PROJECT CHECO SOUTHEAST ASIA REPORT

SEARCH AND RESCUE OPERATIONS IN SEA

1 JANUARY 1971 - 31 MARCH 1972

CONTINUING REPORT

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14. ABSTRACT

Project CHECO was established in 1962 to document and analyze air operations in Southeast Asia. Over the years the meaning of the acronym changed several times to reflect the escalation of operations: Current Historical Evaluation of Counterinsurgency Operations, Contemporary Historical Evaluation of Combat Operations and Contemporary Historical Examination of Current Operations. Project CHECO and other U. S. Air Force Historical study programs provided the Air Force with timely and lasting corporate insights into operational, conceptual and doctrinal lessons from the war in SEA.

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PROJECT CHECO REPORT

Contemporary Historical Examination of Current Operations

SEARCH AND RESCUE OPERATIONS IN SEA (U)
1 January 1971 - 31 March 1972

17 OCTOBER 1972

HQ PACAF

Directorate of Operations Analysis
CHECO/CORONA HARVEST DIVISION

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Project CHECO 7th AF, DOAC

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS PACIFIC AIR FORCES
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PROJECT CHECO REPORTS

The counterinsurgency and unconventional warfare environment of Southeast Asia has resulted in the employment of USAF airpower to meet a multitude of requirements. The varied applications of airpower have involved the full spectrum of USAF aerospace vehicles, support equipment, and manpower. As a result, there has been an accumulation of operational data and experiences that, as a priority, must be collected, documented, and analyzed as to current and future impact upon USAF policies, concepts, and doctrine.

Fortunately, the value of collecting and documenting our SEA experiences was recognized at an early date. In 1962, Hq USAF directed CINCPACAF to establish an activity that would be primarily responsive to Air Staff requirements and direction, and would provide timely and analytical studies of USAF combat operations in SEA.

Project CHECO, an acronym for Contemporary Historical Examination of Current Operations, was established to meet this Air Staff requirement. Managed by Hq PACAF, with elements at Hq 7AF and 7/13AF, Project CHECO provides a scholarly, "on-going" historical examination, documentation, and reporting on USAF policies, concepts, and doctrine in PACOM. This CHECO report is part of the overall documentation and examination which is being accomplished. It is an authentic source for an assessment of the effectiveness of USAF airpower in PACOM when used in proper context. The reader must view the study in relation to the events and circumstances at the time of its preparation--recognizing that it was prepared on a contemporary basis which restricted perspective and that the author's research was limited to records available within his local headquarters area.

Robert E. Hiller

ROBERT E. HILLER
Director of Operations Analysis
DCS/Operations

[redacted]

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS PACIFIC AIR FORCES
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FOREWORD

This is the sixth report in a series by the Southeast Asia CHECO office on Search and Rescue operations. In preparing the fifth report--the period covering July 1969 through December 1970--the author of that study felt that it would possibly be the last on the subject during the war in Vietnam. For that reason, he elected to summarize all Search and Rescue activities in Southeast Asia to present what had transpired in that area through 1970. The reader seeking background information on Search and Rescue in Southeast Asia is, therefore, referred to the previous CHECO publications on the subject, primarily "USAF Search and Rescue in Southeast Asia--1 July 1969-31 December 1970," dated 23 April 1971.

This continuation report is directed toward covering those significant events which took place during 1971 and the first quarter of 1972. While the report was being prepared, great changes were taking place in concepts and tactics for Search and Rescue operations. Some of the changes were a direct result of the unilateral withdrawal of US forces from Southeast Asia, while others were simply a result of finding better ways of doing things.

It was true that when an aircraft was downed, practically all theater resources were made available for the rescue operation. However, the primary rescue-dedicated force was controlled by the 3rd Aerospace Rescue and Recovery Group. For that reason, the study places emphasis on the Group's operation, but the discussion will include,

when applicable, the support offered by outside resources. Throughout the research phase, the author met with unlimited cooperation by everyone contacted. The overall impression, hopefully conveyed in the report, is that there has never been a group of people more dedicated to a goal than those associated with Search and Rescue in Southeast Asia. Although bitter failures and tragedies were encountered during the period, there were also unprecedented successes. Through it all, the men flying combat in Southeast Asia could be assured that in the event they were downed, every conceivable effort would be made to get them back.

[redacted]

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CHAPTER I

MISSION AND ORGANIZATION

The mission of the 3rd Aerospace Rescue and Recovery Group (3ARRGp) remained unchanged during the reporting period 1 January 1971 through 31 March 1972. The organization of the group, however, underwent significant changes, both through relocations and inactivations of some of its units.

MISSION

The 3ARRGp continued to provide a tactical force to rescue and recover personnel engaged in operations in Southeast Asia (SEA). The group planned, organized, coordinated, and controlled the execution of rescue operations. Command and control was provided through the Joint Rescue Coordination Center (JRCC), two Rescue Coordination Centers (RCC), and an Airborne Mission Commander (AMC).

The Commander, 3ARRGp, served on the 7th Air Force (7AF) staff as Director of Aerospace Rescue with the subordinate functions of: 1/

1. advising the Commander, 7AF, on matters pertaining to rescue and recovery requirements and procedures.

2. Coordinating on matters pertaining to all Aerospace Rescue and Recovery Service (ARRS) activities, requirements, and responsibilities in SEA.

[redacted]

3. exercising operational control of all rescue forces in SEA in accordance with policies established by the Commander, 7AF, and/or the Commander, 41st Aerospace Rescue and Recovery Wing (41ARRWg).

4. keeping the Commander, 41ARRWg, informed of Search and Rescue (SAR)/Recovery requirements and all planned or conducted SAR operations.

5. reporting directly to the Commander, 41ARRWg, on all command and administrative matters.

ORGANIZATION

The Military Airlift Command (MAC) was responsible for ARRS activities while the 41ARRWg at Hickam AFB, Hawaii, exercised administrative control over the Pacific region. The 3ARRGp, located at Tan Son Nhut Air Base (AB) in the Republic of Vietnam (RVN), was operationally responsible to 7AF, and executed the SAR mission throughout SEA. As of 1 April 1972, there were two squadrons serving under the 3ARRGp--the 37th Aerospace Rescue and Recovery Squadron (ARRSq) at Da Nang AB, RVN, and the 40ARRSq, located at Nakhon Phanom (NKP) Royal Thai Air Force Base (RTAFB), Thailand.

Two squadrons of the 3ARRGp were inactivated during the reporting period. The 38ARRSq at Tan Son Nhut was inactivated on 30 June 1971, and those Local Base Rescue (LBR) detachments (Det) that had been under the squadron became Dets of the Group. On the 31st of March 1972, the 39ARRSq at Cam Ranh Bay AB, RVN, was officially inactivated.

By that time, the unit (minus four aircraft and approximately 100 personnel) had joined Det 4 of the 3ARRGp and was performing its mission from Korat RTAFB, Thailand.[2/]

Further reductions in strength occurred with the continuing drawdown of USAF forces in RVN. With the cessation of flying activities at Phu Cat, Phan Rang, and Cam Ranh Bay Air Bases, the requirement for LBR operations at those locations no longer existed. Although there was a scale-down of USAF flying activity at Bien Hoa AB, RVN, continuous LBR support was provided that base by augmenting Det 14 at Tan Son Nhut and rotating aircraft on a temporary duty basis. In April 1972, the arrangement of the units of the 3ARRGp was as follows:[3/]

Unit	Location
JRCC	Tan Son Nhut AB, RVN
Operating Location (OL)-Alpha, RCC	Son Tra AB, RVN
OL-Bravo, RCC	Udorn RTAFB, Thailand
37ARRSq	Da Nang AB, RVN
40ARRSq	NKP RTAFB, Thailand
Det 3	Ubon RTAFB, Thailand
Det 4	Korat RTAFB, Thailand
Det 5	Udorn RTAFB, Thailand
Det 12	U-Tapao Royal Thai Naval Base (RTNB), Thailand
Det 14	Tan Son Nhut AB, RVN

(The above information is presented geographically in Figure I.)

Unit Assets and Responsibilities.

JRCC. Located with the 7AF Command and Control Center (7AFCCC), the JRCC (Joker) provided the command and control necessary in coordinating the complex SAR operation. When notified that an aircraft was down, Joker made the decision as to which RCC could best control the SAR effort. The decision was based primarily on the location of the downed aircraft since each RCC had its designated area of responsibility (see Figure 2). Based on communications considerations, Joker could elect to retain primary control of the mission. Also, in determining which of the rescue squadrons to use, Joker decided which was offered the best ingress and egress routes to effect the rescue. Whether it delegated or retained primary control, Joker insured that the following actions were taken:4/

1. The SAR forces were either alerted or launched.

2. The 7AFCCC (Blue Chip) Senior Duty Officer (SDO) was informed of the downed aircraft and what SAR action was being taken.

3. If one was not already there, a suitable Forward Air Controller (FAC) was directed to the SAR area as soon as possible.

4. Key personnel were notified and affected/interested agencies were advised.

The task of Joker than became one of coordinating a myriad of details with Blue Chip and other agencies. Intelligence information was examined, and if it was determined that MIG aircraft and/or Surface-to-Air Missiles (SAM) posed a threat to the SAR operation,

3ARRGp ORGANIZATIONAL UNITS

As of 1 April 1972

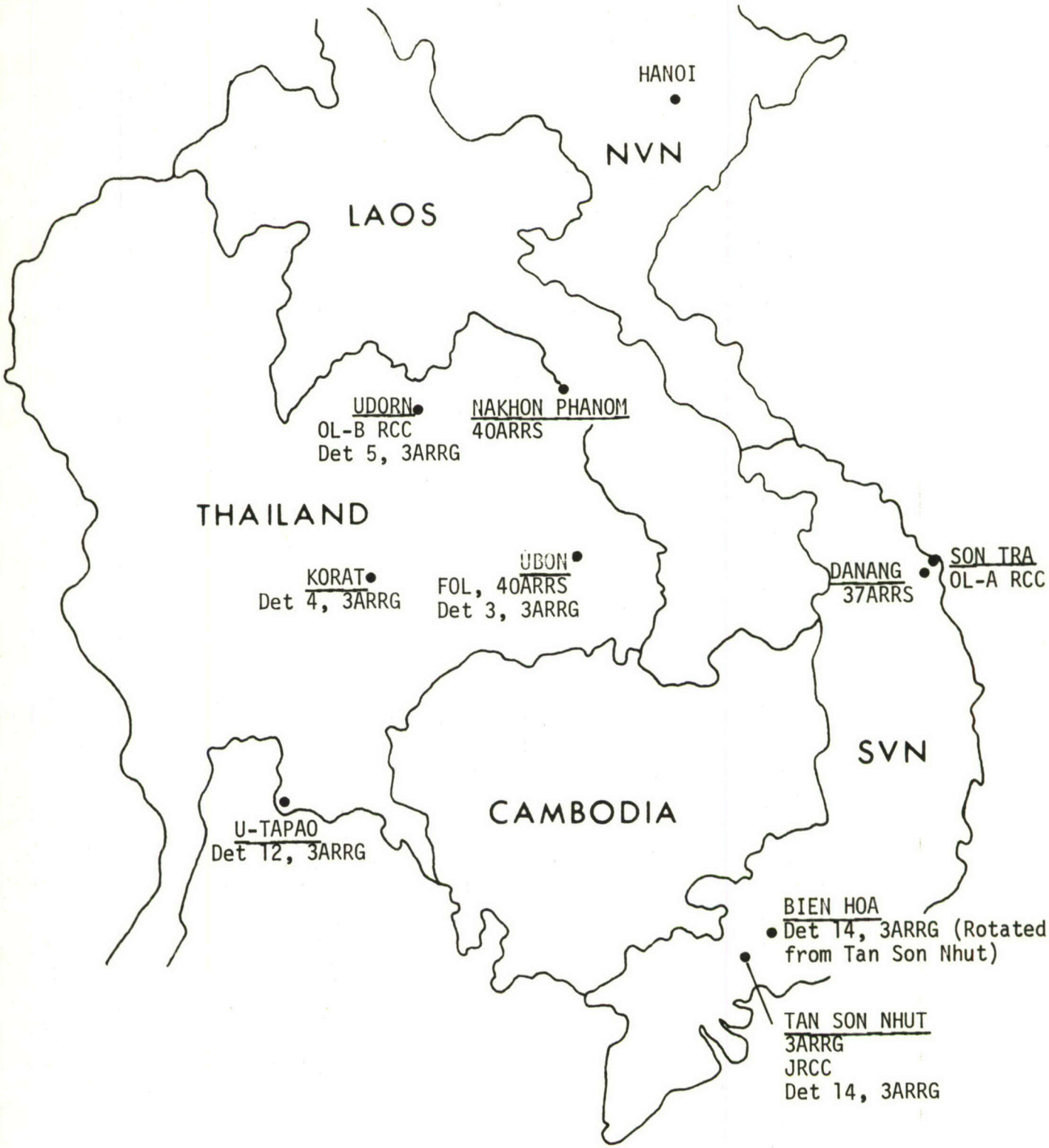
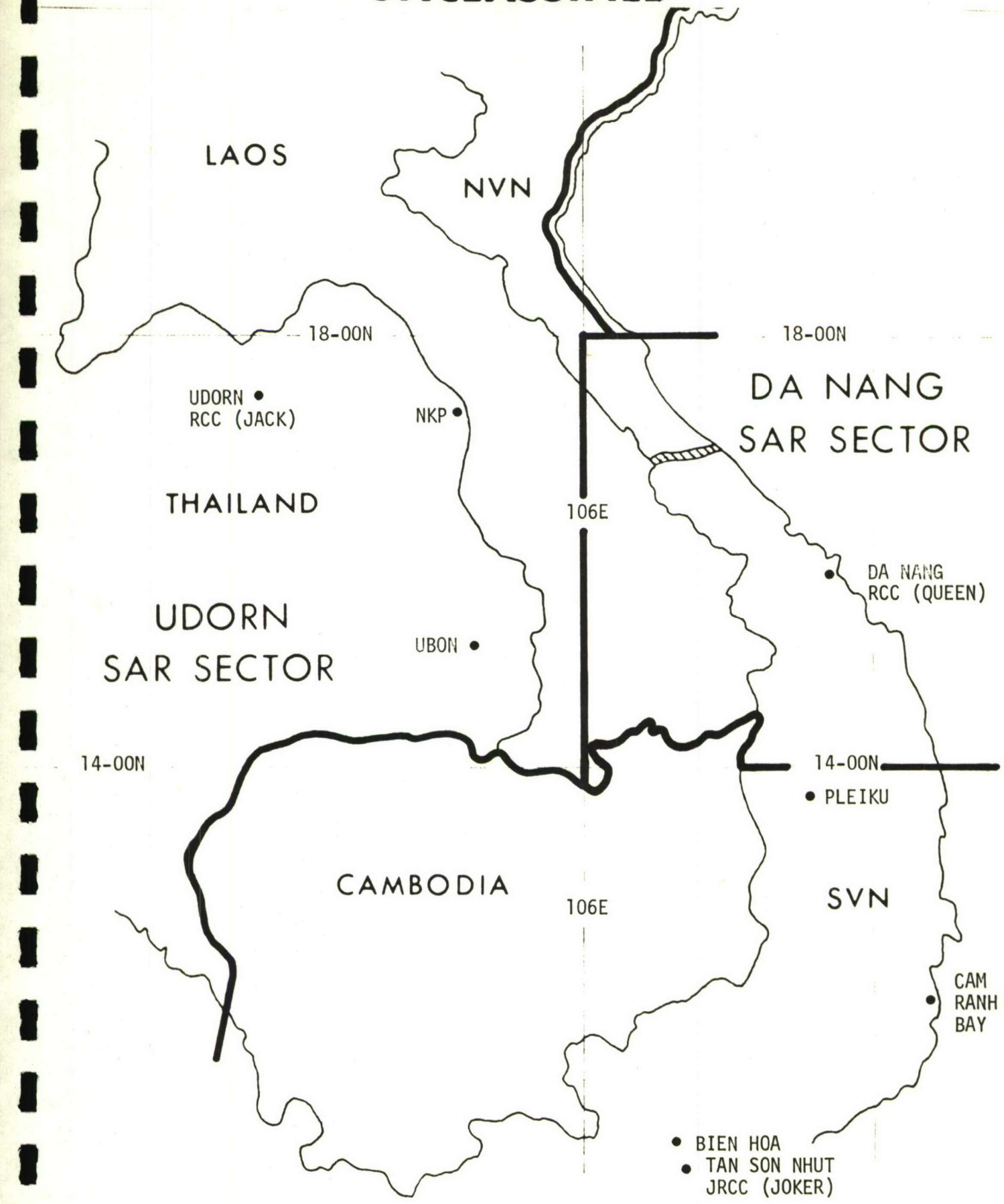


Figure 1

SOURCE: 3ARRGp



Designated SAR Sectors of the Southeast Asia Region

Figure 2

appropriate defenses were requested through Blue Chip. Additionally, Joker coordinated with Blue Chip to insure that requested strike aircraft were available with proper ordnance to complete the SAR effort. Finally, if the SAR operation was halted, and the decision made for a first light effort the next day, Joker was responsible for coordinating to secure adequate forces for the estimated duration of the operation.5/

Operating Location Alpha (OL-A). OL-A was the RCC responsible for SAR operations in the Da Nang Sector. The sector was defined as the land area bounded by 1800N, 1060E, 1400N (minus the northeast portion of Cambodia), and adjacent water within the Saigon Flight Information Region.6/

After delegating mission control to OL-A (Queen), Joker assumed a monitoring role. Queen was then responsible for coordination with the AMC and the SAR coordinator (SARCO), obtaining required forces and ordnance, and keeping Joker informed on the progress of the operation.

Operating Location Bravo (OL-B). The area of responsibility for OL-B (Jack) was the Udorn SAR Sector. This sector was defined as the land area for all of Thailand, all of Laos west of 10600E, and all of North Vietnam (NVN) west of five miles inland from the Gulf of Tonkin (GOT), and minus the southern portion assigned to the Da Nang SAR Sector. After assuming control of a SAR mission, the responsibilities of Jack were similar to those described for Queen.7/

37ARRSq. The 37ARRSq, equipped with HH-53 helicopters, was responsible for maintaining an alert posture at Da Nang AB and at specified orbit points when applicable. Until 5 December 1971, the 37th had also provided two aircraft on SAR alert at Bien Hoa AB. The closure of the Forward Operating Location (FOL) at Bien Hoa allowed for the reduction in Unit Equipped (UE) aircraft and the number of assigned HH-53 "Jolly Greens" stood at eight at the end of the reporting period.8/

In addition to the HH-53s, two HH-43 "Pedros" were assigned to the 37th for the LBR mission. The Pedro helicopters were primarily used in non-hostile environments and were limited (due to aircraft range) to operations within 75 miles of the base. However, when necessary and requested by the JRCC, these helicopters were available for combat rescue.9/

40ARRSq. The 40ARRSq was also equipped with Jolly Green and Pedro helicopters. The squadron moved from Udorn RTAFB to NKP RTAFB effective 21 July 1971. Prior to that, the 40th had maintained both a Det at NKP and an FOL at Ubon RTAFB for SAR alert. Following the move, alert was no longer pulled at Udorn while the FOL was retained at Ubon. Det 3 had been responsible for the LBR function at NKP but on 15 September 1971 the Pedros became part of the 40ARRSq.10/

Det 4. Through almost all of the reporting period the HC-130P "King" aircraft were stationed at Cam Ranh Bay and flew daily orbits in Laos. An additional HC-130P was positioned on alert at Udorn from first light to last light. Prior to the 31 March 1972 inactivation of the 39ARRSq (to which the HC-130s had been assigned), seven King aircraft were moved to Korat RTAFB to continue operations joining Det 4, 3 ARRGp. With the unit at Korat, there was no longer a need for the alert at Udorn and it was discontinued.

With the addition of the King aircraft, the mission of Det 4 was to provide an extended search capability, act as the AMC during SAR operations, and to serve as tankers for the Jolly Greens. The Pedros remained with Det 4 for the LBR mission.

LBR Dets. In addition to the HH-43 Pedros assigned to the 37ARRSq, the 40ARRSq, and Det 4, there were four detachments providing LBR for five other bases in SEA. Detachment 14 at Tan Son Nhut was expanded and performed the LBR mission at both Tan Son Nhut and Bien Hoa. The other detachments were Det 3 at Ubon, Det 5 at Udorn, and Det 12 at U-Tapao. The mission of the Pedros was to provide a fire fighting capability and to recover downed pilots in close proximity to their bases. As mentioned earlier, they were also on call, range permitting, for rescue operations in hostile areas.11/

In summary, the force posture of the 3ARRGp underwent significant modifications during 1971 and the first quarter of 1972. There were fewer ARRS aircraft operating from fewer locations as the redeployment of USAF forces continued. When asked what effect the redeployments and the realignment of 3ARRGp resources had on SAR flexibility, Colonel Frederick V. Sohle, Jr., Commander, 41ARRWg, replied:[12/]

> *Very little effect. There was some reduction in response to the area of the Plaines des Jars and to the north and northwest but [moving the 40ARRSq from Udorn to NKP was] much better for Steel Tiger [southern Laos] where most of the action was.*
>
> *Moving the tactical fighter wings out of RVN during the redeployments resulted in LBR shutdowns, but Army and other helicopters made the majority of the pick-ups in-country. The air war is along the trail, unless we go north again.*
>
> *There has been little drawdown of SAR forces yet. When there is, the responsiveness will not be affected. Except for prolonged missions or multiple missions, SAR will continue as is.*

Colonel Sohle's reference to prolonged and multiple missions indicated a problem area that could be expected to become more severe in the future. The proliferation of enemy Antiaircraft Artillery (AAA) provided an increasing threat to air operations in SEA. When aircraft were downed, the job of recovering the survivors was becoming more hazardous and, in some cases, several days were required to render the SAR area permissive enough to enable the recovery to take place.

Another situation--one that would almost certainly call for a change in concepts and tactics--was the dwindling supply of Rescue Escort (RESCORT) aircraft dedicated to the SAR mission. Since its inception, the SAR Task Force (SARTF) in SEA had included the A-1 Skyraider. The "Sandys," while not in the 3ARRGp organization, were an integral part of the SAR tactics that had proved so successful. These problems and others will be discussed at length in Chapter IV, Operations.

CHAPTER II

AIRCRAFT AND SYSTEMS

AIRCRAFT

HH-53.

Throughout the January 1971-March 1972 period, the primary air rescue aircraft was the HH-53B/C (by the middle of 1971 the more powerful "C" model had replaced the remaining "Bs"). The aircraft was known as the BUFF which, although a less complimentary definition of the acronym was known to exist, stood for Big Ugly Friendly Fellow. More commonly used, however, was the familiar nickname and tactical callsign, Jolly Green.

The big helicopter carried a basic crew of five, consisting of the pilot and co-pilot, flight engineer, and two pararescue men (PJ). Features of the Jolly Green included: an Automatic Flight Control System (AFCS); a jungle penetrator on a 240 foot cable that was capable of hoisting 600 pounds; armor plating for crew and vital aircraft component protection; and three 7.62 mm mini-guns for use during operations in hostile environments. The HH-53's unrefueled radius of action was approximately 275 nautical miles (its air refueling capability provided an indefinite airborne time) and it was limited to the following airspeeds: forward flight at 170 knots; rearward flight at 30 knots; and sideward flight at 35 knots.13/

The HH-53 could lift heavy loads and carry up to 40 passengers and was, therefore, ideally suited for global ARS operations. It was also the best aircraft available for SAR operations in SEA but its size and the power required to operate it worked to its disadvantage in combat. When asked how adequate he thought the HH-53 was in performing the SAR mission, Colonel Sohle replied:[14/]

> *The HH-53 is good for heavy lift and fairly durable against small arms, but it is too big and produces too much downwash. We need an all-weather capability to locate and recover downed airmen. We need improved radar to fly low-level and we need a warning system for the missile threat. I think a small, fast, easily maneuvered helicopter with an inflight refueling capability would be best.*

HH-43.

The HH-43 Pedro had long been used for the LBR mission in SEA with the "F" model in use during the reporting period. Its performance envelope limited it to airspeeds of 105 knots for forward flight, and an estimated 20 knots for sideward and rearward flight. Its limited radius of action restricted its use as a combat rescue aircraft except in those cases where it could be employed near its base.[15/]

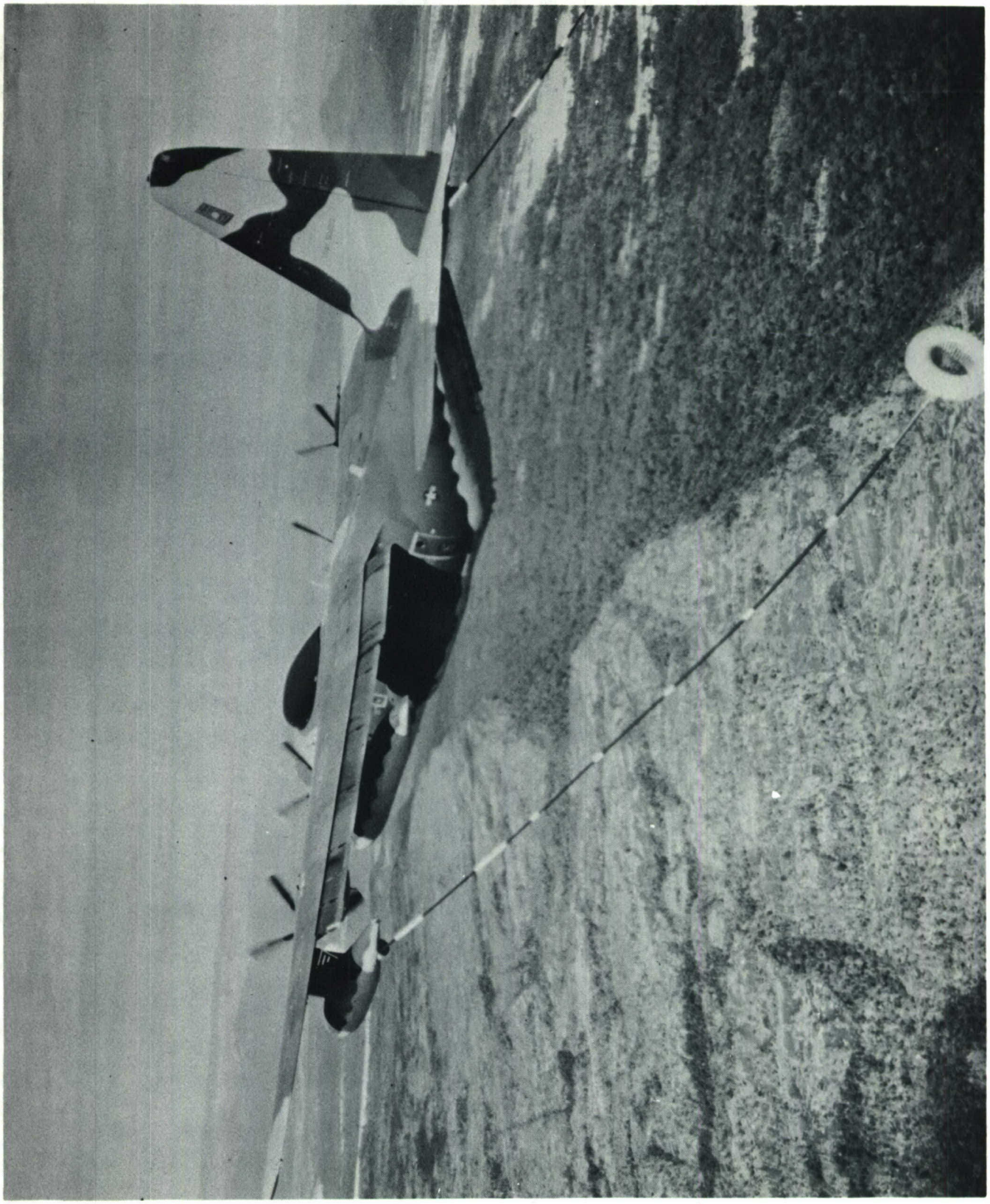
During Visual Flight Rules (VFR), day operation, only one pilot was required, while two were used at night and in Instrument Flight Rules (IFR) conditions. In addition to the pilot(s), there were two firefighters, one medical technician, and a crew chief. For SAR operations, the Pedro was equipped with a jungle penetrator on a 217 foot cable.[16/]

HH-53 "Jolly Green"

FIGURE 3

HH-43 "Pedro"

FIGURE 4



HC-130P "King"

FIGURE 5

HC-130.

The four-engined HC-130P King aircraft provided the communications link between the appropriate RCC (or the JRCC) and the SAR operation. King also provided the airborne mission control by coordinating requests for ordnance by controlling the flow of the various aircraft to the On-Scene Commander (OSC) for his use in neutralizing enemy defenses. To provide the communications capability, the HC-130 was equipped with High Frequency (HF), Very High Frequency (VHF), Ultra High Frequency (UHF), and Frequency Modulated (FM) radios.[17/]

The HC-130P also served as a tanker to refuel the Jolly Greens, thus providing the helicopters a theoretically unlimited operational capability. The crew of the King included two pilots, a navigator, a radio operator, two flight engineers, and a loadmaster.

RESCORT and FAC Aircraft

Other aircraft, though not assigned to the 3ARRGp, played an important role in SAR operations. One--the A-1 "Skyraider"--continued to be the best RESCORT aircraft available for providing the Jolly Greens with protection during SAR operations. Another aircraft--the OV-10 "Bronco"--had features that made it a very promising addition to the SARTF.

A-1

By the beginning of the reporting period, all USAF A-1 assets were consolidated at NKP under the 1st Special Operations Squadron (SOS) of the 56th Special Operations Wing (SOW). Although the 1SOS was responsible

for several different missions, a prescribed number of A-1s were made available daily for SAR support. As had been the case for years, "Sandy" was the tactical callsign for those SAR-dedicated A-1s.

The A-1 came in two basic models--the A-1E (or G) and the A1-H (or J). The primary difference was that the A-1E offered a side-by-side seating arrangement, while the A-1H was a single seater. Since the crew of an A-1 normally consisted of one pilot, the better visibility afforded by the single seat version made it the one preferred for combat, especially for the SAR mission.

The features of the A-1 that made it so ideally suited as a RESCORT aircraft included the following:[18/]

1. Its speed range was compatible with that of the Jolly Green, enabling it to easily escort the helicopter to the SAR area and, during the actual run-in to pick the survivor up, could provide continuous close cover during the ingress and egress.

2. Its 14 store racks (in addition to the external fuel station) provided for the carrying of an impressive variety of ordnance for suppressing enemy ground fire for long periods. It also had four 20mm guns mounted in the wings.

3. Its loiter time (up to five hours) enabled the A-1 pilots to remain in the SAR area for long periods, reducing the number of relief flights required both for RESCORT and strike roles.

4. The armor plating provided for the protection of the pilot and vital aircraft components enabled the A-1 to operate with acceptable risk in a small arms environment.

A-1 "Sandys" Escorting a "King" and a "Jolly Green" (HH-3)

FIGURE 6

The venerable old bird had been long-threatened with extinction, at least in regard to its use by the USAF. Both Vietnamization programming and normal attrition were combining to spell the end of the 1SOS by the end of Fiscal Year (FY) 1971. Plans for force reductions in Thailand called for the turn over of the remaining A-1s to the Vietnamese Air Force (VNAF) under the Improvement and Modernization program. It was through intervention at the State Department level that this turnover was prevented.* 19/

The 1SOS was thus scheduled to be continued through FY 1972, although a number of its A-1s were scheduled to be delivered to the VNAF. As FY 1973 approached, the problem appeared to be surfacing again. Advanced planning called for between 10 and 15 A-1s to be stationed at NKP--hardly enough to support SAR operations alone. Whether the State Department would step in again, or what effect the enemy's 1972 spring invasion of SVN would have, remained to be seen. What was known, however, was that the finding of a suitable replacement for the A-1 in the SAR operation was difficult to imagine. Colonel Sohle said on the subject:

> *We still say there has been no aircraft developed to replace the A-1 to support the tactics now employed--maybe the tactics can be changed, but in the present situation, we don't know.* 20/

---

*The A-1 was retained for other covert missions, as well as for SAR operations.

OV-10

The OV-10 was proving to be a worthy addition to the SARTF by the end of 1971. It had neither the firepower nor the survivability to function as the A-1 did, but there were advantages to the OV-10 also. These advantages will be discussed in the "Operations" section, but generally speaking, they were:

1. The OV-10 FACs (as were all FACs) were more familiar with likely SAR areas than the Sandy pilots could be expected to be. They were likely to be in the area when the trouble began and they could locate the survivor and direct airstrikes against enemy positions while the SAR force was enroute.

2. A very special OV-10--the "Pave Nail"--was equipped with sophisticated electronic gear which enabled it to pinpoint and maintain a survivor's position. Its gear also gave the Pave Nail the capability of directing extremely accurate fire against enemy positions.

With the diminishing number of A-1s, the need for this type of assistance was becoming more critical. The time was approaching when the SAR force could no longer be launched without being assured that there was indeed an objective, and that the area was permissive enough to allow a rescue attempt.[21/] Specifications of the OV-10 were:[22/]

1. It carried a pilot and an observer.

2. It had provisions for carrying four external stores as well as four 7.62mm guns. It could carry additional munitions or a single external fuel tank on a centerline store station under the fuselage.

3. It had two turbo-prop engines and was capable of single engine flight.

RESCAP Aircraft

The Rescue Combat Air Patrol (RESCAP) consisted of all the additional tactical resources that could be brought to bear on the enemy's opposition to a SAR effort. This force included specially configured A-1s capable of laying smoke screens around the survivor and "fast-movers," such as the F-4 for SAM suppression and protection against MIGs. Against heavy defenses, the fast-movers were required to neutralize the area to a degree where the slow moving Sandy/Jolly team could expect to survive during a pickup attempt.

In summary, the SARTF was composed of any and all resources that could be of use during a SAR operation. The command and control of such a diversified force was a truly complicated matter. On occasion the control broke down, but it is to the system's credit that it functioned as well as it did. The manner in which all these elements were meshed in accomplshing the SAR mission will be covered in Chapter IV, Operations.

SYSTEMS

Following is a discussion of some of the major systems and subsystems that were considered necessary for improving the SAR operation in SEA. While final disposition had been made on some of the systems, others awaited further action as the reporting period ended.

Limited Night Recovery System

The need for a night recovery system was first expressed in Southeast Asia Operational Requirement (SEAOR) #114. It was originally envisioned that a night SAR system would enable rescue helicopters to search for, locate, and recover downed airmen at night and during low visibility conditions. The SEAOR was later converted to Combat Required Operational Capability (CROC) 11-70. When the project was declared complete on 1 May 1971,[23] three years after it was initiated, it was more limited than originally conceived.

The Limited Night Recovery System (LNRS) known as "Pave Imp" was what finally evolved. It consisted primarily of Low Level Light Television (LLLTV), a door mounted Night Observation Device, special goggles to improve the crew's night vision, and an automatic approach and hover capability. The system had undergone considerable development and technical difficulties, but MAC announced on 26 February 1971 that initial testing had been successfully completed and that Pave Imp was ready for SEA deployment.[24]

Three of the Pave Imp-modified HH-53s arrived at Udorn RTAFB on 28 March 1971 with two more following on 24 May. The five aircraft were flown by the 40ARRSq as directed by MAC Operational Test and Evaluation (OT&E) 6-6-71. The primary objectives during the SEA introduction were to:[25]

1. Evaluate the effectiveness of LNRS in a combat environment in accomplishing the primary day-night rescue missions.

2. Evaluate the maintainability and supportability of LNRS in a combat environment.

3. Evaluate the adequacy of operational tactics, techniques, and procedures developed during testing in the U.S.

4. Determine if established training requirements were adequate for SEA application.

5. Determine and document recommendations for improvements toward achieving an optimum day-night rescue system.

The final report of the Pave Imp evaluation was published in July 1971, after 220 hours were flown during the 90-day test. The evaluation confirmed that the system had a limited capability in night rescue operations--just what it was intended to have. It could be operated in a permissive environment, over relatively flat terrain, in VFR weather.[26/] The fact that Pave Imp fell so short of what SEAOR #114 had originally called for led to much speculation as to whether the system was worth retaining in SEA. However, the final report included the recommendation that continued use of the system should be made to the fullest extent possible within the limits of its capabilities.[27/]

After reviewing the final report, however, 7AF recommended the return of the Pave Imp aircraft to MAC/ARRS on a one-for-one basis, with 7AF receiving "combat ready" HH-53s in return. The rationale was that the system did not satisfy the requirement for a night recovery system and that the technicians needed to support Pave Imp added to the manpower ceiling problem in Thailand.[28/]

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A reclama by MAC stated that due to cost overruns, the original objectives of a full night/weather recovery system could not be met and that recoverable funds had been directed toward providing a limited system. It was further argued that the LNRS equipment in no way degraded the overall SAR capability and that LNRS should be retained in SEA in order that additional experience might be gained in its use.[29/] In September 1971, 7AF agreed to the retention of Pave Imp and offered the following recommendations:[30/]

- All systems improvements should be fully tested and proven before deployment to SEA.
- Any testing required in SEA should be limited to development or refinement of tactics or procedures as they applied to SEA operations.
- Any requirement for additional personnel support should be kept to a minimum
- Initial qualification training for aircrews should be accomplished in the U.S.

An interview with the 40ARRSq Pave Imp Project Officer, Major Kenneth E. Ernest, disclosed the feelings of the users after the system had been operational for almost nine months:[31/]

> *As far as the LNRS is concerned, we have a system that right now works and I would say it is 90-95 percent reliable as far as doing what it is designed to do. It is designed to pick up a survivor who is on the ground, in the clear where we have slant range vision on him, and in rolling to flat terrain. What this negates is picking someone out of the trees, because you can't see a survival beacon--a beacon with an IR* light. Also you can't hover the helicopter by the side of a mountain. Those are problems. So what we have is a limited system that*

*Infrared.

works real well within its limits. The thing about rescues over here is that if a survivor goes down in a friendly area, he is going to be picked up immediately; and if he goes down in the clear in an unfriendly area, he is going to be picked up by the enemy. In the 25 or 30 rescues in which I was intimately concerned, the survivor has lived and he has survived because he has gone down in a bad area--in other words, on the side of a karst or in a heavily wooded forest. The ones that get caught are the ones that go in on the [Ho Chi Minh] trail, and are in the clear and are just immediately scooped up. That's the trouble with our system. It's not capable of picking up someone from the trees or from the side of a karst.

When people hear us complain about the night system, what we are complaining about is that we do not have a complete night system. We are not bad-mouthing the system that we have.... People here like the system, but we don't want to be put in the position of having to use it in an area where it can't be used. We are constantly justifying why we didn't go in [for a night pickup] and we have to say, "well, we couldn't pinpoint the survivor," or "the dropping of area-denial munitions in the area negated the use of our night equipment." Those then are the problems.

Electronic Location Finder

Basic to the LNRS, and any subsequent improved night recovery system, was the need to pinpoint the location of downed aircrew members. As stated in the MAC ROC #27-70, "MAC's SAR/aircrew recovery forces require a capability to locate and expeditiously maneuver to a hover over a survivor in a combat environment." To completely satisfy the ROC, the following features were required: 32/

1. Provision of terminal location to within ten feet at close ranges.

2. Ability to operate covertly, i.e., not betray the survivor's position to the enemy visually, audibly, or electronically by use of equipment standard to enemy ground forces.

3. Ability to operate through jungle canopies without significant degradation.

4. Be effective day or night under all weather conditions.

5. Be able to accommodate ground fire avoidance maneuvers by the rescue vehicle during approach.

6. Be compatible with and complementary to programmed night recovery systems.

7. Incorporate new handheld device consistent with the size and weight restrictions of aircrew survival equipment.

8. Incorporate new airborne equipment compatible with the limited payload capabilities of all rescue vehicles.

The experimental system which seemed most likely to approximate the requirements of the ROC was the Electronic Location Finder (ELF). The ground portion of the system consisted, basically, of a standard survival radio which provided signals to the rescue helicopter. The signals were displayed visually to the pilot enabling him to fly an approach to the survivor much in the manner of an instrument landing approach. The ELF was advertised by its manufacturer, the Cubic Corporation, as being capable of placing the rescue helicopter in a hover over the survivor with an accuracy of 25 feet.[33/]

An evaluation of the system was conducted at Hill AFB, Utah, and in the Panama Canal Zone. The tests were completed by February 1972 and the performance of the ELF system was considered satisfactory at both locations. It was learned, for example, that at two miles from the "survivor," flying at 130 knots airspeed as close as possible over 100-foot trees, a stable hover above the pickup location was consistently achieved in approximately two minutes.[34/]

As the reporting period closed, actions were underway to have ELF equipment installed in the LNRS-configured HH-53s in SEA by the end of 1972. In the interim, MAC wanted one of the two existing ELF sets installed in a SEA-based aircraft at the earliest possible date. The Air Force Systems Command concurred and authorized funds for the technical support and installation.[35/]

Electronic Defensive Systems

By 1972, the proliferation of sophisticated enemy radar-controlled defenses reached the point where the 3ARRGp requested electronic equipment which would offer protection against AAA and SAM firings. The request was made by 7AF in the form of two Combat ROCs--4-72 for the HC-130P, and 6-72 for the HH-53.

Combat ROC 4-72 stated the requirement for Electronic Countermeasure (ECM) and Radar Homing and Warning (RHAW) systems for the rescue HC-130Ps. To enable the HC-130P aircraft to detect and counter enemy radar-controlled weapons, the desired capabilities of the systems included:[36/]

A. RHAW

1. Visual and aural presentations which would indicate the presence of a threat.
2. Visual indications of the relative strength of the threat signal.
3. Visual indications of the relative bearing from the aircraft to the threat.
4. Discrimination between various types of threat signals, i.e, SAM, AAA, and airborne intercept radar.

B. ECM

1. Provide simultaneous jamming of AAA radar, SAM target tracking radar, and SAM beacons. The jamming was to be of sufficient magnitude and duration to permit the HC-130 to egress from the area or modify its flight profile to negate effective tracking and guidance.

2. Consider deception techniques, such as the use of chaff.

In February 1972, it was requested that the above capabilities be provided to seven of the HC-130Ps then assigned to the 39ARRSq at Cam Ranh Bay AB. By the end of the reporting period, Hq Pacific Air Forces (PACAF) had validated Combat ROC 4-72, and MAC and Tactical Air Command (TAC) had concurred with the requirement.[37/] Air Force Logistics Command was working on a preliminary estimate, but it was undetermined at the time when the system would be made available for installation on the HC-130s. One problem delaying the project was that of finding a location on the aircraft to install the ECM pods. Installation on the wings was precluded by the requirement for the HC-130P to carry in-flight refueling pods. The problem had yet to be resolved by the end of March.[38/]

Similar equipment was requested for 13 HH-53s of the 37ARRSq and the 40ARRSq. In a 21 March 1972 message concerning Combat ROC 6-72, 7AF stated in part:

> *Aerospace Rescue and Recovery HH-53Cs operating within hostile environments in SEA do not possess the capability to counter threats imposed by radar controlled weapons (e.g., SAM, AAA). Mandatory operations often*

cause penetration of lethal threat envelopes while in transit to/from the recovery area, or during the actual recovery operation.

According to the message, the solution to the problem was to install ECM equipment on the HH-53C capable of providing simultaneous protection against[39] AAA radar tracking/fire control systems, SAM radar tracking/guidance systems, and SAM beacon signals. Headquarters PACAF recognized the importance of providing ECM equipment to the HH-53s but pointed out several problem areas that would have to be overcome. Some of these were:[40]

1. The weight of the ECM gear might necessitate a tradeoff in other equipment and/or performance capability which could affect the HH-53 in accomplishing its primary mission.

2. During SAR operations, it was sometimes necessary to jettison as much weight as possible to improve hovering capability. While ECM gear would represent a considerable weight reduction, jettisoning would not be acceptable due to technological compromise and cost considerations.

3. Due to the HH-53's hugh rotor disk, it was suspected that a large amount of jamming power would be required to preclude radar burn through at greater than acceptable ranges. (When the Radar Cross Section (RCS) figures became available, PACAF was proved correct. The RCS for the HH-53 was 28 square meters--approximately the same as for the B-52.)

At the end of March 1972, PACAF was withholding validation of Combat ROC 6-72 until the problem areas could be investigated and reasonable solutions identified. At the same time, MAC concurred with the requirement, stressing that the weight goal be 350 pounds or less

and that the equipment should be sufficiently automated to permit operation by the existing crew.[41/]

The Madden Kit

Named after one of its developers, Captain James R. Madden, the "Madden Kit" was designed to overcome deficiences inherent in air-deliverable emergency kits. An earlier kit, no longer in use in SEA, was the CTU-1A. It was a large kit (eight feet long) carried by fast movers and designed primarily for a more permissive Escape and Evasion (E&E) environment. A primary problem with the CTU-1A was its tendency to become damaged on impact thereby rendering it difficult for the survivor to open. Also, the CTU-1A had little application during a relatively short-term SAR operation. It was difficult to drop near the survivor and the items contained in the kit were of the type needed for an extended E&E effort. A lack of evidence of its usefulness led to the CTU-1A being dropped from the inventory in SEA.

Another kit--the A-13--was a parachute-delivered box designed to be dropped from slow movers like the O-1 and O-2. Its shortcomings stemmed from the requirement for a parachute which made it difficult to place near a survivor in hiding and made it easy for the enemy to spot. Often the parachute hung up in trees; if the chute failed to open, the impact resulted in the survival items being damaged beyond use. The A-13 was still in use at the end of the reporting period but had proved of little use during contested SAR operations.[42/]

Noting these deficiencies, Captain Madden and others of the 56SOW set about to develop locally an air-deliverable survival kit more specifically tailored to the SAR needs. A salvaged flare canister was fitted with lugs compatible with the A-1 aircraft and designed to hold any survival gear that might be needed. Tests were conducted in the local area to improve the basic design. Fins were added for more stability and various shock absorbing nose cones were experimented with. The A-1 pilot had the option of extending the fins of the kit by dropping it "armed" or he could drop it "safe" which caused the fins to remain retracted. The kit was intended for pinpoint delivery with the survivor in sight. Since tne survivor was the target, the pilot of the delivery aircraft had no room for error in armament selection when other ordnance was carried.[44/]

As of May 1971, five kits had been dropped during SAR operations. All the drops were acceptable, the closest being two feet from the objective and the furthest within 20 meters.[44/]

CHAPTER III

PERSONNEL

TRAINING

During 1971 and early 1972, units of the 3ARRGp were forced to maintain large aircrew training programs. Shortages of pilots qualified as aircraft commanders in the HH-53, HH-43, and HC-130P aircraft made a full upgrade training program essential. A large number of the HH-53 pilots arriving in SEA were converted fixed-winged pilots, with the result that the experience level of the helicopter crews was rapidly decreasing. The squadrons were able to keep pace with the training requirements although there was always the prospect that, as had happened before, battle damage could result in a lack of spare aircraft available for upgrading programs.[45/]

Limited Night Recovery System Training

HH-53 pilots arriving at the 40ARRSq were not qualified in the LNRS, necessitating initial qualification through in-theater training. One of the primary problems in providing this training was the difficulty in locating, and obtaining approval to use, off-base training areas in Thailand.[46/] Considerations in choosing a training site included:

1. The need for adequate security.
2. The absence of lights on the ground which would interfere with the LNRS.
3. The need for terrain similar to that in which the system would most likely be operated.

In the spring of 1971, during the evaluation of the LNRS, several sites were identified for future use by the 40ARRSq and the 3ARRGp. One such site was the Nam Phung Special Forces camp in Sakon Nakhon, approximately 40 miles southwest of NKP. However, a letter from the U.S. Embassy in Bangkok stated in part that: "in absolute terms the risk of hostile action near Nam Phung may not be great; but we would be remiss in authorizing repeated U.S. helicopter landings at night in an area so close to the major pockets of armed insurgency in Northeast Thailand."[47/]

The search for suitable night training areas continued, and at one time a site near Korat RTAFB was used. However, the distance involved made it impractical. At the end of the reporting period three sites were being used; Seng Mountain, 55 miles north of NKP; Camp Hunky, 37 miles southwest of NKP; and an area seven miles west of NKP.

SEA King Mission Simulator

A procedure for simulating the complex King mission was developed both to train newly arrived crewmembers and to provide continuation training for aircrew personnel of the 39ARRSq (later Det 4). The simulator had been in use for approximately three years--first at Tuy Hoa AB, then at Cam Ranh Bay AB, and finally at Korat RTAFB. The syllabus of instruction for the simulator was designed to bring crewmembers to a level of proficiency that would enable them to cope with the problems inherent in a complicated Combat SAR operation.

The physical layout of the simulator was very simple. Five interphone jack boxes were connected in one room for the instructors. In

another room, four boxes were connected for the aircraft commander, copilot, navigator, and radio operator. The simulator did not have a mechanical function; all training was conducted by voice with the instructors acting as different control agencies, flight commanders, FACs, or anyone else who might be involved in an actual Combat SAR operation. The training was based on the instructors establishing an objective and teaching the trainees methods for achieving a successful conclusion.[48/]

Primary emphasis was placed on the command and control of the Combat SAR mission and King's role in coordinating the myriad of details associated with a SAR operation. The simulator, then, was a procedures trainer and the instruction progressed from more simple problems such as assisting an aircraft in distress to those problems requiring the control of large numbers of aircraft in support of an extended SAR mission.

The simulator instructors called upon their experiences in actual Combat SAR operations to inject unique conditions, thus providing the crewmembers with the best and most current combat tactics training possible. Considering that an HC-130P crewmember could conceivably spend an entire tour in SEA without experiencing an actual SAR mission, the importance of continuation training in the simulator was readily apparent. A detailed description of the King responsibilities is presented in Chapter IV, Operations.

A-1 Training Problems

Faced with the continued drawdown in A-1 resources, an intense problem was developing in maintenance of pilot proficiency in the 1SOS at NKP. In the past, the varied missions of the A-1 had provided the pilots with much-needed experience in ordnance delivery, but if the number of A-1s was reduced, as feared in early 1972, the point would soon be reached where pulling the SAR alert would take almost the entire force.

Hoping to alleviate the problem, the 56SOW requested that the A-1 Sandy alert at Da Nang AB be returned to NKP, and that the alert aircraft at Ubon RTAFB be rotated every three days rather than five. It was hoped that in this way, more aircraft would be available for training. Flying more airborne alert was another way to increase the proficiency of the A-1 pilots. However, these were all short-range solutions to a problem that would worsen unless more A-1s, or a suitable substitution, became available for the role of RESCORT aircraft.[49/]

PACAF Jungle Survival School

It had long been a requirement that all aircrew members enroute to combat assignments in SEA attend the Jungle Survival School (JSS) at Clark AB in the Philippines.[50/] The school provided the crewmember with intensive training in survival, evasion, resistance, and escape. The student also gained knowledge of SAR operations and what was expected of him in the event he should ever require the services of the SAR force.

The importance of what the school taught was emphasized by Lieutenant Colonel Clifford E. Brandon, Commander, 40ARRSq, when he addressed the members of a SAR conference at NKP on 26 March 1972. He said: "All the rescue forces in the world can't help a survivor on the ground if he doesn't understand SAR procedures and can't assist in his rescue."[51/] The course included both academic training and an opportunity to put to practical use the information learned in the classroom. When a crewmember graduated from JSS he had hopefully become knowledgeable in SAR procedures and familiar with the equipment used in SAR operations in SEA.

Following their rescue, the crew of Nail 31, an OV-10 shot down on 18 March 1972, had the following to say about the quality of the training they received.[52/]

"All the equipment worked as advertised. I think my training duplicated the situation very well," Lieutenant David G. Breskman, pilot, Nail 31.

"I was as well prepared as I could possibly be for an E&E situation. My survival training, E&E briefings, and pre-strike area briefings were of great assistance in my successful E&E and recovery," Captain Steven L. Poretsky, weapon systems officer, Nail 31.

Informal Training

To insure that the crewmembers retained the information they had received at JSS, informal continuation training was given in the theater.

Members of the rescue forces made regular scheduled visits to the combat units to emphasize[53/] both what the survivor could expect from the SAR forces during a rescue operation and what the survivor should do to help the rescue forces.

In this manner, the combat aircrew members (including those on carriers) received the latest information on new equipment and tactics used in SAR operations. The crewmembers were further updated on SAR equipment, tactics, and requirements through the individual units' life support section and mission briefings.

MANNING

During 1971 and early 1972 some 3ARRGp personnel shortages occurred but were largely of a temporary nature. For the most part, manning was in line with in-being authorizations or mission requirements. For example, the pararescue manning level in SEA was maintained at 85 percent of that authorized as a result of a command management decision. The reason for the 85 percent figure was to insure that all PJs in SEA were used to the maximum extent possible.[54/] On the other hand, there were flight mechanic manning difficulties in early 1971 which were due in part to the overages in non-SEA units. This required a realignment of resources and, subsequently, the flight mechanic manning stabilized.[55/]

Maintenance personnel manning had been in accord with total authorized strength although the skill levels were not always those authorized. While the squadrons announced their desire to be fully manned according to skill level, it was pointed out by personnel offices

that the airmen assignment manual allowed for skill as well as grade substitution.[56/]

Helicopter pilot manning was considered adequate. While training output of helicopter pilots had not consistently matched the needs due to attrition and cancellation, management actions such as the reduction in UE aircraft in the using organizations had stabilized the helicopter manning situation by the end of the reporting period.[57/]

AWARDS AND DECORATIONS

Probably the most decorated group in Air Force history, the 3ARRGp continued to receive awards and decorations at a prodigious rate. Between January 1966 and the beginning of 1971, the group had already gathered more than 13,000 awards and decorations. During 1971 and the first quarter of 1972, the group received the following decorations.[58/]

Decoration	1st Qtr 71	2nd Qtr 71	3rd Qtr 71	4th Qtr 71	1st Qtr 72
Silver Star	0	11	0	0	0
Distinguished Flying Cross	40	37	61	35	89
Bronze Star	17	16	21	4	15
Air Medal	518	120	302	67	360
Air Force Commendation Medal	72	40	73	10	52

Decoration	1st Qtr 71	2nd Qtr 71	3rd Qtr 71	4th Qtr 71	1st Qtr 72
Purple Heart	6	1	2	0	14
Other	0	0	0	0	0
TOTAL	653	225	459	119	530

Thus, during the 15-month period of this report, the group had received 1,986 awards and decorations. In addition, the group was awarded its third Presidential Unit Citation for sustained gallantry in Vietnam for the period 1 February 1969 through 30 April 1970. Figures were not available on the number of decorations awarded crewmembers from other squadrons flying in support of SAR operations, but the number would undoubtedly be impressive.

CHAPTER IV

OPERATIONS

With a few exceptions, the alert posture of the SAR forces remained relatively stable during the reporting period. The positioning of the forces was designed to provide coverage in the areas where strike activity was taking place. This report covers the period through 31 March 1972 and therefore does not document the events that took place following the enemy's spring invasion.

Tactics and concepts were constantly evaluated and changed as required. Almost every SAR operation provided new experiences, and periodic SAR conferences were held by the 56SOW at NKP to determine how the new "lessons learned" could be used to enhance future operations. The rescue operations described in this chapter were chosen because each presented unusual problems that were overcome and, in some cases, provided a basis for altering existing procedures.

SAR ALERT POSTURE

At the end of 1971 the SAR-dedicated aircraft were positioned on alert as follows:[59/]

1. HC-130P. Two HC-130P King aircraft were fragged daily for a first-light to last-light orbit. The orbit was normally flown from NKP to the Paksane area, but was changed as required to provide maximum coverage of the daily 7AF fragged strikes. Additionally, an HC-130P stood 30 minute

alert at Udorn to support the 40ARRSq's LNRS night alert commitment. Another King aircraft stood 30 minute alert at Cam Ranh Bay from first-light to last-light. The latter aircraft also provided a 24-hour alert back-up for use as an AMC or tanker, should the need arise. It was on a 45 minute alert during the nighttime hours.

2. HH-53C. Two HH-53C Jolly Greens orbited over the Gulf of Tonkin south of the Demilitarized Zone (DMZ) when required. These 37ARRSq helicopters were on station while U.S. reconnaissance aircraft were flying in the eastern half of Route Package I (between the DMZ and 18 degrees north in NVN). When not flying the orbit, the two aircraft were on 15 minute daytime and 45 minute nighttime alert at Da Nang AB.

The 40ARRSq provided two Jolly Greens for 15 minute alert during the day at both NKP and Ubon RTAFBs. These aircraft were also used for airborne alert over central and southern Laos. Two LNRS-equipped helicopters maintained 45 minute alert at either NKP or Ubon and were supported by the HC-130P on alert at Udorn.

3. A-1. Two A-1 Sandys from the 1SOS pulled 15 minute alert at Da Nang during the day. At NKP, four Sandys were on 15 minute alert with two of them fragged to orbit with the Jolly Greens over central Laos. Two more A-1s were on 15 minute alert at Ubon during the day. These last two escorted the Ubon-based Jolly Greens during their orbits over southern Laos.

4. HH-43. Fifteen HH-43F Pedro helicopters of the 3ARRGp were stationed at six Dets throughout RVN and Thailand. Additionally, two Pedros were stationed with both the 37ARRSq and the 40ARRSq. While primarily used for the LBR mission, these helicopters performed the combat aircrew rescue mission when necessary and as requested by the JRCC.

5. Changes in the SAR Alert Posture. Until 5 December 1971, the 37ARRSq had operated an FOL at Bien Hoa AB, RVN. The alert commitment there had been two Jolly Greens and two Sandys on 15 minute day alert.

On 31 March 1972 the 39ARRSq at Cam Ranh Bay was inactivated. At that time the HC-130s were in place at Korat RTAFB as part of Det 4 of the 3ARRGp. Following the move of the Kings, alert requirements at Udorn and Cam Ranh Bay were no longer needed and were therefore discontinued.

In March 1972, the 56SOW was seeking approval to discontinue the Sandy alert at Da Nang. The reduction of A-1 resources had reached the point where it was felt that two extra A-1s at NKP were necessary to provide the pilots of the 1SOS with adequate training. Similarly, plans were underway to rotate the A-1s from Ubon on a three-day cycle rather than five days to provide additional flying time to and from NKP.[60/]

TACTICS

The tactics and techniques to be employed by the SARTF during SAR operations were outlined in 7AF Manual 64-1, Search and Rescue-Southeast Asia. The manual detailed the individual operational procedures to be used

[redacted]

by each of the components of the SARTF, and the overall command and control relationships of the integrated force. Suggestions were solicited from those involved in SAR operations to keep the manual constantly updated to meet changing tactical situations. As current and detailed as it was, however, it could never be considered the last word on SAR tactics and procedures. According to the manual itself; "Each recovery encounters new problems which must be met with flexibility and ingenuity."[61/]

It was clear that for SAR operations, where each mission presented a unique situation, there was no substitute for experience. In October 1970, when Colonel Sohle was commander of the 3ARRGp, he said:[62/]

> *Our development of present SAR capability has been a history of relearning lessons already learned by someone else, but who unfortunately could not or did not document it for others to profit by. We feel that in 7AF Manual 64-1 this has been overcome or at least minimized. Of course, it is impossible to substitute any document for actual experience. You could read every item ever written on SAR, but there is no alternative to the learning process of involvement in a combat recovery mission.*

The composition of the SARTF during the period of this report remained the Jolly Green/Sandy team, a FAC, an AMC RESCAP aircraft, and any other resources deemed necessary in completing a SAR operation. The basic tactics of the individual components of the SARTF were as follows:

Jolly Greens. When a scramble was ordered, the Jolly Greens proceeded in flights of two to the SAR area where they waited at a designated orbit

[redacted]

point until the order was given to begin the pickup attempt. One helicopter was briefed as Jolly Green "Low" and would ordinarily be the one to make the survivor pickup. The other Jolly was the "high" bird and served as a backup for Jolly Green Low.

When helicopters were called in for the pickup, the high helicopter orbited over the pickup area at a safe altitude. If weather or hostile activity prevented orbiting directly over the area, the high Jolly Green would orbit at the most suitable position from which the recovery operation could be observed. The pilot would advise the SAR force of any enemy activity, and could act as a FAC.

While enroute to the recovery site, the low helicopter pilot computed the aircraft performance and the fuel required to effect the recovery plus the fuel reserve required for enroute time to the nearest airfield or to a tanker. The best approach was considered to be a low-altitude, high-speed run toward the survivor's position. If enemy activity was not prohibitive, an attempt was made on the first pass to stop over the survivor. At the beginning of the Jolly Green's pass, the survivor was briefed to be ready to use a smoke flare, GYRO JET flare, or any visual signal to pinpoint his position. The helicopter crew watched for enemy fire during the approach and returned fire if encountered.

If the enemy fire was too severe, the approach was discontinued and the helicopter took evasive action while climbing away from the scene.

The RESCORT and/or RESCAP then took necessary actions to suppress the hostile activity. When the low helicopter was able to safely hover over the survivor, the flight mechanic or designated hoist operator provided directional information to the pilot to position the aircraft for the recovery. In the event the survivor was seriously injured or disabled, a PJ was lowered to assist in the recovery.

After the survivor had been recovered, the helicopters were escorted to a safe area by the RESCORT aircraft. The PJ or medical technician aboard the Jolly Green administered necessary aid to the survivor while the flight mechanic checked the helicopter for damage. Based on the condition of the survivor and the helicopter, the pilot informed the AMC in King as to his intentions and requirements. Normally, the helicopter returned to its point of departure; however, fuel status, weather, or the condition of the survivor could be cause for deviation.

RESCORT Aircraft. The functions of the RESCORT aircraft were threefold: first, locate and identify the survivor(s); second, detect and suppress enemy activities which might interfere with the recovery effort; and finally, provide protection for the helicopters enroute to, during, and from the pickup attempt. Normally, four A-1 Sandy aircraft (two flights of two) were used to support a pair of Jolly Greens. The two flights were referred to as Sandy Low and Sandy High and were scrambled individually as flights or simultaneously with the helicopters. One pilot of the Sandy Low element acted as the OSC and, unless specifically cleared to do so by the AMC, the Jolly Green would not attempt a pickup without a Sandy OSC in place.

The Sandy High element was responsible for escorting the recovery helicopters to and from the recovery site. Sandy High lead was responsible for navigating and controlling the formation up to the arrival at the Initial Point (IP) during ingress. Upon arrival at the holding point, the Sandy High pilot directed the Jollys into an orbit at a given altitude, providing a fix either in relation to navigational aids or by reference to a geographical area. The following functions were then accomplished by Sandy High as soon as practicable:

(1) Obtained altitude and temperature at the recovery site from the OSC for use by the Jolly Greens.

(2) Insured, through the AMC in King that, if needed, Combat Air Patrol aircraft were on the scene for protection against enemy aircraft.

(3) Briefed Jollys on the recovery area, including enemy positions, E&E areas, and applicable tactics.

When a pickup attempt was to be made, Sandy High moved the Sandy/Jolly formation as close to the recovery site as possible without compromising the safety of the Jollys. When directed by Sandy Low, Sandy High descended for an on-scene briefing while Sandy High wing and the Jollys held in orbit and monitored the briefing, visually relating it to the area. After the briefing, Sandy High returned to the orbit point and gave the Jollys a complete briefing on the survivor's location, the area defenses, and the procedures to be used during the pickup attempt. Upon the execution order, Sandy High flight went into a protective formation and Sandy High was responsible for placing the Jollys over the IP at the time, altitude, and airspeed requested by Sandy Low.

When scrambled, the Sandy Low element went directly to the SAR area. Enroute, Sandy Low queried King and other agencies for current and complete information on the survivor, weather and terrain at the scene, callsigns of other aircraft in the area, and what progress had already been made. After becoming OSC, Sandy Low's primary responsibility was to direct and coordinate the entire rescue operation.

The first major task for the OSC was to locate the survivor. When in the survivor's general area, Sandy Low conducted an electronic search. He attempted to contact the survivor on beeper or voice to further reduce the search area through Direction Finder (DF) steers or through directions received from the survivor. Once in the immediate vicinity, Sandy could further pin-point the location by:

1. visually locating the downed aircraft, or the survivor's parachute.
2. having the survivor advise him when he was overhead.
3. having the survivor use signaling devices.

Radio contact with the survivor also enabled Sandy Low to learn the survivor's condition and to gain information on enemy defenses in the area.

After locating the survivor, Sandy Low was faced with probably the most difficult decision in combat operations. He had to determine when and if it would be safe enough to commit the Jolly Green to the pickup attempt. He had help from the FAC and the AMC, but the decision was ultimately his. The degree of hostile opposition was the primary factor in determining the duration of the SAR attempt, and could extend it from a few hours to several days

Even if the enemy had not fired on Sandy Low during the location of the survivor, the Sandy pilot normally had to assume that there would be opposition to the rescue attempt. In determining the extent, the OSC first made high-speed passes over the area while his wingman and the FAC looked for groundfire. If heavy resistance was met, the OSC left the area while strikes were put in on the enemy positions. On the other hand if little resistance was encountered, Sandy Low was required to fly through the area low and slow, "trolling" for enemy fire. Based on what he determined the situation to be at that time, the OSC either decided to continue to strike the area or to attempt the pickup.

An experienced Sandy Low pilot, Captain Randy Jayne, in discussing the proper time for the OSC to order the beginning of the pickup attempt, said:[63/]

> *When you're deciding it's time to pick the guy up, you have to be very careful--you have to be sure you have suppressed the fire as much as you can. If the enemy is not going to shoot at you and is going to wait for the helicopter, it complicates the problem. But, you put this problem together with the fact that sometime you are going to run out of your own assets--both A-1s and your fast-moving ordnance support. Then you are faced with a tough decision as to when to attempt a pickup. Sometimes waiting is going to hurt you. If you've killed a certain number of the enemy and silenced a certain number of guns, then wait without putting in a continuous stream of ordnance, the bad guys may bring in some more stuff. In four hours it may be worse than it is now. It's a hard decision to make and one that nobody can make but the guy that's down there as OSC.*

Once he had decided to begin a pickup attempt, the OSC would:

1. launch support aircraft in sufficient time to participate in the pickup attempt.

2. continue air strikes to keep pressure on the enemy.

3. bracket the survivor's position with visual marks for the Jolly. One mark was placed on a straight line from the IP through the survivor's location and a second mark was placed 200-300 meters past the survivor.

4. brief Sandy High and the support flight leaders on their role in the pickup attempt.

5. brief the survivor on the pickup attempt and what would be expected of him.

6. plan to use at least the Sandy ordnance as preventive suppression from the IP through the pickup and egress even if opposition had not been present. On any opposed SAR or when opposition was expected, the use of a smoke screen and/or riot control agents was considered.

When possible during an opposed rescue attempt, the following tactics were used: the fast-movers were flown in a racetrack pattern on the most appropriate side of the run-in heading (terrain, weather, and enemy gun positions being taken into consideration); the support slow-movers flew an orbit on the other side of the run-in heading and the Sandy High flight plus Sandy Low wing formed a daisy chain around Jolly Low. When the command of execute was given by Sandy Low, the strike aircraft concentrated their fire on the known and active enemy positions while the support slow-movers dispensed

their special ordnance as directed and then entered a fire suppression pattern on their side. At the same time, the low Jolly was led over the IP by Sandy High where control was passed to Sandy Low.

As Jolly Low approached the survivor, ground fire was called out from his 12 O'clock position. At the proper time, Sandy Low directed the survivor to pop his smoke and vectored Jolly to a hover over the survivor. During this process, the survivor, the Jolly crew, or Sandy High could assist in directing the Jolly over the survivor. Sandy Low remained out of the Sandy daisy chain so that he could supervise the operation while the other three Sandys laid down suppressive ordnance during the ingress, pickup, and egress. Once the survivor was onboard, Jolly took the briefed egress heading and was escorted out of the area.

When the SAR forces were clear, remaining ordnance could be used on still active enemy positions. Finally, King would inventory the forces to determine that each participant was out of the area and could be expected to return safely to his base.

Forward Air Controllers. The FAC had always been a valuable member of the SAR team. Frequently he was already in position, or a short distance away, and knew the area better than the Sandy pilots. In cases where the FAC was on the scene prior to the Sandys, he began the SAR operation in generally the same manner as was described for Sandy Low. During the early stages of a SAR mission, the FAC:

1. assisted in pinpointing the survivor's location.

2. provided the OSC with first-hand knowledge of the SAR area.

3. assisted in locating enemy guns and troops.

4. controlled air strikes to suppress enemy opposition.

5. assisted in the selection of ingress/egress routes and the best local E&E areas.

6. acted as a communications link with the survivor.

When the OSC began locating the survivor or trolling for enemy guns, the FAC held high to observe enemy reaction. When guns were pinpointed, the FAC could be assigned specific targets or areas for air strikes. During the pickup attempt the FAC was placed overhead to spot groundfire and to act as a radio relay if needed.

Support A-1s. Some A-1s were used in the strike/smoke/riot control agent configuration in support of the SAR effort. The strike configured aircraft were used for the suppression of hostile guns or activity which presented a threat to the survivor or the Jolly Green. The smoke/riot control aircraft were normally held on the ground until a pickup attempt was forecast by Sandy Low. They were scrambled by Sandy Low in ample time to reach the scene for a briefing prior to the order to execute.

During strongly opposed rescue operations, the smoke A-1s were used to build a wall of smoke between the enemy and the survivor. Great care had to be exercised to place the smoke so that it would not drift over the survivor's location, thereby hampering the pickup attempt. The accuracy of

the A-1 enabled the riot control agents to be placed very near to, or even on the survivor if the situation warranted. All the support aircraft could be used in a fire suppression role during the actual pickup attempt if so briefed by Sandy Low.

Pedros. Although not a component of the normal SARTF, the HH-43 Pedros were available for aircrew recovery missions. When launched on a recovery mission, the Pedro proceeded to the scene via a nonhostile routing at a safe altitude and held in a safe location until the permissiveness of the rescue area could be assessed. Based on intelligence and FAC information, the aircraft commander of the Pedro determined whether the area was permissive enough to allow a rescue attempt. Certain limitations were imposed on the use of the Pedro helicopters for aircrew recovery operations:

1. Recovery from areas determined to be hostile would be attempted only after additional resources were available on the scene.

2. Rescue operations more than 10 miles off-shore were considered to be extended overwater missions and required another aircraft for navigation-communications assistance and rescue coordination in the event the Pedro was forced to ditch.

3. Night recovery missions in RVN beyond 10 miles from the launch base or into known high threat areas would not be attempted without JRCC approval.

COMMAND AND CONTROL

During actual or proposed SAR operations, control of participating forces was exercised by the Commander, 7AF through the 7AF JRCC in accordance with agreements made with commanders for forces providing SAR support. Whenever

possible, SAR operational control of forces in the search areas was vested in the JRCC/RCC, AMC, or OSC, as appropriate. Operational control of the forces enroute to and from the search areas was vested in the parent organizations.

In transferring control of any element of the SAR force, explicit terms were used so that there could be no doubt concerning control authority and mission supervisory responsibility. Transfer of control could be made based on any of a number of reasons, including geographical considerations, and predominance of forces belonging to a certain service. When an agency other than the JRCC/RCC was controlling a SAR mission, procedures insured that timely, accurate progress reports were forwarded to the JRCC. It was stressed that commanders who committed forces to the SAR operations would not withdraw those forces without notifying the controlling agency and receiving acknowledgement.

Airborne Mission Commander. The AMC was delegated the immediate operational control over the airborne SAR forces engaged in a rescue mission. Located aboard an HC-130P King aircraft which was extensively equipped with electronic search and communications gear, he was the airborne communications and control extension of the JRCC. The Kings were positioned at orbit points which could be moved as the mission dictated to maintain communications with the strike aircraft, the OSC, and the JRCC/RCC. The AMC monitored and controlled the SAR effort by:

1. establishing the location of the objective.

2. appointing an OSC as soon as practical.

3. obtaining forces and equipment required for the rescue/recovery operation.

4. providing navigational and intelligence aid to the SARTF.

5. monitoring the weather.

6. providing a long-range communications capability.

7. controlling and maintaining mission and communications discipline.

8. obtaining and committing secondary SAR forces as required for mission prosecution.

Communications. More than for any other combat operation, effective use of available communications was required during a SAR mission to insure success. Each set of frequencies was used for a specific purpose and the OSC attempted to enforce strict radio discipline at all times. During a SAR, the various radios were used as follows:

1. UHF: Since most of the fast movers were equipped with UHF only, it was the primary radio for communication between the FAC, King, and the strike aircraft. The strike aircraft committed to a SAR made initial contact with King on a standard SAR UHF frequency. When it was decided to employ the strike aircraft, King sent them to a discreet FAC frequency for control.

2. GUARD: Except for emergencies, Guard channel was used exclusively by the survivor, Sandy Low, and the Jolly Greens. Other members of the SAR force did not use it without first clearing through Sandy Low. Prior to the pickup attempt, Sandy Low took all Sandys and Jollys over to Guard for its use as the primary channel. The entire force monitored Guard during the pickup attempt.

3. VHF: VHF was the primary inter-SAR force radio, especially for King. Although Sandy Low normally had his VHF turned down, he could be reached through his wingman. It was specifically used for the general SAR force briefing prior to the pickup.

4. FM: FM was primarily used for interflight coordination. The normal SAR FM frequency was used by King, the Jollys, and the Sandy High element. Sandy Low element and the support flights each had their own discreet FM frequency.

(Author's note: Except for the passage taken from an interview with Captain Jayne, the proceding discussion on Tactics and Command and Control was extracted from 7AF Manual 64-1, dated 15 January 1971. Although considerably condensed, it was intended that the foregoing would acquaint the reader with the basic responsibilities of each element in the SARTF and the callsigns used during the reporting period. The purpose served should be that the following presentation on actual SAR missions and pending changes to basic concepts will be more easily understood.)

ACCOMPLISHMENTS

During 1971 and the first quarter of 1972, the 3ARRGp was credited with 184 combat saves, bringing its total for the war to 2,348. During the same 15 months, 127 non-combat saves were accomplished, which brought that total for the war to 1,133.[64/] (See Figure 3 for combat and non-combat saves.)

The accounts of the SAR operations in SEA all make exciting reading, but those discussed in this report were chosen because they were either

3ARRGp RESCUES*

	Jan-Mar 71	Apr-Jun 71	Jul-Sep 71	Oct-Dec 71	Jan-Mar 72
Combat Saves	60	26	19	47	32
Non-Combat Saves	15	26	45	23	18
Total	75	52	64	70	50

Total Saves (1 Jan 71-31 Mar 72)	311
Total Saves (Since 1 Dec 64)	3,480

*Numbers presented continued to be updated and offer only a close approximation.

Source: 3ARRGp Histories

Figure 7

more difficult than the others, were unusual for some reason, or resulted in proposed changes in concepts and tactics.

Ashcan 01

On the morning of 10 December 1971, Ashcan 01, an F-105G out of Korat RTAFB, was downed by a SAM in the Mu Gia Pass. The pilot, Major Robert E. Belli, had received launch indications and had started evasive action when his aircraft was hit. The aircraft went immediately out of control and Major Belli called for the backseater to get out while he (Major Belli) went for his ejection handles. Major Belli recalled that the negative "G" forces made it almost impossible to reach the handles, but "I do remember finally grabbing them. And that's all I do remember until I woke up on the ground."[65/]

Major Belli's impact with the trees was so great that his parachute was torn in half and he was completely separated from the shroud lines. When he awoke, approximately 15 minutes after his ejection, he discovered that he had a badly broken arm and a dislocated knee. The injuries immobilized him and, in his own words, "I knew that I was going to stay right there until either they rescued me or something else happened."[66/]

Word was received at NKP on Ashcan 01's plight at 1027, and the Jolly Greens were scrambled with Jolly Green 52 to act as low aircraft. When the Jolly Greens arrived at the scene, it was learned that neither the OV-10 Nail FAC nor the Sandy had been able to locate the survivor due to poor weather. In the immediate area of the survivor, the weather was completely

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overcast with bases of the clouds extending to the ground. Winds were from the northeast, gusting to over 30 knots.[67]

Jolly Green 52 located a hole in the clouds about three miles southwest of the survivor and descended below the overcast. Each attempt to head north toward the survivor was met with a wall of clouds and on many occasions, while looking for a clear route, the helicopter was forced to climb up through the clouds. Attempts from the north were barred by 6,000-foot mountains, while the ridge that the survivor was on precluded attempts from the west.[68]

At one time, a SAM passed within 200 feet of Jolly Green 52 and on four other occasions, the Jolly received hits from automatic groundfire after drifting over Mu Gia Pass. Another flight of Jolly Greens arrived in the area and became the target for several SAM firings. As the afternoon progressed, weather conditions worsened in the area and it was decided at 1730 to call off the SAR effort for the day. Sandy gave Ashcan 01 bed-down instructions and insured him that the SARTF would be back first thing the next morning. With the weather and the approaching darkness, the survivor allowed that there was not much that could be done about it and he settled down for the night awaiting first light.[69]

The Sandys and the Jollys held a meeting at NKP that night to discuss the best method of operation for the next day's effort. It was determined at that time that there just was no better way to do it except wait for the weather to improve. Later that night, however, Major Kenneth Ernest, the

pilot of Jolly Green 52 scheduled for the Jolly Green Low position the following morning, called a meeting of his crew to brief a tactic that had never been tried before. Major Ernest told the author:[70/]

> *We just decided to go in in the weather--in a hover right on the trees. Everyone was briefed on just how I wanted our position passed. We knew at times that there would just be one person who would have sight of a tree, and everybody else would be IFR and I would just fly on that one person. If someone sighted something on one side of the airplane or in the rear he would say "clear" in that area. That would mean he had something in sight then he would start giving "move left five feet" and I'd have my eyes out front hoping I could catch something. And then we would leap to it and wait for something else to clear in front and then leap to that tree.*

The SARTF arrived back on the scene at 0545, 11 December, and awaited first light. Major Ernest's crew in Jolly Green 30 (Jolly Low) secured a doppler fix from over the survivor's position to aid in returning to him and, since the weather was about the same as the day before, Jolly Green 30 descended through a hole in the clouds and began searching. Beginning his run-in to Ashcan 01 from about two miles southwest, Major Ernest was IFR and required assistance in locating the survivor. The assistance was provided by a Sandy and a Pave Nail. The Sandy orbited behind the Jolly Green and provided headings for the Jolly through direction finder cuts with the survivor. The Pave Nail orbited 90 degrees off the Jolly's track and monitored the angle between DF cuts on the survivor and on the Jolly.[71/]

In this manner, Jolly Green 30 slowly made its way from tree to tree toward Ashcan 01 Alpha. Along the way, the parachute of Ashcan 01 Bravo (the backseater) was discovered. A flight surgeon aboard Jolly Green 30 determined that the man (who had by then been hanging in his parachute harness for over 20 hours, suspended in a tree, with the wind causing him to swing against the tree trunk) was not alive. An unenviable decision had to be made at that time by Major Ernest. To retrieve the body would require lowering a PJ on Jolly Green 30's only penetrator. With the gusting winds making the helicopter difficult to control, this meant risking the life of the PJ and losing the penetrator. Without the penetrator the mission would have to be aborted, and with Ashcan 01 Alpha calling out that he was just a short distance away, Major Ernest elected to continue to the survivor. In discussing the decision he made, Major Ernest recalled thinking:[72/]

> *. . . What happens if I lower the PJ down there--we only have one penetrator. . . what happens if I get him or the penetrator stuck down there in the trees? We would have to abort the whole mission because we wouldn't have a penetrator to pick up Alpha. That's one thing--also risking the life of the PJ going after a dead man, that's the second thing. Also--here's a live man. Let's get him. Let's get him right now.*

The coordination between the Jolly, the Pave Nail, and the Sandy resumed as Jolly Green 30 continued to inch its way toward Alpha until a hover was established over Major Belli. Approximately one hour had been spent in mostly IFR weather for Jolly Green 30 to move the two miles or so to Ashcan 01 Alpha. Major Belli described the pickup from his vantage point on the ground:[73/]

[redacted]

The rain and winds were still gusty, and I could see the cloud cover right over the top of the tree canopy. Anyway, they finally got over me, and they asked if I wanted a PJ to come down. I told them I guessed one had better since I wasn't in much of a condition to help myself. Actually, they sent two down, which was probably lucky because I think it took both of them to get me on the penetrator. It was kind of funny, because I could see the penetrator with the PJs coming down, and I could see the bottom of the helicopter, but the top of it was in the clouds. I thought that chopper pilot must be having one helluva tough time trying to hover there, with the gusty winds, and him just about IFR. Anyway, they got me on the penetrator and pulled me aboard.

Major Ernest, who won the Aviation/Space Writers' Association Helicopter Heroism Award for his part in the Ashcan 01 Alpha rescue, gave much of the credit to Major Belli. The importance of the actions taken by the survivor was emphasized when Major Ernest said, "I didn't make the pickup. The guy on the ground helped so damn much. His vectors--stuff like that, trying to get me to him--little helpful hints on what the area looked like, what to look for."[74/]

The rescue of Ashcan 01 Alpha marked the first time an IFR recovery had been made. Several observations and suggestions resulted from the operation. Some of these were:[75/]

1. An LNRS night pickup was considered but prevented by the weather in the area the night of the 10th.

2. The modified doppler on the LNRS aircraft proved to be very accurate and it was recommended that all HH-53 helicopters be so equipped.

[redacted]

3. The Pave Nail FACs used on the mission proved that the aircraft could be a very important part of the rescue force.

4. Using the same Jolly Green crews for the continuation of the mission the next day worked very well. It was recommended that this be made a standard procedure.

Falcon 74

Due to fuel starvation, the crew of Falcon 74--an F-4D from Udorn RTAFB--was forced to eject on 18 December 1971. Both Alpha and Bravo landed safely near the NVN-Laotian border, found cover, and awaited rescue. Soon after, an Air Amerca pilot located their position and passed it on to the arriving SARTF. The Sandys reported both chutes in sight, but with approaching darkness and poor weather conditions, it was decided to await first light before attempting a rescue. The survivors were given instructions to maintain radio contact through the night and wait for the SARTF to return the following morning.[76/]

The Sandys were on the scene early on the morning of 19 December and informed the crew that the Jolly Green was coming in to make the pick-up. Since Alpha had reported people near him, Jolly Green 62 was positioned to pick him up first. While maneuvering to pick Alpha up, the helicopter received several rounds of automatic fire in its right engine which almost resulted in loss of the aircraft. Jolly Green 62 was able to leave the area and was escorted by two A-1s to an alternate airfield. The remaining Sandy began calling in airstrikes to neutralize the area while awaiting replacement

Jollys. Ordnance dropped included a riot control agent placed near the survivors' positions in an attempt to discourage the enemy.[77]

Another flight of Jollys was scrambled from NKP with Jolly Green 55 as Jolly Low. By the time the Jollys arrived in the SAR area, the situation had become critical. The enemy had radar coverage of the area and MIGs had already forced the withdrawal of the rescue force several times. The weather was deteriorating and the survivors were reporting people moving around them. Everything considered, it appeared that if a rescue was not effected immediately, the survivors would be killed or captured.[78]

A Pave Nail OV-10 found a small hole in the undercast and the OSC decided to make a pickup attempt. As Jolly Green 55 spiraled down through the hole, the AMC (in King 22) advised the crew to put on gas masks as protection against the riot control agent that had been dropped near the survisors. The gas masks hampered communication and presented a real hazard. As the Jolly Green pilot, Captain Harold O. Jones, headed for Falcon 74 Alpha, he had difficulty communicating with the survivors, other aircraft, and his own crew. As Captain Jones told it:[79]

> *Hovering was very difficult as corrections and observations given by my crew were distorted and unintelligible with the gas masks on. Once over 74 Alpha, it took five minutes to locate him through the thick jungle canopy. . . . At one point during the hover my tail rotor got dangerously close to a tree. I was unable to understand the PJ on the aft ramp telling me not to move back. He finally ripped the mask off and used his helmet microphone to warn me. He immediately*

> *suffered from the effects of the [gas] we were stirring up with our rotor wash.*

Falcon 74 Alpha was picked up and Jolly Green 55 started for Bravo, who reported:[80]

> *On the first pass the Jolly had me sighted and I popped a flare, which he did not see, so I popped another one, which he saw. He flew in about 10 to 15 feet off to my right. . . . At first I started to move underneath the Jolly but the down-wash from the rotors was so strong that he blew down a couple of 100 foot trees, so I stayed out of the way in case any more trees fell.*

While Jolly Green 55 was lowering the penetrator for Falcon 74 Bravo, Captain Jones noted that they were well into their reserve fuel and he requested Sandy to have a tanker ready to air refuel as soon as Bravo's pickup was completed. Bravo was soon aboard the helicopter and as it departed, Captain Jones observed that the area where 74 Alpha had been was completely obscured by clouds. Also, the hole through which Jolly Green 55 had descended was closed so an IFR climb was made through the weather. The survivors were returned to Udorn in excellent condition.[81]

The following observations were made concerning the Falcon 74 operation:[82]

1. The usefulness of riot control agents during a contested SAR operation was again proven. Captain Lester O'Brien, Falcon 74 Bravo, reported that during a rescue attempt earlier in the day, the gas had been stirred up causing him to cough violently. However, between his own attacks of coughing he could hear others around him suffering the same effects.

2. As was already known, the gas masks used by the helicopter crews hampered communications.

3. The downwash caused by the HH-53 constitutes a real hazard to the survivor on the ground and precautions should be continually emphasized.

Nail 31

When the crew of Nail 31, an OV-10 from NKP, bailed out over the Ho Chi Minh Trail on 18 March 1972, they landed in one of the most hostile environments yet faced by rescue forces. The crew was both skillful and fortunate in avoiding capture or death during the period immediately following their bailout. The pilot, Lieutenant David G. Breskman, had traveled about 600 meters from his parachute and was sitting by a tree when he detected an enemy soldier with an automatic weapon coming toward him.[83/]

> *I took out my gun as he approached and sat very still hoping he would veer away from my position. . . . He kept coming toward me; I remained motionless. He looked in my direction a number of times but apparently didn't see me. He was within 10 feet of my position when I wheeled around and fired four times. . . . I cautiously moved over to him and took his MK-47. There was a lot of groundfire at this time and my shots apparently didn't attract attention.*

The SAR force had meanwhile arrived, and the groundfire that Lieutenant Breskman heard was most likely that which was directed at Sandy 01 who was trolling the area looking for enemy positions. On one of his passes Sandy 01 was hit and downed by AAA. The pilot bailed out and was immediately picked up by an Air America helicopter. Before he was shot down, Sandy 01 had pinpointed the location of Captain Steven L. Boretsky, the weapons

systems officer of Nail 31. However, a problem was to develop in that Captain Boretsky was having trouble with his radio and, since he was forced to keep moving away from gun positions, his exact location would not again be known until the next day. With SAR operations cancelled for the day due to heavy groundfire, the night was spent in trying to neutralize the enemy positions which, with his location unknown, placed Captain Boretsky in a hazardous situation.

For 24 hours, airstrikes were used to soften up the area sufficiently to enable a rescue attempt to take place the following day. Special ordnance contributed significantly toward protecting the survivors through the night. The support provided for the Nail 31 SAR operation was indicated by Captain Randy Jayne, OSC during the first afternoon:[84/]

> *While I was OSC, I got not only all the available ordnance in the area, I also got the special ordnance that had been requested earlier in the day. Had we not put that ordnance in--I'm talking here primarily of area denial type weapons--if we hadn't put that ordnance in, if it hadn't been available, those men would not have made it through the night. They were right in the middle of an enemy storage area, bivouac area, an extremely large concentration of enemy troops and AAA.*

As the time for another rescue attempt approached, a wall of smoke was laid by A-1 "Smoke" aircraft from NKP. Enemy resistance had been subdued by the strike aircraft, some of which carried laser-guided bombs and, when the order to execute was given, the Jolly met with little groundfire enroute to the survivors. There was some confusion as to where

Captain Boretsky was, but both crewmembers were found and safely evacuated. The accuracy and the amount of firepower delivered against the enemy during the Nail 31 operation caused Colonel Cecil N. Muirhead, Jr., Commander, 3ARRGp, to speculate that, "toward the end of this operation, the enemy probably wished we would just finish and leave him alone."[85/]

The SAR conference at which Colonel Muirhead made his remarks was held at NKP on 26 March 1972. Those in attendance included the crew of Nail 31 and most of the participants in the SAR operation. The purpose of the conference was to determine what lessons could be learned from the Nail 31 experience. The minutes of the conference included the following:[86/]

1. It was suggested that in extremely high-threat areas, the Nail FACs maintain longer OSC prior to allowing the Sandys in the area for in-close trolling. The Sandys should insure that they are briefed thoroughly by the on-scene FAC and by King.

2. It was emphasized that the cycling and scheduling of Pave Nail assets represented a critical problem due to aircraft availability and maintenance. It was suggested that Joker coordinate closely with the 56SOW to insure the best utilization of the assets.

3. It was noted that first light planning apparently created a considerable fast-mover overload on tanker resources. This resulted from holding certain night flights over until first light without expending them. Like other assets, tankers were limited, and strike flights should expend as soon as possible to avoid excessive refuelings and exhaustion of tanker resources.

Spectre 22

The end of the reporting period was marked by the spectacular rescue of all 15 crewmembers of a Spectre AC-130 gunship. At 2200, 30 March 1972, Spectre 22 was hit by AAA while attacking trucks in the Steel Tiger area of Laos. The right wing burst into flames and the pilot, Captain Waylon O. Fulk, gave the order to evacuate from the aircraft.[87/]

While two crewmembers bailed out at that time, the others elected to remain with the aircraft temporarily. After a lapse of approximately 10-15 minutes, it became apparent that they could no longer stay with the burning aircraft. Captain Fulk, by this time clear of the Steel Tiger area, again gave the order to bail out. When the remaining 13 crewmembers left Spectre 22, they were some 50 miles away from the first two crewmembers who had bailed out earlier.[88/]

The SAR forces were alerted for a first light effort and through the remainder of the night, other Spectre gunships and FACs located the survivors and related their positions in terms of LORAN fixes.[89/]

The following morning the largest rescue operation of its type began. The two survivors that had bailed out first--in Steel Tiger--were picked up by Air America and flown to Pakse, Laos where they were later recovered by a Jolly Green. The SARTF arrived at dawn and within two hours the Jollys had picked up the remaining 13 crewmembers and the operation was complete.

[redacted]

CONFIDENTIAL

Prior to the Spectre 22 operation, there had been concern that the existing procedures would not be adequate for effecting a rescue of a large number of survivors in a hostile area. To improve the situation, all SEA units were requested to submit comments or proposed changes for inclusion in a 56SOW draft of changes to SAR procedures for large-crew aircraft. The final draft was to be forwarded to the 3ARRGp, and the changed procedures were to be briefed to all multi-crew tactical units flying in SEA.[90/]

During the Spectre 22 SAR, the importance of a newly acquired asset--the Spectre gunship--was confirmed. The equipment aboard the three AC-130s that circled the survivors that night made it possible to pinpoint the positions of the crewmembers on the ground. These positions, in turn, were passed to the Jolly Greens, thus greatly reducing the time required to locate the men the following morning.

While the survivors' exact positions were being determined, surprisingly little difficulty was encountered in communication. This had been another matter of concern for prospective multi-crew rescue operations. The difficulties in locating 13 men in a relatively small area of jungle were compounded by the many aircraft at the scene, and presented a situation in which it could hardly be expected that effective radio communication could take place. It was a credit to the SAR force and to the crewmembers of Spectre 22 that radio discipline was maintained to a degree that allowed the pickups to be rapidly accomplished. Sharing the credit were the Spectres and other aircraft that spent the night overhead, both locating the survivors'

[redacted]

positions and keeping their spirits up until the rescues took place. It appeared certain that the experience gained during the Spectre 22 operation would prove valuable in modifying procedures in anticipation of subsequent multi-crew rescue operations.

LOSSES

During the reporting period the 3ARRGp lost three HH-53 Jolly Greens to enemy action. Eight personnel of the 3ARRGp were killed in action (KIA) and one was listed as missing in action (MIA).

3ARRGp COMBAT LOSSES

Date	Unit	Type/Tail Number	KIA/MIA
21 Jul 71	40ARRSq	HH-53/68-8285	0
25 Nov 71	37ARRSq	HH-53/68-10366	3 KIA/1 MIA
27 Mar 72	40ARRSq	HH-53/68-10365	5 KIA/0

Source: 3ARRGp Safety Office, 12 April 1972.

CHAPTER V

THE FUTURE

As this report went to press, the enemy invasion of SVN that had begun in late March had not lessened in intensity. The SAR forces were engaged in what were probably the most difficult operations of the war. It remains for a later report to detail the augmentation of the SAR forces and to document the 3ARRGp's performance during that period.

RESCORT

By early 1972, it was already apparent that the level of enemy activity, combined with the attrition of RESCORT aircraft and the redeployment of tactical fighters, called for basic revisions to the tactics employed in SAR operations.

It had already become policy to delay committing Sandys to areas of AAA until it could be assured that there was an objective. Even then, more time was being spent in trying to neutralize the area prior to using the A-1s to troll and pinpoint the survivor. In discussing the threat as it existed in March 1972, Captain Jayne presented his views on the new capabilities available to the SARTF:[91/]

> *It is no longer an operation where two A-1s, or four A-1s and two Jolly Greens go out and make a pickup, in a lot of cases. The concept of the SAR force being limited to those two aircraft is long behind us. We were able to do some innovating here, partially because some people*

[redacted]

had some foresight and partially due to circumstances. We found that the new OV-10 capability--the Pave Nail--gave us some remarkable abilities that we did not have before. We found that with the combination of the Pave Nail and the laser-guided bomb capability, that we are much better able to deal with large enemy AAA than we were in the past. We found that with LORAN delivery capability, combined with the laser again to pinpoint the survivor, we can protect him and drop ordnance around him even in IFR conditions. Unfortunately, in the last five years we've lost a lot of survivors--captured--because of weather not allowing the pickup. We've rescued three aircrews this year already out of weather, in each case, initially so bad that the A-1 could not get under the clouds--between the clouds and the trees. One of these people [Ashcan 01] was picked up out of that kind of weather by a helicopter, a very unusual situation and one that existed only because of the Pave Nail's equipment and the Jolly Green's equipment.

What we try to do now, the SAR concept has changed to take advantage of this--when we are scrambled on a SAR mission, we hope to have an on-scene FAC who knows the area. We use him to give us a briefing on the area and to put strikes in while we're working. We also try to scramble or divert a Pave Nail to the area immediately. The first thing we want to do is get the man's position down to the last foot. We do a visual search and a communications search and hopefully, at some point, we are able to pinpoint the man's position exactly, so the [radar operator in the Pave Nail] can see the guy on his scope--mark his parachute, a tree, something to give us an exact location. Because if we can do this, problems of weather coming in, or nightfall, don't limit us. We can still protect the man with ordnance. We can work close to him--close, meaning around 1,000 meters--and drop ordnance without fear of injuring the survivor. Now, we've done this four or five times and in no case have we come close to endangering the survivor by dropping ordnance.

Before committing a Jolly Green to a pickup in a hostile environment, it was still required that a Sandy troll the area and, as OSC, determine whether it was permissive enough to allow a reasonable chance for success.

[redacted]

No aircraft was deemed a suitable substitute for the Sandy during this critical phase of a SAR operation. For that reason--and to protect the remaining A-1s--it was suggested at the 26 March 1972 SAR Conference at NKP that in extremely high-threat areas, the Nails and Pave Nails maintain longer OSC prior to allowing Sandys in the area for in-close trolling.[92]

It was planned by PACAF to reduce the number of A-1s to 10 UE* by FY 1973. Additionally, attrition threatened to lower the number of A-1s to a level insufficient to effectively support SAR operations. The 1SOS Operations Officer said in March, 1972:[93]

> *The big thing that I think is going to make the difference is if we can continue to turn over more of the search phase to the Nails and King bird and judiciously use the Sandy force; we may then be able to continue. I think it is a very unrealistic force posture that they have given us in that they expect us to maintain an adequate Sandy alert posture with insufficient aircraft. When we had 21 aircraft, it depleted our resources just trying to keep aircraft over the survivor for 12-14 hours. As we go lower and lower we are reaching the point where we will have to get another type aircraft or more A-1s.*
>
> *As far as I am concerned, the only airplane that can replace the A-1, for the role it has to do, is a new A-1. The jets don't have the loiter capability nor can they withstand the groundfire that we have to take when we are trolling the area prior to bringing in the Jollys. We have armor plating around the pilot and the engine which enables us to withstand most any small arms hits and still get the aircraft back to the field. The A-37, the F-4, the A-7--all of these aircraft are very vulnerable to even the smallest of small arms fire if they take a hit in the engine section. Also, the pilots of these aircraft have little protection. Only the A-7 can get slow enough to get down and do the job that we have to do to get the survivor out.*

*The number of authorized A-1s was 20 UE as FY 1973 began.

Unless the whole concept of rescue operations changed drastically, which was not foreseeable in the near future, the only prospect of an aircraft qualified to assume the Sandy role seemed to lie in the development of a new one.

Nighttime Rescue Capability

Although night alert had been pulled for some time with the LNRS-equipped HH-53s, a combat rescue at night had yet to be made as the reporting period ended. Although features of the system had assisted in the weather recovery of Ashcan 01, its limitations made it unlikely that a nighttime rescue under any but the most ideal conditions could be expected. Primary obstacles to be overcome before the potential of the system could be realized were in the following areas: 94/

1. Terrain Radar Avoidance: The system could only be employed in flat to rolling terrain because it was not capable of warning the pilot when he was near cliffs.

2. Locating the Survivor: Further research was required to develop a satisfactory method of locating the survivor in weather and in heavy jungle. The equipment in use required that the survivor be in the clear before he could be located.

3. Gas Masks: A redesigned gas mask was needed for use in rescues where riot control agents had been used. The mask being used did not allow the use of special night goggles virtually essential during night rescue operations.

Gunships

An additional night SAR capability came to light as a result of the 56SOW SAR Conference on 16 December 1971. Already a proven asset in SAR

operations, the gunships, especially the AC-130 Spectres, were becoming increasingly important in protecting the survivor at night. The Spectre possessed a potent fire control system tied into a sophisticated navigation/detection capability which included LORAN, IR, and LLTV. It was pointed out at the conference that when the Spectre could maintain a pinpoint location on the survivor, it could deliver strafe ordnance very close to his position, discouraging enemy movement in the area.[95/]

The major limitation on the use of gunships in the future would be the degree of AAA threat. While night gunship coverage was considered extremely valuable, recent SARs had been in areas where the AAA/MIG/SAM threat prevented their operation. In the future, however, it was planned that the gunships would be utilized whenever the situation permitted.[96/]

Task Force Alpha

Task Force Alpha (TFA), located at NKP, was responsible for monitoring the sensors placed along the Ho Chi Minh Trail. Additionally, the TFA controllers were regularly provided with strike aircraft with which to attack selected segments of the trail, based on intelligence gathered through the sensors.[97/]

When SAR operations were conducted along the trail, TFA information was passed to the SAR force through intelligence liaison personnel who operated in the SAR Command Post during rescue efforts. Greater use of this capability was anticipated for the future through closer coordination between the SAR coordinator and the TFA controller. In this manner,

selective strikes on preplanned targets near the survivor could be made to protect him, especially at night.[98/]

Command and Control

The intricate command and control system in use at the height of the war was perhaps not well suited for the level of activity in SEA during the latter part of 1971 and early 1972. Suggestions were offered at that time to reduce the complexities inherent in a system that requires the relaying of requests and information through so many individuals and agencies.

When a Sandy OSC made a request to King, it was relayed to the appropriate RCC. The RCC forwarded the request to the JRCC which in turn passed it on to the 7AFCCC. The 7AFCCC then set about satisfying the OSC's request by contacting the appropriate wing to get (for example) ordnance loaded and to the SAR scene.

According to an experienced OSC, there were often major delays at the RCC, at the JRCC, and at the 7AFCCC level, where it was decided whether the OSC's request was valid and what the priority should be. One suggestion to reduce the time spent was to use the Airborne Battlefield Command and Control Center (ABCCC), bypassing King and the RCC when requests were to be made for special ordnance or forces. In support of his suggestion, the OSC said:[99/]

> *Basically, we've found that the people in the ABCCC know the frags, know the airplanes, and know the ordnance. They control the war every day and are better able to get the stuff on the scene, if they are allowed to do so.*

The issue became moot when the enemy invaded SVN, resulting in an increase in U.S. airpower in SEA and the resumption of air attacks against the North.

When air activity in SEA is again reduced to the level prior to the invasion, the question will most likely be raised once more. A greater enemy threat with reduced SAR and SAR support forces would demand greater flexibility in getting special ordnance to the SAR scene as rapidly as possible. In the future, assets may not be available for prolonged SARs.

SUMMARY

Soon after this reporting period ended, the U.S. was flying combat operations almost exclusively from Thailand. Additionally, during 1971 and early 1972, almost all strike activity was conducted in Cambodia and Laos. However, with the NVN offensive in the spring of 1972, the war increased in intensity with the Air Force striking in the North again. The future of the USAF in SEA was uncertain, but as long as Americans continued to fly combat, they could count on the people in rescue to support them. As Dr. Harold Brown, former Secretary of the Air Force said: 100/

> *When the history of this war is finally written, I feel that the story of Air Rescue may well become one of the outstanding human dramas in the entire history of the Air Force. Air Rescue did not begin, of course, with the war in Vietnam. But the extent of the operation, the dangers involved, and the dedication shown on an everyday basis--month after month--makes these rescue operations something unique in our military history. . . . These men are all*

heroes, but they're also normal Americans from all walks of life. They come from the cities and the farms. They share the same hopes and fears that concern us all. . . .

Certainly, the Aerospace Rescue and Recovery people deserve their immortality. For they have lived up to their motto as if it were a solemn pledge: "That others may live."

FOOTNOTES

CHAPTER I

1. History: Headquarters 3rd Aerospace Rescue and Recovery Group Quarterly History, Jul 71-Sep 71 (U), 3ARRGp, n.d., pp. 1-2. (S); Hereafter referred to as 3ARRGp Quarterly History with appropriate quarter indicated.

2. Interview: Author with Captain Richard L. Fuller, Information Officer, 3ARRGp, TSN, 4 Apr 72 (C). Hereafter referred to as Captain Fuller Interview.

3. Ibid.

4. OI: JRCC Operating Instructions 64-1 (U), JRCC, 7AF, 15 Jul 71. (C)

5. OI: JRCC Operating Instructions 64-2 (U), JRCC, 7AF, 15 Jul 71. (C)

6. Op Cit: 3ARRGp Quarterly History, Jul 71-Sep 71.

7. Interview: Author with Major Peter J. Scrivano, Commander, OL-B, Udorn RTAFB, 21 Mar 72. (S)

8. Interview: Author with Colonel Frederick V. Sohle, Jr., Commander 41ARRWg, Hickam AFB, Hawaii, 2 March 72. (C); Hereafter referred to as Col Sohle Interview.

9. Op. Cit: 3ARRGp Quarterly History, Jan 71-Mar 71.

10. Op. Cit: 3ARRGp Quarterly History, Jul 71-Sep 71.

11. Op. Cit: Captain Fuller Interview.

12. Op. Cit: Colonel Sohle Interview.

CHAPTER II

13. Flight Manual: T.O. 1H-53(H)B-1 (U), 30 Jun 1970, Change 5, 30 Sep 1971. (U)

14. Op. Cit: Colonel Sohle Interview.

15. Flight Manual: T.O. HH-43F (U), 22 Sep 66, Change 8, 15 Apr 71. (U)

16. Ibid.

17. Flight Manual: T.O. 1C-130(H)H-1 (U), 22 May 68, change 15 Feb 71. (U)

18. Flight Manual: T.O. 1A-1E-1 (U), 30 Apr 71, Change 1, 30 Nov 71. (U)

19. Report: USAF Force Withdrawal (U), Project CORONA HARVEST, Hq PACAF, 31 May 72, p. 34. (TS)

20. Op. Cit: Colonel Sohle Interview.

21. Interview: Author with Major James C. Harding (U), Operations officer, 1SOS, NKP, 27 Mar 72. (S) Hereafter referred to as Major Harding Interview.

22. Flight Manual: T.O. 11-10A-1 (U), 1 Mar 71, Change 1, 1 Jan 72. (U)

23. Message: Priority Listing of Combat ROCs (U), 010046Z May 71, Hq PACAF (DOQ) (C)

24. Fact Sheet: Pave Imp (U), Hq PACAF (DOQO), 1 Sep 71. (C)

25. Op. Cit: 3ARRGp Quarterly History, April-June 1971 (U), pp. 15, 17. (S)

26. Op. Cit: 3ARRGp Quarterly History July-August 1971, p. 18.

27. Final Evaluation: Pave Imp Operational Test Order 6-6-71 HH-53C (U), 40ARRSq Udorn RTAFB, Thailand, 9 Jul 71. (S)

28. Message: Pave Imp (U), Hq 7AF to Hq PACAF (DO), 120900Z Aug 71. (S)

29. Message: Pave Imp Combat Evaluation (U), MAC to Hq PACAF (DO) 251620Z Aug 71. (S)

30. Message: Pave Imp (U), Hq 7AF to Hq PACAF (DO), 130800Z Sep 71. (S)

31. Interview: Author with Major Kenneth E. Ernest (U), 40ARRSq, Project Officer for Pave Imp, at NKP on 26 Mar 72. (S). Hereafter referred to as Major Ernest Interview.

32. MAC ROC: Precision Survivor Location (U), Hq MAC (ROC #27-70), 16 Nov 70. (C)

33. Brochure: Cubic's ELF AN/ARD-21 Electronic Location Finder (U), Cubic Corporation, n.d. (U)

34. Message: Electronic Location Finder (ELF) ARD-21 (U), CSAF to MAC, 142151Z Mar 72. (U)

35. Message: Project 1559, Task 183 (U), AFSC to ASD, 172130Z Mar 72. (U)

36. Message: Combat ROC 4-72 ECM and RHAW Systems for Rescue HC-130P (U), from 7AF to CINCPACAF (DOQ), 250830Z Feb 72. (S)

37. Message: Combat ROC 4-72 ECM and RHAW Systems for Rescue HC-130P (U), from MAC to CSAF, 202300Z Mar 72. (U) and;
Message: Combat ROC 4-72 ECM and RHAW Systems for Rescue HC-130P (U), from TAC to CSAF, 181700Z Mar 72. (C)

38. Message: Combat ROC 4-72 (RHAW/ECM for HC-130P) (U), from AFSC to ASD, 101535Z Mar 72. (S)

39. Message: Combat ROC 6-72, ECM Capability for Aircrew Recovery (ACR) HH-53C (U), 7AF to PACAF, 210030Z Mar 72. (S)

40. Message: Combat ROC 6-72, ECM Capability for Aircrew Recovery (ACR) HH-53C (U), PACAF (DO) to CSAF, 290312Z Mar 72. (S)

41. Message: Combat ROC 6-72, ECM Capability for Aircrew Recovery (ACR) HH-53C (7AF) (S) 210030Z Mar 72 (U), MAC to CSAF, 311847Z Mar 72. (C)

42. Letter: Air Deliverable Emergency Kit (U), 3ARRGp to Hq 7AF (DOOL), 28 Jul 71. (C)

43. Message: Droppable Survival Kit (U), 56SOW to 3ARRGp, 170420Z May 71. (C)

44. Ibid.

CHAPTER III

45. Report: End of Tour Report, Lt Col Edward S. Modica (U), Commander, 40ARRSq, NKP, 18 Feb 70-12 Feb 71, 20 Jan 71. pp. 3-4. (S)

46. Op. Cit: Colonel Sohle Interview.

47. Memorandum: Limited Night Recovery System (U), American Embassy, Thailand to 7/13AF Liaison Officer, Lt Col Hennessey, 13 May 71. (C)

48. Interview: Author with Captain Donald L. Burgess (U), Standardization Navigator, 41ARRWg, Hickam AFB, Hi, 13 Jun 72. (U)

49. Op Cit: Major Harding Interview.

50. Regulation: Aircrew Life Support System Continuation/Refresher Training (U), PACAFR 504-1, 31 Jan 72, p. 3. (U)

51. Interview: Author with Lt Col Clifford E. Brandon (U), Cmdr, 40ARRSq, NKP, 28 Mar 72. (U)

52. Review: E&E Tips (U), Air Intelligence Review, Hq PACAF (INXT), 25 Apr 72, pp. 46, 51. (S) Hereafter cited as E&E Tips.

53. Op. Cit: Major Harding Interview.

54. Interview: Author with Captain Richard C. Rian (U), Personnel Officer, 41ARRWg, 13 Jun 72. (U).

55. Ibid.

56. Ibid.

57. Ibid.

58. Op. Cit: 3ARRGp Histories for 1971 and 1st Qtr 1972.

CHAPTER IV

59. Op. Cit: 3ARRGp History, Oct-Dec 1971. pp. 13-14.

60. Op. Cit: Major Harding Interview.

61. Manual: Search and Rescue-Southeast Asia (U), 7AFM 64-1, Hq 7AF, 15 Jan 71, p. 1-1. (S) Hereafter referred to as 7AFM 64-1.

62. Report: USAF Search and Rescue in Southeast Asia 1 Jul 69-31 Dec 70 (U), Project CHECO, 23 Apr 71, pp. 55-56. (S)

63. Interview: Author with Captain Edward R. Jayne II (U), Pilot, 1SOS, NKP, 25 Mar 72. (S) Hereafter cited as Captain Jayne Interview.

64. Op Cit: 3ARRGp Histories, Jan-Mar 71; Apr-Jun 71; Jul-Sep 71; Oct-Dec 71; Jan-Mar 72.

65. Interview: Major Robert E. Belli (U), with Mr. Melvin Porter, at U-Tapao USAF Hospital, Thailand, 30 Jan 72. (C) Hereafter cited as Major Belli Interview.

66. Ibid.

67. History: History of the 40ARRSq, 1 Oct 71-31 Dec 71 (U), 40ARRSq, NKP RTAFB, Thailand, Attachment 1, n.d. (S) Hereafter cited as 40ARRSq History, 1 Oct 71-31 Dec 71.

68. Ibid.

69. Op Cit: Major Belli Interview.

70. Op. Cit: Major Ernest Interview.

71. Ibid.

72. Ibid.

73. Op Cit: Major Belli Interview.

74. Op. Cit: Major Ernest Interview.

75. Op. Cit: 40ARRSq History, 1 Oct 71-31 Dec 71, Attachment 1.

76. Report: E&E Report (U), Major William T. Stanley, Pilot of Falcon 74, Dec 1972. (S) Hereafter referred to as E&E Report.

77. Report: E&E Report (U), Captain Lester O'Brien, Navigator of Falcon 74, Dec 72. (S) Hereafter referred to as Captain O'Brien E&E Report.

78. Op. Cit: 40ARRSq History, 1 Oct 71-31 Dec 71. Attachment 3.

79. Ibid.

80. Op. Cit: Captain O'Brien E&E Report.

81. Op. Cit: 40ARRSq History, 1 Oct 71-31 Dec 71. Attachment 3.

82. Op. Cit: Captain O'Brien E&E Report.

83. Op. Cit: E&E Tips.

84. Op. Cit: Captain Jayne Interview.

85. Notes: Notes Taken by Author During SAR Conference at NKP (U), 26 Mar 72. (C)

86. Minutes: SAR Conference Minutes (U), 56SOW, NKP, 26 Mar 72. (S) Hereafter referred to as SAR Conference Minutes, 26 Mar 72.

87. Report: E&E Report (U), Captain Waylon O. Fulk (U), Aircraft Commander, Spectre 22, n.d., (U) Loc. Hq PACAF (DOOTFL)

88. Interview: Author with Lt Col J. H. Kyle (U), Chief, PACAF Special Operations Branch, 11 Jul 72. (S)

89. Ibid.

90. Minutes: SAR Conference Minutes (U), NKP, 27 Feb 72, pp. 4, 5. (S)

CHAPTER V

91. Op. Cit: Captain Jayne Interview.

92. Op. Cit: SAR Conference, Minutes, 26 Mar 72.

93. Op. Cit: Major Harding Interview.

94. Op. Cit: Major Ernest Interview.

95. Letter: Improvements in Search and Rescue (SAR) Capabilities (U), Colonel Jack A. Robinson, Commander, 56SOW, NKP, 30 Dec 71, p. 51. (S)

96. Ibid.

97. Ibid, pg. 4.

98. Ibid.

99. Op. Cit: Capt Jayne Interview.

100. News Release: Background-Air Rescue (U), Directorate of Information, Hq 7AF, 10 August 1971. (U)

GLOSSARY

7AF	Seventh Air Force
7AFCCC	Seventh Air Force Command and Control Center
AAA	Antiaircraft Artillery
AB	Air Base
ABCCC	Airborne Battlefield Command and Control
AFCS	Automatic Flight Control System
AMC	Airborne Mission Commander
ARRGp	Aerospace Rescue and Recovery Group
ARRS	Aerospace Rescue and Recovery Service
ARRSq	Aerospace Rescue and Recovery Squadron
ARRWg	Aerospace Rescue and Recovery Wing
Blue Chip	Callsign--7AF Command and Control Center
CROC	Combat Required Operational Capability
Det	Detachment
DMZ	Demilitarized Zone
DF	Direction Finder
ECM	Electronic Countermeasure
E&E	Escape and Evasion
ELF	Electronic Location Finder
FAC	Forward Air Controller
FM	Frequency Modulated (Radio)
FY	Fiscal Year
GOT	Gulf of Tonkin
HF	High Frequency (Radio)
IFR	Instrument Flight Rules
IR	Infrared
IP	Initial Point
Jack	Callsign for Operating Location Bravo
Joker	Callsign for the Joint Rescue Coordination Center
JRCC	Joint Rescue Coordination Center
JSS	Jungle Survival School

KIA	Killed in Action
King	HC-130P Callsign
LBR	Local Base Rescue
LLLTV	Low Level Light Television
LNRS	Limited Night Recovery System
MAC	Military Airlift Command
MIA	Missing in Action
NKP	Nakhon Phanom (Royal Thai Air Force Base)
NVN	North Vietnam
OL	Operating Location
OL-A	Operating Location Alpha
OL-B	Operating Location Bravo
OSC	On Scene Commander
OT&E	Operational Test and Evaluation
PACAF	Pacific Air Forces
Pedro	HH-43 Callsign
PJ	Para Jumper (now Pararescue Recovery Specialist)
Queen	Callsign for Operating Location Alpha
RCC	Rescue Coordination Center
RCS	Radar Cross Section
RESCAP	Rescue Combat Air Patrol
RESCORT	Rescue Escort
RHAW	Radar Homing and Warning
ROC	Required Operational Capability
RTAFB	Royal Thai Air Force Base
RTNB	Royal Thai Naval Base
RVN	Republic of Vietnam
SAM	Surface-to-Air Missile
Sandy	A-1 Callsign for SAR Operations
SAR	Search and Rescue
SARCO	Search and Rescue Coordinator
SARTF	Search and Rescue Task Force
SDO	Senior Duty Officer
SEA	Southeast Asia
SEAOR	Southeast Asia Operational Requirement
SOS	Special Operations Squadron
SOW	Special Operations Wing

TAC	Tactical Air Command
TFA	Task Force Alpha
UE	Unit Equipped
UHF	Ultra High Frequency (Radio)
VFR	Visual Flight Rules
VHF	Very High Frequency (Radio)
VNAF	(South) Vietnamese Air Force

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