilots were not convinced that the ejection seat was a safe device, Mazza volunteered to test the seat personally. First he made four high speed ejections at a maximum indicated airspeed of 475 mph; then he made four at high altitude, setting a new altitude bailout mark of 42,176 feet. These tests resulted in the development of the present automatic ejection equipment.*

# *I Plan to Survive!*

Major Vincent Mazza, Hqs ARDC

SO FAR MY survival planning hasn't been used because I've never had a need for it. I will be delighted if this situation continues to exist. Actually since the best survival technique is a safe landing back at the home base, I have adopted this as my primary survival plan.

This primary plan is dependent on many considerations other than personal equipment, yet it is surprising how vital a function this much neglected and misused equipment can play. Little things, such as checking the oxygen mask and regulator, may mean the difference between reaching your intended base or falling short. Several pilots in Korea were saved because the emergency oxygen bottle provided an additional 10 minutes flying time at altitude. They were thus able to save enough fuel to reach friendly territory.

Making a safe landing at a preselected airfield is undoubtedly the best way to survive, but for many reasons this isn't always possible, and an emergency escape or landing is the only alternative. For emergencies such as this, survival equipment is provided to aid pilots who may be forced to survive in remote areas or in enemy territory.

Stateside pilots tend to disregard the use of survival equipment, yet there is some very isolated and rugged territory in the United States. In a combat theater the opposite is usually the case. Pilots practically crowd themselves out of the cockpit with survival equipment.

I saw a pilot in Korea who carried five guns and two belts of ammunition, in addition to other excess survival equipment. His largest gun was a tommy gun which he tied to his parachute. This man was practically immobilized in his cockpit. Here was a survival incident looking for a place to happen. His efficiency as a fighting machine was seriously hampered. He was so crowded he could hardly turn his body if a bogey was on his tail. In combat this is an invitation to disaster. In addition, this pilot had unwittingly compromised the most important phase of survival, namely, a successful escape without injury.

Most pilots were taught that the first eight hours of escape and evasion from the enemy are the most important. If a pilot is able to avoid capture for this period of time, his chances of continuing are pretty good. I have no reason to doubt this theory, but I believe the first eight hours are dependent on the success of the first few minutes, namely, the period from ejection to parachute landing and recovery. This escape phase of survival is the critical or payoff portion. The success of evasion or survival will depend on it. If a pilot is badly hurt, evasion is impossible, and survival, without assistance, is doubtful.

Well, enough theory. What can be done to make escape safer? Escape is like insurance, you have to plan for the emergency in advance. When the emergency occurs, it's too late to do much about it. Most of the planning can be accomplished by forming good habits in wearing your personal equipment. A quicker and safer emergency ejection will result. Briefly, here are some tips, sometimes overlooked, that might help you.

- Watch for items which can become a dangerous club during the windblast. The headset-microphone plug on your helmet and the A-2 adapter on the end of your oxygen mask hose have accounted for many injuries. Tie them down.
- Don't load your body with survival equipment, such as guns and open-blade hunting knives. Carry such survival equipment in the container provided. Put only soft items such as gloves or socks in your flying s pockets. Limit the contents of thi kit so it does not raise your sitting height over five inches. (This will assure that you are properly accommodated in any standard aircraft seat.)
- Check the retention features of your helmet and don't forget the chin strap. The helmet is an invaluable item during crash landings, ejection, parachute opening and ground impact. It's good only as long as you keep it on your head.
- The parachute also is good only as long as you wear it. Make sure you keep wearing it after bailout by having a good fit at the start.
- On certain aircraft (T-33 and F-94) it is possible to actuate the seat firing mechanism without pulling the canopy release lever, so don't get excited and inadvertently fire the seat through the canopy. Make sure the canopy has fired except in an extreme emergency when time is more important. Practice your ejection procedures on the ground till they become pure habit. Don't stop at simulating the ejection, remember the next st is to open the lap belt and get out o

the seat as soon after ejection as possible. As you simulate this procedure, lift yourself out of the cockpit. Notice whether you separate cleanly and if there is anything which could be a dangerous club hanging from you.

This is a rough quick coverage of the usual oversights which tend to make ejections more dangerous. If you form good habits and wear this equipment properly you are ready to eject at a moment's notice.

Now let's assume we have made an actual ejection and carry on with the story. We found that the windblast, though of short duration, could be very strong. We opened the lap belt and the next step is to kick the seat free and pull the ripcord as soon as possible. (If we are at low altitude.) This procedure sounds pretty simple, but don't let it fool you into passing up automatic equipment, if it's available. This is a very forgiving piece of equipment and will save many pilots, regardless of their mistakes or bad luck. Automatic equipment also offers the safest means of accomplishing a high altitude jump or a low altitude high speed ejection. In high altitude bailouts, trust the automatic parachute. It is a much better judge of altitude especially at night, in clouds, and over water and desert terrain. Pull manually only if you are positive you are below 5000 feet.

In preparation for landing, a modification of the A-1 survival kit plus some new information and procedures, should make landings on water or land simpler and safer. This information illustrates the methods which will enable you to be in your life raft within 10 to 30 seconds after contact. This is especially important in cold water. Evidence has shown that, even when wearing anti-exposure suits, entry into the life raft must be accomplished in three minutes or little chance of success remains.

Besides permitting a quicker entry into the life raft these practices were recommended for other reasons. Accomplishing all the necessary steps at the moment of water contact can be very confusing, if not impossible under adverse circumstances. For this reason, it is best to accomplish as much as possible during the parachute descent. This procedure also will provide many bonus effects. For instance, deploying the land-sea survival kit on a drop line prior to immersion provides many advantages.

- It provides an inflated life raft which should be rigid enough to enter by the time you hit the water.
- Any survival kit inherently floats. When this kit is strapped to your buttocks, it tends to float your head down. If you are dragged by the parachute canopy, this condition is aggravated. Head down flotation is therefore eliminated by dumping this particular kit.
- Height above open water is very hard to judge. When the kit contents strike the water this will indicate you are about 20 feet above it. During darkness, you can determine this distance by exerting pressure against the lanyard with your feet. When you hit the water, operate the canopy release immediately.
- No attachment of a lanyard from the dinghy to the life vest is required, but remember your equipment is attached to your parachute harness. Therefore, use a canopy release to deflate your parachute. Don't get out of your harness and allow this equipment to be dragged away by the parachute canopy.
- During land jumps, development of this kit rids the jumper of excess weight and bulk and provides a safer landing.

Compare this procedure with the old system and I am sure you will find it a big improvement.

The final step, that of entering the the raft to your person. Make a sea with full equipment. If you encounter stiff winds or high waves, you will find it easier to enter the life raft by turning your back to the wind. In any case enter from the small end and watch for sharp objects which could puncture the life raft (canopy releases, knives and so on). If you take off your parachute harness after you are in the life raft, be certain to tie the raft to your person. Make a sea anchor from your parachute if one is not provided. Although the primary need for a sea anchor is to provide a more stable and seaworthy raft, I recall an instance of a pilot who was sighted due to the wake caused by the sea anchor.

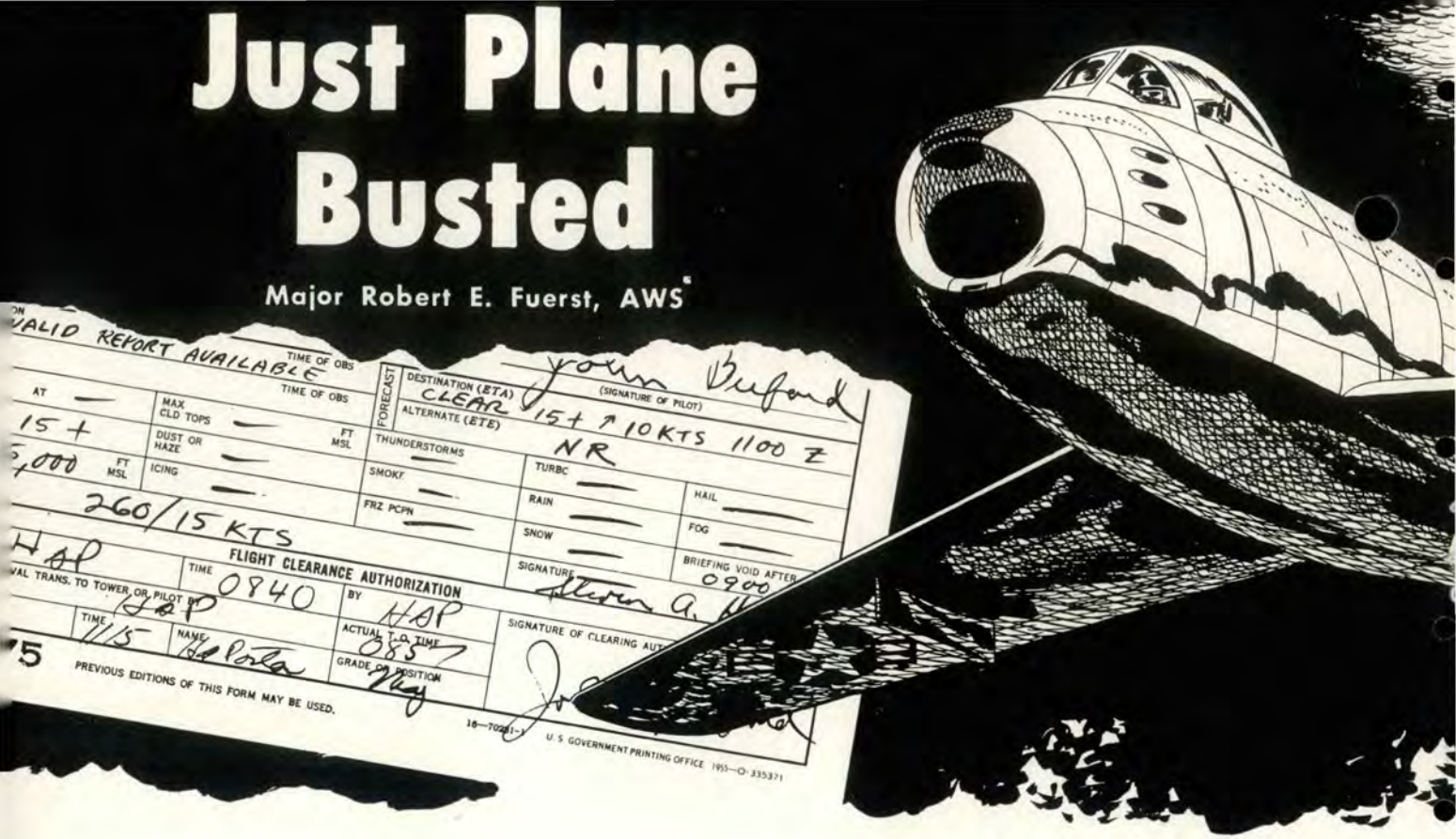
Once you are safely floating in your life raft or standing on the ground, you have completed the first phase of survival successfully. I can personally vouch for this phase. It has worked for me in the past without inflicting any injuries except minor bruises. I plan to survive by these methods in the future. I heartily recommend them to you for your survival plan. ●

Accomplishing all necessary steps prior to water contact is the recommended procedure.

Stateside pilots tend to disregard the use of survival equipment. Could you survive here?

# Just Plane Busted

Major Robert E. Fuerst, AWS




I'VE BEEN A weather forecaster for several years now and I've seen a few missed forecasts along the way. There was one early this year that was among the worst—Old Grif is lucky he's still alive.

At the time it happened, I was staff weather officer for the 67th Fighter-Bomber Squadron on Okinawa, an outfit that had recently moved down from Korea. When tension began to mount in the Orient over the Tachen Islands, the 67th was alerted for duty in Formosa, and I started a preliminary study of Formosa weather to get an idea of what to expect.

As I became familiar with the weather patterns over there, it seemed to me as if I were in for a pleasant and successful forecasting spell during my stay on Formosa. It would be February, the dry season of western Formosa. A high range of mountains runs from north to south down the middle of the island, and we would be located at Chiayi on the plains of the west coast. With daily northeast winds across the mountains there should be downslope flow and dry, fair weather at our field.

No reports were available from Chiayi itself, but there were records and reports from Tainan, a base some 35 miles away. A study of Tainan weather verified my ideas of fair and favorable weather for the month's TDY activities.

On the morning of my departure I checked at base weather, and after a discussion with the duty forecaster we agreed that the outlook was for excellent weather that day in the Chiayi-Tainan area. There were no valid reports from Tainan at the time, but there was a forecast from them and it called for the good weather to persist.

On the way to my C-47 I stopped by Fighter Headquarters and briefed the operations officer on the weather situation, pointing out that the outlook was for continued fair weather. I suggested that when the flight leaders stopped by base weather with their clearances they check the latest Tainan weather, since the reports I had were too old to be valid.

Climbing aboard the Gooney then, I left for Formosa. The C-47 seemed as slow as an Air Weather Service promotion. Almost five long hours it took, while the Sabres made it in less than one. I arrived at noon, just in time to learn that there had been a bad aircraft accident.

A flight of four Sabres had take off and when they had reached Chia the weather was stinko—300 feet and one mile. To make things more interesting, GCA was out. An awkward situation. Four birds above a low deck of stratus at a strange field in an alien country, with fuel running out rapidly. They tried an ADF letdown but when they were still above the stratus deck at 1500 feet, they gave that up, climbing some and dropping the pylon tanks.

One of the birds spotted a break in the undercast near the mountains and peeled off, the others following. The four of them dove through and hissed along the tree tops toward the field, trailing one another and hoping for a glimpse of the runway before fuel got too low.

"There it is!" shouted the lead bird, and you could almost see him pointing at it.

The first two got in the pattern and landed. The third one lost the field and then found it again just before giving up; he also got down. The fourth man, Old Grif, never did get to see the field.

He swerved to avoid a hill and l the others. When he was down to 15

pounds and the field was still not in sight, he eased up to 6000 feet through the stratus deck and announced over the radio, "I can't stay down any longer."

Pulling the armrests, he released the canopy. So far, so good, he thought, and reported, "Canopy clear." He paused a moment, then he spoke into the mike again and there was a grin in his voice, "As they say in the comics, Sayonara." He pulled the trigger and was hurled into space.

The plane plowed into a sugar cane field and was completely destroyed. Old Grif floated down under his white parachute, scratched a little from his blown-off helmet, but otherwise all right. He soon rejoined his flight at the base.

In the initial flurry of excitement most attention centered about Old Grif and his close call. But when investigators began looking into the accident they uncovered several interesting points about the flight.

First, the birds had taken off on a tactical clearance without a trip to the weather station. They had obtained weather by telephone.

Second, base weather received no reports from the destination. Chiayi weather observations were not included on the teletype sequence.

Third, while en route the flight was unable to get terminal weather from Okinawa or Taipei Control. They tried both.

And there were more items: The briefing procedures, the lack of an alternate outside the immediate area, the part played by supervisory personnel, the weather itself and so on.

What it really boiled down to, however, was a busted forecast. A reasonable and logically arrived at forecast, but still a bust. Even if the pilots had shown up in the weather station in person, they would have received the same forecast—good weather at destination. It was a sound forecast, but one which did not verify.

Fortunately there were not four demolished birds and four dead pilots. There could have been. Not that the weathermen were goofing off, not at all. Weathermen probably feel worse about busting a forecast than the poor guy who's flying. No, the weatherman doesn't do it on purpose.

Meteorology is still a junior science and the forecasting end of it will not improve very rapidly for many years. You can expect an occasional miss as long as you are part of the flying game. There are good men in the weather business, capable men, men of integrity. But they still miss one every so often.

What's the answer then? Ignore the weatherman? Listen to his forecast with reservations?

Not exactly. But there is one thing you can do. Accept the fact that there will be a time or two in your career when destination weather will be lousy—contrary to what the forecaster said. So, whenever you get briefed in the weather station be absolutely certain that you have a reliable alternate. Refuse to consider one that is marginal or doubtful. Take two if you want, they're free. But when you leave the ground, have an alternate that you're fully confident about, even if everything else concerning the flight is uncertain.

Never trust the weatherman—never trust him to be infallible, that is. Even by intelligent thinking he can make an error. Always insist on a good alternate. Give yourself that extra peace of mind by choosing the alternate that is entirely dependable. It really pays off. ●


# ... a Winning Hand

IT'S BEEN SAID that certain creatures have direction-finding capabilities. And it must be true. That 50-pound salmon that got away last year has no doubt gone upstream to return to the same spawning ground from which he came. Research proves that's the habit of fish.

The homing pigeon doesn't have a street map, but where can you get that kind of delivery service? Not even from Western Union. And comes the first chill of autumn, certain migratory birds take off under any weather condition—IFR or VFR—makes no difference to them. With unerring navigation, they wing their way south. They land without mishap to spend the entire season in a more pleasant locale.

### Human Factor

Man, constructed the way he is, has certain difficulty in imitating the bird. He managed to achieve wings about 50 years ago and modern technology has so improved that now he can fly faster than the speed of sound. It's not a common occurrence, true, but it is possible to eat breakfast in San Francisco, lunch in New York and be back home in time for dinner. And who know's what will come tomorrow, with perhaps atomic propulsion to serve as an activating force and an earth-circling satellite as a destination for some super plane?

But Joe Pilot doesn't have a built-in direction-finding system. And there are no engineering development projects we know of to change the characteristics of the human body. He will probably continue to refer to a very


## Man, constructed the way he is, lacks the homing sense of a pigeon. Therefore, he has to resort to using charts.

F. H. Redmond, Aeronautical Chart and Information Center

complicated instrument panel to accomplish all of the operations or maneuvers necessary to complete his flight. Also, he'll continue to need charts and aeronautical information publications not only for direction-finding purposes, but also for flight planning, radar and celestial navigation and 500 other good reasons.

### A Chart in Hand

True, these charts and publications of tomorrow may present an entirely different appearance from those in use today. They may be combined in a one-sheet item or a small pocket notebook, which will give all the information needed for planning, navigation and letdown at any desired destination. They may be furnished for use in conjunction with a radar scope or with a movie projection screen in the cockpit. Regrettably, these superior items are not yet available, or at least not yet in production for general use. And since they aren't, it's pretty important that the pilot get and use those charts and publications which have been specifically developed to meet all phases of today's flight operations. A suitable chart or publication in the hand is a good thing to have since man doesn't have the same direction-finding system as the bird in yon bush.

### Ye Olde Tale

An oldie, as stories go, concerns a pilot named Oscar J. Airwicke, an intrepid Air Force pilot (???) who is on a routine flight mission from a base in Arizona to Shreveport, La. Oscar is flying along somewhere in Oklahoma—jets travel fast—and he isn't worrying at all. In fact, as he zooms along he is not bird dogging the radio range but is listening to the strains of "Dance With Me, Henry," which waft along the air waves from the nearest commercial broadcasting station. He dreamily envisions that voluptuous doll he danced with in Toledo the other night, and wonders how soon he can dream up a legitimate excuse to get over there again. But the music slowly fades away. And somewhere in the back of Oscar's mind, a warning bell rings. He realizes he should be nearing his destination, right now!

A glance over the side of the cockpit doesn't reveal any familiar terrain. In fact, about the only terrain Oscar sees at all is a scrap about as big as a very small cow pasture over his left wing. Except for this, a very inconsiderate mass of clouds is completely obscuring the ground. Oscar realizes that he must act, and act quickly.

What to do? He twists the nose of the bird dog to Shreveport, but Shreveport is not there. Nothing, he gets. A calculation of fuel indicates he doesn't have a lot of time to stooge around in the overcast.

Oscar is now on the mike, shouting "MAYDAY-MAYDAY." He gets an answer from a control tower down in Southern Texas, or is it Tennessee saying, "What seems to be your trouble, son?"

Oscar is very much relieved. He speaks up, "This is Air Force jet 12345, and I'm lost. Give me a steer. My fuel is getting low! Which way do I go, Joe?"

A heavenly voice comes back and says, "We have a fix on your position and, well—just repeat after me, son: 'Our Father, Who Art in Heaven . . .'"

Now we know these words were never said, but more than one pilot has been lost, and perhaps for similar reasons. Our contention is that if Oscar had had the latest charts and publications, and had been making constant reference to them, he wouldn't have goofed. He'd have known the direction and location of the nearest airfield, as shown on his Jet Navigation Chart. His Special Edition Radio Facility Charts would have shown him whether that airfield had DF equipment, and whether jet servicing was available. His Jet Pilot's Handbook would have given him the proper information required for an instrument letdown.

True, you may think that Oscar was a hopeless case to begin with, but accident reports show that pilots get into serious trouble because they may use WAC charts which do not show the current frequencies of radio facilities. A contributing factor in an

There wasn't a familiar landmark and he was running extremely low on fuel.

accident may be the fact that the pilot doesn't have the AL chart covering his alternate.

### Available Charts

So bear with us while we ask if you know the answer to certain questions: WHAT charts and publications are available for your flight operations? WHICH of these are normally available in the aircraft? Do you have all of them? If not, WHO makes them? WHERE and HOW do you get them?

To check the answers to these questions, there is no better single source of information than the USAF Catalog of Aeronautical Charts and Aeronautical Information Publications issued for the Air Force (AFR 67-3) by the Aeronautical Chart and Information Center (ACIC) of the Air Photographic and Charting Service (MATS). It is published once each six months and revised by a twice-monthly Bulletin and Quarterly Bulletin Supplement.

They say that not many people have ever seen this catalog. "They say" is a short form not included in JANAP but generally reserved for miscellaneous and sundry information contributed by indigenous and anonymous personnel. But anyhow, rumor has it that when a revision to the USAF Catalog of Aeronautical Charts and Aeronautical Information Publications is received at a base, it's routed to the map and chart office. Here, presumably in the interests of security, the big sergeant in charge locks it in the desk of the rear office.

This may not be true at your base —perhaps you've consulted this catalog more than once to determine what briefing and inflight data is available to you. But if your group, squadron or detachment doesn't have a catalog, the same big sergeant should request one from the Aeronautical Chart and Information Center, 2d and Arsenal Streets, St. Louis 18, Missouri.

While this little gray-backed number may not offer the same fascination as Esquire, it does present a great deal of data in condensed form. A graphic index pictures for you the exact areas of the world for which charts are published, ranging from World Aeronautical Charts to USAF Pilotage Charts, USAF Aeronautical Approach Charts to USAF Navigational Flight Charts, USAF Aeronautical to Planning Charts and USAF Outline Planning Charts to USAF Gnomic Tracking Charts, to mention a few. Described are USAF/USN Radio Facility Charts and In-Flight Data (RFC) publications, USAF/USN Pilot's Handbooks, both conventional and jet, USAF/USN Supplementary Flight Information Documents, the USAF Foreign Clearance Guide, and other special items such as the Air Almanac, Hydrographic Office Navigation Publications and certain CAA flight information publications procured for Air Force use. If breathes there a pilot who doesn't know exactly WHAT each of the above listed charts and publications covers, we believe he has plenty of company.

### Millions of Charts

These items are available from or through the Aeronautical Chart and Information Center (ACIC) which produces or procures and distributes each year more than 90,000,000 charts, publications and related items to meet Air Force needs. There are six Aeronautical Chart and Information Offices (ACIOs) also which—if you'll pardon the expression—girdle the globe with charts and publications. Located in Germany, the United Kingdom, Canal Zone, Alaska, Hawaii and Japan (see the catalog if you want an address), they stock and give out with charts and they publish Radio Facility Charts and other items to meet Air Force requirements. A Washington detachment keeps in touch with Air Force Headquarters and other Government agencies and collects air intelligence and US flight information for use in various charts and publications.

The catalog, under headings entitled in good ole military terminology "Basis for Distribution" and "Requisitioning Procedures," furnishes the answers to questions such as "Do I have the chart or publica

A 3-D scope is used with overlapping aerial photographs to check elevation contours.

Latest data will be printed on these charts.

tion I need?" "How can I get it?" or "Why can't I get it?" While it's always more pleasure to furnish the answers to the first two questions than the last one, it is necessary for various reasons—not the least of which is the budget—to limit distribution on certain items. But if you read the "Basis for Distribution" and you're in, then requisition what you need through your prescribed channels, giving any justification you think might be necessary.

And if by any chance, the catalog doesn't list the item you need, don't give up. Maybe, and this was a more common maybe several years ago than now, you need something new for jet operations. Maybe there's some other special operation that requires a tailor-made chart. It's possible ACIC may have something on the drawing board or hot off the presses which will meet your needs. Listed as examples are a few items which have been under development during the last several years. FLYING SAFETY will tell you more about some of these at a later date.

*Jet Navigation (JN) Charts*—Developed for use by jet aircraft with radar and celestial capability, these charts already cover the Northern Hemisphere and eventually will cover the world (see the catalog).

*Special Edition Radio Facility U. S.* — Large, sheet type radio facility charts with an In-Flight Data booklet were developed in 1953 for use by jet aircraft. Approved by Headquarters USAF for use by certain major air commands, they are described in the 1 July 1955 edition of the catalog. Development is continuing with a view toward improvement of this publication. The Aeronautical Chart and Information Office in Germany has recently published, as an experimental item, a similar chart for jet aircraft.

*Low Level, High Speed Navigation Charts*—Inasmuch as the terrain presents a somewhat different picture as you whisk by hills and through vales at high speed and low altitude than it does under normal flight conditions, a different charting concept is required. Development of a suitable chart and related graphics and techniques is under way at ACIC.

*Charting for TACAN*—The Aeronautical Chart and Information Office in Alaska has furnished experimental charts and graphics for use by the Alaskan Air Command in the test and evaluation of TACAN. As requirements develop in the United States, more charting projects will be undertaken.

*North Atlantic Radio Facility Route Charts*—Developed by ACIC for use by MATS in ferrying jets across the North Atlantic, this chart is now under test and evaluation.

*Tailwind Navigation Chart*—Scheduled for production in the early fall of 1955, this chart was developed as a result of collaboration between the Pacific Division, MATS and the ACIO-Hawaii, for MATS tailwind flying from Tokyo to Honolulu.

*Jet Flight Information* — Midget-size manuals containing both radio chart data and letdown procedures were published several years ago by the Aeronautical Chart and Information Offices in Alaska and Japan for use by jet aircraft in the Alaskan and Far East areas. The 1 July issue of the catalog lists these for the first time as approved for regular operational use in those areas.

Pantograph is used to trace details and elevations onto charts from aerial photographs.

So inquire if you don't find the particular chart or publication you need for your flight mission. It may be available or under development. Future developments may be based partially upon such inquiries.

### Reporting Errors

While aerial photography is probably the best source for preparation of aeronautical charts, do you know that even with the aerial photography missions flown during World War II, and subsequently, that far less than half of the world is adequately covered? Since the issuance of a WAC chart, highways may have been rerouted. You may have reason to believe from actual flight over the terrain, that the elevations given for certain obstructions aren't quite accurate. A radio frequency may have changed, but the new one is not given in the

Like detectives looking for flaws, editors compare old letdown charts with the newest flight information and aids to navigation.

To determine chart contour lines, entire mountain ranges are measured meticulously.

RFC publication, and you don't see a NOTAM at base operations, either. An airport you try to use may be closed; you may not find a NOTAM anywhere covering that. An error may occasionally creep into a chart or publication, human beings being so awfully human. It's entirely possible too that those humans just didn't receive the latest information.

You personally can do something very important for ACIC, for yourself and for any other Joe who flies the skyways, whether he follows the highways, the airways or a compass course. That is, help insure that charts and publications are accurate and current. Report any error or discrepancy you may find.

### A Note to ACIC

To illustrate that the help of the conscientious military user is needed, the detachment commander of the Aeronautical Chart and Information Office in Hawaii describes an incident which shouldn't ever happen to you or any other pilot.

It's not a familiar route you're flying today, but you've flown a lot of them. Takeoff through the overcast is uneventful. You level off at 10,000 feet and settle back for that cup of coffee that's been brewing in the galley. The navigator, having scanned the terrain clearance along the flight route on his aeronautical chart, has ascertained that all is well. As you've done a million times or more, you reach in your pocket for the crumpled pack of your favorite brand and prepare to light up.

Suddenly you observe out of nowhere a sawtooth peak poking its ugly head too close for comfort up into the immediate overcast just off your right wingtip. The coffee in your mouth turns bitter, the cigarette is forgotten. With a nervous grab for the intercom you call your navigator, "Bill, look out to your right; we're not on course. Our altitude is 10,000 and this chart doesn't show a blasted thing."

Maybe your navigator checked and found you were on course. That peak unsung and uncharted was there. We hasten to say this was only a hypothetical example; we don't believe it ever happened to you. But say it did, or an incident at all similar. Say, too, the rest of the trip was uneventful, ETAs right on the button, visibility clear at your point of landing, everything just fine.

### Report Those Errors

Did you report the incident to base operations when you landed? As an alternate, did you personally write to ACIC (or to the Coast and Geodetic Survey, if the chart covered the U. S., and its territories and was published by them)? Did you say, "Look, this chart is strictly for the birds. It needs checking at such and such a place?"

Or did you get involved with such items as closing your flight plan, getting transportation to the VOQ, or dialing the phone number that Mac, your buddy, gave you of a reputedly very cute doll in town—so that the only time this item may ever have been mentioned was in a gripe session at the club over a bottle of brew?

We're not trying to make you feel like a "dirty bird" if you ever failed to report any errors. We certainly wouldn't want to shake your faith in our charts. They are compiled from the best sources of available information. We're just saying what you could do to help ACIC to serve you more effectively.

Our detachment commander in the Canal Zone gives another example of an incident that could happen to you any day if you were flying down Mexico or South America way.

You're doing a little experimenting with the radio compass when suddenly a loud and clear station identification signal attracts your attention. Obviously, you're very near the station and upon flipping the switch to compass position, you notice the azimuth needle swing definitely to 35 degrees and stop.

A quick glance at the Radio Facility Charts doesn't reveal a radio beacon within 75 miles. You check the "Range and Beacons by Identifiers" section and the call sign isn't listed there. In less than two minutes, the needle has moved about 90 degrees to the right, which confirms your opinion that you're very close to the station.

"Well, this is unusual," you remark to your copilot (who is busy auditing his trip expenses. You know—Cash expended, $128; Per Diem due in, $38. Only three days out.). You idly discuss this item for a few minutes; once or twice later on, you think of jotting down a note about the beacon. But, why bother? The ACIO at Albrook AFB probably has the information, and it'll be in the next issue of the RFCs.

On the return trip, the same route is followed; you're approaching the same location. The old Gooney i

fairly well loaded with cargo and you're making preparations for what appears to be heavy rain with the usual amount of turbulence. Your cockpit forecast was pretty close. But a rough engine right in the middle of the weather! You hadn't anticipated that.

This being an "All's well that ends well" story, the weather broke after about 20 minutes. The engine smoothed out and for all practical purposes, it was another 20 minutes of "W" time to log and a write-up on the Form DD-781 (used to be 1A) concerning the rough engine in heavy precipitation.


The best single source of information for acquiring charts and publications is the ACIC Catalog.

Skilled technicians range from draftsmen to linotype operators. ACIC produces, procures and distributes ninety million charts, publications and other items to meet USAF needs.

But there are two or three suppositions you might make. First, you might have been carrying passengers instead of cargo. The engine might have failed completely and maintaining the minimum altitude would have been an impossibility. A nice runway might have been near the beacon. The frequency and identification of the beacon would have been a good thing to know.

Don't wait until you're home to jot down that note. The old bell may not ring so clearly. But if you forget the details or lose the note, let your ACIO or ACIC (Washington Office for the U.S.) know there is a change. It's very difficult to maintain aeronautical information in a current status in areas like Central and South America, where the NOTAM service isn't all it might be and radio facilities are subject to quick change. So wherever you may be, it's a good idea to make that note. If you find a NOTAM in base operations covering that particular item, then and then only, forget it.

Drop a line to ACIC or the appropriate ACIO and inform them of any errors you note on charts or publications. If it happens to be the Radio Facility Chart and In-Flight Data U.S. publications, just tear one of the postcards out of the book, get out your pencil and write a note, fold and staple the card to the correct address and drop it in the nearest mailbox.

## Special Notices

Special notices regarding some of the recent changes in RFC publications could be aptly titled "You Asked For It" since they resulted primarily from a number of requests sent in by postcard or letter. To mention several: Addition of mileage bar scale to chart pages, RFC US; addition of Air Route Traffic Control boundaries and Air Defense Identification Zone boundaries to Planning Chart, RFC US. These give you examples of the power of the pen and pencil. Don't underestimate the help that you can give in maintaining up-to-date charts and publications, which contain all the information you need.

We reiterate: Request the charts and publications you need. Check to make sure they're available for your use in flight. And if some particular item or development would facilitate your mission, don't hesitate to pass this information on. The item you need may not be available today, but perhaps it will, tomorrow.

After all, 30 years or so from now, the present jet may be one of the slow pokes of the aviation industry. From San Francisco, you may be able to run over to Paris for a night out on the town. We're not just kidding, son, this was a prediction of scientists who attended a conference of the International Astronautical Federation in July of this year. Just check then as now to make sure you have the charts and publications you need, and use them. Repeat after me: "Navigation without the latest chart is strictly for the birds. Man needs a chart for getting around." ●

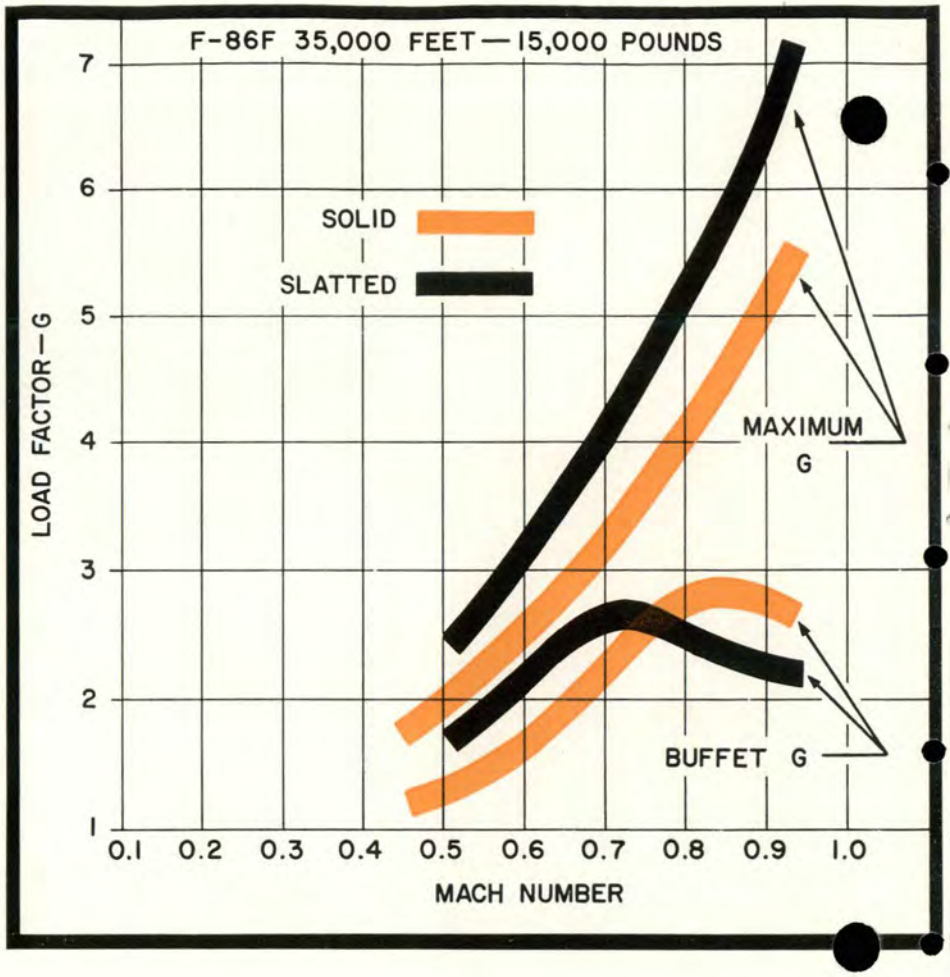


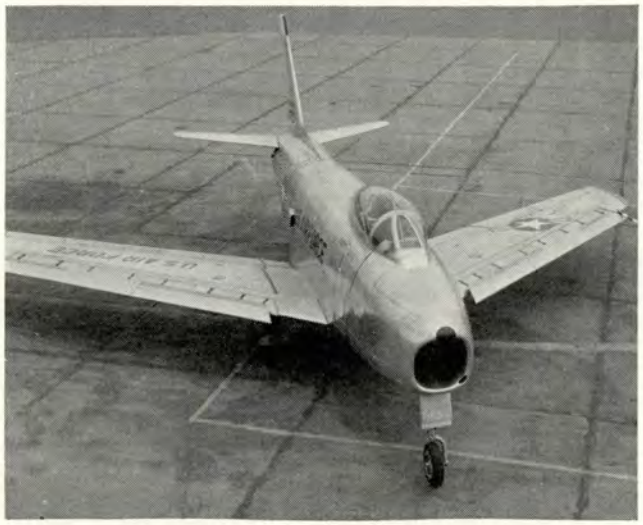

Fig. 1. Greater maximum G provides better aircraft maneuvering characteristics up high.

# the Edge in Performance

Dan Darnell
North American Aviation, Inc.

A test pilot compares the flight characteristics of the F-86 with both the 6-3 solid and extended slatted wing.

The F-86H is shown with the hard, extended leading edge wing and with the extended slatted wing.



NO MILITARY airplane is ever a finished product. From the time it comes off the production line until it is scrapped as obsolete, continual changes are made to improve its flight characteristics and performance. Many of these are minor, and their value is not immediately apparent. But once in a while a modification radically alters the flight characteristics of the airplane. Such a change is the addition of the 6-3 leading edge to F-86 airplanes.

The 6-3 leading edge was introduced during the Korean conflict. At that time, the slats on some F-86s were replaced by solid leading edges. The new solid section extended over the original wing contour six inches at the fuselage inner section and three inches at the wingtip. From these dimensions, it received its name.

The new leading edge was added to increase usable G at altitude. This improved F-86 combat effectiveness against the MIG. But some low-speed characteristics suffered, and it became necessary to install a wing fence to regain some of the lost qualities.

The first airplane with a slatted 6-3 leading edge was not flown until about 18 months ago. The new leading edge included slats on the 6-3 extension and 12-inch wingtip extensions; it retained the advantages of both of the preceding leading edges.

With the addition of the 6-3 slatted leading edge, the F-86 regained the low-speed handling characteristics made possible by the old-type slats. Low takeoff and touchdown speeds resulted in shorter takeoffs and landing rolls.

Also, the improved landing pattern handling characteristics will undoubtedly reduce the accident potential, especially during the approach for landing phase of flight.

One respect in which the new slats differed from the old was that the old-type slats would not open above .65 Mach, regardless of how much G was pulled; under some conditions, 6-3 slats open as high as .9 Mach. Therefore, above 25,000 feet altitude and faster than .65 Mach, the 6-3 slats provide in some instances up to 100 per cent more usable G than old-type slats. This means a great deal more maneuverability.

Let's compare F-86 performance with and without 6-3 slats as shown in Figures 1, 2 and 3. These figures apply specifically to the F-86F, and the F-86D. However, much of this

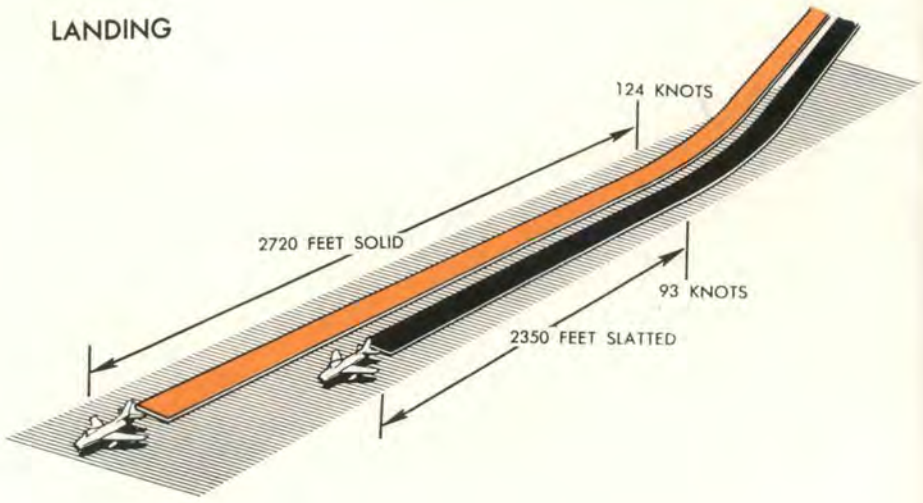



Fig. 2. F-86F takeoff and landing comparison shows differences between solid and slatted leading edges with two 200-gallon external drop tanks installed.

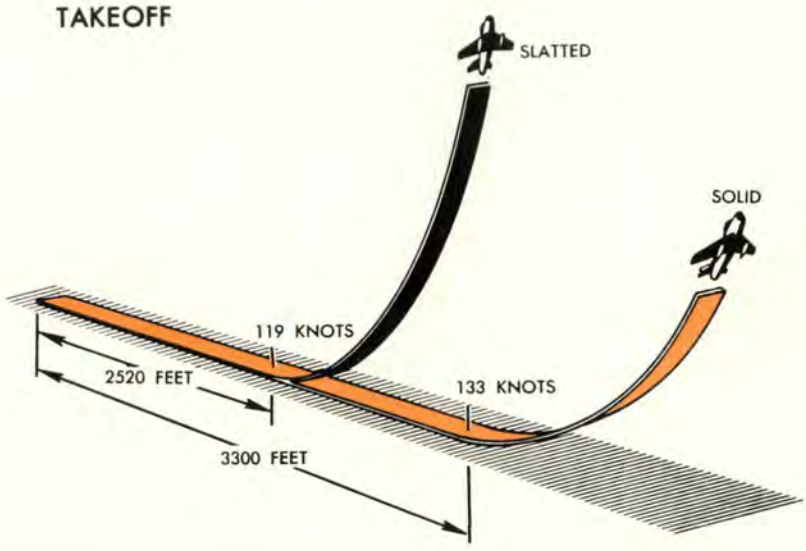
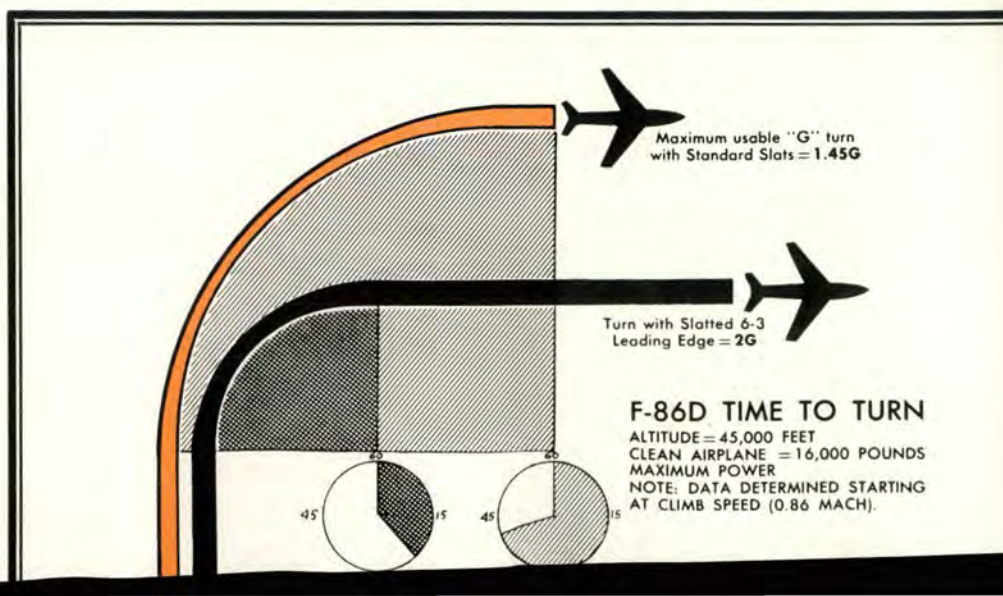



Fig. 3. At 45,000 ft. the slatted 6-3 leading edge wing allows tighter turns.



## MINIMUM-RUN TAKEOFFS

During a minimum-run takeoff in F-86 series aircraft, the airplane lifts off near the stalling speed. The landing gear should not be retracted until the airplane accelerates to the normal-run takeoff speed given in the Flight Handbooks. This is five to 10 knots faster than the takeoff speed for a minimum-run takeoff.

When the airplane is very close to stall speed, retracting the landing gear may cause a nose-up pitch sufficient to cause a stall. Waiting until normal-run takeoff speed is reached or exceeded eliminates this hazard.

Correct takeoff procedure is given in your Flight Handbook, which includes limit airspeeds for raising landing gear and flaps. This procedure should be followed.

information is generally applicable to all F-86 series airplanes.

Figure 1 shows the G available with slatted and solid 6-3 leading edges. For example, at an altitude of 35,000 feet and at .9 Mach, we find that maximum G is approximately 6.5 with the 6-3 slatted leading edge. Under these same conditions with the solid leading edge, there is less than 5G available. We have an extra 1.5G to use for maneuvering.

The lower curves in Figure 1 show buffet initiation (load factor where buffet is first encountered). After buffet is encountered with the solid wing, increasing the load factor increases the buffet magnitude until it is impractical or impossible to increase acceleration because of stall.

With the 6-3 slatted leading edge, increasing G after buffet initiation does not always increase buffet. In some cases, buffet may actually decrease. As a turn is entered, a mild buffet may be encountered before the slats start to open at higher Mach numbers. However, when the slats open, the buffet will decrease or, in some cases, remain at a constant level, allowing the pilot to continue to pull more G. Therefore, the pilot can tighten his turn with less loss of speed and greater stability than with the solid leading edge.

Figure 2 compares takeoff and landing characteristics with slatted and solid 6-3 leading edges. We find that lower indicated airspeeds are possible with the slatted leading edge, and yaw or roll experienced with the solid leading edge is not encountered. Therefore, we have lower touchdown speeds during the landing phase. The result is slower pattern and approach speeds plus better airplane controllability throughout both takeoffs and landings.

Figure 3 shows the improved time to turn with the 6-3 slatted leading edge at an altitude of 45,000 feet and .86 indicated Mach. For example, a turn having a radius of 21,500 feet can be made in 41 seconds at 1.45G with either the standard or the 6-3 slatted leading edge. This turn is a maximum usable G turn with the standard F-86D wing (old type slatted leading edge). Under the same conditions with a 6-3 slatted wing, a 90-degree turn can be made at 2G with a turn radius of 12,000 feet and an elapsed time of 23 seconds. For small course corrections, a usable G of about 2.5 to 3G is available.

Dan Darnell is an engineering test pilot at North American Aviation, Inc. Currently engaged in the flight test program on F-86H and F-100 series airplanes, he has taken part in the testing of all the F-86 series during his six years with North American. Prior experience includes flight testing in the USAF Flight Test Division, Wright-Patterson AFB.

It looks good on paper, but how is it up in the air? We took a 6-3 slatted leading edge F-86F to 45,000 feet with a solid leading edge "F" in the trail position. Altitude was held constant, and in about three 360-degree turns, the slatted leading edge airplane was in firing position on the other. While tracking a solid leading edge airplane that was pulling maximum G, I actually executed rolls inside his turn radius.

To completely evaluate solid and slatted leading edges, pilots were alternated. At no time was the slatted F-86F outperformed in any maneuver that the solid leading edge airplane could execute. At no time was the pilot of the slatted leading edge airplane outmaneuvered in simulated combat.

Being involved in this project has been one of my most satisfying experiences. Here, a minor and not too costly change greatly improved the combat capabilities of an airplane, as well as reduced the hazard of flying. What more could be hoped for?

The new slats will be added to F-86 airplanes in the near future. Here's hoping that you soon get a chance to fly one of these modified birds.

Captain Frank F. Beard

Captain Arthur R. Bulger

M/Sgt Louis L. Ledet

**NOVEMBER, 1955**

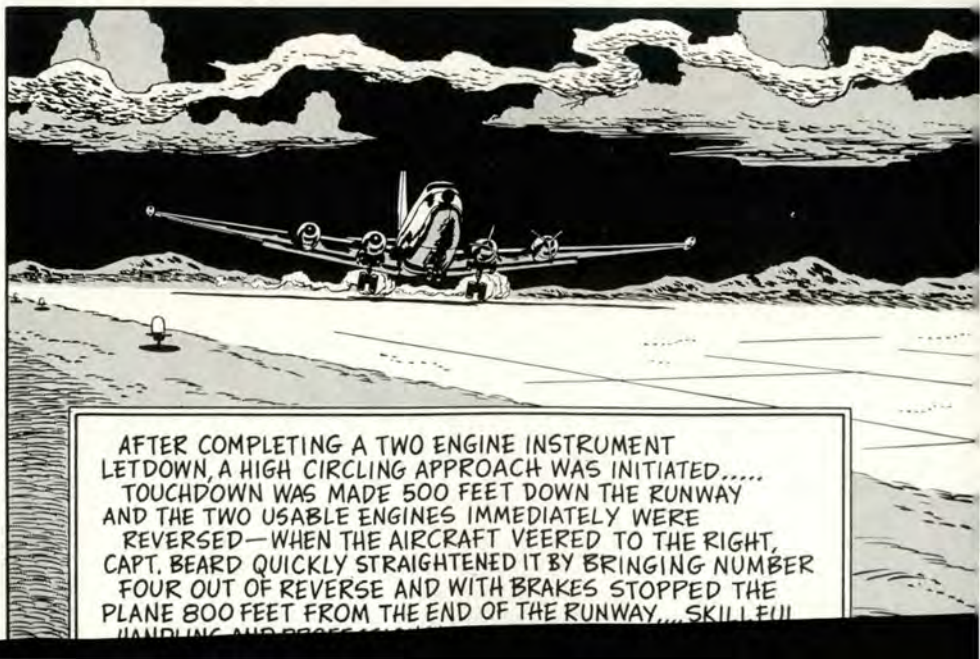
# WELL DONE

CAPT. BEARD · CAPT. BULGER · M/SGT. LEDET

62nd Troop Carrier Group, Larson AFB, Wash.


WHILE CAPT. BEARD, THE AIRCRAFT COMMANDER, WAS FLYING A C-124 ON A ROUTINE TRAINING MISSION AT 12,000 FEET, THE NUMBER ONE ENGINE FAILED WITHOUT WARNING—M/SGT. LEDET, FLIGHT ENGINEER IMMEDIATELY FEATHERED THE PROP.....


AS CAPT. BULGER, THE COPILOT, WAS OBTAINING CLEARANCE TO THE NEAREST AIR FORCE BASE, SGT. LEDET REPORTED THE FAILURE OF NUMBER TWO ENGINE... DUE TO HEAVY ICING, THE CREW PREPARED FOR AN EMERGENCY LANDING ON A MUNICIPAL AIRPORT ALTHOUGH THEY KNEW THE SHORT 4090 FT. RUNWAY WAS NOT STRESSED FOR C-124 AIRCRAFT.....



AFTER COMPLETING A TWO ENGINE INSTRUMENT LETDOWN, A HIGH CIRCLING APPROACH WAS INITIATED..... TOUCHDOWN WAS MADE 500 FEET DOWN THE RUNWAY AND THE TWO USABLE ENGINES IMMEDIATELY WERE REVERSED—WHEN THE AIRCRAFT VEERED TO THE RIGHT, CAPT. BEARD QUICKLY STRAIGHTENED IT BY BRINGING NUMBER FOUR OUT OF REVERSE AND WITH BRAKES STOPPED THE PLANE 800 FEET FROM THE END OF THE RUNWAY....SKILLFUL

# REX SAYS

AFTER TAKEOFF from a small civilian field, the pilot of a Gooney Bird noticed that the airspeed indicator wasn't doing business. He and the crew chief discussed the situation and decided that the pitot cover had not been removed. The latter suggested that mayhap a bit of heat in the pitot head might burn the cover off. It didn't.

The driver then decided to attempt a landing. This didn't meet with any great amount of success as the old Gooney got to bouncing and, as the pilot zigged when the plane zagged, the porpoising action got pretty severe. Finally the throttles were opened and at this point the pilot decided to continue on with the flight as planned.

After about two hours of flying through heavy turbulence the plane was brought in for an emergency landing. This time the touchdown was successful. The crew had had enough.

Getting back to the beginning of this little fiasco, the pilot had instructed the crew chief not to remove the rudder lock until he was in the cockpit and holding the rudder pedals. The pilot made a quickie-type walk around and leaped aboard. The airman was stationed by the tail. Nobody remembered the pitot cover.

*REX SAYS: This is hardly worth commenting on. This lad must belong to the old school of tire-kickers, though fortunately there aren't many of them around any more.*

★ ★ ★

I'M AN IP in F-84s and have better than a thousand hours in the bird. I think I have a fair idea of the systems and know pretty well when a plane is safe to fly and when it isn't. Ordinarily, if there is a question in my mind about the aircraft, I check with the crew chief and get his opinion. But recently I ran into a situation that really stalled me out.

During the preflight inspection of my assigned aircraft I noticed hydraulic fluid seeping from the dive brake well. Also I noticed that the locking nut on the main fuel connection in the well was loose. I wrote up the discrepancies, accordingly. As I was making out the write-up, the crew chief came up and told me the plane was okay. He said the hydraulic leak was either mild seepage or fuel spilled during refueling operations. He wasn't sure just which it was, but shrugged it off and claimed the plane was ready to go.

I didn't argue with him; just got the maintenance officer. Seems I was right and the sergeant was wrong. There was a leak. The point is, the crew chief might have persuaded a student or an inexperienced pilot to go ahead and leap off. I might add the crew chief got racked back, but good.

*REX SAYS: Well, that's an interesting switch on the old "But I'm not the regular crew chief" story. I don't know if the sergeant was lazy, careless or just plain stupid, or a combination of all three, but I'm glad to note that he is in a small minority.*

*If you believe that something is wrong with your aircraft, stay on the ground until you find out for sure that it is all right. Taking someone else's word that a discrepancy is minor or of no importance is sticking your neck way, way out. And, brother, it's your neck, not his.*

★ ★ ★

I'M NOW a firm believer in the scoop that is contained on page 173 of the Supplementary Flight Information Document. It also appears in the Special Notices section of the Radio Facility Charts. I guess a guy has to get lost to appreciate the safety procedures outlined on these two pages.

I was tooling along at 35,000, minding my own business, when the UHF went dead. I'd slipped a mental cog and hadn't really kept up with navigating. Besides this, the petrol was running close, so there was no time like the present to try this radar intercept that we'd discussed at yesterday's Flying Safety meeting.

I flipped the IFF switch to emergency, flew the required pattern, then took off on a bee-line to my alternate. There I received letdown instructions on my radio compass because the lads on the ground were all prepped for me, and I made a normal letdown and landing.

I've covered about an hour's possible sweat job in two paragraphs. My flight could have resulted in a serious consequence wherein I might have had to walk home. As it stands now I am a 100 per cent booster of a pilot knowing his emergency radio procedures thoroughly.

*REX SAYS: Instead of being a headline in a newspaper, this pilot showed what good, intelligent use of the printed material available to every pilot will do. Summed up, all is not lost when lost.*

★ ★ ★

I WENT out to my F-94C t'other day and after making the walk-around, climbed in and got ready to crank up. In checking the controls for freedom of movement I found that the rudders were binding. I did some fast checking and, lo and behold, fished out a foot-long wrench from the right rudder well. Things like that tend to shake a man's faith.

*REX SAYS: Don't hardly know what to tell you. Sounds as if you have a first-class Airman Lou Snutt in your outfit. Just goes to show what a good preflight can turn up on occasion.*

THERE ARE BIG guys and there are bigger guys, but I drew the biggest one of all as my copilot in a C-47 not too long ago. We were scheduled for a CRT flight and everything went okay until we returned to the field to shoot a landing or two.

We cranked into the pattern and flew an uneventful downwind and base, but after turning on final we ran into some severe jet wash. We were at about 300 feet when we smacked into the turbulent area and I had to apply considerable left aileron to keep the wings level. I got the wing up okay but when I tried to return the wheel to neutral, nothing happened!

I tried again, a little harder, as the plane started to go into a descent to the left, wing low. By now things were getting somewhat shook in the cockpit; it looked as if we were going to prang, but hard. I made one last attempt, using all my strength to pull back on the wheel and turn it to the right, with full throttle applied.

This time I was successful. The wheel returned to neutral and we leveled out and started a go-around. Out of the corner of my eye I noticed that as the wheel came back, the copilot's left leg rose into the air with it. Yeah, you guessed it. Old king-size had the wheel caught in the knee pocket of his flying suit. That meant that when I turned the wheel back to neutral I was lifting a goodly portion of a large hunk of man. My boy had neglected to adjust the seat and rudder pedals and hadn't allowed sufficient clearance between himself and the controls.

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*Rex feels that to be a proficient pilot you must be a well-informed pilot. Often Rex runs across small, but important, changes that should be brought to your attention. Rex's review of accident and near-miss reports indicates that occasionally there are certain aspects of flying about which pilots need reminding. In an effort to keep you informed, he will, from time to time, carry current, informative items on this page to keep you, the professional pilot, up to date.*

★ ★ ★

IN THIS FLYING business there are many emergency situations that often result in a substantial amount of wear and tear on pilot and machine alike. Some of them result only in mental anguish while others can give you a few lumps. But, if you have ever been involved in a mid-air collision, and survived, I think you will agree . . . they are the hairiest of them all.

Now maybe this isn't news to anybody, but guys are still roaring around the area, ricocheting off other flying machines. Most of all this happens during VFR flying and a large majority of it occurs in or around highly congested areas. Things get real exciting in an area where everything from B-52s to Cubs is cluttering up the atmosphere. Unless you really keep your eyeballs uncaged and your head on a swivel, coming nose to nose with another airplane is no trick at all.

With an increase in reported mid-air collisions and near-misses, the Civil Aeronautics Administration has launched a "Mid-Air Collision Avoidance" program. A poster campaign is already under way designed to remind pilots of the ever-present collision hazard. In addition they have undertaken some rather interesting projects within congested areas, on an experimental basis. One such project governs VFR flying in the Washington, D.C. area. (See Keep Current section, FLYING SAFETY, Sept. 1955.) This test will be concluded on 24 November and an evaluation will be made as to feasibility for adoption within other high-density zones.

Also, a "heavy traffic warning signal" test is soon to get under way in both the Washington, D.C., and the Los Angeles areas. When you are tuned to a Navaid in these areas and hear a transmission such as "Caution—Congested Traffic," consider yourself warned.

Let's everybody get behind this "Mid-Air Collision Avoidance" campaign and remember these basic rules:

- During VFR always keep looking around.
- Off airways, fly the correct quadrantal altitudes.
- On airways, fly the correct airways altitudes.
- Be especially alert in and around congested areas.

★ ★ ★

I RAN ACROSS a couple of interesting items that I think should be brought to your attention.

The first one is on IFR position reporting procedures. It seems that CAA stations have been receiving some real "gone" position reports of late.

Giving the man all kinds of unnecessary information such as your point of departure, point of destination and type of airplane only clutters up the air. It serves no useful purpose to ARTC. The required information is this, no more or less: (1) Identification, (2) Position, (3) Time, (4) Altitude, (5) Type of flight plan, (6) ETA next reporting point, (7) The name *only* of the next succeeding reporting point along the route of flight, and (8) Remarks, when required. Here's how your position report should read when operating on Victor Airway 30, Pittsburgh to Minneapolis: "Air Force six two one eight five, over Litchfield five six at eight thousand, instrument flight plan, estimating Pullman one four one eight, *Milwaukee*." This is all explained in the FAC chart. See the inside back cover.

The other item deals with flying IFR on Victor airways. Pilots flying IFR along such airways are cautioned to make every effort to stay in the center of the airway. It is possible that in areas where adjacent Victor airways are separated by only 15 degrees, other traffic can be operating along these airways at the same altitude or climbing or descending through your altitude near congested terminal areas. Enough said, I'm sure. ●

Yep, old king-size had the wheel stuck in the knee pocket of his size 48 flying suit.

*REX SAYS: Sort of lucky your co-pilot wasn't lead-footed, to boot. What amazes me about the whole deal is that the big fellow must have been slightly uncomfortable during the entire flight. Actually, more than one accident has been caused by someone who failed to fit himself or his equipment into the cockpit with sufficient control clearance.*

★ ★ ★

I THOUGHT you might be interested in this account of a board investigation into a violation of flying regulations. It is astounding that any pilot would take off on a cross-country with the complete lack of flight planning that this one displayed. A narrative of the incident follows:

The flight started from a civilian field located in a western state. The pilot filed with CAA while the copilot was briefing the passengers and inspecting the aircraft, a B-25. After the engines were started the copilot asked what their destination was and the pilot informed him that they were going VFR direct to a base in the Middle West.

The copilot then reminded him that this meant they would be flying over high, mountainous terrain at night and suggested that they go airways. He received no reply. They took off and the pilot cranked in a station on the bird dog that took them considerably south of their filed course.

They flew this course for about 30 minutes, ending up about 80 miles south of course. The copilot finally was able to convince the pilot of their approximate position and that they were now on airways. The pilot shrugged this off as being unimportant, although they were approaching an ADIZ. Further, he refused to make a position report and an estimated time and place of penetration, stating that *it was not required when entering an ADIZ, but only when leaving one at an altitude above 10,000 feet.*

During the flight it became obvious that the power settings used would not allow the aircraft to reach the original destination. The pilot called a base and requested landing instructions, receiving a straight-in approach. About the time that he started his letdown, two F-94s bounced them. Fortunately, it was obvious that the plane was landing, so the fighters allowed them to go on in. Needless to say, there was quite a reception committee waiting on the ground for the plane to taxi in.

The copilot stated that he had performed all the navigation on the flight out and had tried to keep up with their position on the way back. This was a little hard to do, however, as the pilot had neglected to pick up any charts covering his filed flight plan. The Fac Chart was the only available navigation aid for the trip east.

The investigating board found that this violation submitted by Flight Service was valid and that the pilot used little or no preflight planning.

A further finding was that the evasiveness used by the pilot in answering questions submitted by the board during the investigation indicated a lackadaisical attitude on the pilot's part toward complying with flight regulations and accepted rules and procedures.

*REX SAYS: This one is the bitter end. I concur with the board findings and think that under the circumstances the language was rather mild. The last time this lad checked 60-22 must have been back in the Jenny days. As for his non-existent flight planning, I don't think it is necessary to make any comment on that. You can sum up the whole mess by saying that this guy just wasn't a professional.*

★ ★ ★

I THOUGHT Rex would appreciate this little hide and seek episode. It's one for the books.

Flight Service received a call from an Air Division stating that a Mayday was being received from an Air Force jet, but that they did not have radar contact. Immediately all DF and radar facilities in the area were alerted. Two DF units were able to obtain bearings which were plotted by Flight Service. An advisory was issued to the pilot who then stated that he was running low on fuel and was at 5000 feet. Flight Service advised him to climb, due to terrain features and for better radio reception. This did the job and the aircraft was directed to an air base for a safe letdown and landing.

What makes this whole caper especially interesting is the fact that this was the third time in two days this pilot had become lost and squawked "Mayday." And in the same area.

*REX SAYS: This is a boo-boo from the records that makes for hard believing. Navigation, either by pilotage or radio aids, isn't a lost art. For a pilot to goof up once is bad enough, but to get hopelessly lost three times in two days in the same area, well. . . . I wonder if this lad had a business in a jet aircraft?*

# *Snow is where you find it . . .*

**This unusual winter scene should have a message for you. Weather phenomena is at its peak during the coming months, so don't be a winter mishap because of unsuspected conditions. Before every flight, double-check the latest weather trend and read those NOTAMS.**


NORTH FRIGID ZONE
NORTH TEMPERATE ZONE
NORTHERN HEMISPHERE
SIBERIA
ASIA
EUROPE
USSR
MONGOLIA
TURKEY
MEDITERRANEAN SEA
IRAN
CHINA
INDIA
ARABIA
AFRICA
ARABIAN SEA
NORTH PACIFIC OCEAN
CEYLON
MADAGASCAR
AUSTRALIA
SOUTH ATLANTIC OCEAN
INDIAN OCEAN
SOUTHERN HEMISPHERE
ANTARCTICA
SOUTH TEMPERATE ZONE
SOUTH FRIGID ZONE