

HISTORICAL DATA

1 JAN-30 JUN 51

AIR RESCUE SERVICE (MATS)



H-19 Helicopter In Korea

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By ~~XXXXXXXXXX~~ of ~~CO~~ ARS
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HISTORICAL DATA

AIR RESCUE SERVICE
(MATS)

1 January--30 June
1951

Headquarters
Air Rescue Service
Barton Hall
West Potomac Park
Washington 25, D. C.

~~SECRET~~

FORWARD

The Historical Data for the period 1 January through 30 June 1951 records the most valuable information on the organization, mission, responsibilities, training, and planning for the present and future.

It is hoped that the information contained in this history will be useful in meeting the objectives outlined in Air Force Regulation 210-3, 13 January 1950

~~SECRET~~



MISSION OF AIR RESCUE SERVICE

Provide world-wide air rescue service for all Air Force activities and to other U. S. military forces requesting such services.

Maintain assigned rescue facilities in operational readiness to permit rapid deployment in support of combat operations in any area.

Render air rescue service, upon request, to civil aviation of the U. S. and to civil and military aviation of other countries in accordance with ICAO procedures and policies of the Department of Defense.

Aerial evacuation of aircrews from behind enemy lines in support of combat operations.

Perform such other missions as are directed by the Chief of Staff, USAF.

NOTE: Rescue service is fulfilled by aerial and ground search, dropping of survival equipment and medical personnel, and evacuation of survivors.

~~SECRET~~

CODE OF AN AIR RESCUE MAN

It is MY duty as a member of the Air Rescue Service to save life and to aid the injured.

I will be prepared at all times to perform my assigned duties quickly and efficiently, placing these duties before personal desires and comfort.

These things I do that others may live.

POLICY OF AIR RESCUE SERVICE

Air Rescue Service exists only to save lives. The probability of finding survivors diminishes with each minute that passes after an air disaster occurs. Therefore, in each and every incident it must be presumed that there are survivors and every possible effort must be made to find, aid, and return these survivors to safety. The thoughts and efforts of every man in the Air Rescue Service must be directed toward creating an organization better equipped and trained to carry out any rescue by day or night in the least possible time so that all will know that no life has been lost through a wasted minute or a misdirected effort.

~~SECRET~~

CONCEPT

Air Rescue Service is provided in the United States Air Force for the express purpose of conserving manpower, which is the most important element of our nation's combat strength. By virtue of accomplishing this conservation, there accrues another most important benefit of this service, namely that of maintaining a higher level of morale among aircrews and air passengers.

The problem of providing air rescue service for our Air Force is not a simple one. This service entails the search for--the rendering of aid to--and the actual rescue of personnel involved in aircraft accidents. Such incidents may occur anywhere about the world, high up in the rugged mountains, deep in dense jungles, far out to sea, or in desert or frozen waste lands. They may occur at any hour of the day or night and in time of peace as in time of war. The incident of greatest concern is the one that may occur in war-time behind enemy lines and require the recovery of our downed aircrews from deep within enemy territory.

In order to perform this most difficult job of search, aid, and rescue, the Air Force must have a well-trained and properly equipped air rescue force in being. This force must be deployed strategically about the world wherever Air Force planes fly. It must be on the alert around the clock, for time is of the greatest importance throughout a search and rescue mission. This rescue force may be likened to a world-wide air fire department, standing by to answer the call for help whenever and from wherever it may come.

The size of such a rescue force should be determined by consideration of several factors. The four most important of these factors are--the area or areas of the world over which our planes fly--the frequency or density of flights in area or areas--the effectiveness of enemy action against our planes in time of war--and the effectiveness of the operational rescue unit concerned. It can be seen from a brief analysis of these major factors that there is no simple functional relationship between the size of the air rescue force and the number of combat units in our Air Force. Therefore, it appears that a suitable balance between deployable combat air forces and air rescue forces can be arrived at only on the basis of best professional judgement.

With the above thoughts in mind, the specific Air Rescue Service requirements become those considered necessary to provide adequate search and rescue coverage for our Air Force on a world-wide basis in time of peace, as well as provide minimum D-Day requirement in the event of war.

highlight of this observance was a "Fathers For a Day" program which saw, where feasible, MATS organizations serve as host to children from various local orphanages. This event was particularly successful at the 2156th Air Rescue Unit (TTU), MacDill AFB, Fla., where the "adopted kids" were given a vaudeville show with cartoons and a movie, lunch, and an escorted visit to the ARS training area to see simulated parachute jumps and demonstrations of landing. They were also taken to the flight line to see ARS aircraft and finally given a chance to cool off in the base swimming pool.

Security
Measures
in PIO

During this reporting period, constant adherence to security measures were complied with. This included not only those items received from the combat area in Korea but also concerned such training exercises which involved Air Rescue Service.

PIO Per-
sonnel

Changes in assigned personnel in the PIO Division during the past six months found Major Albion T. Sawyer becoming the Public Information Officer on 18 April 1951. Captain J. B. McCarley II became the Assistant PIO until he was transferred, by Hq, MATS, to Lages Field, Azores, in June.

Medical
Division

The practical application of emergency medical treatment of wounded or injured personnel saved the lives of thousands of soldiers and airmen during this reporting period. This was readily apparent in the efforts of Air Rescue Service in Korea. The years of study and experimentation within Air Rescue Service, with reference to equipment and procedures, formed the basis for the procedures and techniques which proved so successful in combat operations.

Improved
Medical
Training &
Equipment

Every effort was made to improve the training and equipment which would further assist the ARS medical technicians in providing adequate emergency medical treatment. The Paradoctor Parachute Kit, aerial delivery Type 1, was one such item. The kit contained all necessary equipment for immediate medical treatment and in addition a number of items which were to be used specifically for survival.

Also, efforts directed toward acquiring adequate and qualified personnel met with limited success with the assignment of seven qualified doctors. These trained officers were assigned to various Air Rescue Service activities as the squadron surgeons. While these assignments were not sufficient to fill the requirements, other steps were taken to fulfill the demand for medical personnel. In this case, five Medical Service Corps officers completed the Medical School at Gunter AFB, Ala., and were utilized at bases where qualified Medical Corps officers were not available.

The training of assigned personnel continued as an important function of Air Rescue Service. The number of hours of training given medical teams at the 2156th Air Rescue Unit (TTU), MacDill AFB, Fla., were increased to insure complete and adequate qualification of the graduates of the school prior to assignment to field activities. This was accomplished by initiating a twelve week course within each squadron for the assigned medical technicians to further qualify them in meeting all emergencies. In this way, the medics were kept current in all phases of this specialized field. To assist in the local training, the Surgeons Office of Air Rescue Service distributed TM8-230 to all ARS activities to be used as a guide in

the training program and in emergency medical aid.

Annual Physical Exam.
for Off.

The annual physical for all Air Force officers was begun during this period. It was the first time since 1948 that the physical examination became a requirement and as a result emphasis was placed on obesity.

Personnel
Changes In
Medical
Division

Personnel changes involved the Medical Division as Captain Robert Klotzman was assigned to Great Falls AFB, Montana. He was replaced by 1st Lt. Hilmut S. Schroeder, acting surgeon of Headquarters, Air Rescue Service.

ARS Head-
quarters Sq.

The Headquarters Squadron continued to administer the affairs of personnel assigned to Headquarters, Air Rescue Service. Captain Fred Ward remained as Commandant and was responsible for records, supply, and transportation. During the six month period, 186 Psychological Warfare officers were processed through this headquarters. These officers were assigned to this headquarters following their selection for the Psychological Warfare Course which was conducted at Georgetown University, Washington, D.C. The 14 week course included the following subjects: Comparative World Cultures; Values at Stake in the Present Conflict; Political Structures and Practices Including Military Government; Sociological Aspects of U.S. Foreign Policy; Historical Aspects of Psychological Warfare; Psychological Warfare Technique and Practice; and Economic Factors in the Contemporary World Situation. The initial class of this continuing program was begun on 1 February 1951.

officer and airman with equally qualified personnel.

Critical Need of Some AFSC's The greatest personnel problem during this period involved efforts to procure qualified personnel in a number of critical AFSC's. The four most critical included Air Accessory Maintenance; Rescue and Survival; Air Traffic Control and Warning; and Communications. The average personnel assigned was approximately 50% of authorized strength.

Rotation Of 3rd Air Rescue Personnel The rotation of combat helicopter pilots and medical technicians became a necessity following more than six months of active operations. The inherent flight characteristics of the helicopter were such that constant attention was required while flying. As a result, the flying fatigue toll among the H-5 pilots was relatively high. Another factor involved nervous tension brought about while flying the unarmed aircraft near and over enemy territory. The 3rd Air Rescue Squadron initiated a plan for the rotation of crew members from Detachment One to other flights of the squadron for the purpose of rest and recuperation. To make this plan workable, it was necessary for Headquarters ARS to expend every effort in obtaining adequately qualified helicopter pilots and medics for assignment to the 3rd Air Rescue Squadron. With the assignment of these additional personnel, the "old and tired" pilots were reassigned to supervisory non-combatant positions within the squadron.

In connection with combat crew rotation, a plan for rotating all operational crew personnel from the FEAF area was

fire, is most commendable. The spirit and continuing effective results of your rescue organization is a source of pride to this command."

These letters were not only from higher commands; appreciation for the efforts of Air Rescue Service in Korea was understandably more human and touching when voiced by the U. N. personnel given actual assistance by Air Rescue Service.

Letter of
Thanks From
Pfc. Horn

One letter of appreciation was received from Pfc. Don Horn, a member of Company B, 23rd Infantry Regiment, 2nd Division, U.S. Army. He said, "I want to express my deepest appreciation for the heroic work the 3rd Air Rescue Squadron did at Chipyeong in evacuating the wounded and myself. Your helicopters were under fire all the time but that didn't stop them. All I can say is, thank God there is a 3rd Air Rescue Squadron or some of those men would never have made it out of there alive. You have earned the heart-felt thanks and appreciation of the entire 23rd Infantry Regiment, 2nd Division."

Prior to his being evacuated, Pfc. Horn's squad had been ordered to take a strategic hill. During the attack, one member of the squad was wounded seriously and required immediate medical attention. Pfc. Horn and three other soldiers volunteered to take the wounded man down the hill and bring ammunition and rations on the return trip. In his own words he describes the final phase of the battle. "We were about half way to the bottom when the gooks made a 'banzai'--some of them over ran our position further

up the hill, and started throwing grenades at us--the boys on the top of the hill were fighting hand to hand--we couldn't very well drop the wounded guy so we started on the dead run for a ditch about thirty yards away. Then something blew up right ahead of me and that is all I can remember of the battle."

"I came too in the aid station inside the town with a lot of other guys around me, all wounded. I didn't have as bad a wound as they did, in fact, not even a scratch--but, I couldn't move my arms or legs. The medic said it was a bad concussion and I was glad. Pretty soon, I heard what sounded like a whole bunch of out-board motor boats coming right outside the aid station. The medics carried some of us out to a little rice paddy and there on the ground was a helicopter, just as big as life. It sure was wonderful to see it there. We didn't know how we were going to get out of there wounded, with all the roads blocked, and the Commies just waiting for the chance to get a shot at us if we tried to break out."

"The guys that could still walk were kept at Chipyeong, and I didn't want to go myself, but they helped me into the helicopter and it looked mighty good. I sat right behind the pilot and they loaded two more guys into the blister things (capsules) on the sides. I looked up and saw the blades going 'round in circles and then passed out again. When I came too, I was over the Sea of Japan in a gaint of a hospital plane."

This type of story has been repeated many, many times during

the past six months of operations in Korea.

Letter From
Mother of
Evacuated
Pilot

Another touching letter was received from the mother of a rescued British pilot by Major John G. Shumate, Silver Star holder para-doctor with the 3rd Air Rescue Squadron. (See Historical Data, ARS, 1 July - 31 December 1950; page 26) Mrs. Clare Leonard wrote; "We received a letter from our son, Stanley, a couple of days ago, in which he gave your home address. That pleased us all a good deal because at last we are able to say a very heart-felt 'thank you' for the gallant rescue of Stan after he had been shot down over enemy territory in Korea. I am quite sure, as indeed is everyone who read of the rescue, that you saved his life! I doubt whether the enemy would have taken the trouble to drag him out of the cockpit--injured as he was. He learned, that as you worked to free him, you were being 'potted at.'"

"How can we ever convey to you our deep gratitude? Mrs. Leonard concluded, "We are sure that apart from snatching our son from under the very noses of the enemy, the skillful attention he received enroute to Inchon did much to succor him. If you think this letter is just a bit 'flowery' do please forgive me, but it seems so difficult to say just 'thank you' for saving a man's life."

ARS Evacs In
Korea Passes
1000, 2000

During the past six months of operations in Korea, Detachment One surpassed not only the one thousand but the two thousand mark for United Nations personnel evacuated and rescued from the front lines and from behind the enemy lines.

On 21 February 1951, a Detachment One, 3rd Air Rescue Squadron helicopter settled down in the yard adjacent to the Mobile Army



USAF Photo

A two-stage evacuation of a wounded South Korean marine by an SA-16 "Albatross," an H-5 helicopter, and crews of the 3rd Air Rescue Squadron. The wounded man was picked up by the SA-16 at a small island off the Korean coast and flown 125 miles to this FEAF airbase in 45 minutes, transferred to an H-5 helicopter in another five minutes, and is shown leaving for a nearby hospital. In less than one hour after original pick-up, he was receiving medical care at a modern hospital.

Surgical Hospital. From the enclosed litters on each side of the helicopter a critically wounded American was quickly unloaded and carried into the tent hospital for immediate medical attention. As soon as the patients were unloaded the helicopter returned to the front lines, approximately thirty miles away, for another load of wounded patients.

This seemingly routine mission marked the 1000th United Nations combatant to have been saved by the 3rd Air Rescue Squadron helicopters by evacuations from front line positions of critically wounded personnel who needed immediate medical attention. This total included the evacuation of wounded from units that were surrounded by the enemy, or behind the enemy line pick-ups of downed U. N. aircraft crews.

H-19 Makes
Initial
Pickups

There had been a reluctance on the part of the detachment operations to use the H-19 on "hot" missions. It was felt that the most qualified pilots lacked the experience necessary to take the big aircraft over enemy territory. Although used almost solely for training, the H-19 flew to the forward area occasionally on evacuation missions. On 24 June 1951, on the second of three H-19 sorties, it was discovered that one of the wounded soldiers was the 2000th man to be evacuated by the special helicopter detachment and this historic event occurred on the last day of the first Korean War year.

By 30 June 1951, the number of personnel rescued or evacuated mounted to the astonishing total of 2,104.

Quick ARS
H-5 Action
Saves B-26
Crew

A call from a distressed B-26 was intercepted by the ground forces radio. The pilot of the B-26 stated his right engine was afire and the propeller could not be feathered. He advised he was attempting to make K-13 strip near Suwon for an emergency landing. K-13 at that time was approximately 20 miles inside enemy territory. Since the crew of the B-26 consisted of three men, two helicopters took off to make the rescue. The crew of the B-26 was picked up by these helicopters just 20 minutes after they had landed at K-13.

There can be little doubt that proper communications equipment and procedure have materially assisted in the effectiveness of Air Rescue Service operations in Korea.

Importance
Of Para &
Land Rescue
Teams

One of the most interesting, colorful, and important operations of the entire Air Rescue Service organization centered around the pararescue and land rescue teams. The value of these specially trained personnel was evident in the successful accomplishments of many missions during this period. This was particularly true of the rescue and survival personnel assigned to the 3rd Air Rescue Squadron.

It should be stressed that while training rescue and survival personnel for utilization in the assistance of survivors needing medical aid, the ability of all crew members to survive an emergency will affect the success of a rescue operation. Perhaps the most valuable asset a potential survivor may possess is in the form of his survival knowledge. Experience has proven that survival equipment is easily lost when needed most, or the equipment

available may not be adequate for combating the difficulties encountered during a specific survival experience. In such cases, only survival knowledge by each individual would assure the protection of a distressed crew member during such emergencies. The ultimate in survival would be reached if all personnel of the USAF could be indoctrinated in proper survival procedures. An informal program of survival education was conducted through survival lectures by members of the rescue and survival teams when requested by the various base commands.

Survival of
Navigator
In Dingy

The irrevocable evidence of the value of survival knowledge was well portrayed in a survival incident which occurred in the area of Japan. A B-26 bomber was returning from a mission over Korea and suffered fuel starvation off the west coast of Japan. With only a few minutes of fuel remaining, the pilot instructed the crew to bail out. A bail-out was accomplished by the navigator, the only survivor of the bomber crew. He had some difficulty in releasing the CO₂ bottles of the one man dingy after the landing in the water but did eventually inflate the rubber raft and successfully boarded it. Once inside the dingy, he hugged the bottom as much as possible in order to keep warm. Fortunately, the sea was fairly calm and winds were light. The remainder of this first night was very cold with the water temperature about 45 degrees and the air temperature just about freezing.

At daybreak, the navigator took account of his condition

and discovered that it was actually warmer to stay partially submerged in the water in the dingy and decided against bailing out the water. He spent the day and night in the one man dingy and during the afternoon of the second day was spotted by a searching SA-16. The amphibian made several passes for a landing but the water was too rough. The sea was running between 15 and 20 feet. Instead of landing, a five-man raft was dropped to the navigator. The raft landed 100 feet from the dingy and was fully inflated by the time the survivor reached it. One hour later an SB-17 arrived and dropped the A-1 airborne lifeboat. The navigator boarded the boat and spend the night, the following day and the second night in the boat.

The A-1 was equipped with sufficient dry clothes and blankets to give ample protection against the cold winds and water spray. The lifeboat was eventually carried to shore where the survivor walked to a small village and was provided with shelter and warm food. He was later evacuated to his home base. During the time spent in the A-1, the survivor did not attempt to start the engines since the boat sustained some damage to the aft section and steering assembly.

A medical check-up showed the navigator's condition as good, with no signs of cold or shock. It is interesting to note that this survivor had recently completed a four year tour of Arctic duty. This tour had made him survival conscious and provided him with survival training. These factos were perhaps the

primary reason for his amazingly successful survival.

Rescue And
Survival
Training

Plans to conduct the Arctic phase of the rescue and survival training course at Goose Bay, Labrador, were completed during this period. The first class began the Arctic phase during the last week of February 1951.

The length of the rescue and survival training course was increased from eight to 12 weeks in order to more adequately prepare the personnel for assignment to the field activities.

All phases of the training program in Air Rescue Service were vitally important to the successful conduct of operations. The professional skills of the assigned personnel were the result of training--training which provided the technical proficiency necessary for constant and superior operations. The basic training program, as outlined in the Air Rescue Service Training Manual 50-1, was used by all operational activities in achieving a high standard of training which is the key to future successful operation.

SB-29 Trans-
ition Train-
ing

The initial SB-29 aircraft transition training program was completed during the first week of January 1951. However, the assignment of an additional 21 aircraft required renewal of the training program. The flight training phase was again conducted at Flight C, 5th Air Rescue Squadron, Maxwell AFB, Ala., with the maintenance phase of the program being conducted at Tinker AFB, Okla. The new program was begun during the latter part of March and the first part of April. During the last half

HEADQUARTERS
AIR RESCUE SERVICE
Military Air Transport Service
Washington 25, D.C.

Public Information Division
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MEMO TO THE PRESS:

Presentation to be given by Colonel Richard T. Kight, United States Air Force, Commanding Officer, Air Rescue Service, at the Symposium on Military Operations, Seventh Annual Forum, American Helicopter Society, Inc., April 27, 1951, Washington, D. C.

THE HELICOPTER IN THE UNITED STATES AIR FORCE

Gentlemen:

I consider it an honor and a privilege to be a guest at this Forum.

Within the past 10 months the helicopter has done more to prove itself as a useful and necessary method of aerial transportation than it has during its entire previous history. It has converted many persons to a new way of thinking which a year ago was shared by a mere handful of helicopter exponents. I refer particularly to the record being established by the helicopter in the Korean operation.

Foremost, the helicopter has saved the lives of many hundreds of men by front line evacuation and behind enemy line rescue operations. In doing this job, the helicopter has had the eyes of many aviation leaders focused upon it. It has proven itself versatile, and capable of performing a multitude of jobs formerly relegated to other types of aircraft or to ground transportation, and in performing missions not

previously possible. It has proven to be a combat-capable aircraft.

Inasmuch as representatives of the other U.S. military arms which utilize helicopters are present, and will give the picture as it pertains to them, I shall confine my remarks to the helicopter and its world-wide operation by the Air Force.

Two general uses recognized within the Air Force are the Rescue usage, whether in friendly or enemy areas, and Specialized Transport usage, such as front line evacuation and logistical air transport in combat areas.

In the United States Air Force, the Air Rescue Service is the organization responsible for the air search and rescue mission and, in Korea, by augmentation, has assumed and carried out much of the specialized transport requirement. So for purposes of this discussion, I will talk of characteristics in a general way and as applying to either mission.

I would like to digress for a moment from the present day overall operation of Air Rescue Service and look back into history, if 3 years ago can be called such. At that time, after a thorough study of the helicopter as it existed, we presented what we then considered its 4 principal shortcomings; this presentation was made in a paper read before the Helicopter Society Forum in 1948. Namely, these shortcomings were:

- (1) Slow speed
- (2) Short range
- (3) Small load-carry capacity, and
- (4) Inability to be used for night or instrument flying.

We later elaborated on these shortcomings with the addition of 3 others, which were listed in an article written by the late Dr. Alexander Klemm and which appeared in the September 1949 issue of "Aero Digest."

They were:

- (1) the need for better altitude performance in hovering,
- (2) the ability to continue flight with one engine out-of-commission,
and
- (3) the need for an all-purpose landing gear.

Also, we added to the night and instrument flying ability the requirement for anti-icing and de-icing equipment. This multi-purpose requirement was tied into one because of the compatibility of all 3 requirements.

I would like to point out that this list of needed equipment and materiel changes is not isolated to the Air Force, but is found sprinkled throughout the requirements laid down by other military and civil operators.

High altitude performance has been one requirement which we have pushed harder than any other, since it is the one most immediately needed for air search and rescue work. This requirement, I believe, has done much to achieve results in the overall development of the helicopter. In attempting to solve this one problem, designers and engineers have also found it necessary to study load, speed, range, and single-engine flight.

Up to now, I have mentioned 7 requirements for general improvement of the helicopter. I feel sure that the helicopters now in production will show a great step forward in meeting the requirements I have mentioned.

So, at this time, I would like to place before the designers, engineers, and manufacturers, 2 new goals -- simplicity and durability.

Up to the present time, simplicity and durability have been secondary, but with the old requirements rapidly being met and with new lessons being learned in actual combat, I believe these new goals become highly significant and important. They definitely belong on the "Wanted" list of helicopter improvements.

In speaking of simplicity, I mean simplification of basic design of the helicopter and its component parts, the simplification of maintenance, and the simplification of operation.

Durability should be aimed at keeping each helicopter in the air more hours per hour spent in maintenance; and in eliminating materiel failures, which either require valuable man-hours of maintenance, or worse still, in-flight materiel failures.

Simplicity and durability, therefore, are very real and vital to us who operate helicopters.

As I stated earlier, the need for aerial evacuation and rescue in Korea became apparent in the early stages of that war. The Commanding General, Far East Air Forces, indicated an urgent need for an aircraft which could conduct that type of operation. I happened to be on a staff visit in the Far East at that time and so had the pleasure of escorting the first helicopter into Korea.

I'd like to quote from a statement made by General Stratenoyer recently:

"One of the great significant accomplishments, the saving of untold number of lives of United Nations soldiers and the aiding and evacuating of hundreds of battle-stricken wounded

men, has been performed in the Korean War by U.S. Air Force helicopters and by their crews of the Far East Air Forces."

The latest (20 April 1951) break-down of figures available on the 3d Air Rescue Squadron helicopters show that a total of 1,506 persons have been picked up. Of these, 1,091 were front line evacuations, 413 were rescues from behind enemy lines, and 2 were rescues from the waters near Korea. I would like to point out that these figures represent solely those personnel evacuated or rescued by Air Rescue helicopters. I did not include the 600 South Korean troops which were led to safety by a Rescue helicopter after being surrounded by enemy troops. In addition, Air Rescue helicopters have flown thousands of units of whole blood and other medical supplies and equipment to front line positions. These accomplishments do not include the many missions flown by Army, Navy, and Marine helicopters.

Other aircraft of the 3d Air Rescue Squadron accounted for 140 evacuations and rescues. Altogether, 1,646 United Nations personnel, both air and ground forces, have been evacuated or rescued by Air Rescue Service aircraft. In accomplishing this remarkable record, our helicopters have been responsible for nearly 53% of the total sorties and for about 20% of the total flying hours spent on actual search, rescue, and evacuation missions. In fairness to other types of aircraft, I must report that they have been used extensively for other purposes, such as almost continuous rescue orbit and patrol over the Korean waters. The statistics given here do not include those sorties or flying hours.

It was this feat that prompted Lt General George E. Strateneyer, Commanding General, Far East Air Forces, to present the Distinguished Unit Citation to the 3d Air Rescue Squadron last February.

As a result of our usage of the various models of the H-5 series in Korea, the rescue pilots made several recommendations on what they would like to have in the way of improvements in future helicopters. Their requirements are:

- (1) larger payload,
- (2) more power,
- (3) longer range,
- (4) instrumentation to fly at night and in all-weather operations,
- (5) greater forward speed, and
- (6) internal litters.

Thus you can see that the demands previously stated are being reaffirmed by the boys in combat.

We believe that the new H-19's and H-21's will meet or surpass most of these "combat tested" suggestions.

A great increase in the maintenance efficiency of the helicopter has been noted within the past few years. This, in turn, has increased the "in commission" status to give a substantial boost to the operational availability. Several outstanding measures were taken to produce the present maintenance picture. For instance, 4 years ago the life of the main rotor head averaged approximately 120 hours. Today the life is extended to 240 hours. This increase, which has doubled the life of the main rotor head, came as the result of a seemingly minor procedure, which consisted of purging the main flapping hinge-bearing every 5 flight hours and at least once daily. There is one item which is indicative of the great distance yet to be traversed in reaching the height of maintenance efficiency. Just replace the grease often -- and you've doubled the life of a main rotor head. Simple? Well, yes -- but we pulled those main rotor heads at 120 hours for a long time until someone found the answer. After much research and discussion pro and con, the life of the main transmission and gear box has been extended from 240 hours to 400 hours, which subsequently increased the operational availability of each helicopter. Metal blades, when installed on the 'copters now utilizing the wood and fabric type, will again do much to increase the operational availability of each

It is such strides, either through actual improvement of component parts or through the extension of life of present day parts, which give us greater maintenance and operational efficiency.

While maintenance of helicopters in combat areas has been difficult, it has been possible. Much credit, however, must go to the maintenance and flight personnel, who have taken not only the experience and improvements of the past but who have done a magnificent job because of the incentive created by the demands of this aircraft in combat.

Among the concrete improvements -- or requirements for improvements -- which Air Rescue Service will soon have on its newer helicopters are:

- (1) main rotor blade restrainers to allow helicopter operation in high winds,
- (2) automatic pilots,
- (3) metal main rotor blades,
- (4) blades de-icing equipment,
- (5) winterization of all rescue helicopters,
- (6) a change of engines to furnish more horsepower in the H-19,
- (7) standard type human pick-up harness,
- (8) instrumentation for weather and night flying, and
- (9) auxiliary long-range fuel tanks for emergency use.

All of these improvements are now being accomplished or are in the final stages of study and research.

When you look at its progress, the helicopter has come a long way but, like aviation itself, it still has a long way to go. Many problems must be resolved. Each user will have his own peculiar and particular characteristics and requirements.

In summary we conclude that our present helicopters have performed well within their design limitations and have taught us much concerning the utility of rotary-wing aircraft. We also conclude that the new helicopters we are soon to receive are a great step toward meeting our present day mission requirements. We recommended simplicity and durability as well as increased performance for consideration in new designs.

We believe future developments in the rotary-wing field hold great promise for the attainment of our ultimate "dreamy" requirements for a long-range search and rescue aircraft. Such a craft would be capable of performing a dual function -- that now performed by fixed-wing aircraft and rotary-wing aircraft -- with primary consideration toward long-range, speed, and ability to hover at destination. In this connection we offer the following for consideration:

- (1) Further development of the standard helicopter types
- (2) Development of convertaplane types
- (3) Development of a combination, long-range, fixed-wing mother ship with a small helicopter capable of aerial launching and retrieving.

Are there any questions?

END