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in yields by the two methods. Although there is more confidence in the U^{235} analysis, the preliminary yield should be quoted as 550 ± 50 KT.

2. Project 1.2 - Internal Nuclear Detector Measurements (MIKE) (AEC)

a. Object

This project was designed to document various processes of the detonation, using the following techniques. Selected amounts of various substances are included in, or placed in the immediate vicinity of the device. These substances have little or nothing to do with the primary nuclear processes of the explosion, but serve only as remote indicating "tracers". The existence of a tracer substance in or near the exploding device is assurance that such a tracer will be bombarded with neutrons and gamma rays. If the substance has been properly selected, and if the tracer has been located sufficiently near the device to be thoroughly mixed with the device debris, such a bombardment will result in easily detectable activity in every sample subsequently analyzed. Hence, careful positioning of tracer substances can furnish information as to the detailed action of some particular portion or component of the device design.

b. Method

The experimental procedures involved are essentially the laboratory analysis techniques used on samples taken from the atomic cloud.

c. Results - MIKE Shot

The complete results of this project are not available at this time. Continuing studies are in progress to gather, by this method, diagnostic information as to the detailed thermonuclear processes of the device during the detonation period. These studies are inter-related with efficiency of deuterium burning or radiochemical fusion yield measurements. Preliminary results indicate approximately [redacted] of the deuterium; however, there is considerable evidence that [redacted].

3. Project 1.3 - Cloud Sampling (MIKE - KING) (AEC)

This project was designed to collect appropriate samples of the atomic cloud, primarily in support of the radiochemical studies of Projects 1.1 and 1.2. The project was considerably complicated by the specifications for an "adequate sample", namely minimum acceptable physical size, absence of contamination during collection and shipment, sufficiency of nuclear

activity and availability for relatively immediate recovery and delivery to the Laboratory for analysis.

b. Method

(1) Sixteen F-84G's, manned sampling aircraft, were maintained on Kwajalein in order that a minimum of twelve could be operational for each shot. A total of twelve filter samples were considered essential for the analysis required by Projects 1.1 and 1.2. Two papers from a given aircraft constituted a single sample. Since these carriers were required to have a flight capability of five hours, ten inflight refueling tankers were maintained (also on Kwajalein) for support purposes. One B-36 and one B-29 were used as primary and alternate operational air command posts, or traffic controllers for the project.

(2) Sampling devices and associated equipment installed on the F-84G aircraft consisted of the following:

(a) A filter was installed in the forward section of each wing tip tank - the filter paper area in each case being approximately one square foot. The filter mouth was supplied with a shutter which could be opened or closed by the pilot to preclude the possibility of rain washing the paper.

(b) A snap sampler (consisting of a poly-ethylene bag in a metal case, with a valve controlled inlet probe) was mounted in the nose of the aircraft.

(c) An ionization chamber was mounted in the right tip tank filtering unit - to act as the detector for a dose rate meter in the cockpit. This meter gave the pilot an indication of particulate sample strength collected.

(d) A second intensity rate meter, with its associated detector, was mounted in the cockpit. This meter gave a direct reading of dose rate to which the pilot was subjected at a given time.

(e) A total-dose meter was also mounted in the cockpit to give the pilot a direct indication of how many roentgens of gamma he had received.

(3) At zero time, two of the spare F-84G's were in the shot area - ready to perform reconnaissance as required to establish:

(a) Base of the upper cloud.

(b) Lowest altitude of prominent features of the cloud created by wind shear.

(c) Lowest altitude at which a useful radiation intensity was present.

This information was relayed to the control aircraft, and was used to determine proper take off times and flight altitudes for the twelve carriers.

(4) A much larger component of [DELETED] radiation was expected to be present in the cloud radiation flux from MIKE shot than one would expect from "normal" detonations. Fortunately, much of this [DELETED] [DELETED] in energy and could be "screened out" by a relatively thin layer of an absorbing material such as lead. The pilot was therefore shielded by a protective gown of lead impregnated glass fabric to reduce the soft component by a factor of about four.

(5) To protect the carrier pilot from ingestion of radioactive material, adequate precautions were taken to filter any air that entered the pressurized compartment.

c. Results

(1) MIKE Shot

(a) Twelve samples were obtained by the F-84G aircraft, including the two used for early reconnaissance. Aircraft operated in three flights of four aircraft each.

(b) Samples obtained by the first flight, as well as one sample from the second flight, were each approximately the size predicted and were satisfactory for yield determination. Two samples of the second flight and the four samples from the third flight were approximately one-third of the size of the best four and were satisfactory for the purpose of ratio and detector studies. These samples were from five to ten times smaller than they should have been because of unforeseen operational limitations beyond the control of this project (Par. 3c (1) (g) below). The two reconnaissance aircraft gave very small samples which were useful for ratio checks.

(c) Sample quality is governed by the capability of penetrating the main body of the cloud. In general, all samples, except four which were taken at radically different altitudes or sections of the cloud, are considered to be as representative of the cloud as possible.

18. Program 11 - Preliminary Geophysical and Marine Survey of Test Area

This program was designed to obtain detailed information as to the configuration and structure of Eniwetok Atoll in order that the effects of MIKE shot (and other high yield shots presently planned for future tests) upon that structure might be more readily and reliably interpreted. In addition, it included a study of the biological contamination effects resulting from an atomic burst near water.

Prior to MIKE shot, both acoustic soundings and seismic refraction surveys were conducted on and around the Eniwetok reef. Ground shock tests were accomplished in conjuction with high explosive detonations and two deep-drill holes were sunk to unaltered basement rock. In addition, samples of marine life were collected both before and after the shot in order that the biological effects of radiation contamination might be subsequently analyzed in the laboratory.

The only appropriate preliminary statement of results for this program is that usable data was recovered and is being reduced.

OPERATIONS

19. Organization and Command Relationships

a. Joint Task Force 132 was organized into a Headquarters and four functional task groups designated as:

(1) Task Group 132.1 (Scientific Task Group)

(2) Task Group 132.2 (Army Task Group)

(3) Task Group 132.3 (Naval Task Group)

(4) Task Group 132.4 (Air Force Task Group)

b. The basic plan for operation IVY was set forth in J.C.S. 2179/15. Forces were drawn from the Atomic Energy Commission and its contractors, and from the three Services. Appendix L depicts the general organization for operation IVY. Appendix M depicts the organization of the Headquarters, Joint Task Force 132. The peak task force strength overseas numbered approximately 11,000. Appendix N indicates the phasing of task force elements overseas.

c. Task Group 132.1 (TG 132.1), activated on 2 January 1951, was commanded by Mr. Stanley W. Burriss of LASL. TG 132.1 was responsible for designing and constructing all test facilities in the forward area and

conducted the experimental programs. The "J" Division of LASL, formed after operation SANDSTONE in 1948 to provide continuity in weapons tests activities and headed by Dr. Alvin C. Graves, formed the nucleus of TG 132.1. Actual design and construction of facilities and the operation of 31 boats and small craft were accomplished by the firm of Holmes & Narver, Inc., Los Angeles, California, which reached a peak strength of about 1,250 on Eniwetok Atoll. Other elements of TG 132.1 were drawn, under AEC contractual arrangements, from certain universities and from private industry or through assignment by CJTF 132 from military sources and Service laboratories. Approximately 113 officers and 171 enlisted men of the military Services were assigned to TG 132.1 to assist in administration or the conduct of experiments, as well as to receive special training. TG 132.1 was organized along military lines and at peak strength numbered about 2,124. The organization and missions of TG 132.1 are shown in Appendix O.

d. Task Group 132.2 (TG 132.2), activated on 1 August 1951, was commanded by Colonel George E. Burritt, USA. TG 132.2 operated all base facilities on Eniwetok Island; provided off-atoll communications, less Airways and Air Communications Service (AACS); and provided land security throughout the atoll. A force of 167 military police was assigned to accomplish this latter function. In addition, all military personnel on Eniwetok Atoll were organized and trained into a ground defense force capable of resisting hostile action, if such an emergency occurred. The peak overseas strength of TG 132.2 during the operational phase was approximately 1,230. The organization and missions of TG 132.2 are shown in Appendix P.

e. Task Group 132.3 (TG 132.3), activated on 8 February 1952 at Washington, D.C., was commanded by Rear Admiral Charles W. Wilkins, USN. The Task Group consisted of nineteen ships and thirty-five small craft. Naval air participation consisted of Patrol Squadron TWO based at Kwajalein with aircraft detachments aboard the USS RENDOVA (CVE-114). TG 132.3 conducted security operations in the forward area, served as an afloat base during MIKE shot evacuation and provided logistical and technical support to TG 132.1. All vessels were fully operational at the time of reporting to the Task Group and at peak strength the Task Group overseas numbered 5,487 personnel. The organization and missions of TG 132.3 are shown in Appendix Q.

f. Task Group 132.4 (TG 132.4), activated on 2 January 1952 at Kirtland Air Force Base, was commanded by Brigadier General F.E. Glantzberg, USAF. The Strategic Air Command (SAC), the Air Research and Development Command (ARDC) and the Military Air Transport Service (MATS) augmented the Special Weapons Center (SWC) in the organizing, manning, equipping and training of subordinate task units. The Air Materiel Command (AMC) provided technical and logistical support to the Task Group. TG 132.4 operated experimental and liaison aircraft and provided, in collaboration with other Task Force elements, such services as weather information, communications, search and rescue and documentary photography. During the training period, simulated operations were conducted and a complete, detailed rehearsal of IVY air operations was staged at Bergstrom Air Force Base in August, 1952. One F-84 was lost during the operational phase at Eniwetok, resulting in the death of the pilot. One RB-50 was destroyed with no personnel casualties. At peak strength the Task Group overseas numbered 2,518 personnel. The organization and mission of TG 132.4 are shown in Appendix R.

g. It is believed that a permanent Joint Task Force organization would result in more expeditious and economical progression of effort from one overseas operation to the next. A permanent organization would eliminate many of the following repetitive activities which have typified previous test operations due to the lack of continuity from one task force to another:

(1) Assignment, post-operation release and subsequent reprocurement of staff personnel indoctrinated in joint planning.

(2) Assignment, post-operation release and subsequent reprocurement of specialists and units specially trained for atomic energy test operations.

(3) Time consuming and costly processing of new AEC "Q" security clearances.

(4) Activation, post-operation deactivation and subsequent reactivation of Naval small craft used in off-continental tests.

(5) Modification, post-operation demodification and subsequent remodification of ships, aircraft and equipment employed in these test operations.

20. Planning and Training

a. Shortly after the organization of the JTF 132 Headquarters,

Training Memorandum No. 1 established the policies for the familiarization and training of Headquarters personnel. The memorandum outlined a required background reading and orientation course; emphasized utilization of appropriate courses of instruction and orientation in the atomic field offered at Sandia Base, Albuquerque, New Mexico, and later at Maxwell Air Force Base, Alabama; and emphasized the importance of staff visits to installations and organizations concerned with the activities of JTF 132. Following this, Training Memorandum No. 2 set forth the military training policy of CJTF 132 for the personnel assigned to the Garrison Force at Eniwetok. This memorandum had as its purpose the welding into a combat unit all the various occupational grades making up the Garrison Force, as well as the orderly conduct of Task Force matters in the forward area.

b. As the mission and concept of operation IVY became known, Operation Order No. 1-52 was issued for the purpose of guiding the formation and early training of the Navy, Air and Scientific Task Groups. As the concept became more firm, Operation Plan No. 2-52 was issued. This plan was designed to cover final training throughout the Task Force and the movement overseas.

21. On-Site Operations and Rehearsals

a. Joint Task Force and Task Group command posts were established in the forward area by 17 September 1952. This marked the beginning of the operational (on-site) phase. Task Groups then prepared to receive and take operational control of major air and surface components allocated for IVY. Arrival of major components in the forward area was phased in accordance with the immediate operational needs of the Task Force. For example, the security vessels and aircraft assigned began arriving on 15 September 1952 to correspond with the arrival of RESTRICTED DATA materials; drop aircraft and aircraft instrumented for effects began arriving on 25 September 1952 for on-site rehearsals; and evacuation transports arrived on 20 October, in sufficient time for preliminary loading. Meanwhile, the following on-site activities commenced to increase in tempo by mid September:

(1) Construction of test facilities progressed substantially as scientific personnel arrived with instrumentation equipment and supervised its installation and calibration. Concurrently, basic survey and

rehearsal. After two postponements due to unfavorable weather the KING weapon was successfully detonated on 16 November 1952, three days beyond the 13 November date planned at the time of reentry after MIKE shot.

22. Operations Afloat

a. Because of unknown factors involved in a detonation of the magnitude of MIKE, complete evacuation of Eniwetok Atoll was required for this phase of the operation. The CJTF 132, CTG 132.1 and the weapons party established their command posts for this period aboard the USS ESTES (AGC-12); CTG 132.2 established his command post on the USNS COLLINS (TAP-147); and CTG 132.3 was in his flagship, the USS RENDOVA (CVE-114).

b. With the exception of the small weapons party and an upper air sounding team, evacuation -- begun on M-4 days -- was practically completed by 2000 on M-1 day. CTG 132.4 boarded the ESTES at 1700 to act as Staff Air Controller. The weapons party boarded the USS CURTISS (AV-4) by 0125. The evacuation fleet, under the operational command of CTG 132.3, was clear of the lagoon by 0315 and the last ship was on station by 0445.

c. At the time of detonation all ships were in a sector bearing northeast to south, at a distance of thirty miles or more from ground zero. The exact position of several of the ships was dictated by their use as recording and measuring stations in various scientific programs.

d. The ships remained at sea until a radiological safety survey of the lagoon was made. Upon completion of this survey on the morning of M/1, reentry into the lagoon was commenced. With the completion of surveys of the camp areas the movement of personnel ashore was begun.

23. Post-Shot Reentries

a. Within one hour after the MIKE detonation, reentry operations commenced by helicopter launched from the RENDOVA at sea. Movement of the Task Force ashore was geared to reactivation of facilities and was completed by M/4 days. On M/1 day, radiological safety (RadSafe) conditions permitted general reentry into the atoll by the Task Force and on M/2 days the Task Force moved ashore. As radiation levels on the instrumented islands decreased, recovery operations progressed. By M/12 days all significant data was recovered.

b. Recovery operations following MIKE shot posed fewer obstacles

than those following MIKE. As the KING detonation was an air-drop, radiation levels were almost negligible. Thus, recovery schedules were advanced and recovery work was completed by K/7 days with excellent data obtained.

24. Disposition of Forces and Equipment

a. As tasks were completed, units of the Task Force were deployed and individuals returned to the ZI or reassigned in a normal phasing out process immediately after KING shot. As operation CASTLE had been programmed to follow IVY after only a short interval of time, the roll-up of IVY was planned in such a manner as tc provide for continuity of operations and for economical, expeditious support of CASTLE.

b. Consideration was given to the savings which would accrue through reassigning to the Task Force certain ships, boats and aircraft already activated and modified for IVY at substantial expense. Retention of planning staffs and certain troop elements was also accomplished.

25. Search and Rescue. Throughout the operation, search and rescue (SAR) responsibility for the Task Force was assigned to CTG 132.4. This proved to be a workable arrangement in view of his proximity to the Kwajalein Area SAR Coordination Center during the less critical periods and the versatility of control facilities available to him during rehearsals and shot periods in his Air Operations Center in the Combat Information Center (CIC) aboard the ESTES. Winch and float equipped helicopters, radar equipped P2Vs, destroyers and AVR crash boats combined with airborne control aircraft and the latest type fixed radar equipment of the ESTES provided superior SAR capabilities. To provide a margin of safety appropriate to extensive over water jet fighter operations, including inflight refueling, two "dumbo" equipped SB-29s and two SA-16 amphibious aircraft were assigned to remain airborne throughout critical periods.

26. Weather

a. The weather problem in operation IVY was one of the most difficult in the history of meteorology. Total requirements for weather; the absolute demands with respect to terminal conditions at Eniwetok and Kwajalein plus the air route between the two locations; and the rigorous conditions of minimum acceptability of upper wind structure controlling radioactive fall-out throughout the Marshall Islands created a problem with only

a remote probability of all conditions being favorable.

b. The fact that the problem was solved successfully should not be permitted to obscure one important fact. MIKE was detonated on the only day during a period of almost a whole month on which acceptable conditions prevailed. Conditions were unacceptable for the fourteen days preceding and the nine days following 1 November. The fact that the weather organization was able to recognize and predict conditions for that one day reflects great credit on the Task Force Weather Central and its supporting components on the outlying islands. KING shot was no less complicated because of the added requirement for a visual drop.

c. It is clear that more flexibility must be built into subsequent overseas tests in order to prevent costly delays which commit key scientific and military personnel and equipment for long periods of time. First, consideration should be given to planning for the most favorable period of the year, January - April. Secondly, all participating programs such as sampling, photography and scientific diagnosis must be made aware of the fact that imposition of individual weather requirements can eventually create an insolvable problem. It is vital, therefore, that demands be held to a minimum. In this respect, all efforts should be extended to simplify the cloud sampling problem. Finally, an effort should be made to schedule all shots not earlier than noon in order that weather reconnaissance aircraft may be effectively employed during the forenoon hours in formulating the final command decision, especially with respect to weather in the local area.

27. Radiological Safety. (See Appendix S).

28. Documentary Photography. Operation IVY was documented by the utilization of both still and motion pictures depicting the scope and conduct of the operation. The motion picture film depicts on-site operations and those activities of pre-operational nature which were necessary to give it proper continuity. Lookout Mountain Laboratory (LML), an Air Force organization, fulfilled all the film requirements and functioned as the documentary photographic unit of Task Group 132.1.

29. Official Observers

a. As a result of the difficulties experienced by previous task forces with their respective official observer programs, it was hoped that the program for IVY would preclude two of the most serious pitfalls, namely, the nomination of official observers too late to make adequate preparations for their orientation and the nomination of individuals as observers who were

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prompt AEC-DOD announcement immediately after each test would remove the extremely difficult problem of trying to keep from public knowledge unauthorized information of the fact that a test had occurred.

(3) A briefcase containing information classified up to and including SECRET-RESTRICTED DATA-SECURITY INFORMATION was left in the Officers' Quarters at Fort de Russy, T.H., by a member of the Scientific Task Group. The incident became known to the press in Hawaii and caused considerable undesirable press comment. The briefcase was determined to have been in military custody at all times until delivered to AEC authorities.

(4) All instances related above are presently under investigation by the Service agency concerned, the FBI and the AEC.

39. Intelligence

a. Intelligence summaries, as well as estimates and comments received from intelligence departments and Service agencies, were evaluated and collated so as to determine their effect upon the plans and operations of the Joint Task Force.

b. Contact reports in the forward area received immediate evaluation. None of the several reports received were determined to have derived from an enemy source.

40. Public Information

a. The public information policy was tempered by the realization that the IVY tests would exert greater impact upon United States foreign and domestic policies than previous tests. Consequently, the policy as resolved by the National Security Council called for a minimum of public reporting on the tests. This reporting was to be limited to one brief announcement after the tests in addition to the two brief pre-test announcements on the organization and timing.

b. Prior to receipt of the National Security Council decision on the Public Information Plan for operation IVY, the CJTF recommended to the Chief of Staff, U.S. Army, Executive Agent, that an AEC-DOD announcement be made immediately after each shot. Two reasons appeared pertinent at that time. First, personnel in large numbers would be released for return to the ZI immediately after MIKE shot, thereby increasing the danger of uncleared statements reaching the public. Secondly, if the press learned of the shot

prior to final announcement, the Commander, his Deputies and high ranking observers would be constantly beseiged for statements. Subsequent events have proven the desirability of an official announcement after each shot.

LOGISTICS

41. Transportation

a. Shortly after activation of the Task Force, CINCPAC published directives outlining broad policies and procedures for control of MATS airlift and Military Sea Transportation Service (MSTS) surface transportation allocated for JTF 132 use. Personnel and cargo space requirements via air and surface were submitted by the task groups, including AEC and its contractor, to CJTF 132 for screening, consolidation and submission through normal channels to the Executive Agent.

b. Shipment of personnel and equipment from the West Coast to the forward area and return was accomplished primarily by MATS aircraft and MSTS ships, exceptions being shipments via vessels of the Naval Task Group, aircraft assigned to the Navy and Air Force Task Groups and Special Missions. Special Air Mission (SAM) flights were requested for key Staff personnel, VIPs, return of radiological samples and critical priority material.

c. Phasing of personnel to the forward area began in March 1952, and was completed in October. Shipment of supplies and equipment proceeded on a continuous basis. The required types of equipment presented a problem in that more deck stowage was necessary than was normally available and vessels calling at Eniwetok Atoll had to be self-sustaining inasmuch as heavy lifts could be discharged only when adequate ship's gear was available.

d. To facilitate and expedite the processing and movement of Task Force personnel and equipment through transshipment points, liaison officers were stationed at Naval Supply Center, Oakland, California; Travis AFB, California; Hickam AFB, Oahu, T.H.; and a Movement Control Agency which was established at the Naval Station, Kwajalein Island, M.I. (NAVSTAKWAJ). The three liaison officers first noted above were further designated as Movement Control Agents to insure that security policies were carried out in accordance with CINCPAC instructions.

e. During operation IVY some 157 vessels were employed to transport 2,662 passengers and 143,447 measurement tons of west and eastbound

APPENDIX S

RADIOLOGICAL SAFETY

1. General

a. The basic RadSafe organization for operation IVY provided trained personnel and suitable radiac equipment for each task group. As a result, individual task groups solved problems peculiar to their respective Service needs. All task group missions were integrated, however, into the fulfillment of task force missions. The RadSafe Unit, Task Unit 7 (TU 7), of the Scientific Task Group acted as the major technical servicing agency to the Task Force for such matters as calibration, repair, photodosimetry, radiochemical laboratory, equipment and special monitor missions, as well as for general radiological advisory assistance. This unit was composed mainly of RadSafe engineers from the Army, Navy, Marine Corps and Air Force, and technical personnel from Oak Ridge National Laboratory, LASL, Army Radiation and Chemical Laboratory and Evans Signal Laboratory.

b. The main objectives of RadSafe plans for IVY were:

(1) Protection of personnel in the conduct of operations.

(2) Training of personnel in routine atomic test radiological operations, utilizing methods and equipment evolved from other atomic tests. In spite of unusual and some unknown pre-shot factors concerning the detonations, all objectives were met successfully.

c. During the operation, the Task Force supported the Commander in Chief, Pacific Fleet (CINCPACFLT), in off-site security by giving assistance in off-site RadSafe operations. The World Wide Fall-Out Program of the New York Operations Office (NYOO) and AEC encompassed IVY operations with respect to the unusual aspects of the MIKE event. Personnel and equipment from NYOO were airborne by Task Force elements in off-site, general area surveys under the cognizance of CINCPACFLT. These post-shot surveys covered the Marshall Islands in detail, using Kwajalein as a base; the Caroline Islands, using Guam as a base; and the Hawaiian Islands, using Pearl Harbor as a base.

d. To minimize unusual potentialities of RadSafe factors, upper wind patterns were given careful study prior to shot times. Surveys such as the world wide fall-out coverage off-site and the intensive ones on-site

verified the correctness of the pre-shot assumptions of the detailed criteria established for relative degrees of favorable conditions for shot times.

e. Future training for military personnel should constantly stress the differences between peacetime atomic tests and wartime field applications relative to RadSafe operations. In this respect, maximum permissible exposures and their significance in both classifications are the factors which still seem to be doubtful to the average military individual.

2. Preliminary Operations

During pre-shot phases of the operation, vigorous training was employed in all phases of RadSafe activities - especially in the types of post-shot operations required and levels of radiation in fall-out expected from the IVY detonations. The Army Task Group was more completely trained and provided with instruments than at any other overseas test. Similarly, the Air Task Group solved difficult control problems in the technical phases of manned sampling while the Navy Task Group, for the first time at any overseas atomic tests of the scope of IVY, had the capability of complete salt water spray decontamination with resultant protection from fall-out on all weather surfaces of the units which got underway with the embarked Task Force. The Scientific Task Group had the capability and provided a photodosimetry program which gave ultimate dosage records on every individual in a manner superior to that of any previous tests. All these preliminary special steps in the task groups were initiated to provide the Task Force Commander with flexibility and effective control in critical shot time firing conditions, a factor of great importance considering the great yields of devices and weapons now being attained at the Pacific Proving Ground.

3. MIKE Shot

a. The MIKE event commenced in earnest for RadSafe operations with the establishment of the RadSafe Center on the RENDOVA one day prior to MIKE Day. At the same time the RadSafe Section of the Joint Operations Center (JOC) in the ESTES was organized in three groups with one group working with surface situation data; one working with air situation data; and the third with the general overall situation, air and surface, both in the area of Task Force responsibility and in other areas of the Pacific Ocean under the cognizance of CINCPAC. Liaison was also maintained with CINCPACFLT, in coordination with the World Wide Fall-Out Program of the NYOO.

b. Communications between the JOC, in the ESTES, and the RadSafe Center, in the RENDOVA, was by means of a direct channel (AN/TRC) backed up by radio teletype. This system was augmented by a direct radio contact between helicopter aircraft and the RadSafe Center with intercept facilities in the JOC. Direct communications also were utilized between the RadSafe Center and individual boats, DUKWS and ultimately, through this means, monitors on foot or in jeeps.

c. As a result of a conference with cognizant personnel of CINCPAC relative to the safety and security of Eniwetok Atoll, conclusions were formalized in a letter to CINCPAC on 14 July 1952. This letter outlined considerations and provided steps to be taken in the case of significant radiological fall-out outside the immediate area of Task Force operations. One of the considerations in this letter indicated the possibility of a health hazard at Ujelang Atoll, with a remote possibility of the same at Bikini, all as a result of MIKE shot.

d. An LST, under control of CINCPACFLT (COMHAWSEAFRON), took station at Ujelang and embarked all the native population at 1700 hours local on M-4 days. This LST had earlier been directed to take station at 8° North 161° East. In the evening of M-3 days, a message, indicating a predicted cloud path with respect to significant fall-out, was sent to CTG 132.3 to cover the special P2V security sweep commencing at the earliest daylight of M-2 days. This message directed a sweep up to 800 miles from ground zero on a bearing of 270° true. At M-2 days, 2130 local, a detailed command conference and execute order for MIKE shot was confirmed. The confirmation was based on the following conclusions:

(1) The general weather picture gave a favorable outlook.

(2) The weather trend for the predicted fall-out pattern, as determined by a resultant winds forecast, presented an extremely favorable picture. The four hour fall-out pattern was forecast to lie entirely in the northwest quadrant which, in accordance with the criteria established for MIKE shot, was most favorable.

(3) The surface Radiological Exclusion Area (RADEX) gave a pattern for the "hottest" cloud as being from the surface to 35,000 feet in an arc 260° true to 350° true from ground zero out to a 100 mile radius.

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(4) The air RADEX significant to sampling operations was concentrated in an east-west band which was twenty miles west, thirty miles north and sixty miles east of ground zero.

(5) Twenty-four, forty-eight and seventy-hour trajectories at significant altitudes were presented. These indicated a column of air three miles in height from 40,000 to 55,000 feet moving generally east under the tropopause. Below this altitude, the cloud column was forecast to move generally west, northwest; whereas, above the tropopause, cloud parcels were forecast generally to move west.

e. During the evening of M-2 days, a message was sent to CTG 132.3 prescribing a sector to be searched out to about 800 miles by a P2V sweep on a bearing 285° true, with instructions to divert any shipping therein so as to clear the Eniwetok area by at least 200 miles radial distance from ground zero. This message covered the sweep on M-1 day commencing at earliest daylight. At 1423 local, on M-1 day, a surface RADEX forecast from H Hour to H/4 hours was sent to all task group commanders. This forecast covered an area bearing 260° true clockwise to 320° true, radial distance 100 miles, all from ground zero.

f. At 2130, M-1 day, a command conference was held in the ESTES. The general weather picture gave a less favorable forecast than had been indicated in the M-2 days briefing. The weather trend for fall-out pattern, as determined from the resultant winds forecast, presented a favorable picture although cloud trajectories would pass slightly into the southeast quadrant from ground zero. The outlook with respect to specific considerations was:

(1) Ujelang would be well south of the significant cloud pattern with the evacuation LST in an even more favorable position.

(2) The HORIZON, because of its location with respect to the surface RADEX, i.e., in the northeast quadrant, was ordered to be moved, after collection of data, in a general northeast direction for four hours commencing no later than H/1 hour.

(3) Bikini appeared clear of the fall-out pattern, with no evacuation needs considered necessary.

(4) Pearl Harbor to Wake and Wake to Guam air routes were considered clear, while the Kwajalein to Guam air route was recommended for a

twenty-four hour closure beginning with H Hour.

(5) With respect to surface routes, information from the special P2V searches on K-2 days indicated one British ship on course 120° true at such a position that if course were continued it would be well within the 200 miles radius of Eniwetok at shot time. This ship was directed on K-1 day to change course, which it did, clearing the Eniwetok area by the requisite 200 mile radial distance.

(6) Early reentry into Eniwetok for crash parties and maintenance crews appeared favorable. The early aerial survey schedule by helicopter also appeared feasible without additional delay factors. The overall conclusion from the radiological standpoint was for a favorable pattern. Firing MIKE on schedule, with a movement of Naval vessels from points south of ground zero to a more easterly position, was recommended. Since the upper wind pattern presented a less favorable outlook than had been indicated at the K-2 days conference, the Task Force Commander decided to review the situation again at 0300 local, K Day.

g. At midnight, the observed wind pattern which was considered only favorable for the fall-out pattern, changed to a most favorable criteria pattern which would place all fall-out north of ground zero. On the basis of the later command conference at 0300 local, the situation from a RadSafe standpoint was recommended as most favorable and the shot schedule was firmly laid on. No recommendations for movement of Naval vessels in the south sector was necessary under this fall-out pattern. At H-9 hours, a message was dispatched to CINCPACFLT giving the seventy hour forecast trajectories of the cloud and information on conditions relating to RadSafe of air and surface routes. This message recommended closing the Kwajalein to Guam air route from H Hour to H/24 hours, whereas the Wake to Guam route could remain open up to 10,000 feet. No health hazard problem was considered to exist on the surface routes except inside the 300 mile radius, northwest quadrant of the Eniwetok area. A final air RADEX was dispatched, giving an exclusion area bearing clockwise 280° true to 090° true, maximum distance fifty miles for H Hour to H/3 hours.

h. The MIKE device was detonated at 0715 hours local, 1 November 1952, and by H/10 minutes the Eniwetok aerial RadSafe survey was underway by

helicopter from the RENDOVA. This survey covered Eniwetok and Parry Islands. Upon receipt of the information covering these two islands, two helicopter flights were sent in with emergency parties - one for the Eniwetok landing strip; and the other, a contractor engineer group for surveying damage and checking reefers, powerhouses and the water plant. The next flight of helicopters for Parry was dispatched at H/45 minutes. Results were successful and the parties returned to the RENDOVA within the first three hours. Meanwhile, another helicopter transferred scientific personnel from the ESTES to the RENDOVA from which point they proceeded to make an early damage survey. At approximately this time, the early RadSafe survey team, operating via helicopter, was as far north as Runit Island where excessive, active fall-out was encountered. This helicopter returned to the RENDOVA at H/70 minutes. By this time, the cloud had reached greater than 120,000 feet in altitude and in its rapid climb was forced to billow out at the tropopause level though continuing to rise to a still greater height. This billowing out effect reached to a distance of thirty miles in diameter in approximately forty minutes and resulted in heavy, mud fall-out which occurred as late as H/40 minutes when it was encountered by the initial RadSafe survey team. Heavy rain showers were in progress within two hours after the detonation and were concentrated mainly within and around the lower cloud stem. All utilities on Parry and Eniwetok were reported in operating condition and the crash crew was ready to receive aircraft at the Eniwetok air strip by H/2 hours.

i. At about 1028 local, helicopters were dispatched to rescue a downed pilot in the lagoon. Although the rescue efforts failed to locate the downed pilot, one of the rescue aircraft was heavily contaminated and landed at Eniwetok Island. Radiation level on the external surface of the aircraft was about 5 r/hr, while readings inside the cockpit were roughly 150 mr/hr. Meanwhile, winds were being received from Bikini which indicated that the very favorable pattern of air flow aloft was being maintained, i.e., cloud was moving all to the northwest of ground zero up to about 70,000 feet. By H/5 hours, the early survey of the entire atoll - accomplished at altitudes of 800 to 1,500 feet where necessary to avoid excessive ground radiation - had been completed by scientific and monitor personnel. An attempt to enumerate the exact readings is planned for inclusion in the History of

Operation IVY.

j. Early reports from the Navy Task Group, which was responsible for the RadSafe of the Task Force while afloat, indicated that no ships had encountered fall-out as of 1600 local, M Day; however, the HORIZON - which had been seventy-two miles north, northeast of ground zero and had steamed at shot time in a northeast direction for four hours - reported that she was just out of the fall-out area and that radiation levels on board were 14 mr/hr average, 50 mr/hr maximum. The topside water spray system proved successful in reducing this contamination.

k. At H/7 hours, a lagoon water survey commenced in accordance with a plan initiated by CTG 132.3. This involved a pass across the lagoon on a control line between Runit and Rigili Islands, taking samples of water at the surface and at thirty-five foot depths with an additional sampling line north of Coral Head in the center of the lagoon. Other water samples were taken at the Deep Entrance, the anchorage agea and the Wide Passage. These early samples indicated no contamination at the southern half of the lagoon. At this time, a message was sent to CTG 132.4 prescribing tracks for the first WB-29 cloud tracking mission, WILLIAM 5, take-off time H/12 hours. Early cloud tracking showed the cloud to be moving in three general segments: one segment from above 80,000 feet moving westerly; one segment between 40,000 and 80,000 feet moving northwesterly; and another segment between the surface and 40,000 feet moving northeasterly, all at about sixteen knots. On M Day, at 1700, a message was sent to Kwajalein prescribing the tracks for the second WB-29 cloud tracking mission, WILLIAM 6, scheduled to take off at H/24 hours.

l. As of 0715 local on M/1 day, all ships had reported negative fall-out and early morning water samplings of the lagoon indicated no contamination of its southern half. On the basis of this water sampling and other evaluation, the time for reentry (R Hour) was announced and the Navy Task Group entered the lagoon at 0900 local with assurances that Eniwetok and Parry were RadSafe cleared and significant fall-out was no longer expected. The RadSafe control point for all traffic north of Japtan Island was in Building 57 on Parry Island. All lagoon traffic south of Japtan was unrestricted and swimming was permitted only at the authorized beaches.

m. At M/1 day, a careful survey of the atoll - both ground and air - was made. Also, PZV flight CHARLIE from Kwajalein in connection with the World Wide Fall-Out survey of the Marshall Islands made a sweep of the southwestern Marshalls, including Ujelang, reporting neagative results. This was the signal for the disembarkation of natives from the LST. The disembarkation was completed on the afternoon of M/1 day.

n. At 1400 hours local, a message was sent to Kwajalein directing the final WB-29, WILLIAM 7, to proceed to a point 14° North, 165° East and, from this point, to search an area clockwise from 315° true to 010° true out to an approximate distance of 450 miles at any altitude between 10,000 and 15,000 feet. On this flight, which was well out in the northwest quadrant, readings were higher than on the flight of the previous day. All flights up to this time had indicated negligible fall-out in the northwest and none in the southeast and southwest quadrants. Radiation levels at flight altitudes were, in general, 5 to 10 mr/hr outside of the aircraft with an allowance for a factor of 10 higher for rain showers concentrating fall-out particles at lower altitudes. This was considered insignificant as a health hazard. At 2000 local on M/1 day a third RadSafe advisory message was sent to CINCPACFLT stating that no health hazard problems existed on air or surface routes as a result of the MIKE detonation.

o. Early recoveries continued on M/1 day and it appeared that early reentry to Runit on M/2 days was feasible. This would include reestablishing a labor camp with a control monitor on Runit so that KING instrumentation could be initiated.

p. At earliest daylight on M/2 days, World Wide Fall-Out flights ABLE and BAKER from Kwajalein were initiated, covering the remainder of the Marshall group. No significant activity was reported. As of M/2 days, no TG 132.3 vessels had encountered fall-out other than minute amounts, during evening showers, of approximately 5 mr/hr on topside decks which reduced to background by morning.

q. On the night of M/2 days, the fourth and final RadSafe advisory was sent to CINCPACFLT indicating that no health hazard to surface or air routes existed anywhere in the Pacific Ocean Area as a result of MIKE shot. Outlying weather stations at Ponape, Kusaie, Majuro and Bikini indicated no

delayed fall-out as of 1800 local, M/2 days. With this message to CINCPAC and CINCPACFLT, the MIKE event was officially secured as a possible hazard to areas outside of JTF 132 responsibility. Messages from Guam indicated, subsequently, that airborne contamination reached a maximum of approximately 5 mr/hr with no fall-out on the ground on M/4 days.

r. On M/2 days, complete recovery was made from the Bogallua bunker. Recovery programs were reviewed each evening between TG 132.1 scientific personnel and the RadSafe control group. On this basis, sites, allowable periods of work and boat and aircraft schedules - along with the necessary work for KING shot instrumentation - were established for the following day.

s. One photo documentary plane flying near the shot island encountered fall-out which resulted in exposures of about 10 r to passengers and crew. Subsequent investigation indicated laxity in scheduling the operation of the plane as well as general poor monitor understanding of the situation during and after the exposure. All critical, manned sampling operations were conducted with less than the total allowed 3.9 r for operation IVY, although a separate exigent exposure of 20 r had been permitted for this phase of the operation. It is interesting to note that lead impregnated suits worn on one of the sampling missions reduced the dose received by a factor of approximately four.

t. The MIKE device was detonated under almost ideal conditions and most certainly under the favorable conditions prescribed in pre-shot criteria for fall-out. The ultimate final fall-out pattern and nonexistence of health hazards to distant areas is considered the answer to hazards of detonations occurring under these conditions.

4. KING Shot

a. KING critical activities commenced with M/1 day and as recovery from MIKE projects progressed, instrumentation for KING progressed. By K-3 days it was apparent that the weather trend was becoming more unfavorable. The cloud cover condition for this shot was critical since the requirement called for less than .3 cloud below 2,000 feet, preferably none below 3,000 feet and conditions amenable to a visual drop from 45,000 feet. These conditions do not too frequently exist in this region. An effort was made at Task Force level to move K Day, then designated as Thursday, 13 November,

1130 local, up one day to Wednesday, 12 November, but the Scientific Task Group was unable to meet this schedule. The weather picture for K Day on 13 November was deteriorating and by scheduled shot time it went "sour". This necessitated a forty-eight hour delay stand-down for the aircraft concerned, with a new series of command conferences, which were held on Friday night (2130 local, 14 November) and on Saturday night (2130 local, 15 November). The general weather picture presented a favorable outlook at the conference on the night of 14 November. The four hour fall-out pattern was forecast to lie in a narrow cone of thirty-five degrees, from 240° true to 275° true, all within a radius of eighty miles. Since the wind directions were so invariant because of the deep trade pattern aloft, surface RADEX from the ground to the top of the sounding, 70,000 feet, was in a cone of 90° measured from 200° true to 290° true. Twenty-four, forty-eight and seventy hour trajectories were presented and showed all cloud levels to all heights moving west. Overall conclusions from the radiological safety standpoint were, again, for a most favorable pattern and a recommendation was made to detonate KING on schedule. However, because of cloud conditions and general bad weather affecting aircraft in the Kwajalein terminal area, the decision to postpone KING for another twenty-four hours (to Sunday, 16 November) was made at a last minute command conference. This meeting then became the equivalent of the K-2 days command conference.

b. At the K-1 day command conference, the fall-out pattern continued very favorable with good strong easterly winds in the lower levels, i.e., below 35,000 feet where the "hot" dirt cloud was expected to extend after shot time. Although upper level winds just below the tropopause (trapping cut-off for fall-out consideration) were toward the southeast quadrant after shot time, the dirt cloud was not expected to reach these levels and the fall-out pattern was considered very favorable. Surface RADEX was from 210° true to 290° true from H Hour to H/3 hours, radial distance ninety miles. Air RADEX was concentrated in the west, southwest sector. The outlook for specific items was as follows:

(1) No health hazard was considered to exist for air and surface routes, Ujelang, the OAK HILL (which was located in the northeast quadrant and seventeen miles from zero) and the Navy Task Group.

(2) Early aerial survey appeared feasible after shot time, both north and south of Runit.

(3) Overall conclusions from the RadSafe standpoint were again for a most favorable pattern and a recommendation was made for the shot on schedule.

c. This led to confirmation of the shot schedule for Sunday, 1130 local, 16 November and KING was detonated on schedule. What began as an almost cloudless day with few low, fair weather cumulus clouds became an overcast one at midday with a high thin overcast as the KING cloud spread out radially and eventually in long streaks to the west, southeast and southwest near the tropopause and above. Also, small convective showers - probably caused by temporary slight distortion of the general area circulation - were evident for a period of about two hours until once again the trade conditions were reestablished. An emergency evacuation capability for the Task Force was maintained even though the Navy Task Group was outside the lagoon at shot time.

d. Early reentry was commenced at H/10 minutes except for the helicopters which were on the RENDOVA at H Hour (8 miles at sea to avoid blast). They departed the RENDOVA and landed on Parry at H/18 minutes. The initial aerial survey helicopter then again loaded the monitor group from Parry and the group relayed information back from the site at H/50 minutes. This survey found little contamination on Runit. Since the shot time wind pattern with resultant low dirt cloud (about 19,000 feet) had made possible certain pre-shot estimates of the possibility of early reentry, the remaining K Day recovery parties shoved off on schedule for Runit and adjacent islands.

e. At H/75 minutes, a fairly comprehensive report of the damage and contamination on Runit Island was received. Although a water reading in the vicinity of the target read zero, a reading of 300 mr at 500 feet above the target was registered and the ground reading at the Runit powerhouse was 3 mr. Two telephone poles remained standing; tent frames were demolished and charred; mud had been thrown almost to the airstrip; there was evidence of a wash-over of the northern end of the island; the radar target had been dished out; NRL revetments were eroded; the blockhouse was left but the sand was gone; discolored yellow water was observed 2,000 yards off the beach, downwind from ground zero; and the reef was unchanged. This preliminary

survey was of assistance to TG 132.3 as an indication of the extent of water contamination to be anticipated from the dirt cloud.

f. By H/3 hours another helicopter had completed a lagoon water survey and by H/5 hours the Navy Task Group had returned to the lagoon. This action had been anticipatory and predicated on advice from the Task Force Headquarters relative to assurances on fall-out. These advices, in turn, were based on early cloud tracking flights which occurred immediately after shot time.

g. By K/1 day, the KING recovery program had essentially been completed and the operational phase of IVY was rapidly drawing to a close. The RadSafe advisories to CINCPACFLT were simple and concise with no added emphasis on health hazards from fall-out in areas outside the Pacific Proving Ground area. This lack of emphasis on health hazards was based on documentation of previous atomic tests involving air bursts as well as actual cloud tracking of the KING cloud. All cloud tracking ceased with flight WILLIAM 6, thus cancelling WILLIAM 7, the last regularly scheduled "tracker". However, it should be noted that because of the ball-of-fire size, the lower dirt cloud - with induced activity from soil and water - was estimated to be a consideration from the standpoint of maximum permissible exposures. This was true since an additional total dosage, even as small as 900 mr, for some personnel of the Scientific Task Group and AEC would have resulted in cases of total dosages in excess of the allowed 3.9r for IVY.

h. The K/1 day sweep under off-site cognizance of CINCPACFLT, utilizing sensitive airborne special survey equipment of NYOO, was made over Ujelang, Kusaie and Ponape by Task Force P2Vs operating from Kwajalein. This sweep showed no appreciable activity on the ground at these sites. Thus, with the KING delayed fall-out considered finished business, return of the portable, field-type photodosimetry and radiochemical laboratories to the ZI aboard the RENDOVA got underway. Final turnover of RadSafe responsibilities by the RadSafe Unit of the Scientific Task Group to the AEC RadSafe representative was accomplished at 2400 hours on 22 November at Parry Island with the following recommendations made:

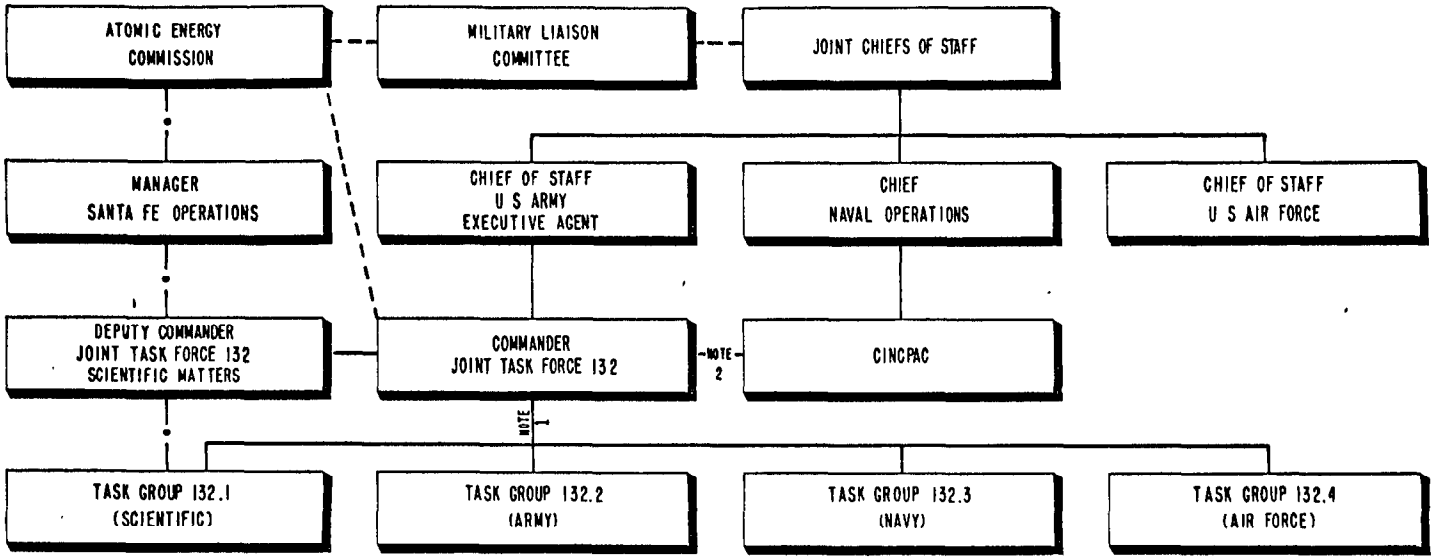
(1) Discourage activity in the area of Bogallua through

Ebiriru until 1 January 1953.

(2) Initiate a planned program for removal of radioactive scraps from the upper islands.

i. All film badge developing ceased in the forward area as of K/4 days.

ORGANIZATION FOR OPERATION IVY



NOTE: 1. CJTF 132 EXERCISED OPERATIONAL CONTROL OF ALL TASK GROUPS FOR PLANNING AND COORDINATION ONLY UNTIL THE ON-SITE PHASE AT WHICH TIME HE ASSUMED FULL OPERATIONAL CONTROL. THE OPERATIONAL (ON-SITE) PHASE EXTENDED FROM 0300 Z 17 SEPTEMBER 1952 TO 0001 Z 21 NOVEMBER 1952.

2. BY DECISION OF THE JOINT CHIEFS OF STAFF ON 18 APRIL 1951, THE COMMANDER, JOINT TASK FORCE, REPORTED TO CINCPAC FOR MOVEMENT CONTROL, LOGISTICAL SUPPORT, AND FOR PURPOSES OF GENERAL SECURITY WITH RESPECT TO THE TASK FORCE AND ENIWETOK ATOLL.

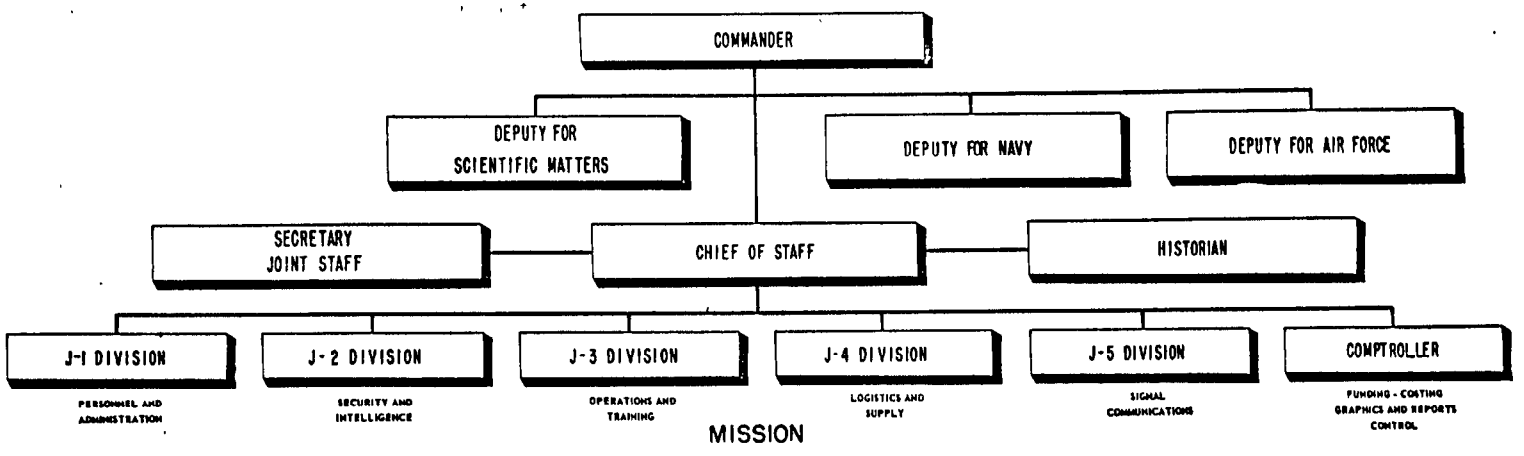
LEGEND:

——— OPERATIONAL CONTROL
– – – LIAISON
—·— AEC POLICY

APPENDIX L

~~SECRET~~ SECURITY INFORMATION

HEADQUARTERS, JOINT TASK FORCE 132
ORGANIZATION



MISSION

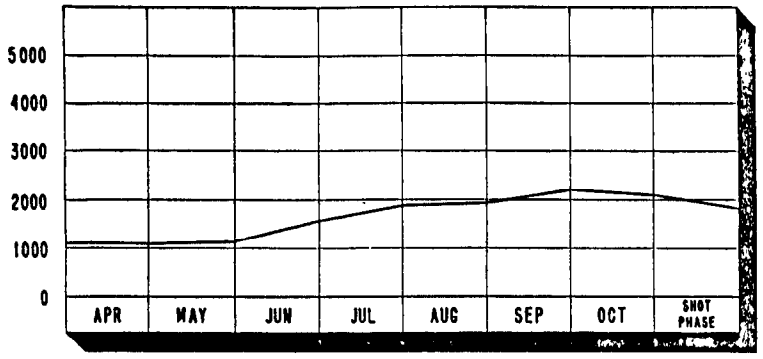
1. CONDUCT TESTS OF TWO EXPERIMENTAL DEVICES.
2. CONDUCT THE EXPERIMENTAL MEASUREMENTS PROPOSED BY THE AEC, AND SUCH OTHER TESTS PROPOSED BY THE ARMY, NAVY, AND AIR FORCE AS APPROVED BY THE JCS.

KEY PERSONNEL

MAJOR GENERAL P. W. CLARKSON, USA, Commander
DOCTOR A. C. GRAVES, AEC, Deputy for Scientific Matters
BRIGADIER GENERAL W. W. WISE, Jr., USAF, Deputy for Air Force
CAPTAIN J. R. PAHL, USN, Deputy for Navy
BRIGADIER GENERAL A. R. WALK, USA, Chief of Staff
COLONEL E. W. COFIELD, USAF, Assistant Chief of Staff J-1
LT. COLONEL R. M. GLESZER, USA, Assistant Chief of Staff J-2
COLONEL F. J. SACKTON, USA, Assistant Chief of Staff J-3
CAPTAIN W. L. KNICKERBOCKER, USN, Assistant Chief of Staff J-4
COLONEL L. H. STANFORD, USA, Assistant Chief of Staff J-5
COLONEL J. M. RUDDY, USA, Assistant Chief of Staff Comptroller

OVERSEAS PHASING of PERSONNEL BY TASK GROUP

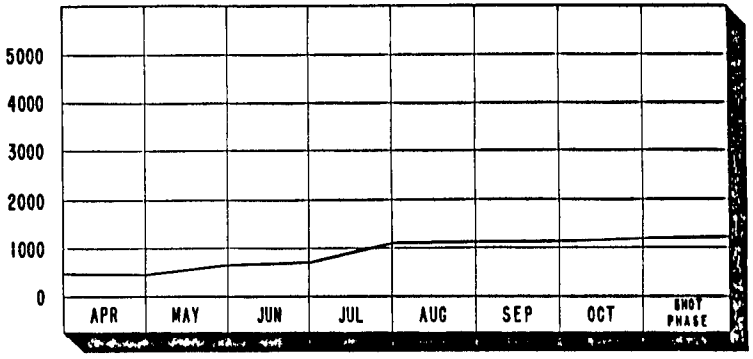
TG 132.1 (SCIENTIFIC)



1952

1095	1259	1585	1808	1962	2251	2124	1819

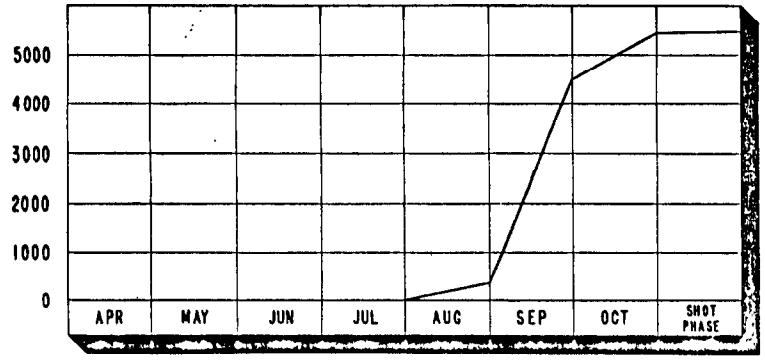
TG 132.2 (ARMY)



1952

455	655	709	1084	1127	1132	1201	1230

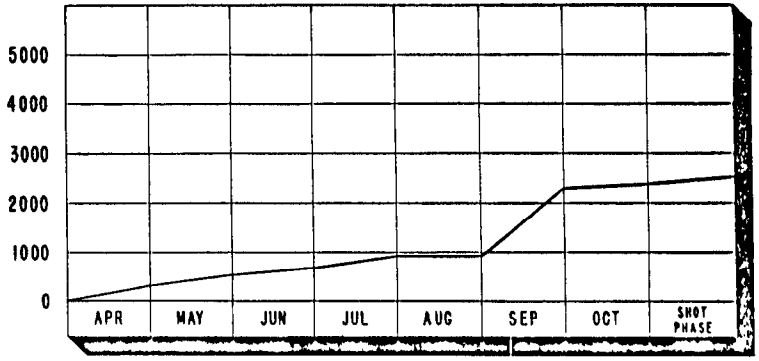
TG 132.3 (NAVY)



1952

0	0	0	0	353	4508	5466	5487

TG 132.4 (AIR FORCE)



1952

310	544	699	928	926	2331	2361	2518

APPENDIX B

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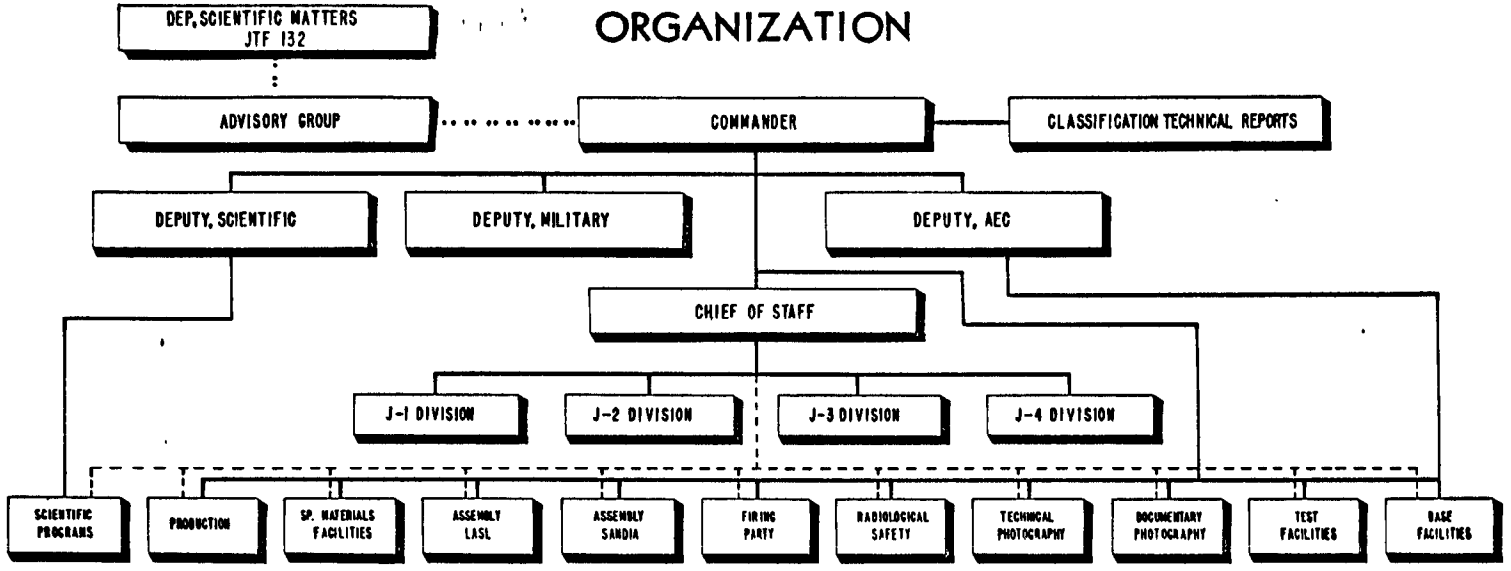
TASK GROUP 132.1
SCIENTIFIC
ORGANIZATION



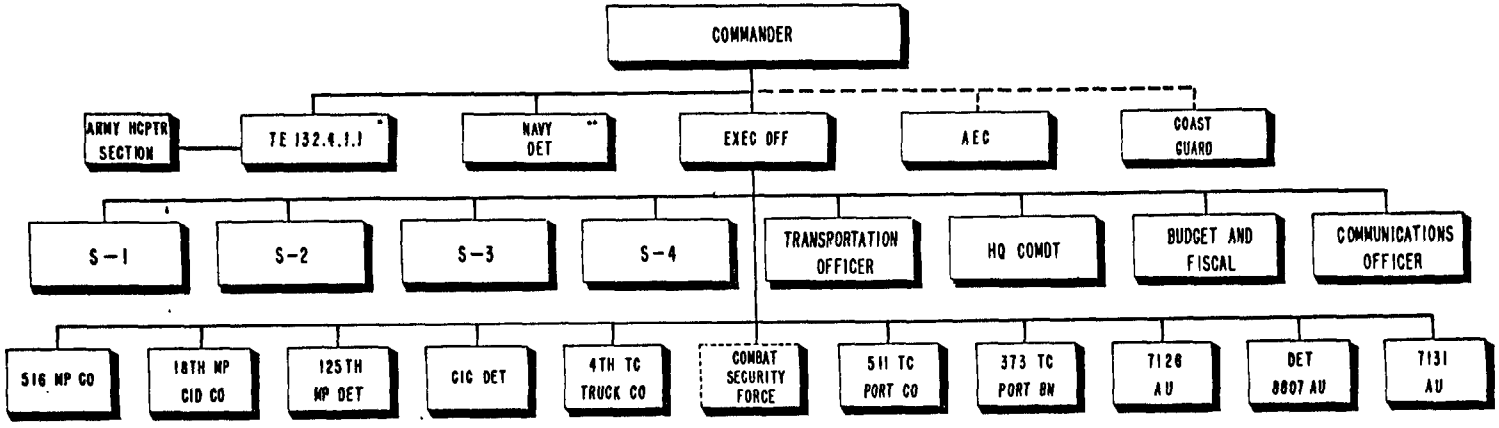
MISSION

TO CONDUCT THE EXPERIMENTAL DEVICES TESTS; PROCURE, ASSEMBLE AND PLACE THE DEVICES TESTED; ARM AND DETONATE THE DEVICES TO BE TESTED.
CONDUCT OF TECHNICAL AND MEASUREMENT PROGRAMS AS FINALLY APPROVED.
CONDUCT OF DOCUMENTARY FILM OPERATIONS.
OPERATE AND MAINTAIN CERTAIN SPECIFIED UTILITIES AND FACILITIES ON ENIWETOK ISLAND.
PLAN, CONSTRUCT AND OPERATE ALL REQUIRED INSTALLATIONS AND FACILITIES (INCLUDING AEC CONTRACTOR BOAT POOL) ON ALL OTHER ISLANDS OF ENIWETOK ATOLL.
CONDUCT THE RADIOLOGICAL SAFETY PROGRAM.
ESTABLISH THE TECHNICAL MISSION FOR JOINT TASK FORCE 132 TEST AIRCRAFT.

KEY PERSONNEL

MR. S. W. BURRISS, Commander
DR. K. E. OGLE, Deputy for Scientific
LT. COLONEL R. T. LUNGER, USA, Deputy for Military
MR. P. W. SPAIN, Deputy for AEC
MR. D. CURRY, Jr., Chief of Staff
MR. A. W. KELLY, J-1
MR. W. R. ADAIR, J-2
COLONEL P. L. HOOPER, USA, J-3
MR. H. S. ALLEN, J-4
LT. COMMANDER J. B. JOHNSON, USN, Communications
CAPTAIN R. G. SHROYER, USA, Budget & Fiscal
DR. R. C. SMITH, Classification
DR. W. E. OGLE, Task Unit 1
DR. H. L. JOHNSTON, Task Unit 2
MR. W. H. STEITLER, Task Unit 3
MR. R. D. KROHN, Task Unit 4
MR. H. NORTH, Task Unit 5
MR. S. W. BURRISS, Task Unit 6
COMMANDER R. H. MAYNARD, USN, Task Unit 7
MR. L. M. GARDNER, Task Unit 8
LT. COLONEL J. L. GAYLORD, USAF, Task Unit 9
MR. R. H. CAMPBELL, Task Unit 10
MR. P. W. SPAIN, Task Unit 11

TASK GROUP 132.2
ARMY
ORGANIZATION



LEGEND: ---- LOG SUPPORT & LN

* CTG 132.4 HAS OP CONTROL DURING OP PHASE

** CTG 132.3 HAS OP CONTROL DURING OP PHASE

MISSION

RENDER NECESSARY SUPPORT TO TASK GROUP 132.1.
PROVIDE LOGISTIC SUPPORT FOR THOSE ELEMENTS OF THE JOINT TASK FORCE BASED ON ENIWETOK ISLAND.
PROVIDE GROUND SECURITY FOR ENIWETOK ATOLL.
OPERATE PORT FACILITIES, BASE FACILITIES, AND SIGNAL COMMUNICATIONS.

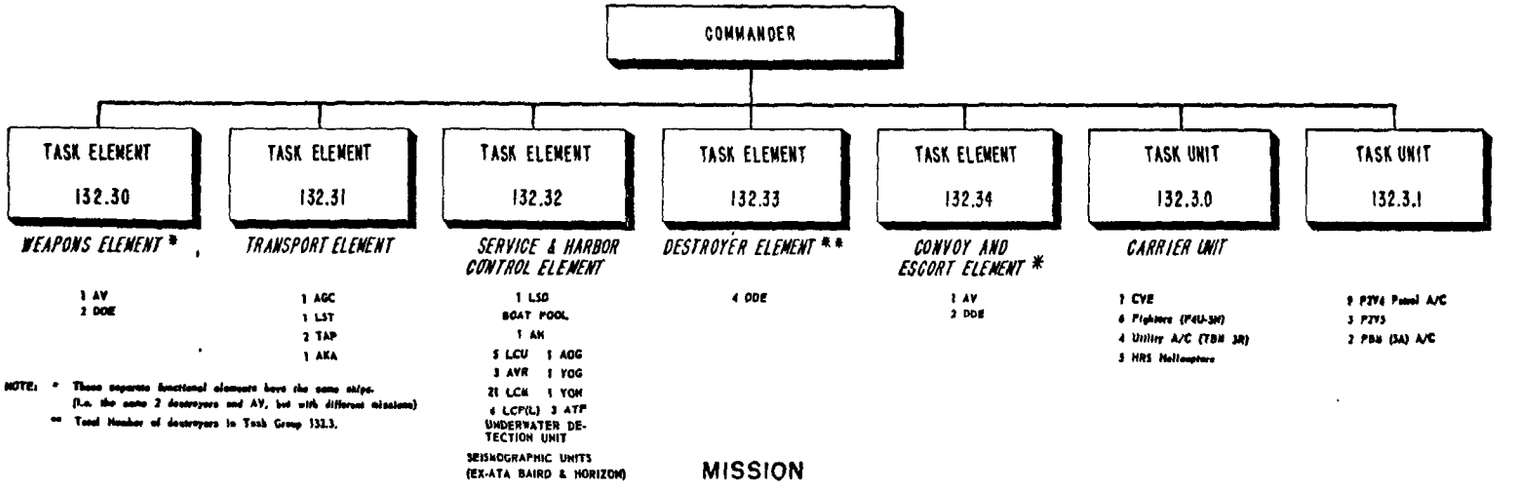
KEY PERSONNEL

COLONEL G. E. BURRITT, USA, Commander
COLONEL R. H. CUSHING, USA, Executive Officer
MAJOR E. B. FINNEGAN, USA, S-1
MAJOR K. C. OSWALD, USA, S-2
MAJOR C. V. CHAPMAN, USA, S-3
LT. COLONEL F. S. WARING, USA, S-4
CAPTAIN G. M. LIPPENCOTT, USA, Communications
CAPTAIN C. T. SOKOLOSKI, USA, Comptroller
CAPTAIN R. W. SPEARS, USA, 7126th A U
2D LT. F. J. DEVANEY, USA, 7131st A U
CAPTAIN W. E. SHELLEY, USA, 511th T Port Co.
MAJOR F. S. PEMBERTON, USA, 4th T Truck Co.
LT COLONEL H. R. FLEMING, USA, 373rd Trans Port Bn.
MAJOR P. E. LYONS, USA, CIC Det

TASK GROUP 132.3

NAVY

ORGANIZATION



NOTE: * These separate functional elements have the same ships. (i.e. the same 2 destroyers and AV, but with different missions)

** Total Number of destroyers in Task Group 132.3.

MISSION

PROVIDE SHIPBOARD COMMAND FACILITIES FOR CJTF 132 AND ADMINISTRATIVE SPACE AND COMMUNICATIONS CIRCUITS FOR HEADQUARTERS, TASK GROUPS 132.1 AND 132.3.

PROVIDE AMPHIBIOUS AIRLIFT FOR VARIOUS ELEMENTS OF THE JOINT TASK FORCE DURING SHOT PERIODS.

PROVIDE SUITABLE WATER TRANSPORTATION WHILE THE JOINT TASK FORCE IS LAND BASED, AND SHIPBOARD FACILITIES TO SUPPORT THE JOINT TASK FORCE WHILE AFLOAT.

RENDER NECESSARY SUPPORT TO TASK GROUP 132.1.

CONTROL HARBOR FACILITIES AT ENIWETOK ATOLL IN COORDINATION WITH CTG 132.2 AND CTG 132.1.

BE PREPARED TO AUGMENT FACILITIES FOR INTRA-ATOLL TRANSPORTATION AND TO ASSIST IN CARGO HANDLING OPERATIONS AT ENIWETOK ATOLL.

PROVIDE LIMITED SHIPBOARD FACILITIES FOR RADIO CHEMISTRY TECHNIQUES, FALL-OUT STUDIES, AND PHOTO-DOSIMETRY FACILITIES.

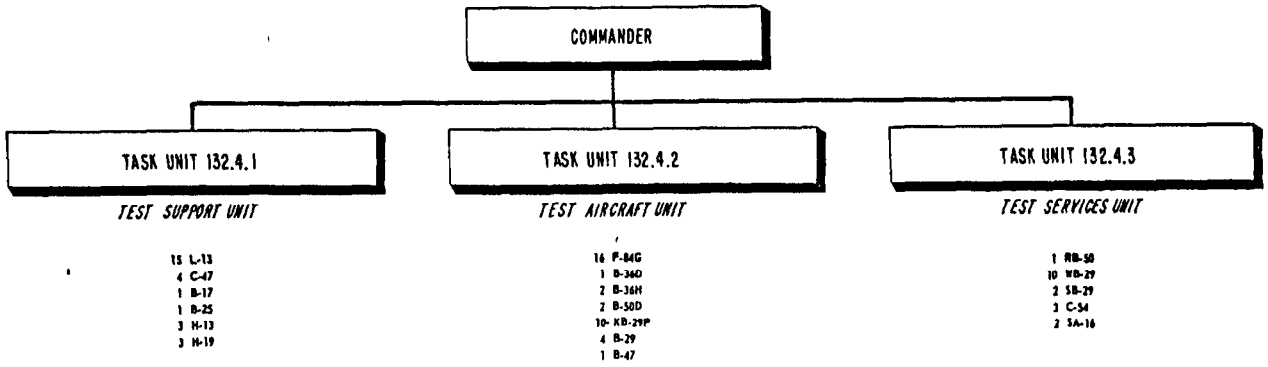
DISCHARGE, WITHIN THE CAPABILITY OF FORCES AVAILABLE, THE OFF-SHORE AND AIR SECURITY RESPONSIBILITIES FOR ENIWETOK ATOLL.

COLLECTION OF SCIENTIFIC DATA AND WATER SAMPLES.

KEY PERSONNEL

REAR ADMIRAL C. W. WILKINS, USN, *Commander*
CAPTAIN E. TATOM, USN, *Chief of Staff*
LT. COMMANDER O. K. DEJARNATT, USN, *Administration and Personnel*
LT. COMMANDER R. A. KLARE, USN, *Security and Intelligence*
COMMANDER F. R. BIARD, USN, *Plans and Operations*
COMMANDER D. BONTECOU, USN, *Logistics*
LT. COMMANDER H. C. TONINI, USN, *Communications*
CAPTAIN J. HULME, USN, *Weapons Element*
CAPTAIN J. S. HOLTWICK JR, USN, *Transport Element*
COMMANDER E. J. YOUNGJOHNS, USN, *Service and Harbor Control Element*
CAPTAIN M. DURSKI, USN, *Destroyer Element*
CAPTAIN W. L. KABLER, USN, *Carrier Unit*
COMMANDER M. J. BERG, USN, *Patrol Plane Unit*

TASK GROUP 132.4
AIR FORCE
ORGANIZATION



MISSION

PROVIDE, OPERATE AND MAINTAIN AIRCRAFT FOR TECHNICAL MISSIONS IN THE CONDUCT OF OPERATION IVY.

PROVIDE AIRWAYS AND AIR COMMUNICATIONS SERVICE (AACS) AND AIR RESCUE SERVICE (ARS) TO SUPPORT THE JOINT TASK FORCE.

PROVIDE SUPERVISORY PERSONNEL FOR AN AIR OPERATIONS CENTER AFLOAT.

PROVIDE A WEATHER CENTRAL ON ENIWETOK, AND PERSONNEL FOR WEATHER CENTRAL AFLOAT. ESTABLISH WEATHER REPORTING STATIONS ON PONAPE, KUSAIE, AND BIKINI.

PROVIDE CLOUD TRACKING AIRCRAFT FOR POST-SHOT RADIOLOGICAL SAFETY "SITUATION DATA" TO ASSIST CJTF 132 IN DETERMINING ADVISABLE TIME FOR REENTRY FOLLOWING DETONATIONS.

OPERATE AIRBASES AND SUPPORT SERVICES AND FACILITIES AT ENIWETOK.

PROVIDE INTRA-ATOLL AIRLIFT AT ENIWETOK ATOLL.

PROVIDE ADMINISTRATIVE AIRCRAFT AS REQUIRED BY CJTF 132.

KEY PERSONNEL

BRIGADIER GENERAL P. E. GLANTZBERG, USAF, Commander
COLONEL J. W. THOMSON, USAF, Deputy Commander
LT. COLONEL K. D. KIENTH, USAF, Chief of Staff
MAJOR B. R. WILLIAMS, USAF, Personnel
LT. COLONEL C. A. OUSLEY, USAF, Operations
LT. COLONEL M. A. CICCONE, USAF, Material
LT. COLONEL R. S. NUGENT, USAF, Communications
LT. COLONEL A. C. FLEMING, USAF, Comptroller
LT. COLONEL W. R. HANNA, USAF, Inspector General
COLONEL A. E. TOKAZ, USAF, Task Unit 1
LT. COLONEL T. T. OMAHUNDRO, USAF, Task Unit 1.1
COLONEL W. E. BERTRAM, USAF, Task Unit 2
COLONEL R. W. NELSON, USAF, Task Unit 3