

Interceptor

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1978 IN REVIEW . . . see page 5



Interceptor

FOR THE MEN AND WOMEN RESPONSIBLE FOR AEROSPACE DEFENSE

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Gen James E. Hill
Commander in Chief

Published by the Chief of Safety
Col Alfred E. Lang

Chief of Safety Operations
Lt Col Joseph L. Nuvolini Jr.

Editor
Maj Lionel P. Johnson

Associate Editor
Maj Wayne E. Griffith

Editorial Assistant
Jeanie Alvord

Art Director
Craig T. Schafer

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SPOTLIGHT

When you spend a lot of time alone, you might find out that you're not as good company as you thought you were.

Bill Hoffmann

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OUR COVER

This F-106 recovered from a midair collision with an A-7. The six made it; the seven didn't. Lots of lessons here: heads up and fly your plan.



**IN THE INTEREST OF SAFETY
PASS ME ALONG TO A FRIEND**



Year End Report

1978 in many respects was a banner year, safety-wise, for the Command. Our Class A flight mishap rate dropped sharply, reversing the steady upward trend of the past three years. This achievement represents hard work and discipline by everyone in the Command. The most comforting aspect of the year was that we did not have any crew fatalities caused by delayed ejection.

There tends to be a letdown after a year of hard work and success. One hears things like "we'll never be able to do that again," or "accidents come in threes." This is not logical reasoning. Missions accomplished the safest way possible are not restrained or otherwise affected by time. There is no reason 1979 cannot be even more successful than 1978.

In fact, we each should resolve to actively participate in individual and unit goals of safe mission accomplishment in 1979. There can be no letdown, no passive approval of lax operations, and no relaxation of high standards of discipline and professionalism. Those things are continuing, and perseverance in that area dictates the measure of success, both in the long and the short term.

ALFRED E. LANG, COL, USAF
Chief of Safety

HOT LINE

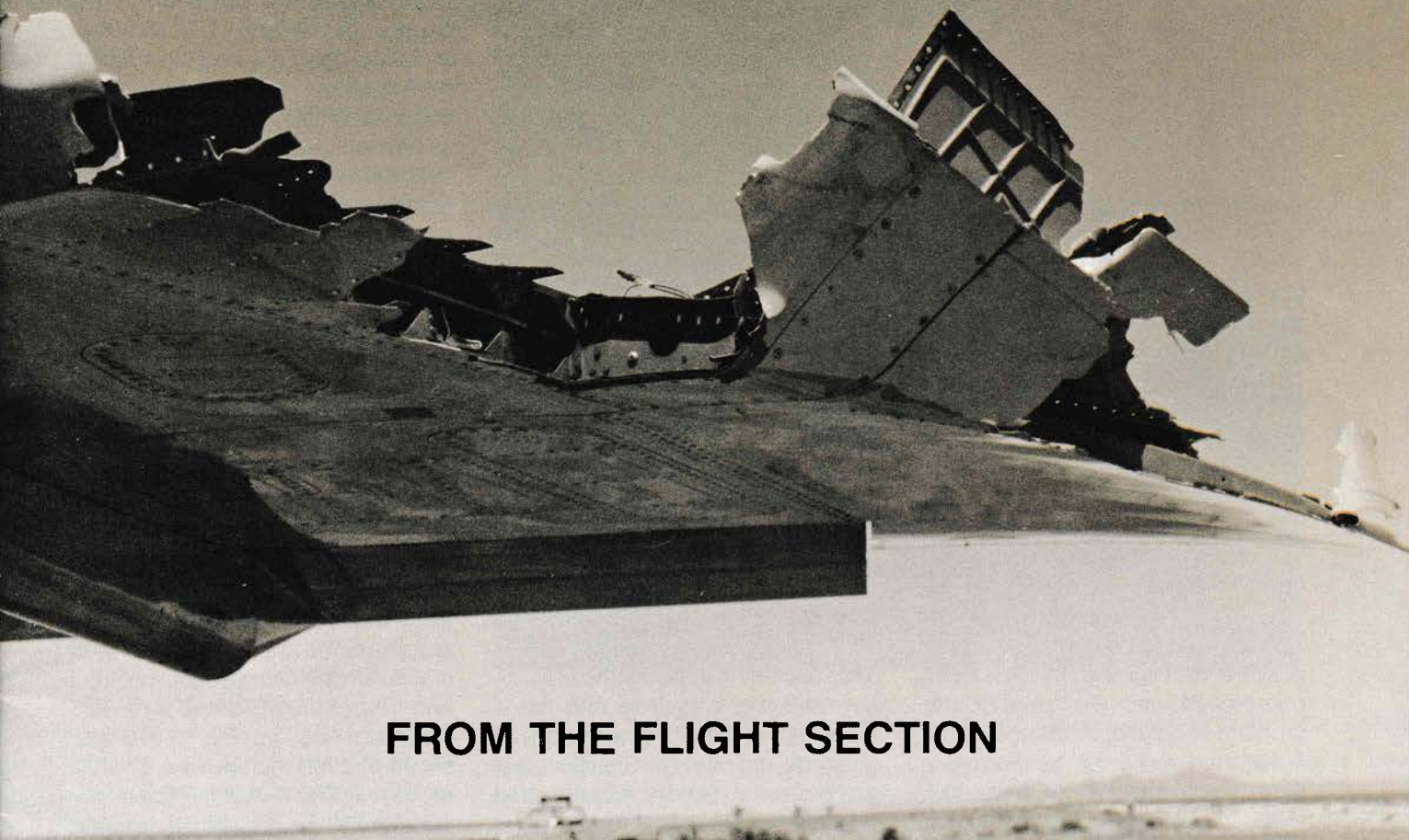
DIVERT! Two incidents, one of which resulted in a destroyed aircraft, could have been avoided had the right decision been made. In the first, an RF-4C hit the ground on short final during the second attempt of a night weather landing on the wing. The weather: partial obscuration, one-half mile visibility in fog. The question: why even attempt the landing, in formation no less, when you've got a perfectly good alternate? The second could have been as bad. The A-7 driver landed on a wet 6,500-foot runway — the normal runway was down for maintenance. Passing the departure-end barrier, tail hook up, he thought he had it made. He thought wrong — off the end, into the toolies. A quick check into the Dash One chart shows that successfully stopping on the runway was a shaky proposition to begin with. You gotta wonder what the SOFs were doing. In each of these incidents, diverting the aircraft was the correct call. If the SOF doesn't make that call, take it upon yourself to RON somewhere else if things aren't right at home. (TAC ATTACK)

T-BIRD TAXI PROBLEM. A T-33 struck an aircraft ladder during taxi out. The first thing you think is "pilot," right? Not so. The ramp was covered with hard-packed snow and ice. The crew was transient on an exercise. Maintenance did not forewarn the crew that several ladders had been left lying on the ramp after previous aircraft had departed. Subsequently several ladders were covered with snow. The ramp was unlighted, taxi lines were not visible, it was dark, and the aircraft was not marshalled out of parking. The pilot taxied out of parking and turned 45° to miss one ladder, continued taxiing and struck another. Several things could have prevented this, the foremost of which is to police up loose equipment from the ramp. One might suggest that Maintenance talk to the crews about such impediments. Another fix that may work is for crews to survey the intended taxi routes as they approach their aircraft. The guy preflighting the bottom can take a ground-level shot and find unusual lumps or articles in the way.

STAY ON YOUR TOES. A T-Bird recently had an overtemp during start. When the pilot went around the horn with the throttle, the engine began rumbling in an unusual manner and the EGT climbed rapidly. Before the start could be discontinued the EGT exceeded 900 degrees. The crew chief, watching the start, observed a 6- or 7-foot long flame streak out of the tailpipe. Evidently the emergency fuel system did not cut out when the throttle was brought to idle. The pilot observed the emergency fuel light still illuminated. This occurrence certainly shows that it is necessary to stay alert at all times and be ready for anything. A similar situation has occurred during the emergency fuel check. When the emergency system is activated, the normal system does not cut out. This results in a rapid engine acceleration from 55 percent.

REGULATIONS. AFR 60-16/ADCOM Sup requires that for night sorties, the initial approach to the field of intended landing be an instrument approach, if available. The reason behind this reg is to require the pilot to use all the cues possible to make a safe landing when outside visual cues are reduced — stacking the deck in his favor where possible. Recently a pair of T-Bird pilots found the value of this regulation the hard way. During a VFR overhead pattern while landing at a strange field at night, they got a bit low on final and hit two 18-inch high approach lights that were located some 200 feet prior to the beginning of the overrun. They touched down in the overrun and completed the landing roll-out. After landing they checked the aircraft over with flashlights as they thought they may have contacted the runway lip. Nothing unusual was noted, however, until after two subsequent flights and the aircraft had returned home. Maintenance personnel found some minor damage to a flap and speed brake. This mishap points out the value of knowing and going by regulations (most of them were written to help you) and the necessity of a thorough pre-flight inspection at all times. You never know what may have been done to your aircraft prior to your arrival. Don't rely on the other person to do your job for you!

"78 IN REVIEW"



FROM THE FLIGHT SECTION

1978 was the best flight safety year ADCOM and our gained ANG units have ever had. Fewer aircraft were destroyed and fewer fatalities occurred in 1978 than in any previous year. The Safety staff thanks each of you for the contribution of your time, effort, and attitude in establishing this record. The record is indicative of a lot of hard work by maintenance personnel, aircrews, and supporting agencies. The establishment of a record in 1978 creates a new goal to do better in 1979.

ADCOM aircraft flew a total of 101,290 hours and experienced three Class A mishaps, while ADCOM-gained ANG aircraft flew a

total of 57,960 hours and experienced two Class A mishaps. The mishap rates for 1978 are 2.96 Class A mishaps for ADCOM per 100,000 flying hours and 3.45 for our gained ANG units. The 2.96 rate is the lowest ever recorded for ADCOM and the 3.45 rate is second only to the outstanding ANG 1975 rate of 2.2.

ADCOM and our gained ANG units are in a precarious position in that one mishap largely affects the mishap rate. We have been in this position for quite some time so it is noteworthy that the increasing mishap trend has been reversed. The combined rate for 1975 was 3.9,

1976's rate was 4.2, and 1977's was 5.0. This year it was down to 3.1.

Now a brief rundown of the 1978 mishap experience. Each mishap description is followed by a section entitled "Results." This section comes about from a field suggestion. Some aircrews indicated that although mishaps were briefed and discussed, they rarely found out what happened to the mishap recommendations, nor could they associate changes with specific mishaps. The results section will give you briefly what has been accomplished as a result of the mishaps. Additionally, each mishap is followed by a Safety office comment

concerning the mishap.

F-106

Flying time for the F-106 was down approximately 600 hours in 1978 to 67,488 hours. There were three F-106s destroyed which is one less than in 1977. One other F-106 Class A mishap was recorded in which the aircraft was not destroyed, but the cost to repair put it into the Class A category.

There were eleven F-106 Class B mishaps recorded with loss of main landing gear doors being predominant. The door loss problem surfaced as the only significant problem trend for the year. This problem began in 1977 when it was determined that the main landing gear could be trapped in the up position after a door loss. This led to a redesign of the upstops. After the redesigned upstops were installed there was an increased loss of fairing doors. A TCTO was issued that led to rerigging the landing gear; this has been completed and we believe the problem is solved. Additionally, the F-106 had two main landing gear side brace attachment bolts fail. When the bolt fails the main gear overextend and rest against the external tank. The mishap potential of the broken bolt was such that a TCTO was issued directing a one-time inspection of the attachment bolt. Results of the inspection have not been finalized at the time of this writing but over-torquing is an apparent factor.

The following is a brief rundown of our F-106 mishaps for 1978:

1. During join-up at medium altitude, in an attempt to prevent overshooting, the pilot retarded the throttle to idle, opened the speed brakes and began a rolling maneuver around the lead aircraft. As the aircraft became inverted, the pilot was distracted and lost situation awareness. Subsequent flight control inputs forced the aircraft into

an out-of-control condition. The pilot assessed the situation to be a spin and ejected at the recommended out-of-control altitude. The mishap board determined that the aircraft was not in a spin but in a post-stall gyration. **Results:** (a) An expanded out-of-control, post-stall gyration and spin characteristics description is now included in the F-106 Dash-1. (b) BFM training is now part of the T-33 Interceptor Lead-In Course and the F-106 CCTS. (c) A program to provide ADCOM aircrews with departure/out-of-control experience is being formulated using the T-37 and T-33 aircraft. **SEOF Comment:** While it is hard to accept the loss of a perfectly good airplane, it is far better for an aircrew not to delay his ejection decision and live to explain what occurred.

2. A fire started in or around the engine diffuser case while the F-106 was making a wing takeoff. Shortly after becoming airborne the fire was detected, flight controls and thrust were lost, and the pilot ejected successfully just within the ejection seat envelope. Ejection occurred at about 75 degrees of bank, level flight, 350 feet AGL, and 225 KIAS. **Results:** The cause of the fire is undetermined. The Command is attempting to procure an improved diffuser case for the J-75. **SEOF Comment:** Certainly the ejection parameters were not very good but you can't argue with success. The seat worked and that's what counts. Again, a good case for preplanning your ejection decision and trusting the F-106 ejection seat.

3. The intercept mission was progressing normally until several aircraft warning lights illuminated, followed shortly by the loss of electrical power and flight controls. The RAT was extended but flight control response was not evident. As the aircraft rolled and nosed over, the pilot ejected successfully. The loss

of controls, dual hydraulic failure, and loss of electrical power were evidently caused by a fire in the main wheel well area. The fire was most probably caused by chaffed wire and/or hydraulic lines. **Results:** A TCTO directed inspection of the wiring and hydraulic lines in the wheel wells. Approximately one-third of the fleet required some maintenance to correct chaffing of electrical wires in the wheel wells. No further action is planned. **SEOF Comment:** When the aircraft failed to respond to flight control inputs, the pilot realized that his situation could only deteriorate. His decision to jettison a disabled aircraft was appropriate, timely, and the only viable course of action.

4. Lack of a range clearance forced a flight of two A-7s and two F-106s to turn 180 degrees away from their inbound heading. The subsequent turnback inbound was made with the aircraft out of position and one of the A-7s and an F-106 collided. The nose of the F-106 sliced through the left wing and tail of the A-7. The A-7 pilot ejected successfully when his aircraft became uncontrollable. The F-106, minus the nose section, was landed successfully. **Results:** Exercise mission briefing procedures were reviewed thoroughly and improved to assure everyone had a better understanding of what was expected of them during the mission. **SEOF Comment:** As aircrews we are never relieved of the responsibility to keep our eyeballs out of the cockpit. It is also our responsibility to speak up whenever we feel that an unsafe situation is developing.

5. One Class B mishap bears mentioning: During a descending attack on another aircraft, the pilot realized that an overshoot was developing and relaxed back stick pressure. This allowed the aircraft to accelerate with an unplanned in-

creasing rate of descent. Realizing that a continuation would result in ground contact, the pilot discontinued the attack. Ejection was determined to be out of the question because of aircraft speed. The pilot's only recourse was to attain maximum g available. When mach tuck occurred, with its accompanying g increase, the external tanks departed the aircraft and severely damaged the leading edge of both wings. The aircraft was safely recovered to await arrival of new wings. **Results:** Briefings have been expanded to include high-speed dive recovery characteristics, altitude loss, and g available while supersonic. **SEOF Comment:** This is one of the few examples where ejection was not an acceptable course of action. The pilot swallowed his pride and discontinued the attack when safety was in doubt. The pilot and aircraft came back to fly and fight another day.

Those are the main F-106 mishaps which occurred in 1978. All ejections were successful and no fatalities occurred. There were 42 Class C mishaps recorded, nine of which were engine problems (we had 26 engine problems in 1977). PACER MOWER has reduced the problems associated with the J-75 and made the engine more reliable.

T-33

The Lockheed racer had a banner year. The sticking lap belt problem was cured but no one had to use the system to check it out. The aircraft showed itself again to be very reliable. ADCOM T-33s flew 35,405 hours while ADCOM/ANG logged 8,212 T-33 flying hours. One each Class A and Class B mishap occurred. Nineteen Class C mishaps occurred with no trends evident.

The Class A mishap occurred during a cross-country mission. On climbout the solo pilot felt and heard an explosion in the rear part of the aircraft. Unknown to him, one or



more turbine blades broke and exited the aircraft through the fuselage. When the throttle was advanced, the engine exceeded EGT limits. Idle power could be maintained, however. Glide to a major airfield was not possible so the pilot set up for a flameout landing at a 4,500-foot gravel strip. The pattern and landing were executed flawlessly. Unfortunately, the aircraft continued to smolder and burn after the pilot shut down and egressed. The aircraft eventually was destroyed by fire before adequate fire fighting equipment could arrive. **Results:** Added justification for the procurement of new T-33 turbine wheels. Initial delivery of eight new wheels began in October 1978. **SEOF Comment:** A very fine bit of flying on the part of the pilot; it is unfortunate that the outcome was not more favorable.

F-101

ADCOM F-101s flew 4,380 hours while our ANG units logged 11,862 hours. We experienced one Class A and one Class B mishap. The aircraft flew relatively trouble free for the entire year without any new trends surfacing. Of the 25 Class C mishaps reported though, 18 were engine-related. The main problem associated with the engine has been in the N1 compressor. During AB initiation and termination, the N1 compressor is accelerated about 7 percent due to open exhaust nozzles without the AB in operation. This acceleration causes the turbine blades to fail. Unfortunately, there are no present means to check the blades. New blades for the J-57 have been procured, however, and will come into the inventory in late 1979.

One Class A F-101 mishap oc-



curred during 1978. The aircraft was configured with two external tanks and was making a wing takeoff. The lead F-101 was configured with only one external tank. When it became evident that the wingman could not keep up, lead pushed up his power and made his own takeoff. The wingman apparently attempted to fly off with lead prior to attaining sufficient flying speed. The aircraft climbed very little, pitched up, and crashed. The rear seat pilot evidently initiated ejection but there was insufficient time for the system to operate. Both crew members were fatalities. **Results:** (1) Formation takeoff guidance in the ADCOM formation manual was amplified to require the heavier of two dissimilarly configured aircraft be the lead aircraft on takeoff. (2) Procurement of a single-motion ejection seat for the ANG F-101s is being evaluated. **SEOF Comment:** Overconfidence and inadequate premission planning cost us two lives and a valuable aircraft.

F-4

The aircraft had an excellent year. ADCOM F-4s flew 4,562 hours while the ANG flew 4,635 hours. There were no Class A mishaps and three Class B mishaps — all engine FOD. Of the nine Class C mishaps reported, six were engine-related.

One mishap bears mentioning because it nearly resulted in a destroyed aircraft. During takeoff, the RSU observed the aircraft wings folding. He transmitted this but the aircrew did not hear it. The aircraft nose came up sluggishly and it broke ground abruptly. Pitch continued to increase as the gear and flaps were raised and the wings continued to fold. Pitch finally reached about plus 50 degrees with airspeed 150-160 KIAS at 500 feet. After a controllability check, and a few minutes to regain their composure, the aircrew accomplished a successful approach end barrier engagement.

Results: Steps have been taken to more fully insure wings are locked

down prior to takeoff. **SEOF Comment:** Several people dropped the ball on this one. The crew chief, the aircrew, and the EOR crew all failed to detect that the wings were unlocked. Each of them could have broken that chain of events leading to disaster, yet no one did. Flying wings, lives, and an aircraft were put on the line based on an assumption that the other guy did his job. Only through a superb job of airmanship did the aircrew make up for the numerous errors.

B-57

Another good year was attained by the old bird. 1978 was the first Class A mishap-free year for the B-57 — in five years. We kept our small fleet intact with only two Class B mishaps recorded. ADCOM flew 6,606 hours while the Guard logged 5,876. One Class B was a birdstrike while the other occurred when both engines were damaged by ice ingestion. Fifteen Class Cs were reported. Eight of them for engine problems. There was one gear up landing because of a broken actuator rod; a fine bit of flying by the crew limited aircraft damage.

Other

The other category comprises the T-37, UV-18, and C-131. These aircraft logged a total of 11,231 hours without a Class A mishap. One C-131 Class B mishap occurred when an engine caught fire and damaged the airframe. Three T-37 Class C mishaps were experienced — two of them physiological incidents and one engine problem.

Summary

While rates in themselves are not really important, people and airframes are. The loss of a single life or airframe gives us all enough cause to work harder. Keep up the good work, speak out when things don't look right, and take it upon yourself to break that event chain which leads to a mishap. Cheers!

MISSILE/NUCLEAR SECTION



The 1978 missile/nuclear mishap review shows a rather busy year.

Air-Launched Missiles

ADCOM and ADCOM/ANG experienced no mishaps in this category during 1978. An improvement over 1977 when three Class C mishaps were reported.

Ground-Launched Missiles

During 1978 there were no ground-launched missile mishaps recorded.

Remotely Piloted Vehicles (RPVs)

We had eight reportable mishaps during the calendar year in the following categories:

-CQM-10B (Class A). The drone tumbled out of control and was destroyed shortly after liftoff. The fuel flow system was the suspected cause.

-CQM-10B (Class A). The drone was lost when the booster system failed during launch. Materiel failure in the boost system caused this mishap.

-BQM-34A (Class A). The drone entered a right turn at 20,000 feet, lost altitude, and dove, despite efforts to

regain control. The technical data and controller actions contributed to this mishap.

-BQM-34A (Class A). The drone could not be recovered following a remote control problem in the ground control station. Materiel failure and tech data compliance were causes.

-BQM-34A (Class A). The drone experienced loss of carrier after launch and all attempts to regain control failed. Either materiel failure or RF interference caused this mishap.

-BQM-34A (Class B). During boost phase the rocket motor separated from and penetrated the fuselage. The aft rocket motor support assembly failed.

-BQM-34F (Class A). The drone was lost during recovery system failure. An undetermined logistic factor is suspected.

-BQM-34F (Class A). The drone was lost during water recovery. Mishap is under investigation.

Also during the year, a PQM-102A critical profile mishap was downgraded to the nonreportable category.

Nuclear Area

We experienced no nuclear accidents or incidents; however, we did have a total of 22 Dull Swords. Six Dull Swords involved the MB-1 rack failing to release an ATR-2A. The causes included materiel failure and numerous discrepancies in the rack itself. Another Dull Sword included a defective forward umbilical. Two other reports involved cracked joints in MD-1 cradles. Only one report was attributed to the MF-9 trailer last year. A set screw on the travel lock arm snapped off due to fatigue failure.

The W-25 warhead accounted for another two reports. One involved a defective timer and the other a failed pressure check.

The MC 1274 contributed four more Dull Swords by failing electrical tests.

A T-304C gave erroneous indications which were cause for a report.

Four deficiencies were attributed to the ATR-2A failing to ignite or launch. The causes included defective cartridges, bad umbilicals, defective wiring in the rack, and technical data deficiencies.

The final Dull Sword concerned a bomb threat in a storage area.

As in years past, the Dull Sword continues to be the most common type of AID reporting. The Dull Sword also has the longest initial suspense — two workdays. However, much of this valuable time is often lost simply because communication lines are ineffective. We urge unit Safety personnel to keep in touch with those they rely on to keep them informed. After all, it's only human nature not to air problems to strangers. If you are getting reports which turn out to be "false alarms" in terms of Dull Swords, then your communication system is effective. Isn't it better to hear about several incidents that didn't turn out to be reportable, than to not hear about that reportable deficiency that occurred several weeks ago? ★

The “Friendly Enemy”



by 1Lt Duane W. Deal
17th DSES

Inside the control center of the NORAD blockhouse, the calm routine of the early morning is about to break. The dutiful observation of the surveillance section sergeant has changed into an intent concentration — his radar scope shows an aircraft entering his region's airspace from the arctic, moving southward over Canada toward the United States border at 500 knots. Immediately he gives his query via the hotline to the identification section. Although it seems like an hour to the sergeant, a minute later the identification section reports that there is no flight plan or contact with the aircraft, thus classifying it as an “unknown.” With the unknown con-

tinuing to penetrate airspace, the Senior Director (SD) of the control center directs an active air scramble of two F-106's under his control. Less than five minutes later, the interceptors are airborne on course and under FAA control, and the SD completes his checklist: all essential parties are notified (including NORAD headquarters, the FAA, and the region commander), weather reports are updated for the interceptors, and a weapons controller is assigned to direct the intercept. As the FAA relinquishes control of the F-106's to the weapons controller, the situation becomes somewhat more intense — the intruding aircraft has commenced

electronic jamming of the ground and airborne radars, forcing the surveillance section to initiate other means of tracking to pass accurate information to the weapons controller. “Target bearing three-four-zero for ninety, level angels three-seven-zero, speed mach point seven-zero” goes the call from the controllers to the interception team. Before the pilots can acknowledge, however, the radio erupts with another voice, directing the interceptors to turn right forty degrees. “Spoof . . . chatter . . . continue three-four-zero,” the controller interjects, alerting the pilots that the intruder is attempting communications jamming by issuing false in-

structions. The lead pilot announces to the controller that his aircraft has detected the stranger: "Contact three-five-zero for thirty." "Contact is chaff, repeat chaff," the controller broadcasts, only to hear the third voice say, "Contact is target. Turn further right twenty degrees." . . . Again, "Spoof . . . Chatter," is the controller's response. Noting a target track change on the scope, the controller announces, "Turn three-five-zero, target evasive left." "Contact three-three-five for twenty," the pilot replies. "Contact target," the controller reassures. Seconds later the interceptor pilot announces, "We have a visual contact with the stranger, and will pull into his stern." "Say aircraft type," says the controller. As the lead interception pilot announces what he sees, the control center breathes a sigh of relief: "The target is an Air Force Echo-Bravo five-seven, out playing his old tricks again."

Over the years, such "tricks" have become known as the trademark of a unique USAF unit, the 17th Defense Systems Evaluation Squadron. Stationed at Malmstrom AFB, near Great Falls, Montana, this unit of the Aerospace Defense Command (ADCOM) is tasked with simulating an enemy aggressor force to train and evaluate air defenses worldwide.

Although the unit has been in existence for nearly a quarter of a century, it is still somewhat unfamiliar to the general USAF populus. Formed as the 4677th Radar Evaluation Flight at Hill AFB in 1954, the unit's job was to simulate the primary enemy offensive threat of the 1950's — the manned bomber. With six World War II-vintage EB-29's to its name, the 4677th REF would launch its aircraft for normal missions of 6-8 hours. Flying with a crew of ten, the EB-29 would lumber

nationwide in and out of radar coverage while its six electronic warfare officers — otherwise known as EWO's — would use the electronic equipment on board to jam radars along the route.

The squadron began to play its current role in 1959 when it switched from its EB-29's to EB-57's. This exceptionally cost-effective aircraft change gave one EB-57, with a crew of two, a greater mission effectiveness than two EB-29's having a combined crew of twenty. With its new aircraft, the squadron assumed a larger role in the 1960's, being deployed worldwide to evaluate air defenses. In 1972 the unit became a tenant at Malmstrom AFB. In 1974, the "friendly enemy" was redesignated as the 17th DSES, shortly afterward becoming the only operational squadron of its type in the active USAF flying the EB-57E.

The EB-57's nickname might just as well be "Modification." Evolved from the British Canberra, the B-57



An early morning launch



A flight of Canberras off on another exercise deployment

has as rich a heritage as the unit to which it belongs. "The EB-57E's that we fly are but another modification on the basic airframe that's been a workhorse for the Air Force," notes 17DSES Commander Lt Col Jim Goodnight. "This is the same aircraft that's been used in high-altitude sampling, photo reconnaissance, target towing operations, and which has also seen a lot of

action as a bomber. As a matter of fact, a few of our planes still have the bomb armament panel and gunsight mount that I used in Vietnam in the B-57."

"The EB-57 'E' model has characteristics that deem it particularly suitable to its present task," according to Operations Officer Lt Col J. T. Stanley. "Our plane's immense wing allows us to cruise with the sta-

bility traits associated with a bomber, yet turn in combat to rival the best fighter. And what's more, we can take our birds and simulate an air strike *comfortably* anywhere from sea level to over 40,000 feet, in practically any subsonic speed range."

The B-57's bomb bay has been modified to hold assorted "blackboxes" for ECM equipment

(electronic countermeasures). "These components can be interchanged to concentrate on the particular radars we'll be working," says EWO Capt Ron Berdine. "For example, if we plan to fly air-to-air work against F-106's, we'll get maintenance to install different jammers than if we were working only air-to-ground against ground radar sites."

ECM is not the only weapon on the side of this "enemy" force. External chaff dispensing pods are mounted on wing pylons which once held bomb racks. Chaff is a radar reflecting substance much like the icicle strands placed on trees at Christmas. It is used to cloud radar scopes to hide the EB-57. For instance, the scope could show a positive blip revealing the EB-57's position one second, then a bundle of chaff is dropped, leaving several blips to choose from.

Ingenuity is also a prime tool of the aircrew, which consists of a pilot and an EWO. An example lies in the use of communications jamming in an attempt to disorient the interceptor crews and radar controllers. "Our crews all have their own individual techniques for comm jamming," explains instructor pilot Capt Don Hoover. "Some carry special tape recorders to play back headings issued to fighters. Others use these same tape recorders to saturate the frequency with country and western music, just when the interceptors are looking for target information. We even have some 'musicians' that play tunes on harmonicas, kazoos, and jew's harps to 'entertain' the interceptors."

Finally, the pilots also use the most obvious tool at their disposal—the aircraft itself. Dependent upon the threat being simulated—from fighter to bomber—the aggressors are issued clearance to

evade to certain extents in aircraft heading, altitude, and airspeed. It then falls on the pilot's shoulders to do his best in the simulated combat situation to elude the interceptors.

"Maintenance on an aircraft such as the EB-57 tends to be quite an involved task," according to Deputy Commander for Maintenance Major Paul Perkin. "The basic aircraft has been modified to such an extent that it resembles the original B-57 first flown over 25 years ago only by its

low body and high wing silhouette. Add that fact to the average airframe time, around 8,000 hours, and to the critical spare parts situation, and you find yourself in a situation where our mechanics not only know every part of the aircraft, but, in many instances, end up making replacement parts in our component repair branch shops."

"Another interesting facet of the situation," adds aircraft generation branch line chief MSgt Jim Stanke,

A 17DSES crew going to work





The 17th arrives in Europe

"is that many of our personnel are *younger* than the plane they're working on. But they keep working to keep it mission capable every time."

Simply stated, the mission of this unique unit is to travel as professional "bad guys." A more eloquent statement is that the unit is tasked to train, operate, and maintain a simulated enemy aggressor force for the training and evaluation of air defense systems throughout the free world. In describing the mission of flying units, one is usually pointed toward a normal sortie profile to serve as a depiction; however, with a unit such as this, there is no such animal as a "typical" sortie — each sortie is *atypical*. Therefore, to describe the mission of the 17th DSES, a short look should be taken at each of its five primary sortie profiles: exercises, mixmasters, anchor fak-

ers, spades, and training missions.

Exercises are those missions planned and coordinated well in advance of the execution date, which often have accompanying public news releases dealing with them. For these exercises, the friendly enemy deploys 4-8 aircraft to various staging bases. From these bases, the EB-57's take off — usually late at night — and fly specific ground tracks and altitudes out of and back into defense radar coverage. Upon reentering coverage, interceptor aircraft are vectored by radar controllers to the point where the interceptor pilots can establish either a visual or radar contact with the target. Throughout the mission and up to the point where the interceptor is in a position to make a simulated "kill," the EB-57 pilot and EWO are using all of the capabilities of their aircraft and its systems in an

attempt to outwit all involved.

On the other hand, the *mixmaster* mission involves one or two EB-57's deploying to an interceptor base as a training aid to work closely with the interceptor squadron. Generally flying twice per day for a week's time, the mixmaster involves 5-10 engagements per flight between the aggressor and friendly aircraft. "The mixmaster tends to be the favorite mission of the pilots and EWO's," states pilot Capt Tom Godbold. "We work closely with the fighters to determine their needs, we grab some really productive flying time, and, perhaps above all, the mixmaster is about as close to a true dogfight as we can come."

The third mission type is dubbed as an *anchor faker*. Again, these missions involve flying distinct ground tracks, yet there is no engagement with fighters. Instead, the

EWO uses the 57's ECM gear for the selective jamming of NORAD radar sites along the route as training for the ground stations.

While the other missions evidence coordination, the *spade* mission launches with a minimum of prior notification. During a *spade*, the EB-57 is tasked to perform an evaluation of the intercepting unit to determine its response time and effectiveness. Interceptors sitting alert are often scrambled on such flights.

Finally come virtually the only local missions the 17th flies to and from Malmstrom AFB — the *training* flights which launch in the unit's three dual-control B-57's. The unit provides its own initial and continuation training for the pilots and EWO's. In addition, training is given for NASA and other government agency pilots requiring B-57 experience. An integral part of the training is the strong safety program which has earned the USAF Flight Safety Plaque for the past two consecutive years. These awards are particularly noteworthy when you consider that the squadron flies 25-year old aircraft in and out of strange airfields worldwide in all climates.

The first three mission scenarios presented — the exercise, mix-masters, and the anchor fakers — are used by the unit worldwide. Almost purely a TDY unit, the 17th DSES deploys not only to CONUS bases, but also throughout Canada, Alaska, Iceland, Korea, and Europe. In its role as a roving aggressor force, the EB-57 is engaged by assorted NATO and PACAF fighters, in addition to the F-106, F-4, F-15, and F/CF-101's it routinely sees at home.

When your primary missions involve traveling, as is the case with the 17th, maintenance flexibility and versatility quickly become part of your makeup. For normal deployments stateside, it isn't uncommon to see a pilot and EWO oiling their

plane, installing starter cartridges in the engines, and accomplishing other routine servicing. "The aircrews also assist maintenance teams in troubleshooting when problems arise," notes Lt Col Stanley. "After all, you can't always expect a complex aircraft to fly 8-12 sorties away from the tender care at home without some problem arising." With transient alert (TA) crews launching and recovering perhaps two EB-57 sorties a day for a week, friendships often arise between the aircrews and the TA crews.

"When four or more 57's are sent to one base for any length of time, a maintenance support package is also sent," reports flight chief TSgt John Satre. "This is the case with the overseas deployments and occasional Alaskan trips. These maintenance packages may consist of 4-40 additional personnel, dependent upon the time involved and sortie schedule." Along with the personnel come spare parts and tools to last the length of the deployment, all transported via a cargo plane contracted through MAC.

As the friendly enemy travels around, questions pop up from

nearly everyone encountered. Most questions deal with easily answered subjects, such as the EB-57's characteristics, deployment locations, and squadron manning. But they all seem to end with a prevailing theme that isn't quite as easy to answer: "How well do you do against the interceptors?" or "How often do you get through?" Lt Col Goodnight offers an answer: "Just how well we do depends upon a multitude of factors, such as the evasive action we're allowed, the state of equipment in the EB-57 and in the interceptor, the purpose of the mission, and primarily upon the experience level of those we're going against, both those in the air and those on the ground. *Exactly* how well we do I can't say. But I will say this: the interceptor pilots that we train continue to prove themselves outside the training environment by escorting lost aircraft, aiding those in distress, and by intercepting 'curious' Soviet aircraft on our airspace borders. And above all, I'm confident that if the real need ever arises, our defenders will successfully perform their mission, in part, because of the training we've provided." ★



Crack maintenance is a critical element of a successful deployment operation

Mishap Prevention

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 20TH AIR DIVISION (ADCOM)
FORT LEE AIR FORCE STATION, VIRGINIA 23801



REPLY TO
ATTN OF: CC

7 November 1978

SUBJECT: Mishap Prevention

TO: All 20 AD Subordinate Units/CC

1. The ADCOM fleet, while still capable of fulfilling its mission, is getting old. In fact, our airplanes are older than many of the pilots, controllers, and maintenance personnel who are tasked with the responsibility for their safe operation. In this type of situation, there often develops a tendency for some of the younger troops to place unquestioning reliance on the wisdom and experience of the "old heads." This practice can be valid until they run across "old heads" who have been at it so long that they have grown complacent, thinking they know the book better than the guy who wrote it. When this happens, a weak link develops in the mishap prevention chain, and the stage is set for an accident.

2. In order to preclude this situation, there are a number of points which must be emphasized to all personnel:

a. First, experience does not equate to infallibility. In fact, experience can often lead to complacency. It is, therefore, imperative that all personnel involved in a given operation be constantly alert for conditions which don't "look" or "feel" right. An equally important corollary to this rule is that if such a condition is noticed, it must be pointed out. If wrong, something will have been learned; if right, a mission, an airplane, or a life might well be saved.

b. Second, but an integral part of the first, should be the elimination of the "non-hacker" stigma. There is no easier way to squelch an expression of concern about a particular operation than to retort with "what's the matter, can't you hack it?" This reply not only indicates the lack of a logical response to the comment, but also serves as a deterrent to further dialogue. In order to preclude the development of this kind of stifling environment, it is essential that top-level emphasis be put on the encouragement of a free and open exchange of ideas, doubts, and even constructive criticism.

c. Finally, avoid the "old shoe" syndrome. Just because our equipment has been with us for quite a while, there is no reason to become comfortable with it to the point of taking it for granted. It should be treated with the respect due its age, and a keen eye always kept open for the new wrinkle which lies in wait to snare the unwary.

3. These ideas by no means comprise an all-inclusive list. They should, however, serve as a point of departure for further mishap prevention efforts within your units. Mishap potential exists in all areas. Remember -- there are really no new mishaps - only those which get repeated because the lesson wasn't learned the first time. I expect more than that from the men and women of the 20th. I expect a constant striving for the standard of excellence of which I know you to be capable. This includes approaching every task with open eyes and an open mind - an operation in which complacency has no part.

Edward L. Tixier

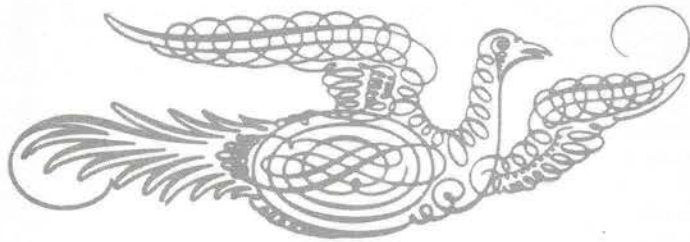
EDWARD L. TIXIER, Brigadier General, USAF
Commander

INTERCEPTOR thanks Brigadier General Tixier for allowing us to print his letter on mishap prevention. Although it was written to the personnel of the 20th Air Division, it certainly pertains to all of us and we wanted to share it with you — our readers.



Brigadier General EDWARD L. TIXIER

The Perils



of Birdmen



"Like the great ocean that laps our shores, the sea of air at the bottom of which we live has its currents and counter currents, its whirling maelstroms and quiet pools, its billows and its breakers. The misfortune of it all is that we cannot see them. Only the man in the air knows that they exist; that he must feel his way in the brightest sunshine through those unseen perils like a blind man groping his way in a strange room. He can tell you that this sea on which he rides is never absolutely calm. . . ."

"Since 1908 when flying really became a sport, there have been 250 accidents, in which 140 machines have been damaged, 90 machines totally wrecked, 50 men slightly injured, and 23 men killed outright. . . ."

The above was extracted from an article in the Saturday Evening Post, November 5, 1910, titled "The Perils of Birdmen."

Sixty-nine years have elapsed since Bleriot crashed the machine in the photograph for a cause he did not know—"In some inexplicable manner it caught fire and was reduced to a mass of blackened metal." In this relatively short span of time we have progressed beyond the dreams of the early birdmen. I wonder what Bleriot would think of the Space Shuttle, for instance. Unfortunately the perils are still with us and will remain — new perils with the new machines and the new systems, and even some of the old-fashioned perils of 1909.

Wilbur Wright was once heard to remark, "The more you know about the air, the fewer are the chances you are willing to take. It's your ignorant man who is most reckless."

The birds rapidly get more advanced and more complicated, but the birdman is the same old model. He is still capable of displaying his recklessness and ignorance. There is no living man who is not ignorant of some subject or other (although some OERs and APRs dispute this fact). We're human and we learn to walk, we learn to fly, and now we are learning to live in space. We provide our young people with our textbooks and our experience, and we supervise and guide them to overcome the pitfalls and the perils.

We as "Old Heads" provide our fledgling "young jocks" with the profes-

sionalism and leadership to make our outfit the finest in any command. We attempt to lead our young pilots by example, and sometimes fall short of the mark. Perhaps we are trying to impress our associates and ourselves, and by so doing, allow ignorance to create a new peril. How many times have you thought, or heard another pilot say, "There but for the grace of God go I!" There are a very few "Old Heads" in the interceptor business who haven't had their share of "hairy" experiences. Many were just plain lucky they weren't killed or FEB'd or grounded, and many got by with skill and cunning alone. Some of us won't own up to it.

Our very mission calls for slogans like "Get the MA!" and "Every man a tiger!" and this is the way we go. We've also learned by rote to scorn the phrases that somehow connote our failings, such as "Minimum Fuel," "Declaring an emergency," "Heads up!," "Broke lock," "No joy," "Aborting the mission for attitude gyro out." What kind of sick philosophy preaches against the applied use of good judgment? What is this false stigma that some of our so-called "Old Heads" have attached to the use of emergency and/or precautionary calls or actions?

Every outfit has had one or two of the barroom hairy-story tellers who preach an idiot fighter pilot idol kind of religion. They like people to think they can fly sick airplanes, make tighter patterns with less fuel remaining, than any birdman in history. This particular breed of cat would like you to believe they can do things with the airplane and the radar that are next to impossible. Regulations are for sissies! Just because the Dash One says that intentional spins are prohibited means only that the test pilots were afraid to try them. They fly their toughest missions at the bar with great gestures and phrases to the listening audiences of the youngest pilots in the squadron because mainly the young pilots haven't heard these old "stories" before.

EXAMPLE: A young pilot was quietly sipping his beer at the bar when he overheard one of these "Old Heads" (who *must* be a *real* fighter pilot, because he drank like one, and he talked like one) define to all within earshot how easy it was to do an Immelman in the

F-101. He said, "You just kick in the burners and get up a hell of a head of steam, and pull up!" And guess what, the young troop went out later and tried to emulate his squadron hero. He ran into a state-of-the-art problem when he started the maneuver and his pullup at twenty thousand feet! Pilot and RO ejections were successful.

Then there was the "Old Head" who used to get a big laugh out of his novice wingmen by playing chicken with the treetops. He would signal the flight into tight formation with the normal stack down. Then take the flight down on the deck to within a few feet of any big frozen lake and head for the treeline. As the approaching treeline would come into the peripheral vision of the wingmen, the smart ones would stack their formation up. How this guy ever got to be an "Old Head" was a mystery. Later this particular "Leader" would relive the thrills and the tensions at the bar describing in detail how his left wing or his right wing stacked up first.

There are many war stories such as these, we all know a few. They all contain humor, tragedy, sickness, and ignorance.

Wilbur was right (no pun intended) when he stated "Your ignorant man is most reckless." But how about our "Old Heads" at the bar?—contributing factors to many accidents of younger pilots. The real fighter pilot today is a good leader, is a good wingman, is a good officer, is a good example, and is more technically knowledgeable, more highly skilled, and more capable than any birdman in history.

It improves our perspective to occasionally look back a few years in aviation to see where we've been and compare. Today's fighter aircraft weighs in the neighborhood of twenty tons and travels through Wilbur Wright's "Sea of Air" at speeds far in excess of Mach One. The jet engine alone costs more than Grandpa would have had to pay for a whole fleet of "Wicker Basket Airliners." Today's crew must be completely proficient in the complete weapons systems, the procedures, the tactics, and the regulations. The "paper work" involved for one flight alone has been jokingly equated to, if laid end to end, the length of the runway and the overrun. Not too farfetched. Overlook the technical or-

ders for an instant and consider the regulations and restrictions alone, where a simple minor violation of any one can lead to a great big fat major aircraft accident and the loss of your life or your career. Ignorance of or malicious disregard of any one of these regulations or restrictions can tragically destroy us. A real peril to today's pilot, is a rapid turnover of personnel—interplacement of inexperience at all levels, new crews, new faces. Now if ever in history, we must depend on our few remaining "Old Heads" to take the new troops under their protective wings with vigorous, honest, intelligent effort. Dig out the dusty checklists and review the old regs. Read the new ones and provide the "New Heads" with your experience and leadership.

If the "new troops" have to have their own "hairy stories" of perilous adventure in the air, let them be of their own making. Let's don't lead our young wingmen astray before they get off the ground; and when we get airborne, let's fly as professionally as we say we can at the bar. We can eliminate one more peril for our modern birdmen.

The more complex our systems become, the more complicating become our monitoring processes. There are just more things involved, more things to monitor. The transistors and the computers can't think, we have to understand them and then monitor their programs and their progress continuously. For example, in our business during 1978, there were nearly 1,000 precautionary landings performed by ADCOM pilots where some kind of system failed. The human saved the bird. He analyzed the particular problem and prevented the destruction of the system. The contributory aircraft systems were:

- Airframe, fuselage, landing gear, flight controls, and engine, all known back in 1910.

In addition were:

- Hydraulic/pneumatic, instruments, electronics, air conditioning and pressurization, communications, radar/weapons, miscellaneous utilities, and fuel system.

These are the perils of which we keep statistics. We know of another—how about the guy at the bar? Is he also a contributing factor to the perils of junior birdmen? ★



Diary OF A PILOT

SURVIVAL. Imagine yourself cruising over snow-covered timber a couple of months from now, and you're forced into an ejection or crash landing. You suddenly find yourself miles from any civilization with only the clothes on your back and your survival kit. The routine flight has rapidly turned itself into a survival situation. Every aircrew member should be able to cope with this problem and be back to fly again. But yet each year a few find themselves in the same hole and don't hack it. They were caught unprepared. This true story will provide you many lessons in combating the elements. It illustrates circumstances, conditions, and decisions that may confront you some day in the future. This crew made mistakes, but they do show how long you can survive with limited rations if you plan, program, and have a will to live.

A pilot of a B-26 which crashed near Saglek Bay, Labrador, kept the following diary. We pick up the story when the crew is about to depart BW-1, Greenland, for Goose Bay, Labrador.

November 12, 1942

We're still sitting here with 16 less minutes of light each day. We've less than six hours of daylight between sunrise and sunset now. Had about two inches of snow last night, and everything was really pretty. Spent most of the morning sweeping it off the plane. They said that there's a chance of leaving tomorrow, but this place seems so much

like home that it doesn't seem like we should leave.

November 16, 1942

This place is full of changes. Yesterday afternoon Jansen and I walked down to the river. There was a solid sheet of ice resting on the rocks, and it was covered with almost two inches of snow. Every once in a while, we would break through up to our knees, but there was nothing under the ice. Last night we had rain with a warm wind with gusts up to better than 60 miles per hour. So this morning there was only isolated patches of ice left. Today was the first time in two weeks that we have been able to walk on bare ground. We've had all kinds of weather, most of the days were fairly warm. But one day it was six degrees. We've seen days when not a breath of air stirred.

November 26, 1942

I still say this is screwy weather. We were alerted this morning at 03:30. There was a solid overcast. We killed time until 06:00 then we got briefed. It was still overcast and seemed to be getting worse. The A-10's and the B-25's started kicking off, but about that time, it started to rain. At 07:00, Capt. Jones called everything off. It was starting to rain and the ceiling looked like it was very low. About ten minutes later it stopped raining, and an A-20 came over at 600 feet with room to spare. By 08:30 the sun was shining and everything looked as nice as we could ask for, but it was too late to take off.

December 10, 1942

Took off at last for Goose Bay. About 13:15, we ran into some clouds and I turned around and called for the formation to turn around also. One plane dropped out; I think I saw the two P-40's later. I lost the others while letting down below the clouds. We saw an opening to the south at about 2,000 feet and after flying in that direction we broke out. We finally had to go back up to 13,000 feet, but it was clear sailing, so we kept on. Lt. Josephson gave me a new heading to get back on course, but we know now it was too much of a correction. About halfway I picked up Goose beam, but the set went dead after a few minutes. It was too late to turn back then, so we tried to get it on the compass, but couldn't. We finally hit the coast. We decided we were south of Goose Bay, so we turned north until we finally realized we were north. We were almost out of gas, so I started looking for a place to land. I wanted to get back where there were trees, but the engine started missing, so we came back down. The crew never even batted an eye when they were told they were going to have to make a crash landing. Even if I do say so myself, it was a good landing, and Lt. Josephson did a good job of cutting the switches. We hit a rock that tore the bombay open and one prop tip went through the fuselage behind me; outside of that the ship was intact. It swung around almost 90 degrees without stopping, but made a good windbreak that way. It was almost dark, so after eating a cold ration we went to bed inside of the ship; we had 17 blankets, a comforter and bed roll, but we slept very well. Lt. Josephson took a star shot and decided we were 300 minutes from Goose.

December 11, 1942

Lt. Josephson walked to the Fjord to the west and Golm the one to the east. We spent most of the day clearing up the ship and pooling rations in the afternoon. I climbed the mountain in front of us, but didn't learn much. Nolan worked

on the put put all day without results; we cranked the dinghy radio, it was pretty windy, so we spent the night in the ship.

December 12, 1942

Made three big improvements in our situation. Lt. Jansen and Golm discovered a lake close to our ship and saw a fox. Waywrench and I saw 50 seals, we know that there is food there. We made a lean-to out of tarps under the wing, and slept out there, it was much better.

December 13, 1942

When the star shots were figured out it showed us to be close to the town of Hebron. Worked on the put put all day with no success, so we tried to work the liaison set on the batteries but they were too weak. We pooled our covers and slept together.

December 14, 1942

Wind blew all day with increasing velocity and snow, our lake went dry so we are back to melting snow. We went to bed early.

December 15, 1942

Didn't get up until noon because the wind was blowing, our breakfast consisted of 9 cups of coffee and a package of fig newtons. The weather was very discouraging all day but late in the afternoon Nolan pumped the put put through a couple of times and it caught. It didn't put out but 5 volts. However, we were still encouraged. We ate a fairly big supper and went to bed early.

December 16, 1942

Had to eat a cold breakfast because the wind blew too much snow in our fire. Nolan changed the voltage regulators and got 25 volts, long enough for me to get a couple of stations on the liaison receiver. The put put stopped, but we hope we know what is wrong with it, so we hope to get the message out soon.

December 17, 1942

The put put out, but we did try the batteries; they were dead too.

December 19, 1942

More snow last night. Nolan and Mangins tried to work on the put put but it was too cold. We built a

fire in the lean-to and thawed out.

December 20, 1942

It was so windy, we stayed in bed all day.

December 21, 1942

Everything was really snowed in, so we spent the day eating and thawing out blankets and planning a trip south. Lt. Josephson, Lt. Jansen, and Sgt. Nolan plan to head south in the boat the first clear day.

December 22, 1942

Had a perfect day, the first clear day in over a week. We worked on the boat and cleaned snow away from the lean-to all day. We ate a pretty big meal with the three boat men eating a little extra.

December 23, 1942

Got up at 07:15; got the boat ready and started carrying it. The wind was pretty strong and the boat was heavy, so we had a pretty hard time of it. We didn't get to the water until noon, and then it took quite a while to find a place to put it in the water. We intended to put them off shore, but they appeared to be making slow headway to the south. That was the last time we saw them. We had a hard time coming back against the snow, we had some peanuts and caramels, and went to bed.

December 24, 1942

Christmas Eve and we've been here two weeks today. It was lonesome with just the four of us, but we got up pretty early and dug out the gas strainer so we could make a fire. It was so windy we couldn't work outside so we dried out the blankets. Golm got blistered pretty bad and swollen hand which had to be doctored, we stretched out our eating to cover most of the day. We had a sardine-sized can of herring with crackers, a spoon of peanuts apiece, a black cough drop, and a caramel, a cup of bouillon, a cup of grape drink, and plenty of coffee, using the same grounds over and over. It's really a surprise how much one can get from a small thing like a caramel, but we look forward to it with anticipation every day.

December 25, 1942

What a Christmas! Mangins' feet pained him so much we had to get up at 03:30. He was in agony before that, but was better after, although his arches pain him pretty bad. Got up again at 09:00; Golm went exploring. I massaged Mangins' feet, and Waywrench started fixing up the floor, which was in pretty bad condition from the fire. Later we had to dig out a rear entrance to the ship to fix the window up. After that, we had a first aid lesson. The only one who doesn't have anything wrong is me. We are about to eat our Christmas dinner and go to bed.

December 26, 1942

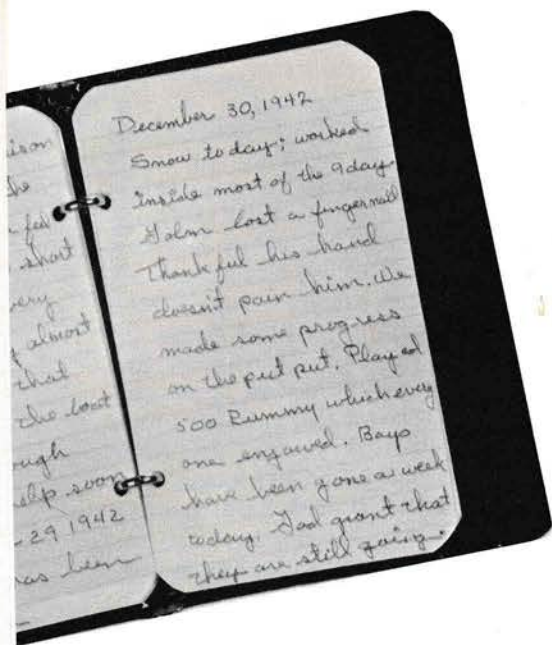
Had another swell day, the weather was perfect. Waywrench cleaned up the back of the ship, while Golm dug around in the rear of the bombay, uncovering a can of Fruit Cocktail and a can of Chicken A La King. I worked on Mangins' feet and did some odd jobs. Everyone is feeling better, and I hope that Mangins will be up in a few days. We aren't starving by any means, but the conversations are mostly about food. You surely can remember some good tasting food.

December 27, 1942

Started today as usual by treating the casualties. Mangins' feet are better, but we found a big blister on each foot. Golm and Mangins spent the day drying blankets. Waywrench finished cleaning out the back of the ship, and I climbed the mountain to see if I could see anything out to sea. I also took a roll of film. The enforced diet is beginning to tell on us, but we'll eat a little more tomorrow.

December 28, 1942

This has been a terrible day. The wind started up early in the morning and has kept us inside all day. We had two fires which took the rest of the day to repair. Mangins' feet are quite a bit better, and he will start working on the put-put soon. We may get the liaison set going yet. In the meantime, we can feel the effects of the short rations more every day. We pray every minute that the boys in the boat will get through and get help soon.



January 1, 1943

Happy New Year. It snowed and blew all night, and kept it up all day. So since we had no fire we stayed in bed all day.

January 2, 1943

More wind and snow today. It slacked up a little around noon, so we got up with the aid of a fire in a peanut can. Waywrench got the prop and de-icer tank out with a gallon of alcohol and glycerine, and I dug out the oil drain. After that, we had a couple of hot fires and plenty of coffee and had a lemon powder and a cup of bouillon. Our main dish was the last can of date-nut roll with jelly, and it was very good. We didn't finish with eating and drinking until almost noon. Then I worked on Mangins' feet, and we went to bed. There was quite a bit of loose snow outside but the very shape of the ship keeps it fairly clean. It actually rained today, but I didn't know what effect it's going to have on our situation. The boys have been gone ten days today, which is the time we figured it would take them to make the trip. We hope they made it and can help bring help soon.

January 3, 1943

There wasn't much wind last night, so we thought we would have a good day, but the wind picked up, and it snowed all day. The ship has a sheet of ice on it, and is covered

with snow. Besides that, the drifts are higher and closer than they have ever been before. We hooked up the hand fuel transfer pump, and I'm positive we pumped some gas over to this side, but we couldn't get it to drain out, so we had to use the alcohol to cook with. I got into a big hurry once and caused a fire in which I got burned, but not badly. Now we are all wearing bandages. I found two bouillon cubes in the radio operator's desk. Spent a lot of time putting snow under our bed. There was quite a hole there, so we should be able to sleep better tonight. It must be raining outside now. It couldn't be melting ice on the wing. We keep praying for clear weather and hope that the boys got through. Also to try out a new theory to where Hebron is.

January 4, 1943

Had a blue sky when we got up, but it stayed overcast all day. There wasn't much wind, however, so we got up and went to work. Waywrench and I got quite a bit of gas out of the other wing, so we are pretty well fixed on that. Mangins has the put-put almost ready to try again. We are just praying for good weather both in hopes of a rescue plane (if the boys got through). I am cutting down still more on the rations.

January 5, 1943

It started off like a beautiful day, but turned to a light low overcast. Waywrench and I cleaned the plane of snow and Mangins finished the put-put, which seems to be in pretty good shape. It started clearing late this afternoon.

January 6, 1943

This is the eighth day of bad weather. The entrance is blocked, and it doesn't do any good to dig it out. It has been two weeks since the boys have left, and spirits are still high in spite of the bad weather.

January 7, 1943

We've been here four weeks today. The entrance was blocked up this morning. As I was going into the ship, I saw a little bird. We caught him and boiled him for a couple of hours. Then made stew

by adding bouillon powder. It was really delicious. Golm started to go looking for Hebron, but the snow was too soft. Mangins got outside for the first time in 13 days. If we can't find a town or get the put-put going in three days, we are going to have to sit and wait until the weather clears and pray that the boys got through, because we are too low on food to do anything else. God help us get out of here safely.

January 8, 1943

Today was the most strenuous for me since we got here. I tried to get to Hebron, and I still think I know where it is, but there are two mountains in the way. I can feel myself growing weaker, and we have less to eat every day. I don't know what we would do if we didn't have that three pounds of coffee. We sit around and drink that and talk about all kinds of food, but I think we all crave chocolate candy more than anything else. The boys have dug out the back of the ship, so if tomorrow is clear, we still have one last try with the put-put radio.

January 9, 1943

Well, we put the put-put back in its place and it jammed again, so that leaves us with one possibility, that the boys got through.

January 10, 1943

We have been here one month today, 31 days. Spent most of the day, which was perfect as far as the weather was concerned, looking for the plane and fixing up bandages. The boys' spirits were much higher today, after our little church service. Our only food today was a slice of pineapple and two spoonfuls of juice.

January 11, 1943

Our third day of perfect weather, also coldest day since right after we got there. Spent the day watching for the plane which didn't come. The oil gave out on this side, which brings about another problem. The short rations are beginning to tell on us, but we are still in high spirits. If we don't live to eat some of the food we talked about, we've eaten mentally some of the best meals in the world.

January 12, 1943

Today was the boys' 20th day, our 33rd, and was overcast, but was calm. We got the oil almost dug out but are so weak that we can hardly work. The boys' spirits are still high, though, and we had a couple of lively bull sessions and our one topic, food. Our ration today was a slice of pineapple.

January 13, 1943

Another calm overcast day. We dug up the oil, dried out the blankets, made a new bed on snow, and ate our last food, a slice of spam and a soda cracker apiece. All we have left is a half of pound of chocolates and three drink powders, but we talk like rescue was certainly tomorrow. It cleared off late this afternoon, so maybe there is hope for tomorrow.

January 14, 1943

Clear day, but with wind. We cleared off the plane and waited, but nothing happened. Late this afternoon we were playing cards, when Waywrench oiled the gas too fast and caused an explosion which burned both his and my face, hair, and hands. Our rations was four chocolates, but we are still working out pretty well. After a devotional we went to bed.

January 15, 1943

A perfect day as to the weather, but the coldest since we got here. Spent most of the day trying to keep warm and listening for a plane. Also made big plans for a couple of days in New York when we get our furloughs. Rations was two chocolates and a bouillon powder. No one is particularly hungry yet, but we are all getting weaker and colder because our bodies aren't putting out enough heat.

January 16, 1943

Another calm clear day, but the coldest we have had yet. The oil froze up, so we had to end up by burning nothing but gas. The only thing we have left is one bouillon powder and two sticks of gum. The strain is beginning to tell, but we still have good bull sessions about food and the furlough to New York.

January 17, 1943

Couldn't have asked for a better day except that it is so miserably cold that the oil is frozen and won't burn. So our gas is going pretty fast. Had our last food, bouillon powder, so unless rescue comes in a few days . . . The boys have been gone 25 days which is a long time, but they are still our only hope. Our families will really miss some swell dishes and menus.

January 18, 1943

Cold and clear. My watch stopped, so we didn't get up until noon. Must be a little warmer, because we got oil. Today was our first complete day without any food, but spirits are still pretty high. It's surprising how much punishment the body and mind can take when necessary. We are still in pretty good condition, but rather weak. Not much hope left.

January 20, 1943

It snowed and blew all night, but we slept pretty well, and were much more cheerful today. We stayed up longer than we should have though, and are pretty tired. That snow has been blowing pretty hard all day and is piling up in front of the door, so I don't know what we will do if it doesn't stop pretty soon.

January 21, 1943

Six weeks today and a rough night with snow and rain, so everything was soaked when we got up. Only Waywrench and I got up, and then only long enough to melt snow for water. Things could be worse.

January 22, 1943

Got up around noon, and was up until about six. I cleared up the entrance and made the bed. We could

stand some good weather.

January 23, 1943

Spent a miserable night. Everyone got crowded and nobody could get comfortable. Had a good day, but everybody is pretty discouraged, although the conversation was pretty good. We haven't really felt famished, but we are really weak. It really gets me to see these boys start to do something and have to stop from the lack of power to go on. Waywrench has developed a case of piles and is really suffering.

January 24, 1943

Had a miserable night. Everyone got up at one-thirty, shot the bull and drew gas, and went to bed at seven-thirty.

January 25, 1943

Cold night, clear day, but still pretty bad. Little hope left, still hanging on.

January 26, 1943

Overcast, but fairly calm. Each day we don't see how we can last another day, but each time we manage to go on. We all smoked a pipe of tobacco this morning and Golm really got sick, and I felt pretty bad. But we came out pretty well.

February 3, 1943

Slept a solid week in bed. Today Waywrench died after being mentally ill for several days. It's beginning to look real grim now. We are all pretty weak, but should be able to last several more days. All cold and hungry. Need help fast.

Note: This is the last entry in the Diary. The men were found in the first part of March by Eskimos from Hebron, about one and one-half hours' walk away. ★





INSPECTOR'S VIEWPOINT

GETTING SELF-INSPECTION INTO PERSPECTIVE

by Major Richard Waltman

Where does self-inspection fit into the overall scheme of management, and what constitutes an effective self-inspection system (SIS)?

Peter Drucker, author of a number of management books, is helpful in getting self-inspection into perspective. In his discussion of the work of a manager, Drucker identifies five basic operations that a manager performs:

- a. Sets objectives.
- b. Organizes.
- c. Motivates and communicates.
- d. Establishes measuring yardsticks.
- e. Develops people.¹

Most of us in the Air Force have many of our objectives already established by our particular mission statement and by the regulations that apply to a particular functional area such as operations, maintenance, or supply. These objectives are often supplemented by personal organizational goals set by individual managers.

Yardsticks are used to analyze and appraise performance. In other words, how does the performance of a function stack up against the stated objective? It's here that the SIS comes into the picture, a self-analysis or self-evaluation of actual performance compared against required or desired performance. Gold Books, ADCOM 123-series pamphlets, TIG Briefs,

¹Peter F. Drucker, *The Practice of Management*. New York and Evanston: Harper and Row, 1954, pp 343-346.

and locally developed checklists are some of the tools or standards used for comparison.

During our Management Effectiveness Inspections we have had the opportunity to see what makes an efficient and effective SIS. Here are our observations:

First, the support of the commander is an essential element of the successful SIS. If the boss is interested, cares, and demands action and answers, his people will likely do the same and produce worthwhile results. Without the commander's support, the application of SIS throughout the units tends to be spotty with marginal benefits.

Secondly, self-inspection is used to make sure that all aspects of a particular job are being adequately performed; i.e., actual performance is compared to the required performance. Many jobs in the Air Force are comprised of a great number of individual tasks, and the SIS provides an excellent means of making sure that all the tasks are being done, and being done correctly.

The best self-inspection efforts are efficient. They are administratively well organized and have specific procedures established and followed. Typewritten reports are the exception. Notes in the margin and replies to the commander on Gold Book findings was one technique that produced good — and efficient — results.

Self-inspection is best done on a continuing basis, not a semiannual or quarterly one-shot deal. The paperwork doesn't end up filed in the SIS monitor's desk, it stays in the duty section where it can be used on an as-needed basis.

Finally, although more related to establishing objec-



tives, big dividends have been paid by addressing the positive as well as the negative. Take a look at the good items you find in other units' reports and evaluate where you stand. One unit extracted laudatory findings from MEI reports and set up a miniprogram to ensure their function was as good as the unit that received the kudos.

On the other side of the coin, we have seen some examples of misguided application of SIS. We recently inspected a unit that relied solely on a semiannually applied SIS program to determine management's effectiveness. The results of the MEI were something less than satisfactory—there is obviously more to good management than just having a self-inspection program.

Another trap is the system that is organized well administratively, but is ineffective. Beware the slick, tinsel program with volumes of neat binders sitting in the SIS

monitor's office, binders containing letters tasking sections to do some inspection or another, formal typed replies, Gold Books with all findings initialed by someone, and similar nonsense. These programs are paper mills that are usually ignored by busy people and don't produce results.

Finally, the last common type of misguided SIS is the one that suffers from a general lack of management interest. It just isn't used to gain the edge that an effective self-inspection program can give.

Managing well is a tough proposition whether you are a unit commander or running a one-man shop. Take a look at your efforts at self-inspection and see if you're using it to best advantage. Good self-inspection can't solve all your problems, but it can lighten your load, make you a better manager, and improve the quality and quantity of your work.



check points

✓ **T-Bird stuck throttle.** One hour after takeoff the pilot was unable to retard the throttle below 90 percent RPM. An emergency was declared, and after descending through 8000 feet, the throttle could be retarded to 82 percent RPM. A shallow approach was made, and the engine was shut down on a one-third mile final by shutting off the main fuel switch in the rear cockpit. After an uneventful landing was accomplished, maintenance investigators discovered the throttle linkage under the left rear cockpit console submerged in water. No other discrepancies could be found. The pilot stated that he found the canopy open and an excessive amount of snow in the cockpit when he arrived at the aircraft. On the day prior to this incident, safety personnel, observing flight line operations, noticed T-33 aircraft parked in a snowfall with their canopies open. Maintenance personnel were contacted and advised to close the canopies. The water in the cockpit probably

accumulated over the course of several exposures of this type. As it would have been frozen, the water would not have drained during the pre-flight. The heat of the cockpit then probably melted the ice in flight and allowed chunks of ice to jam the throttle linkage. (MSG/SEOD)

✓ **Aeronautical chart currency:** an important factor in flight safety. How up-to-date are the aeronautical charts you use? Each chart produced by the Defense Mapping Agency (DMA) for the military services is systematically reviewed to determine if accumulated corrections justify revision. In the interim all known chart discrepancies and additions affecting flight safety are identified in the DMA Aeronautical Chart Updating Manual (CHUM), a semiannual publication. A monthly CHUM Supplement, which contains a cumulative listing of supplemental corrections, is published between issues of the CHUM. Note that these two publica-

tions list the latest edition number and date for each chart. If your chart does not reflect the latest edition number or date, it should not be used. Are the latest CHUM data posted on your charts? Typical chart corrections listed in the CHUM pertain to such important things as spot elevations, aerodrome vertical elevations, maximum elevation figures, power transmission lines, major landmark features, and vertical obstructions. (TIG BRIEF)

✓ **F-4 FOD.** During a turn in the traffic pattern, the aircraft rolled at a greater than commanded roll rate. The pilot immediately attempted to reduce the roll rate with a left stick input. This had no effect. The WSO at this point felt the control stick contact his left thigh and noted that the bank angle was approaching 90 degrees of right bank. The AC called for the WSO to assist in the application of left stick. The direction of roll finally reversed as aircraft bank angle approached 135 degrees with the nose of the aircraft falling through the horizon. The aircraft was recovered to level flight at approximately 300 feet AGL. The crew declared an emergency and climbed to 2000 feet MSL to accomplish emergency landing procedures. The crew attempted to alleviate the problem by depressing the paddle switch but this had no effect. All hydraulics were normal. The application of left aileron trim had no effect either. The crew established a shallow right orbit to alleviate control forces in order to prevent fatigue and accomplish a controllability check. The AC lowered the gear and full flaps. As the flaps extended at around 200 KIAS the aircraft suddenly rolled to 80-90 degrees of right bank in a steep spiral. The AC selected right afterburner, called for the WSO to assist in the application of full left rudder, and gradually increased back pressure to 19.2 units AOA. The aircraft slowly responded to these inputs and was recovered at 200 feet AGL. A climb was begun to 2000 feet and a shallow left turn was used to place the aircraft on final for approach and arrestment. As airspeed decreased, controllability increased slightly and a landing was accomplished without further incident. Both crew members were

physically exhausted from the constant application of full left stick and rudder inputs. Two abnormalities were discovered by maintenance personnel. The aileron trim was in the full right position. Aileron trim alone, however, could not account for the excessive stick forces required to hold wings level. The chief culprit turned out to be FOD in the lateral control bell-crank system. A 5/8 inch number 10 screw was found jammed between the lateral control bell crank and the enclosing bulkhead behind door 47L. The screw showed signs of corrosion and had undoubtedly been there for some time. A computer run provided by AFISC revealed that objects as foreign as speed wrenches and open end wrenches have been found in precisely the same location. In virtually every other case, however, the binding was only temporary and control freedom was reestablished before landing. Incidents of this nature can and do cause loss of life and valuable resources. We were lucky this time; let's make sure our quality assurance program adequately covers compartment cleaning before panel installation. (MSG/SEOD)

✓ **T-Bird overtemp.** During roundout on a touch-and-go landing, the T-Bird pilot retarded the throttle to idle — then inadvertently continued to cut off. He instantly realized what had happened and put the throttle back into the operating range slightly beyond idle and hit the gang start switch. Too late! The EGT zoomed up to 960 degrees as the engine relit. The pilot then completed a successful high-speed abort. Contributing to the inadvertent shutdown was the fact that the throttle idle stop adjustment plate was canted slightly inboard at the rear. Thus less than normal outboard throttle lever movement was required to stopcock it. Since this is the second inadvertent T-Bird shutdown in recent months, it behooves all pilots to be cognizant of the problem and use extreme caution when retarding the throttle. If you note a throttle that's abnormally easy to stopcock when you shut down after flight — write it up so the next pilot won't have the scare of a lifetime. (MSG/SEOD)

we point with



Captain Don W. Hoover
17th DSES



Captain Wesley M. Gross
17th DSES

PRIDE

B-57 GEAR UP LANDING

Captain Hoover, the instructor pilot, and Captain Gross, the pilot, departed Malmstrom AFB on a local proficiency training flight in a dual control B-57C. Following a high-altitude approach with a touch-and-go landing at Great Falls IAP, Captain Hoover assumed control of the aircraft for the return to Malmstrom AFB. Captain Hoover set up for an overhead pattern at Malmstrom, but when the landing gear were lowered, the left main gear indicated up. Captain Hoover quickly made a visual confirmation that the left main gear was indeed up. The tower controller reported the inboard gear door to be down, while the gear itself was still retracted. Captain Gross recycled the gear but the left main would not come down. An emergency was de-

clared and the 17th DSES/SOF was altered. Captain Gross flew the aircraft and accomplished all suggested dash one procedures as instructed by Captain Hoover. The crew then decided to accomplish a gear up landing as recommended by the dash one. Captain Gross flew the aircraft while Captain Hoover reviewed "Landing with Gear Retracted Procedures" and "Emergency Ground Egress Procedures." The crew flew a practice low approach to determine at what point on final approach to jettison the canopy. The crew also decided to commence the approach with 2,000 lb remaining to insure sufficient fuel for another approach, should the first one need to be aborted. At the predetermined fuel and completion of runway

foaming, the crew positioned the aircraft for a straight-in approach. Captain Gross had to fly the approach because when the canopy is jettisoned, as required, the instructor's control column in the rear cockpit is disconnected and stowed. At the predetermined point on final approach, the canopy was jettisoned. Captain Gross shut down the engines just prior to touchdown and completed a superb on-speed landing. The aircraft remained on centerline and stopped 3,000 feet from the approach end of the runway where the crew successfully egressed. The aircraft sustained only minimal damage due to the expert handling and superb airmanship of Captains Hoover and Gross. To them we point with pride.

THE WAY THE **Ball Bounces**

CLASS A 1978 MISHAP RATE ADCOM ANG

1 Jan - 31 Dec	3.0	3.5
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RATE = MAJOR ACCIDENTS PER 100,000 FLYING HOURS

CLASS A MISHAPS ADCOM ANG

December 1978	0	0
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EJECTIONS ATT SUC

1 Jan - 31 Dec	3	3
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COMBINED ADCOM AND ANG

ON TOP OF THE HEAP

MO	ADCOM	MO	ANG
85	84 FIS Castle	89	144 FIW Fresno
71	57 FIS Keflavik	77	191 FIG Selfridge
54	87 FIS K.I. Sawyer	65	107 FIG Niagara Falls
51	46 AERO Peterson	58	102 FIW Otis

CLASS A MISHAP FREE

CUMULATIVE STATISTICS

	20 AD	21 AD	23 AD	24 AD	25 AD	26 AD	ADWC	AFI	46	ANG
F-101										1
F-106		1			1		1			
F-4										
T-33										1
T-37										
B-57										
OTHER										



Winter and its winds have been especially bad this year. Sometimes a gentle breeze becomes a deadly enemy when its velocity suddenly increases. Don't dress just for the weather at the bases from which you will take off and land — dress for the weather at the places over which you'll be flying 'cause you never know when something might happen to that engine. —Arlene