

THIS PAGE IS UNCLASSIFIED

THIS PAGE IS UNCLASSIFIED

FOR OFFICIAL USE ONLY

SNC

Director
Air Force Studies Inst
ATTN: Archives Branch
Maxwell AFB, Alabama

RETURN TO:

7312-203-221
21 Jan 1964

THIS PAGE IS UNCLASSIFIED

AIR RESCUE SERVICE BACKGROUND, CAPABILITIES AND REQUIREMENTS
BRIEFING

MADE BY COLONEL RUDOLPH TO HQ MATS

31 JANUARY 1964

INDEXED

Date

PROJECT CORONA HARVEST
DO NOT DESTROY

CATALOGED

CATALOGED

No

0005807

"Reproduced on 4 MAR 69 by ARXLR
by authority of ARXDC. Reproduced
Copy # 1 of 1 cy(s)."

FOR OFFICIAL USE ONLY

ATCH 2

226W

THIS PAGE IS UNCLASSIFIED

THIS PAGE IS UNCLASSIFIED

FOR OFFICIAL USE ONLY

AIR RESCUE SERVICE

Background, Capabilities and Requirements

I. INTRODUCTION:

The principal purpose of this briefing is to present a condensed analysis of the Air Rescue Service capabilities to accomplish its mission, with special emphasis placed on the capability within the Zone of Interior. Some background is necessary to place the analysis in proper perspective. Naturally, capability deficiencies represent requirements. My discussion will follow this connotation.

2. BACKGROUND:

At the end of the Korean War, ARS was a relatively large organization. It was overstrength in respect to its mission requirements. This condition continued until [redacted]

CHART #1 ON - 1956 POSTURE

1956, when ARS consisted of 12 groups, and 37 squadrons. 3 of these groups located in the Z1 consisted of 11 squadrons of 71 fixed-wing aircraft and 12 helicopters. These 3 groups were devoted primarily to military Search and Rescue in support of USAF Z1 operations.

CHART #1 - OFF

~~CONFIDENTIAL - NOT ONLY~~

THIS PAGE IS UNCLASSIFIED

7-3884-3

THIS PAGE IS UNCLASSIFIED

THIS PAGE IS UNCLASSIFIED

In 1956 and again in 1958 and 1959 USAF directed a reduction in ARS strength. As a result all Units were eliminated and overseas strength was reduced to 2 squadrons and 7 detachments. Helicopters were eliminated from ARS with final phase-out in June 1960. Reclama action resulted in the restoration of one ZI fixed-wing squadron, at Eglin AFB. Retention of this squadron was based primarily on overseas air route support, training needs, and ZI/Overseas personnel rotation balance, rather than upon ZI Search and Rescue requirements.

CHART #2 ON - 1960 POSTURE

Search and Rescue or SAR in the United States was to be accomplished through the National Search and Rescue plan and the local base rescue helicopter capability. The National SAR Plan was Presidentially directed, and promulgated in 1956. It provided for centralized direction and control of all available SAR capability within the ZI when an incident occurred. The capability consisted of the Civil Air Patrol, "pick-up" military aircraft from any available source, ground search parties (military and civilian), law enforcement agencies, and other groups, public and private. While this provided for lots of effort and forces, there was little professional SAR capability provided.

CHART #2 - OFF

THIS
PAGE
IS
UNCLASSIFIED

THIS PAGE IS UNCLASSIFIED

THIS PAGE IS UNCLASSIFIED

USAF was made Executive Agent for the Inland Region under the National SAR Plan, the Inland Region refers only to the Continental US. CONAC was designated Inland SAR Coordinator, and exercised the function through 5 SAR Coordination Centers.

CHART #3 ON - LOCATION OF 5 CENTERS

CHART #3 - OFF

The new activated local base rescue function was parceled out to the individual commands.

In 1960, the McKee Board findings led to studies and recommendations that all rescue functions be consolidated under ARS. During 1960 and 1961, the LBR and National SAR functions were transferred to ARS. However, there are certain basic factors which should be made clear, as they bear directly and heavily upon the ARS SAR capability in the ZI. In respect to the National SAR, as in the past, there were no full time professional SAR forces available, except one ~~small~~ squadron at Eglin. In January 1962 the 41st Air Rescue Squadron was reactivated at Hamilton AFB. This squadron was not primarily reprogrammed for ZI SAR support. The 41st reactivation was oriented seaward; we got it to meet Pacific air route, Pacific Missile Range, and Alaskan and special high altitude sampling support requirements.

T
H
I
S

P
A
G
E

I
S

U
N
C
L
A
S
S
I
F
I
E
D

THIS PAGE IS UNCLASSIFIED

THIS PAGE IS UNCLASSIFIED

FOR OFFICIAL USE ONLY

The local base rescue units were tailored for aircraft crashes on and near the air base on which LBR is located. Although very capable in their primary mission, these units were not equipped for extended search, and they were not (and still are not) under the direct operational control of ARS.

3. CURRENT ZI CAPABILITY:

Currently ARS has centralized control and direction of all ZI SAR missions. This is accomplished through the 3 Air Rescue Centers, which replaced the 5 CONAC Centers. To do this job ARS has available only the professional resources shown on this chart.

CHART #4 ON - SHOW NA SQDNS AND 3 ZI ARC'S

EXPLAIN CHART - COVER ZI CENTERS

NAME SQUADRONS AND CENTER LOCATIONS
3 - HATS

- A. CENTER COMMANDERS
- B. SAR CMDRS WITHIN THEIR AREA OF RESPONSIBILITY
- C. SUPERVISE LBR PROGRAM

T
H
I
S

P
A
G
E

I
S

U
N
C
L
A
S
S
I
F
I
E
D

FOR OFFICIAL USE ONLY

THIS PAGE IS UNCLASSIFIED

THIS PAGE IS UNCLASSIFIED

FOR OFFICIAL USE ONLY

The procedure is that these Air Rescue Centers will conduct SAR missions using the CAP, support aircraft from any available source, those local base rescue resources within range of a SAR incident, and any other military and civil capability available, this of course includes any ARS fixed-wing capability which can be on-scene in time.

In practice, this all transpires, but not in such smooth fashion as in theory. Here's why. FIRST, whether it is in airlift, strategic bombardment, or rescue, there is no substitute for professionalism. Most of the resources involved in any given SAR incident are not professional forces. We must through necessity rely on the USAF trained Civil Air Patrol. This relationship has proven quite successful and to some degree fills the gap between ARS requirements and resources. SECOND, except for the vicinity of Eglin and Hamilton AFB's where Air Rescue Squadrons are located, the lack of ARS professional forces and deployment distance involved is a handicap in prosecuting any ZI mission. It is noted that during the recent B-52 crash in Maryland, it was necessary to bring in ARS resources from Goose Bay and Bermuda, as well as Eglin. THIRD, the aircraft with which our squadrons are equipped are ~~completely~~ **unsuitable** for searching over rugged terrain, wooded areas, and where there is deep snow. Our aircraft, while too slow for quick reaction, are too fast for visual survivor search where these handicaps exist.

FOR OFFICIAL USE ONLY

T
H
I
S

P
A
G
E

I
S

U
N
C
L
A
S
S
I
F
I
E
D

THIS PAGE IS UNCLASSIFIED

THIS PAGE IS UNCLASSIFIED

FOR OFFICIAL USE ONLY

This is especially acute as long as our primary search method is dependent upon human vision. Until electronic crash locator beacons and adequate individual aircrew locator beacons are in general use, visual sighting is our only means of locating downed airmen. FOURTH, although our LBR helicopters have been very successful in their primary mission, they are not designed for search duty. They are short range/endurance aircraft. They are not equipped to home on crash/individual locator devices; and, they are restricted from instrument flight. This frequently precludes their arriving on scene, and often limits search under marginal conditions.

ZI SAR shortcomings are not limited to the lack of professional forces. Nor are they limited to ARS. Outside the ARS purview, lack of aircrew rescue/survival techniques, training, and discipline compounds our difficulties. We need to go no further back than the B-52 accident cited earlier. One crew member stayed by his parachute, got out of his wet clothes and into his survival sleeping bag. Using an old type survival radio (URC-II), he talked a helicopter into visual contact and was saved. Two others left their parachutes, abandoned their survival gear, and died.

THIS PAGE IS UNCLASSIFIED

FOR OFFICIAL USE ONLY

THIS PAGE IS UNCLASSIFIED

THIS PAGE IS UNCLASSIFIED

FOR OFFICIAL USE ONLY

As I stated before, there is no suitable aircraft in the ARS inventory to perform efficient search for individuals in rugged, or vegetation or snow covered terrain. This void has existed since general purpose, area coverage helicopters were phased out of the ARS inventory, by USAF Directive. The LBR helicopters can perform short range/duration, VFR, visual search only. The fixed-wing aircraft can accomplish medium range search overwater, desert, or similar terrain. For other search, comprising nearly all ZI requirements, there is a void, or at best a "gray" area. This "gray" area is covered by the capability provided by CAP and "pick-up" non-professional assistance. Although the Civil Air Patrol is, in our opinion, considered a SAR professional force, they too operate fixed-wing aircraft in most cases, and therefore fall generally into the same category as the ARS fixed-wing squadrons.

CHART #4A ON - ZI SAR OPERATIONAL STRUCTURE

EXPLAIN CHART

Despite this jerry-rig arrangement on what may appear to be a jumbled-up mess, we do get the job done, a very large percent of the time. There is however the imposed and built-in calculated risk that will catch up with us at times.

CHART #4A - OFF

FOR OFFICIAL USE ONLY

T
H
I
S

P
A
G
E

I
S

U
N
C
L
A
S
S
I
F
I
E
D

THIS PAGE IS UNCLASSIFIED

THIS PAGE IS UNCLASSIFIED

I would now like to turn to the ARS

4. CURRENT OVERSEAS CAPABILITY:

You have seen how we looked in 1956 and in 1960, and what our current ZI posture is.

CHART #5 ON - CURRENT WORLD-WIDE POSTURE AND RESOURCES

This posture includes those North American based squadrons which I showed previously. Let me emphasize that these North American based squadrons are primarily postured, tailored, and utilized for missions other than ZI SAR. Also ARS has operational control of only the 4 NA units. All ARS squadrons located in the European Area are under the operational control of USAFE and answer to CINCEUR'S requirements. Pacific ARS Squadrons are operationally controlled by PACAF and answer to CINCPAC requirements. Our 64 world-wide local base rescue units, not shown on this chart, are operationally controlled by the Commander of the base on which they are located. Also not shown are two special detachments. (1) At Homestead AFB which controls ARS aircraft in support of Caribbean Recon missions, and (2) our detachment at Goodfellow AFB for recovery of the Balloon sampling operation. Around the world, to accomplish our missions we have 91 units on 79 bases. We maintain aircraft and territories outside the ZI. Please note our present population and UE aircraft.

CHART #5 - OFF

FOR OFFICIAL USE ONLY

T
H
I
S

P
A
G
E

I
S

U
N
C
L
A
S
S
I
F
I
E
D

THIS PAGE IS UNCLASSIFIED

THIS PAGE IS UNCLASSIFIED

The functions our world-wide forces support are considerably more varied and extensive than is commonly known. The ARS mission, from AFR 20-54,

CHART #6 ON - BRIEF MISSION SUMMARY

covers the spectrum. / P A U S E / It includes the responsibility for recovery of aerospace hardware as well as personnel. The recovery of research and developmental hardware is also included, as well as normal command interest in and coordination on rescue/recovery R&D. Nevertheless, most people think of ARS as an organization which responds only to aircraft crashes to locate and aid survivors. The fact is that aid to survivors is not the heaviest workload of our missions, although the most compelling.

CHART #6 - OFF

CHART #7 ON - TABULAR LISTING OF OUR MISSIONS

The charges of AFR 20-54 lead to many missions. Here is an operational breakout of several of them. / P A U S E /
(AF #1 SUPPORT)

ARS always has a mission going on someplace. Last year we prosecuted 12,854 missions, or over 35 missions per day! 4 1/2 % of these daily missions were the emergency type. We go anywhere, to support anyone, anytime, although we are funded - and programmed only - for USAF support.

CHART #7 - OFF

CONFIDENTIAL USE ONLY

T
H
I
S

P
A
G
E

I
S

U
N
C
L
A
S
S
I
F
I
E
D

THIS PAGE IS UNCLASSIFIED

THIS PAGE IS UNCLASSIFIED

FOR OFFICIAL USE ONLY

These USAF missions are supported in several ways: By precautionary strip alert (and there is always one aircraft at each squadron on immediate strip alert for emergencies). By special and additive strip alerts, (at home bases and deployed locations). By precautionary airborne orbital alert, along air routes, or along space capsule ground track; by airborne intercept and escort; by air search, location, and assistance, including the dropping of survival gear and the jumping of our pararescuemen onto land or into water. And, the world-wide local base rescue function.

ARS can perform these functions, but generally in less than the optimum fashion that we desire. There is one exception, the LBR mission, this we can do properly, as these units are properly equipped. Those functions with less than optimum capability are directly attributable to equipment short-comings. By way of comparison, if SAC's capability were on a par with ours, they would just now be preparing to transition from the B-29/50's into the B-36, with the B-47 still on the come! MATS would be progressing from the C-54 to the C-118; TAC from P-51 to F-80. However regardless of our present posture, through close management, ~~much~~ TDY, the constant shifting of aircraft and good maintenance capability, we provide the best recovery force possible.

THIS PAGE IS UNCLASSIFIED

THIS PAGE IS UNCLASSIFIED

THIS PAGE IS UNCLASSIFIED

THIS
PAGE
IS
UNCLASSIFIED

Let me briefly touch on 3 of our more used missions, one at a time, and see how the ARS capability looks. FIRST, precautionary strip alert: We maintain this as an emergency posture at each squadron and LBR location. When an incident occurs we proceed to the location. Our top speed is 160 - 180 knots, depending whether we are in an HU-16 or an HC-54. Time is critical in rescue and the initial period after an accident is the most critical. We regret that our reaction is not faster. SECOND, airborne precautionary orbit: Here again because of our slow speeds, we must launch hours ahead of the aircraft we are supporting in order to get on station in time. If those we are supporting, postpone or abort, we have already flown the majority of the mission. Once we are on station, if a fighter goes down halfway between orbit stations, we are faced again with slow reaction time. We simply cannot fly fast enough to escort the majority of disabled aircraft.

CHART #7A ON - COMPARISON OF PERFORMANCE OVER THE YEARS

This chart demonstrates our lack of capability progress over the years. / P A U S E / If the fighters can fly at all, we can't keep up; the bombers and transports run away from us with one or two engines out.

CHART #7A - OFF

THIS PAGE IS UNCLASSIFIED

THIS PAGE IS UNCLASSIFIED

FOR OFFICIAL USE ONLY

NEXT IS SEARCH AND LOCATION: Overwater, although slow in arriving at the scene, visual or "eyeball" search capability is at its best. However, this falls for short of that desired. Our competent pararescuemen can and do jump under almost any conditions. I am sure you remember their deployment into the open seas to assist Commander Scott Carpenter. They have also secured 5 DISCOVERER capsules in the Pacific Ocean area which would otherwise have been lost, and they are continuously in action on the AMR.

Gentlemen, I have covered with you a short background on ARS and have indicated to you the basic capabilities of the ARS today.

If we are to meet our commitments in the future however we must improve this capability. We can readily identify 4 areas that requires ^{immediate} attention:

CHART #8 ON - Areas Requiring Improvement

- These are:
- (1) Area SAR Coverage
 - (2) Wartime SAR Mission
 - (3) National Space Projects Support
 - (4) Location & Communication

To a very great extent all 4 of these areas are overlapping. Therefore, I will not try to cover them each as a separate entity.

CHART #8 - OFF

FOR OFFICIAL USE ONLY

THIS
PAGE
IS
UNCLASSIFIED

THIS PAGE IS UNCLASSIFIED

THIS PAGE IS UNCLASSIFIED

CHART #9 - OFF

Our efforts to obtain a suitable overland search and recovery vehicle dates from the time helicopters were first phased out of ARS.

CHART #10 ON - RECAP OF EFFORTS TO OBTAIN AREA COVERAGE
HELOS

A Major stumbling block to this objective has been a widespread and consistent misunderstanding of helicopter roles, capabilities and LBR organizational and functional requirements.

CHART #10 - OFF

When we request general purpose area coverage helicopters, the fact that we have 150 helicopters in our inventory almost inevitably results in the reaction, "Why can't you use them?" There are several reasons, lack of range, lift limitation, lack of speed, VFR flight only, lack of adequate communication gear, not suitable for our war time mission, to name a few. But, let me say again that life saving, fire-suppression, LBR function that the HH-43B was bought to accomplish, - it is stops.

T
H
I
S

P
A
G
E

I
S

U
N
C
L
A
S
S
I
F
I
E
D

THIS PAGE IS UNCLASSIFIED

THIS PAGE IS UNCLASSIFIED

A long range, twin engine, heavy lift helicopter for the area job will provide ARS with the capability to accomplish overland SAR, balloon recovery, Cape Kennedy launch abort support - which by the way we are tasked by DOD to provide - and our wartime recovery mission.

Our wartime mission is to deny the enemy possession of our downed aircrews and to return these invaluable assets to US control by picking them up in the battle zone, and from within hostile territory. We ~~do not have this~~ capability. Our most capable LBR equipped HH-43B's would be marginal and then only after modification.

Another misunderstanding concerning helicopters plagues us. We need to have a mobile capability for the LBR's so they can readily deploy with the aircraft they are to support. This requirement has been confused with our requirement for mobile, area coverage, general purpose helicopters, to cover the "gray" areas I spoke of earlier, and for our wartime mission. Adding heavy helicopters such as the CH3C will give us some LBR requirement relief, since the CH3C can fill the LBR needs. The reverse is not the case, however.

Now let me briefly cover the NASA (and in the future, USAF) space support requirements.

THIS PAGE IS UNCLASSIFIED

THIS PAGE IS UNCLASSIFIED

THIS PAGE IS UNCLASSIFIED

A long range, twin engine, heavy lift helicopter for the area job will provide ARS with the capability to accomplish overland SAR, balloon recovery, Cape Kennedy launch abort support - which by the way we are tasked by DOD to provide - and our wartime recovery mission.

Our wartime mission is to deny the enemy possession of our downed aircrews and to return these invaluable assets to US control by picking them up in the battle zone, and from within hostile territory. We ~~do not have this~~ capability. Our most capable LBR equipped HH-43B's would be marginal and then only after modification.

Another misunderstanding concerning helicopters plagues us. We need to have a mobile capability for the LBR's so they can readily deploy with the aircraft they are to support. This requirement has been confused with our requirement for mobile, area coverage, general purpose helicopters, to cover the "gray" areas I spoke of earlier, and for our wartime mission. Adding heavy helicopters such as the CH3C will give us some LBR requirement relief, since the CH3C can fill the LBR needs. The reverse is not the case, however.

Now let me briefly cover the NASA (and in the future, USAF) space support requirements.

T
H
I
S

P
A
G
E

I
S

U
N
C
L
A
S
S
I
F
I
E
D

THIS PAGE IS UNCLASSIFIED

THIS PAGE IS UNCLASSIFIED

[REDACTED]

CHART # 12 ON - HC-130H REQUIREMENTS (78)
PROGRAMMED (60)
FUNDED (15)

This is the status of these aircraft. We must be successful in obtaining programming and funding action for those beyond the first 15.

CHART # 12 - OFF

Before going on to the next subject, may I show you our projected aircraft program.

CHART #13 ON - ACFT PROGRAM

The blue line represents our 30 HU-16 aircraft. Although 14 years old these aircraft are programmed to remain in ARS through the next 5 years. Yellow line, HC-97's. We expect to get 28 of these aircraft starting in April 64. The last aircraft scheduled for ARS in Aug 64. These aircraft are programmed to be an interim bird until the programmed HC-130's take their place. Their effectiveness will be marginal. The 36 HC-54 aircraft, green line, will also phase out as the HC-130 come into the inventory. The brown represents our projected HH3C helicopters. These 8 are projected to go, 4 to Goodfellow AFB for balloon recovery and 4 to Patrick AFB for AMR support.

CHART #13 - OFF

THIS PAGE IS UNCLASSIFIED

THIS PAGE IS UNCLASSIFIED

FOR OFFICIAL USE ONLY

Last, we need electronics and communication gear, both for our own aircraft and for those we support.

CHART #14 ON - RESUME' OF ATTEMPTS TO OBTAIN CRASH AND PERSONAL LOCATOR BEACONS, AND PROPER COMMUNICATIONS GEAR

We can understand, although not support, delays in obtaining proper communications gear. It is difficult to demonstrate our needs except when a tragic incident occurs. Furthermore, there are many views as to what is best; ours has frequently failed to prevail.

/ P A U S E /

CHART #14 OFF

What does puzzle us, however, is why we can't get crash and personal locators. Since WW II, we can find no evidence of opposition to such gear. On the contrary, everyone agrees that it is needed. But we've spent so long awaiting the ultimate gear that for 18 years we've had no suitable beacons. We have had almost 100% success in the recovery of aerospace hardware. Beaconry used in this hardware are in many cases very suitable to fill the requirement in question. In this equipment field we must buy the best available now; buy again when improvements come out, and continue to stay abreast. These are relatively small expenditures compared to the potential life savings that could be realized over the years.

FOR OFFICIAL USE ONLY

T
H
I
S

P
A
G
E

I
S

U
N
C
L
A
S
S
I
F
I
E
D

THIS PAGE IS UNCLASSIFIED

THIS PAGE IS UNCLASSIFIED

TOP SECRET - NOE ONLY

Some place you have to stop waiting for the ultimate and buy equipment. Designs on paper save no lives. These beacons and an effective USAF program for their use are needed now. We have cost out the recent C-124 Pacific area search at 1.35 million dollars. Suitable beacons will cut this cost considerably.

CHART # 15 ON - SCHEMATIC OF 3 TYPES OF CAPABILITY WE NEED

Together with effective location beaconary and communications gear we require three basic types of SAR capability.

- a. Local Base Support. This we have in our LBR program, however the coverage is limited.
- b. Coverage of rugged, terrain, wooded areas and deep snow. Our capability is limited. Aircraft such as the HH-3C helicopters are required.
- c. Long Range Missions. Capability is limited. Will improve slightly with arrival of the HC-97. The HC-130 with the capabilities outlined is required.

CHART #15 - OFF

CHART #16 ON - BUILDUP OF % FLYING TIME DEVOTED TO MISSIONS

Our mission time percentage is building year after year. This chart indicates the growth over the last 6 years.

T
H
I
S

P
A
G
E

I
S

U
N
C
L
A
S
S
I
F
I
E
D

TOP SECRET - NOE ONLY

THIS PAGE IS UNCLASSIFIED

THIS PAGE IS UNCLASSIFIED

[REDACTED] ONLY

A recent official request to our using agencies for their predicted support requirements shows that they will continue to expand. CLEARWATER actions are expected to further raise these requirements.

/PAUSE/

CHART #16 - OFF

In summary, if ARS capabilities are to reach the level our users expect and need, we have ~~tot~~ to spend, in practically one package, the money that 14 years of neglect dictates. We must have equipment compatible with the systems we support, and the tasks we must accomplish.

Gentlemen - since the days of Kitty Hawk, man has had trouble in the air. I foresee nothing that will change this trend. If we are to aid these flyers, and I am sure that the US public will demand just that, a complete and effective search and recovery capability must be "in being".

T
H
I
S

P
A
G
E

I
S

U
N
C
L
A
S
S
I
F
I
E
D