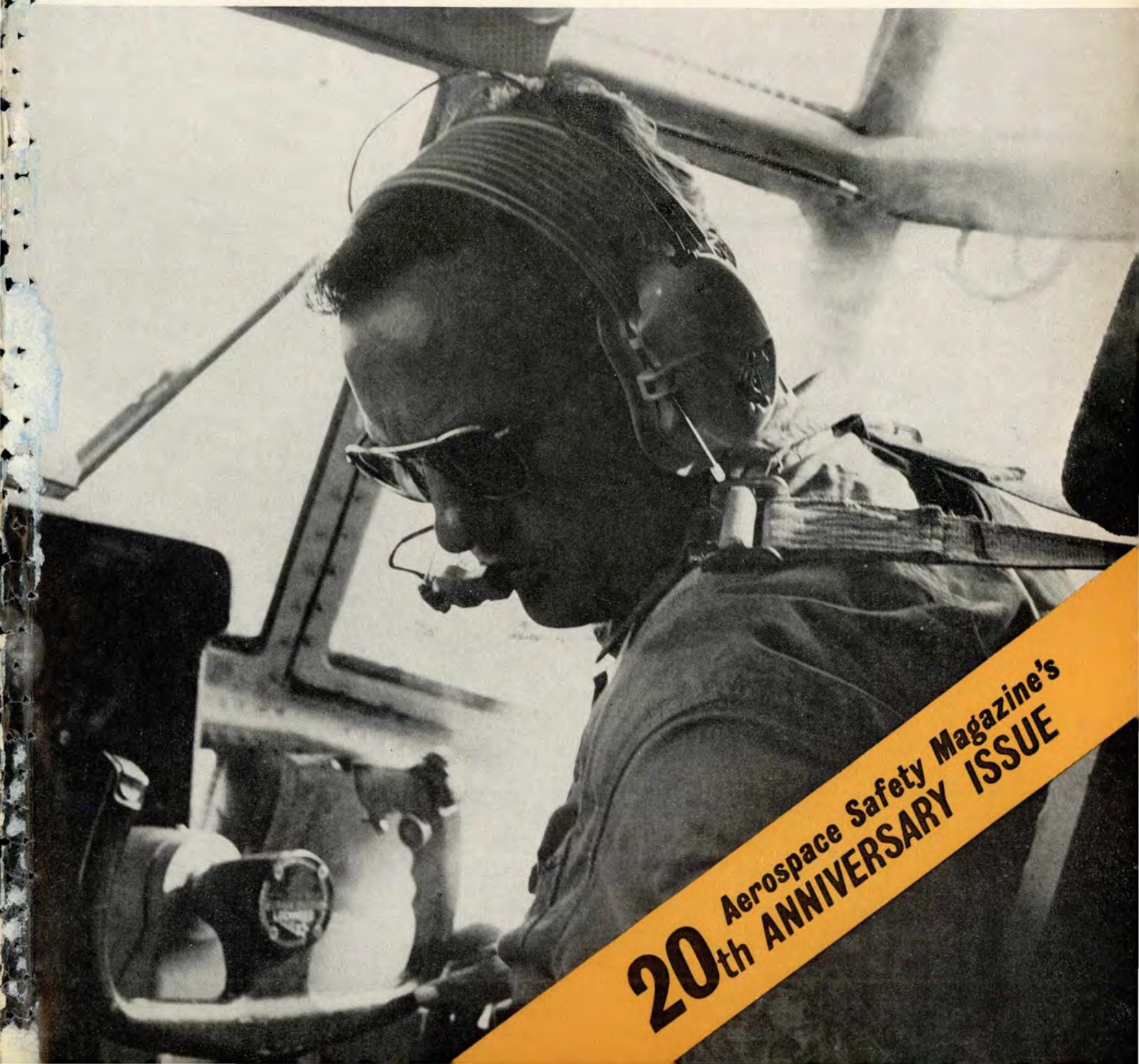
UNITED STATES AIR FORCE • SEPTEMBER 1967

Aerospace SAFETY

THE MAGAZINE DEVOTED TO YOUR INTERESTS IN FLIGHT

SPECIAL PACAF/VIET NAM ISSUE



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September 1967 AFRP 62-1 — Volume 23 — Number 9

SPECIAL FEATURES

REGULAR FEATURES

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PACAF

The Pacific Air Forces (PACAF), is the featured subject in **Aerospace Safety** this month. To gather material, Lt Col William C. Hawkins and Managing Editor Bob Harrison visited PACAF units in the Pacific and Southeast Asia. They talked to commanders and safety officers, pilots and other aircrewmen, medics and the men who work on the flight lines.

In Southeast Asia they flew with crews delivering cargo to forward operating bases and Special Forces camps where the runways were short, narrow dirt strips. They talked to fighter pilots just before they left on missions to North Vietnam and to those same pilots when they returned. They spent some time with the Rescue people who fly the Jolly Green Giants into places swarming with enemy troops to rescue downed aircrews, and the Forward Air Controllers (FACs) who fly reconnaissance missions and direct air strikes from tiny O-1s, aircraft not much different from those to be seen at any stateside airport.

The most difficult part of writing the article came not from a dearth of material but too much. This meant a lot of rewriting and distillation to get it to manageable size. There are a lot of stories in Southeast Asia and many of them haven't been written but someday will be. Our goal was to tell as much of the overall story as possible, partly as an aid to those who haven't been there but who some day will.

The article is in two parts: PACAF in general in one part and Southeast Asia in the other. Also this issue contains articles from SEA by other Air Force men on the spot. We think you will find it interesting.

The Editor.

Safety Policy In A Combat Environment

Prior military experience has taught that an aggressive safety program is as essential to the preservation of our combat potential in war as in peace, and we cannot unnecessarily compromise safety to accomplish our mission. Although the course of any armed conflict may require some adjustments to meet operational requirements, the present military operations in Southeast Asia have proved that any degradation of emphasis on safety will result in needless loss of personnel and equipment.

We now have the weapons systems, the personnel and are rapidly acquiring the facilities which we need to most effectively accomplish our mission, but conditions keep changing, and with them, the task before us. This means we must stay flexible enough to adapt ourselves to any new problems that may arise. This flexibility rests primarily with our personnel. It is up to us to make the best possible use of our equipment and organization under changing conditions.

My commanders are the prime factors of our safety program, for they set the pace and bear the burden of responsibility. This responsibility also extends downward and includes each supervisor, as well as every individual. As the risks associated with our combat operations increase, so must the degree of our supervision. Only the supervisor who recognizes safety as an integral part of his management responsibility can be truly effective. Therefore, safety must be integrated into every phase of operations, maintenance and support activities.

A review of our accidents in Southeast Asia during the past year reveals that many may have been attributable to the hazards associated with the combat environment. However, some of them indicate lack of command attention, weak supervision, or lack of self discipline. To insure continuation of our present favorable safety trends, I insist that each commander and supervisor continually emphasize the necessity for a strong accident prevention program based on quality supervision and adherence to published directives.

John D. Ryan

JOHN D. RYAN, General, USAF
Commander, PACAF

PACAF airpower in the Pacific

Air Defense of 40 per cent of the earth's surface, particularly when that area includes the war in Southeast Asia, is a gigantic task requiring the utmost of men and equipment employed in an intricate system that includes the entire scope of air power. This task is the responsibility of PACAF, the United States' Pacific Air Forces.

Commanded by General John D. Ryan, PACAF, with emphasis on its units in Southeast Asia, is the subject of this report on the Air Force's major commands.

The Command traces its heritage back to pre-World War II days when it was known as the Far East Air Force. During WWII, it was redesignated 5th Air Force, until 1944 when the 5th and 13th Air Forces, both operating in the Pacific Theater, were joined and there was once again a Far East Air Force. This title continued throughout WWII, the Korean War, and until 1957 when FEAF was reorganized and designated Pacific Air Forces with headquarters at Hickam AFB, Hawaii. This action placed all USAF units in the Pacific under one commander, and PACAF became the air component of the unified Pacific Command, which includes Army and Navy forces.

The largest Air Force command, geographically, PACAF has been experiencing growing pains during the past couple of years with the buildup of forces in Southeast Asia, and this growth exploded for a time as men and aircraft were rushed to war. While that war gets the headlines, PACAF has many other responsibilities which it carries out through its major subordinate units—5th, 7th and 13th Air Forces and the 315th Air Division.

C-123 Provider lands near a South Vietnam village under the guidance of an Air Force ground controller. C-123s transport food and other items to troops stationed in remote areas throughout South Vietnam.

FIFTH AIR FORCE

Fifth Air Force was born during the bloody days of World War II. When it was formed, on 3 Sep 1942, Major General George C. Kenney, its first commander, was asked that it be designated "5th" in honor of the 5th Interceptor and 5th Bomber Commands which fought in the Philippines in the early days of the war.

Following WWII, during which the 5th was assigned the southwest Pacific area, the Command carried the aerial fighting to the Communist forces in Korea. In that war 5th aircrews destroyed nearly 1000 enemy aircraft, more than 82,000 vehicles and 11,000 train cars and locomotives during about 625,000 sorties. Following the Korean war, the 5th headquarters, which had been moved to Korea, returned to Japan and in 1957 was moved to Fuchu Air Station outside Tokyo, where it is today.

Major components of the 5th are the 41st Air Division at Yokota, 39th Air Division, Misawa, 314th Air Division, Osan, Korea, and the 313th Air Division at Kadena, Okinawa. Its area of responsibility covers Japan, Korea, Okinawa, Iwo Jima and the surrounding waters. An intricate air defense system includes strategically located air bases and radar stations. Fifth Air Force aircraft and crews team up with those of the Japanese Air Self Defense Force, which are mostly F-104s. A similar defense system in Korea employs a mix of Republic of Korea Air Force F-86s and F-5s and USAF aircraft.

The director of safety reports directly to the 5th Air Force commander, Lt General Seth J. McKee. Safety goals are based on Mission Safety 70 guidelines which call for progressive reductions in accidents in a number of categories. The command safety office monitors the overall safety program and assists subordinate units by means of staff visits, conferences, surveys, safety publications and safety messages disseminated by the Far East Radio network.

Fifth Air Force policy is to select the highest qualified people possible for safety positions. Flying safety officers in each unit are required to be operationally ready in unit assigned aircraft, and graduates of the flying safety officers course at University of Southern California are actively sought for these jobs.

Under Mission Safety 70 the goal is 30 per cent reduction in accidents by 1970. 5th Air Force bettered its goal for reduction of aircraft accidents in 1966, but such success has not been achieved in all areas. A primary target is motor vehicles, both military and privately owned autos and two-wheelers. Fifth Air Force Regulation 127-3 requires commanders to establish traffic review boards. It also directs that personnel records be reviewed for police, driving and medical records in an attempt to identify individuals who may be traffic risks.

A major effort to head off safety problems is the Spotlight Program, which operates command-wide. In this program safety items rated marginal, critical or catastrophic, are identified and reported up the line to a level where they can be solved. In the 5th Air Force, the commander is briefed quarterly on the status of Spotlight problems with special briefings as required.

We couldn't visit everywhere we would have liked in 5th Air Force, but we were able to spend some time at the 41st Air Division at Yokota and the 313th Air Division at Kadena, Okinawa.

Wife and daughter watch the "man of the house" taxi out for takeoff at Yokota AB, Japan.

41st AIR DIVISION

The 41st maintains an around-the-clock readiness in an area that covers more than two-thirds of Japan's airspace—from north central Honshu southward through the remainder of the Japanese Islands to Okinawa and Korea. Its current commander is Colonel Paul P. Douglas, Jr., former Deputy Director of the Directorate of Aerospace Safety.

The division's major components are the 35th and 80th Tactical Fighter Squadrons, and the 6091st Reconnaissance Squadron. The division also operates a Direct Air Support Flight, and squadrons for field, munitions, and armament and electronics maintenance. The fighter squadrons fly the F-105 Thunderchief.

If awards are indicative of an organization's capabilities, the 41st is quite an outfit. The division won the Air Force and PACAF Tactical Flight Safety Trophies for 1966 and Outstanding Unit in PACOM for peacetime operations. Its 6091st Reconnaissance Squadron earned two outstanding unit awards.

In the 41st motor vehicle safety receives a great deal of attention. Automobile traffic in Japan has to be seen to be appreciated. To the newcomer it looks like a deadly game, so before he ventures out alone he'd better know the rules. So training. But there's more than just training. Let's take the 41st's two-wheel vehicle control program as an example.

This program includes a training course designed and conducted by the Yokota Base Motorcycle Club. Each aspiring cyclist receives training and is tested and given a refresher briefing each six months. If he fails the test his squadron commander is notified with the recommendation that the man's license be suspended.

Twice a year all two-wheel vehicles are inspected.

To receive an operator's permit, an individual must have been in the 5th Air Force for at least 90 days. Other requirements are that he be approved by his squadron commander and the unit traffic Review Committee. This entitles him to a beginner's permit for 30 days, which allows operation in a specific on-base area. Then he is tested and, if he passes, he is issued a temporary operator's permit good for on-base operation only.

Finally, when he demonstrates proficiency on base, he takes a final test, and, if he passes, gets his permit. This still does not entitle him to carry passengers, which requires extra training.

If this seems unduly restrictive, remember: The Far East area is the highest accident area in the Air Force for two-wheel vehicles.

An F-102 Delta Dagger of Naha's 51st Fighter-Interceptor Wing lands at Naha Air Base, Okinawa.

313th AIR DIVISION

The 313th Air Division maintains a combat-ready force of tactical aircraft prepared to defend the Ryukyu Islands and some 300,000 square miles of the vast Pacific. Its aircraft are supersonic F-105 Thunderchiefs and F-102 Delta Daggers of the division's 18th Tactical Fighter Wing at Kadena AB and 51st Fighter Interceptor Wing at Naha AB.

The air defense responsibilities of Major General Jerry D. Page, division commander, include operational control of the Army's Okinawa-based 30th Artillery Brigade (Air Defense), armed with Hawk and Nike Hercules missiles. He also is responsible for all Air Force activities in the Ryukyus.

Kadena, with a 5260-acre area, is the Air Force's second largest base in the Far East and among the busiest. Some 13,000 air operations a month are logged on its 9000 and 12,000-foot parallel runways. This breaks down to a takeoff or landing every three minutes.

Through the terminal moves a steady stream of passengers and cargo to and from the States and throughout Asia. Prime mover is Military Airlift Command's 603rd Military Airlift Support Squadron, which hauled 469,091 military and civilian passengers and 82,187 tons of supplies on 11,601 aircraft in and out of Kadena last year, twice as much as the year before.

Another key Kadena unit, without which neither the 313th nor the base could function, is the 1962nd Communications Group of the Air Force Communications Command. It operates and maintains Kadena's complex communications network, including special facilities to insure 313th's immediate response to any emergency.

At Naha, not far from Kadena, is the nerve center of an intricate radar complex—the Air Defense Control Center, a steel and concrete blockhouse crammed with electronic and other gear. Into it comes tracking information from radar sites at Okinawa's Yoza Dake Air Station and others on Miyako, Kume and Okino Islands.

315th AIR DIVISION

Airlift is the business of the 315th Air Division. Headquartered at Tachikawa AB near Tokyo, the division's C-130s and 118s, with C-124s which belong to MAC but are under operation control of the 315th, have been setting new records in cargo hauling and troop movements. Division aircraft and crews rotate into South Vietnam where, with the 834th Air Division's C-123s and C-7s, they provide in-country airlift. Last year 315th aircraft carried 672,000 tons of cargo and 1,733,797 passengers. Total tonnage for the year was 875,000 of which 685,312 was within Vietnam. This doubles their 1965 total, which was also a new record, and was 175,000 tons more than that hauled by the division during three years of the Korean War.

But the 315th does more than haul cargo and troops. Other missions include aeromedical evacuation, operation of aerial ports, communications support for the command and control of its airlift forces.

The 9th Aeromedical Evacuation Group provides flight nurses and medical technicians for intra-theater aeromedical evacuation flights in the western Pacific. The group, with headquarters at Tachikawa AB, transports an average of 300 patients a day and hit a new high in May when its aircraft moved 12,298 patients, 10,000 of them from and within Southeast Asia.

Under the 7th Aerial Post squadron is the 5th Communications Squadron. Its combat control teams of eight men each secure and

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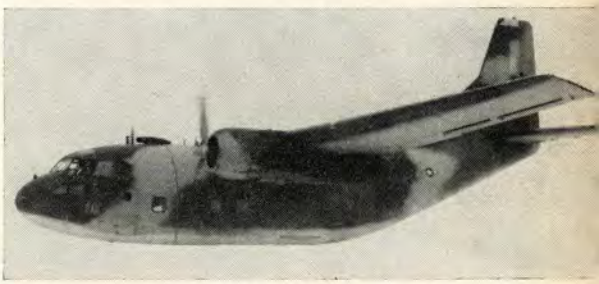
Lt Col Russell F. Grutchlow, Norfolk, Va., commander of 313th Air Division's 15th Tactical Reconnaissance Squadron, explains operation of retractable belly cameras on unit's new RF-4C aircraft to Lt Gen En-Teh Hsiung (left) of Taiwan's Nationalist Chinese Air Force.

C-124, long a workhorse for MAC, still delivers the goods. Some are flown by Reserve, ANG crews.



C-123s carry much of the load in Vietnam. Below, patients are readied for medical evacuation in C-130.


SOUTHEAST ASIA
21841

safety's contribution to combat strength

About 200 miles north of Saigon and within smelling distance of the salt air coming off the China Sea, lies a Vietnamese village guarded by a small Special Forces compound. Highway One, the coastal road running the length of Vietnam, bisects the village and separates the armed camp from its lifeline, a short dirt airstrip.

About a dozen American soldiers call the compound home during their tour in Vietnam. Sharing the camp are Vietnamese regional troops who, with the Americans, hold down this tiny spot in an area otherwise dominated by the Viet Cong. A collection of enemy weapons attests to the frequent clashes with "Charlie," most of which occur at night.

When we flew into the strip at Luong Son early in May, a young lieutenant told us that a major battle hadn't taken place for several months there but that minor scuffles occur frequently and that, as a matter of fact, a patrol had "zapped" four Charlies the previous night.

"How secure is this place?" we asked.

"Well, it's safe to the other side of the village on the north and to about 10 meters past that bridge on the south." He pointed to a small bridge on the highway about even with the end of the landing strip.

If you are wondering what this has to do with the U.S. Air Force, wonder no more, for it is airpower that makes possible the existence of such enclaves in enemy infested territory.

Luong Son has a dirt strip 2000 feet long. C-7A Caribous land there at frequent intervals with supplies and equipment needed by the men in the camp. And this—the resupply of ground forces by air—is one of the big stories in Vietnam. For without air power, this would be an entirely different kind of war.

Luong Son is just one of many places occupied by Army and Marine forces or Vietnamese soldiers, with a handful of American advisors. They depend on air power for supply, reconnaissance, air strikes during battles and air evacuation of casualties.

All Air Force units in South Vietnam are under 7th Air Force, a component of the Military Assistance Command, Vietnam (MACV), while our forces in Thailand belong to 13th Air Force but are fragged by 7th Air Force. The two air forces come together at Udorn, Thailand, where the 7/13 Command setup coordinates support of forces in Thailand.

Headquarters of the 7th Air Force, commanded by Lt. General William W. Momyer, is at Tan Son Nhut Air Base just outside Saigon. Other major units on base are the 834th Air Division, which is in charge of all tactical airlift operations within country, the 460th Tactical Reconnaissance Wing, the 2d Aerial Port Group and 377th Combat Support Group.

Basically, all airlift within country is provided by the 834th through the 315th Air Commando Wing at Phan Rang AB, with C-123s, the 483d Troop Carrier Wing, at Cam Ranh Bay with C-7As, and C-130 aircraft and crews on rotation from the 315th Air Division with headquarters in Japan.

Materiel is brought into Vietnam by water and by air. Main seaports are Saigon, Cam Ranh Bay and Da Nang. At Saigon material is delivered to both Tan Son Nhut and Bien Hoa, 18 miles northeast of Saigon. From these four bases most of the supplies, equipment and troops for both air and ground forces are delivered by 834th aircraft.

To get an idea of the scope of this tremendous undertaking one just about has to see the mountains of boxes, crates and bags that flow into the theater and then spend at least a day with the crew of any one of the transport aircraft as they shuttle from base to base delivering vitally needed supplies.

We spent an afternoon with a C-123 crew and our log should provide a fairly good idea of how these crews spend a 12-hour day seven days a week. Our pilots were Lt Col Herb Hazzard, 309th Squadron

Luong Son is typical of Special Forces camps that depend on air power for their existence.

Aircraft come in all sizes at Tan Son Nhut Air Base, Saigon. Ramps are crowded with cargo, vehicles, aircraft and working people.

Commander, who was about to complete his year in Vietnam, and Lt Col Jim Walsh, just arrived and checking out in the bird. We joined the crew fairly late in the afternoon, but they had been up since 0430 and had flown their first mission before daylight.

1510 Leave Tan Son Nhut, cargo barrels of JP-4.

1540 Arrive Song Be.

1547 Leave Song Be with two Vietnamese women as passengers.

1610 Arrive Bien Hoa, discharge passengers and take on load of munitions.

1655 Leave Bien Hoa.

1710 Arrive Dau Tieng.

1720 Leave Dau Tieng (howitzers firing at some target off base).

1740 Arrive Tan Son Nhut.

However, the day is not quite over. First thing after landing is a maintenance and intelligence debriefing. Since practically all the aircraft fly every day, maintenance carefully queries the crews in order to get on any discrepancies right away so that the aircraft will be available for the next day's missions.

By now it is getting close to 1830, everybody's tired and hot. Off to the club for a couple of cold ones and dinner. For those of you who will be doing this job, your evening routine is fairly standard, but some of you won't have much time to linger at the club because the clock is going to go off again at some ungodly hour of the morning, like maybe 0030.

Take all of the safety problems that the Air Force has to contend with in every theater, except the Arctic, then add a few that are unique and you have Vietnam. Some of those that present the most hazards are short, semi-prepared airstrips with unstabilized shoulders, short overruns and unfriendly terrain. Then add monsoon rains, parking problems, and ground and air movement hazards at Army bases occupied by numerous helicopters, and the strong possibility of enemy fire at aircraft approaching or taking off.

Measures are being taken to remedy each of these hazards. Safety surveys, OHRs *and accidents* have resulted in actions that have brought about improvements in runways. Many of the strips used by cargo and FAC aircraft are extremely short and narrow. Built of either clay or laterite, a sort of decomposed granite-like material, these are as slippery as boiled okra during the rainy season which makes them either completely unusable or highly dangerous. When landings are out of the question supplies are dropped, which is not as satisfactory, of course, as delivery on the ground. Ground troops have to protect many of the airfields and are understandably reluctant to extend the perimeter any farther than absolutely necessary.

Where there are particularly short runways, overruns are being provided as are panels marking the end of the runway. At bases with hard surface runways, grooving is in progress in an effort to improve surface conditions when heavy rains occur.

CROWDED FIELDS

But congestion is something else again. The hazards from this condition vary somewhat, depending upon the primary activities at a particular base, but some of the bigger bases, like Tan Son Nhut, have all the air activities to be found in Vietnam. The traffic pattern at TSN, for example, and it's one of the busiest in the world, is a scary proposition for both newcomers and veterans alike.

We were standing on the second story porch of a building at TSN one afternoon counting the aircraft we could see in the pattern. We counted 14 at one time and this number never seemed to change—there were always 14 aircraft in the pattern. Now this is bad enough, but the types of aircraft were O-1s, U-6s, C-7s, C-123s, C-130s, RF-4Cs, RF-101s, C-141s, commercial 707s and DC-8s, and numerous small aircraft flown by as many different activities. The speeds of these aircraft in the pattern vary enormously as do the types of patterns flown.

One of the busiest airports in the world, Tan Son Nhut is both military air base and civil airport for Saigon. Traffic movements average one a minute.

Some idea of this huge amount of air traffic is provided by the following figures: During 1966 the traffic count at TSN was 548,233, an average of 1606 per day, or a little better than one a minute, not including helicopters. This is gradually being reduced by diversion of traffic to other bases, for example, Bien Hoa, which has taken some of the load off TSN.

But there are traffic problems at the smaller bases, too. Most of the forward operating bases belong to the Army and are used primarily by the Air Force for resupply. The Army craft are helicopters, for the most part, which introduce their own special problems for fixed wing aircraft. Vortices create hazards and have cost aircraft either by producing violent reactions in fixed wing aircraft, or by dust and rocks thrown up by the rotor wash. Because of the small size of some of these strips parking is extremely congested with helicopters practically lining the edge of the runway on both sides. This not only endangers landings and takeoffs but makes taxiing extremely hazardous.

One thing about Vietnam, there aren't many amateurs very long. The newcomers, if they weren't pros when they arrived, become so very quickly. For one thing, you get a rubber neck real soon—like on your first flight. Traffic is VFR and it is not a bit unusual on a cargo flight, for example, to encounter a number of O-1s and other cargo types going in all directions, helicopters—Air Force, Army or Marine—Vietnamese A-1s, etc., before you arrive at your destination. At the small forward operating bases your traffic pattern will be a tight circling approach and, very possibly, at a real short strip, you'll be turning final just off the end of the runway with 30 to 40 degrees of bank. If it doesn't look right, don't hesitate; take it around—but stay in close. Once you've got it made, spike it to the runway, get on the brakes and go into reverse. The dirt flies and the other end comes up awfully fast, but you're going to make it because you're a real pro now. And as such you took into account such little goodies as a wet, slippery runway, a built-in crosswind and the fact that Charlie might have slipped in at night and planted a mine or two in the runway. (Fighter pilots have their own problems, which we'll discuss later.)

This airfield is representative of many marginal strips into which Air Force cargo aircraft operate daily.

Mines in the runway are usually more of a hazard on takeoff than during landing. A typical example of why this is so occurred about the middle of May. A C-7A landed at a short dirt strip, taxied back to the middle and offloaded its cargo. Then the crew took it down to the end for takeoff. When they approached the end of the runway the nosewheel ran over a mine which blew off the front end of the aircraft. Fortunately, the crew escaped serious injury. During landing the aircraft had touched down beyond the mine, or there probably would have been some casualties among the crew.

Normally, touchdowns are not made right on the end, even on a short runway—because of the possibility of mines—and crews try to stop and turn around before they get to the extreme end. But when you need every inch to get off, you don't leave much runway behind you when you line up for takeoff.

One thing which the troops discourage, but which frequently occurs anyway, is Charlie pot-shooting at aircraft landing and taking off. Usually you won't even

C-123 takes off from forward operating base after delivering supplies —one phase of air power in support of ground forces.

know about this until you look over the aircraft and start counting holes.

Another safety problem that is more subtle than having Charlie shoot at you or short runways, is the *tiger* attitude. This is not necessarily prevalent but neither is it unusual. A shrug of the shoulders and "well, that's combat" won't hack the job of preventing this attitude from resulting in accidents. Every aircraft in Vietnam is precious, and it is bad enough to lose one to enemy action without having a cocky, go-to-hell attitude wrap one up in a ball. Aggressiveness is a highly desirable trait among pilots, but commanders and safety people as well have the responsibility of seeing that this very human and necessary characteristic is channeled toward mission accomplishment rather than hot rodding. Perhaps we should make one thing clear right now. We are not talking about timid pilots "playing it safe." We *are* talking about a mature, professional approach to getting the job done. Incidentally, these are not the writer's observations, but rather are the thoughts expressed by numerous commanders and safety officers in SEA. In case you haven't read it, what we are talking about was pretty well summed up in the article, "Fighting New Guy," in the August issue of this magazine.

Safety officers in Vietnam tell us they like their jobs and give as reasons why two primary factors. One of these is command support and the other is that the job is not a desk and swivel chair operation. During the early days of the big buildup of aircraft and men things got pretty hectic. There were many hazards—such as power poles on the edge of runways—that have since been eliminated by know-how and hard work. Austere and hazardous conditions could have been anticipated since the country was pretty much underdeveloped and the Viet Cong were much more powerful than they are now. Pouring in the necessary resources to counter the Communist threat meant living with many hazards and overcoming them as soon as possible, extremely congested operations and, undoubtedly, looser supervision than now exists. But gradually the situation has improved and the aircraft accident rate in Vietnam compares favorably with the Air Force as a whole. Seventh Air Force figures show that the cumulative rate for the first three months of this year was less than half for the same period in 1966. From January through March last year the rate never went below 12, while this year the rate dropped to 5.8 in January, 3.6 in February and an even 5 during March, obviously a significant improvement, part of which at least resulted from learning.

AIRCRAFT—ALL KINDS

The person who goes to Vietnam just to see the show will certainly get his money's worth. There are some 21 different types of aircraft flying a variety of missions too numerous to describe in detail here. However, we'll try to provide a brief rundown on as many as possible.

Tactical fighter-bomber aircraft include the F-100, F-4, F-5. These aircraft along with the AC-47, A-1 and B-57 provide ground support and air strikes in the south. In addition, the F-4s fly a variety of missions in North Vietnam.

Primary reconnaissance aircraft are the RF-4C, RF-101, RB-66, with C-47s, C-130s and RB-57s performing a similar role.

The O-1 is *the* forward air controller aircraft although O-2s are beginning to arrive in two versions for FAC operations and psychological warfare.

We have already mentioned the cargo aircraft being employed in Vietnam, but in addition to these, U-10s, U-6s and C-47s are used in a limited cargo role. Also the C-124, C-135 and C-141 are to be seen at the major bases but they do not operate in-country. They belong to MAC and fly into and out of the major aerial ports with cargo that later is delivered in-country by aircraft belonging to the 834th Air Division. (The Air National Guard is well represented, too, at the major bases. Last year, augmenting MAC, they made 2500 overseas flights including 900 in direct support of the war in SEA.)

The other birds one would see are helicopters—CH-3C, which is used to some extent in a cargo role; the HH-3E (the famed Jolly Green Giant); and the HH-43 Huskie, primary aircraft of Base Rescue Units; the HU-16; and the EC-121 radar-picket aircraft.

TACTICAL AIR POWER

Tactical air power in Vietnam requires close cooperation between the U.S. Air Force, Army, Marines and Vietnamese military forces. Air strikes in South Vietnam, for the most part, are in support of ground forces and have been a major element in successful operations against Viet Cong and North Vietnamese units that have crossed into South Vietnam.

On many occasions 7th Air Force fighters have meant the difference between victory and defeat. They have been the element that prevented VC takeover of many Special Forces camps threatened by capture. They operate day and night and in weather, often making their bombing and strafing runs under the eerie light of flares dropped by flare ships.

They hit targets that would be impossible without FAC guidance, and operate against intense concentrations of ground fire. They have earned the admiration of ground troops grateful that such devastating power is on their side and not directed against them.

Tactical air support in South Vietnam is supplied by F-100s, F-4s, F-5s, A-1s, both American and Vietnamese, and U.S. and Australian B-57 Canberras.

The major hazards to tactical bombers in South Vietnam can be grouped into three basic categories: enemy action, facilities, and weather.

Enemy action primarily has consisted of small arms fire, although the VC have been getting bigger equipment including large caliber anti-aircraft guns. Surface-to-air missiles have not been a problem in South Vietnam. But mortars and rockets have, during raids by Communist forces on airfields where they have had some success in destroying parked aircraft and facilities.

Strikes against the enemy are both preplanned and on call. Preplanned strikes are laid on in advance and are directed toward known or suspected enemy installations and troop buildups. But much of the work is unplanned and takes place as the result of an immediate call for assistance. In the early days of Air Force participation in Vietnam this often meant long delays because of a policy that ensured that civilians would be protected. This policy is still in force but procedures and communications have improved to the point where

A well-concealed enemy in the dense jungle foliage of Vietnam faces destruction by napalm, dropped by a Vietnamese Air Force A-1E Skyraider tactical bomber.

Air Force B-57 Canberra strafes a suspected enemy storage area. The B-57 pilots are members of the 8th Tactical Bomb Squadron, Phan Rang Air Base.

fighters can be delivering ordnance within 15 minutes of a call for assistance.

All strikes are controlled by the Tactical Air Control Center (TACC) at Tan Son Nhut and subordinate Direct Air Support Centers (DASC) located at Da Nang, Pleiku, Nha Trang, Bien Hoa and Can Tho.

Before a strike can be mounted ground forces requesting air support must clear with local Vietnamese authorities. The request is then funneled to both U. S. and Vietnamese military officials for clearance. If approved, the request goes to the TACC which coordinates and controls the strike through Forward Air Controllers. The DASC nearest the strike maintains constant communication with the FAC who directs the fighters and assesses damage.

Fighters also play a major role in rescue by providing fire suppression for the helicopters making the rescue. Many rescues of downed aircrews take place in the midst of enemy troops who try their best to knock down the choppers. Under these conditions many successful rescues would have been impossible without fighter support.

F-4s have carried the brunt of air-to-air action in North Vietnam and have run up an impressive score against the North Vietnamese MIGs.

Of the three major problems, other than enemy action, that the fighters face, facilities have presented many serious hazards that gradually have been overcome. Nevertheless, some still remain. Some of these which 7th Air Force, frequently in cooperation with the Army, has worked hardest to correct are congestion on taxiways and ramps, airfield lighting, navigation and landing aids, soft runway shoulders, poor drainage and the many problems presented by metal mats during wet weather and on soft and sandy surfaces.

But you don't build a major airfield complex for an entire country overnight. Records have been set and tremendous obstacles overcome in probably the fastest, most efficient construction efforts ever conceived. The result has been a marvel of engineering and construction accomplishment. Not only have hundreds of strips been bulldozed out of the jungle, but a number of major bases with 10,000 feet concrete runways and ramps had to be built, along with roads, buildings, taxiways, fuel and munitions storage, and other airfield necessities.

This all takes time and the war wouldn't wait. Consequently construction has still not completely caught up with aircraft operations. Seventh Air Force has monitored airfields closely during this period, and gradually has removed hazards where possible and devised ways of operating around them when they could not be removed.

Vietnam has provided a valuable learning process in regard to tactics and improvements in equipment. Delivery tactics that were not successful have been modified or replaced with others that do the job. Aircraft have been modified to deliver many different combinations of munitions; the A-1 is the first recip airplane to be equipped with ejection seats. There have been three successful ejections in three attempts. Survival gear has undergone many improvements.

Probably the roughest flying assignment in Southeast Asia is that of the F-105s conducting bombing missions in North Vietnam. All of the '105 units are located in Thailand and belong to the 13th Air Force with headquarters at Clark Air Base, R.P. However, missions are fragged by 7th Air Force.

There is a vivid contrast between Vietnam and Thailand. In the former the war is spread throughout the country. This is not true of Thailand where Air Force units operate from Thai bases against targets in another country. While these bases are extremely busy places, the congestion found at most Vietnamese bases is not present. At Tan Son Nhut, Bien Hoa, and other RVN bases there is a complex mixture of different services and aircraft that is almost unimaginable. In Thailand this mixture is not present, although there is a variety of Air Force aircraft flying many different types of missions. Some bases, of course, support many more activities than others. At Takhli, for instance, the primary aircraft are the F-105 flown by the 355th Tactical Fighter Wing, KC-135 tankers supporting the F-105s, RB-66s and base HH-43s. At Udorn, however, there are probably as many as 10 to 15 different aircraft types operated by U. S., Thai Air Force, and contract operators. The major activities in Thailand, though, are the F-105, F-4C and RF-4C wings with their support units and Air Rescue detachments.

Living conditions are, for the most part, better than in Vietnam. Quarters have improved considerably during the past year as construction has begun to catch up with the demand.

Missions to North Vietnam are grueling. A mission usually consists of one or two refuelings and a strike on one or more targets. Then there may be a ResCap if an aircraft is shot down.

Rescues frequently become a major operation, with F-4s flying top cover over F-105s, which are above A-1 "Sandies" providing fire suppression for the Jolly Greens making the rescue. Add one more aircraft, a high flying HC-130 of the 3d Aerospace Rescue and Recovery Group, which directs rescue efforts.

Targets in North Vietnam are reported to be the most heavily defended that USAF crews have ever encountered. The primary defense weapon is antiaircraft guns in calibers up to 85mm, supplemented by small arms fire, surface-to-air (SAM) missiles and MIG interceptors.

F-4s from Thai and RVN bases sometimes fly high cover against MIG attacks. The F-105s are more than a match for MIGs at medium altitudes, and techniques have been developed for weapons delivery to degrade the effectiveness of ground fire. The SAMS, while certainly a threat and deadly when on target, have not been very effective.

One thing aircrews have going for them is excellent personal equipment far superior to that which crews in previous wars had. And it is constantly improving. A lot of attention is given to these survival items. This interest was evident in the P. E. shop at Takhli AB. This shop, run by TSgt Joseph Perry, would be a credit to any stateside base. Equipment is kept in tip-top shape, the shop is neat and orderly with everything in its place, and Sgt Perry obviously knows his business.

AERIAL RESUPPLY

One of the real success stories in South Vietnam is provided by the 483d Troop Carrier Wing commanded by Col Paul J. Mascot. The Wing flies C-7A Caribous which they took over from the Army on 1 January this year. Its primary mission is support of Army Special Forces camps. The Wing has 50 to 60 aircraft flying each day into runways that range in length from about 1000 feet up. Many are 1200 feet or less in length.

Each month this year the Wing has increased its performance over the previous month. In May—the latest figures we have—the Wing flew 8373 hours and 13,950 sorties to airlift 100,458 passengers and 8402 tons of cargo. This exceeds the monthly average for 1966, and with fewer aircraft. And, as of 1 May, the Wing had experienced only one accident.

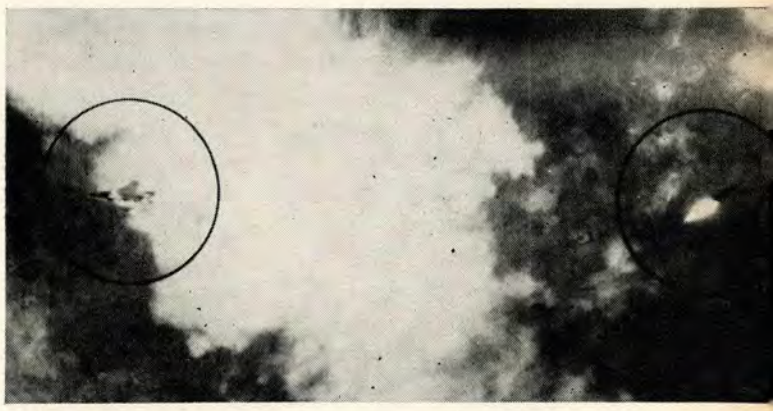
Col Mascot is understandably proud of the Wing which, the day we arrived, turned out in its maintenance shops its first completely built-up engine.

Aerial delivery of supplies takes many forms in Vietnam because of the necessities of the situation. Most cargo is delivered in the conventional manner, but frequently an aircraft cannot land either because of the weather or facilities or because of enemy action. Then air drops are called for, sometimes by parachute but frequently by simply pushing the cargo out the rear door.

An interesting case of the latter occurred during construction of a Special Forces camp in the Mekong Delta south of Saigon. The camp was to be constructed on a marshy area that is under water much of the time. To solve this problem, a scheme was devised for building the camp on a platform mounted atop empty fuel barrels which would float.

The only way to obtain the barrels was by air and there was no available airstrip. Also the barrels would have to be delivered to the spot where needed. The job was done by C-123s of the 315th Air Commando Wing which flew down a canal adjacent to the new camp site and dropped the barrels right on target where the men building the camp could easily get to them.

While this was a bit unusual, such cargoes as livestock, dried fish, and Vietnamese families complete with children, all their household goods and animals is not. Cattle destined for food at camps where there is no runway are delivered by air dropping them. Of course, the cows were understandably reluctant to depart the aircraft when they looked out the open cargo door and saw how far it was to the ground. Finally the problem was solved by turning the crates around which placed the animal with its rear to the open door. Then it was a simple matter of rolling the



Starter cartridge kicks out smoke as F-105 pilot prepares to leave for mission in North Vietnam. Center photo shows SAM in flight. Picture was taken by photo recce camera of RF-4C flown by Capt Edwin Goodrich of Largo, Tex. Bottom photo—scratch one MIG, shot down by F-105.

crate out the end. Loadmasters tell us that the look on the cow's face when it sees where it is after exiting the aircraft is truly a sight to behold.

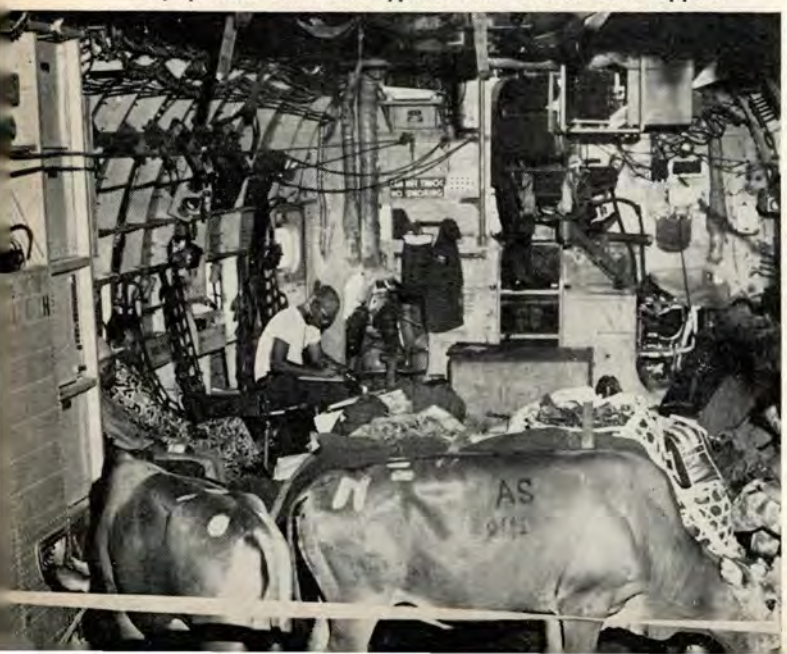
For the most part, the Vietnamese passengers are troops, families evacuating a village in a combat zone or simply persons traveling from one place to another on a space available basis. The number may vary from one or two to more than one aircraft can handle, in which case the crew must carefully count the would-be passengers and estimate their weight and that of their belongings. This accounts for at least part of that haggard look crews frequently have at the end of a long, tiring day. Of course, each person has to be searched and his luggage examined since grenades and other lethal devices have been left aboard aircraft. Then the aircraft has to be carefully searched after off-loading.

Probably the most serious hazard the crews face is weather. There are two monsoon seasons in Southeast Asia and they have a profound effect on aerial operations. From May to September the monsoon wind flow is from southwest to northeast across Vietnam. This means heavy rains and low visibility in the central highlands and the Mekong Delta. Up north the skies are generally clear.

The weather pattern reverses itself in the fall which results in clear weather in the south and clouds, fog and rain in the north.

Weather affects operations year round since the crews may be required to operate in both weather zones regardless of where they are based. For example, during the clear season down south, C-130 crews based at Tan Son Nhut may be operating out of Da Nang where the weather is at its worst. Frequently cargo must be delivered despite the weather, which means that a lot of missions are flown into mountainous areas with the aircraft flying through canyons to get under the clouds. This makes for some mighty tense moments, especially when the low flying aircraft make tempting targets for enemy ground fire.

A typical air land load for Ashau, a Special Forces camp due west of Da Nang near the Laos border. The load includes chickens, pigs, cows, vegetables, mail, personnel and equipment. The same type of load is also air dropped.



RANCH HANDS

The neck scarf has become rather commonplace in the Air Force, but not in Vietnam where the men of only one outfit are permitted this distinctive item of wear. These are the Ranch Hands, the crews of specially configured C-123s who fly the defoliation missions. The scarfs were personally presented to the Ranchers by Premier Ky for their outstanding performance.

Ranch Hand crews located at Da Nang and Bien Hoa fly one of the most dangerous missions in Vietnam, risking enemy fire as they skim along the tree tops frequently as low as 100 feet above the surface. At last count they had taken 3000 hits but had lost only four aircraft.

Generally there are only three men aboard, two pilots and a loadmaster who operates the pumps that spray a common weed killer that most Americans use in their own yards. The lead ship also has a navigator who sits on an armored box that fits over the radio console between the two pilots. The spray is non-toxic to animals and humans but is very effective against plant life.

Each aircraft can cover an area 800 feet wide by 10 miles long in the course of one mission, the spray being used to kill vegetation that the enemy uses to hide his activities. It is also used to clear the area around Special Forces camps to deny Charlie cover from which to bombard the camp, and since the Communists have seen fit to conduct operations in the demilitarized zone, much of it has been defoliated to discourage that activity.

AIR RESCUE

If there is one group of fliers in SEA that all aircrews take their hats off to, it is the men of 3d Aerospace Rescue and Recovery Group, which includes the famed Jolly Green Giants. Whenever a crew goes down, for any reason, he can count on an all-out effort to rescue him.

Rescue efforts in SEA are controlled and coordinated by the 3d ARRG Joint Search and Rescue Center at TSN. The Group has two operating locations (O.L.s), one at Da Nang, the other at Udorn, Thailand, plus the local base rescue units at a number of bases.

Flying HU-16 Albatrosses, HH-3Es (Jolly Greens), HH-43s and HC-130s, the 3d between December 1964 and July this year, had a record of 1,000 saves. These range from fairly routine rescues to those such as

Three Ranch Hand UC-123s engage in the Vietnamese version of crop-dusting. The aircraft is spraying defoliant chemicals, harmless to human and animal life, but temporarily effective against the dense vegetation which may be shielding enemy troops from aerial view.

that which took place on the night of 14 December 1966. Three crewmen bailed out when their aircraft was shot down only 47 miles from Hanoi. They were soon back in action because the Jolly Greens penetrated intense enemy fire and rescued all three.

Then there were the two pilots who had to leave their damaged aircraft and landed high on a mountain slope. One helicopter managed to pick up the man at the lower elevation but the other one at 7500 feet was too high. Because of the heat and low density of the air, when the chopper tried to rise from a hover with the man on the end of the line, it merely settled toward the ground. Finally, the attempt had to be abandoned and the downed crewman was told to hole up for the night. In the cool of the following morning the Jolly Greens returned and were able to lift him off the mountainside to safety.

Rescue crews never know what the next minute will bring. When the HH-3s got an aerial refueling capability, training had to be conducted. One crew on their first training mission had to unplug from the tanker when they were directed to rescue a downed airman. Life in the rescue business is seldom dull.

These men frequently lay their lives on the line to save their fellow airman. One of many such heroic incidents occurred last December when a crew of Detachment 2, 37th ARRS, rescued a pair of F-4C pilots surrounded by enemy troops.

While the first pilot was being hoisted up the helicopter began taking hits from ground fire. Nevertheless, the second pilot, who was wounded, had to be rescued so a pararescue man descended to the ground and got him into a stretcher. However, the man's weight was too much for the flight engineer to pull aboard. Meanwhile, the first rescued pilot had taken a hit in the leg and could not assist. The helicopter moved out and a second one went in and picked up the pararescueman.

Men of the 3d have established a record few thought possible just a few years ago. They have received more than 1500 awards, including four Air Force Crosses. One of these was awarded posthumously to an airman, the only Air Force Cross won by an enlisted man so far. Presidential Citations have been awarded to the 3d Group and a subordinate unit, the 38th Aerospace Rescue and Recovery Squadron at Tan Son Nhut.

While we're on the subject, we shouldn't forget the tremendous job being done by pilots of A-1 "Sandies" in rescue work. They frequently pave the way for the helicopters, strafing enemy troops and guns to make the rescue possible. Many times they have been the difference between a successful rescue and failure.

FACS

A supersonic jet even at low speed travels too fast for the pilot to be able to pick out any but the more prominent targets. So he needs some eyes. These eyes are called forward air controllers (FACs) and among other things they direct fighters onto their targets.

There are about 600 Air Force FACs in SEA operating out of 60 locations. These pilots fly rather antiquated light aircraft called O-1 Birddogs and their job is a complicated one. In addition to directing airstrikes at enemy targets, some of them work as air liaison officers with ground forces and even as cargo haulers, on special occasions.

One mark of a good FAC is his familiarity with his assigned sector. After a short time on the job he is expected to know his sector far better than his home neighborhood. He should be able to spot any changes that may have taken place on the ground. Dying foliage, vehicle tracks, an unusual number of people in a location—or a lack of people where previously there were several or many—are clues that the VC may be operating there.

A clump of bushes along a canal may hide an enemy sampan and the FAC must know whether those bushes were there yesterday.

The FAC carries a tremendous responsibility on his shoulders. When he calls for an airstrike he has to

Armed reconnaissance missions are normally flown in preselected areas following prime target cancellation or as a secondary mission. Since almost every North Vietnamese carries a weapon, aircraft at low altitudes are susceptible to ground fire despite high speeds. This photo shows enemy ground gunners attempting to turn their anti-aircraft guns around for a shot at attacking USAF aircraft.

be right. He must direct the fighters in such a way that innocent villagers are not hit and the enemy is, without inflicting casualties on friendly troops. For his pains he gets to fly an 80 knot airplane, gets shot at regularly and operates in an environment with plently of built-in hazards. Some of his airfields would have been rejected in World War I. One, for example, crosses a main road. In order to land the FAC must buzz the field to clear the roadway, so that when he lands he won't roll into the local traffic. Some fields he shares with helicopters whose rotor wash can put an O-1 out of business in a hurry.

For a time early in the Air Force buildup in Vietnam the FACs were a real headache for the safety people. Part of the problem was the aircraft, primarily engine trouble, another part was brought about by operating conditions. Then some pilots who had limited or no experience in such a light aircraft with a conventional gear contributed their share of accidents. Since then things have improved: the engine problem was brought under control, pilots receive better training and the airfield–traffic situation has eased some. Nevertheless, in 1966 more O-1s were lost to accidents than to enemy action for a rate of 11.3.

So far this year there has been a gratifying improvement. For the first four months the rate was 4.1 (three major accidents) compared to a rate of 17 for the same period last year.

All of the FACs belong to the 504th Tactical Air Support Group with headquarters at Bien Hoa Air Base. Under the 504th are five Tactical Air Support Squadrons, two Tactical Communication and Maintenance Squadrons and one Theater Indoctrination School for in-theater training of new arrivals.

THE DRAGON SHIP

"War is Hell," said Sherman, and the VC no doubt agree with him when they get hit by an AC-47 Dragon Ship. The armed Gooney Birds, some around 25 years old, can lay down more fire than any other aircraft in Vietnam. Crews say it's like squirting bullets out of a hose when the three side-mounted 7.62 miniguns cut loose at 6000 rounds a minute per gun.

AC-47s of the 14th Air Commando Wing operating out of Da Nang, Pleiku, Nha Trang, Bien Hoa and Binh Thuy do their work at night by the light of 2.5 million candlepower flares.

Primary tasks of these aircraft, some of which are older than their crews, are convoy escort, night reconnaissance, and close air support of Special Forces Camps.

AIRFIELDS

With approximately 300 airfields in South Vietnam there are bound to be some problems, particularly at the smaller strips and those with heavy, mixed traffic. Also, there is a continuous construction program as unsuitable strips are improved and new airfields are being built.

To counter the hazards such conditions impose, many actions have been taken: Here are just a few:

- 834 AD published a regulation establishing procedures for gathering and distributing airfield and drop zone criteria.
- The Combined Intelligence Center, Vietnam, consolidates airfield data reports for inclusion in FLIP publications.
- 7th Air Force Airfield Survey Team continuously surveys airfields and reports deficiencies to responsible agencies.
- Runway markings have been improved at forward assault strips.
- Programming of new control towers or rehabilitation of existing facilities.
- Installation of VASI at bases where this facility would be advantageous.
- Efforts are being made to provide controllers at forward operating bases where needed and no control is existent.

SAFETY MEN AT WORK

Southeast Asia is providing the greatest safety challenge yet to confront the Air Force. (The word SAFETY is used here as meaning preservation of resources for their subsequent use against the enemy.)

Never before have we operated on such a scale in such an environment. Just about every aircraft type in the inventory is being employed in some capacity, frequently in roles for which the aircraft was not designed. That such employment has been successful is a tribute to the imagination and flexibility of the men of the Air Force.

While fighting a war on the other side of the world we have had to concurrently provide the facilities

necessary for operating equipment that is extremely demanding. For example, two-mile long paved runways for jet fighters. This has meant the construction of entire airfields and ports.

The lack of adequate surface transportation plus enemy harassing action on the few roads and railways has required that men, equipment and supplies be delivered by air. This requires airfields of all kinds from huge complexes with aerial ports to hundreds of dirt strips barely big enough to handle cargo aircraft. Meanwhile, the enemy is doing everything possible to prevent or delay such construction or destroy it when the facility is completed.

We have already touched on some of the safety problems that are prevalent in SEA. But the scope is much wider. A thousand other hazards exits. Munitions transport and handling is a constant problem, not only in storage areas and on the flight line, but also in the hands of inexperienced people such as the airman who recently pulled the pin on a souvenir grenade in the barracks. He is dead and other men were injured.

Crowded conditions on flight lines, lack of suitable storage areas, the tempo of loading and unloading operations all contribute to less than desirable munitions handling and storage. Gradually, construction of explosives storage facilities is catching up with demand but a lot remains to be done. Safety officers keep a close watch on storage and handling and, under the circumstances, stress supervision as the most important element in explosive handling. Explosives are usually an item of concern during periodic safety meetings at all levels.

Ramp congestion at the major bases where incoming material is concentrated gives commanders and safety officers nightmares. As new facilities are completed this congestion is lessened some, but not eliminated. We had nothing but admiration for the young men handling the mountainous piles of cargo that must be trans-shipped each day. Many of them are youngsters subject to err, but close supervision, sweat and hard work are getting the job done with reasonably few mishaps. These young men work a long day every day in extreme heat on concrete ramps that keep the temperature above the 100-degree mark most of the time.

Aircraft line the ramps waiting for cargo, there is a steady stream of taxiing aircraft, traffic going in all directions and the constant noise of aircraft engines, jet and recip. Such an environment is conducive to accidents. Safety officers and commanders are well aware that supervisors, and safety officers too, who hole up in air-conditioned offices won't hack the job. Not that there is an abundance of air-conditioned offices.

Hangar space and warehousing are still at a premium so most material is stacked outside and most maintenance is conducted outside, despite the heat and downpours during the rainy season. Regardless of one's job, life on the flight lines of Southeast is seldom pleasant.

But there are some compensations. Living conditions have improved greatly since the first Air Force units arrived and are getting better all the time. The food is fair to good. Every effort is made to get the mail through quickly. The tour is of a definite length so you'll know when you can go home. And there is Rest and Recreation leave to break up the year. Aircrews have the comfort of knowing that if they have to bail out Rescue will make every effort humanly possible to get them out safely.

All of these things serve to make fighting a war a bit easier. Morale among the men we talked to, at all ranks, was high and, undoubtedly, the items mentioned above help keep it that way.

As for safety people, we found without exception a lot of men dedicated to their jobs, willing to work 12 hours a day or more, seven days a week. We found a relationship between commanders and safety officers in which each backed the other. This is resulting in the preservation of lives and valuable equipment which helps keep up the strength of our forces. ★

THE COLUMBIAN TROPHY

Mr. José Comacho, Colombian Chargé d'Affaires (L) presents Lt Col Murphy A. Pruett, commander of the 431st Tactical Fighter Squadron, the Colombian Trophy for flying safety, during ceremony at George AFB. In background is Brig Gen Frank K. Everest, Director of Aerospace Safety. Trophy is awarded by government of Colombia for meritorious achievement in flying safety.

Flying Safety and Flying Combat

Maj James A. Hamilton, Asst Chief, Public Information Div, Hq PACAF

The ready room of a tactical fighter squadron in Southeast Asia these days is not a lot different from that of any other air base in the world. Perhaps the atmosphere is a little more electric, the pilots and crews a bit more tense and a general feeling of gravity more prevalent. The safety factor is still paramount, however, at bases with exotic names like Takhli, Korat, Ubon or Da Nang. Just as it is at George, Willie, Shaw or Cannon.

The operations section of the 333d Tactical Fighter Squadron, an F-105 Thunderchief outfit which flies daily against some of the most heavily defended targets in the history of air conflict, is not a likely place to find safety slogans. But they are there, some 13 of them mounted on the walls at last count. No room for archaic superstitions in this gung-ho outfit.

The language in these cryptic homilies may be a little dissimilar to that heard or seen at mainland bases, but almost every pilot can adapt them to his own flying environment or perhaps find them directly apropos in his next assignment.

The wall approach taken by the 333d is in the form of do's and don'ts. The sayings themselves are the contributions of several flying safety officers and various members of the outfit. Personnel turnovers are rapid with 100 missions against hard targets in North Vietnam, or one year, equaling a tour in Southeast Asia.

On the positive side of the safety suggestions are:

Do brief rendezvous. Regrouping after the strike is of singular importance when the environment is hostile and can include anything from MIGs to surface-to-air missiles. Often weather is closing in and clouds of billowing smoke are pouring from the well-struck target. Getting back together is sometimes difficult but always essential as many of the targets require that the flight be refueled in order to get back to home base. Lessons learned well at Nellis pay off.

Do believe the MIGs are there. The tactics of the Communist pilots have varied over the months of the air war. But their presence cannot be denied. As of April 1, 1966, USAF pilots had destroyed 30 MIGs (the score is much higher now) while losing six of our fighters to the Russian-built jets. The F-105, not built for air-to-air combat, is credited with seven of the kills. On January 2 of this year, F-4Cs posing as a standard strike

flight on the way to targets lured MIG-21s into a major engagement and shot down seven without a loss of U. S. aircraft.

Do take charge during ResCap. The outstanding record achieved by the Air Force in rescue operations has been the result of well coordinated team efforts. ResCap is set up by fighter aircraft in the vicinity of a downed pilot and the word for rescue aircraft sent through the C-130 control aircraft which are always airborne during the strikes. A-1E Sandies are sent in to sanitize the area around the grounded pilot before the HH-3C Jolly Green Giant moves in for the pickup. As in any group activity, the key is quick and effective leadership to insure minimum voice transmissions and timing of each element's job. Proof of this particular pudding is the hundreds of aircrew members who have been saved in Southeast Asia to fly and fight another day.

Do plan for one pass and get out. North Vietnam's total air defenses including SAMs, MIGs, and anti-aircraft are called the most sophisticated system this country has ever encountered in combat. Most of the veteran pilots in Southeast Asia agree that they are much more susceptible to being hit on the second time around. The name of the game is get the target on the first try and not have to go back.

Some of the "negatives" adorning the wall are equally important in order to think positively about flying in Southeast Asia.

Don't duel with guns larger than yours. The seven MIGs credited to F-105s have all been in the 17-21 class and have been downed with the Thunderchief's 20mm cannon. The F-4Cs have scored mainly against the MIG-21s and used air-to-air missiles in the majority of the successful kills. The heaviest U.S. losses have been to the Communist anti-aircraft guns and small arms fire which are heavily concentrated around the most lucrative military targets. The next two slogans attest to the potency of the defenses.

Don't fly in circles after pop-up, and *Don't loiter in target area.* The .37, .57 and .85mm flak around the targets can make violation of these two rules extremely costly. Close attention to good flying safety factors has helped negate these rugged defensive measures.

Don't fly low on armed recce. This type of mission is flown in pre-determined areas usually after a prime target has been cancelled and the fighters diverted to secondaries. Again the ground fire can be intense as almost every North Vietnamese carries a weapon of some kind to fire at the feared attackers from the sky. The old axiom of max altitude and airspeed and still get the target is particularly true in the combat situation.

Don't press pull-out attitude. One veteran of 100 missions put it this way. "Don't be a hero. Keep a close hold on your emotions. Set your limitations based on experience, what you know and what you have learned. The one emotion to guard against is anger. Anger will overcome stark terror, let alone plain old horse sense."

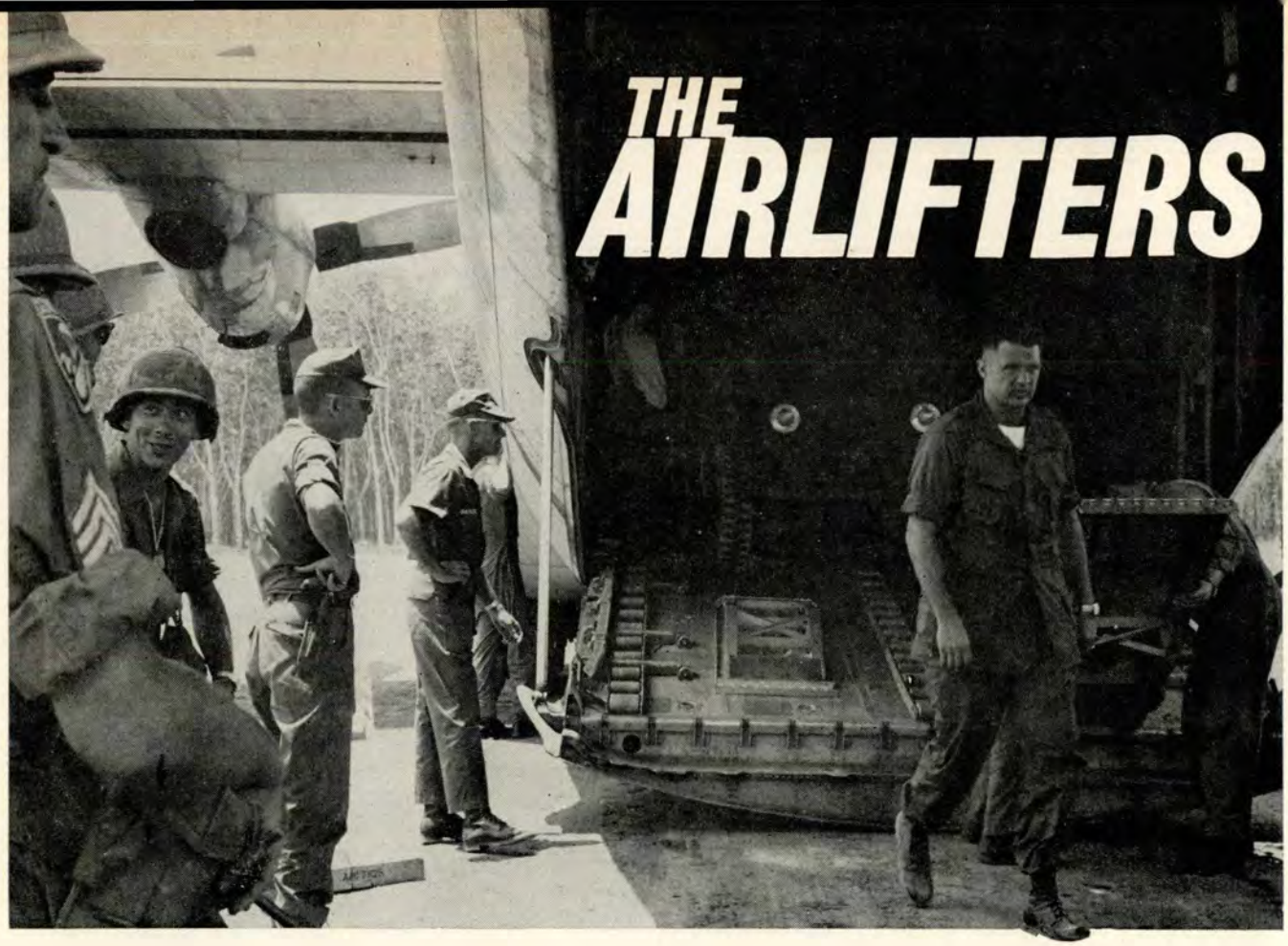
Don't press when the weather is bad. This is certainly just as true whether over Kansas City or Hanoi. The difference is the weather over North Vietnam can force you into an altitude where ground fire can reach you, can put you in a situation where you can't regroup or can make tanker rendezvous difficult, if not impossible. And the weather in Southeast Asia is not only unpredictable but extremely unforgiving.

Don't cheat on Bingo. The old code word for go home fuel is just as vital and valid over NVN as it was in Korea. For there are no alternates. The temptation is almost always present—one more pass at that clump of trees which might conceal a truck park, another hill to cross for a possible hit and so on. The ones who come back pay close attention to Bingo.

Those who don't remember the past are condemned to relive it. This slight paraphrase of the American Philosopher George Santayana doesn't seem a bit out of place on the wall of a combat fighter outfit. The professionals fighting the air war in Southeast Asia know that lessons learned well and experiences retained for future use can be the difference in survival. ★

Safety slogans illustrated, left to right, DO BELIEVE THE MIGS ARE THERE: DO PLAN FOR ONE PASS AND GET OUT! DON'T FLY IN CIRCLES AFTER POP-UP.

THE AIRLIFTERS



A1C Robert H. Miller, 315 Air Div, PACAF

The day begins early for airlift crews of the 314th Troop Carrier Wing, 315 Air Division. Several hours before the sun rises, C-130 crews are already at their aircraft planning the day's operations. In the ensuing 14 hours they will travel throughout Vietnam on what is referred to as the Vietnam Shuttle—a massive airlift system involving thousands of men and tons of cargo.

I spent two days on the shuttle with Captain Ross E. Kramer and his crew of the 345th Troop Carrier Squadron operating out of Nha Trang. The first day proved to be "just another day on the shuttle."

We left Nha Trang bright and early with a load of mail for An Khe, some 150 miles northeast of Saigon, then headed for Pleiku. During the day we ferried general cargo and mail between An Khe, Pleiku and Cam Ranh Bay.

Arriving back at Nha Trang shortly before eight that evening, Captain Kramer briefed his crew on the next day's adventure and then yelled to them as they left the C-130 Operations center, "Get a good night's sleep because we hit it again at 5:00 a.m. tomorrow."

At 4.45 a.m. the next day in the Nha Trang C-130 operations center the entire crew, minus the loadmaster, was huddled over maps and other briefing material discussing the day's schedule.

Capt (then Lt.) Hugh J. Shelton assists fully equipped U.S. Army troops onto a C-130 Hercules. Captain Shelton (cover pic) is from Oak Ridge, Tenn., and has been in the Air Force since 1963.

A C-130 of the Vietnam shuttle passes over a peninsula of the Republic of Vietnam on its late-afternoon return to Cam Ranh Bay Air Base.

Capt Ross E. Kramer, a C-130 aircraft commander discusses with his crew a forthcoming landing at Tan Son Nhut AB, RVN.

CRANK 'EM UP—Loadmaster A3C Robert E. Kains, of Gloversville, N.Y. gives the go-ahead for the C-130 pilot to start the engines in preparation for take-off from Quan Loi, a dirt strip 50 miles north of Saigon. Using the 40K Loader, Air Force aerial port personnel load a C-130 Hercules of the 315th Air Division with 40,000 pounds of canned food at Cam Ranh Bay, RVN.

Shortly after 5:30 a.m. the aircraft lifted off the Nha Trang runway and headed for one of the busiest airports in the world—Tan Son Nhut. The loadmaster, A3C Robert E. Kainz, of Gloversville, N.Y., notified Captain Kramer that the load was a pallet of explosives.

Easing back into his seat for a quick cup of coffee, Captain Kramer said, "The loadmaster is the hardest worker on these flights. These guys are the first to arrive at the aircraft and the last to leave. They work 15 to 16 hours each day, seven days a week. I sure don't know how they do it."

As we approached Tan Son Nhut, Captain Hugh Shelton, copilot and also a qualified aircraft commander, informed the crew that due to the heavy air traffic arriving and departing from the base, which is located on the outskirts of Saigon, they would have to circle the field several times before the control tower could give the go ahead for a landing.

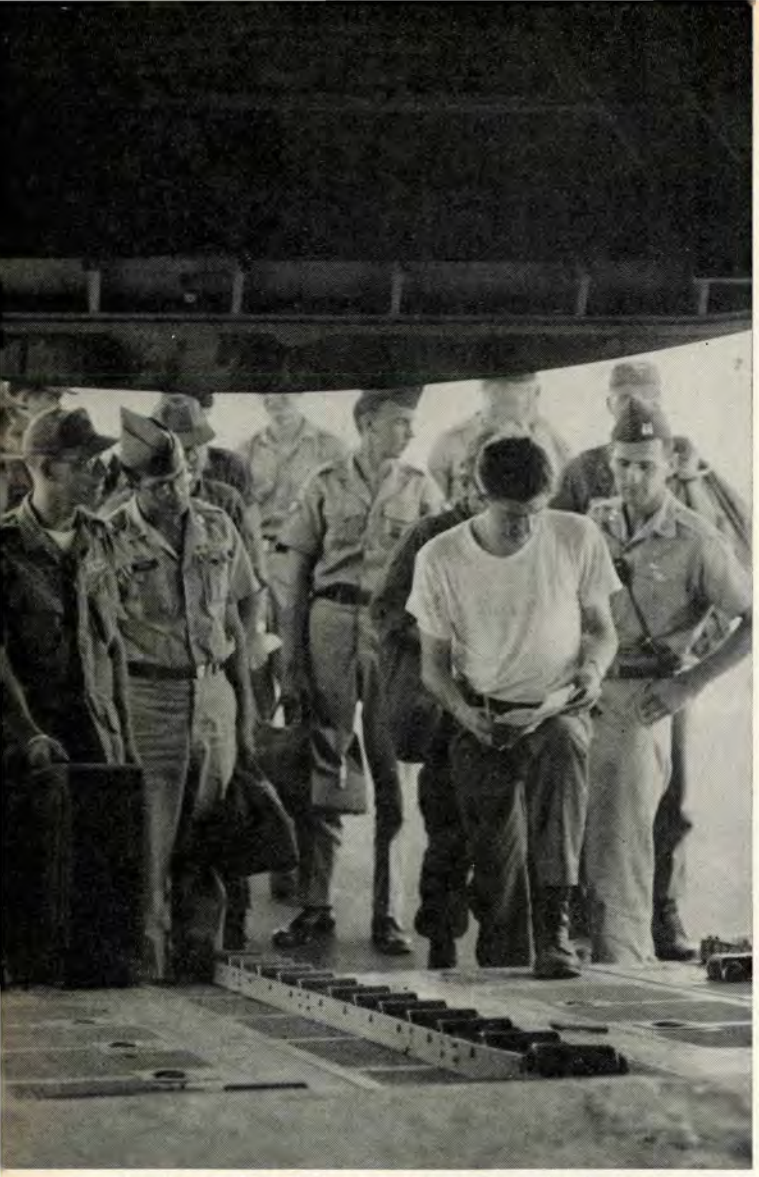
"Ordinarily we land and taxi to a space on Rebel Ramp in front of C-130 Operations," Captain Kramer explained, "but since we are carrying explosives, we will head for the bomb dump after we land." Following a routine landing, the aircraft taxied to a remote portion of the air base known as the bomb dump. As the crew left the plane they were met by a team of ordnance personnel who unloaded the sensitive cargo.

After unloading, the aircraft taxied to Rebel Ramp where supplies and ammunition waited to be loaded aboard the Hercules. The C-130 was then off for Quan Loi, a dirt strip 50 miles north of Tan Son Nhut. The purpose of the mission was to resupply Army troops engaged in a search and destroy mission in the area. The flight took less than 15 minutes.

During the unloading, Captain Kramer remarked to Captain Shelton as they stood under the shade of the aircraft's wing, "Wait 'til you see what we are carrying to Bien Hoa." Several minutes later a small line of South Vietnamese soldiers piled into the rear cargo door of the C-130. Accompanying the troops were several women and children.

Although Captain Shelton had seen similar situations, he told me, "Women and children are the last people you would expect to see in a battle zone. But the Vietnamese family ties are very close and it's not uncommon to see a Vietnamese soldier being accompanied by his wife and family when he is transferred from one battle area to another."

Once the Vietnamese passengers had been secured, Captain Kramer started the engines and the aircraft left Quan Loi in a cloud of dust. Destination: Bien Hoa.



"FASTEN YOUR SEAT BELTS." Army and Air Force passengers are given instructions by A3C Robert E. Kains, of Gloversville, New York, prior to takeoff from Pleiku, in a 315 Air Division C-130.

Army and Air Force personnel bound for rest and recuperation sites are loaded on C-130 Hercules headed for Saigon's Tan Son Nhut Air Base.

An air policeman stands guard at the entrance to the Tan Son Nhut bomb dump while a C-130 prepares to unload a sensitive cargo of ordnance.

After checking with Airlift Control Element at Bien Hoa, Captain Kramer notified his crew that they would be returning to Quan Loi.

The one thing which impresses everyone who arrives at Quan Loi is the red dust. It's so fine that the slightest breeze starts a choking dust cloud. Airman Kainz reported to the crew that there would be a slight delay while more than one hundred South Vietnamese soldiers were loaded aboard. The delay afforded the crew time for a quick lunch of C-rations and cool water. After the loading was completed, the aircraft was all set for takeoff. Next stop on the day's agenda: a return trip to Bien Hoa.

Awaiting our arrival on the hot, sun-baked flight line at Bien Hoa were several pallets of C-rations, destined for men stationed near Minh Thanh—an air strip and Army camp located about 40 miles northwest of Tan Son Nhut, in the middle of a rubber plantation. Army engineers had cleared a portion of the plantation to allow room for the huge C-130s and other cargo aircraft to land. Stepping out of the plane at Minh Thanh, the first thing which catches your eye is a sign: "Little LaGuardia Airport—Constructed by the 1st Engineers Battalion—Always First."

In the distance you could hear loud thumping noises. The aircraft's flight engineer, TSgt Charles C. Cole, of Jacksonville, N.C., explained that the noises were caused by mortar shells exploding.

After loading several jeeps and some U.S. troops on board, we took off again for Bien Hoa, which by this time had become pretty familiar. After picking up a load of combat troops bound for Pleiku, the aircraft flew back to An Khe, the last stop of the day.

Once the loadmaster had unloaded the plane at An Khe, the entire crew was ready to call it a day. The return trip to Nha Trang took less than an hour, but there was some excitement when a pressure fluctuation in number three engine caused it to be shut down.

Captain Kramer was recently recommended for our nation's second highest flying honor, the Distinguished Flying Cross, when he made a combat delivery during a severe tropical storm. The incident happened last December near Bong Son. According to the official report, Captain Kramer dropped 25,000 pounds of vitally needed ammunition to U.S. troops who were under heavy attack. Because of the low ceiling and adverse weather conditions, he was forced to navigate by radar. The ammo landed right on target. Other members of the crew have had their share of danger, too. Frequently they are fired upon from the ground during flights.

Cargo, aircraft, men and danger make up the Vietnam Shuttle—the combat airlift system which lends direct support to ground action in Vietnam. ★

the I.P.I.S. approach

By the USAF Instrument Pilot Instructor School, (ATC)) Randolph AFB, Texas

Q Does AFM 60-16 intend to allow IFR "VFR on Top" operation along jet routes from FL 180 to FL 240?

A No. "VFR on Top" operation is not permitted at any altitude for flights on or within Federal airways, nor along jet routes parallel to and within 10 miles of centerline.

Q AFM 60-16 prohibits VFR operation when "operating within Federal airways." What is the width of Federal airways?

A The Federal airways that constitute the low altitude system are eight NM in width out to 51 NM. The airways then widen at a rate of 4.5 degrees from centerline out to 130 NM where the width increases to 20 NM. The low altitude airways extend from 700 feet above the surface, except where designated at higher altitudes, up to 18,000 feet MSL.

Q When a pilot is conducting a turbojet enroute radar descent, may he continue the descent and approach if he is advised that the weather at the aerodrome of intended landing has gone below minimums published for the planned approach?

A A turbojet enroute descent is merely a maneuver conducted in lieu of a published penetration. Once the enroute descent is started, the pilot is in the initial approach phase of the approach and would be allowed to continue the approach *if authorized by MAJCOM supplement to AFM 60-16, par 8-15a(2).* If the MAJCOM does not authorize continuing the approach, the pilot must request an amended clearance, e.g., clearance to a holding fix or alternate airfield, while continuing to comply with his last ATC clearance.

Initiating the published missed approach from any position other than the published missed approach point without ATC clearance would be a violation of the ATC approved route, which may result in inadequate clearance from other aircraft or obstructions. Obstruction clearance provided for the missed approach is applicable only if the missed approach is started at the published missed approach point.

Q Is it necessary to enter the route of flight and ETE for other than the first leg in the DD Form 175?

A Air Force pilots filing flight plans with Air Force operations will enter in the Route of Flight section of the DD Form 175 the route, destination and ETE for the first leg. Subsequent legs need include only the bases of intended landing and designation of stopover points where refueling is planned. Reference par 3-3b(2), AFM 60-16.

Q A few civil ILS systems incorporate the DME portion of a TACAN transmitter as an integral part of the instrument landing system, e. g., Channel 30 at Reno Municipal, Nevada. What information will be provided a military TACAN-equipped aircraft when turned to an ILS/TACAN channel?

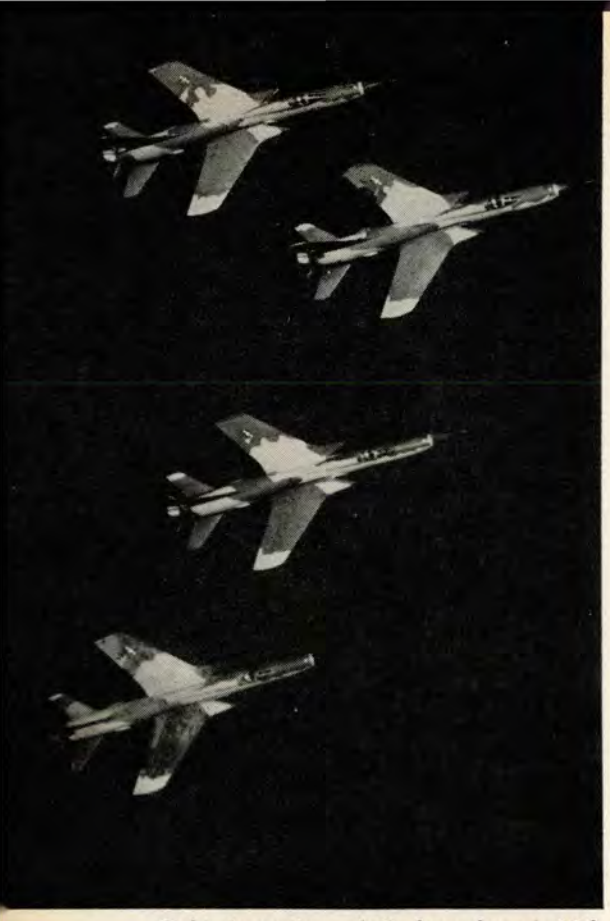
A When a TACAN-equipped aircraft operating in the vicinity of Reno Municipal tunes in CH 30, DME range to the *glide slope transmitter* site will be displayed in the range indicator. Glide slope transmitters are located near the approach end of the runway. The TACAN bearing pointer will be useless since TACAN bearing information is not transmitted by an ILS/TACAN. The identification received on the TACAN receiver will be the same as the ILS three-letter identifier (RNO).

Q Will aircraft operating under radar control on an IFR clearance be vectored around unidentified targets?

A Air Traffic Control does not normally vector aircraft around unidentified targets unless specifically requested by the pilot. A pilot desiring this service should request "vector clear of traffic," or an "avoidance vector."

Under certain conditions, i.e., marginal VFR weather or below 3000 feet AGL where flight at hemispherical altitudes is not required, the pilot should seriously consider requesting vectors clear of reported unidentified targets.

The IPIS is glad to answer questions concerning any facet of instrument flight. You may write to either the Editor, *Aerospace Safety* magazine, or direct to IPIS. Answers will be either mailed direct to the writer or published in IPIS Approach in this magazine. ★



Tight formation of Kadena based 18th Tactical Fighter Wing F-105s on one of their flights as guardians of Ryukyu Islands and 300,000 square miles of the vast Pacific.

PACAF continued from page 5

set up drop zones, operate navaids and communications facilities for Air Force and Army airborne assault and supply. The controllers on these teams are an elite group. Each man is a qualified air traffic controller who can map, knows some weather observation techniques, and is expert in escape and evasion. Most of the 7th APS controllers have seen action in Vietnam.

13th AIR FORCE

The southwest Pacific and Southeast Asia, with the exception of Vietnam, are the responsibility of the 13th Air Force which provides air defense, tactical air forces, supply and logistical support of USAF units in Southeast Asia. Assigned aircraft are the F-100, F-102, F-105, F-4, B-57 and B/RB-66.

Clark AB near Manilla, R.P., is headquarters for the 13th. It is one of the busiest air bases in the Pacific. The tremendous flow of men and supplies generated by the war nearly saturates the base facilities. MAC aircraft fly in and out of the base around the clock. Contract carriers add to this constant flow, along with tactical aircraft of the 405th Fighter Wing, the largest in the Air Force.

The 405th, commanded by famed test pilot Colonel Chuck Yeager, operates a variety of aircraft at six detachments in the Pacific and Southeast Asia. Its crews and aircraft rotate to South Vietnam to assist 7th Air Force.

Safety in the 405th is a demanding job. Major Chuck Fortney, Chief of Safety, has a couple of things going for him that should be of interest to other safety officers and commanders. One of these is the assignment of a maintenance specialist, a former line chief, to the safety office. The other is an agreement with Quality Control that all aircraft released after a mishap must have Safety's okay.

These are recent innovations but Fortney believes they will pay off in accidents prevented.

With a base as busy as Clark, there are many safety problems. These are the business of the 636th Combat Support Group safety office headed by Lt Colonel E. R. Greenleaf.

FOD is a major headache because of the texture of the earth upon which paved surfaces are laid and the heavy rains that erode this loose, volcanic dirt. This means a lot of pebbles and other debris, including shell casings from World War II, that get blown out of the ground by aircraft during runup. Also the paving doesn't stand up well along the edges of the taxiways and breaks off when rain washes gullies under and adjacent to the edges.

Safety officers Maj Joe Skiera, left, and Don Post prepare for airfield survey.

Majors Don Post and Joe Skiera of base safety do a lot of patrolling along the flight line looking for such hazards and others that can easily develop on a base teeming with transient traffic. Somehow they managed to acquire a pickup painted white with bold markings that say SAFETY. It's radio equipped, hard to mistake for anything else, and has a lock on the door to the covered bed so they can keep camera, recording and other equipment in the truck and ready for use.

The 13th is very much in the war with its units rotating into Vietnam and its responsibilities in Thailand where 13th forces operate in conjunction with 7th Air Force. For more on this see the following article on Southeast Asia.

PACAF SAFETY

Accident prevention in the many-faceted Pacific theater provides a stern test of all the Air Force has learned about the operation of aircraft, their maintenance and handling equipment in support of air operations.

Safety as a discipline is a major effort as the command strives to prevent the loss of lives and equipment in its huge and diversified area of responsibility. That's why "Star Talks," the Spotlight program, The Mission Safety 70 Operations Plan and other programs designed to eliminate accidents.

There are many facets of the command safety program, for example, Star Talks. When an accident occurs the unit commander is required to submit a narrative account of the mishap by priority message to PACAF headquarters. The unit commander then briefs the commander immediately subordinate to PACAF and submits a letter of circumstances to that commander, which in turn goes to CINCPACAF.

There are also safety conferences such as one held at Clark AB attended by munitions experts and safety specialists. This conference resulted in PACAF Manual 65-3, "Flight Line Operating Procedures," which outlines procedures for handling of munitions from storage to takeoff of the aircraft on a combat mission.

In the past many safety problems have lain dormant for years, occasionally causing an accident but still going uncorrected. PACAF's Spotlight Program was designed to correct such hazards as well as new ones that have to be identified and eliminated. When PACAF started this program a total of 333 items were identified. By the time these were screened and acted upon only 74 had to go to headquarters for action.

The problems identified in this manner range from engine failures to crew rest facilities in Vietnam to airfield hazards at forward operating bases. The majority can be handled at unit level, some require action at a higher headquarters or even in a different command. The important thing, though, is that the problems can be identified, which is the most important step toward solution.

The success of PACAF's efforts in flying safety is reflected by the major aircraft accident rate which dropped from 13.4 in 1965 to 11.4 in 1966. Preliminary figures for this year show a dramatic improvement with a rate of 7.8. A major factor in this reduction seems to be that when sufficient qualified safety people arrived in Southeast Asia during the latter half of last year the rate began to decline.

But it is on the ground where success seems to be most elusive. There were 45 ground fatalities in PACAF last year, three times the number for the previous year. Twenty-five of these occurred in Southeast Asia, most of them from vehicle accidents. Ask any safety officer in Vietnam what his biggest problem is and chances are he will point to a motorcycle. This, of course, is an over-simplification, but the fact remains that motor vehicle accidents are a tough problem to solve.

Overall, safety in PACAF is geared to the Mission Safety 70 program, a long term effort with the end goal of a 30 per cent reduction in accidents by 1970. The base year for this program was 1963, a peace time year when conditions were far different from what they are at present. Nevertheless, PACAF is determined to meet the goal. ★

Traffic in Far East cities is heavy, and growing in volume daily.

Driving in foreign countries calls for extra care and awareness. This scene may look safe, but there are intersections in the left foreground and on both sides beyond the bridge, which is narrower than the road.

THE AVERAGE GCA pattern is reasonably safe; however, if conditions are VMC and you are in a high density traffic area, it may not be as safe as you think.

Here's one that has just come in: A many motored conventional under GCA control had to take sharp evasive action to miss a many motored jet flying VMC in the vicinity. GCA had erroneously placed the conventional 1000 feet too low and at the VFR traffic pattern altitude. Know your area, all the pattern altitudes for jets and conventionals, and take no directions for granted.

WHAT HAPPENED TO the "Joe Smith, 50 feet over the end of the runway" technique for landing transports? True, this method goes out the window in special situations like landing at many Southeast Asian strips where the runways are very short; but, even on these, there is a happy medium.

A couple of months ago a jock rammed a big bird into the dirt short of an adequately long runway in a relatively peaceful part of the world. Let the situation govern the techniques and procedures and give yourself a little margin for error whenever and wherever possible.

NEW WEATHER RADAR. USAF Air Weather Service recently inaugurated the first of 144 new storm-detection radar sets schedules for installation at many Air Force bases around the world. Called the AN/FPS-77, the new weather radar will provide local-area weather surveillance more precisely and less expensively than earlier APQ-13 and CPS-9 radar sets.

With an effective range of 200-plus miles, the FPS-77 will provide local-area radar viewing by base weathermen of thunderstorms, tornadoes and other severe weather. In addition to providing a more discriminating return on local weather disturbances, the FPS-77 is more easily maintained than earlier weather radars.

LOWRY AERO CLUB is shown to be located at Lowry AFB, Colorado (pg 22, July issue). This is incorrect. The club is at Buckley ANG Base. All other information about the club is correct.

WHICH TWIN has the malfunction? A recent accident involving a twin-engine jet fighter re-emphasized the need for quick and correct analysis of emergency situations.

During a formation takeoff the wingman asked his leader to reduce power because he was falling behind. Immediately after gear up, the leader noticed flames coming from the rear of the wingman's aircraft and advised him that the left engine was on fire. The flight was approximately 300 feet in the air at 250 knots. The wingman fell back and stated he was going to eject. The ejection was unsuccessful because of the low altitude, excessive sink rate and seat chute entanglement.

The initial investigation did not reveal anything wrong with the left engine. However, the right engine had suffered compressor stall damage from causes not yet determined. Since the engine was operating in afterburner, the stalled condition, approximately 80 per cent, caused the fuel rich air to torch out the rear

of the engine. The leader was to the left of the wingman and it appeared to him that the left engine was the one torching. The board concluded that his call may have influenced the wingman to reduce power on the left (good) engine.

This conclusion is supported by the fact that the right engine was still torching at the time of ejection and the left engine was operating at approximately 60-75 per cent on impact.

It is very difficult to isolate a malfunctioning engine by feel in a multi-engine centerline thrust aircraft. The pilot must be able to diagnose it from his engine instruments. As we all know this pilot was in the most critical phase of flight—that period of about 30 seconds when the pilot's reaction has to be quick and accurate. However, one split second of hesitation to correctly analyze the situation before you react, pays off. I believe that the most valuable thing one can do in the flight simulator is to practice this 30-second period. All possible emergencies should be practiced over and over so that the emergency can be analyzed and the reaction performed quickly and correctly.

Major Don O'Connell
Directorate of Aerospace Safety

A LARGE percentage of USAF midair collisions involve aircraft in formation. A couple of our pilots collided not long ago because the lead failed to insure that the mission briefing for post-refueling reform thoroughly covered required signals and procedures. Additionally, one of the flight leaders failed to brief on the signal required for making a position change during the reform maneuvers. If it can happen to these boys, it can happen to you; make certain you've got your signals straight and be sure to call them before you make a move. Even this won't prevent mishaps if the aircrews, including gunners and all other types, aren't alert. Two big jets ran together recently because a crewman was either reading a book or dozing when he could have provided visual reference and a warning.

AMONG YOUR SOUVENIRS you may find a live grenade unless more thorough inspections are made prior to air shipments from the RVN combat zone. Grenades still in sealed cans were discovered under the seat in a helicopter that was airlifted home for repairs. The oversight probably occurred during a quick look-around of the interior of the chopper and the "tin cans" became part of the cargo. There was no evidence of tampering, even so just knowing that "they are live ones" is enough to shake you up, isn't it? Now that we know IT CAN HAPPEN, more stringent inspections by persons responsible and so designated, are in order.

HANDSIGNALS, no matter how many, cannot replace headsets for effective communications between aircrew and ground crew members during start and before taxi operations. Recently a transient alert crewman was fatally injured during the starting of an F-4. Use of headsets would probably have prevented his being crushed between the drop tank and leading edge during the flap check. Aircrews must never move any switches in the cockpit until they are assured that ground crew personnel are clear of the aircraft.

TWO F-4s collided recently during air combat tactics (ACT) maneuvering. As a result, the command involved has taken action to insure that —

- Instructor pilots develop and maintain the capability to recognize dangerous situations and take immediate corrective action, accordingly.
- Instructor pilots guard against complacency when flying with highly experienced students.
- All tactical aircrews temper their aggressiveness with good judgment while participating in ACT flight training.
- ACT attacks be terminated at 1000′ range or whenever visual contact between aircraft is lost within one mile.

FALLOUT

PUFF, THE MAGIC DRAGON

I've just finished reading the June issue and, as always, have enjoyed it very much. I'm writing in regard to your request for pictures for the September issue. Not being a pilot—instead a flight engineer, I hope I'll still be able to contribute to the magazine. I would like to contribute some pictures of the grand ol' Gooney Bird. I had the rewarding experience of flying in Vietnam on the AC-47 Dragon Ships and the original "Puff, The Magic Dragon" when she was an FC-47.

This was the first time I had any real contact with the Gooney Bird and I now hold a lot of respect for the ol' girl. It is a reliable plane that may be low and slow, but there are a lot of men alive today, in Vietnam and at home, who owe their lives to the "Puffs." They hold a mighty impressive record that grows more and more every day. During the year that I was with them, not one Special Forces Camp or Vietnamese outpost was over-run while the "Puffs" were on the scene, not to mention the many convoys and field troops that "Puff" rescued with fire power and flares.

Here is some history of the two squadrons that have used the "Puffs" in Vietnam. The 1st Air Commando Squadron, holder of the Presidential Unit Citation, was selected to test the idea of mounting guns in a C-47 as a firing platform because of the plane's ability to stay on a target for several hours. The original "Puff, The Magic Dragon," then an FC-47, used prototype models of the Gatling gun called "mini guns," built by General Electric. "Puff" had several sister Gooneys that had .30 caliber machine guns mounted in them, but these guns didn't prove as good as the "minis." "Puff" got her name from the "friendlies" (American and Vietnamese ground forces) since she looked like a dragon in the sky and because of the roar her Gatling guns made as they spit long tongues of flame from tracer bullets.

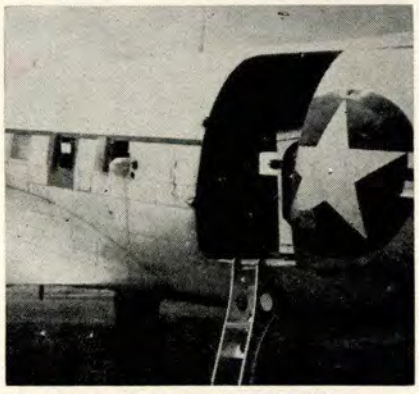
After "Puff" had proven her worth all over South Vietnam, the 4th Air Commando Squadron was formed. They came to Vietnam with a squadron of reconditioned "Puffs." Their designation was changed to AC-47 Dragon Ships, but "Puff" had made a name for herself and the nickname carried over to the new squadron. Then ol' "Puff" was retired as a gun ship and became a "flare hauler" with the 4th ACS and kept up her outstanding record.

The AC-47 is making more and more of a name for herself in Vietnam every day. The ol' Gooney Bird is going to be around for a long time and who knows what they will do with her next? Here are some pictures of the FC/AC-47s.

I hope I have been able to contribute a small amount. Keep up the fine work; I'll be looking forward to reading all of your future issues.

SSgt Michael L. Custance
55th Mil Alft Sq, Box #2
APO New York 09057

This is the nose of the original "Puff."


The three miniguns mounted in "Puff."


Closeup of minigun mounted in Dragon Ships.


One of our "Puffs" mounting the ten .30 cals.

WELL DONE

☆ U.S. GOVERNMENT PRINTING OFFICE 1967 251-220/12

CAPTAIN
FREDERICK C. HIEBERT

13 TACTICAL FIGHTER SQUADRON
APO SAN FRANCISCO 96553

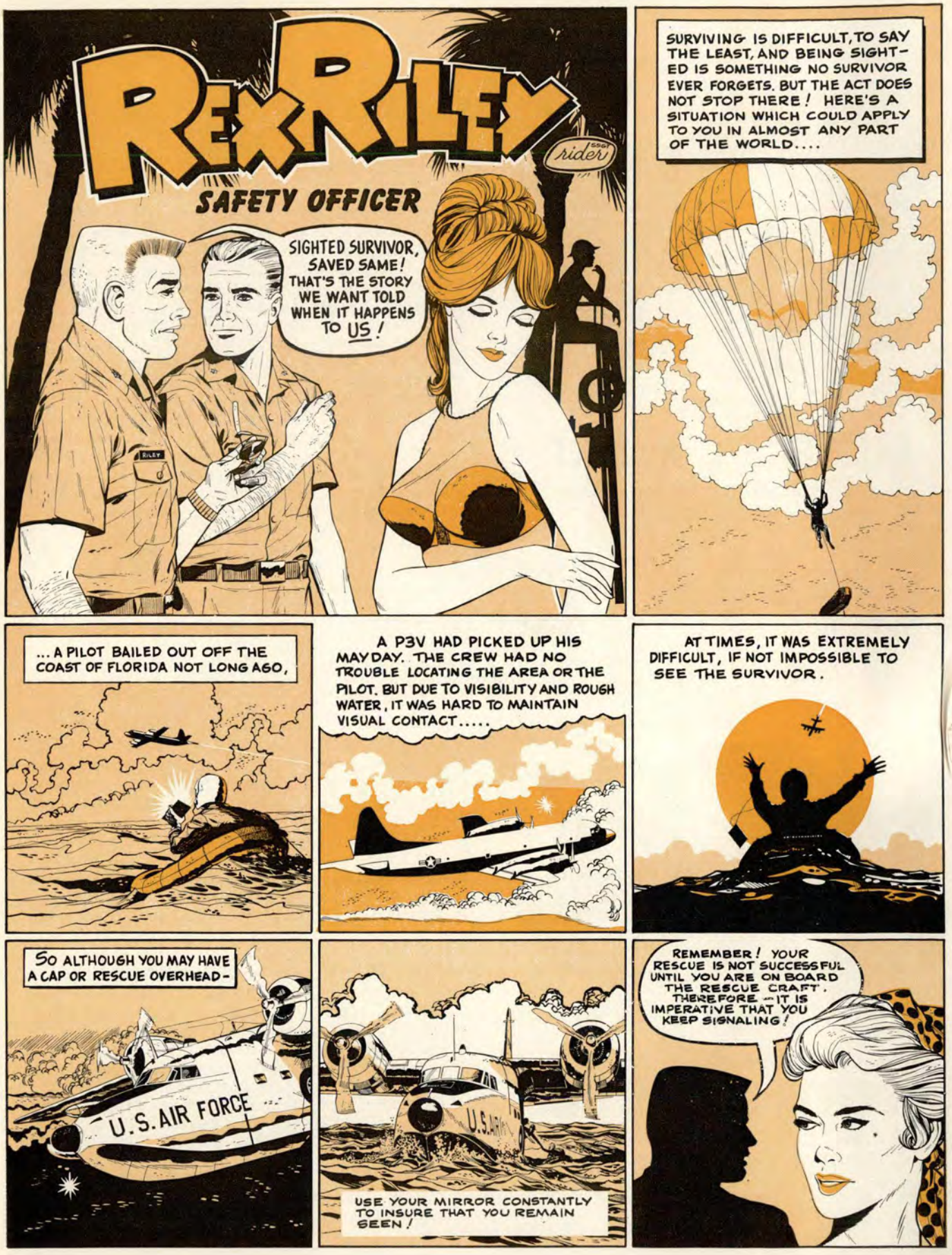
On 25 July 1966, Major Frederick C. Hiebert led a flight of four F-105 aircraft on a tactical mission. During the mission, Major Hiebert's left rudder cable was severed, causing the left rudder to become ineffective. He immediately experienced a temporary loss of control and at one time, the aircraft approached uncontrolled inverted flight at low altitude. Regaining control, he elected to remain with the aircraft and return to his home base. Due to the distance involved and without any alternate fields, he was forced to refuel in flight. He carefully maneuvered his aircraft behind the tanker and accomplished the inflight refueling. Arriving at home base, he safely completed the landing, although the aircraft was barely controllable below 180 knots indicated airspeed and the left rudder control, nose wheel steering and brakes were inoperative. Major Hiebert demonstrated professionalism in the highest degree in coping with a critical inflight emergency, thereby saving Air Force property and preventing a possible loss of life. Well Done! ★

MAJOR
KENNETH L. KRUSLYAK

331ST FIGHTER INTERCEPTOR SQUADRON
WEBB AFB, TEX 79720

Captain Kenneth L. Kruslyak was on a day VFR Air Combat Maneuver mission in an F-104A. Approximately 30 minutes after takeoff, the Engine Oil Level Low light came on and he smelled a strong odor of oil. He immediately declared an emergency and turned toward Webb, 50 miles away. When the oil pressure dropped to 5 PSI below normal, he went A/B and accelerated to Mach 1.5 in a climb to altitude. Since smoke and fumes continued to enter the cockpit, Captain Kruslyak dumped the cabin pressure and selected 100 per cent oxygen. He elected to land on the closest runway which had a slight tailwind component.

Captain Kruslyak entered a high final, ten miles out, 15,000 feet, 450 KIAS. Using speed brakes, takeoff flaps, and gear at precise intervals for speed control, he made an excellent straight-in pattern for runway 17L. Oil pressure had deteriorated to a 3-10 PSI fluctuation with engine seizure imminent. During the flare, land flaps were selected to decrease touchdown speed. The dragchute was deployed and engine stopcocked. Cause of the emergency was failure of the number one scavenge pump drive gear; consequently, oil could not circulate within the engine. Captain Kruslyak's response to this emergency very likely prevented the loss of an F-104. Well Done! ★


REX RILEY
SAFETY OFFICER
rider
SIGHTED SURVIVOR, SAVED SAME! THAT'S THE STORY WE WANT TOLD WHEN IT HAPPENS TO US!
SURVIVING IS DIFFICULT, TO SAY THE LEAST, AND BEING SIGHTED IS SOMETHING NO SURVIVOR EVER FORGETS. BUT THE ACT DOES NOT STOP THERE! HERE'S A SITUATION WHICH COULD APPLY TO YOU IN ALMOST ANY PART OF THE WORLD....
...A PILOT BAILED OUT OFF THE COAST OF FLORIDA NOT LONG AGO,
A P3V HAD PICKED UP HIS MAYDAY. THE CREW HAD NO TROUBLE LOCATING THE AREA OR THE PILOT. BUT DUE TO VISIBILITY AND ROUGH WATER, IT WAS HARD TO MAINTAIN VISUAL CONTACT.....
AT TIMES, IT WAS EXTREMELY DIFFICULT, IF NOT IMPOSSIBLE TO SEE THE SURVIVOR.
SO ALTHOUGH YOU MAY HAVE A CAP OR RESCUE OVERHEAD-
U.S. AIR FORCE
USE YOUR MIRROR CONSTANTLY TO INSURE THAT YOU REMAIN SEEN!
REMEMBER! YOUR RESCUE IS NOT SUCCESSFUL UNTIL YOU ARE ON BOARD THE RESCUE CRAFT. THEREFORE — IT IS IMPERATIVE THAT YOU KEEP SIGNALING!