FLYING SAFETY

THE INSPECTOR GENERAL U. S. AIR FORCE

SEPTEMBER 1952

THIRTY YEARS...

FLYING SAFETY AWARDS

There are many things necessary for the achievement of an outstanding flight safety record. Probably the main ingredients are the understanding and cooperation of every person in the unit who can possibly affect that record. Each must first understand fully what is expected of him—how he can contribute to flight safety. Then he must work wholeheartedly toward accomplishing his part of the job.

Listed below are the Air Force Bases which established outstanding flight safety records during the period 1 July to 31 December, 1951, and which are being presented awards in the form of engraved bronze and mahogany plaques.

Special notice should be made of the fact that this is the third successive award of a plaque to Mather AFB. Two-time winners on the list are Selfridge, Stewart, and Davis-Monthan Air Force Bases.

Here are the award winners for the period 1 July to 31 December, 1951:

Bergstrom Air Force Base, Texas
Castle Air Force Base, California
Davis-Monthan Air Force Base, Arizona
Keesler Air Force Base, Mississippi
Ladd Air Force Base, Alaska
Lawson Air Force Base, Georgia
Mather Air Force Base, California
Selfridge Air Force Base, Michigan
Stewart Air Force Base, New York
Wheelus Field, Libya
Wiesbaden Air Base, Germany

THIS MONTH

The Eastern Air Defense Force has solved its instrument flying problems by setting up its own school at Otis AFB. Beginning on page 2 is the story of the "EADF Instrument School."

NEW EYES

If you're contemplating a flight into the Washington, D. C. area, read "New Eyes for Approach Control" on page 6. It will answer some questions you might have regarding routing of traffic in that area.

PROFILE OF A PILOT

This time it's a pilot who is well known in bomber pilot circles. We present Colonel James V. Edmundson, currently the Director of Operations, 15th Air Force.

WELL DONE

This month we congratulate Lt. Albert A. Sparlis of Ellington AFB, Texas, for his quick thinking in guiding two Corsair pilots to a safe landing.

THIRTY YEARS

Flight Safety is synonymous with flying experience and the professional know how of the aviation world. "Thirty Years," on page 18, is a story of how flight safety has grown in meaning and importance in the last three decades.

INVITATION

Again, we extend an invitation to one and all to send in any articles which you would like to see in print. If you don't have the article written but know where the story material is, let us know—we'll go out and get it. If you don't have a story and don't know where one is, sit down and write to us anyhow. We like to know what you think of your magazine.

THE COVER

Three daring pilots posed for this one in 1922. The aircraft are MB3's.

FLYING SAFETY

DEPARTMENT OF THE AIR FORCE
THE INSPECTOR GENERAL, USAF

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The printing of this publication has been approved by the Director of the Bureau of the Budget, June 4, 1951.

If enemy bombers attempt a surprise raid on our country, they may well choose to strike when weather will hamper our defense efforts. Making certain that interceptor pilots can meet the challenge of bad weather operations, and meet it with safety, is the job of the

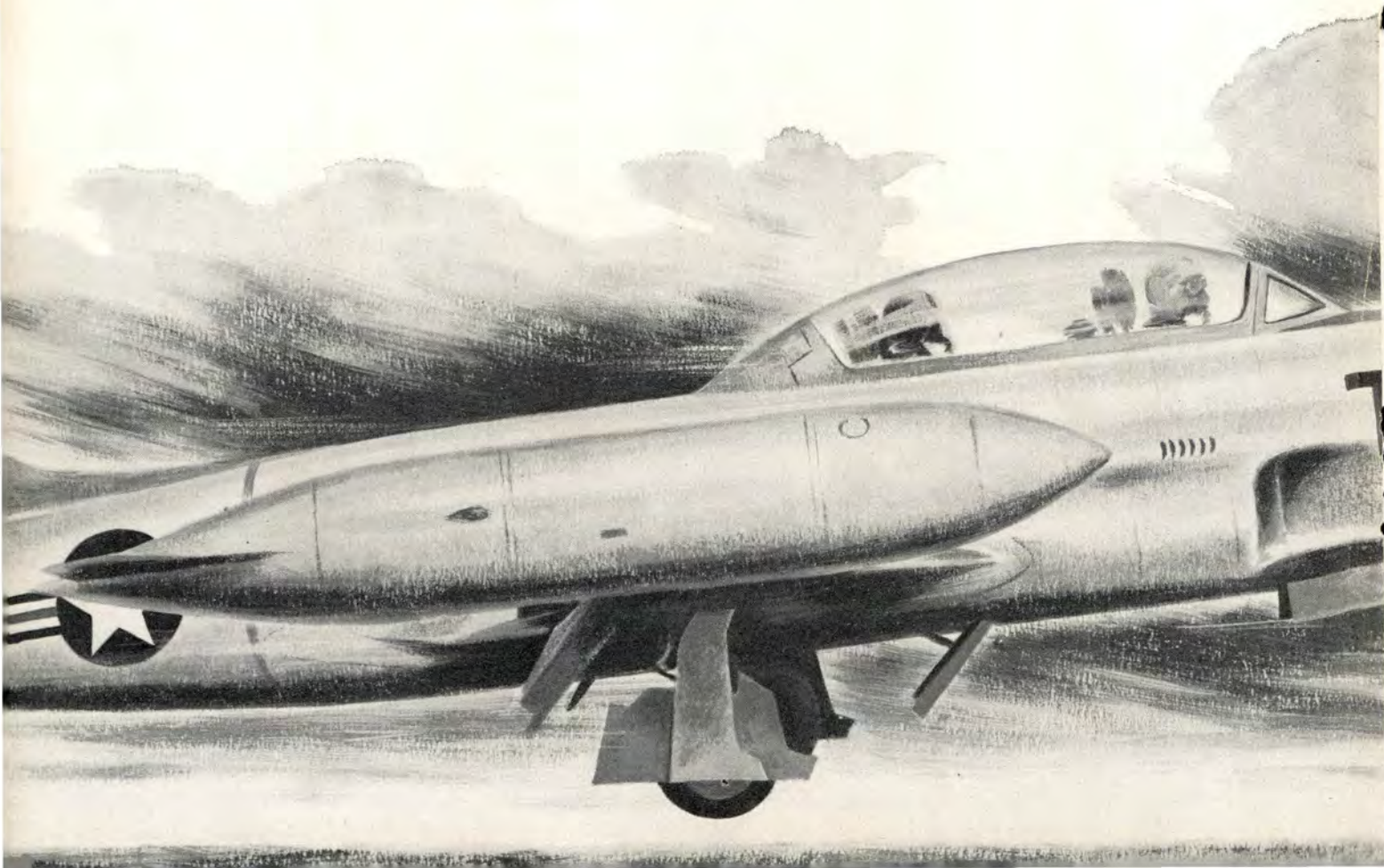
EADF INSTRUMENT SCHOOL

MARK TWAIN, whose observations often had the subtlety of a sledge striking an anvil, once noted that there is a sumptuous variety about New England weather. The mercurial atmospheric quality associated with the land hallowed by the Pilgrims, and to which the sage of the Mississippi alluded so pointedly, probably played no part in the selection by Eastern Air Defense Force of Otis Air Force Base on Cape Cod as the locale for its jet instrument school. But for its purpose it is unlikely there exists a finer site than the Falmouth, Mass. installation.

The threat exists that a potential enemy can deliver atomic bombs to the United States. And he has a running start should he decide to do so, since he can make delivery at the time of his choosing. He has a corner on the most important element of attack—surprise. Our sole hope of countering it rests with a far-flung and intricate radar system, buttressed by a ground observer corps which eventually will scan the skies around the clock.

Surprise, however, is not the only ace the enemy would hold. Weather and darkness favor any attack they might make. To counter these advantages Air Defense Command must rely principally on the all-weather fighter pilot. So Eastern Air Defense Force, whose area embraces more than half the nation's population and an estimated 80 per cent of the industrial capacity, has established the instrument school at Otis. This is insurance that its jet pilots can, if necessary, find and destroy enemy aircraft attempting to strike lush targets under cover of weather or darkness.

The school came into being last January. Until that time instrument training was a responsibility of indi-



vidual squadrons. Each had, or was slated to receive, at least one T-33. But this policy had two serious drawbacks. First, the squadrons had definite mission commitments such as alerts, practice intercepts and gunnery. These had priority. Second, squadrons equipped with F-86's, F-84's or F-94's found the addition of the T-33 presented a maintenance problem. On the one hand, pilots might not be available at proper times for instrument training; on the other, the equipment might be out.

An early staff study, recognizing these shortcomings, observed that greater utilization could be obtained if all T-33's in Eastern Air Defense Force were pooled and each could average 60 hours per month. The study further concluded that a well-run school, whose sole mission was training, would produce more sound and better qualified jet instrument pilots than a tactical unit which had more pressing missions.

The 4707th Defense Wing was given jurisdiction over the school and it is interesting to note that besides weather, which runs the full range from fair to foul at Otis, the wing's commanding officer is Col. Leon Gray, an experienced jet instrument pilot.

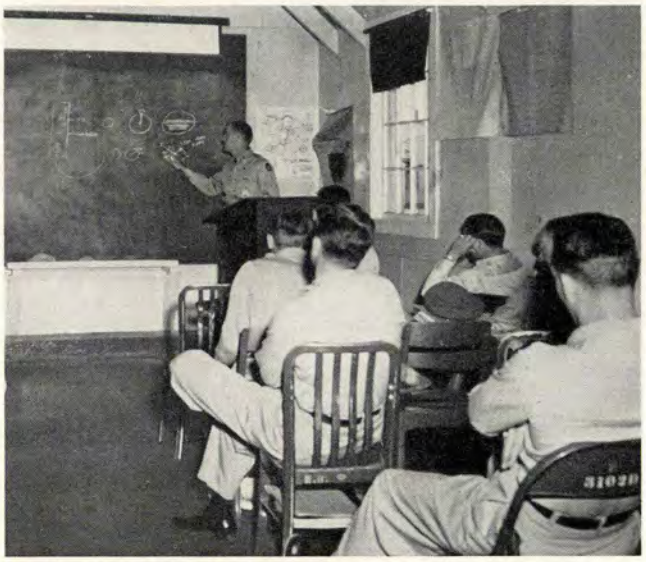
Maj. Archie W. Chatterley, European air war veteran of the famed Fourth Fighter Group, was plucked from a Defense Command air division to head the school. He was given a staff of nine instructors which, with himself, made for a total of 10 teachers. Only four, however, are permanent party. These are Chatterley, Capt. John Paladino, Capt. Nelson J. McDonald and Capt. John Mattingly. The others are TDY'd from EADF squadrons for 90-day tours.

Paladino, who was recalled to active duty two years ago with the 154th Air National Guard Squadron of Little Rock, and Mattingly are Korea returnees. Paladino, incidentally, was the central figure in one of the most unusual dramas of the Korea air war. He blacked out from lack of oxygen while returning from a mission. Two wingmen saw his Thunderjet begin to stagger and positioned themselves below the wings of Paladino's F-84, creating in effect an air cushion which the Little Rock flier rode down to altitude where he regained consciousness and control of the aircraft.

The Otis school was established officially on 9 January 1952 and was a going concern six days later with the arrival of five T-33's and the first class of students. Since early in February it has handled about 10 students each

week. Although designed primarily to conduct instrument instruction, examinations and flight checks for jet pilots, original terms of reference further required that the school transition EADF pilots progressing from conventionals to jets. Because several Eastern squadrons were called up from the Air Guard with F-47 and F-51 equipment and had to be converted to jet interceptors, transition has been big business rather than a sideline at the school. Indeed, transition is accomplished in 15 days instead of the 30 prescribed originally.

The Otis project does not compete with the instrument school at Moody nor with the all-weather fighter-interceptor school at Tyndall. It is a one-time period of concentrated instruction designed to raise the level of the jet pilot's instrument proficiency. In fact, says Major Chatterley, "our school complements Tyndall. We use their techniques and we try to get Tyndall graduates assigned as instructors."



Lt. Blair Davis, one of the instructors, briefs students on right way to make instrument takeoff.

Gages in T-33 cockpit occupy attention of student under scrutiny of instructor, Capt. Nelson McDonald.

Although strictly a non-tactical school, the course can be adapted to tactical requirements. On the average, each student is given between 32 and 40 hours of academic training and about 16 hours of air time in the T-33. The air time rises to an average of 25 for three types of students undergoing transition. These are recent graduates of advanced flying school, pilots reporting in from squadrons equipped with conventional fighters, and those whose flying techniques have dulled while serving in desk assignments.

EADF's course outline prescribes that "whenever possible, training will be conducted in actual weather conditions and every effort will be made to obtain the maximum weather time for each student." It further dictates that after initial instruction, "each flying period will be concluded with a GCA for each student."

In line with this policy, eight of the first 22 academic hours are devoted to study of weather and 10 hours are taken up with navigational aids and procedures. The school's weather curriculum includes atmosphere and adiabatic processes, adiabatic diagrams, fronts and associated phenomena, fog and ice, jet streams, upper air charts and vertical cross sections. The 10 hours of navigational aids and procedures are split into two parts. Six hours are concerned with use of radio equipment, radio ranges, voice procedure, radio direction finding devices, radio compass bearings and fixes, and instrument approach system. Four hours are spent studying flying rules and navigational publications and discussing operation of both Military Flight Service and Air Traffic Control.

The remaining four hours of the first 22 take up attitude instrument flying and include intensive instruction in all flight instruments.

Colonel Gray's objective is to train pilots who can bring their jets home safely with a 200-foot ceiling and half-mile visibility. This is a demanding requirement but all work toward it, particularly since each pilot knows the wing commander monitors GCA runs on the radio in his office.

A mockup of the Otis GCA is the principal item of decor in the students' briefing room and here, before and after each flight, the instructor briefs and critiques his student. For the instructor, these briefing and critique sessions represent additional time spent with his student. With 16 flying missions, each lasting approximately two hours, scheduled daily, instructors get about four hours apiece in the blue. And when not instructing in the cockpit, they can be found in the classroom.

The very first lecture directed at the student traces the history of instrument flying from needle, ball and airspeed to the present method using the full panel. In a real sense it is a review but the importance becomes

apparent when the student finds he is working the gages almost exclusively in the aerial classroom.

A discussion of the Otis school would be incomplete if it failed to note the excellent maintenance. An unusual "contract" arrangement between the school and 564th Air Base Group guarantees that four T-33's will be in at all times. Actually the in-commission rate is sufficiently high to assure that flying instruction never suffers from lack of equipment. But with four aircraft assured at all times, "it's fairly certain," says Col. Donald D. Renwick, 564th CO, "that no student training will be held up for want of an aircraft." Colonel Renwick, a War II veteran of the 56th Fighter Group, monitors the maintenance personally with frequent visits daily to the flight line.

Top-grade maintenance has made an important contribution to the school's outstanding safety record. In the first five months more than 3,000 accident-free hours went on the books. Each month, total time has risen steadily until the current 30-day figure approximates 700 hours, exceeding the original estimate that each aircraft could fly 60 hours per month.

In addition to the kind of maintenance provided by Colonel Renwick's people, Chatterley attributes the remarkable safety achievement to the fact that the school underscores individual instruction as the best means for arriving at accident prevention.

"When a student reports in, he is assigned to one instructor," Chatterley explains. "The instructor conducts the student's briefings and critiques. He monitors the student's Link time. He knows the student's weaknesses and strong points. And when he sends his man out for a final check ride with another instructor, you can be sure the student has made the grade. We've had to turn back only a few students to their squadrons with the recommendation that they be given further training," Chatterley says, adding, "I'm convinced we've had fine results because of this individual instruction system."

There are two big reasons for the stress placed on safety through sound instruction. First, there is the obvious reason that pilots and equipment are more precious than the rarest metal. Like rare metal, the supply must be husbanded. Second, the mission of Eastern Air Defense Force requires that safety be ingrained in pilots. There is not room in its mission responsibility for the loss of a single interceptor in an accident that could have been avoided. This becomes apparent readily with recitation of targets in EADF's area.

Pittsburgh's steel mills, Detroit's great production plants, Chicago's rail yards, the Pentagon and hub of government in Washington, New Jersey's industrial complex, New York's teeming millions—these represent only a small percentage of the sites Eastern's interceptor squadrons must be ready to defend.

Col. Leon Gray, Commanding Officer at Otis, finds that monitoring GCAs has produced better results.

The magnitude of the responsibility is such that it requires every interceptor pilot assigned have the ability to take his fighter to the place in the sky where it will be needed when the whistle blows—and conceivably in weather that might ground ducks. One interceptor flown into the ground on an instrument takeoff because the pilot was not able to climb out on the gages might leave the hole through which an enemy atom bomber would deliver its lethal load to a prime target.

So the instrument school at Cape Cod exists to further the cause of the mission. When time and opportunity permit, the course outline calls for the grind of classroom and cockpit to be broken up with guest lecturers. These include technical representatives, FCC and CAA representatives, GCI squadron senior controllers and representatives from the operations shops of the Air Division and EADF Headquarters. The information these people can impart is aimed at increasing the knowledge the student will take back to his squadron.

When the jet pilot completes Eastern's school at Otis he is aware that instrument attitude flying depends on coverage, interpretation and aircraft control. Equally as important, he is aware of his ability to strip the protective cloak of weather and darkness from any enemy who would attempt to dump an A-bomb on the Liberty Bell.

NEW EYES FOR APPROACH CONTROL

Radar gets the most'est traffic down the fastest when the weather socks in

MIX TOGETHER some 16,000 military and civilian aircraft VFR-IFR operations in and out of a single airport for a typical month's activity; take care of the IFR traffic for two other airfields besides monitoring their aircraft taking off day and night; mark off several close-in prohibited flying areas, then establish just one traffic pattern for the joint use of the three fields and you have a rather broad picture of an aviation beehive situated figuratively in the shadow of the nation's capital.

To be more specific, this beehive is Uncle Sam's Washington National Airport situated just across the Potomac from Bolling AFB and the Navy's Anacostia airfield.

A visiting pilot interested enough to take a look behind the scenes to find out how the ground operational end works air traffic with such speed and smoothness, particularly during the peak traffic hours of 1000 and 2200 when the weather's socked in, might ask himself a couple of questions along the lines of the "How-busy-can-they-get" and "How-do-they-do-it" type.

If the somewhat puzzled pilot found his way to an unpretentious office situated just under the tower on the roof of the terminal building and asked his questions of Thomas A. Basnight, Jr., Chief Air Traffic Controller for Washington National Airport, right away he would start getting a lot of answers, many of which Chief Controller Basnight might lump together in a few words, "Radar Approach Control."

For the pilot to interpret Basnight's answer broadly enough to get a well-rounded "picture" of just what has happened to bring about such fast streamlining of time-bound approach control operations, he would have to go back a few years to get a comparison of air traffic volume then and the still-growing volume of air traffic today.

Following the end of WW II, the increase in air traffic, both military and civilian went hand in hand with the development of larger and faster aircraft and these factors intensified the IFR traffic control problems in a high-density or "saturated" metropolitan area. Something just "had to be done" for the better about the familiar approach control wherein under IFR, ARTC clears aircraft into a stack, and then the tower pulls a plane off the bottom into the GCA or ILS for the final approach.

Established at Washington National on a "test" practic basis as far back as 1946, Air Surveillance long-range radar (70 to 100 miles) has apparently proved to be the answer to smoothing out the majority of IFR troubles plaguing Air Traffic Control. The overall importance of the Washington installation is the manner in which radar is used to control en route and terminal area traffic, and, of course, the degree to which other aids are currently used to serve the needs of the radar traffic controller.

With radar approach control finally officially adopted as the primary control aid and made SOP as of 1 July 1952, Washington National becomes the first airport to have a full-scale radar control center. In effect, this radar approach control streamlining enables a reduction in the intervals between successive landings during traffic peaks and a considerable reduction in the amount of communications chatter required to handle a flight.

Additionally, safer and closer stacking facilities are provided, and a plane is vectored into the ILS or GCA final much quicker. These major improvements are by no means academic, or "paper" justifications. They were proven out during the radar trials. And not only at Washington National. The same type of equipment was used by the USAF at Wright-Patterson AFB where all types of aircraft—from jets to cub-type—were utilized to determine the effectiveness of a radar control program.

Just how effective the current radar program can be is reflected in the peak traffic figures for a 24-hour period of operations at Washington National. As released by Controller Basnight, there were 602 IFR operations with the bulk of this traffic coming between mid-morning and midnight and the average landing interval established for a peak hour was one minute and 40 seconds per aircraft. Twenty-seven landings and 15 departures was the high for an hour's operations; 95 per cent of all this air traffic were DC-3 aircraft or larger.

Under the previous aircraft separation standards of ten minutes and 1,000 feet, the controller could only work about six planes an hour; under the surveillance radar approach separation of three miles and 90 seconds, the controller can work 30 aircraft an hour. Unless dual runways are used, however, the potential capacity of the airport is only about 26 an hour.

Radar VFR-IFR departure control (120.7 mc) is another new technique that is being utilized at the nation's busiest airport. The departure controller monitors departing traffic until it is turned over to Washington Traffic Control for further long-range clearances. Missed-approach traffic, if it can work the frequency, is also turned over to departure control.

The purpose of the departure control system is to

reduce delays of flights by effecting a triple change in the monitoring of outbound traffic. First, it makes for a more flexible radar system which is adaptable to changing traffic and weather conditions; second, the system provides better utilization of unused airspace in the Washington area, and third, it follows the outbound traffic toward radio fixes located outside of the congested area. These specified fixes serve as clearance limits short of destination and to feed the en route airway.

At the present time, and until there can be a better "marriage" between VHF radio frequencies utilized by many unmodified USAF aircraft and those used by civil aircraft and installations, those tactical type planes departing from Bolling AFB and Andrews AFB that do not have the required frequencies are treated as "radio failures" until the route center picks them up. Radar approach control then vectors other traffic around the "radio failures" keeping a three-mile separation.

Because of the prohibited flying areas and the proximity of Bolling and Anacostia just across the river, the jointly-used present Washington traffic pattern is somewhat restrictive as compared with the "good ol' days" when a straight-in approach for all traffic was SOP.

Explaining the why of the present "joint" patterns now being used, Basnight pointed out that it was not because they are the best patterns but simply because "that's all there is."

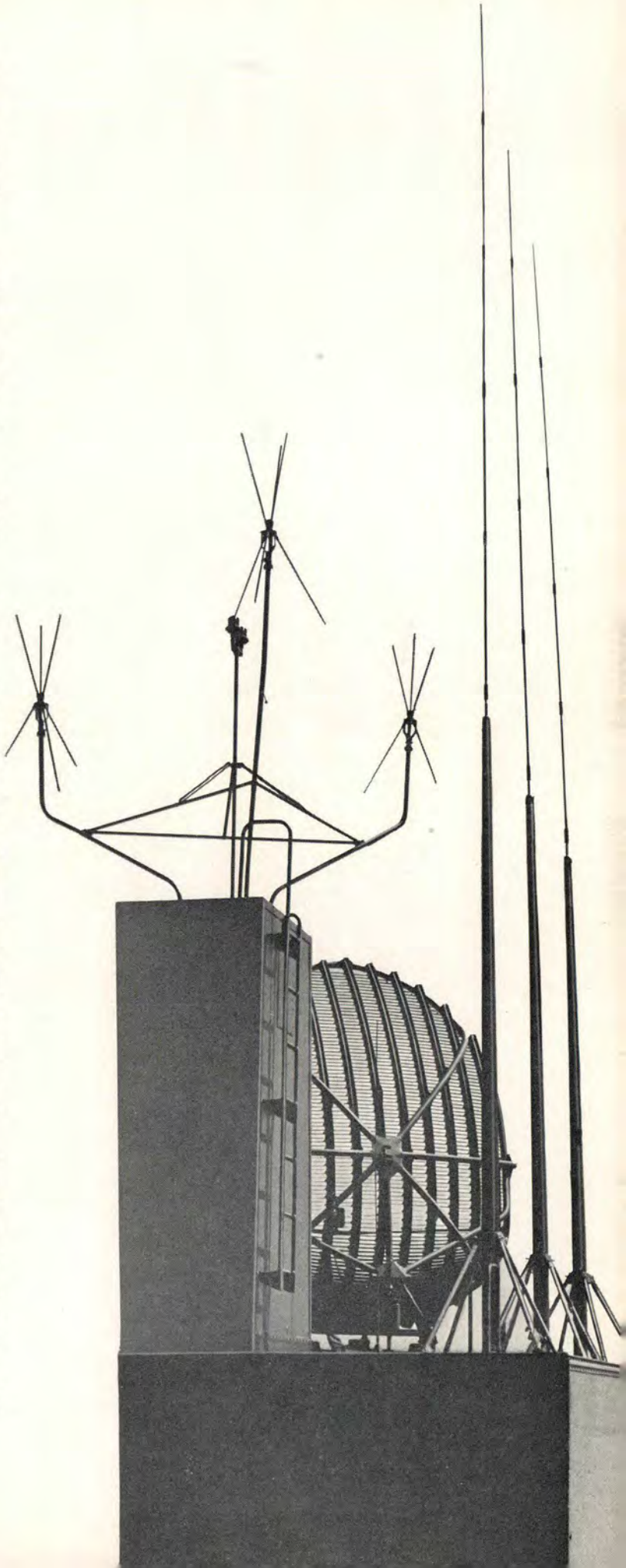
"If we were blessed traffic control-wise as are some of the other major airports which are approachable from all directions, traffic patterns would be relatively unimportant," Basnight added.

The patterns, which are more or less approach and departure lanes brought about by the large amount of restricted airspace, become most unworkable when someone starts to "crowd." Sacrifices were made in flexibility in order to satisfy the demands of all three busy airfields, noise abatement, and a safe and orderly flow of traffic in the same general direction at the three fields.

To facilitate handling of the VFR patterns between Bolling, Anacostia and Washington National, a dividing line has been put into effect. For pilots, the basic rule provides that military traffic will remain east of the Anacostia and Potomac rivers between Riverdale and the Washington Range station, while civil traffic remains west of these rivers. Deviations from this rule, if necessary for routine operations, are accomplished through coordination between the three towers via intercom.

Should a military aircraft be approaching from the west, the military tower will restrict the pilot to a minimum of 2000 feet altitude until he is east of the rivers unless weather should require rerouting the flight south of the range station. Civil traffic reporting east of Washington likewise is routed over the military fields at a minimum of 2000 feet or around the Washington range station. For civil traffic inbound from the northeast, the rule is to remain west of the Anacostia River to avoid proximity with military traffic.

From the standpoint of the pilot who may be flying IFR into the Washington area, radar approach control



Departure control watches outbound air traffic and keeps radio contact until a flight is picked up by ATRC.

imposes no radical hardships; instead, the radar program facilitates his safer approach to a touchdown. Some changes in procedure do constitute and govern a flight to a landing.

Primary responsibility of the Washington center is clearing inbound traffic to an appropriate fix at the lowest available altitude and radar approach control takes over from there. The aircraft will normally be cleared by the Center to Springfield and Andrews with altitude separation, expected approach time and appropriate holding instructions. Usually, the lowest holding altitudes will be 3000 feet at Springfield and 3500 feet at Andrews.

These fixes serve as feeder points and aircraft leaving these points under radar control will be cleared for approach and will be considered on initial approach. Radar vectors and altitude levels assigned between the points and final approach are given as required for spacing and separating traffic.

For Washington National the close-in fixes for holding are Andrews Range Station, and Springfield Radio Beacon. Traffic from these points is fed "Y" fashion into the final approach. For missed approaches, the altitude specified in procedures outlined in flight manuals, Instrument Approach Charts, and other publications is the minimum en route altitude. This altitude is usually specified and unless the pilot is otherwise instructed by ATC, a missed approach aircraft should climb to this altitude.

In the case of Washington, 1800 feet is the missed approach altitude for the northwest leg when approaches are made from the Washington Range Station or when on ILS. The Riverdale procedure specifies a missed approach altitude of 1600 feet. In giving missed approach instructions which involve holding, a minimum of 1800 feet is given for Riverdale. The reason: Minimum holding is 1800 feet because of the flight path in the holding pattern which would bring a flight close to radio towers with a height of between 700-800 feet MSL.

A lot of the military traffic caught in peak loads of IFR can be diverted to Andrews AFB only a few miles southeast of Washington. The Andrews approach control area covers an area of about 100 degrees sweep with an east-south radius of around 30 miles. Instrument traffic in this area up to 4000 feet altitude may be worked by Andrews approach control which uses four close-in fixes for holding: Andrews range, Shadyside intersection, and the Huntington and Charlotte Hall intersections.

With business as usual, Washington approach control transmits on 118.1 and 126.5 mc to traffic in the Andrews Range holding stack and 118.3-118.1 mc to aircraft in the Springfield pattern. The pilot must specify which frequency he is working if he expects a reply on that frequency.

Aircraft are letdown to altitudes for transition to ILS or radio range for the instrument approach unless a GCA is requested.

Scheduled air carriers are expected to make ILS approaches unless the pilots advise approach control otherwise. Pilots of all other aircraft are expected to advise the controller of type of approach desired on first radio contact. Standard non-radar separation may be provided to an aircraft if it is requested by the pilot.

Any aircraft experiencing two-way radio failure before receiving a clearance to leave a feeder fix is expected to conform to standard radio failure procedures and proceed to Washington Range Station and execute an approach.

In order to provide a continuous flow of traffic, approach control may at times alter the approach sequence on a first-come-first-served-basis, and expected approach times will be revised as necessary. If the controller hears no transmission, or if the pilot cannot establish communications with approach control during any two minutes period after leaving a feeder fix, the pilot should assume radio failure and complete his approach straight-

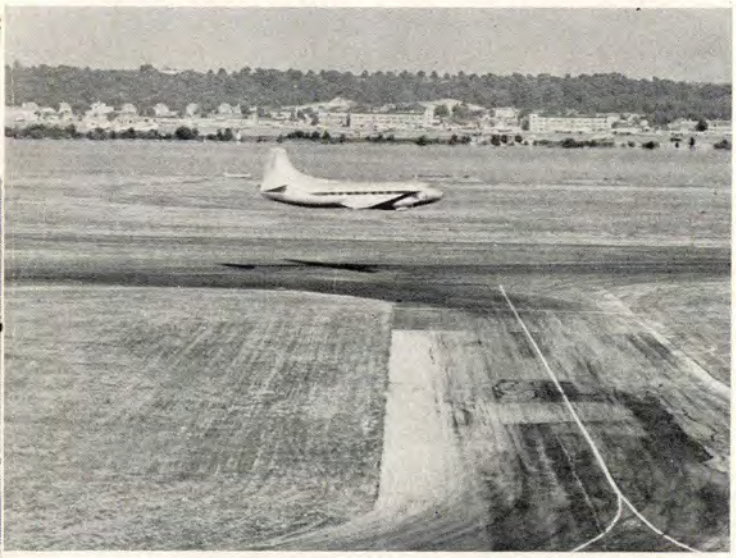
Almost constantly working traffic in or out of Washington National keeps tower operators jumping.

in if practicable. The required separation between an aircraft with radio failure and others in area will be provided on the basis that the plane will make a landing as soon as possible. Other aircraft in the area will be controlled accordingly by reference to radar scopes.

It should go without saying that all USAF pilots should be thoroughly familiar with all of the procedures, communication facilities, reporting points and holding patterns. All of the requirements necessary for clearance to the Washington area are outlined in current USAF radio facility charts.

There are only a few terminal areas in the country that would warrant the installation of a complete radar center such as the one operating at Washington National. Here, radar has proved to be an extremely sound method of controlling aircraft. For even better control the only proviso is that an aircraft carry a coded responder for positive identification at longer ranges in weather.

A Martin 404 takes off South from the nation's busiest airport. Just across the Potomac, in the background, Bolling AFB can be seen.



Improper procedures and poor communications under IFR represent major delay factors in any congested terminal area. Any smoother and related reductions in these factors are all for the better, and the day is not too far off when the pilot will fly a completely automatic approach. Monitored by GCA plus radar approach control, this system will give the reliability necessary for increased vectoring of more aircraft to provide the greater safety required for getting 'em down fast when the weather closes in.

IN THE D.C. AREA

Chief Controller Basnight had some suggestions for the military pilots who may clear into the Washington Area. He emphasized good preflight planning . . . particularly during marginal weather conditions. Parking space at the MATS terminal is limited and other available ramp space gets scarce during IFR conditions.

Also, give an accurate fix to the WNA traffic controller who wants to know so that he can plan ahead. Generally speaking, an initial call at or abeam some well-known checkpoint, radio or visual, about 20 miles out is ideal. Here's the list of checkpoints which are considered useful to the Washington Tower:

If you're arriving from:

NORTH NORTHWEST — Herndon, Arcola, Gaithersburg, Rockville.

WEST SOUTHWEST—Arcola, Manassas, Indianhead, Doncaster, Woodbridge.

SOUTH SOUTHEAST — Indianhead, Doncaster, LaPlata, Waldorf.

EAST—Shadyside, Crossing, Patuxent, River.

NORTHEAST—Fort Meade, Laurel, Bowie, Beltsville, Greenbelt.

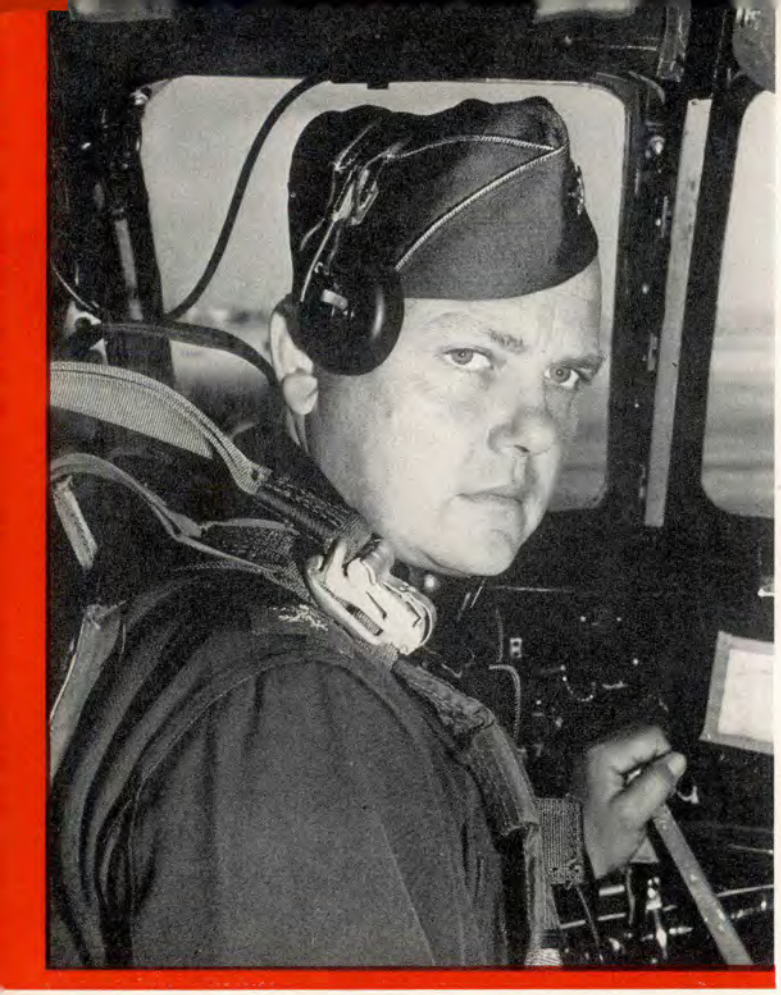
WHO SAID THIS?

Sometime around 1929 some very sage words were penned by an author who is not known to us. Although aviation has progressed almost unbelievably in the intervening years, it still has not outgrown the advice which is contained in the following message:

"Remember how little you know; remember that to be valuable you must learn a great many different things. Then, keep on living to put them into practice. Don't kill yourself trying to fly up to older men; take it easy; build up experience, for there will come a time when you will need it and during that time you will learn more than all that has gone before.

"Anticipate emergencies and they don't become emergencies. Endurance and morale are more important than the mere ability to fly, because every now and then, a pilot must have a weather-proof, slow-burning kind of nerve."

We would like to know who was the author of this item, and any assistance would be very much appreciated. A clue to his identity: he is a man of foresight.



Profile of a

Meet Colonel James V. Edmundson, a veteran bomber pilot of two wars, who has recently returned from a third combat tour in the Pacific area. He is presently assigned as Director of Operations, Fifteenth Air Force.

THE 201 file of Col. James V. Edmundson contains a flight surgeon's evaluation that the gentleman is temperamentally miscast as a bomber pilot and never will amount to a hill of beans in the Air Force except as a fighter pilot. Which proves that men of science have not yet cornered the infallibility market.

It is true that the good doctor's conclusion was reached before the present Deputy for Operations of Strategic Air Command's 15th Air Force had flown 137 missions, accumulated 1600 hours of combat time, had sunk a Jap submarine and destroyer, and generally acquired a reputation for outstanding performance in vertical warfare. It is hardly likely that such a diagnosis would be made today.

Many people remember December 7, 1941, for a variety of reasons. Colonel Edmundson has at least two. It was the day he won his first and only Purple Heart and it was the first time he had ever put on bedroom slippers and worn them for three days.

The day before, he had been Christmas shopping in Honolulu. He awoke to the scream of dive bombers unwinding. "At first," he recalls, "I thought they were Navy planes in from a carrier and horsing around over Pearl Harbor channel. I looked out the window and caught sight of a long, elliptical wing. Then the bombs began to go off. And even before I saw the meatball insignia, I realized the Japs were attacking."

Colonel Edmundson had spent almost two extremely pleasant years at Hickam until the day that would live in infamy. He had arrived in January, 1940, as a B-18 pilot in the 31st Squadron of the 5th Bomb Group.

As the first bombs fell, the young flier hastily donned a pair of trousers, put on the bedroom slippers and raced for the flight line to disperse aircraft. For his efforts he picked up a commendation and a fragment from a Jap bomb which creased his scalp.

In mid-January, Colonel Edmundson scored his first blow in retaliation against the Japs. Not long after Pearl Harbor, he was transferred to the 26th Bomb Squadron at Wheeler Field and began flying anti-submarine patrols in B-17's. On January 16, 1942, while cruising at 1000 feet about 100 miles off the Island of Oahu, Edmundson spotted a Jap sub as it surfaced for a noon sighting. On the last pass, the bombardier, M/Sgt. Joe Wilderman, scored a direct hit and the sub blew apart in a series of explosions. It was the first Jap submarine destroyed in combat by our side and Colonel Edmundson won a Navy commendation signed personally by Secretary Frank Knox.

Bombing then had few of its modern refinements. Knowledge of weight and balance was far from widespread. In the absence of "Tokyo" tanks, fuel capacity was limited. A 300-gallon tank installed in the radio compartment of the B-17 stepped up the range and on

Pilot

For his efforts in Korea fracas, Colonel Edmundson Receives award from boss, Maj. Gen. Emmett O'Donnell.

an extremely long mission a bomb bay tank could be carried. By today's standards bomb loads bordered on the ludicrous. The first Forts carried eight 500-pounders. It is a matter of record that the days immediately following Pearl Harbor were ones of "too little."

Against this background, in June of 1942, Colonel Edmundson crossed his personal Rubicon. From the time he had won his wings at Kelly Field in February, 1938, he had hoped for fighters. After Pearl Harbor, when not on anti-submarine patrol, he flew with a fighter squadron based at Wheeler. The battle of Midway in mid-1942 brought him to the moment of decision. The 11th Bomb Group was alerted for movement to the Solomons and Edmundson was offered a choice of going or accepting a transfer to the fighter squadron.

"I thought it over," he says, "and figured that if I accepted the fighter assignment I would spend most of my time flying defense patrols and waiting for the Japs. On the other hand, I knew that if I went with the bomb group, I'd be going where the action would be." To Edmundson the choice was clear. He went to the Solomons as operations officer of the 26th Squadron.

The group staged through Espiritu Santo but operated out of Efate in the Hebrides. Throughout July, Guadalcanal was a prime target as the 11th paved the way for the Marine landings in August, 1942. Many Marines who took part in the Guadalcanal campaign have good cause to remember Colonel Edmundson.

On August 19, the group received an emergency request to mount an immediate strike against a Jap destroyer which was shelling the 'Canal. Since his aircraft was combat-ready when the call for the strike came down, Colonel Edmundson set out for the target.

Richard Tresgaskis, in his best-seller, "Guadalcanal Diary," recounts that Marines on the beach cheered Colonel Edmundson on as he made his bomb runs through a hail of flak until finally a 500-pounder scored a direct hit. The Navy awarded its Distinguished Flying Cross to the Colonel for this feat.

Missions out of the Solomons averaged about eight hours. The Forts worked over Munda and Rabaul, chased Jap ships and flew island reconnaissance. Living and working conditions were the worst possible. For a full month crews slept on the ground under the wings of their aircraft. No one had taken along a mosquito net from Hawaii and the incidence of malaria was high. Before sea-side fuel storage tanks could be installed, gas was dumped over the sides of ships in 50-gallon drums, floated ashore and pumped by hand into the B-17's. The 11th became expert at three-engine performance. A bum engine was no cause for standing down. Instead, it was repaired sufficiently to help on takeoff. Once air-

borne, it was feathered and the mission flown on three engines.

When the Marines took undisputed possession of Henderson Field on Guadalcanal, the 11th moved in. Colonel Edmundson has a deep-rooted memory of Henderson.

One day the group commander, Col. Lawrence "Blondie" Saunders, former West Point All-America football

On 1949 flight to England, 22d lost B-29 in Azores. Colonel, left, hears of survivors sighted on two rafts.

player, led six B-17's on a mission to Buka Straits. The Forts hit the runways of a Jap airfield with 1000-pounders, then set course for Bougainville where they dumped 500-pounders on Nip shipping. Under fighter attack for the better part of an hour, Saunders' attackers were shot up badly.

With one engine knocked out and all ammunition expended, Colonel Edmundson flew back to Henderson. "We were just getting ready to land," he recalls, "when our batteries opened up. I looked above me and saw 18 Jap bombers in V hitting the strip." The colonel found a convenient cloud, ducked behind it and was overjoyed when a Marine Corsair took up station on his wing. At least, he thought, he would have protection if Jap fighters were around and found him.

When the Japs had finished their attack, there were 1800 feet of runway left. The colonel brought his Fort in and the Corsair landed behind him. On the ground Edmundson told the Marine he appreciated what he had done, particularly since the B-17 was out of ammo and defenseless. To which the Marine rejoined this made two of them in the same fix.

That night Jap warships shelled frantically and succeeded in knocking out the gas storage dump. Without fuel to support flying, Saunders ordered the 17's to New Hebrides where gasoline was available. Colonel Edmundson had only three engines and 1800 feet of runway but made the takeoff without incident to New Hebrides where the 11th mounted strikes until Henderson was sufficiently repaired to receive it again.

From August until November, 1942, Colonel Edmundson commanded the group's 431st Squadron. In the latter month he took the squadron to New Zealand for a brief R&R period. He weighed in at 128 pounds, some 40 pounds under his weight when he had left Hawaii. In that month, too, he was moved up to become deputy to Saunders.

In March, 1943, after more than three years out of the country and with 78 missions behind him, Colonel Edmundson returned to the States. But the itch for combat remained and within two months he was in England. He had virtually assured himself of a job as a deputy group commander when he received a wire directing him to return to the U. S. immediately. Saunders had gone into the B-29 program and wanted Edmundson with him.

Colonel Edmundson went to Marietta, Ga., in July, 1943, and became one of the first ten pilots in the Air Force checked out in the B-29.

The pilot who was to return to the Pacific for combat twice more was born in Hollywood, Calif., June 18, 1915. His parents still make their home in Santa Monica where his dad, an old-time silent film actor, conducted a real estate business for 30 years.

Colonel Edmundson forged his career the hard way. He was graduated from Santa Monica High School in 1931, at a time of considerable depression and unrest. He took a year at Santa Monica Junior College and did summer work at the University of California at Los Angeles. He worked at numerous jobs. For a time he drove a brick yard truck at $9 a week; he went on the road with a magazine subscription crew; started as a dishwasher and was on his way to becoming a store manager in the Kress five-and-dime chain; became a timekeeper on the "graveyard" shift at Douglas Aircraft.

None of these tasks looked like Colonel Edmundson's bucket of fish. "I saw so many people punching clocks and living for the weekend," he says, "that I made up my mind I would never settle at any job unless I was so contented I wouldn't care if a weekend ever rolled around."

The Douglas job rekindled the fire of interest in aviation that had been lighted when Edmundson was a youngster by Waldo Waterman, a Santa Monica neighbor and one of the great pioneers in American aviation. Douglas was making B-18's for the Air Corps. "I saw those planes cranking out," Edmundson recalls, "and I figured someone ought to be flying them."

Having reached this conclusion, Edmundson wrote two letters, one to the Secretary of War, the other to the Secretary of the Navy. Both posed the same question: "How do I become a pilot?"

His letters drew application blanks from both services but in this instance the Army acted first. He was ordered to March Field for a physical in November,

1936, was accepted and directed to report to Randolph Field in the cadet class beginning February, 1937.

Upon graduation he asked for assignment to Hawaii and was sent instead to March where he joined the 95th Attack Squadron of the 17th Group and flew A-17's. The concept of attack aviation was giving way to bombardment and the A-17's went to Canada to be succeeded by B-18's. When Colonel Edmundson did get orders to Hawaii in December, 1939, he wrote an urgent letter to the Adjutant of the Hawaiian Department asking that he be assigned to a pursuit squadron when he arrived the following month. The request was rejected and he became a B-18 pilot in the 31st Squadron.

The Colonel spent the winter of 1943 at Smoky Hill Air Force Base, Salina, Kans., in command of the 792d Squadron, 468th Bomb Group. In the Spring of 1944 the group went to India and operated out of Bengalarea, about 100 miles from Calcutta, and also flew out of Pengshang in China's Chengtu Valley.

Mounting raids out of Pengshang was one of the war's major operations. The B-29's made six trips from their base in India to store up sufficient gasoline to set up a mission. "We'd load up, fly to Pengshang, then drain the tanks of all but enough fuel to get us back to India," Colonel Edmundson recalls. "After we'd done this six times we had enough fuel on hand to fly the mission."

Soon after the 468th arrived in India, Edmundson moved up to deputy group command. In November, 1944, he took over the group and two months later received his eagles. The B-29's ranged over targets in China, Formosa, Manchuria, French Indo-China, Siam and, of course, the Japanese homeland. He led the raid on Singapore which destroyed the George VI floating drydock, largest of its kind in the world.

In the Spring of 1945, Colonel Edmundson's group was moved to Tinian as the war against Japan entered its final phase. The 468th smashed at Tokyo, Kure, Osaka, Nagoya, Kobe, and other Jap targets. It was poetic justice perhaps that Colonel Edmundson flew the last mission of the war. He was returning from a strike against Hikari Naval Arsenal on August 14 when the cease fire order was given. The colonel experienced a great thrill when he led a string of B-29's over the battleship Missouri the day the surrender was signed.

When he returned to the States for the second time in October, 1945, the colonel had flown 29 missions in the aircraft of the same number. But he still was not through with the Pacific. Early in 1946 he went to Kwajalein to take part in "Operation Crossroads," the atomic tests of that year. While at Kwajalein he was ordered to Germany but because he had been out of the country five of six years was pulled off orders in Washington and assigned to the policy division of plans. For two years in the Pentagon he was out of the bombardment business entirely. In August, 1948, he was sent to Air War College and upon graduation a year later returned to March to command the 22d Bomb Group.

The colonel took the 22d to England in November, 1949, for three months of temporary duty. He left for the Pacific again on July 4, 1950, and nine days later the 22d flew its first mission from Okinawa in the Korea war. In the three months and 18 days that followed before the group returned, he led 30 missions and his combat time totaled just 20 minutes short of 300 hours.

Colonel Edmundson, who never flew a tri-motor in his life and has more than 300 hours of three-engine time, points out that "emergencies can crop up at all times. It is imperative, therefore, that each man knows the equipment and knows the system in the aircraft so that an effective flight can be turned in regardless of multiple malfunctions."

Colonel Edmundson, front row center, and War II B-29 crew line up for photographer at India base.

Since safety is so closely related to effective flight, he counsels that SOP's be followed precisely and without question. "If a pilot knows his equipment and does what he's supposed to do, it's not likely that he'll get into trouble."

In 5000 hours Colonel Edmundson has had his share of emergencies. There was one mission in the Solomons, for instance, where he handled a Fort so skillfully that his gunners knocked down four of seven Jap Zeros which had attacked the B-17.

The colonel's formula based on knowing his equipment plus doing the right thing at the right time has served him well in 14 years of Air Force flying. Out of such formulae pilots live to produce supremacy for the U. S. Air Force.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USAF

WINGS FOR WEATHER

Whether hurricane hunting or flying recon missions over the Arabian desert, the ultimate purpose of AWS weather missions is to provide safety for your flight.

A SOLITARY ARAB is urging his tired camel onward across the burning desert sands of Saudi Arabia, when the distant throb of airplane engines reaches his ears. A short while later the brief black shadow of a giant plane races over the sands before him, flying eastward toward the coast of the Persian Gulf.

Poised on the gunwale of a small boat riding at anchor in the clear, blue waters of the gulf off the village of Sharjah, a pearl diver pauses for a moment before his plunge to the oyster beds below. He too has caught the sound of engines in the distance and, because in 1946 he helped to build the air base at Dhahran, he recognizes in the uneven beat of the engines an indication of trouble.

Shading his eyes against the glaring sun, the lone watcher in the boat sees his guess justified, as the huge WB-29 Superfort circles above him and heads back to Dhahran.

Unknown to the native diver, he has witnessed the first unsuccessful attempt of Flight A of the USAF Air Weather Service's 53d Strategic Reconnaissance Squadron to fly its 100th weather mission.

Taking off from the U. S. air base at Dhahran every other day, a big Air Weather Service WB-29 wings eastward over the Persian Gulf, the Gulf of Oman and the Arabian Sea to the old city of Karachi in Pakistan. Over Karachi, the huge "flying weather observatory" alters its heading to northwest and points its nose toward the misty towers of the Himalaya mountains.

Onward it drones toward the forbidden land of Tibet, past the joining of the Indus and Sutlej Rivers, to a nameless spot in the lowlands 60 miles west of Lahore in Pakistan, in the shadow of the mighty Himalayas. At Lahore it circles back and proceeds southeastward to a point over the Gulf of Oman, where it turns west to return to Dhahran.

This 2,770-mile weather "track," like the tracks flown regularly by other Air Weather Service planes throughout the world, is a long, arduous routine of taking periodic weather observations and transmitting them by radio back to the base. Taking the place of reports from ground stations in areas where such facilities do not exist, the observations made by WB-29 weather crews help to fill in the global weather picture supplied to Air Force and Army units by the Air Weather Service.

Each of the AWS weather reconnaissance squadrons flies one or more regular tracks with code names like Petrol Able, Ptarmigan, Buzzard Dog and Gull Easy. Flight A's track out of Dhahran is called "Hawk Baker" for the ancient bird of prey which is still highly prized as a hunting bird in the Middle East.

On Flight A's 100th "Hawk Baker," a weather plane commanded by Capt. Albert J. Kantor of North Tonawanda, New York, took off from Dhahran, over the heads of wildly scattering flocks of native sheep and past the huge Dhahran oil refinery, where the flames of free-gas escape torches lit the early morning countryside. Climbing to a flight altitude of 10,000 feet, Kantor set his course for Karachi.

Less than two hours later, as the four-engined weather plane approached the Oman Peninsula, which separates the Persian Gulf from the Gulf of Oman, number three engine cut out, making it necessary for the pilot to feather the propellor on that engine and return to home base at Dhahran.

In a second attempt to complete the scheduled "Hawk Baker," another crew, commanded by Capt. Albert A. Kopp of Struthers, Ohio, left Dhahran, frightening the foraging sheep for a second time that day. All went well with Kopp's ship for the first 1,000 miles, but then it too lost an engine and Kopp was forced to land at Karachi.

When Kopp's radioman flashed a report to flight headquarters that the second try was down in Pakistan with more than half of "Hawk Baker" still to be flown, the maintenance crew was thrown into turmoil. Rising to the need, the mechanics worked all night to build up a replacement engine for Kopp's stranded WB-29.

At five o'clock the following morning the new engine was loaded aboard a third WB-29, which took off at once under the command of 1st Lieut. Hollie C. Trosper of Tacoma, Washington. Before noon, Trosper's plane had landed in Karachi and the mechanics he had brought with him were hard at work making an engine change on Captain Kopp's crippled ship.

Completion of the mission did not wait for the engine change. Captain Kopp assumed command of Lieutenant

Trosper's ship and took off immediately, taking with him three men who had come to Karachi that morning with Trosper. These three men—Capt. Graham St. John, weather officer from Willow Run, Michigan; 2d Lieut. Andrew P. Jara, navigator from Sacramento, California, and Sergeant Dolan Dunks from Seattle, Washington—became the only three to fly all of "Hawk Baker" that day in the same plane.

Once the defective engine had been replaced, Lieutenant Trosper and his crew took off from Karachi to return the ship to Dhahran. The question of who flew the 100th "Hawk Baker" remains unsettled.

A detachment of the 53d Strategic Reconnaissance Squadron, which has its headquarters at Kindley Air Force Base in Bermuda, Flight A has been flying "Hawk Baker" for a little more than a year. Originally a temporary duty outfit for the various AWS reconnaissance squadrons, the flight, which is commanded by Maj. Leo Lesonik of Edinboro, Pennsylvania, became a permanent junior size version of its bigger brothers in March of 1951 and was attached to the 53d.

Its parent organization in Bermuda flies hurricane reconnaissance from June to September of each year, shouldering its big WB-29s directly to the center of the violent tropical storms. As the huge weather-modified bombers wrestle with the tearing hurricane winds which circle the storm's "eye," the weather observer is hard at work, collecting and analyzing his observations of the atmospheric characteristics of the storm. Information collected in this way and sent back to home base by the radioman makes possible advance warnings of the probable path and power of each hurricane and resultant savings in lives and property.

Experience throughout the past several years has taught that accurate world-wide weather forecasting, particularly for military units, demands an adequate global network of observing posts. The USAF Air Weather Service, which is a component of the Military Air Transport Service (MATS), recognizing that such a network of ground stations was impractical, filled the need by placing weather reconnaissance squadrons at various places around the world.

Particular locations present particular problems to these squadrons—while the 53d is tracking hurricanes over the vast miles of the Atlantic, the Guam-based 54th Strategic Reconnaissance Squadron in the Pacific is performing similar duty with typhoon reconnaissance. The Air Weather Service Squadron based at Eielson Air Force Base in the frozen interior of Alaska flies regular missions over the North Pole, performing daily miracles in Arctic maintenance and pioneering in the development of navigational procedures for use in crossing the trackless wastes of the far North.

In Saudi Arabia the AWS mission is a quieter one, outside of an occasional monsoon, but the preparations for "Hawk Baker" at Dhahran are no less complete than those at Eielson for "Ptarmigan," which takes a weather crew over the top of the world and back.

Before takeoff at Dhahran, Air Force mechanics swarm over the WB-29 to make sure that its four engines and all of its mechanical devices are in perfect condition. An engineer checks the maze of switches, dials and gages on the flight panel and makes a detailed examination of each instrument. An experience such as the 100th "Hawk Baker," with two planes cancelled out for engine malfunction, is a "once in a blue moon" proposition.

Prior to takeoff on each AWS mission, the navigator plots his course over the hundreds of miles of sea and desert and satisfies himself that all of his navigational instruments are in shape to do the job of getting the big plane to the right place at the right time and back again. Preflight planning includes checking that all necessary equipment is aboard, a briefing of forecast weather along the route, and the preparation of a flight plan to use forecast winds in getting the best possible fuel consumption from the big plane.

Emergency procedures aboard the WB-29's are no less elaborate, for the big planes often range hundreds of miles from the nearest land and, in the case of those which fly "Ptarmigan" over the Pole, over hundreds of square miles of desolate Arctic wastes. All emergency equipment—for use in case it should become necessary to "ditch" the plane or bail out—such as parachutes, Mae West life jackets, life rafts and emergency supplies of food and water, are examined and placed in the aircraft by the personal equipment section.

Just before takeoff on a "Hawk Baker"—or any other weather track—a final crew briefing is held and the aircraft commander makes sure that all of the minute details have been completed. Minutes later, another "Hawk Baker" is airborne.

The ten-man WB-29 crew immediately becomes an integrated whole with one purpose: to carry the weather observer-forecaster to the points where he must take atmospheric readings and to get his reports back to the base. Riding in the bombardier's seat in the nose of the big plane, this weather specialist makes the same observations which might be made by a ground station at the same point on the earth's surface below.

His calculations of atmospheric pressure, humidity, temperature, cloud cover, wind direction and velocity and other meteorological factors are sent back to the Dhahran ground station by the radio operator. From that point they are relayed by teletype circuits to other AWS weather stations throughout the world and to the USAF Weather Central at AWS Headquarters in Washington, D. C., where they become part of a huge map of the world's daily weather.

The "Hawk Baker" mission is a routine job for the airmen based in the Middle East, but the weather information they obtain from tropical skies over Saudi Arabia and Pakistan fills in an important area on the hemispheric weather maps plotted at the Washington weather central—information which is incorporated into the plans and operations of U. S. and United Nations military forces throughout the world.

safety in formation

By Maj. Robert M. Bell
57th Fighter-Interceptor Group

During the last ten years of instructing in fighter aviation I have formulated some formation "musts" that have resulted so far in "Safety" success. Formation, it must be remembered, differs in detail with each instructor; however, the general rules for safety will apply regardless of the particular mission or type flown. Although this writer's experience is limited to fighters, conventional and jet, it is felt that many of these rules can be held applicable to bombers, transports or trainers. Experience and general opinion indicate that, as in all other flying, briefing of formation missions is of extreme importance. This briefing should not be just a general outline of what is expected, but a detailed picture of what the flight will encompass to include taxiing out and in, and the exact desired position of each aircraft during all maneuvers contemplated or anticipated.

It is reasonable to assume that no pilot, regardless of his experience, can do a job unless he knows what is expected of him. Don't take anything for granted. Formation flying takes practice and a lot of it. A man who was proficient last month could be dangerously rusty now. A note to formation leaders: A good wingman has put his faith in you. In many respects you're flying his airplane for him. Don't let him down. If you don't earn that faith you are not a leader.

To best outline safety in formation, I will break down a briefing guide that has proven very successful to me for several years. Here are the major points:

• *Attendance*—An unbriefed or partially briefed pilot is a hazard to himself and to the rest of the flight. Make certain all pilots who are to fly attend the briefings.

• *Mission outline*—Tell the members of the flight what you're going to do and they will start thinking with you. They will be particularly observant about the parts of the flight that directly involve them. Also, be sure each man knows his position on the schedule as well as his leaders.

• *Start, taxi, and takeoff times*—You can't afford to rush. A man's life is too short, as it is.

• *Procedures for taxi, takeoff and joining formation*—Start right, end right. A well planned beginning helps make the entire flight a success.

• *In-flight formation*—This is the body of the flight. The most minute detail here is not superfluous. A blackboard is absolutely necessary. A picture is worth a hundred words.

• *Landing formation and pattern*—The pilots will be tired at the end of the flight. This phase is very important and should be covered explicitly.

• *Radio frequencies* — An unheard command is a double hazard.

• *Emergency procedures*—This phase covers all possibilities to include disposition of spares and shorts, radio failure, fuel shortage, etc. Emergency and auxiliary airfields should be covered in detail, giving runway lengths and latest NOTAMS.

• *Weather*—A complete weather briefing for the entire flight duration, both local and en route, is a real must.

• *Questions*—You can't cover everything. A question on the ground might save a life in the air. At the completion of your briefing, the element and flight leaders should hold their own briefings. Now that you have imparted your plans to the rest of the flight or flights, remember to advise them of any change, and your flight should be successful and safe.

• *Critique* — Mid-air collisions are the primary hazard involved in formation flight. All of these mishaps are obviously the result of not knowing the positions of the other aircraft, or . over-extending one's ability by trying to fly too close in maneuvers for which you are not prepared. Here again, the briefing officer should be cognizant of the capabilities of his pilots. Over-extension of those capabilities must rightly be credited to, or perhaps more pointedly "blamed" on the leader.

It is well to repeat here that formation ability is not inherent. It is education, briefing and practice. A formation pilot can be superior only if, with all these other criteria, he has pride. As in all other flying phases, pride to the extent that superior flying is considered minimum satisfactory must be evident in all pilots.

THIRTY YEARS . . .

"WEST CREEK, Sept. 1—Seven Air Force airmen lost their lives in the flaming wreckage of a twin-engine light bomber early today when it crashed into the south slope of Bald Mountain. There were no survivors."

This grisly drama is repeated too often. The Air Force continues to suffer unwarranted losses through accidents. These costly incidents are followed invariably by sensational newspaper headlines and startling radio newscasts. This public notice is only that which can be expected. In the public's eye, aviation is still the infant mode of transportation, and still carries its shining cloak of glamor.

The flying fraternity often asks: "Why does a fatal aircraft accident receive so much publicity, when far more people die daily in automobile accidents, drownings, and other miscellaneous mishaps?" The answer is obvious. Man in the air is in an unnatural element. Therefore, in the minds of many people, the pilot defies disaster every time he takes leave of the earth. As a result, every serious accident becomes an item of high interest. The layman fails to realize that the many scientific and technical developments of the past three decades have accomplished much to remove the stigma of the term "unnatural element" from aviation as a whole.

The accident picture is not as dark as it might be. Regardless of the blaring headlines, the fact remains that in the Air Force the accident record is improving almost every day. Regardless of public opinion and the ominous mutterings of the diehards, the Air Force continues to make great strides in accident prevention.

Let's take a look at the record. The Air Force major accident rate—computed on the number of accidents for each 100,000 hours flown—has been steadily downward for the past 30 years. In 1922 the Air Force suffered more than 500 accidents per each 100,000 hours, and in 1951, this rate had decreased to record low of 33. In the first six months of 1952, the major accident rate stands at 29—or five accidents less than the rate of 34 established in the first six months of 1951. If this low rate of 29 is reflected throughout the current year, the Air Force will enjoy by far the lowest incidence of accidents suffered per number of hours flown.

The 30 year accident record has not been without setbacks. The Air Force has had a few high-accident years, but each peak has been followed by another downward trend. The air mail incident of 1933 caused one rise in accidents. Rapid mobilization for World War II resulted in another high point. Demobilization in 1945 and 1946 robbed the Air Force of experience and caused another rapid upturn in the accident rate. The trend has been downward since.

So much for history. This year accident rates have declined in all categories—major accidents, fatal accidents, total fatalities, pilot fatalities, and aircraft destroyed. Right now, the Air Force can be encouraged by the fact that the long and hard fight against aircraft accidents is paying off in new victories. However, total victory will not be won until all unnecessary accidents have been eliminated. No one is certain what an acceptable accident rate is. But everyone in the Air Force is sure that the present low rate is still too high. Every member of the Air Force must strive to eliminate those unnecessary accidents which are caused by thoughtlessness, carelessness, negligence, or any other human factor.

During the past 30 years, the Air Force has been manned by virtually three generations of personnel. First, the product of World War I. Second, the huge company of flying men who evolved from World War II. And now, the third "generation," the youngsters of today who have graduated into the jet era. From this cross section of experience, we have "manufactured" a hypothetical family of pilots—father, son, kid brother. Their comments are typical of the three classes of pilots who make up today's Air Force.

In its day, the MB3A flew along with the best and offered a challenge to the stick and rudder pilot of 1922.

Three generations of military pilots — father, son and now the kid brother — take a look at flying in general and SAFETY in particular.

MY SIGNATURE is followed by "Colonel, USAF (Ret.)." I hung up my wings this year after more than thirty years of flying, but I still live, breathe and eat aviation. You can't forget a long and happy military flying career in months or years, and you can't forget two sons carrying on in the same profession.

In the last three decades, I have seen airplanes progress from bamboo, linen and wire crates, to the huge sleek jet bombers and fighters. I have seen pilots develop from comparatively uneducated daredevil kids to the keenly trained, alert professional pilots of today. And in this short span of years, I have seen aviation grow from a foolhardy, hell-for-leather game to a highly refined precision business which provides us with our greatest weapon in war and our fleetest method of transportation in peace.

Above all, I have seen both military and civilian aviation become safer and safer as the years click off. As I bow out, it is with an extreme sense of achievement for the past and confidence in the future that I examine the score cards which tell me that the Air Force is now enjoying its lowest aircraft accident rate in history. It is comforting for me to pass this word along to my sons, and to all the other sons and daughters who make up our modern Air Force.

I like to think that during my service I contributed in some small way to the achievement of this safety record. Back in the old days—when the accident was the rule rather than the exception—we gave little thought to safety. But it wasn't long before I and many of my contemporaries realized that safety was the key to survival. And later, when the airplane was being developed into an efficient fighting machine, we came to our second realization that safety was also the key to operational success.

Aviation has come a long way from the old stick-and-rudder days. And I'm happy to say that in my opinion, safety has more than kept pace. Our complex aircraft, high speeds, intricate navigation procedures, and long ranges at high altitudes demand maximum flight safety. There can be no compromise. Admittedly, we still have accidents and we will continue to have accidents as long as the human element exists; but I'm convinced that even though we now have less accidents than ever before, they can still be reduced considerably.

From a commander's point of view, I can say from experience that the accident rate can be reduced through an honest and sincere acceptance of the fact that accident prevention is a command responsibility. To stop unnecessary accidents, commanders must exercise confident leadership and firm control. They must pass on the benefits of their experience and instill a high degree of safety consciousness in their subordinates. They must provide standardized training and operating procedures, adequate maintenance, and positive airspace and airport control. A good commander owes these and many other

common-sense obligations to both himself and his aircrews if he is to conduct an efficient and safe operation.

More than anything else, the commander must give his full support to an intensive accident prevention program regardless of the size or scope of his activity. His safety record will only be as good as the effort he expends on correcting pre-determined deficiencies and removing known or suspected hazards. He must have the confidence and cooperation of his entire staff in this endeavor. And it is his responsibility to get it.

These are but a few observations of a so-called "old-timer" who is now taking the final curtain call. I regret that many of our safety accomplishments have been made at the expense of tragic mistakes. However, I'm sure that present and future members of the Air Force will benefit from past errors, and we will have a better and safer Air Force.

My only advice to those who follow is to attempt to condition yourself to think in terms of safety and you'll act safely. Increase your knowledge of your equipment and procedures and you automatically increase your safety potential.

• • •

WHILE DAD is closing his log book for the last time, I suppose I can be considered as reaching for the middle years in my flying career. A "typical" present-day Air Force pilot—Major, 33 years old, 3500 hours, two combat tours in World War II—with an all-consuming ambition to do the best job I know how and someday die of old age.

I was brought up on the hair-raising tales of early flying, and, believe me, I thought it was a pretty adventurous and thrilling way to make a living—if you lived. I carried this same attitude through flying school in 1941 in spite of sage advice from instructors and other old hands, including Dad.

After a few near-misses which I survived through no fault of my own, I started to think about safety, but not too much. I believe what finally made me a convert was my introduction to a four-engined behemoth called the "B-24 Liberator." My transition and subsequent assignment as a pilot in this huge flying machine "liberated" me from any pre-conceived notion that I was the hottest rock in the sky. Because I wasn't.

Although simple by present comparison, that B-24 made a Christian of me to the extent that I realized at last that flying was a serious business which entailed a lot of training, study and practice, and which carried with it more responsibility than I had ever dreamed. It didn't take me long to figure out that I alone was responsible for my crew, myself, my airplane, and the accomplishment of assigned tactical missions which were a definite part of the entire operational effort.

This awakening didn't come any too soon. I lost a lot of friends in training, and more in combat. In analyzing why they were lost, in many cases, it wasn't hard to determine that it was their own fault, or the fault of someone else who didn't know or didn't perform his job. Of course I'd been told this same thing many times before, but this sobering realization finally struck me when I began to feel the impact of responsibility.

Flight safety is an ethereal quantity, difficult to define and practice, and almost impossible to enforce. At the risk of being trite, I subscribe to the theory that "Safety is Knowledge"—knowledge of the pilot, the crew, the mechanic, the commander, the designer, and all the others who contribute to the end product and the ultimate mission. This knowledge is more important than ever because our margin for error grows slimmer by the day. Our high-performance jets of today are far less forgiving of errors in technique, judgment or workmanship than their conventional predecessors. I have a personal slogan that I believe has kept me out of a peck of trouble—"You gotta know it before you can do it."

Another important contribution to safety is confidence; that is, confidence tempered with common sense. Overconfidence can be far more dangerous than timidity —so you have to recognize and respect your own limitations. This is often difficult, because it is a strange man who likes to admit to himself that he isn't just as capable as the next joker. But it is a fact that one type of person is cut out for one job and others another. There are some pilots who can fly everything and do all their jobs with equal facility and efficiency. I'm not one of them, and I haven't met very many. That's why I have my own yardstick for my capabilities. And I'm always using that yardstick to measure immediate situations against my own state of proficiency.

The B-26 Marauder was a rugged type of WW II fame.

Flying to me is the finest profession I could have chosen. And I do consider it a profession. For every hour in the air, I'm convinced that it takes many more

hours of study on the ground to make that hour pay off. Keeping pace with technological developments alone is a big job—to say nothing of learning new navigational and instrument techniques, superimposed on the complex aircraft we must now master. Flight planning alone is a full-time job, and one of the most important to the pilot. I'm convinced that poor preparation for flight has caused many more costly accidents than those resulting from pure in-flight emergencies.

I have a long way to go before I taxi in for the last time, but I also have a lot to learn. I depend on that learning to keep me alive and make me an asset to the Air Force.

Like Dad, I'm particularly gratified that my kid brother is starting his flying career at a time when the Air Force is experiencing its lowest accident record on the books. And there is no reason why it can't go lower. I hope the lessons learned and passed on by the Dads and big brothers will help the lads who are now cutting their flying teeth to fly far and safe. It'll be no accident.

• • •

ALTHOUGH I'm only the "kid" to Dad and Bob, I never miss an opportunity to remind 'em that my type of flying definitely places them in the horse and buggy class. Of course, they never fail to remind me that I wouldn't be riding the hot pipe if they hadn't built up

The Bell X-5 is a sample of 30 years of aviation experience.

all the know-how and experience which makes high-speed, high-altitude flying what it is today.

We joke a lot about the relative merits of different techniques and equipment, but we all agree on one thing: You gotta play it safe if you're gonna finish the game.

I've heard and read millions of words about safety—both at home and in training. I suppose some of it has seeped through my thick skull, but now I have come to the conclusion that you can never get enough. I don't mean that I live and fly by the safety bromides. I do mean that, as a jet pilot, I must weigh my every decision and action against the element of risk involved.

I rarely think of the word "safety" as such. It can be translated into many definitions—proficiency, judgment, alertness, precision, knowledge, planning, and a myriad of other factors necessary for successful flight. My Form 5 file is comparatively short on hours, but it represents a lot of training and hard work. And all this is essential if I am to be a professional pilot. That's what I want to be.

In training, and now in our tactical jet fighter squadron, we have kicked "flying safety" around quite a bit. We have argued pro and con that you can't pay too much attention to safety if you are to come out on top in combat. Fortunately, there usually is some older head around to remind us that dead pilots and wrecked aircraft can't win battles. We have been reminded also that efficient flying is the safest kind of flying and produces the desired results.

We still have pilots on whom this safety business hasn't rubbed off. They may get by with it for years. But I am of the opinion that unless they get on the stick and stop bucking the odds, they're bound to throw snake eyes on some future roll. As for me, I'll play with the house.

I've heard other arguments that if you pay too much attention to the rules and the development of safe flying habits, you'll lose your enthusiasm and zest for tactical operations and all the skill it demands. In my book, this is for the birds. All you have to do is look at the records. In Korea our ratio of air-to-air kills over the Reds has been uncommonly high throughout the conflict. And at the same time, accident statistics show me that jet fighter accident rates have declined to a marked degree. That's good enough for me. In my book, safety and tactical proficiency go hand in hand.

Although it pains me deeply sometimes, I'm afraid I'm forced to agree with my brother on the flying safety score. I agree that I must know every phase of my job if I am to fly safely. I must take meticulous care in maintaining proficiency, planning flights carefully, navigating accurately, knowing all my equipment, and above all, exercising good judgment and common sense. And it appears to me that common sense is the key to the whole accident problem.

• • •

Father, son and kid brother—three different philosophies of flight safety, but all good ones. If you agree with any one of them, and practice that belief, chances are you will be a safe pilot. Flight safety for the individual cannot be set down in a list of rules. There are, of course, rules for specific things such as taxiing, in-flight procedures, landing, etc. But the general attitude of a pilot toward safety is something which must come from within himself, and nobody can dictate this to him. Regardless of how many rules are established, it is still this inner attitude which determines how the pilot will comply with the rules — how he will react in an emergency, and whether he can ultimately be classified as a safe pilot. If your safety attitude is right, you will be safe.

Sharpshooters

In a remote corner of Arizona, pilots of the Air Defense Command improve their gunnery techniques

YUMA AIR FORCE BASE, Arizona, is located right smack in the middle of the "Sunshine Capital of the West." The Chambers of Commerce thereabout speak rather highly of the weather in their brochures, but Air Force men in the area aren't too sure about it all.

Officers and airmen assigned to the 4750th Air Base Group, Weapons Training, conduct their daily tasks in blazing sunshine which has been known to send a Gila monster looking for a shady spot.

The 4750th, under the command of Col. Robert F. Worley, is stationed on the desert to provide for all the needs of Air Defense Command units which come to Yuma to qualify in air-to-air gunnery. This results in

"Nuthin' but mile after mile of mile after mile." That's the word about Yuma AFB, Ariz., where the thermometer hits 110 for days on end. Work on parking apron ceases when mid-day sun beats down. Flying begins at 5 A.M.—ends near noon.

units from the cool areas of the country such as Bangor, Me., Madison, Wis., and Tacoma, Wash., getting together in the sun and comparing tactics and airplanes.

Thermometers have been known to "blow their tops" in Yuma during the summer, with the daytime mercury hovering around an average of 103 for four months in a row. In fact, temperatures above 100 degrees have been recorded in eight of the 12 months of the year. The all-time high is 120 (taken in the shade) and runway temperatures have sent GI thermometers surging up and beyond 160 degrees.

Working under conditions which would force an Arab to take to the hills, the base flew more than 6500 sorties in a recent four-month-period. During that time, more than 1,400,000 rounds of ammunition were fired.

Despite all of the obvious obstacles, the gunnery program has been going on since June, 1951, without a major accident. Two minor accidents have marred an otherwise perfect flying safety record, a mark which is the pride of all TDY and assigned personnel.

Each unit, while at Yuma, becomes a detachment, and is under the supervision of the 4750th Weapons Training Squadron. Usually, all of the members of a detachment will be from the same squadron, but, in the case of an Air Division the detachment commander will come from one squadron, while the members will come from the units in the division.

Flying safety is a full time job with all of the flying, operations, and maintenance personnel at Yuma. The Weapons Training Squadron Flying Safety Officer, Maj. Charles E. Van Bibber, works in complete harmony with detachment commanders to insure that flying safety is uppermost at all times. Flying safety posters adorn the briefing rooms, and the many flying safety publications are gobbled up as soon as they are put out for distribution. Two Flying Safety meetings are held monthly—one for assigned base personnel, including the tow target pilots; and the other for the TDY units. The experience level of the pilots who come to Yuma, plus the concerted Flying Safety program, undoubtedly has had a great deal to do with the base's enviable record.

A famous author once remarked that nobody does anything about the weather. Well, the old boy could

A mobile control officer has his hands full now and then as F-86's, F-94's, F-80's, and tow-target planes line up for takeoff. And the heat doesn't help! When the flights are back in, the inevitable "tabbing-up" takes over. The man with the paint-brush does the work, with plenty of help to see that he doesn't miss any good shots.

The armament specialist has the most unenviable job of all. He waits at the runway end until his plane taxis out for takeoff. Then, he charges the guns and waits some more. Runway temperature — close to 160 degrees.

learn a thing or two by dropping in on the sun-drenched base at Yuma.

It is interesting to note a few of the steps which have been taken to beat the heat. The first gunnery mission of the day is usually airborne around 5:00 a.m., and the flying day is concluded at noon. Base uniform regulations have been altered to allow certain comfort deviations.

For example, short-sleeve shirts, without necktie, are authorized for wear during the summer months. In addition, "Frank Buck" helmets are also authorized. Flying clothing is authorized for wear on-base while off the flight line.

At present, living facilities are strictly tent-type, and recreational activities center around a large swimming pool, which is the "social center" of the base. Despite living in tents, morale is generally high. It's an obvious example of a group of men working together with the full knowledge that the job must be done. Conditions are constantly improving, and future plans for the base call for the very best in living, working, and playing conditions.

Concerning future plans for this Air Defense Command weapons training center, Col. Worley had this to say:

"Our job is to rebuild and operate a Weapons Training Base, furnishing supervised training on all aircraft weapons for all Fighter Units assigned to the Air Defense Command. The entire operation is an effort to alleviate undesirable conditions brought about by a lack of adequate range facilities, gunnery equipment and qualified instructors at most fighter bases throughout the Command. The general scope of the mission involves the training and maintenance of proficiency of over 1,000 Fighter-Interceptor crews and although still in its infancy, this type of weapons training has already paid tremendous dividends in advancing and maintaining combat readiness of Fighter-Interceptor crews. Most of these crews are mature, experienced jet pilots who acknowledge and conform strictly to sound flying safety practices, so important to successful gunnery operations."

don't get careless

The old saw, "experience is the best teacher," is, like most cliches, true up to a point. In flying, nothing is more important to a pilot than the experience he gains through actually meeting situations and learning from them. An old-timer in the flying business once said, "The day I take an airplane up and don't learn something is the day I quit flying." In recognizing the importance of experience in flying he might have made one more pertinent point: a pilot must use the experience gained.

As a pilot adds flying time to his log he acquires maturity of judgment and many "built-in" safety habits. This acquired knowledge, which is simply the sum of his experience, should enable him to analyze and plan a flight stressing care and safety. Unfortunately, experience sometimes breeds both carelessness and contempt for some of the basic rules of flying safety. When this occurs, as it does too often, trouble follows.

A routine training flight recently culminated in disaster because two highly experienced pilots chose to ignore standard safety procedure. Their jet trainer was completely demolished and only a near miracle saved them from serious injury.

In this instance, the accident was set up before the aircraft ever broke ground. The pilot neglected to get a formal weather briefing for the local flight, merely asking several other pilots what weather conditions they had encountered on previous flights.

Though the base weather office had reported considerable thunderstorm activity in the area and the weather was extremely marginal, supervisory personnel dispatched the flight on a local VFR clearance. No briefing was given to the pilot as to the weather possibilities despite the fact that the flight would terminate after dark.

During the one hour and fifty minutes of instrument training that followed, the IP failed to keep himself orientated with the field. When ready to return to the base it was found that it would be necessary to circumnavigate many thunderheads that lay between the aircraft and the field. A letdown was made to remain VFR while dodging around these thunderstorms and after burning a large percentage of the remaining fuel the pilot called for a VHF D/F steer. By this time thunderstorm activity was so severe that radio contact was made only after several calls. Six steers were given the pilot to bring him over the field, which by this time had closed in to 600 feet and one mile in heavy rain.

The pilot requested a GCA and stated that he would proceed to a nearby homer until picked up. GCA picked the aircraft up and started a PPI, however, an immediate approach was impossible due to rain clutter on the scopes. As quickly as possible the pilot was positioned for final approach and started in for his landing.

By this time the aircraft was down to the last few gallons of fuel and the pilot called in that the GCA approach had to be a good one as this was a one time proposition, only.

Three miles out from the end of the runway the aircraft flamed out due to fuel starvation and was landed straight ahead into a thickly wooded swamp. The plane was destroyed on impact and the pilot and student spent several unpleasant hours fighting mosquitoes and attempting to shield themselves from the driving rain.

At no time during the flight did the IP request weather at any of the several nearby bases, all of which were VFR, though he still had 80 gallons remaining when he vectored in to the field on the D/F steer.

The findings of the Accident Investigation Board showed that the primary cause of the accident was poor judgment on the part of the IP in that he failed to stay oriented while the student was under the hood, continued the mission when both his fuel reserve and the weather had become marginal and failed to use an alternate field that was VFR.

The Board also determined that experienced suvervisory personnel were at fault in that the flight was dispatched VFR when a strong possibility of IFR conditions existed. Other supervisory errors were failure to have either a tower officer or a mobile controller on duty though base regulations directed that they would be, failure to brief the pilot on the weather and failure to advise the pilot of changed weather conditions during his flight.

CROSS FEED

AIRSPEED CONVERTER—In reference to your article titled, "From MPH to Knots" in the June 1952 issue of FLYING SAFETY Magazine, I am submitting to you for your consideration what I believe to be a more simple method to convert airspeed from MPH to knots than that which was written and illustrated in your article.

Instead of the conversion chart illustrated in your article, I am enclosing a picture, front view, of an airspeed indicator which I have modified to give the pilot immediate visual conversion to knots from the instrument now in use for MPH indication.

In modifying this instrument, I used a piece of .025 aluminum, shaping it as a rim circumscribing it around the airspeed indicator. This rim, 5/8" in width, has the knots calibrated on it in luminous paint including a yellow marker for the flaps range, a red marker for the danger range of speed of the aircraft and the white marker indicating slippage. For the rim, with its calibrated markings to be as close to the pointer as possible, the instrument was rear mounted and the new rim fastened to the front by the mount screws.

The modification of this instrument, because of its simplicity, can be converted by the local field maintenance unit in no more than an hour's time per instrument.

A/1C Julian J. Jeziorski
149th Ftr. Bomber Sq.
Godman AFB, Kentucky

ENGINE PREFLIGHT—Having read the July 1952 issue of FLYING SAFETY, the item, "Dead Head," printed in the "Crossfeed" column inspired further thought on the subject of preflight checking of reciprocating engines.

During my 4000 hours of flying, more than half of which has been as instructor in C-47 and C-54 aircraft, I have noted that the average engine preflight normally includes only the routine magneto and "full-power" checks, neither of which will indicate a completely "dead" cylinder.

With both sparkplugs of a cylinder inoperative, no magneto drop will be indicated on the magneto check and the "full power" check will fail to disclose that one out of the fourteen cylinders is not firing inasmuch as takeoff manifold pressure and RPM can be easily attained and a single "dead" cylinder will not cause noticeable roughness under usual conditions.

By substituting an engine check with manifold pressure set at the value equal to station barometric pressure for the "full power" check, a dead cylinder will be immediately indicated. With manifold pressure set at station barometric pressure, the R-1830 engine with paddle-blade propellors will develop approximately 2550 RPM. Proportionally lower RPM will be developed if one cylinder is not firing.

Capt. John R. Finn,
Edwards AFB, Calif.

(The latest C-47 handbook (AN 01-40NC-1), revised on 2 Nov. 51, outlines the correct power check for the R-1830 engine. The power check as recommended by Captain Finn is substantially correct, however, the handbook includes procedures which are slightly different as follows:

"Open the throttle until the engine speed is 2450 RPM (airplanes with paddle-bladed propellors); 2350 RPM (airplanes with narrow-bladed propellors).

"The manifold pressure gage should read field elevation pressure as was indicated by that gage prior to starting the engine. A variation of ± one inch H. is satisfactory. If the manifold pressure reading falls outside these limits, the engine is not operating properly."—Ed.)

FOOT-O-METER—Due to ever increasing size, speed and weight of our aircraft, it appears that we need something more concrete to base our "no abort" or stopping distances on, during takeoffs and landings. The old runway light count or "past so and so point" method seems a little obsolete, especially in jet or cargo type aircraft.

Could a measuring system be devised by which we could know exactly how far we've travelled over the runway? It'd probably be too expensive to start changing present aircraft, but subsequent ones could be equipped with a gear driven, electrically transmitted "foot-o-meter" attached to a main gear—in other words, just a plain old speedometer mileage indicator converted to indicate distance in feet. It could be made to "trip" back to zero at the push of a button for the next landing. Can't see why it would be any more complicated or expensive than a tachometer—one life saved would be worth a lot of gages.

2d Lt. James G. Cubbison
Biggs AFB, Texas

(The "foot-o-meter" would not be

practical for landings because you would never know exactly how far down the runway you started the landing roll; consequently, the reading on the gage would be meaningless. For takeoff, marks alongside of the runway would serve all aircraft. Installation of the meter in every aircraft would be costly and take up valuable space on the instrument panel.—Ed.)

COMMANDO CHECKS — In your June issue of FLYING SAFETY you asked for suggestions on articles. We of the 434th Troop Carrier Wing (M) are flying C-46's and I know there are many more wings flying the old Commando. The troop droppers here would appreciate any articles pertaining to troop carrier operations particularly those using the C-46.

A possible subject could be one that would clarify three conflicting opinions on accomplishing the ignition and power check for the C-46. The C-46 Handbook (AN-01-25LA-1) calls for one power and ignition check; T.O. 02A-1-29 calls for another and information from AMC calls for still a different check. I'm confused! Any light you can throw on this difference of opinion would be appreciated.

Capt. Clyde P. Shearer
FSO 434th TCW (M)
Lawson AFB,
Ft. Benning, Ga.

There have been differences in the past but the latest revision of AN-01-25LA-1 (30 Oct. 51) is not in conflict with T.O. 02A-1-29 with exception of the allowable mag drop during the ignition check. The handbook (AN-01-25LA-1) allows a 65 RPM mag drop; T.O. 02A-1-29 is a generalized T.O. for all reciprocating engines which lists 50 RPM as the maximum allowable mag drop on R-2800 engines and refers the reader to the applicable —1 T.O. for the specific RPM to be used in a power check.

This headquarters is not aware of any information from AMC which calls for a different check.—Ed.)

CONTRAILS

ATLANTIC CROSSING — The recent move of the 49th Air Division from the United States to its new home in the United Kingdom represented one of the greatest mass air movements of jet aircraft known. The Division consists of both B-45's and F-84's and is commanded by Col. John D. Stevenson.

Planning the overseas flight was a tremendous undertaking and required the utmost in cooperation not only from the members of the Division but also from personnel of all stopping points en route. Bombers and fighters alike landed for refueling at Goose Bay, Labrador, and Keflavik, Iceland, prior to reaching the destination.

That all phases of the operation were well planned and well executed is attested by the fact that all aircraft arrived safely with no accidents to mar the record.

In the accompanying photo, Col. David M. Jones and other B-45 crewmembers receive a thorough weather briefing at Goose Bay prior to hopping off for Iceland. Col. Jones was a member of the famed Doolittle Raiders and presently commands the 47th Light Bomb Wing. Commander of the 20th Fighter Bomber Wing, the F-84 unit of the 49th Air Division, is Col. John A. Dunning, well known fighter pilot of World War II.

KNOTTY PROBLEM — The CAB recently ruled that Civil Air Regulations will not be changed to standardize the knot and nautical mile for all U. S. aviation. As a result, the CAA has indicated that Military IFR flight plans will be accepted only in statute miles. This requires two things which are not in strict accordance with AFR 100-43 which directed adoption by the USAF of the knot and nautical mile on 1 July 1952. First, pilots filing IFR flight plans direct with CAA must use the statute system in so doing. Second, base operations personnel must convert air-speed to statute miles when processing flight plans to CAA. In military operations, pilots will continue to use the nautical system in executing clearances. Attempts to effect a complete standardization of the nautical system of measure in American aviation are continuing.

POINT SYSTEM

A novel type of award system has been developed within the 81st Fighter-Interceptor Wing as an integral part of that organization's Flight Safety program. A handsomely engraved plaque is awarded quarterly to the squadron within the Wing which has achieved the most outstanding safety record. The plaque is to be engraved to show the new winner each time it changes hands.

A rather elaborate point system was devised for this purpose which provides for a certain number of points for such things as full utilization of aircraft, accident-free days, and attendance at flying safety meetings. Points are deducted for such as violations of air traffic or flying safety rules, non-attendance at flight safety meetings, and major or minor accidents.

For major accidents, the point system goes like this: if the accident was incident to flight, 200 points are deducted; otherwise, only 100. If personnel error caused the accident, regardless of phase of flight, 200 points are deducted. Minor accident deductions are 30 per cent of those for major accidents in the same category. To determine points for flying safety meeting attendance, the percentage of pilots absent is subtracted from 300 points. Points for other items are awarded or deducted on a standard scale.

This program was only very recently instituted but results are already noticeable in the Wing accident rate. The first award of the plaque was made to the 91st Fighter-Interceptor Squadron, commanded by Lt. Col. Benjamin B. Cassiday. Col. Robert J. Corrigan, Group C.O., made the presentation, giving full credit to all personnel in the squadron.

Virginia Mayo, Warner Bros.

FOOTBALL SEASON'S HERE

A lot of preparation and practice insures that the best team wins—with a water girl like this one, who could lose? Stay proficient in your flying, and observe the safety rules and your team will also be a winner.

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A MEMBER OF THE TEAM

The best weather advice in the world is given to you to make every flight the safest possible. The WEATHER FORECASTER can be depended upon, day or night, to help you plan your flight safely.