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HEADQUARTERS

456th TROOP CARRIER WING

Operations Summary and Analysis

Volume I

[redacted] SECRET

HEADQUARTERS EIGHTEENTH AIR FORCE
Donaldson Air Force Base
South Carolina

26 June 1956

Colonel James L. Daniel
Commander, 456th Troop Carrier Wing
Ardmore Air Force Base
Oklahoma

Dear Colonel Daniel:

I did not believe this office should made a decision with reference to the classification of your unit history, since Tactical Air Command had forwarded a message directly to you concerning submission of the wing history. As a consequence, I talked to Major Von Stein, Director of Historical Services, TAC, this morning and concurrence was given to my initial reaction that the report should be TOP SECRET.

My personal congratulations to you and members of your Command for a well-deserved Distinguished Unit Citation.

Sincerely,

Kenneth W. Heist

KENNETH W. HEIST, DAFC
Director of Historical Services

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SUMMARY AND ANALYSIS - PROJECT GENETRIX

Section I

1. Purpose. To present a factual summary and analysis of Project Genetrix, in narrative form by documenting the participation and progress of the 456th Troop Carrier Wing (M).

2. General Information.

a. Security Classification. Summary and analysis, with inclosures and attachments, is classified SECRET by authority of the Commander, 456th Troop Carrier Wing (M). Reproduction of this Summary and Analysis in whole or in part is prohibited without written approval of the Commander, 456th Troop Carrier Wing (M).

b. Coverage. This Summary and Analysis covers the period 1 November 1954 through 30 November 1955.

c. Code Names. Where used in this document or attachments thereto, code names as listed below apply as shown:

(1) Grand Union: Logistics phase.

(2) Drag Net: Recovery phase.

(3) Moby Dick Hi: Operational Suitability Test.

(4) C-119L: Unclassified code name for overall project.

(5) Grayback: Classified (C) code name for overall project.

(6) Genetrix: Classified (C) code name for overall project, replacing "Grayback."

3. Introduction.

a. Prior to participation in Project Genetrix the 456th Troop Carrier Wing (M) was located at Charleston Air Force Base, South Carolina. The Wing, commanded by Colonel James L. Daniel, Jr., consisted of a Wing Headquarters Squadron, 456th Air Base Group, 456th Maintenance and Supply Group, 456th Troop Carrier Group, 456th Tactical Infirmary, and the 4460th USAF Dispensary. Authorized strength of

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this Wing base structure was 245 officers and 1800 airmen; actual strength was 258 officers and 1811 airmen. Aircraft authorizations were fifty (50) type C-119, two (2) type C-45, and two (2) type L-20.

b. Tenant units based on Charleston Air Force Base at that time consisted of the 1608th Air Transport Group (MATS), 444th Fighter Interceptor Squadron (ADC), Detachment #13, 25th Weather Squadron, Detachment #4, 1st Aerial Port Squadron, Detachment #2, 727th Aircraft Control and Warning Squadron, C-119-2 Mobile Training Detachment, C-54-5 Mobile Training Detachment, and 1924-8 Airways and Air Communications Service Detachment. Total assigned strength of tenant units was 305 officers and 1323 airmen.

c. Briefing prior to Phase I consisted of three conferences at Tactical Air Command, Langley Air Force Base, Virginia. The first conference, on 20 September 1954, was attended by:

Major General	David W. Hutchinson	DCS/Operations	TAC
Major General	Robert W. Douglass, Jr.	Commander	18AF
Colonel	Hoyt L. Prindle	C/S	18AF
Colonel	James L. Daniel, Jr.	Commander	456TCW
Lt Colonel	Malcolm C. Hooker	DCS/Operations	18AF

d. Subsequent conferences, conducted at Langley Air Force Base, Virginia on 22 September 1954 and 25 October 1954, were attended by:

Colonel	James L. Daniel, Jr.	Commander	456TCW
Colonel	Jay D. Bogue	Commander	456 TAC Gp
Colonel	Marcus W. King	Commander	456 M&S Gp

e. Initial briefing was given by the Air Research and Development Command, Air Intelligence Security Services, and intelligence agencies. Development of Project Genetrix had begun by ARDC in 1949.

f. On 25 October 1954 the Commander, Tactical Air Command designated Colonel James L. Daniel, Jr., and the 456th Troop Carrier Wing (M) responsible for the recovery mission of Project Genetrix. The mission was stated as:

The air recovery of high-altitude balloon-borne equipment.

The concept of operations and method of mission accomplishment was made the responsibility of Colonel Daniel.

g. It was emphasized that this was a top priority "crash" mission, requiring extensive modification of fifty (50) type C-119 aircraft, the development of plans, and new concepts of manning, supply, operations, and training.

Section II

1. Conferences at Langley Air Force Base developed several areas for consideration and action. The nature of the project affected aircraft, training of aircrews, and procurement of qualified personnel to a greater degree than other functions in a Medium Troop Carrier Wing. Pre-phase planning highlighted the following:

a. Modification of fifty (50) type C-119 aircraft was required to intercept and recover airborne packages. (See Tab "A" for description of modifications).

b. Aircrew Training. See Tab "B" for description of training requirements.

c. Personnel. Input and stability of personnel to man the 456th Troop Carrier Wing (M). (See Tab "C").

2. On 26 October 1954 Colonel James L. Daniel, Jr., attended a conference in the office of the Deputy Chief of Staff, Materiel, Tactical Air Command, with representatives from Tactical Air Command, Air Research and Development Command, Air Materiel Command, and Eighteenth Air Force. General information furnished the conferees included the following proposals:

a. Reorganization of the 456th Troop Carrier Wing into six (6) squadrons, each capable of operating individually.

b. Assignment of eight (8) type C-119 aircraft to each squadron, with two (2) squadrons having the capability of operating from Arctic areas.

c. An operational readiness inspection on 1 August 1955; in place date 1 October 1955, allowing thrity (30) days to become fully operational by 1 November 1955.

d. Technical representatives to be provided at each operating site, to assist with maintenance of recovery and electronics gear.

e. The transfer of Charleston Air Force Base to Military Air Transport Service.

f. Modification schedules of aircraft as follows: eighteen (18) aircraft completely modified by 15 March 1955, with the remaining thirty two (32) aircraft completely modified by 15 July 1955.

3. a. The Commander, 456th Troop Carrier Wing (M) evolved a plan providing for personnel and equipment augmentation of the Wing, assumptions relative to the project, a concept of operations, and training necessary to insure capabilities required to conduct operation "Grayback." This plan, dated 17 November 1954, proposed that the 456th Troop Carrier Wing (M) would:

(1) Operate Charleston Air Force Base for approximately four (4) months.

(2) Perform normal troop carrier missions for approximately four (4) months.

(3) Prepare to turn Charleston Air Force Base over to the receiving command (MATS).

(4) Conduct the necessary planning and augmentation of the Troop Carrier Wing to insure that training for project C-119L was thoroughly and expeditiously conducted.

b. Upon completion of training activities required to qualfiy personnel for the project and through the duration of the Project Wing Headquarters would be manned in accordance with Tab "B", exhibit "B" to 456th Troop Carrier Wing (M) document titled Project C-119L, 17 November 1954 (456 TSC #105); the tactical squadrons to be manned in accordance with Tab "B", exhibit "C".

4. Based on information then available, the Commander, 456th Troop Carrier Wing (M) made the following assumptions relative to the project:

a. That personnel and equipment presently assigned would be utilized and augmented from other sources as required.

b. That the present wing headquarters and tactical squadron organizational structure would be augmented, personnel stabilized, and undergo an operational training phase.

c. That a training period would start approximately 1 March 1955 and continue for a six (6) month period to approximately 1 September 1955 and that unit aircraft would be completely modified during this training period.

d. That only fully qualified crew members and maintenance personnel in the C-119F aircraft would be retained, and specialized cabin equipment operators would be provided.

e. That sufficient instruction would be provided in equipment operation and recovery procedures to enable the local establishment of a training program for perfecting air crew technique.

f. That sufficient aerial port personnel would be provided as a tenant detachment during the air crew training phase for parachute recovery and repack requirements.

g. That the 456th Troop Carrier Wing Headquarters would be located at an installation in the recovery area and operational units would be located at established installations in the following areas: Japan, Iwo Jima, Midway, Wake, Honolulu and Kodiak. These installations would provide full administrative and logistical support such as office equipment and supplies, billeting, messing, medical, finance, chaplain, legal, Base Supply service, vehicle transportation and other normally base supplied necessities.

h. That unit aircraft where operating with clam shell doors removed and 3,524 gallons of gasoline would gross approximately 70,494 pounds and be operating at 8,500 to 15,000 pounds in excess of their safe single engine operating weight limitations dependent upon free air temperature and dew point temperature at time of take off.

i. That all aircraft would be equipped with beaver tail doors to lessen the overload condition at take off and increase the possible radius of action.

j. That rapid and secure world wide communications service would be available on an immediate and continuous basis.

k. That operational area weather data complete in every detail would be available on a continuous basis.

l. That each operational site would have its' own HF air/ground communications.

m. That unit deployment would be accomplished by other than organizational aircraft into their assigned base with a minimum

of thirty (30) days support equipment and spare parts, and would operate for a period of 120 - 180 days.

n. That depot support would be available at all times with a high priority for airlift of aircraft parts and equipment.

o. That logistical airlift would be available to the 456th Troop Carrier Wing headquarters at all times for immediate aircraft maintenance support to squadron units and for administrative visits to subordinate units as required.

p. That unit aircraft would be modified with cabin fuel tanks (1,000 gallons) for long range operation and would not be capable of unit logistical support.

q. That operational areas might be in the arctic and/or tropics and that long overwater flights would be required.

r. That target recovery operations would not be conducted during darkness or in cloud coverage.

s. That unit aircraft would be winterized as required prior to deployment and that aircraft in the arctic areas would have heated hangar space for a minimum of three (3) alert aircraft.

t. That recovered targets would be accepted by an outside agency immediately upon return of the aircraft to operating base.

u. That secure stroage facilities for classified material would be available at each operating base.*

5. The plan of the Commander, 456th Troop Carrier Wing (M) providing for personnel and equipment augmentation, assumptions relative to the project, concept of operations, and training formed the basis for the "Tactical Air Command Proposed Plan for the Air Recovery Function on Project (Confidential) Grayback."

6. The Commander, 456th Troop Carrier Wing (M) made further recommendations in three areas: Operations, Personnel, and Materiel. Among the comments was a reiteration of the necessity for

*Complete plan is attached as Tab "D". See also Tab "I" for comparison.

immediate contact between each operating site and the aircraft assigned to that site; for rapid and secure communications from each site to the Wing Headquarters Control Center. The Commander recommended that C-124's be specified as support aircraft due to the requirement for built-up engines and propellers to be delivered from selected depots to the operating sites. The Commander further recommended commercial contracts for installation of:

Second ARN-6.
"Cutter" operating lever on the pilots pedestal.
Dual generator system on each engine.
Flight operable doors.
Low-ratio operable power recovery turbine on all aircraft.

Section III

1. A conference was held at Charleston AFB, South Carolina on 17 January 1955 between representatives of 456th Troop Carrier Wing, 18th Air Force and Military Air Transport Service to negotiate an agreement for the transfer of command jurisdiction of Charleston AFB, South Carolina and its' attendant facilities from the Tactical Air Command (the relinquishing command) to Military Air Transport Service (the receiving command).*

2. The agreement, as negotiated, provided for transfer of Charleston Air Force Base, South Carolina and all associated facilities from Tactical Air Command to Military Air Transport Service at 0001 hours 1 March 1955.

3. The agreement encompassed instructions, property, supplies, equipment, reports of survey, maintenance, purchasing and contracting, Comptroller activities, personnel, manpower and organization, communications, military justice, claims, base publications, existing agreements, and records.

4. Effective at 0001 1 March 1955 the 456th Troop Carrier Wing (M) became a tenant unit on Charleston Air Force Base, South Carolina.

*See Tab "E" "Agreement Concerning Transfer of Charleston AFB, S.C., from Jurisdiction of TAC to MATS."

Section IV

1. Letter WCO OPS 6, Headquarters 456th Troop Carrier Wing (M), 24 September 1954, Subject: "Instructions Reference TDY of Aircraft and Personnel, Langley Air Force Base, Virginia,"* was addressed to Commanders, 456th Troop Carrier Group and 456th Maintenance and Supply Group. This letter set forth numbers of personnel by recommended AFSC to receive training in System 119-L. Total personnel: 40 airmen, and officers as required. Ferry crews were to be provided by the 456th Troop Carrier Group on 29 September 1954 to deliver 7 type C-119-F aircraft to Langley Air Force Base for participation in the training program, with operational control of the aircraft to pass to Commander, AFCRC Detachment #3, System 119L, upon arrival at Langley.

2. Aircraft assigned to Langley were supported by the 456th Troop Carrier Wing (M). Maintenance personnel were placed on TDY at Langley to perform routine maintenance; aircraft were returned to Charleston Air Force Base for inspections. Supplies and equipment for training and for routine maintenance of Langley - based aircraft were picked up at Charleston. Nylon rope, chutes, cable, poles, and miscellaneous hardware consumed in pickups was procured from M&O funds of the Wing and forwarded to the unit training at Langley.

3. No insuperable maintenance problems arose as a result of this situation, i.e., minor maintenance performed at Langley, and inspections at Charleston. However, it was noted that high RPM caused sheet metal damage due to vibration. The A-frame type gear fabricated by ARDC was used in the first two months training, with no replacement parts available. Parts required were fabricated locally. A prototype gear was delivered in the first of calender year 1955. This gear carried a heavier duty motor than the original gear. The aircraft utilization rate during this period decreased due to stand downs at Langley, and the requirement for furnishing three aircraft to ARDC at Vernalis, California to stand by for recovery work.

4. The training of crews for System 119L was delayed at Langley, requiring a request for extension of TDY for the first 5 pilots undergoing training. Letter, Detachment #3, 6520th Test Squadron (Flight), Langley Air Force Base, Virginia, 17 December 1954, Subject: Training of Crews for System 119-L (Classified Confidential;

*Classified Confidential; 456 TCW Control #2450.

456 TCW Control #2766) set forth the lack of suitable equipment as the delaying factor. As of 17 December 1954 two sets of recovery equipment had been delivered, a third set was undergoing engineering modifications, and two additional sets had been promised for delivery by the contractor, one on 21 January 1955 and one on 1 February 1955.

5. Concurrent with the training of crews at Langley, a winch operators course began at Cambridge Research Center, Georgetown, Delaware. Spaces were allocated to Commands subordinate to Tactical Air Command. Selections were made from aerial gunners, or personnel holding a maintenance field AFSC. Upon completion of the winch operators course personnel were placed on 30 days temporary duty at Langley for training, in recovery operations, then were reassigned PCS to the 456th Troop Carrier Wing (M).

6. Proficiency traning presented the problem of crew strength. The necessity for an augmented crew was dictated by long overwater flights, with duration of 15 hours. The Commander, 456th Troop Carrier Wing (M) set crew strength on recovery aircraft as follows:

3 Pilots
1 Navigator
1 Radar Operator
1 Engineer
1 Winch Operator
4 Pole Handlers

Section V

1. The early planning for Project C-119L was accomplished on a "need to know" basis, because of the Top Secret classification of the project. In procuring specialized equipment, supplies, and services peculiar to the project, the Commander, 456th Troop Carrier Wing (M) was guided by experience in materiel and supply consumption gained by Detachment #3, 6520th Test Squadron (Flight), Langley Air Force Base, Virginia. Letter, 4 December 1954, Detachment #3, 6520th Test Squadron (Flight), Subject: Training Equipment for System 119L, set forth the following:

a. The necessity of procuring a stock of items (other than recovery equipment).

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b. The majority of items required were not carried in Air Force stocks, and would require local purchase.

c. Data supplied indicated the number of each item required to effect 100 recoveries, cost per item, and Vendor.*

2. On 15 February 1955 the Commander, 456th Troop Carrier Wing (M) surveyed fund requirements to determine the effect of classified projects upon his base Maintenance and Operation funds (P458), and his capability to continue funding those requirements generated by classified projects. Extensive temporary duty and local purchase requirements had reduced available Maintenance and Operations funds to a point where the purchase of necessary supplies and equipment for the operation of the base had been curtailed, and for use in furtherance of these projects, had ceased.

3. As of 15 February 1955 classified projects had required the following funds:

Temporary duty travel:	$42,853
Supplies and equipment:	$48,027
	$90,880

4. An immediate requirement for $21,983 also existed on 15 February 1955 for local purchase of supplies essential to C-119L. A resume' of C-119L costs and estimates was made for the period 1 November 1954 (when C-119L costs were first borne by the 456th Troop Carrier Wing) to 30 June 1955, the end of Fiscal Year 1955. These costs and estimates were:

1 November 1954 - 15 February 1955	$ 90,880	(Actual
16 February 1955 - 30 June 1955	$247,165	(Estimated)

5. These costs and estimates were transmitted to Commander, Eighteenth Air Force by letter WCO, Headquarters, 456th Troop Carrier Wing (M), 17 February 1955, Subject: Fund Requirements. These requirements were subsequently formalized by the submission of a special budget estimate for Project Grand Union for the period 15 February 1955 - 30 June 1955.

*Cited letter, with consumption list for air/air and water/ground to air pickups is attached to 456 TCW Confidential Document #55222.

6. Special budget estimate highlighted the following:

a. During the period 15 February 1955 - 30 June 1955 the Commander, 456th Troop Carrier Wing (M) would equip six (6) tactical squadrons and train them in the first two (2) phases of the techniques and operations peculiar to C-119L.

b. Fifty (50) type C-119 aircraft were to be modified and equipped for the training phase of C-119L.

c. One hundred forty four (144) pilots and three hundred eighty four (384) other aircrew members were to be trained.

d. Utilization rate of three (3) hours per aircraft per day would be experienced.

Section VI

1. In March 1955 personnel from Headquarters, Eighteenth Air Force and Headquarters, 456th Troop Carrier Wing (M) proceeded to Headquarters, Far East Air Force to accompany a FEAF survey team to survey the sites for use in conjunction with Project (C) Grayback.*

2. FEAF personnel were briefed, and the following sites surveyed. Comments on each site are from letter referenced in footnote.

a. Misawa Air Base. Adequate facilities available to meet logistical requirements for this project. Priorities must be established assuring that such space will be available.

b. Iwo Jima. Survey not made due to grounding of all C-119 and C-124 aircraft in the theater. Specific requirement for Iwo Jima was presented to FEAF.

c. Midway. Suitable facilities are available at Midway, subject to the approval of CINCPAC.

d. Hickam. Adequate facilities are available at Hickam.

*See letter ODO, Hq 18AF, 29 March 1955, Subj: Report of Visit, 18AF TSC #55-52.

3. Of particular interest to the future successful accomplishment of the 456th Troop Carrier Wing (M) mission are the following comments extracted from letter referenced in footnote to paragraph 1, Section VI.

a. "The requirements for unit support equipment were presented to FEAF who assured that they would take necessary action to have prepackaged the equipment required by each site and that this equipment would be in position prior to deployment of the TAC Squadrons.

b. "I feel that the reluctance on behalf of FEAF to have formulated any positive plans to support this project was xxxx due to a complete lack of positive instructions and requirements emanating from Headquarters USAF.

c. "Recommend that the priority, security, and importance of this project be reiterated to each command concerned by USAF."

4. Site survey was conducted by the Commander and Staff, 456th Troop Carrier Wing (M) in June 1955, as part of the preplanning for deployment of the Wing. A check list was prepared prior to site survey, covering:

Operations and Intelligence
Communications
Personnel and Administration
Medical
Materiel

This check list was designed (1) to furnish the site (Base) Commander a requirement for his planning purposes so that the deployed (456th Wing) unit might be received at his station and maintain operational capability with the minimum amount of interruption; (2) to furnish the (456th Wing) unit Commander with information on facilities available at his designated site of operations.*

Section VII

1. On 27 April 1955 the Commander, 456th Troop Carrier Wing (M) directed his command to:

*See Tab "F" for check list.

a. Conduct the recovery phase of an operational suitability test of System 119L. This suitability test was nicknamed "Moby Dick Hi."

b. Deliver recovered gondolas to the 544th Reconnaissance Technical Squadron, Offutt Air Force Base, Nebraska.

2. To effect this recovery phase the Commander took the following action:

a. Provided necessary operational aircraft and aircrews to perform the recovery mission.

b. Established a Recovery Control Center at Charleston Air Force Base on a "round-the-clock" basis.

c. Provided airlift for logistical support of Moby Dick Hi, and for delivery of recovered data to Aeronautical Chart and Information Center.

d. Briefed crews on recovery; provided pilot flimsies, maps, operational instructions, and emergency procedures; continued training for Project Drag Net.

3. A total of 141 balloons, consisting of four (4) types, were launched in the operational suitability test. These types by number were:

a. High - fliers, ballasted for approximately 80000/50000 feet, 1 - 7 days duration. Total: 84.

b. Balloons with water stations, ballasted for approximately 80000/50000 feet, 1 - 7 days duration. Total: 30.

c. Special balloons, using a mixture of hydrogen and impurities to form a larger bubble with less expansion at altitude. Total: 7.

d. Low - fliers, ballasted for approximately 39000/50000 feet. Total: 20.

4. The following data lists balloons by total time aloft:

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FROM	TO	NUMBER	AVERAGE TIME
1 Minute	1 hour	26	39 plus minutes
1 hr. 1 min.	6 hours	38	1 hr. 56 min.
6 hr. 1 min.	24 hours	9	11 hr. 25 min.
24 hr. 1 min.	48 hours	13	32 hr. 28 min.
48 hr. 1 min.	144 hours	41	97 hr. 19 min.
144 hr.	Plus	14	
	TOTAL:	141	

5. The average time aloft does not take into consideration the potential flying time of each balloon, since a number in each category were terminated electronically or by shoot-down. A total of 33 balloons were terminated by recovery attempt, with 11 successful air recoveries.

6. On a percentage basis, the number of successful air recoveries was lowest on those balloons equipped with water stations attached. This is attributed to the increased weight of the package on this type balloon, with resultant equipment failure. Average recovery weight of package with water station attached was 710 pounds, as against 650 pounds for other "high - fliers." From 19 air recovery attempts on this package (those with water stations attached) 14 were failures. The cause of these failures was:

NUMBER	CAUSE
6	Drogue separated, or tore, line snapped.
4	Loop broke.
4	Miscellaneous.

7. Although the incidence of propeller damage incurred in air recovery attempts is relatively small, some significance may be attached to the fact that in each of the three (3) instances reported, a drogue chute was hit (twice) or cut off (once) by the left propeller. No instance of damage to the right propeller is reported in Moby Dick Hi files.

8. A typical Recovery Report is attached as Tab "G".

Section VIII

1. Project Drag Net consisted of ground and air training, and testing of equipment to be used in Weapons System 119L. Training phases were set up as follows:

Navigation Training (70 hours Navigators - 8 hours pilots).
Security Indoctrination (14 hours - all aircrew personnel).
Weather Training (4 hours - pilots, navigators, and radio operators).
Survival Training (64 hours - all aircrew personnel).
Communications Training (30 hours - radio operators, 8 hours - pilots).
Cruise Control (3 hours - pilots, navigators, and engineers).
Engineering Training (8 hours - pilots and engineers).
Interior Guard Training (14 hours - Staff and below).
"Drag Net" Indoctrination (8 hours - all aircrew personnel).
Altitude chamber and Flight Surgeon Lectures (All aircrew members).
Arms Familiarization (All personnel).

2. Equipment tests were made on (1) Model 80-C Pick-up unit, (2) loops, (3) production type parachute systems, (4) cable, (5) winches, and (6) drogue lines. In addition to these tests, 152 non-production type systems were worked for crew training and proficiency. (See Tab "H" for test evaluations).

3. In pursuance of Project Drag Net, a base of operations at Georgetown, S.C., became desireable. Upon request by the Commander, 456th Troop Carrier Wing (M), the District Engineer (Savannah District) negotiated a lease for hangar #2 at Georgetown Airport, Georgetown, South Carolina. This lease was in effect from 1 April 1955 - 31 July 1955, inclusive.

4. Overwater flight operations in connection with Project Drag Net presented a requirement for a vessel of sufficient size to handle certain gear and personnel, as well as having the capability of performing air sea rescue operations in the open sea. This requirement was presented by letter WMO TRS 10, Hq., 456th Troop Carrier Wing (M), 5 April 1955. The following are excerpts from cited letter:

"It is anticipated this training will commence 15 April and continue through a six month period in the Southern portion of

Warning Area Number 177, bordered by coordinates 78° 30' W/33' 00'N, 79° 06' N/33° 10' N, 78° 38' W/32° 39' N, 79° 31' W/32° 51' N.

"It is the understanding of this headquarters that the Charleston Transportation Depot has available a 65-foot "T" boat x x ideally suited to the training needs of this command. Request that Headquarters, USAF make arrangements x x x for the loan of this boat."

5. Approval was secured from Department of the Army by Department of the Air Force subject to the condition that the 456th Troop Carrier Wing (M) reimburse the Charleston Transportation Corps Depot actual "out of pocket" costs. Negotiations between the Commander, 456th Troop Carrier Wing (M) and Commander, Charleston Transportation Corps Depot, were successfully concluded, indicating costs for a four (4) month period as: (See footnote).

Drydocking	$ 680.00
Inspection, Maintenance and Repair	1,200.00
15,840 gallons fuel @ .09 gallon	1,425.60
Lubricants	98.00
	$3,403.60

Section IX

1. Concurrent with Projects Drag Net and Moby Dick Hi, difficulties were encountered in Maintenance, Operations, Materiel, and Personnel areas. Contributing factors were (1) accelerated aircraft utilization and materiel consumption, (2) assignment of personnel to the Wing who, for certain reasons, could not be deployed with the Wing, and (3) indecision as to date of deployment.

2. Propeller defects and maintenance of props.

a. Interim T.O. 1C-1-517, 27 July 1955 was a grounding factor 5 days after receipt. As a result of inspection, 118 defective

Reference: Ltr ASO 560, Chasn TC Depot, 4 May 55, Subj: Loan of 65-foot "T" boat, and 1st Ind CSS FIN 1-1, Hq 456 TCW.

blades were found, involving 42 aircraft and 76 propellers. A subsequent recheck returned 3 of the blades to service. However, 49 propellers were put into service between 1 - 15 August; 39 reparable propellers were shipped to Warner Robins on an exchange basis for overhaul and compliance with T.O. 3HA1-1-502, and 14 propellers were received from WRAMA. Nine propeller assemblies were received in an unserviceable condition in a 30-day period (15 July - 15 August 1955).

b. The problem of poor workmanship and inferior materials in the rework of propeller blades at WRAMA continued to ground a large percentage of assigned aircraft throughout the mission. Approximately 30% of modified props received were found to have defective blades. In some periods 50% of the aircraft had defective blades installed, causing a heavy workload in the squadrons and on the base propeller shop. All propeller specialists that could be spared were loaned to the base propeller shop, which established a 24-hour a day work schedule to tear down, crate, ship, uncrate and rebuild propellers as they were received from WRAMA. A special daily flight by support aircraft was flown to maintain the necessary shuttle of propellers and blades. On 7 September 1955 request was made to Air Staff for a 1A overriding priority on props, blades, and parts. This action was completed and coordinated to the depot in seven days. However, the heavy replacement factor required by T.O. 1C-1-517 required that additional prop blades be placed at each operational site. This requirement, for 25 blades per site, was forwarded for coordination with Air Materiel Command. Eventually, a trip to the Hamilton Standard factory was made and arrangements concluded for air pick-up of 120 newly manufactured blades. This alleviated the propeller blade situation.

3. Engine changes.

a. Engine changes at an excessive rate were incurred during the training period. Twenty three engines were changed during August 1955. Over 50% of these engine changes were performed prior to their maximum operating time expiration. Failure rate was estimated at 215 hours per engine.

b. Engine build-up kits received had old-type unarmored flight hoods. The Wing effected air pick-up of 42 armored flight hoods from MAAMA.

4. Annual fuel cell inspections on all aircraft became due prior to deployment. This was an additional situation which caused

grounding of aircraft. It was found that Air Force stocks were not in sufficient quantity to prevent AOCP's. The #5 left outboard cell had to be placed on procurement whenever needed. Manufacture was hampered by disruption at the factory (U.S. Rubber Co.) caused by floods occasioned by hurricane Janet.

5. Information was received that T.O. 1C-119F-533, which is a Flight Safety Technical Order, had been published, requiring replacement of aluminum wiring with copper. The Service Department of Fairchild Aircraft Company was contacted, and sufficient kits were rushed through to modify all Wing aircraft. This Technical Order compliance was entirely electrical in nature, and was time-consuming because of lack of sufficient squadron electricians and space limitations.

6. A special course on operation and maintenance of newly installed engine analyzers was conducted. Sixty personnel completed the course, including all engineers, and 24 maintenance personnel.

7. Local crew training for initial qualification and required proficiency training was materially affected by the shortage of aircraft occasioned by defective props and excessive engine changes. Priority was given to Project Moby Dick Hi, and that operation did not feel the effects of any AOCP's. A second factor which delayed training was non-receipt of a balloon borne type transmitter. This transmitter, to be used in training crews in the methods and procedures of making electronic contact, was requested in December 1954. Date of receipt: 4 August 1955. A third factor was the critical shortage of Micro press tools, cable cutters, and bronze hooks. The shortage necessitated dispatch of aircraft to distant points to intercept aircraft returning from chase missions, in order to "borrow" tools from that aircraft, since as many as 20 aircraft were on recovery missions at one time and only 13 sets of tools were available. Bronze hooks were in critical supply, original cast aluminum hooks proved unsatisfactory, due to breakage. Tests, made by the Wing, indicated bronze hooks were acceptable, and an initial supply was procured from the U.S. Navy, Charleston, South Carolina. The contractor (All American Engineering Co.) was unable to provide these hooks in sufficient quantity. Loop and cable breakage were main factors in loss of hooks.

8. Procurement of nylon rope and chutes rose to large quantities. This increased procurement stemmed from increased failure of these items during recovery operations, caused by higher package weights and higher true air speeds. The recovery equipment was engineered to effect recovery of 500-pound weights at speeds of 130 miles per hour at 10,000 feet or lower. Operational weights used in recovery operations exceeded 750 pounds, with true air speed of 150-160 knots at 20,000 feet.

9. Aircraft 51-8165 was lost in a crash on 23 August 1955. This was a non-operational accident.

Section X

1. Proposed Plan for Recovery Phase of Project (C) Grayback was published by the Commander, 456th Troop Carrier Wing (M) on 28 May 1955. A deployment date of not later than 1 October 1955 was planned, with airlift of personnel, 180 days kits complete, and UME and UPREAL equipment. Because of slippage in the program, caused by commitments laid on for tests, evaluation of equipment and recovery gear, and proficiency training, this schedule was delayed. (See Section XII, and Tab "H").

2. Departments of the Army and the Air Force telegraphic movement directive AFOOP-OC-C 41917, 17 June 1955 and message PC-C 6-2051, Hq., Tactical Air Command, 21 June 1955, directed the 456th Troop Carrier Wing (M) to prepare for foreign service. Air movement of personnel and equipment was directed, and port designations and readiness dates noted. These telegraphic movement directives formed the basis for letter OPR-L, Headquarters, Eighteenth Air Force, 23 June 1955, Subject: Movement Order, 456th Troop Carrier Wing (Medium).

3. On 8 July 1955 Amendment Number 1 was published by Hq., Eighteenth Air Force. This amendment delayed movement of the Advanced Air Echelon from 15 July to 25 July 1955. Amendment Number 2, 7 September 1955, changed readiness dates for main body to 5 - 10 October 1955, and mode of travel to surface transportation.** Further delays dictated by higher headquarters again delayed shipment of the main body, which departed Charleston Air Force Base, South Carolina 16 October 1955.

4. On 22 August 1955 the Commander, 456th Troop Carrier Wing (M) published Operations Order Number 1-55. This order provided for phased movement of all echelons and increments of the Wing, movement of flyaway kits and UME, and deployment of unit aircraft.***

*See Tab "I"
**See Tab "K"
***See Tab "J"

Section XI

ADVANCE ECHELON

1. The advance echelon began movement on 18 July 1955 with the departure of Wing administrative aircraft 51-8101. Itinerary was Charleston Air Force Base, South Carolina - Travis Air Force Base, California - Hickam Air Force Base, Hawaii - Kwajalein - Andersen Air Force Base, Guam - Clark Air Force Base, Phillipines - Kadena Air Base, Okinawa - Central Air Base, Iwo Jima, and Johnson Air Base, Japan. Beginning with Guam all bases were concerned with some portion of Project Genetrix. Within security requirements orientation briefings were held at each base and facilities surveyed for the purpose of briefing the Commander, 456th Troop Carrier Wing upon his arrival. The Commander, 456th Troop Carrier Wing (M) and Director of Materiel, with eleven airmen, arrived Shiroi Air Base on 6 August to complete the move of the advance echelon.

2. Initially, effort was expended receiving property, equipping offices, and making arrangements to receive the main body. Tents for Troop housing were under construction, but no housing problems were encountered, as the main body was not scheduled to arrive for several months. The Wing Commander established liaison with Headquarters, Far East Air Forces, and at the bases under control of FEAF which were to receive our FEAF-based recovery squadrons. The 6926th Radio Squadron (Mobile) and Detachment 4, FEAF were in place. These units were under the operational control of the 456th Troop Carrier Wing (M).

3. An early problem of importance was the establishment of reliable communications to all operating bases. Excessive circuit outages were encountered on the teletype circuits. It was not until 10 October 1955 that Detachment 4, FEAF was considered fully operational and assumed able to furnish the communications facilities needed to support the mission.

4. On 25 - 26 September a typhoon destroyed 80% of the facilities of Central Air Base, Iwo Jima. Facilities of Detachment 1, 744th Troop Carrier Squadron, were destroyed or damaged to the extent that they could not be reconstructed in time to meet project requirements. The Commander, 456th Troop Carrier Wing (M) surveyed sites at Itami, Ashiya, and Itazuke Air Bases to determine the base best suited to project requirements, and Itazuke Air Base was selected. The movement of Detachment 1, 744 th Troop Carrier Squadron from Iwo Jima to Itazuke Air Base created financial and logistics problems which have not been entirely solved.

5. Consideration was given to the use of "Black Box" equipment in a ground cutdown station. A model was constructed by the Wing, using the 4U equipment to determine whether it would be effective. Tests proved conclusively that it was, and plans were made to develop and construct such stations. Additional personnel were requested to operate these ground cutdown stations, and operating instructions for the cutdown stations were forwarded to the squadrons.

6. Standard Operating Procedures numbers 11A and 11B were published for the Recovery Operations Control Center (TAB "L") and Squadron Recovery Center (TAB "L") and Squadron Recovery Center (TAB "M"), respectively.

Section XII

1. It was initially planned that Phase III, deployment of aircrews and tactical aircraft, would commence in early September, to be in place at the operating location not later than 1 October, and to be fully operational by 1 November 1955.

2. Recovery training was scheduled so as to insure 100% combat readiness by 1 September 1955. Squadrons were scheduled to depart Charleston on the 1st, 4th, 7th, 10th, 13th, and 16th of September.

3. Due to launch and recovery difficulties encountered in operation Moby Dick Hi, the number of launches was increased from 25 to 150 balloons. This was designed to further test both launch and recovery procedures and techniques.

4. At the same time the 456th Troop Carrier Wing (M) conducted extensive tests to determine desirable modifications in the recovery gear and airborne equipment; these tests were designed to secure a more favorable recovery rate. These tests continued until deployment of the aircraft to their oversea locations. (See Tab "H" for resume of tests and proficiency training). Concurrently with test and evaluation of equipment and recovery gear, proficiency training was underway to meet requirement for combat readiness laid down by Headquarters, First Air Division: a crew, to attain full combat readiness, was required to fly a stated number of actual patrol and intercept flights, as well as accomplishing one actual recovery on Moby Dick Hi.

5. The requirements for test, evaluation, and proficiency training laid on caused a slippage in deployment dates for all phases of deployment. Tactical aircraft and crews were re-scheduled to depart Charleston Air Force Base in the period 1 - 13 November, with the last squadron to be in place not later than 20 November. (See Tab "N", 456 TCW Operations Order Number 2-55, 27 October 1955).

6. Additional recovery and ground training was scheduled and continued in progress up until the time of deployment. Squadrons were stood down in turn as scheduled to deploy, approximately ten days prior to scheduled departure dates, in order to perform required periodic inspections, and for pre-deployment engine changes. However, some aircraft were committed to conducting test flights on the Pacific Coast at the exact time the deployment was in progress at Charleston. Others were engaged, throughout the United States, in logistics missions in support of the over-all mission or the deployment itself. Despite these factors a rigid deployment schedule was established and maintained. All aircrews committed to collateral missions accomplished them successfully and returned to Charleston where they were absorbed into the deployment of their individual units without delay or revision of the scheduled departure times.

7. The 456th Troop Carrier Wing (M) plan for deployment of tactical aircraft called for a route as follows: Charleston Air Force Base, South Carolina - McChord Air Force Base, Washington - Kodiak Naval Air Station, Alaska - Adak Naval Air Station, Alaska - Misawa Air Base, Japan - Johnson Air Base, Japan - Kadena Air Base, Okinawa. Deployment was to be accomplished by "leap frogging" the units, by moving out in the order of their overseas site's nearness to the Zone of the Interior.

8. It was realized from the start that a flight from Charleston Air Force Base to McChord Air Force Base was at maximum range, and that weather conditions would have to be favorable in order to arrive at destination with adequate fuel reserves. This maximum range flight was desireable, however, for many reasons, the primary reason being to check aircraft fuel consumption as well as cruise control procedures before starting on the overwater legs of the flight.

9. On 12 October 1955 a liaison officer was dispatched to McChord Air Force Base to review those items that were essential to the support of aircraft and crews while enroute at McChord. The following functions and activities were represented at a meeting at McChord:

a. Project Officer for "Grand Union".

b. Base Operations Officer.

c. Food Service.

d. Transient Billeting.

e. Transient Alert and Refueling.

f. Motor Pool.

g. Navigation and Briefing.

h. Base Maintenance.

10. The times of arrival, total aircraft involved, quarters and messing required, with transportation needs and times were given to representatives of the activities concerned. Maintenance support, with hours of maximum need, was discussed and a request was made for those personnel to be made available during those hours.

11. The maintenance kit of C-119 spare parts being stocked at McChord was 98% complete at this date. Those items missing were listed and every effort was exerted to have them available by the date of arrival of the first aircraft.

12. Eighteenth Air Force Letter OOT-G, 6 September 1955, Subject: C-119 Aircraft Gross Weight Limits, established 68,000 pounds as the maximum gross weight for C-119 aircraft under their operational control. It became apparent from the introduction to our present mission and from our original concept of operation that a waiver on this gross weight restriction would have to be obtained. Due to the weight of the additional mission equipment on our aircraft, take-offs at or below 68,000 pounds would preclude carrying sufficient fuel to successfully accomplish our assigned mission. A waiver was requested to operate our tactical aircraft at the maximum weight allowable as computed from the Eighteenth Air Force single-engine limit gross weight charts, but not to exceed 72,000 pounds. This waiver was granted, with the stipulation that it would be exercised only at such times as operational necessity dictated.

13. Immediately prior to scheduled deployment of our first squadron, an objection was interposed to our plan to fly non-stop from Charleston to McChord. Eighteenth Air Force requested that a route be established with an enroute stop at Ardmore Air Force Base, Oklahoma, to preclude operating our aircraft at weights in excess of 68,000 pounds while within the Zone of Interior. Liaison with Ardmore Air Force Base was effected to secure support for aircraft and crews deploying through that base.

14. Enroute support posed no great problem, since Ardmore, a Tactical Air Command base, was assigned C-119 type aircraft. A substantial support kit of C-119 parts, including a built-up engine and propeller, had been pre-positioned at McChrod Air Force Base, Washington. Support personnel, as well as the greater portion of a 180-day flyaway kit, had been pre-deployed to each of the operational recovery sites, which were also scheduled as the enroute stops. Only required enroute maintenance was to be performed at Ardmore and McChord. Post flights were to be performed upon arrival at Kodiak Naval Air Station, Alaska.

15. Departures from Charleston of all aircraft were as scheduled by Wing Operations Order Number 2-55. One aircraft, carrying personnel of the advance echelon, departed on 18 July 1955; one aircraft, with liaison personnel for Ardmore and McChord Air Force Bases, departed on 20 October 1955. The tactical squadrons were programmed to fly in formation from Charleston Air Force Base to Ardmore Air Force Base, with

the remainder of the route to be corridor type. In three instances weather prevented this type operation; when necessary, due to weather, a corridor type departure was scheduled with aircraft departing at 15 minute intervals.

16. One outstanding maintenance difficulty was encountered on flight to Ardmore: a high rate of failure in UHF, VHF, and Omni receivers. Available spares were completely exhausted on the first squadron to arrive at Ardmore. The communications section of all units began rebuilding receivers, and throughout the staging operation maintained a 24 hour per day work schedule to keep sufficient spares available for our aircraft.

17. The route from Ardmore to McChord Air Force Base, as listed in Wing Operations Order Number 2-55, did not prove feasible for two reasons:

a. Aircraft were flying at 14,000 feet in excess of three hours.

b. Excessively high winds were encountered, and forecast, enroute, especially at high altitudes.

An alternate route was established to take advantage of lower altitudes and more favorable winds. This route was only 26 miles longer than the original route and was as follows:

Ardmore to Oklahoma City	Via V-163	8,000 feet
Oklahoma City to Goodland	Via V-17	8,000 feet
Goodland to Cheyenne	Via V-132	10,000 feet
Cheyenne to Billings	Via V-19	10,000 feet
Billings to Livingston	Via V-2	10,000 feet
Livingston to Helena	Via V-127	12,000 feet
Helena to Seattle	Via V-2	10,000 feet
Seattle to McChord	Via DIR	10,000 feet

18. Four delays were encountered during the operation. Two were due to ARTC clearance, but did not exceed 25 minutes. One delay was due to late arrival of flight lunches (20 Minutes) and one delay was for two hours, due to a turbine found rubbing at time of pre-flight inspection.

19. Two aborts were encountered during the operation. One was due to lack of sufficient torque reading on takeoff. This aircraft required a change of plugs on malfunctioning engine, and was

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airborne four hours and fifteen minutes after scheduled takeoff. One abort was due to loss of water injection on takeoff roll. Both regulators were changed and aircraft then operated normally.

20. a. On 2 November 1955 the 745th Troop Carrier Squadron arrived McChord with eight aircraft and crews. No outstanding discrepancies were noted, and after minor maintenance and crew rest the squadron departed dor Kodiak Naval Air Station Alaska, with the last aircraft off at 0400 hours PST, 4 November 1955.

b. On 5 November the 745th Troop Carrier Squadron arrived McChord with eight aircraft and crews. No major maintenance problems were encountered and all aircraft departed on time on 6 November 1955, after normal crew rest.

c. On 8 November Detachment #1, 745th Troop Carrier Squadron arrived McChord with eight aircraft and crews. No major maintenance discrepancies were encountered, and after normal crew rest the aircraft departed for Kodiak Naval Air Station, Alaska, with last aircraft off at 0658Z hours 10 November 1955.

d. On 10 November Detachment #1, 746th Troop Carrier Squadron arrived McChord, with one aircraft having been diverted into Casper, Wyoming with electrical difficulty. All aircraft departed for Kodiak on 12 November, after normal crew rest. Colonel Jay D. Bogue departed with this squadron for Kodiak and Adak to direct operations for squadrons arriving and departing these stations.

e. On 13 November Detachment #1, 744th Troop Carrier Squadron arrived McChord, with one aircraft having been diverted to Cheyenne, Wyoming on account of illness of the aircraft commander. This aircraft was delayed for 24 hours before arriving McChord. After minor maintenance and normal crew rest the squadron attempted to depart on 15 November. A weather delay was necessary, due to low ceilings and no available alternates at Kodiak. The squadron departed McChord on 16 November, with the exception of C-119F 51-8039, which required an engine change due to low torque on the left engine.

f. On 14 November the 744th Troop Carrier Squadron arrived McChord with eight aircraft and crews. No major maintenance discrepancies were encountered, but it was determined to hold the aircraft at McChord for an additional day, due to lack of sufficient facilities at Kodiak to handle two squadrons. The squadron departed McChord on 17 November with the last aircraft off at 0355 hours PST.

21. Postflight inspections were accomplished at Kodiak Naval Air Station on all aircraft staging through. The maintenance section of 746th Troop Carrier Squadron suspended all routine squadron maintenance activity, split personnel into eight postflight crews, and

assigned one crew to each transient aircraft. Time for postflight completion averaged four hours. Night maintenance schedules were necessary for an average of two aircraft per squadron. Weather presented the only difficulty in staging this large number of aircraft through Kodiak. Wind gusts exceeded 75 miles per hour, and damage to two elevators were occasioned by these winds. Facilities at Kodiak were excellent.

22. Deployment through Adak Naval Air Station was without incident. The 745th Troop Carrier Squadron organized maintenance personnel into teams consisting of (1) parking crew, (2) aircraft discrepancies notation crew, (3) runners between aircraft and maintenance office, (4) towing crew, (5) refueling crew, (6) minor maintenance crew, outside, (7) major maintenance crew, hangar, (8) trouble-shooting and final run-up, and (9) inspection. Major maintenance consisted of heater systems, leaks in heating and ventilating systems, instruments, and communications. With the exception of C-119F 51-8119, which required extensive engine reconditioning, maintenance on other aircraft was considered that which is normally expected on this type aircraft.

23. Some aircraft were delayed at Adak for 48 hours awaiting favorable enroute winds. Strong winds on this leg are common during the winter months. The 456th Troop Carrier Wing (M) had self-imposed as a safety factor a minus 30K wind component to insure adequate fuel to overfly Misawa and safely reach the Tokyo area. Most aircraft encountered enroute winds of approximately a minus 25K component. Average fuel remaining at Misawa was 6,000 pounds, which was more than ample to continue to Johnson Air Base, had it been necessary. Two aircraft turned back to Adak when they estimated they had insufficient fuel to safely continue flight, based on encountered winds and therminal forecast. All aircraft deployed through Adak by 20 November 1955 excepting four. Of these, two departed on 23 November, one on 25 November, and one on 5 December.

24. Deployment through Misawa Air Base, Japan was without incident. The three squadrons to deploy through Misawa flew direct to their FEAF operating locations from this point. During deployment through Misawa 19 postflight inspections were accomplished.

25. A list of parts consumed enroute is attached as Tab "O".

Section XIII

1. By planning and executing self-support over arctic routes, the entire complement of 49 C-119F aircraft of the 456th Troop Carrier

Wing (M) were deployed to seven different overseas operational sites in Alaska, Japan, and Okinawa. A rigid deployment schedule was established and maintained. Operations through McChord and the Aleutian chain were conducted in mountainous terrain, with heavy icing, through strong headwinds, and with long overwater legs. These hazards were accepted with the knowledge that, by close supervision and control, together with the proficiency which had been developed in training, the flights could be safely accomplished. Arrival was made on schedule at their overseas bases and operational training and test missions were flown within 24 hours after arrival. This is believed to be the largest mass movement, through the arctic area, of C-119 aircraft in the history of the United States Air Force.

Section XIV

1. Rail movement of the main body began with departure of the 745th Troop Carrier Squadron on 9 October 1955, enroute to Seattle Port of Embarkation for further shipment to Adak Naval Air Station. The 746th Troop Carrier Squadron departed by rail on 15 October, enroute to Seattle Port of Embarkation for further shipment to Kodiak Naval Air Station. The main body of Wing Headquarters, with the four remaining squadrons, departed Charleston Air Force Base by rail on 16 October, enroute to Parks Air Force Base, California and subsequent shipment through San Francisco Port of Embarkation to sites in Okinawa and Japan. Rear echelon departed Charleston Air Force Base by airlift on 25 November.

Section XV

1. As of 30 November 1955 the 456th Troop Carrier Wing (M) and its' units, with strengths as indicated, were at the following locations:

Headquarters, 456th Troop Carrier Wing
Shiroi Air Base, Japan
Assigned: 27 Officers - 68 Airmen

744th Troop Carrier Squadron
Kadena Air Base, Okinawa
Assigned: 39 Officers - 213 Airmen

Detachment #1, 744th Troop Carrier Squadron
Itazuke Air Base, Japan
Assigned: 40 Officers - 209 Airmen

745th Troop Carrier Squadron
Adak Naval Air Station, Alaska
Assigned: 41 Officers - 269 Airmen

Detachment #1, 745th Troop Carrier Squadron
Misawa Air Base, Japan
Assigned: 41 Officers - 211 Airmen

746th Troop Carrier Squadron
Kodiak Naval Air Station, Alaska
Assigned: 41 Officers - 272 Airmen

Detachment #1, 746th Troop Carrier Squadron
Johnson Air Base, Japan
Assigned: 41 Officers - 212 Airmen

2. Each squadron, excepting Detachment #1, 746th Troop Carrier Squadron, was assigned eight (8) tactical aircraft, equipped and operationally ready for the air recovery function of Project Genetrix. Detachment #1, 746th Troop Carrier Squadron, was assigned nine (9) tactical and one (1) administrative aircraft. The assignment of one administrative aircraft to this squadron was dictated by necessity, since no facilities for aircraft of this size existed at Shiroi Air Base, site of Wing Headquarters.

GRAND UNION ELECTRICAL SYSTEM. To supply required voltages for operation of the grand union electrical circuits, additional components have been added to the airplane electrical system. A project power junction box is added to provide a central source of power for auxiliary fuel system, power recovering equipment, homer equipment and SCR radio altimeter. Two inverters are utilized to provide power requirements for the homing equipment. An inverter automatic change-over relay and a warning light relay are located in the project inverter junction box in the cargo compartment. The inverter switch, homing equipment power switch and inverter warning lights are located on the pedestal. On Group "A" airplanes only, a monitoring bus is installed in the electrical system to automatically cut off the Liaison, Loran, and AN/APN-12 radio systems in the event of a partial electrical failure. On Group "B" airplanes only, two additional engine driven generators and a liaison radio set have been added.

SYSTEM COMPONENTS.

Part	Number Required	Type, Model Part No.	Vendor
Junction box, project power	1	213-742002	Fairchild
Junction box, project inverter	1	213-742003	Fairchild
Inverter	2	AN3515-1	
Change-over relay	1	45B7367	
Warning light relay	1	44B18574	
Switches	3	AN3021-10	
Light, indicator	1	AN3157-2	
Light, indicator	1	AN3157-4	
Circuit Breakers:			
Inverters	2	PLM-105	Klixon
AC Power	1	MS25005-10	
DC Power	1	MS25005-10	
Voltmeter	1	MS25005-10	
Radio altimeter	1	MS25005-5	
Generator	2	AN3633-1	
Generator field control relay	2	M-2	
Reverse current relay	2	AN3025-1	
Overvoltage relay	2	E-2	
Generator warning light	2	AN3157-6	
Generator control switch	2	AN3227-5	
Generator shunt	2	AN3200-300	
Limiter	2	45B7089-325	

Warning light relay	2	AN3306-1
Voltage regulator	2	32276-D
Ammeter	2	J-1

PROJECT POWER JUNCTION BOX. The project power junction box is located on the right side of the cargo compartment at station 293. The box acts as a distribution point for the project electrical power and contains 28-volt dc buses, and circuit breakers for the auxiliary fuel pumps, homing dc power, main inverter, spare inverter, and winch power circuits.

PROJECT INVERTER JUNCTION BOX. The project inverter junction box is located on the 106 bulkhead in the cargo compartment. The box contains the inverter automatic change-over relay, warning light relay, 115-volt-single phase, 400 cycle bus outlets, and a control switch for the 115 volt circuit, and circuit breakers for the project homing voltmeter and alternating current circuits.

MAIN AND SPARE PROJECT INVERTERS. Two 1500-volt ampere, single phase inverters are located on the auxiliary deck at stations 185 and 214. The inverters convert the 28-volt, 400-cycle, single phase alternating current for the purpose of operating the project homing equipment. Each inverter consists of two primary assemblies, the inverter or rotary unit, and the control unit. The rotary unit is a motor generator set, while the control unit contains the starting contractors, electronic voltage and frequency regulator, and a noise filter for suppressing any generated interference. The inverters are protected by individual circuit breakers in the project power junction box and controlled by a switch on the pedestal control panel.

AUTOMATIC CHANGE-OVER RELAY. The inverter circuit contains an automatic change-over relay located in the project inverter junction box to facilitate the change-over operation from main to spare inverter, when main inverter malfunctions. Incorporated in the change-over relay is a time delay, heater operated relay, set to operate in approximately six seconds after main inverter failure. This time delay is needed in the inverter circuit to allow the spare inverter time in which to obtain normal operating speed.

INVERTER CONTROL SWITCH. Operation of the main and spare inverters is controlled by a single-pole, single-throw, "ON-OFF" toggle switch located beside the inverter warning lights on the pedestal control panel.

INVERTER WARNING LIGHTS. Two "push-to-test" inverter warning lights are installed on the aft left side of the pedestal control panel. The amber light is placarded "MAIN INVERTER OUT" and the red light is placarded "BOTH INVERTERS OUT." Illumination of the MAIN

light indicates a malfunction of the main project inverter. Should both inverters malfunction, the "BOTH" light will come on. Operation of the lights is controlled by a warning light relay located in the project inverter junction box.

HOMER CONTROL SWITCH. A single-pole, single-throw, "ON-OFF" toggle switch located beside the inverter control switch, directs inverter putput to the homer control unit on the auxiliary deck.

DC POWER CIRCUIT BREAKER. A ten-amp circuit breaker is installed in the project power junction box to protect the inverter and homing equipment control circuits.

AC POWER CIRCUIT BREAKER. A ten amp circuit breaker is installed in the project inverter junction box to protect the homer circuits utilizing the 115-volt, 400-cycle, single phase alternating current.

VOLTMETER CIRCUIT BREAKER. A five amp circuit breaker is installed in the project inverter junction box to protect the AC voltmeter on the copilot's instrument panel.

RADIO ALTIMETER CIRCUIT BREAKER. A five amp circuit breaker is installed in the radio junction box to protect the radio altimeter circuit.

DC MONITORING BUS. (Group "A" Airplanes Only). On airplanes listed under Group "A" effectivities, a monitoring bus is installed in the electrical system to automatically cut off certain electronic components in the event of a partial electrical failure. The monitoring bus is connected to the main bus through the operation of three relays. Energizing the left and right engine generator indicator light relays will complete a circuit to the monitoring bus relay coil. When this relay is energized a circuit is completed between the main and monitoring bus. Failure of either engine generator will break the circuit to the monitoring bus relay thus rendering inoperative the Liaison, Loran, and AN/APN-12 radio systems. Should it become necessary to operate any of this equipment, the monitoring bus may be reconnected by placing the monitor bus switch in "OVERRIDE." This action will bypass the indicator light relays and energize the monitor bus relay.

NUMBER 2 GENERATORS CIRCUIT. (Group "B" Airplanes Only). Two additional engine driven generators are installed on airplanes listed under Group "B" effectivities. The generators are identical in operation to the existing engine driven generators. Included in each generator circuit is a reverse current relay, field control relay, overvoltage relay, voltage regulator, limiter, shunt, and warning light circuit.

NUMBER 2 GENERATORS. A 30-volt direct current, 300 ampere, engine-driven air-cooled generator is mounted on each engine accessory drive section. Each generator is controlled by a switch located on the #2 generator control panel.

REVERSE CURRENT RELAY. A reverse current relay is located in each generator junction box and functions to prevent an interchange of current between generators when the system is operating at light loads. It accomplishes this by connecting the generator to the battery or bus load, and disconnecting the generator from the battery or bus when reverse current tends to drive it as a motor.

OVERVOLTAGE RELAYS. An overvoltage relay is located on each side of the cargo compartment at station 340. The relays protect the #2 generator circuits against overvoltage conditions.

VOLTAGE REGULATORS. Two carbon pile voltage regulators are installed on the left side of the cargo compartment between stations 337 and 355. Purpose of the regulators is to prevent excessive change in generator output voltage by automatically controlling the generator field current. Each regulator is adjustable by means of the knurled adjusting knob at the regulator base.

FIELD CONTROL RELAYS. Operating within each #2 generator circuit is a generator field control relay, located beneath the voltage regulators. Each relay is of the latch type, utilizing a trip coil which is operated through the over-voltage relay, and a reset coil, which is electrically operated by the "RESET" position of the generator control switch, or the manual push button on the field control relay box.

GENERATOR SHUNTS. A shunt is installed in the #2 generator junction boxes for each #2 generator. These shunts provide the proper circuit connection for operation of the instrument panel ammeters.

LIMITERS. A limiter is installed in each #2 generator junction box. The limiter is basically a fuse, protecting the generator and the generator circuit.

GENERATOR SWITCHES AND INDICATOR LIGHTS. The #2 generator switches and indicator lights are located on a control panel to the pilot's left. Positions and corresponding functions of the generator control switches are identical with the existing engine driven generators.

DC VOLTMETER SELECTOR SWITCH. The DC voltmeter selector switch includes a switching position for checking the output of the #2 generators.

EQUIPMENT TABLE.

Equipment	Location	Function
RADIO ALTIMETER SCR-718		
BC-788 Transmitter Receiver	Accessory compartment deck at station 470.	Indicates distance from airplane to ground.
I-152 Indicator	On radio rack in crew compartment.	
AS-333/AP (4)	Underneath fuselage on right side at stations 266.5 and 449.	
HOMER INSTALLATION		
MRT-6 Transceiver	On auxiliary deck on right side at station 165.	
56626-1W-A1-101-1 Control Box	On radio operator's table.	
56627-1T-A1-101-1 Control Unit	On auxiliary dect on right side at station 157.	
D56624-1 Switching Unit	Accessory compartment between stations 179 and 192.5.	
HS3 Galvanometer	On pilot's instrument panel beneath altimeter and beside course indicator.	
DS6620-1H-CO-1 Antenna	Top of fuselage at station 192.5.	
LIAISON SET 618S-1		
618S-1 Transceiver	In lavatory compartment.	To provide long-range twoway voice and code communications.
416W-1 Power Supply	In lavatory compartment.	
614C-2 Control Panel	On pedestal radio panel.	
180L-3 Antenna Tuner	On left side of auxiliary deck below antenna mast	
AB-336/U Antenna	On top left fuselage-antenna wire extends to left vertical fin.	

MASTER ELECTRICAL EQUIPMENT LIST.

Index No.	Nomenclature	Type
1	Fuel Pump	TF31600-6

2	Circuit Breaker	AN3160-20
3	Switch	AN3021-10
4	Light, Indicator	AN3157-2
5	Light, Indicator	AN3157-4
6	Galvanometer	HS3
7	Auto-Change-Over Relay	45B7367
8	Warning Light Relay	44B78574
9	Circuit Breaker	MS25005-5
10	Circuit Breaker	MS25005-10
11	Circuit Breaker	PLM-105
12	Inverter	AN3515-1
13	Relay Box	56624-23
14	Control Unit	D56627-1T-A1-101-1
15	Receiver	MRT-6
16	Control Box	56626-1W-A1-101-1
17	Antenna	DS6620-1H-CC-1
18	Circuit Breaker	AN3161-P10
19	Switch	G100-H3
20	Light, Indicator	AN3157-2
21	Circuit Breaker	PLM 150
22	Connector	AN3106A20-5P
23	Circuit Breaker	MS25005-5
24	Indicator	I-152
25	Receiver and Transmitter	BC-788
26	Antenna	AS-333/AP
27	Relay	AN3353-1
28	Relay	AN3362-1
29	Switch	AN3021-10
30	Relay	AN3308-1
31	Circuit Breaker	MS28005-5
32	Switch	AN3227-5
33	Ammeter	Type M
34	Light, Indicator	AN3157-6
35	Light	MS25010-3
36	Circuit Breaker	AN3161P5
37	Relay	AN3306-1
38	Generator	AN3633-1
39	Relay	AN3025-1
40	Limiter	457098-325
41	Shunt	AN3200-300
42	Circuit Breaker	5A
43	Circuit Breaker	20A
44	Relay	M-2
45	Relay	E-2
46	Voltage Regulator	32276-D
47	Transceiver	618S-1
48	Power Supply	416W-1

49	Antenna Tuner	180L-3
50	Remote Control Unit	614C-2
51	Switch	AN3023-3
52	Relay	AN3308-1
53	Circuit Breaker	MS25005-5
54	Circuit Breaker	MS25005-35
55	Circuit Breaker	MS25005-10

GRAND UNION FUEL INSTALLATION.

AUXILIARY FUEL SYSTEM.

DESCRIPTION. Two auxiliary fuel tanks having a total usable ecpacity of 1000 gallons, are installed side by side in cradles on the right forward side of the cargo compartment floor. The tanks are enclosed by a cover assembly to reduce fuel vapors in the cargo compartment. Both the tanks and the enclosure formed by the cover assembly are vented through the right side of the cargo compartment. A booster pump is installed in each tank. Both pumps are controlled by a switch-type circuit breaker located on the project power junction box. The pumps join a common supply line on the aft right side of the right tank. The supply line is then routed to the manual valve on the main fuel system cross-flow line at station 313. Three manual shut-off valves, two check valves and two drain valves are also incorporated in the system. A fuel sight gage provides visual indication of tank contents.

SYSTEM COMPONENTS.

Part	Number Required	Type Model or Part No.	Vendor
Fuel Tanks	2	A-1125	Benson
Cradle assemblies	2	110-680042	Fairchild
Booster Pump	2	TF31600-6	Thompson
Drain valve	2	7501-1	Koehler
Shut-off Valve	3	24132	Koehler
Check Valve	2	525GG-1	Parker Appliance
Circuit breaker	1	AN3160-35	

DESCRIPTION. A swing-type valve is installed in each pump supply line to the right of the manual shut-off valves. The check valves eliminate the possibility of a reverse flow of fuel in either of the booster pump supply lines.

DRAIN VALVES AND LINES. A drain valve is incorporated in each pump drain line. Purpose of the valves is to drain foreign matter from the tank sumps. A pump seal drain line is installed in each pump. These lines continuously drain overboard.

SIGHT GAGE. A tubular glass sight gage is mounted on the left tank cradle. Two plastic windows on the forward left side of the vapor cover afford visual access to the gage.

SIGHT GAGE SHUT-OFF VALVE.

DESCRIPTION. A manually operated shut-off valve is installed in the line leading from the bottom of the sight gage to the tanks interconnect line. Purpose of the valve is to shut off escaping fuel in case of sight gage breakage. The valve is normally safety-wired in the "OPEN" position. An access panel is provided in the vapor cover for operating the valve.

FILLING. The auxiliary fuel system is serviced through a single filler line which extends through the fuselage skin at station 218 on the right side of the airplane.

FUEL TANK ASSEMBLY.

DESCRIPTION. The fuel tank assembly consists of a supporting structure secured to cargo tie-down fittings, a vapor cover consisting of a top and bottom half, two 500 gallon Benson tanks, and pumps, valves and tubing necessary to complete the system. The tanks and their component parts are all contained within the vapor cover, with all tubing routed through vapor-proof fittings in the cover.

BOOSTER PUMPS.

DESCRIPTION. A submerged type electrical fuel booster pump is installed in the aft end of each tank. The booster pumps serve to supply fuel under pressure from the fuel tanks to the suction port of the engine-driven pumps and to prevent vapor locks at high altitude by maintaining sufficient fuel pressure in the suction port of the engine-driven pumps. The booster pumps are the two-speed type, however, only the "NORMAL ON" and "OFF" positions are used in this installation. A switch-type circuit breaker, installed in the project power junction box, is used to control the booster pumps.

TANK SHUT-OFF VALVES.

DESCRIPTION. A manually operated shut-off valve is installed in each supply line from the booster pumps. These valves control fuel flow to the manual shut-off valve on the crossfeed line. The valves are normally safety-wired in the "OPEN" position. Access panels are provided in the vapor cover for operating the valves.

CHECK VALVES.

GRAND UNION OXYGEN EQUIPMENT. A low pressure oxygen system is installed in the cargo compartment of the airplane to accommodate five

additional personnel. The system is filled through the regular crew oxygen system filler valve, but is isolated from the regular oxygen system consists of five oxygen cylinders, five demandregulators, five flow indicators, five mask to regulator tubes, a pressure gage, two recharger assemblies and a line valve. Brackets are also provided for the installation of five portable oxygen units.

OXYGEN CYLINDERS. Five low pressure, shatter-proof oxygen cylinders are mounted on a cradle assembly on the right side of the cargo compartment ceiling just aft of the 106 bulkhead. These low pressure cylinders are charged to their designed pressure of 425 psi through the regular crew oxygen system filler valve with filler lines connecting to each cylinder.

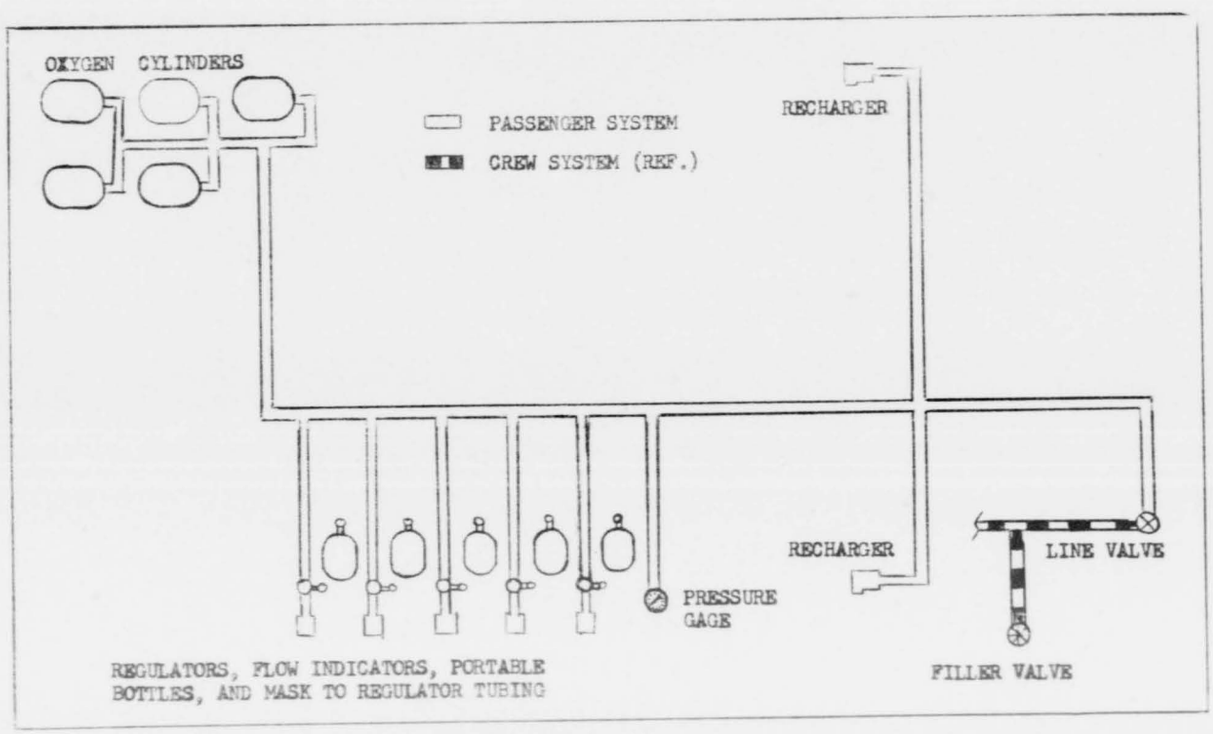
ALTITUDE - FEET		GAGE PRESSURE - PSI							
		400	350	300	250	200	150	100	BELOW 100
25,000	100% DIL.	16.4	14	11.8	9.3	7.1	4.7	2.3	EMERGENCY DESCEND TO ALTITUDE NOT REQUIRING OXYGEN
	NORMAL	20.5	17.5	14.5	11.6	8.7	5.8	2.9	
20,000	100% DIL.	12	10.4	8.7	6.9	5.2	3.4	1.7	
	NORMAL	23.4	20.2	16.8	13.4	10.2	6.7	3.3	
15,000	100% DIL.	9.6	8.3	7	5.5	4.2	2.8	1.3	
	NORMAL	28.1	24.1	20.1	16.1	12.2	8.2	4.1	
	100% DIL.	7.5	6.7	5.5	4.3	3.3	2.2	1.1	
	NORMAL	36.8	31.6	26.3	21.1	15.8	10.5	5.3	

NOTE: All figures shown are maximum man-hours available.

Oxygen Duration Chart

SYSTEM COMPONENTS.

Part	Number Required	Type, Model or Part No.	Vendor
Oxygen Cylinder	5	G-1	
Cradle Assembly	1	213-770059	Fairchild
Demand Regulator	5	A-12A	
Pressure Gage	1	AN6021-1B	
Flow Indicator	5	AN6029-1A	
Recharger Assembly	2	AN6041-1	
Line Valve	1	MIL-V-7529	
Mast to Regulator Tubing	5	AN6003-48A	



OXYGEN SYSTEM SCHEMATIC

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GRAND UNION POWER RECOVERING EQUIPMENT.

HYDRAULIC SYSTEM. The hydraulic system is utilized in the recovering system and consists of a flow regulator valve, manual selector valve, dual thermal relief valve, two quick disconnect fittings, and necessary tubing and plumbing. All components including tubing are located between stations 461.5 and 479 on the left side of the cargo compartment. Pressure for the system is tapped off the 3000 psi line to the in-flight operable doors at station 479. The pressure is directed from the tap-off tee fitting through a flow regulator to a two position manual selector valve mounted on a bracket at station 470. From the selector valve the pressure is directed, by positioning the valve, to either one of two quick disconnects located on a bracket beneath the selector valve. A dual thermal relief valve is incorporated to prevent over-pressure in the system.

SYSTEM COMPONENTS.

Part	Number Required	Type, Model or Part No.	Vendor
Flow Regulator Valve	1	196-6-1.50	Waterman
Manual Selector Valve	1	AN6293-6	
Quick Disconnects	2	155-54-6S	Aeroquip
Dust Cap	2	155-57-8	Aeroquip
Dual Thermal Relief Valve	1	MS28016AB4	
Switch, Cable Cutter	2	C100-H3	Hetherington
Light, Indicator	1	AN3157-2	
Circuit Breaker	1	PLM 150	Klixon

FLOW REGULATOR. A flow regulator valve is located in the pressure line at its entrance to the inlet port of the selector valve.

SUPPLEMENT INFORMATION
FOR C-119 AIRPLANE WITH
IN-FLIGHT OPERABLE DOORS

IN-FLIGHT OPERABLE DOORS

DESCRIPTION. The in-flight operable doors are comprised of two movable components, the hood and the floor, installed on the aft end of the fuselage at station 549. The hood, which extends the full width of the fuselage, essentially maintains the contours of the fuselage ceiling and two side panels and is hinged to the aft end of the fuselage at two points. The floor is hinged to the aft end of the hood at station 704 and butts against the fuselage when in the down position. The assembly extends from station 549 to station 708 and its tapered contour provides both increased range for heavy equipment drops and standard airplane flight characteristics. When operated, the opening created provides ample area for loading and unloading bulky cargo plus the facility for dropping the equipment while in flight. The hood is operated by two hydraulic actuators while floor movement is controlled by a threaded drive shaft, a carriage, and four cables. Control switches are located in the right and left side of the crew compartment at station 14 and in the forward right hand side of the cargo compartment at station 110, whith position indicators for the hood and floor adjacent to each switch.

OPERATION.

HOOD AND FLOOR OPEN. The flight operable doors are initially actuated by one of the three momentary control switches on either the pilot's, copilot's or jumpmaster's alternate panels. When placed to "OPEN" the control switch energizes the hood selector valve solenoid in the hood selector valve through the floor up-limit and hood up-limit switches which are in series. The hood selector valve directs hydraulic fluid under 1380 psi, to the hood unlock actuator, which results in disengaging two springloaded locking pins from the guide rail stops. The guide rails are components of the hood structure and extend forward along the inside of the fuselage at water line -30. Full retraction of the lock actuator actuates a sequence valve, which directs fluid to two hood control actuators, and results in hood travel. When the hood opens to 7 degrees, an up-limit switch opens, de-energizes the hood selector valve solenoid, and completes the circuit to the floor selector valve. The hood selector valve slide returns to neutral, blocks the hydraulic fluid flow to the hood actuators, and traps the fluid in the hood system lines. The floor selector valve moves to permit fluid to flow under 3000 psi, to the rotary

floor drive motor and a shuttle valve, which shuttles to direct pressure to the floor drive mechanism brake assembly. The brake assembly is a multiple-disc friction type, "spring loaded for on" design, and releases upon application of hydraulic pressure. Floor up travel is then initiated by a constand displecement rotary hydraulic motor which actuates the drive mechanism. When the floor reaches its upmost position, the floor up-limit switch is actuated, which opens the circuit to the solenoid to the floor selector valve. The floor selector valve slide returns to neutral, blocking the pressure and opening both of the hydraulic lines of the rotary motor return. This release of pressure through the motor return line, releases the pressure on the brake, permitting the spring to take over. The floor drive mechanism is then locked with the floor in the up position. At the same time the floor up-limit switch opens the floor circuit, it signals, by an indicator light that the floor is up, also closes the circuit to the hood selector valve solenoid. This permits the hood selector valve slide to move and direct pressure again to the hood actuators, which raises the hood to its extreme up position. Upon completion of hood up travel, the hood up-position indicator switch is closed and signals, by an indicator and light, that the cycle is complete. The operator then releases the control switch, cutting off power to the operable doors system.

HOOD AND FLOOR CLOSED. The control switch, when placed in the "CLOSE" postion energizes the solenoid of the hood selector valve. The hood selector valve slide moves, permitting hydraulic fluid under 1380 psi, to flow from the close port of the selector valve to the rod side of the hood control actuators. When the hood lowers to 9 degrees open position, a down-limit switch opens the hood circuit, which de-energizes the hood selector valve and blocks the pressure to the control actuators. The hydraulic fluid is entrapped in the hood system and the hood is held in this intermediate position. At the same tiem, the down-limit switch closes the circuit to the floor selector valve solenoid, actuating the floor system. Pressure in the floor down line moves the shutle valve and hydraulic fluid is directed to the floor drive mechanism friction brake, which disengages the mechanism. Hydraulic fluid enters the down port of the rotary hydraulic motor, actuating the drive mechanism and lowering the floor. When the floor is fully lowered, the floor don-limit switch opens the circuit to the floor selector valve solenoid and again closes the circuit to hood selector valve solenoid. The hood selector valve slides to direct fluid to flow to the hood control actuators, closing the hood the remaining 9 degrees. Hood down-position indicator switches, are closed indicating to the operator that the cycle is complete, and the control switch is released. The hood down-lock pins re-engage the stops on the guide rails and the hood is then locked in the down position.

PICK-UP UNIT.

The Model 80C Pick-Up Unit is designed to be a part of the Equipment Recovery System. When this system is installed in an airplane, cargo can be picked up and hoisted into the airplane while in flight. Provision is made in the system so that the cargo can be picked up from ground or water.

GENERAL DESCRIPTION.

The Model 80C Pick-Up Unit is designed to pick up cargo with a gross weight not exceeding 4000 pounds. The unit consists of a drum mounted in side supports which are securely fastened to structure in the airplane. The drum is wound with 500 feet of 1/4" aircraft cable, to the end of which is fastened a nylon loop. A brake system effectively ties the drum to the hub and ring gear assembly. A pawl is provided to hold the ring gear in a stationary position, and an electric motor, constantly engaged with the ring gear, provides power to reel the drum in or out. Using this equipment the pick-up is accomplished without abrupt start and with smooth acceleration from zero to designated flying speed with a minimum of strain to pick-up plane and cargo.

DETAILED DESCRIPTION.

DRUM. The drum is mounted on a shaft held in position by the motor side support and the operator's side support. Rotating brake discs are keyed to the inner surface of the drum. A driving gear attached to the drum operates a gear train which controls the rotation of the countershaft and the motion of the level wind mechanism.

RING GEAR AND BRAKE ASSEMBLY. The ring gear is mounted on the hub which is keyed to the stationery brake discs. Radially located on the hub are a series of brake levers which are assembled to keys fastened to the brake pressure plate. When the brake spring pressure is applied, the brake levers squeeze the stack of brake discs between the hub and the brake pressure plate, effectively typing the ring gear to the drum.

MOTOR SIDE SUPPORT. The motor side support contains a bearing support for one end of the drum shaft, the pawl and an electric motor which is constantly geared to the ring gear through a two-speed gear box. The motor is a 24 volt dc compound wound electric motor rated at 3.3 hp at 460 pinion rpm at high speed. The pawn can be engaged with the ring gear to prevent the ring gear and brake assembly from rotating in the reel-out direction. The pawl will ratchet when the drum is rotated in the reel-in direction.

BRAKE APPLICATION TUBE ASSEMBLY. The brake application tube assembly contains the initial brake spring which applies a slight brake pressure at all times, the main brake spring which applies full pressure to the brakes, the main brake adjustment know which controls the final amount of brake pressure and thrust bearings which transmit the main brake spring pressure to the brake levers.

OPERATORS SIDE SUPPORT. The operator's side support incorporates a bearing support for one end of the drum shaft, the countershaft the brake operating nut, the yoke and the time adjustment stop. The yoke connects the brake operating nut to the brake application tube assembly. When the brake operating nut is screwed onto the countershaft the main brake spring pressure is removed from the brake levers. The brake operating nut consists of a nut and a cam, and the number of turns the nut can be threaded upon the countershaft depends upon the position of the time adjustment stop which engages the cam.

GUARDS. Bottom and rear guards are attached to the side supports. A removable drum guard and a level wind chain guard are supplied.

LEVEL WIND. A level wind mechanism assures proper distribution of the cable upon the drum. Provision is made so that the level wing rollers can be swung up out of the way of the cable when a pick-up is made.

ELECTRIC POWER FITTING. A single prong amphenol fitting is provided on the side of the motor control box for connection to the circuit breaker box at the main power source.

DIRECTIONAL CONTROL SWITCH. A control, (toggle) switch is mounted on the top of the motor control box to control the direction of rotation of the drum.

SAFETY SWITCH. A safety switch is mounted under the pawl lever control handle so that the electric motor cannot be selected for reel-out while the pawl is engaged. A red warning light will light up when the pawl is disengaged.

CABLE AND LOOP. The drum is wound with 500 feet of 1/4" aircraft cable. The cable is attached, through a thimble, to the loop which is made of 110 feet of 1/2" rope.

GROUND STATION. When cargo is to be picked up from the ground, it is placed in a 1/4" steel cable sling attached, through thimbles, to the 150 feet of 1/2" nylon leader. A recovery hook is attached to the end of the leader. The hook end of the leader is temporarily fastened, with masking tape, to the end of a 20' bamboo ground pole.

The pole is placed in a pole socket which is driven into the ground at an angle of about 50 degrees. The cargo is placed forward along the line of flight of the pick-up airplane so that there is a minimum of slack in the leader.

WATER STATION. The water station is a self contained unit with a telescopic pole assembly projecting from the top of the cargo box. The leader leads from the four pronged hook at the top of the pole assembly into a cloth bag attached to the side of the cargo box. The rope is neatly stowed in the bag with the right end protruding sufficiently to connect to the cargo sling assembly hardware.

PRINCIPLES OF OPERATION.

The Equipment Recovery System is designed to accelerate the cargo from zero speed to the speed of the airplane.

In making a pick-up, contact is made between the nylon leader attached to the cargo and the nylon loop attached to the drum cable. When contact is made the nylon stretches sufficiently to rotate the drum until the peripheral speed of the drum is equal to the forward speed of the airplane. As the drum is brought up to speed, the brakes are automatically applied so that the drum is smoothly but rapidly decelereted until it stops.

When the pick-up unit is prepared for a pick-up, the brake operating nut is screwed in by the brake resetting crank, (counter-c lockwise), until it seats lightly on the stops, and is then backed off sufficiently for the key to rest against one of the notches on the cam. Bhis nut operating through the yoke and brake application tube assembly relieves all of the load of the main brake spring from the brake levers, leaving the brake actuated only by the initial brake spring. This initial braking force overcomes the air drag on the nylon loop as it is held by the poles prior to a pick-up, thus preventing the cable from peeling off the drum. When contact is made between the loop on the drum cable and the leader attached to the cargo, tension builds up in the loop and leader, accelerating the drum until its peripheral speed equals the speed of the airplane. As the drum revolves, it drives the countershaft through a gear train, which in turn causes the brake operating nut to back off the countershaft. This action, operating through the yoke and the brake application tube assembly, transfers the predetermined load of the main brake spring from the brake operating nut to the brake levers, which in turn squeeze the brake discs and rapidly decelerate the drum. The braking action merely ties the drum to the ring gear, and the ring gear must be locked by the pawl in order to have the brake effective in stopping the drum.

The number of turns the drum makes before the entire force of the main brake spring is transferred from the brake operating nut to the brake discs is dependent upon the time adjustment setting. This setting is determined by the speed of the airplane, the weight of the cargo, the design of the leader and the amount of brake pretension. The final force exerted by the main brake spring is governed by the main brake adjustment knob and is dictated by the weight of the cargo. If the setting for main brake pressure is too low for the load, the drum will continue to rotate and the cable will peel off the drum. For this reason a safety device is used to secure the end of the cable to the drum so the cable can peel off without injury to any of the equipment. Conversely, if the setting for main brake pressure is too high or if insufficient time is allowed by the time adjustment stop to accelerate the drum, the cable or the leader may be severed by the high shock loads imposed.

The level wind rollers are controlled by a handle located on the level wing roller assembly. Prior to pick-up the handle is pulled out and moved upward in an arc to raise the level wing rollers. To hold the level wind rollers in the raised position, the handle is pushed in where it engages. After pick-up the handle should be moved to the down position so that the rollers will lay the cable on the drum properly. If this is not done there is a possibility that a cable wrap may be pinched in the preceding layer, which would be almost certain to cause a cable break during the next pick-up.

The pawl is controlled by a tee handle located on top of the electric motor control box. To disengage the pawl, start motor "IN" raise the pawl handle and slide toward the motor to lock. The pawl control also operates an electric switch which makes it impossible to run the electric motor "OUT" with the pawl engaged. A red warning light mounted at the switch is out when the pawl is engaged but lights up when the pawl is disengaged. If the red light is on, the motor may be run in the "OUT" position but no pick-ups can be made since the pawl is disengaged and the brakes are not effective.

The brake operating nut is controlled by a removable hand crank located on the operator's side of the unit. To engage the brake operating nut, release the crank trigger, press the crank handle toward the unit to release the crank key, and while still pressing the handle, turn the crank counterclockwise until the cam touches the time adjustment stops. Be sure that the key is resting against one of the notches when preparing the unit for pick-up. The crank is removable and may be stored in the canvas stowage kit fastened to the rear guard. To replace the crank on the unit, push the crank on the shaft after making sure that the handle spring seats in the hole provided.

Line up the holes in the handle and the shaft and push the pin into place. The pin is permanently fastened to the handle by a short length of chain.

The time adjustment is controlled by a lever which is located behind the brake operating nut. To change the amount of delay, pull the knob away from the unit and swing the lever so that the pin drops into the desired hole.

The main brake adjustment is made by a knurled knob, located on the end of the brake application tube assembly. To increase the brake pressure, turn the knob clockwise until the desired number is indicated on the scale by the line inscribed on the brake application tube.

A mechanism on the back of the electric motor controls the speed of the motor pinion. To shift the gears to low speed, pull out the horizontal gear shift locking knob and pull up the vertical gear shift knob. To increase the speed, push the vertical gear shift knob down.

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FLYING TRAINING

1. Flying Training (Initial Phase)

a. Pilots:

(1) Recheck in C-119 aircraft by instructor pilot.

(2) Emergency procedures instruction.

(3) Single engine operation with the clam shell doors removed.

(4) Maximum performance operation.

(5) Long range cruise operation with clam shell doors removed.

(6) Target recovery technique:

(a) Ground pick up:

1 Fifteen (15) trial passes.

2 Ten (10) actual pick ups.

(b) Water Pick up:

1 Ten (10) trial passes.

2 Ten (10) actual pick ups.

(c) Air pick up:

1 Twenty (20) actual pick ups.

b. Navigator, radio operator, aerial engineer, and reel operator training will be conducted in conjunction with the pilot flight training.

2. Flying Training (Proficiency Phase)

a. Pilots:

(1) One (1) maximum range cruise mission per month.

[redacted]

[redacted]

(2) One (1) actual ground pick up per month.

(3) One (1) actual water pick up per month.

(4) One (1) actual air pick up per month.

b. Navigator, radio operator, aerial engineer and reel operator training will be conducted in conjunction with the pilot flight training.

3. Ground Training (Initial Phase and to be repeated as necessary for proficiency).

a. All crew personnel:

(1) Altitude Indoctrination:

(a) Flight surgeon lecture.

(b) Altitude chamber exercise.

(2) Security Indoctrination:

(a) Mission security.

(b) Equipment security.

(c) Intelligence training lectures.

(3) Interior guard training:

(a) Methods and procedures.

(b) Firearms instruction:

1 Care.

2 Use.

3 Inspection and repair.

(4) Survival training:

(a) Water.

(b) Arctic.

(c) Tropic.

[redacted]

[redacted]

b. Pilots, Navigators and Radio Operators:

(1) Navigation training:

(a) Basic navigation.

(b) Radio navigation.

(c) Celestial navigation.

(d) Loran navigation.

(e) Polar (Grid) navigation.

(2) Communication training:

(a) Code.

(b) Equipment operation.

(c) Emergency procedures.

(d) Inflight repair and calibration.

(e) IFF operation.

(3) Weather training:

(a) General weather indoctrination:

(b) Weather flying.

1 Fronts.

2 Icing.

3 Thunderstorms.

4 Winds.

5 Fog.

(c) POMARS:

c. Pilots and Aerial Engineers:

(1) Engineering:

[redacted]

[redacted]

(a) Weight and balance.

(b) Post flight and pre-flight.

(c) Engine conditioning.

(d) Emergency procedures.

1 Electrical.

2 Hydraulic.

3 Fire.

(2) Cruise Control:

(a) Charts and graphs.

(b) Power settings.

(c) Range computation.

[redacted]

[redacted]

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HEADQUARTERS
456TH TROOP CARRIER WING (M)
CHARLESTON AIR FORCE BASE
Charleston, South Carolina

REPORT OF PROCEEDINGS OF SPECIAL COMMITTEE

Proceedings of a Special Committee which convened at Charleston Air Force Base, Charleston, South Carolina pursuant to Letter Order #134, Headquarters 456th Troop Carrier Wing, 27 October 1954, a copy of which is attached as exhibit A.

The committee met, pursuant to the foregoing order, at Headquarters 456th Air Base Group at 1000 hours, 27 October 1954, and recessed at 1200 hours 27 October 1954, the committee rejoined at Headquarters 456th Troop Carrier Group at 1030 hours, on 1 November 1954.

All members were present at each meeting

PURPOSE:

The present mission of the committee is to formulate a new table of organization (T/O) for a squadron containing eight (8) transport type aircraft.

DISCUSSION:

The committee after a thorough discussion and a varied presentation of ideas by each member, considered the following factors:

1. The squadron would have its own adminstrative capabilities and Headquarters.
2. The squadron will be based as a tenant on an established Air Force Base.
3. The squadron must have incorporated in its T/O, its own security section and guard personnel. It must have augmentation in the medical, food service and motor transportation areas. These should be included in the basic T/O for the unit.
4. The squadron, due to its long range requirements should be authorized three (3) pilots per aircraft, and one (1) navigator per aircraft.
5. In the event the squadron were to be deployed to an arctic area an augmentation for that area was considered.

CONCLUSION:

In view of the above the committee made the following conclusions:

1. T/O of the unit will consist of forty two (42) officers and two hundred seventy five (275) airmen. (See exhibit B)

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REPORT OF PROCEEDINGS OF SPECIAL COMMITTEE CONT'D

2. Augmentation for arctic is included in the proposed t/o (exhibit B) and appears beside those positions affected.

The board adjourned at 1200 hours on 1 November 1954

/s/
/t/ BOB ARNOLD
(President)

/s/
/t/ JAY D. BOGUE
(Member)

/s/
/t/ WILLIAM E. LENNON
(Recorder)

[redacted]

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HEADQUARTERS
456TH TROOP CARRIER WING (M) (TAC)
CHARLESTON AIR FORCE BASE
CHARLESTON, SOUTH CAROLINA

SUBJECT: LTRO 134 27 October 1954

TO: Personnel Concerned

1. FNO, ORGN indicated, this STA are detailed as a Special Committee, established under PROV AFR 14-6 to formulate plans concerning certain classified matters as directed by the Commander, 456th Troop Carrier Wing (M), this STA. Members and such other personnel as required will meet at the call of the Chairman.

COL	BOB ARNOLD	1159A	456th ABGRU	Chairman
COL	JAY D BOGUE	2108A	456th TRPCARGRU(M)	
MAJ	ROBERT L BODELL	A0866264	HEDRON 456th TRPCARWG(M)	
CAPT	WILLIAM E LENNON	A0715560	456th TRPCARGRU(M)	Recorder

2. Minutes of all committee meetings, as far as can be recorded without being classified, will be prepared and forwarded for the approval of the Commander, 456th Troop Carrier Wing (M), this STA. The PROV AFM 10-1 will apply.

/s/t/ JAMES L DANIEL JR
Colonel, USAF
Commander

CONFIDE

[redacted]

[redacted]

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PROPOSED REORGANIZATION OF TROOP CARRIER SQUADRON (MED)

			TOTAL	ARCTIC AUGMENTATION
COMMAND				
Lt Col	0066A	Air Commander	1	
M Sgt	73170	First Sergeant	1	
PERSONNEL				
Lt	7324	Adjutant	1	
T Sgt	73270	Personnel Tech	1	
S Sgt	70250	Sr Clerk	1	
S Sgt	83150	Sr Statistical Spec	1	
A/1C	22350	Draftsman	1	
A/1C	70250	Clerk	1	
A/1C	73250	Classification Spec	1	
A/1C	73251	Personnel Spec	1	
A/2C	70230	Clerk	1	
OPERATIONS AND TRAINING				
Maj	1435	Air Operations Off	1	
Capt	2054	Intelligence Off (PI)	1	
Lt	1435	Survival Tng & Equip Off	1	
T Sgt	60170	Air Transportation Supv	1	
A/1C	60150	Air Transportation Spec	1	
A/1C	70250	Clerk	1	
FLIGHTS				
Capt	1044C	Flight Commander	2	
Capt	1044C	Pilot, Transport	6	
Capt	1534P	Acft Observer, Nav	2	
Lt	1044C	Pilot, Transport	16	
Lt	1534P	Acft Observer, Nav	6	
T Sgt		Fuselage Supv	8	
S Sgt	29353	Sr Airborne Radio Opr	8	
S Sgt	43151W	Flight Mech Tech	8	
A/1C		Cargo Handler	32	
MAINTENANCE				
Capt	4344	Acft Maint Off	1	
M Sgt	43170	Acft Line Chief	1	
M Sgt	43170	Acft Flight Chief	2	
M Sgt	43171D	Acft Maint Inspector	2	1
T Sgt	42371	Acft Prop Mech Supv	1	
T Sgt	43171D	Acft Crew Chief	8	
T Sgt	47171	Vehicle Maint Tech	1	
T Sgt	53271	Metal Processing Supv	1	
T Sgt	53471	Airframe Repairman Supv	1	

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S Sgt	42350	Sr Acft Prop Mech	1	1
S Sgt	43151D	Sr Acft Mech	4	2
S Sgt	43152B	Sr Acft Recip Eng Mech	2	1
S Sgt	43154B	Sr Acft Electrician	2	1
S Sgt	43156	Sr Acft Instrument Mech	1	1
S Sgt	47154	Sr Veh & Mtr Equip Eng Mech	2	2
A/1C	42350	Acft Prop Mech	1	1
A/1C	42250	Acft Hydraulics Mech	2	1
A/1C	43151D	Acft Mech	4	2
A/1C	43152B	Acft Recip Eng Mech	2	1
A/1C	43154B	Acft Electrician	2	1
A/1C	43156	Acft Instrument Mech	1	1
A/1C	47154	Veh & Mtr Equip Eng Mech	1	2
A/1C	52250	Metal Processing Spec	2	2
A/1C	53450	Airframe Repairman	2	2
A/1C	70250	Sr Clerk	1	
A/2C	42230	Apr Acft Prop Mech	1	1
A/2C	43131D	Apr Acft Mech	8	4
A/2C	43132B	Apr Acft Eng Mech	2	2
A/2C	43134B	Apr Acft Electrician	1	
A/2C	43136	Apr Acft Instrument Mech	1	
A/2C	47134	Apr Veh & Mtr Equip Eng Mech	1	
A/2C	53430	Apr Airframe Repairman	2	2
A/2C	70230	Apr Clerk	1	

COMMUNICATIONS AND ELECTRONICS

Lt	3054	Air Electronics Off	1	
M Sgt	30170	Acft Radio Maint Tech	1	
T Sgt	30171	Acft Elect Nav Equip Tech	1	
S Sgt	30150	Sr Acft Radio Rprmn	2	
S Sgt	30151	Sr Acft Elect Nav Equip Tech	2	1
A/1C	30151	Acft Elect Nav Equip Tech	2	1
A/2C	30130	Apr Acft Radio Rprmn	1	1
A/2C	30131	Apr Acft Elect Nav Equip Rprmn	2	2

COMMUNICATIONS AND ELECTRONICS AIR/GROUND STATION*

T Sgt	29370	Radio Operations Supv	1
S Sgt	29351	Sr Ground Radio Operator	3
S Sgt	30450	Sr Ground Radio Mech	1
A/1C	29351	Ground Radio Operator	3
A/2C	29331	Apr Ground Radio Operator	4

* Indicates personnel needed to operate radio ground station on 24 hour basis

[redacted]

[redacted]

SUPPLY

Capt	6424	Tech Supply Off	1	
Lt	6424	Orgn Supply Off	1	
T Sgt	64173	Orgn Supply Supv	1	
S Sgt	64151	Sr Orgn Supply Spec (1 Tech)	2	
S Sgt	92250	Sr Surv Tng & Pers Equip Spec	1	
A/1C	55250	Woodwoker (Carpenter)	1	
A/1C	64151	Orgn Supply Spec (1 Tech)	2	
A/1C	70250	Sr Clerk	1	
A/1C	92250	Surv Tng & Pers Equip Spec	2	
A/2C	64131	Apr Orgn Supply Spec (Tech)	1	
A/2C	70230	Apr Clerk (Tech)	1	

FOOD SERVICE

S Sgt	62250	Sr Cook	2	4
A/1C	62250	Cook	2	3
A/2C	62230	Apr Cook	2	3
A/3C	62010	Food Sv Attendant	2	3

SECURITY

T Sgt	96170	Air Police Supv	1	
S Sgt	96150	Sr Air Policeman	3	2*
A/1C	96150	Air Policeman	9	4*

*No arctic augmentation required if unit is furnished two (2) additional winterized vehicles for ramp and area patrol purposes.

MOTOR POOL

A/1C	60350	Vehicle Operator	1
A/2C	60330	Apr Vehicle Operator	2

TACTICAL SQUADRON ELEMENT (MEDICAL)

Capt	9356	Flight Surgeon	1	
A/1C	90250	Sr Med Sv Spec	1	1
A/1C	90651	Sr Med Admin Spec	1	1

RECAPITULATION		RECAPITULATION ARCTIC	
OFFICERS	42	OFFICERS	0
AIRMEN	193	AIRMEN	58
AGGREGATE	235	AGGREGATE	58

6 [redacted]

[redacted] SECRET

PROJECT C-119L

456th Trp Carr Wg (M)
Chasn AFB, S. C.
No.

[redacted] SECRET 56043

[redacted] PROJECT C-119L

TITLE PAGE

1. This is a TOP SECRET document and will be handled in accordance with AFR 205-1.

2. This project is directed by Headquarters Tactical Air Command and plan submitted in accordance with Tactical Air Command classified message COT-TA 114030.

3. The classified title of this project is "GRAYBACK". The unclassified title of this project is C-119L.

4. This plan is specific in nature and provides for personnel and equipment augmentation of the 456th Troop Carrier Wing (M), assumptions relative to the project, concept of operations and the training necessary to insure capabilities required to conduct operation "GRAYBACK".

5. This plan will be effective and implemented as directed by higher headquarters.

[redacted]

[redacted] PROJECT C-119L

DISTRIBUTION:

4 - Commander, Eighteenth Air Force (copies #1, 2, 3, and 4)

1 - Commander, 456th Troop Carrier Wing (M) (copy #5)

TABLE OF CONTENTS

[redacted]

[redacted] PROJECT C-119L

1. In accordance with instructions from Headquarters Tactical Air Command, the 456th Troop Carrier Wing (M) has conducted a study of personnel and equipment augmentations and the training necessary to successfully perform the recovery operations required by Project C-119L. It is planned that the existing Troop Carrier Wing and Tactical Squadron type of organization will be retained and augmented as required (see Tabs "B" and "C").

2. The 456th Troop Carrier Wing (M) will be required during the immediate future to:

a. Operate Charleston Air Force Base for approximately four (4) months.

b. Perform normal troop carrier missions for approximately four (4) months.

c. Prepare to turn Charleston Air Force Base over to the receiving command.

d. Conduct the necessary planning and augmentation of the Troop Carrier Wing to insure that training for Project C-119L is thorough and expeditiously conducted.

3. In order to plan and program the Base transfer and the transition of the 456th Troop Carrier Wing (M) into a specialized unit, the following three (3) activity phases are planned.

a. Phase I. The interval from this date until Charleston

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[redacted]

Air Force Base is turned over to another command, it is anticipated that the Wing structure will remain intact during this period and that normal base and troop carrier functions will continue. Also, advance preparation, personnel actions and supply requisitions will be processed during this phase of Project C-119L.

b. Phase II. The interval from the date Charleston Air Force Base is released to the recieving command until the Headquarters, 456th Troop Carrier Wing (M) and the three (3) tactical squadrons are qualified and ready to be deployed, it is anticipated that during this period the Wing Headquarters will be augmented to provide base support required of a tenant organization and that the tactical squadrons will be fully manned (see Tab "B", Exhibit "A" and "C"). During this phase, certain Wing Base records will be closed, personnel actions and supply actions completed for Project C-119L, and the necessary crew training conducted.

c. Phase III. This phase will start upon completion of the training activities required to qualify personnel for this Project. At this time, the 456th Troop Carrier Wing (M) headquarters will be manned in accordance with Tab "B", Exhibit "B." The Troop carrier squadrons will be manned in accordance with Tab "B", Exhibit "C," fully equipped, personnel trained, and ready to be separated into six (6) fully operational detachments for deployment. This phase

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will continue thorugh the duration of the Project.

4. The Project assumptions, concept of operations, personnel and material requirements are shown in Tabs "A," "B" and "C."

JAMES L. DANIEL, JR.
Colonel, USAF
Commander

[redacted] SECRET

56043

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TAB "A"

OPERATIONS

[redacted] SECRET

I

MISSION

1. To provide personnel and equipment augmentation for the 456th Troop Carrier Wing (M) Headquarters and the three (3) tactical squadrons as required.

2. To conduct crew training as required to safely effect aerial recovery of designated targets during project "GRAYBACK."

II

ASSUMPTIONS

1. That personnel and equipment presently assigned will be utilized and augmented from other sources as required.

2. That the present wing headquarters and tactical squadron organizational structure will be augmented, personnel stabilized and undergo an operational training phase.

3. That a training period will start approximately 1 March 1955 and continue for a six (6) month period to approximately 1 September 1955 and that unit aircraft will be completely modified during this training period.

4. That only fully qualified crew members and maintenance personnel in the C-119F aircraft will be retained and specialized cabin equipment operators will be provided.

5. That sufficient instruction will be provided in equipment operation and recovery procedures to enable the local establishment of a training program for perfecting air crew technique.

6. That sufficient aerial port personnel will be provided as a tenant detachment during the air crew training phase for parachute recovery and repack requirements.

[redacted]

7. That the 456th Troop Carrier Wing Headquarters will be located at an installation in the recovery area and each operational unit will be located at established installations in the following areas: Japan, Iwo Jima, Midway, Wake, Honolulu and Kodiak. (For exact location see exhibit A). These installations will provide administrative and logistical support such as office equipment and supplies, billeting, messing, medical, finance, chaplain, legal, Base Supply service, vehicle transportation and other normally base supplied necessities.

8. That unit aircraft where operating with clam shell doors removed and 3,524 gallons of gasoline will gross approximately 70,494 pounds and be operating at 8,500 to 15000 pounds in excess of their safe single engine operating weight limitations dependent upon free air temperature and dew point temperature at time of take off.

9. That if possible all aircraft be equipped with beaver tail doors to lessen the overload condition at take off and increase the possible radius of action. It is imperative that aircraft operating from Kodiak and Honolulu be equipped with beaver tail doors to insure overlap of radius of operation.

10. That rapid and secure world wide communication service will be available on an immediate and continuous basis.

11. That operational area weather data complete in every detail will be available on a continuous basis.

12. That unit deployment will be accomplished by other than organizational aircraft into their assigned base with a minimum of thirty (30) days support equipment and spare parts and will operate for a period of 120 - 180 days.

[redacted]

[redacted]

13. That dep[illegible] support will be available at [illegible] times with a high priority for airlift of aircraft parts and equipment.

14. That logistical airlift will be available to the 456th Troop Carrier Wing headquarters at all times for immediate aircraft maintenance support to squadron units and for administrative visits to subordinate units as required.

15. That unit aircraft will be modified with cabin fuel tanks (900 gallons) for long range operation and will not be capable of unit logistical support.

16. That operational areas may be in the artic and/or tropics and that long overwater flights will be required.

17. That target recovery operations will not be conducted during darkness or in cloud coverage.

18. That unit aircraft will be winterized as required prior to deployment and that aircraft in the artic areas will have heated hangar space for a minimum of three (3) alert aircraft.

19. That recovered targets will be accepted by an outside agency immediately upon return of the aircraft to operating base.

20. That secure storage facilities for classified material will be available at each operating base.

III

CONCEPT OF OPERATIONS

1. 456th Troop Carrier Wing Headquarters will prior to deployment be augmented by sufficient personnel to conduct training and meet tenant unit requirements and upon deployment:

a. Will be manned by approximately ninteen (19) officers and forty seven (47) airmen and will consist of command, operations, stat services, material and personnel sections. (See exhibit B tab B). The material and

[redacted]

[redacted]

personnel sections will be primarily coordinating, monitoring and liaison agencies. The operations section will:

(1) Conduct briefings and command coordination.

(2) Provide 456th Troop Carrier Wing Headquarters with control of the operational units.

(3) Establish training standards, publish directives and monitor crew proficiency and unit capabilities.

(4) Establish, maintain and monitor reports to reflect capabilities and effectiveness of operational units.

(5) Maintain the most current information available with respect to communications, weather and navigation for the purpose of planning and forecasting missions.

(6) Maintain a plotting board on a twenty four (24) hour basis to:

(a) Identify the radius of aircraft operation of each operational unit.

(b) Fix the location and forecast track of targets and commit recovery aircraft.

(c) Divert and alert aircraft as conditions require.

(d) Plot the position of downed targets in the event of a missed recovery.

(e) Plot the position of aircraft in the event of an emergency condition to facilitate rescue.

(7) Conduct necessary operational liaison with the Major Command to secure airlift for logistical and administrative purposes.

(8) Maintain constant communications contact with all operational units.

[redacted]

[redacted]

(9) Keep higher headquarters and all operational units advised of the progress of all recovery missions.

(10) Publish operational analysis at the conclusion of the project.

2. Troop Carrier Squadron Detachments will:

a. Be organized with sufficient operational, maintenance and administrative personnel and equipment to be operationally self supporting upon deployment and to conduct operations for a period of 120 - 180 days. (See exhibit C, tab B).

b. Possess a twenty four (24) hour resdiness capability to dispatch aircraft and qualified crews on short notice. A minimum of one (1) crew per aircraft will be required for this purpose.

c. Maintain an aircraft in commission rate of seventy five per cent with a two (2) hour per day utilization factor for planning purposes.

d. Give primary consideration to personnel health, welfare and morale to insure maximum effectiveness.

e. Conduct all missions with two (2) aircraft working as a team to provide insurance against mission abort, communications back up, and emergency survival aid.

f. Operate an air/ground high frequency communication station for mission aircraft contact, strike reports, changes in mission and emergency information.

g. Be capable of plotting target coverage for all areas.

h. Be capable of immediate dispatch of aircraft and crews for operation in other areas of responsibility.

i. Maintain strict stock control of equipment, parts, and tools in order to anticipate requirements.

[redacted]

j. Be prepared to forward daily information of aircraft status, crew status, equipment and supply shortages, and such other data as may be required by 456th Troop Carrier Wing Headquarters for continuous monitoring of operational capabilities.

k. Maintain a continuous ground training program to insure proficiency in aircraft accessory equipment operation, navigation, communications equipment and procedures, emergency procedures, security requirements, survival, cruise control and weather.

l. Organize, train and operate aircrews as a permanent team. Where possible assign aircrews to a specific aircraft.

m. Be prepared to operate aircraft at a radius of approximately 850 nautical miles without clam shells and a radius of approximately 1100 nautical miles with the "beaver tail" doors. This data is based on thirty (30) minute operation at the maximum radius and a two (2) hour fuel reserve.

IV

TRAINING REQUIREMENTS

1. Flying Training (Initial Phase) - - - - - 112 hours.

   a. Pilots:

      (1) Recheck in C-119 aircraft by instructor pilot. 3 hours.

      (2) Emergency procedures instruction. 10 hours.

      (3) Single engine operation with the clam shell doors removed. 10 hours (2 hours per month).

      (4) Maximum performance operation with the clam shell doors removed. 5 hours.

      (5) Long range cruise operation with clam shell doors removed. 60 hours (5 flights at 12 hours each).

(6) Target recovery technique: - - - - - - - - - - 24 hours.

(a) Ground pick up:

1 Fifteen (15) trial passes.

2 Ten (10) actual pick ups.

(b) Water pick up:

1 Ten (10) trial passes.

2 Ten (10) actual pick ups.

(c) Air pick up:

1 Twenty (20) actual pick ups.

b. Navigator, radio operator, aerial engineer, a reel operator training will be conducted in conjunction with the pilot flight training.

2. Flying Training (Proficiency Phase)

a. Pilots:

(1) One (1) maximum range cruise mission per month.

(2) Two (2) actual ground pick up per month.

(3) One (1) actual water pick up per month.

(4) Five (5) actual air pick up per month.

b. Navigator, radio operator, aerial engineer and ree operator training will be conducted in conjunction with the pilot flight training.

3. Ground Training (Initial Phase and to be repeated as necessary for proficiency)

a. All crew personnel:

(1) Altitude Indoctrination:

(a) Flight surgeon lecture.

(b) Altitude chamber exercise.

(2) Security indoctrination:

(a) Mission security.

[redacted]

(b) Equipment security.

(c) Intelligence training lectures.

(3) Interior guard training:

(a) Methods and procedures.

(b) Firearms instruction.

1 Care

2 Use

3 Inspection and repair.

(4) Survival training:

(a) Water

(b) Artic

(c) Tropic

b. Pilots, Navigators and Radio Operators:

(1) Navigation training:

(a) Basic navigation.

(b) Radio navigation.

(c) Celestial navigation.

(d) Loran navigation.

(e) Polar (Grid) navigation.

(2) Communication training:

(a) Code

(b) Equipment operation.

(c) Emergency procedures.

(d) Inflight repair and calibration.

(e) IFF operation.

(3) Weather training:

[redacted]

[redacted]

(a) General weather indoctrination.

(b) Weather flying.

1 Fronts

2 Icing

3 Thunderstorms

4 Winds

5 Fog

(c) POMARS

c. Pilots and Aerial Engineers:

(1) Engineering:

(a) Weight and balance.

(b) Post flight and pre-flight.

(c) Engine conditioning.

(d) Emergency procedures.

1 Electrical

2 Hydraulic

3 Fire

(2) Cruise Control:

(a) Charts and graphs.

(b) Power settings.

(c) Range computation.

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TAB "B"

PERSONNEL

[redacted] SECRET

[redacted]

1. It is planned that the change over from an operating Troop Carrier Wing to a specialized Troop Carrier Wing will be accomplished in three (3) phases. The phases and actions required in each phase are listed below:

a. Phase One: That period required for preparation of turning over the base and certain units of the 456th Troop Carrier Wing to the command assuming base control. This preparation would include continuing full time Troop Carrier operations as directed by higher headquarters, monitoring of personnel assignments to proper units to ascertain that Project C-119L would get only the qualified personnel required for the mission, material inventory, closing of the necessary records, etc. During this period the 456th Troop Carrier Wing will be manned in accordance with the present manning document.

b. Phase Two: That period of time after the base transfer and during the training period of C-119L when the 456th Troop Carrier Wing will be engaged in equipping, training and monitoring of the operational units. It is intended that the 456th Troop Carrier Wing will operate with its present manning document and necessary augmentation to perform the mission at this time. Augmentation will be for those support personnel, (see exhibit "A") required to perform the function of assisting the base commander in rendering the necessary support requirements for the 456th Troop Carrier Wing. These support personnel will remain assigned to the wing from the date that the

[redacted]

base is turned over to the gaining command until such time as the 456th Troop Carrier Wing has completed its training mission and is deployed to sites as required by Headquarters USAF. At the time of deployment and coincident with Phase Three those personnel assigned to support functions and who are qualified will be assigned to the 456th Troop Carrier Wing or to one of the assigned Troop Carrier Squadrons. The balance of the support personnel will be disposed of in accordance with the base transfer agreement. It is believed that these support personnel can be secured from within our own resources.

c. Phase Three: That date when the three Troop Carrier Squadrons composed of six (6) independent flights will actually be committed to operational maneuvers at the designated overseas station. The 456th Troop Carrier Wing, 744th, 745th and 746th Troop Carrier Squadron will operate on their present Table of Organization with augmentation as outlined in exhibits "B" and "C" respectively. It is anticipated that of the 271 officers required by exhibit "B" and "C", that only 17 pilots and approximately 38 navigators will be needed from resources outside the wing. There are supposedly 27 navigators from navigation training due to arrive at this station during January 1955. Of the 1205 airmen required by exhibits "B" and "C" it is estimated that the wing will be capable of furnishing 450 airmen from within its own resources. The balance of these airmen will have to be furnished from other sources. It is believed, that with the present influx of personnel and those scheduled for assignment to this station for assignment to Project C-119L, that the requirement will probably be about 350 airmen from other sources.

[redacted]

This figure is of course purely an estimate. Each of the three (3) Troop Carrier Squadrons will be manned in accordance with the exhibit "C" so that on the date of deployment each Troop Carrier Squadron can split into two (2) separate units, each administrationally and operationally capable of caring for itself.

[redacted]

[redacted]

Organization

A	B	C	D														E
Section Code	Title	AFSC	Total	Lt Col	Maj	Capt	Lt	W/O	M/Sgt	T/Sgt	S/Sgt	A/1c	A/2c	A/3c	Remarks
03000	PERS AND ADMIN																
	Pers Officer - Adjutant	7324	1				1										
	Personnel Tech	73270	1							1							
	Personnel Specl	73251	1									1					
			3														
44000	MAINTENANCE																
	Acft Maintenance Officer	4344	1				1										
	Acft Radio Repairman	30150	2								2						
	Acft Elec Nav/Equip Repairman	30151	4								1	3					
	Acft Radio Maint Tech	30170	1						1								
	Acft Elec Nav/Equip Tech	30171	1							1							
	Instr Repairman	42250	2								1	1					
	Instr Repairman	42250	1									1					
	Apr Acft Propel Repairman	42131	2										2				
	Acft Prop Repairman	42151	2									2					
	Acft Prop Repairman	42151	1								1						
	Acft Hydr Repairman	42152	4								1	3					
	Acft Elec Repairman	42350	2								2						
	Apr Acft Mech	43131A	7										7				
	Apr Acft Mech	43131A	5										5				
	Acft Mech	43151A	4									4					
	Acft Mech	43151A	7								7						
	Reciprocating Eng Mech	43251	5									1					
	Reciprocating Eng Mech	43251	6								6						
	Acft Elec Repairman	42350	1									1					
	Acft Elec Repairman	42350	1								1						
	Acft Maint Supv	43170	2						2								
	Acft Maint Tech	43171A	11						3	8							
	Metal Proc Specl	53250	3									3					
	Metal Proc Specl	53250	1								1						
	Apr Airframe Repairman	53430	3										3				
	Airframe Repairman	53450	5									5					
	Airframe Repairman	53450	2								2						
	Apr Woodworker	55230	2										2				
	Woodworker	55250	2									2					
	Painter	55251	3								1	2					
	Apr Fabric/Leather Worker	58131	3										3				
	Orgn Supply Specl	64151	1								1						
	Orgn Supply Specl	64151	1									1					
	Apr Clerk	70230	1										1				
			99														
			18														

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Organization

A. Section Code	Line No.	B. Title	C. AFSC	D. Total	Gen	Col.	Lt Col	Maj	Capt	Lt	W/O	M/S	T/S	S/S	A/C	A/2C	A/3C	E. Remarks
42000		SUPPLY																
		Supply Officer	6424	1						1								
		Apr Vehicle Operator	60330	1												1		
		Vehicle Operator	60350	5										2	3			
		Supply Helper	64010	11													11	
		Apr Warehousing Specl	64130	8												8		
		Apr Supply Records Spec	64132	9												9		
		Warehousing Specl	64150	4											4			
		Warehousing Specl	64150	3										3				
		Supply Records Spec	64152	3											3			
		Supply Records Specl	64152	3								1		3				
		Warehousing Supv	64171	1														
		Apr Clerk	70230	2												2		
				51														
		TOTAL		153						3		9	8	35	44	43	11	

19

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PROPOSED ORGANIZATION AND AUGMENTATION FOR A
HEADQUARTERS TROOP CARRIER WING (M)

			Present Authorized T/O	Proposed Augmentation To Present T/O
COMMAND				
Brig Gen	0002	Wing Commander	1	
Col	0066	Deputy Commander		1
ADJUTANT				
Maj	7024	Adjutant	1	
M Sgt	70270	Admin Supv	1	
S Sgt	70250	Clerk	1	
S Sgt	70252	Steno	1	
S Sgt	99018	Airmen Aide		1
A/1C	70250	Clerk	1	
A/2C	70230	Apr Clerk	1	
HEADQUARTERS SQUADRON COMMANDER				
Maj	7024	Hq Sq Commander	1	
M Sgt	73170	First Sergeant	1	
T Sgt	70270	Admin Supv	1	
S Sgt	73251	Personnel Spec	1	
S Sgt	64151	Orgn Supply Spec	1	
A/1C	73250	Classification Spec	1	
A/1C	70250	Clerk		1
A/2C	64131	Apr Orgn Supply Spec	1	
A/3C	70010	Admin Helper	1	
DIRECTOR OF PERSONNEL				
Lt Col	0016	Director of Personnel	1	
Capt	7324	Personnel Officer	1	
M Sgt	73270	Personnel Tech	1	
T Sgt	73270	Personnel Tech	1	
S Sgt	73250	Classification Spec		1
A/1C	73250	Classification Spec	1	
A/2C	73230	Apr Classification Spec		1
A/2C	70230	Apr Clerk	1	
A/1C	70250	Clerk	1	1
STATISTICAL SERVICES				
Maj	6834	Statistical Services Off	1	
M Sgt	68170	Stat Svs Supv	1	
S Sgt	68150	Stat Spec	1	
A/1C	70250	Clerk	1	
A/1C	22350	Draftsman	1	

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			Present Authorization T/O	Proposed Augmentation To Present T/O
DIRECTOR OF OPERATIONS				
Lt Col	0036	Director of Operations	1	
Maj	1435	Air Operations Off	2	1
Maj	3016	Comm & Elect Staff Off	1	
Maj	1534P	Navigator		1
Capt	6746	Management Analysis Off		1
Capt	2054	Intelligence Off		1
Capt	2524	Weather Off		1
M Sgt	75270	General Trng Supv	1	
M Sgt	60170	Air Transportation Supv	1	
M Sgt	29370	Radio Operations Supv	1	
T Sgt	46170	Munitions Supv	1	
T Sgt	20470	Intelligence Tech		1
T Sgt	72171	Historical Tech		1
T Sgt	25270	Forecaster		1
S Sgt	68150	Stat Spec		1
S Sgt	25250	Forecaster		1
S Sgt	70252	Steno		1
A/1C	70250	Clerk	1	2
A/3C	70010	Admin Helper	1	
DIRECTOR OF MATERIAL				
Lt Col	0046	Director of Material	1	
Maj	4316	Acft Maint Off	1	
Capt	6424	Supply Off	1	
M Sgt	64175	Stock Control Tech	1	
T Sgt	64173	Orgn Supply Tech	1	
T Sgt	70270	Admin Supv	1	
T Sgt	43171A	Acft Maint Tech		1
T Sgt	70270	U R Control		1
A/1C	70250	Clerk	1	
A/2C	70230	Apr Clerk	1	
			45	21

RECAPITULATION

	T/O	Non T/O	Total
OFFICERS	13	6	19
AIRMEN	32	15	47
			66

[redacted]

[redacted]

PROPOSED ORGANIZATION AND AUGMENTATION OF A TROOP CARRIER SQUADRON (M) CAPABLE OF BEING DIVIDED INTO TWO (2) OPERATIONALLY AND ADMINISTRATIVELY SELF SUFFICIENT DETACHMENTS

			Present Auth T/O	Proposed Augment To Present T/O	Arctic Augment
COMMAND					
Lt Col	0066A	Air Commander	1	1	
M Sgt	73170	First Sergeant	1	1	
PERSONNEL					
Lt	7324	Adjutant	1	1	
T Sgt	73270	Personnel Tech		2	
S Sgt	70250	Sr Clerk	1	1	
S Sgt	83150	Sr Statistical Spec		2	
A/1C	22350	Draftsman		2	
A/1C	70250	Clerk	1	1	
A/1C	73250	Classification Spec	1	1	
A/1C	73251	Personnel Spec	1	1	
A/2C	70230	Apr Clerk		2	
OPERATIONS AND TRAINING					
Maj	1435	Air Operations Off	1	1	
Capt	2054	Intelligence Off (PI)		2	
Lt	1435	Survival Tng & Equip Off	1	1	
T Sgt	60170	Air Transportation Supv	1	1	
A/1C	60150	Air Transportation Spec		2	
A/1C	70250	Clerk	1	1	
FLIGHTS					
Capt	1054B	Flight Commander	4		
Capt	1054B	Pilot, Transport		12	
Capt	1534P	Acft Observer, Nav	1	3	
Lt	1054B	Pilot, Transport	28	4	
Lt	1534P	Acft Observer, Nav	3	9	
T Sgt		Fuselage Supv		16	
S Sgt	29353	Sr Airborne Radio Opr	16		
S Sgt	43151W	Flight Mech Tech	16		
A/1C		Cargo Handler		64	
MAINTENANCE					
Capt	4344	Acft Maint Off	1	1	
M Sgt	43170	Acft Line Chief	1	1	
M Sgt	43170	Acft Flight Chief	4		
M Sgt	43171D	Acft Maint Inspector	3	1	2
T Sgt	42371	Acft Prop Mech Supv		2	
T Sgt	43171D	Acft Crew Chief	16		
T Sgt	47171	Vehicle Maint Tech		2	
T Sgt	53271	Metal Processing Supv		1	

[redacted]

			Present Auth T/O	Proposed Auth T/O	Arctic Agmt
MAINTENANCE (Con't)					
T Sgt	53471	Airframe Rpmn		2	
S Sgt	43151D	Sr Acft Mech	8		4
S Sgt	43152B	Sr Acft Recip Eng Mech	2	2	2
S Sgt	42350	Sr Acft Prop Mech	1	1	2
S Sgt	43154B	Sr Acft Electrician	3	1	2
S Sgt	43156	Sr Acft Instr Mech	1	1	2
S Sgt	47154	Sr Veh & Mtr Equip Eng Mech	1	3	4
A/1C	42350	Acft Prop Mech	1	1	2
A/1C	42550	Acft Hydraulics Mech	2	2	2
A/1C	43151D	Acft Mech	8		4
A/1C	43152B	Acft Recip Eng Mech	2	2	2
A/1C	43154B	Acft Electrician	2	2	2
A/1C	43156	Acft Instrument Mech	2		2
A/1C	47154	Veh & Mtr Equip Eng Mech	1	1	4
A/1C	53250	Metal Proc Spec (Welder)	1	3	4
A/1C	53450	Airframe Rpmn	2	2	4
A/1C	70250	Sr Clerk		2	
A/2C	42330	Apr Acft Prop Mech	2		2
A/2C	43131D	Apr Acft Mech	16		8
A/2C	43132B	Apr Acft Eng Mech	4		4
A/2C	43134B	Apr Acft Electrician	2		
A/2C	43136	Apr Acft Instr Mech	1	1	
A/2C	47134	Apr Veh & Mtr Equip Eng Mech		2	
A/2C	53430	Apr Airframe Rpmn	2	2	4
A/2C	70230	Apr Clerk	2		
COMMUNICATIONS AND ELECTRONICS					
Lt	3054	Air Electronics Off	1	1	
M Sgt	30170	Acft Radio Maint Tech		2	
T Sgt	30171	Acft Elect Nav Equip Tech		2	
S Sgt	30150	Sr Acft Radio Rpmn	1	3	2
S Sgt	30151	Sr Acft Elect Nav Equip Tech	4		2
A/1C	30151	Acft Elect Nav Equip Tech	4		2
A/2C	30130	Apr Acft Radio Rpmn	2		2
A/2C	30131	Apr Acft Elect Nav Equip Rpmn		4	
COMMUNICATIONS AND ELECTRONICS AIR/GROUND STATION *					
T Sgt	29370	Radio Operations Supv		2	
S Sgt	29351	Sr Ground Radio Operator		6	
S Sgt	30450	Sr Ground Radio Mech		2	
A/1C	29351	Ground Radio Operator		6	
A/2C	29331	Apr Ground Radio Operator		8	

* Indicates personnel needed to operate radio ground station on 24 hour basis

			Present Auth T/O	Proposed Agmt T/O	Arctic Agmt
SUPPLY					
Capt	6424	Tech Supply Off		2	
Lt	6424	Orgn Supply Off	1	1	
T Sgt	64173	Orgn Supply Supv	1	1	
S Sgt	64151	Sr Orgn Supply Spec	1	3	
S Sgt	92250	Sr Surv Tng & Pers Equip Spec	1	1	
A/1C	5850	Woodworker (carpenter)		2	
A/1C	64151	Orgn Supply Spec	2	2	
A/1C	70250	Sr Clerk		2	
A/1C	92250	Surv Tng & Pers Equip Spec	1	3	
A/2C	64131	Apr Orgn Supply Spec	2		
A/2C	70230	Apr Clerk	1	1	
FOOD SERVICE					
S Sgt	62250	Sr Cook		4	8
A/1C	62250	Cook		4	6
A/2C	62230	Appr Cook		4	6
A/3C	62010	Food Sv Attendant		4	6
SECURITY					
T Sgt	96170	Air Police Supv		2	
S Sgt	96150	Sr Air Policeman		6	4*
A/1C	96150	Air Policeman		18	8*
MOTOR POOL					
A/1C	60350	Vehicle Operator		2	
A/2C	60330	Apr Vehicle Operator		4	
TACTICAL SQUADRON ELEMENT (MEDICAL)					
Capt	9356	Flight Surgeon		2	
A/1C	90250	Sr Med Sv Spec		2	2
A/1C	90651	Sr Med Admin Spec		2	2
			192	278	116

* No Arctic augmentation required if unit is furnished two (2) additional winterized vehicles for ramp and area patrol purposes.

RECAPITUALTION		RECAPITULATION ARCTIC	
OFFICERS	84	OFFICERS	0
AIRMEN	386	AIRMEN	116
AGGREGATE	470	AGGREGATE	116

[redacted] SECRET

TAB "C"

MATERIEL

[redacted] SECRET

[redacted] SECRET

1. The inclosed logistical support items have been determined upon the assumption that present squadrons would retain their identity and be augmented by sufficient equipment to permit a two (2) flight organization. Upon receipt of movement directives the augmented squadrons' equipment would be assigned to each flight to permit self-contained operation of each of the two (2) flights at separate Air Bases.

2. It is expected that such of the support equipment may be available at operational Bases. Upon determination of these Bases a survey team should visit them and determine what items are available and can be dropped from our shipping requirements.

3. Aircraft spares are listed in thirty (30) to one hundred and eighty (180) day requirements. It is desired that thirty (30) or sixty (60) day requirements, plus four (4) built-up engines, be included with movement, depending on operational location and its re-supply time. This to be followed by automatic thirty (30) day re-supply plus air supply of priority items.

4. POL requirements at each operating location for a thirty (30) day period are:

a.	115/145 AvGas	144,000 US Gals.
b.	Engine Oil	4,320 US Gals.
c.	Water/Alcohol	1,250 US Gals.

5. Inclosures submitted herewith are materiel requirements con-

[redacted] SECRET

[redacted]

sidered as minimum needs to support a flight consisting of eight (8) C-119F aircraft and manned by forty-two (42) officers and one hundred and ninety-three (193) airmen. An augmentation of fifty-eight (58) airmen has been considered when operating in Zones VI and VII. If present squadrons are retained these lists indicate one-half of such squadron requirements.

6. Items preceded by an asterisk in nomenclature column of all Unit Mission Equipment (UME) and Unit Support Equipment (USE) require approval of Major Air Commander. It is requested that these items be considered by the Major Air Commander and approval be granted to authorize the items on any UAL listing that may be printed for a squadron of this nature.

7. Unit Mission Equipment presently on hand is approximately 60% of the requirements for Project C-119L. Project Night Life kits are approximately 64% complete with respect to usable items.

8. The greatest possible protection has been taken into consideration to provide suitable clothing and equipment for officers and airmen to permit operations at locations in Zone III thorught Zone VII. This has been done to permit flexibility of a squadron and to avoid any delays in movement from a station located in Zone III to a station located in Zone VII.

9. Quantities in Inclosure Number 3, Unit Support Equipment, are based upon AFSC's as listed in the proposed Table of Organization. All items on this inclosure should be made available to a squadron from the

[redacted]

[redacted] SECRET

base at which the squadron is a tenant organization.

10. Weight and Cubage Data, Inclosure Number 5, is complete on all items except Unit Support Equipment and individual clothing and equipment.

5 Incls

1 - Unit Mission Equipment

2 - T/A 1-21 Equipment - UME

3 - Unit Support Equipment

4 - Aircraft Spares

5 - Weight and Cubage Data

[redacted] SECRET

TRANSFER AGREEMENT

TRANSFER OF AIR FORCE FACILITIES AT CHARLESTON

AIR FORCE BASE, CHARLESTON, SOUTH CAROLINA

From Jurisdiction of

TACTICAL AIR COMMAND

to

MILITARY AIR TRANSPORT SERVICE

1 March 1955

56043

AGREEMENT
FOR
TRANSFER OF CHARLESTON AIR FORCE BASE
FROM TACTICAL AIR COMMAND
TO MILITARY AIR TRANSPORT SERVICE

I

GENERAL INFORMATION

1. AUTHORITY

Pursuant to authority granted to Eighteenth Air Force (Tactical Air Command) in Headquarters TAC message AI/P-3 1-0196, 4 JAN 55, and authority granted ATL D (MATS in HQ MATS message MAXP122-N44, 22 Dec 54, and in accordance with the provisions of AFR 87-5 and other applicable directives, an agreement has been negotiated between representatives of these two commands for the transfer of command jurisdiction of Charleston AFB, S. C., and its attendant facilities, from Tactical Air Command (the relinquishing command), to Military Air Transport Service (the receiving command).

2. REPRESENTATIVES

See Tab "A" for list of representatives who negotiated the transfer.

II

TERMS OF AGREEMENT

1. EFFECTIVE DATE OF TRANSFER

Subject to the approval of this agreement by major commanders concerned prior to 1 March, the effective date of transfer of jurisdiction of Charleston Air Force Base, S. C., from Tactical Air Command to Military Air Transport Service will be 0001 hours, 1 March 1955.

2. INSTALLATIONS INVOLVED IN THE TRANSFER

Charleston Air Force Base, S. C., as described in bounds, metes, and restrictions in Tab_____, including all real property, buildings and facilities located within said boundry. In addition, the following off-base facilities, currently under the jurisdiction of or being supported by Eighteenth Air Force, are herein transferred to the jurisdiction of Military Air Transport Service. (See Tab _____.)

3. AGREEMENTS

All existing cross-service, joint use, and logistical support agreements will remain in effect until re-negotiated by Military Air Transport Service.

4. PERSONNEL

a. Military Personnel:

(1) Personnel with compassionate reasons for remaining in the Chasn, S.C., area and all personnel surplus to the requirements of the mission for the 456TH Troop Carrier Wing will be reassigned to Military Air Transport Service. List of officer to be reassigned by name, grade, AFSC and FSSD is attached as Tab____. List of airmen to be reassigned by AFSC and retainability is attached as Tab _____. The lists for both officers and airmen may be modified on the basis of FSSD for overseas levies received prior to date of transfer of the base.

(2) Personnel assigned to units of the 456TH Troop Carrier Wing required for Project C-119L will be retained within the wing structure provided for the operation of Project C-119L.

(3) Personnel in the pipeline for assignment to the 456TH Troop Carrier Wing required for Project C-119L will be retained

within the wing structure provided for the operation of C-119L. Personnel in the pipeline to the 456TH Troop Carrier Wing not required for Project C-119L will be reassigned to MATS upon arrival.

(4) Within its capability, to effect proper utilization, Atlantic Division, Military Air Transport Service, will accept the transfer of any Air Force Reserve personnel, not on extended active duty, assigned to the 456TH Troop Carrier Wing under the Reserve Mobilization Assignee/Designee Program.

(5) Command copies of personnel records of all officers reassigned to Military Air Transport Service will be transferred to Military Air Transport Service within 3 days from the date of transfer.

(6) All proceedings provided for in the AFR's 36-2, 39-16, 39-17, and any other regulations or directives which originate within TAC units at Charleston Air Force Base, that require administrative actions by the "next higher command".

will be processed through Military Air Transport Service command channels.

b. Civilian Personnel:

(1) All Civil Service employees under the jurisdiction of the 456TH Troop Carrier Wing at Charleston Air Force Base will be transferred to jurisdiction of Military Air Transport Service as of time of transfer.

(2) Headquarters, 363d Tactical Reconnaisance Wing, Shaw Air Force Base, S. C., will be responsible for the cross servicing, pay and administration of Civil Service employees at Charleston Air Force Base until such time as this responsibility is assumed by Military Air Transport Service.

c. Manpower and Organization:

(1) Units of the 456th Troop Carrier Wing required in the accomplishment of the mission assigned to the 456th Troop Carrier Wing will remain as tenant units of Charleston Air Force Base, S. C. Upon completion of the assigned mission, units will be disposed of according to USAF directives.

(2) Non-TO military troop spaces and civilian positions allocated to the Eighteenth Air Force for Charleston Air Force Base with the exception of ____officers, ____airmen, and _____civilians, will be returned to USAF by Tactical Air Command, effective on the date of transfer of the installation.

(3) Military Air Transport Service will justify and obtain

military troop spaces and civilian positions from USAF based on the Military Air Transport Service mission and tenant support to be provided units located at the installation. This will require civilian authorization equal to the assigned civilian strength on the date of transfer to insure that funds are adequate to cover terminal leave of any civilians who might be separated.

5. PROPERTY, EQUIPMENT, SUPPLIES, AND MAINTENANCE

a. Supply:

(1) All base supply, services and maintenance functions under the jurisdiction of Headquarters Tactical Air Command are transferred to the jurisdiction of Military Air Transport Service on effective date of transfer.

(2) Military Air Transport Service will insure that personnel required to assume responsibility for all property accounts are in place prior to effective date of transfer.

(3) Responsibility for all remaining supplies, equipment and salvage materials will be transferred with the installation.

(4) The Commander, 456th Troop Carrier Wing, will prepare statements in accordance with paragraph 6a, Air Force Regulation 67-10, 14 May 1954, indicating that each property account is in satisfactory condition. These property accounts will include Air Force Supply Account, AF 518 50

Disposal Account, AF 5-13 50

Library Account, AF 1817 10

Medical Account, AF 520 MSO

Petroleum Account, AF 518 PO

Clothing Account, AF 518 CSS SO

These statements will reflect the dates of the last reports of audit and will be indluded as Tab ___ to this agreement.

(5) All UME equipment on hand and authorized to units of the 456th Troop Carrier Wing and other Eighteenth Air Force units assigned to Charleston Air Force Base will be retained by the units.

(6) All USE equipment on hand in in use, authorized to units of the 456th Troop Carrier Wing and other Eighteenth Air Force units assigned to Charleston Air Force Base in their UAL will be retained by the units concerned until units are permanently transferred out of Charleston Air Force Base.

b. Maintenance:

(1) All base maintenance activities presently the responsibility of the Tactical Air Command becomes the responsibility of the Commander, Charleston Air Force Base, on effective date of transfer.

(2) Military Air Transport Service will provide aircraft field maintenance support to tenant Tactical Air Command units.

c. Reports of Survey:

(1) Reports of Survey, initiated prior to the assumption of

com d jurisdiction by Military Air ansport Service, wi l be continued for processing to final action through Tacti- cal Air Command channels without regard to the type of pro- perty involved.

(2) Reports of Survey, involving Unit Support Equipment, initiated by Eighteenth Air Force tenant units subsequent to the effective date of transfer, will be processed through Military Air Transport Service channels.

(3) Reports of Survey, involving Unit Mission Equipment, initiated by Eighteenth Air Force tenant units subsequent to the transfer, will be processed under the general pro- visions of paragraph 17, Section 4, Volume VI, AFM 67-1, except that the Military Air Transport Service Commander, Charleston Air Force Base, may take final action by author- ity of the Secretary of the Air Force as though the person- nel were under his command jurisdiction. Those Reports of Survey which exceed his delegated authority will be for- warded to Headquarters Eighteenth Air Force for further processing.

(4) The commander of the primary Eighteenth Air Force Tenant unit will in all cases act as the Appointing Authority.

6. PURCHASING AND CONTRACTING

a. Purchasing and contracting activities and responsibilities per- taining to the installation and satellite activities will be made

available for review of Military Air Transport Service 15 days prior to the effective date of transfer.

b. Effective on date of transfer, Purchasing and Contracting responsibilities of Charleston Air Force Base will be assumed by Atlantic Division, Military Air Transport Service. Tactical Air Command will forward to Military Air Transport Service within 20 days after the effective date of transfer, all command copies of contracts and related documents which are then in force andon which final settlement has not been accomplished. A similar change of custody of numbered Air Force control copies will be simultaneously effected between Eighteenth Air Force and Atlantic Division, Military Air Transport Service. Operating functions presently being performed by the 456th Troop Carrier Wing, with respect to procurement of supplies and services essential to maintenance and operation of the installation being transferred will become the responsibility of the 1608th Air Transport Wing (MATS) on the effective date of the transfer and all records, contracts, related documents, etc., will remain intact to insure uninterrupted operating of the Purchasing and Contracting Office being transferred.

c. The contracting officer will notify all interested contractors and agencies of the change in command jurisdiction prior to 1 March 1955.

d. Appointments of Contracting Officers, made by Eighteenth Air Force, will be terminated effective on the date of transfer and the Commander, Atlantic Division, Military Air Tranpsort Service, willrequest appointment of new Contracting Officers, sufficiently in advance of the effective date of transfer to allow appointments to be made so

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as to become effective simultaneously with Eighteenth Air Force terminations.

7. COMPTROLLER ACTIVITIES

a. Budget:

(1) Transfer of responsibility for the budget function to include budget estimating, financial planning, and fund administration will be effective_____.

(a) The Tactical Air Command will continue to fund Charleston Air Force Base through_____, for normal requirements within the mission of the Tactical Air Command. Additional requirements peculiar to the Military Air Transport Service prior to this date will be funded by the Military Air Transport Service.

(b) Tactical Air Command agrees to make the unobligated balance of the budget authorization available for the withdrawal by Headquarters USAF except for amounts necessary for units of the Tactical Air Command which will acquire the status of "special activities", and except for small balances left to absorb adjustments in obligations in the Tactical Air Command allotment symbol number (paragraph 30601e, AFM 172-1.

(2) Funding for Tactical Air Command units at the installation after _____will be in accordance with paragraph 40204, AFM 172-1, 1 Oct 53.

(3) Direct communication with respect to Tactical Air Command funding matters is authorized between the Commander, Charleston Air Force Base, and Commander, Eighteenth Air Force, subsequent to the transfer of Charleston Air Force Base.

(4) All funding matters will be conducted in accordance with AFM 172-1, 1 Oct 53.

(5) Appropriation and Expense Accounting records and reports for Tactical Air Command units will be maintained by host command and forwarded to Tactical Air Command and/or Eighteenth Air Force as prescribed by AFM 177-1, dated 1 July 54, and current Tactical Air Command directives.

b. Accounting:

(1) Nonappropriated Funds. The responsibility for all welfare funds including Officers' and Noncommissioned Officers' Open Messes and Consolidated Nonappropriated Welfare Fund will be transferred to Military Air Transport Service as of 0001 hours_____. This includes the assuming of liabilities for loans payable to Tactical Air Command Open Mess Loan Fund for loans secured by Officers' Open Miss and Noncommissioned Officers' Open Mess Funds. Terminal audits of funds which are to be dissolved will be performed by the auditor general in accordance with provisions of paragraph 8, AFR 75-4, 6 Sep 53. Transfer of welfare funds will be accomplished in accordance with the provisions of paragraph 7c, AFR 176-2, 24 Feb 54, as changed.

The following reports will not be required by Commander, Tactical Air Command, nor Commander, Eighteenth Air Force, subsequent to _____:

(a) 1-TAC-C1 Officers' Open Mess Financial Statements

(b) 2-TAC-C1 NCO Open Mess Financial Statements

(c) AF-C45 Consolidated Nonappropriated Welfare Fund Monthly Report of Operations and Net Worth.

(2) Reports of Audit. After effective date of transfer, Reports of Audit pertaining to Tactical Air Command units will be submitted to Commander, Eighteenth Air Force, for review and further transmission to Commander, Tactical Air Command, in accordance with paragraph 4, AFR 175-4, 6 Feb 53.

(3) Appropriated Funds. The following reports will still be required by Commander, Eighteenth Air Force:

(a) Status of Allotment Current Year, RCS: AF-C31 (TAC-2)

(b) Status of Allotment Prior Year, RCS: AF-C31 (TAC-1)

(c) Report of Appropriation Reimbursements, Fiscal Year 1955-1954, RCS: AF-C20

(d) Reconciliation of New Expenditures, RCS: AF-C15

(e) Expense Summary Reports (as required)

(f) Financial Reports (as required)

(g) PIO Cost Report (as required) RCS: DDCO 37 TAC-1

The maintenance, liquidation, and final closing of all appropriated fund records at the installation will be the responsibi ity of Military Air Transport Service

effe[illegible]ve date of transfer in accorda[illegible] with Part III, AFM 177-1, and Tactical Air Command directives.

(4) Property Accounts. The following reports which have as of dates in _____ will be the last reports submitted to Commander, Eighteenth Air Force. No reports will be required subsequent to _____:

(a) Air Force Stock Fund, Aviation Fuel Division, Monthly Trial Balance Report, RCS: 5-AF-C40.

(b) Air Force Stock Fund, Clothing Sales Division, Monthly Trial Balance Report, RCS: AF-C77.

(c) Air Force Stock Fund, Clothing Sales Division, Monthly Summary of Clothing Activity Report, RCS: AF-C78.

(d) Air Force Stock Fund, Medical-Dental Division, Monthly Trial Balance Report, RCS: AF-C90.

(e) Monetary Inventory Monthly Operating Report, RCS: 1-AF-C86.

(f) Quarterly Analysis of Monetary Inventory Transactions Report, RCS: 2-AF-C86.

(g) Quarterly Report of Reimbursable Commissary Store Cost, RCS: AF-C33.

The above reports will be required through the as of date ending _____.

c. Statistical Services:

(1) All reports required by current directives with "as of"

dates prior to the time of transfer will be submitted as directed by Commander, Eighteenth Air Force.

(2) Effective upon time of transfer, statistical reporting requirements for base type reports except as noted in other sections of this agreement, will be in accordance with Military Air Transport Service Manual of Recurring Reports. Unit type reports required by 18AFM 15-0 will remain in effect and be the responsibility of Tactical Air Command units remaining at Charleston Air Force Base. Information copies of base reports identifying personnel or equipment of Tactical Air Command units will be furnished Tactical Air Command units remaining at Charleston Air Force Base. This includes such reports as the individual Ground Accident Report, RCS: 1-AF-X11, and Preliminary Report of Aircraft Accidents, RCS: AF-F3.

(3) Tactical Air Command units remaining at Charleston Air Force Base will furnish the Military Air Transport Service Commander statistical reports as required to complete Military Air Transport Service base reports relative to Charleston Air Force Base.

(4) Classification and Index cards for officers and airmen and personnel cards for civilian personnel transferred will be provided by Eighteenth Air Force to Atlantic Division, Military Air Transport Service, in accordance

with AFM 171-5, not later than 20 days after date of transfer.

8. TECHNICAL DATA

a. Aircraft:

All aircraft assigned to the 456th Troop Carrier Wing will remain assigned to units within the 456th Troop Carrier Wing.

9. INSTALLATIONS

a. All repairs and utilities projects for Charleston Air Force Base, including appropriated and nonappropriated fund projects pending at base or higher level, will be transferred to Military Air Transport Service.

b. All buildings, equipment, and utilities are accepted in their present condition by Military Air Transport Service.

c. All command plans, records, drawings, maps, charts, real estate records, and reports as of the effective date of transfer will be forwarded by Tactical Air Command to Military Air Transport Service within 30 days of the effective date of the agreement.

d. All leases, licenses, permits, existing utility and service contracts consummated prior to transfer date which will be in force after the transfer date, will be assumed by Military Air Transport Service.

e. The Real Estate Facilities Account Number AF4718-REFPR will be transferred to Military Air Transport Service on the effective date of the transfer.

f. Command copies of leases, licenses, permits, easements or other documents establishing the USAF real estate interests will be forwarded to Military Air Transport Service within 30 days following the effective date of transfer. Command information concerning construction policies, programming authorizations, and appropriations relating to the installation will be forwarded from Tactical Air Command to Military Air Transport Service within 30 days following the effective date of transfer.

g. All field maintenance facilities will be transferred to the receiving command.

10. ORGANIZATION

a. The 456th Troop Carrier Wing will remain assigned to Eighteenth Air Force and will remain at Charleston Air Force Base as a "tenant" unit.

11. COMMUNICATIONS

a. All responsibilities for fixed communication-electronic facilities presently operated and maintained by personnel of 456th Troop Carrier Wing will be transferred to Military Air Transport Service for operation and maintenance:

(1) A pony circuit from AIRCOMNET will be established from the Wing Communications Center to the 456th Wing Communications Center.

(2) Permission for transfer of crypto account #9629 to Military

Air Transport Service will be requested by 456th Troop Carrier Wing office of record prior to effective date of station transfer.

(3) All active communications projects, contracts, and agreements will continue in effect until re-negotiated or terminated by Military Air Transport Service and the records pertaining to these will be transferred to the receiving organization.

b. All Tactical Communications (HF, FM, LL) presently installed, maintained, and operated, and any additional circuits required for tactical operational use as prescribed by Commander Eighteenth Air Force to units attached to Charleston Air Force Base will be installed, operated, and maintained by units assigned or attached to Headquarters Eighteenth Air Force.

12. MILITARY JUSTICE AND CLAIMS

a. The Commander, Atlantic Division, Military Air Transport Service, will exercise general court-martial jurisdiction and the Commander, Charleston Air Force Base, will exercise special and summary courts-martial jurisdiction over Air Force personnel assigned to the tenant Tactical Air Command units at Charleston Air Force Base (ref paragraph 2a(1), AFR 11-40).

b. The Commander, Eighteenth Air Force, or the Commander, Atlantic Division, Military Air Transport Service, may terminate paragraph a hereof by giving notice, either verbal or written, of his intention to

terminate. Such termination shall be effective on the date of notice.

c. All courts-martial cases which have not been referred to trial on the effective date of transfer will be processed by the receiving command. All courts-martial cases which have been referred to trial on effective date of transfer will remain with the relinquishing command.

d. On and after the effective date of transfer, non-judicial punishment administered by Commanders of Tactical Air Command tenant units will be accomplished pursuant to the privisions of Article 15, UCMJ, as implemented by AFR 111-9 and 9A, 6 NOV 52. A true copy of the completed record of punitive reductions of airmen assigned to Tactical Air Command tenant organizations, imposed under the provisions of Article 15, UCMJ, will be forwarded through appropriate court-martial channels.

e. The Commander, Charleston Air Force Base, will assume jurisdiction over and process all claims pending on 1 March 1955 in Headquarters, 456th Troop Carrier Wing.

13. PUBLICATIONS

a. All Charleston Air Force Base Regulations in effect on date of transfer of jurisdiction will remain in effect until superseded or rescinded by new local regulations or as directed by Commander, Charleston Air Force Base.

b. Files of the USAF administrative and technical publications pertaining to base functions will remain at Charleston Air Force Base and revert to the control of the Military Air Transport Service.

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14. RECORDS

a. Administrative and property records of the installation accumulated incident to the operation of the base, fixed communications, billet, base housing, repair and utility management of real estate facilities, commonly known as "station records", will be transferred to Military Air Transport Service with such property and will be retained or disposed of in accordance with the provisions of Section XIV, AFM 181-5 and AFM 67-1.

15. ASSUMPTION OF COMMAND JURISDICTION

a. The Commander, Military Air Transport Service, is responsible for notifying Headquarters USAF of their assumption of command jurisdiction of Charleston Air Force Base.

16. APPROVAL

Foregoing transfer agreement is subject to approval of the commanders of major air commands concerned.

Signature of Tactical Air Command Representative	Signature of Military Air Transport Service Representative
APPROVED: _____ (date)	APPROVED: _____ (date)
FOR THE COMMANDER Tactical Air Command	FOR THE COMMANDER Military Air Transport Service

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10 INCL

Tab "A" List of Conferees
"B" Summary of Real Property
"C" Officer and Airmen Personnel to be Transferred
"D" Assigned Civilian Personnel
"E" Statement Reflecting the Condition of the Various Property Accounts
"F" Status of Unobligated Funds
"G" List of Nonappropriated Funds
"H" List of Leases, Licenses, etc.
"I" List of Off-Base Facilities
"J" List of Tenant Organizations

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HEADQUARTERS
456TH TROOP CARRIER WING (M)
CHARLESTON AIR FORCE BASE
Charleston South Carolina

TABLE OF CONTENTS

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PREFACE

PRE-PLANNING FOR DEPLOYMENT OF 456TH TROOP CARRIER WING (M)

I. PURPOSE. The Purpose of this check list is two fold.

a. It will furnish the Base Commander a requirement for his planning purposes so that the deployed unit may be received at his station and maintain operational capability with the minimum amount of interruption.

b. It will also furnish the unit commander with information on facilties available at his designated site of operation so that proper planning may be made at the earliest possible date to insure maximum operational capability.

II. OBJECTIVES. To determine the overall capability of the station to support the unit which will be based there. A team composed of operations, personnel, materiel and communications representatives of the 456th Troop Carrier Wing will visit your station and submit in detial the personnel and item of supply and equipment that will accompany the unit when deployed. Further, they will furnish a listing of the support equipment and facilities to be furnished by the base concerned. Based on this and the known facilities at the station, this team will determine:

a. The shortages that exist in personnel, materiel and station facilities to support this unit.

b. The availability of personnel and materiel within the theater to fill these shortages.

c. The normal customs, uniform requirements, restrictions, etc., of the station concerned.

OPERATIONS AND INTELLIGENCE

I. OPERATIONS

1. Does Base Operations Provide the following:

a. Clearance for 175s and 113s _____

b. Weather forecaster services _____

c. Maps, charts and letdown plates for operational areas _____

_____

d. Crash and rescue services _____

e. Local proficiency areas, hazards and restrictions _____

_____

2. Who operates the Control Tower and what are the control frequencies? _____

_____

3. Are Radio Navigational Aids available and who operates equipment?

_____

a. Range call sign and frequency _____

_____

b. Homer call sign and frequency _____

_____

c. ILS _____

d. GCA _____

e. LORAN _____

4. Climate and weather conditions _____

a. Percent IFR by month _____

I. OPERATIONS (cont'd)

b. Average temperature _____

c. Rainfall by month _____

d. Average wind conditions _____

5. Base instrument school facilities _____

6. Flying Safety activity on the base _____

7. Base aircraft and flying activities _____

8. Base nearness to hurricane or storm areas and possible evacuation bases _____

9. Squadron Operations area and facilities _____

a. Space requirements for operations, administration, training, crew briefing, crew alert room, navigation, intelligence, communication and personal equipment _____

_____

_____

_____

10. Squadron aircraft parking area _____

a. Nearness to operations and maintenance _____

11. Are training aids available _____

a. Film Library _____

12. Base Regulations in the 55, 60, and 62 series _____

_____

13. U.S. Customs and clearance procedures _____

_____

Operations and Intelligence

I. OPERATIONS (cont'd)

14. Pictures and maps of the squadron area and operational area _____

_____

II. INTELLIGENCE

1. Is there space available for:

a. An Intelligence Office, where interviews can be held in privacy _____

b. A War Room suitable for display of large wall maps? _____

_____

c. Storage of classified documents: i. e., how many safes can the Intelligence Section count on obtaining? A minimum of six drawers is required for the smallest section. _____

_____

d. Storage of classified equipment on the line? _____

_____

e. Briefing and training personnel? How much seating capacity?

_____

_____

2. What security measures have been taken, are available or are needed, for:

a. All office, storage, and training space or facilities? _____

_____

_____

_____

Operations and Intelligence

II. INTELLIGENCE (cont'd)

b. The base in general and the flight line in particular? _____

_____

(1) What controls and physical measures have been taken for personnel and traffic? _____

_____

_____

(2) Make arrangements to have our personnel absorbed into any base pass system that is in effect or to coordinate our system with the base's. _____

_____

3. What Air Police organization exists on base? _____

_____

a. Will the Air Police Squadron want to absorb our guards? To what extent - on duty rosters only or to the extent of consolidated billetting? _____

_____

4. What Intelligence organization is on the base? _____

_____

a. Chain of command of intelligence organizations on base? To higher headquarters? _____

b. What channels are used by Intelligence organizations on base? Direct or otherwise? _____

_____

Operations and Intelligence

II. INTELLIGENCE (cont'd)

5. What other security agencies are operating on the base or in the area, including local law enforcement agencies, OSI, etc.? _____

_____

6. Get briefed on local situation - civilian make-up, attitudes, and incidents involving civilian population _____

_____

7. Requirements for participation in Base Defense System, etc. _____

_____

8. Do they have a Photo Lab and its capabilities? _____

_____

COMMUNICATIONS

1. Is Message Center space available? _____

2. What is location of Message Center space in connection with operations? _____

_____

3. Type power available and reliability? _____

_____

4. What type Teletype circuits are available, and what Relay Station will we operate with? _____

_____

5. Power output of Teletype Circuits? _____

_____

COMMUNICATIONS (cont'd)

6. Number and type Back-up circuits available? _____

_____

7. Message Center location in connection to Air/Ground Radio Station? _____

8. How is Message Center and Air/Ground station tied together? _____

_____

9. What administrative telephone facilities are available and what are requirements for EE8's? _____

_____

10. Availability of necessary ACPs and JANAPs for operation of Message Center? _____

_____

11. What Cryptographic facilities are available, if any? _____

_____

12. Will it be necessary for this unit to furnish Generators for back-up power in Message Center? _____

_____

13. Type facilites for Airborne Communications Maintenance, is field maintenance shop available? _____

_____

14. Are facilities available for Squadron Communications Shops?

_____

15. Is 220 volts 3 phase current available in Squadron Communications Shops? _____

_____

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COMMUNICATIONS (cont'd)

16. Is power source stable, what is normal voltage fluctuation? ____

_____

17. What is distance between proposed Transmitter and Receiver sites and Message Center, and what communications facilities are available between these sites and the proposed Message Center site? _____

_____

_____

18. What type Keying Circuits are to be used (FM or Landline)? _____

_____

19. What is the location of Command Issuing Office for Security Service Equipment and Systems? _____

_____

20. Who is the Command Issuing Officer to be contacted? _____

_____

21. Is necessary equipment and systems available presently in the Command Issuing Office? _____

22. Type Control Tower (Civilian or Military)? _____

23. What radio and electronics equipment is available in Control Tower? _____

_____

24. What type commercial communication do they have to ZI? _____

_____

25. Information on MARS, overseas telephone. _____

_____

26. Base Regulations in 100 series. _____

PERSONNEL AND ADMINISTRATION

I. DISCIPLINE AND CUSTOMS

1. What are the base regulations on uniform and courtesies? _____

_____

2. What are the base regulations on fraternization? _____

_____

3. Who exercises disciplinary control over the base, Air Force, Navy, Army, civilians? _____

4. Is the installation under Air Force or civilian control? _____

_____

5. Is there a Legal Officer at the installation? _____

_____

6. Is civilian clothing authorized for off-duty wear? (AFR 39-44)

_____

7. Should personnel take winter or summer clothing or both and what are unifrom requirements? _____

_____

8. Are there any local regulations relative to the conduct, discipline, dress or activities of military personnel which should be passed on to the units before arrival at the base, such as wearing of flight clothing, etc.? _____

_____

9. Are there any civil laws of an unusual nature which should be passed on the units before arrival to the base? _____

_____

10. Are the base AWOL, Courts Martial and VD rates on the increase or decrease? _____

11. What special on and off base traffic regulations are if effect?

_____

12. Does the Command permit U.S. military-native marriages? (AFR 34-12, 34-24) _____

13. What base regulation affects the purchase, possession, or use of alcoholic beverages on or off base? _____

Personnel and Administration

II. PERSONNEL SERVICES

1. Athletics.

a. Will the base provide individual sports equipment such as golf clubs, fishing tackle, tennis racquets or should personnel bring their own? _____

b. Are there any sports leagues in which the unit might take part? _____

_____

2. Recreation.

a. Do they have officer and airmen clubs? _____

_____

b. Will officers and airmen be expected to join their respective clubs? _____

c. What off-duty recreation facilities are available? _____

_____

_____

d. Is there a base theater? _____

e. What civilian recreation facilities are available? _____

_____

f. Is there a Base Library? _____

_____

II. PERSONNEL SERVICES (cont'd)

g. Are there military or civilian motion picture houses on or near the base? _____

_____

h. Is there a Hobby Shop, etc.? _____

_____

i. Description of nearby communities. _____

_____

3. Miscellaneous.

a. Is there a Mortuary Officer? _____

_____

b. Do such organizations as YMCA, service clubs, or civilian civic groups exist in the base area? _____

c. Are there AM or short wave radio stations which can be adequately received in the area? _____

_____

d. Will base provide newsmaps, TIG briefs, Flying Safety, Information Digest, etc.? _____

e. Is there a base newspaper? _____

f. What off duty education facilities are available? _____

_____

Personnel and Administration

III. CHAPLAIN

1. Is there a base Chaplain? What Faiths? _____

_____

2. Are there civilian religious facilities to supplement the chaplain where no chaplain or a certain faith is assigned? _____

_____

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IV. PERSONNEL AND ADMINISTRATION

1. Will the base be able to administer APTs and AQEs?

2. Does the base have a complete set of P & A regulations, manuals, etc.?

3. Will the base supply copies of new or revised AF publications?

4. Will the unit be authorized access to base publications files as necessary?

5. Does the base have facilities for the reproduction of publications and internal forms?

6. Can the base furnish an adequate amount of office supplies?

7. Will the unit participate in base exchange, non-appropriated funds, and similar activities and derive a proportionate share of the central base fund?

8. Will the provision of AFR 35-59 on compassionate transfers be permitted during the project?

9. Is an Airmen's classificetion board available and what are its policies?

10. Will the base require participation in AD, CD, RP, etc.?

11. Mailing address of station and approximate mailing time to ZI?

12. What is parent organization of base, organizational structure and population?

13. What is native language and customs of area?

Personnel and Administration

V. INFORMATION AND EDUCATION

1. Will the base assist in Information Services requirements?

2. Is there a base or civilian newspaper available to keep personnel informed on current events?

3. Will the unit provide funds for off-duty education or unit personnel?

4. Does the base education section have USAFI facilities?

Personnel and Administration

VI. BASE FUNCTIONS

1. Will the unit be authorized representation on the board of officers for the respective clubs?

VI. BASE FUNCTIONS (Cont'd)

2. Will the base expect a historical report from the unit?_____

_____

3. Is the base capable of providing for certain boards such as Medical Evaluation, FEB, 39-16, 39-17, 35-66, 35-67, etc.?_____

_____

4. Will the Base Inspector be available for conferences with unit personnel? _____

_____

5. Will the Provost Marshal's office be equipped to replace lost Identification Cards (DD Form 2AF) and similiar items? _____

_____

6. Does the base have a Ground Safety Officer? _____

_____

7. Will the Base Locator require listings of unit personnel? _____

_____

8. Does the base operate a Non-Commissioned Officer School, and is so, would unit personnel be expected to attend?_____

_____

Personnel and Administration

VII. PERSONAL SERVICES

1. Is there a Base Exchange? How large? _____

_____

2. Will the base assist in soldier voting procedures? _____

_____

3. Does the base have AFAS and Red Cross assistance? _____

_____

VII. PERSONAL SERVICES (Cont'd)

4. Is all necessary clothing available through clothing sales or the Base Exchange? _____

5. What facilities exist for processing of amateur film, either through the Base Exchange or Hobby Shop? _____

_____

6. How extensive and of what calibre are civilian shopping facilities? _____

_____

7. Are there any restrictions or rations on purchase of base exchange items? _____

_____

8. What are meal prices at field ration and open mess? _____

_____

VIII. COMPTROLLER SECTION

1. Can finance service be provided by base on which we are located? If not, what is location of nearest Class "A" disbursing office or Class "B" agent? Round trip time in hours by (1) air, (2) rail, (3) water, (4) auto? _____

_____

2. What type of security is available for government funds? Is it considered secure for a monthly payroll in cash? _____

_____

3. What currency is used for payment of troops? (Indigenous, U.S. currency, script?) Rate of exchange, if indigenous? What are limitations on possession of indigenous, U.S. currency, or script, is any? _____

_____

_____

4. What commercial banking facilities are available for use by troops, and for unit or other funds? Distance, and time round trip by most convenient method of transportation? _____

_____

VIII. COMPTROLLER SECTION (Cont'd)

5. Normal time finance office requires to process travel claims?___

6. Is an accounting office available for unit fund and reports?___

7. Reports required in area ___

8. Are W-2 Forms provided? ___

9. Are microfilm facilities available? ___

MEDICAL

1. What medical facilities are available? ___

2. What is the VD rate?___

3. What special innoculations/immunizations will be required before leaving the ZI? ___

4. Will the base medical facility administer records for unit personnel? ___

5. Is the base medical facility supplemented by civilian contract personnel? ___

6. Are there civilian medical facilities acceptable and available to military personnel? ___

MEDICAL (Cont'd)

7. Sanitation:

a. Water _____

_____

b. Toilets - 5% of unit strength _____

_____

c. Urinals and showers - 4% of unit strength _____

_____

8. What are conditions in nearby communities? _____

_____

9. Flight Surgeon availability _____

_____

MATERIEL

I. BARRACKS REQUIREMENTS

1. Is there available space for billeting in the following ammounts?

a. Officers: 3,150 Sq Ft (Max) 2,310 Sq Ft (Min) _____

_____

b. Airmen: 16,500 Sq Ft (Max) 12,100 Sq Ft (Min) _____

_____

2. Are the following in quantities indicated available for issue?

a. Cots: 262 _____

b. Blankets: 524 _____

c. Sheets: 2096 _____

d. Pillows: 262 _____

e. Pillow cases: 524 _____

f. Mattresses: 262 _____

g. Mattress Covers: 524 _____

I. BARRACKS REQUIREMENTS (Cont'd)

3. Are there latrine and shower facilities available? _____

_____

4. Are lighting and heating facilities adequate? _____

_____

5. What facilities are available for day rooms? _____

_____

II. MESSING REQUIREMENTS

1. What type of fuel is required for cooking? _____

_____

2. What type of cooking equipment will we be required to bring such as serving equipment and utensils? _____

_____

_____

3. What is the status of the following:

a. Refrigeration: _____

_____

b. Sterilization: _____

_____

c. Water: _____

_____

d. Sewerage: _____

_____

e. Storage (Dry): _____

_____

II. MESSING REQUIREMENTS (Cont'd)

f. Meat Delivery (Type): _____

_____

g. Cutting Facilities: _____

_____

h. Garbage Disposal: _____

_____

Materiel

III. SQUADRON ORDERLY ROOM

1. Orderly room space needed will be approximately 1,000 sq. ft. Will it be available? _____

_____

2. What type structure will the orderly room be located in? _____

_____

3. Will the following be available in the orderly room? _____

a. Telephones: _____

b. Lighting (what type): _____

c. Heating and fuel: _____

d. Ventilating: _____

Materiel

IV. UNIT SUPPLY

1. Will there be 1,000 square feet available for unit supply? _____

_____

2. What type of structure will they be located in? _____

_____

IV. UNIT SUPPLY (Cont'd)

3. Will any difficulties arise for the following?

a. Telephones: _____

_____

b. Lighting: _____

_____

c. Heating and ventilating: _____

_____

d. Security conditions: _____

_____

e. Bins and pallets: _____

_____

f. Weapons storage: _____

_____

4. What will be the laundry situation, i.e., schedule, etc.: _____

_____

_____

5. What are the cleaning facilities? _____

_____

_____

6. What is the set up for shoe repair? _____

_____

7. Will janitorial supplies be available? _____

_____

8. Will office supplies such as pencils, erasers, etc., be available?

_____

_____

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Materiel

V. FUEL REQUIREMENTS (30-day period)

1. 250,000 gallons 115/145 gasoline.

2. 2,250 gallons 1100 oil.

3. 1,400 gallons alcohol (S/N 8500-116500 or 8500-102000)

4. 200 gallons prop oil (Mixture of 50% 1010 oil and 50% 1100 oil).

5. 100 cylinders of breathing oxygen.

VI. REFUELING VEHICLES

1. 2 ea type F-6 Fuel Servicing units complete with tractors.

2. 1 ea type F-3 Oil Servicing Unit.

3. 1 ea Water Alcohol Truck.

VII. SQUADRON VEHICLES

1. 2 ea automobile station wagon, ½ ton, 8 passenger.

2. 2 ea truck, pickup ½ ton.

3. 1 ea truck, stake and platform 1½ ton.

4. 2 ea tractor, (tug) (S/N 5015-640055).

5. 2 ea trailer, stake, 4-wheel, (S/N 5040-860075-897)

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Materiel

VIII. MAINTENANCE SPACE

1. Engineering office - 300 square feet.

2. Inspection Section, which includes - 1,000 square feet.

   a. T. O. files

   b. Airmen briefing

   c. T.O.C. Section

3. Electrical Shop and Instruction Specialist - 600 square feet.

4. Hydraulic shop and propeller shop - 800 square feet.

5. Motorized ground equipment - 1800 square feet.

6. Tool crib and technical supply -3,000 square feet (including 180-day stock level).

7. Drop equipment - 600 square feet.

8. Dock space for two (2) docks - 100 x 300.

9. Aircraft Parking (8 aircraft) - 1,200 linear feet.

10. Hangar space if possible three (3) aircraft.

Materiel

IX. MISCELLANEOUS

1. Will space be available for one (1) alert crew to stand-by? If so, answers to the following are requested:

a. How near the flight line? _____

_____

b. What type of structure? _____

_____

c. What facilities within the structure?

(1) Telephone _____

(2) Lighting _____

(3) Sleeping _____

2. What Base Exchange facilities will be available? _____

_____

3. Authority to use priority type requests. _____

_____

4. Joint Use Agreement _____

_____

5. Facilities and personnel for building up engines. _____

_____

a. Squadrons will have kits. _____

_____

6. Scalled map of base area. _____

X. UTILITIES

1. Electricity.

a. AC or DC _____

Materiel

X. UTILITIES (Cont'd)

b. Voltage _____

c. Phase _____

d. Cycles _____

2. Water.

a. Is distilled water stored? _____

b. Quantity (1400 gal/mo)? _____

c. Source? _____

d. Is distiller available locally? _____

e. Washing A/C (racks) _____

f. Aircraft Cleaning.

(1) Gunk _____

(2) Terko _____

3. Sewerage.

Materiel

XI. REQUIREMENTS

1. Operations space requirements:

Operations office	300 Sq Ft *
Administration	400 Sq Ft *
Intelligence office	300 Sq Ft *
War Room	500 Sq Ft *
Communications	400 Sq Ft *
Pilots Lounge	400 Sq Ft
Personal equipment	500 Sq Ft
TOTAL	2800 Sq Ft

Those items marked with an asterisk must be located in the same building and the others should be in this building or immediately adjacent to it.

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XI. REQUIREMENTS (Cont'd)

2. Telephone or intercom facilities. _____

_____

3. Type structure and security for building. _____

_____

4. Toilet and shower facilities in building. _____

_____

5. Type lighting and heating and/or ventilation. _____

_____

[redacted]

RECOVERY REPORT

PLANE BORNE EQUIPMENT

MOBY DICK HI OPERATION

CONF

FLIGHT NUMBER MDH # 37

9

PLEASE NOTE:

1. The forms contained in this report were designed to facilitate the preparation of this report and to arrange data for analytical study.

2. Each form should be prepared by the personnel actually performing the work. Upon completion, forms should be assembled in proper order and submitted as a complete report.

[redacted]

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[redacted]

RECOVERY REPORT
PLANE BORNE EQUIPMENT
MOBY DICK HI OPERATION

FLIGHT NR. MDH # 37 . Date: 24 July 1955

A. AIRCRAFT AND FLIGHT CREWS:

1. Number of aircraft available for recovery action..... 2 .
2. Number of flight crews available for recovery action..... 2 .
3. Location of aircraft and flight crews:
   a. Charleston AFB..... X
   b. Lowry AFB.....
   c. (Other Locations).....
   d. .....
   e. .....

B. INITIATION OF RECOVERY ACTION:

1. Recovery order received at..... 24/1630 (DTG)
2. Latest position of MDH flight..... 43.5 N 115.5 W
3. Crew briefing began at..... 23/2030 (DTG)
4. Crew briefing completed at..... 23/2100 Z

C. RECOVERY INSTRUCTIONS:

1. MDH flight identification code..... FAB
2. VHF channel code letter..... A
3. VHF flight termination code numbers..... 1930-48
4. Attach as inclosure #1 a copy of the instructions issued to recovery crew at briefing or in-flight.

(This form is classified Confidential. When filled in it will be classified SECRET).

1

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RECOVERY REPORT
PLANE BORNE EQUIPMENT
MOBY DICK HI OPERATION

CONFIDENTIAL

FLIGHT NR. MDH # 37 .

Date: 24 July 1955

D. FLIGHT PLAN:

		AIRCRAFT NR. 1	AIRCRAFT NR. 2
1.	Aircraft NR.....	51-8051	51-8035
2.	Location.....	Charleston AFB	_____ AFB
3.	Time of takeoff.....	1845 Z	_____ Z
4.	Hours of fuel.....	12:00	
5.	Flight Plan (IFR VFR)...	IFR	
6.	Flight altitude.....	9000 ft	_____ ft
7.	Distance to MDH flight..	_____ NM	_____ NM
8.	ETE to MDH flight.....	11 Hrs 30 Min	

E. FORECAST WEATHER:

1. Attach as inclosure #2 a copy of weather forecast for the area where intercept or recovery would be accomplished.

F. PRE-FLIGHT:

		ACFT NR. 1	ACFT NR. 2
1.	Electronic equipment tuned and checked ...	24/1300Z	
2.	Brake setting on winch.....	2.8	
3.	Recovery gear checked.....	24/1300Z	
4.	Flight operable doors installed.....	24/1300Z	

(When filled in this form will be classified SECRET).

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RECOVERY REPORT
PLANE BORNE EQUIPMENT
MOBY DICK HI OPERATION

FLIGHT NR. MDH # 37 . Date: 24 July 1955

G. IN-FLIGHT:

1. Time VHF receiver turned on ..... 1020 Z
2. Time VHF signal initially received..... 1145 Z
3. Estimated distance from MDH flight at this time..... 645 NM
4. Time four (4) digit code transmitted..... 1145 Z
5. Answer received from MDH flight (code letters)..... FAB
6. Did VHF transmissions continue? ..... Yes
7. Time MDH flight visually sighted..... 1500 Z
8. Position of aircraft at this time.....43-30N 114.01 W
9. Estimated position of MDH flight at this time.....43 14N 114.40 W

H. RECOVERY ACTION:

1. Time required to prepare and extend recovery gear ..... 20 Min
2. Time two digit cut-down code transmitted..... 2105 Z
   a. Position of MDH flight at this time.....43-36N 115-47W
   b. Altitude of aircraft at this time..... 20,000 ft
   c. Calculated altitude of MHF flight..... 80,000 ft
3. Time chutes sighted ..... 2108 Z
   a. Estimated altitude of chutes at this time..... Unk ft
   b. Position of drogue chute (up and down)..... Up
   c. Were all chutes deployed?..... No
4. Time of initial recovery pass..... 2123 Z
   a. Altitude of aircraft at this time..... 19,000 ft

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H. Recovery Action: (Cont'd)

5. Time aerial contact established ..... 2135 Z

a. Altitude of aircraft at this time..... 8,200 ft

b. Position of aircraft at this time.....43.36 N 115.47 W

6. Time aerial recovery completed. (Equipment onboard). 2210 Z

7. Complete the following:

PASS	ALT AT START	RATE OF DESCENT		PASS	ALT AT START	RATE OF DESCENT	
#1	19,000	1,200	ft min	#6			ft min
#2	16,000	3,000	ft min	#7			ft min
#3	12,500	3,500	ft min	#8			ft min
#4	8,200	4,000	ft min	#9			ft min
#5			ft min	#10			ft min

I. WEATHER:

1. Cloud coverage at time of cut-down:

a. Above aircraft:

type 0, Coverage 0 %, Base 0 .

type _____, Coverage _____%, Base _____.

b. Below aircraft:

type CU, Coverage 30 %, Top 18,000 .

type _____, Coverage _____%, Top _____.

c. REMARKS: (Enter additional information pertaining to weather conditions that existed during recovery).

None

(When filled in this form will be classified SECRET).

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[redacted]

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RECOVERY REPORT
PLANE BORNE EQUIPMENT
MOBY DICK HI OPERATION

FLIGHT NR. MDH # 37 . Date: 24 July 1955

J. AERIAL RECOVERY (UNSUCCESSFUL)

1. Reasons why aerial recovery was not successfully accomplished.

(Give specific reason, eg, weather, malfunction of recovery gear, etc..., and explain in detail).

Recovery Successful.

2. Was MDH equipment visually followed to the ground? ... N/A N/A

3. Position of impact point..... N W

4. Estimated position of impact point if MDH equipment not visually located on ground..... N W

K. GROUND RECOVERY BY PARATROOPERS:

1. Were paratroopers used to recover equipment..... N/A

2. Altitude at which paratroopers left aircraft..... N/A ft

3. Did paratroopers reach MDH equipment?..... N/A

(When filled in this form will be classified _____).

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[redacted]

[redacted]

RECOVERY REPORT
PLANE BORNE EQUIPMENT
MOBY DICK HI OPERATION

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FLIGHT NR. MDH # 37 . Date: 24 July 1955

L. COMMENTS: (Describe the difficulties encountered on this flight and indicate the corrective action taken. Negative report required if applicable).

1. Pre-flight tuning of VHF electronic equipment.

Normal

2. In-flight operation of VHF electronic equipment.

Normal

3. In-flight preparation of recovery gear:

a. Extension

Normal

b. In trail.

Normal

(This form is classified Confidential - When filled in it will be classified SECRET).

[redacted]

L. COMMENTS (Cont'd)

5. In-flight operation of recovery gear

a. On contact

Caught reinforcing lines in drogue chute on center hook - used 450 feet cable with 2.8 brace - 5 delay

b. Reeling in

Normal except winch motor ran very hot

6. Air Ground Communications

N/A

7. Water Station pick up (If applicable)

N/A

(When filled in this form will be classified SECRET).

[redacted]

RECOVERY REPORT
PLANE BORNE EQUIPMENT
MOBY DICK HI OPERATION

FLIGHT NR MDH # 37 DATE 24 July 1955

M. RECOMMENDATIONS: (List recommendations that would eliminate, preclude or reduce the difficulties listed in Section L, above)

1. Slow down rate of descent of package.

2. 3 chutes only deployed.

3. Keep recovery aircraft in advance of MDH trajectory to eliminate continuous hours spent from take off at CHS to position of MDH.

   Nearly twenty four continuous hours from take off were spent on successful recovery of MDH # 37.

4. Allow winch operator to operate his own assigned aircraft winch to prevent using wrong brake setting (each winch is different and the operator can put an accurate setting on a winch he has been operating) - Pull test cards are close to proper setting but experience is far more accurate.

(When filled in the form will be classified SECRET).

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RECOVERY REPORT
PLANE BORNE EQUIPMENT
MOBY DICK HI OPERATION

FLIGHT NR MDH # 37 DATE 24 July 1955

N. RECOVERY CREW: (Describe experience level of the recovery crew and indicate the estimated degree of overall proficiency)

1. Reported to ARDC at Langley for training on 1 November 1954. Made 15 ground, 10 water and 15 air pick ups. Instructed all three chases at Langley for second group of TAC pilots. Took part in 2 live chases at Langley. Reported back to Charleston approximately 20 January 1955. Instructed all three phases from Charleston effecting approximately 15 water, 30 ground and 20 air pick ups. Took part in four live chases from Charleston effecting one ground (Jumpers) and one air recovery. Flew 5 intercepts with electronic equipment. Fully qualified.

2. Overall Crew Training (Estract of T-1 Report) U

	1	2	3	4	5	6	7	8	9	10	11	12
Crew 40CN	R	R	R	R	R	R	R	R	O	R	R	R

(NAME)

(RANK)

(TITLE)

Incls:
1. Cy of Instructions issued to recovery crew
2. Weather forecast for Recovery area.

(When filled in this form will be classified SECRET).

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RECOVERY REPORT
PLANE BORNE EQUIPMENT
MOBY DICK HI OPERATION

RECOVERY ORDER MDH # 37 CONFIDENTIAL 24 July 1955

1. Dispatched by Major Parmentier to Aircraft Commander of recovery Aircraft by the SOCS circuit at Mountain Home, Idaho on 24/1630Z Jul 6 1955.

2. Text of Recovery Order.

a. Latest position of Moby Dick Hi 37 is 43.2N 115.6W. You are directed to affect recovery as soon as possible and proceed to Offutt AFB to Deliver MDH 37. Follow Communications procedures as briefed upon departure Charleston AFB. After recovery is affected and MDH 37 is delivered Aircraft are released to return to Charleston.

EDGAR M PARMENTIER
Major USAF
OIC TRCC
Charleston AFB

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(Incl 1)

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RECOVERY REPORT
PLANE BORNE EQUIPMENT
MOBY DICK HI OPERATION

CONFIDENTIAL

23 July 1955

1. Weather for Mountain Home Idaho.

   a. Clear becoming 5000 scattered, 10-1200 broken, during afternoon with occasional thunder showers in area. Winds at 20000 ft. 230/45 knots. Light to moderate turbulence above 4000 ft. Freezing level 14000 ft. Visibility 10 miles lowering to 3 miles in rain showers.

2. Weather at Fairchild AFB Wash.

   a. 3000 scattered 8000 broken, 12000 overcast with scattered thunder storms and moderate rain showers. Visibility 10 miles lowering to 1 to 3 miles in scattered showers. Light to moderate turbulence above 3000 ft. Winds at 20000 ft 230/35 knots. Freezing level 14000 ft.

3. Weather at Great Falls AFB Mont.

   a. Clear becoming 5000 scattered, 10-12000 broken with occasional thunder storms build-ups to 35000 ft in the afternoon. Visibility 15 miles lowering to 3 to 5 miles in showers. Light to moderate turbulence above 4000 ft. Winds at 20000 ft 240/40. Freezing level 14000 ft.

PREPARED BY T/Sgt Stone Weather Section
456th Troop Carrier Wing

(Incl 2)

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HEADQUARTERS
456TH TROOP CARRIER WING (M)
Charleston Air Force Base
Charleston South Carolina

10 October 1955

WOT

SUBJECT: Training and Proficiency Air to Air Recovery

TO: Commander
First Air Division (MS)
Offutt Air Force Base
Omaha, Nebraska

1. In addition to tests of various loops and production type chute systems one hundred fifty two (152) non-production type systems were worked for crew training and proficiency. The results of these recovery attempts are listed below:

a. Of the one hundred and fifty two (152) systems air dropped, eleven (11) failed to deploy sufficiently to work.

b. Of the one hundred and forty one (141) systems worked all were contacted and forty five (45) recovered. Primary reasons for contact and non-recovery are as follows:

(1) Loop broke (24)

(2) Drogue tore - no reinforcing hooked (21)

(3) Drogue line failed (4)

(4) Aluminum hooks failed (7)

(5) Main chute risers failed - package lost (6)

(6) Drogue line thimble severed reinforcing lines (7)

(7) Cable failed (3)

(8) Cable cutter fired due to inverted chutes (6)

(9) Cable played off winch (4)

(10) Struck drogue with propeller (2)

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EVALUATION CONDUCTED BY:
456th Troop Carrier Wing (M)

Date: 10 October 1955

I. NOMENCLATURE OF TEST: Test of 80' Two Strand Open Center Loop.

II. PURPOSE: To determine suitability of this loop for recovery purposes.

III. DESIGNED CAPABILITY: Locally manufactured loop and design capability unknown.

IV. EVALUATION: Thirty nine (39) contacts, nine (9) recoveries.

a. Reasons for non-recovery:

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(1) Loop pulled off pole (2)

(2) Drogue lines failed (2)

(3) Fired cable cutter when aircraft went on single engine. (1)

(4) Hook cable broke (1)

(5) Drogue failure (13)

(6) Package broke loose from main chutes (7)

(7) Crew error - cut loop during transfer (1)

(8) Struck drogue with propeller (1)

(9) Broke pole holder (1)

(10) Loop broke (1)

V. FINDINGS: The 80' two strand loop has resulted in less loop failures however failure occurs more frequently elsewhere in the parachute system. A careful study of the drogue and main chute systems recovered minus the package proved conclusively that eight (8) of the twenty (20) failures (items 5 & 6 above) were a direct result of hardware cutting the nylon drogue leader, drogue re-inforcement lines or the main chute risers.

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[redacted]

EVALUATION CONDUCTED BY:
456th Troop Carrier Wing (M)

Date: 28 September 1955

I. NOMENCLATURE OF TEST: Modified winch, 500 foot cable, (partial brake stack brake spring removed).

II. PURPOSE: To determine better results by using winch with modification reducing initial drag on winch when drogue makes contact with loop.

III. DESIGNED CAPABILITY: Winch (removing initial brake spring and half brake stack).

IV. EVALUATION: Seventeen (17) attempts, seven (7) recoveries, average 41%

A. Various types loops

(1) Drogue chute tore (4)

(2) Loop Broke (3)

(3) Drogue broke loose (2)

(4) Drogue inverted (1)

(5) No reinforcement in Drogue (2)

(6) Recoveries (7)

(7) Old hooks (1)

V. FINDINGS: Drogue lines breaking (hardware). Loop breaking. Drogues appear to be without reinforcement.

/s/ Jay D. Bogue
/t/ JAY D. BOGUE
Colonel, USAF
Deputy Commander

[redacted]

EVALUATION CONDUCTED BY:
456th Troop Carrier Wing (M)
Date: 10 October 1955

I. NOMENCLATURE OF TEST: Test on 1,000 foot cable utilizing two (2) different loops.

II. PURPOSE: To determine if adding an additional 500 foot to length would minimize loop breakage by slowing the brake action all allowable more cable to play out.

III. DESIGNED CAPABILITY: Locally manufactured loop and design capability unknown.

IV. EVALUATION:

a. In all seventeen (17) attempts were made at recovery and seven (7) recoveries effected for an average of 41% effectiveness.

(1) Five (5) of these attempts were made with a one (1) piece nylon loop and only one (1) recovery effected for a 20% average.

(2) Twelve (12) of these attempts were made with two (2) piece nylon loop and six (6) recoveries effected for a 50% average. Further of these twelve (12) attempts nine (9) were made with "B" type nylon and four (4) recoveries effected for 44% average and three (3) attempts were made with "C" type nylon and two (2) recoveries effected for a 66% average.

b. In using 1,000 foot cable on these pickups two (2) winch motors were burned out. The extension of the cable beyond 500 foot did not help in retrieving the package and in some instances caused a whipping action.

c. Reasons for non-recovery are listed below:

(1) Cable failed (1)

(2) Drogue line thimble severed drogue reinforcing lines (2)

(3) Loop broke (5)

(4) Winch motor failed (2)

[redacted]

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EVALUATION CONDUCTED BY:
456th Troop Carrier Wing (M)
Date: 10 October 1955

I. NOMENCLATURE OF TEST: Test of Production type parachute systems.

II. PURPOSE: To determine suitability of this system for recovery purposes.

III. DESIGNED CAPABILITY: See manufacturers contract specifications.

IV. EVALUATION: Seventy four (74) systems were air dropped from aircraft to determine deployment of chute systems, static capability of drogue chute and recovery capability of complete systems. No water stations were attached since aircraft, at time of test did not have capability to effect water recovery. Water station tests will be reported upon completion and forwarded under seperate cover. An attempt was made by this headquarters to photograph the maximum number of contacts. The camera equipment available to this headquarters did not serve the prupose and after approximately ten (10) contacts the attempt to photograph each contact was abandoned.

A. Of the seventy four (74) systems dropped the following is a break down of chute deployment and functioning.

(1) Twelve (12) Main Chute Systems failed to fully deploy.

(2) Twenty eight (28) drogue chutes oscillated to a degree.

(3) Five (5) drogue chutes did not erect properly.

B. Of seventy four (74) systems air dropped and twenty four (24) recovered, the recovery percentage was approximately 32%. Excluding those systems which failed to properly deploy and or the drogue chute oscillated excessively the recovery rate was approximately 58%.

C. Reasons for non-recovery are listed below. In some instances as many as two (2) or more of these factors were present in one (1) contact.

(1) Loop Broke (12)

(2) Drogue tearing - no contact with reinforcement. (10)

(3) Drogue line failure (5)

(4) Hook failure (Aluminum) (6)

(5) Winch geer box failure (1)

(6) Lost cable from winch (3)

(7) Drogue reinforcement lines severed by top thimble (5)

(8) No contact due to excessive rate of fall (7)

(9) No contact due to interference by another aircraft (1)

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EVALUATION CONDUCTED BY:
456th Troop Carrier Wing (M)
Date: 28 September 1955

I. NOMENCLATURE AND DESCRIPTION: Test in cooperation with All American.

II. PURPOSE: To determine better system by use of a series of loops and methods, testing stresses put on the equipment used in the aircraft.

III. DESIGNED CAPABILITY: Aircraft modified by direction of All American.

IV. EVALUATION: Twenty three (23) attempts, seven (7) recoveries, average 30.4%.

a. Various types loops

(1) Drogue line broke (2)

(2) Drogue Chute tore (2)

(3) Loop broke (7)

(4) Lost package (1)

(5) Recovered (7)

(6) Drogue Chute inverted (1)

(7) No reinforcement in Drogue (1)

V. FINDINGS: Same as All American stressing angle of poles.

/s/ Jay D. Bogue
/t/ JAY D. BOGUE
Colonel, USAF
Deputy Commander

[redacted]

[redacted]

EVALUATION CONDUCTED BY:
456th Troop Carrier Wing (M)
Date: 10 October 1955

CONFIDENTIAL

I. NOMENCLATURE OF TEST: 150' Drogue line, Double reinforced drogue chute, 800 lb. packages.

II. PURPOSE: To determine if added nylon is the system would increase recovery capability.

III. EVALUATION: Five systems dropped, two (2) contacted, none recovered.

a. Reasons for non recovery.

(1) Lost cable (1)

(2) Lost package below main chutes - one (1) main chute inverted. (1)

(3) No contacts - excessive rate of descent (3)

IV. FINDINGS: Main system chutes unable to withstand opening shock utilizing 800 lb weights. In each system the main chutes failed to deploy simultaneously resulting in popped pannels and excessive rates of fall. Results inconclusive.

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Evaluation Conducted by:
456th Troop Carrier Wing (M)
Date: 10 October 1955

I NOMENCLATURE AND DESCRIPTION: Model 80-C Pick-Up Unit installed in C-119 Airplane. (Equipment Recovery System)

II PURPOSE: To accomplish air to air or air to water retrieval of C-119L systems.

III DESIGNED CAPABILITY: This equipment recovery system was designed for the pick up of cargo by a C-119 aircraft in flight. The system permits the aircraft to pick up cargo, the weight of which does not exceed 500 pounds, from the ground, water or air.

IV EVALUATION:

1. This equipment recovery system can not be used effectively for this project within its designed capability, it was designed for pick up of 500 pound objects or less at 130 knots true air speed. At present the pick up objects exceed that weight limitation and true air speed at altitude is in many instances in excess of 130 knots. The following modifications are considered minimum necessary to make this system effective.

2. Modifications were effected as follows:

a. Winch Motor: Excessive rates of failure were encountered in the original winch motor. A heavy duty winch motor was installed in the winch unit and to date appears to be operating satisfactorily. Coordination is being effected with All American Engineering Company to devise and install a ram air cooling system for this motor to further insure satisfactory operation of this unit.

b. Ring Gear and Brake Assembly: During operation of the winch, brake spring pressure is applied, squeezing the stack of brake discs between the hub and the brake pressure plate, tying the ring gear to the drum. At this point considerable failure has been experienced in the pinion gear which is the means of tying in the ring gear to the winch motor. All American Engeering Company is recasting the pinion gear with a stellite metal. This fix has not yet been tested at this station since the forecast input will not make these new pinion gears available until after deployment, however it is believed that it will correct this failure.

c. Hooks: The original production type hook was completely unsatisfactory. Failure rate of the hooks was approximately 60 percent. A new casting of a bronze hook was made by All American Engineering Company and although to date less than 150 hooks have been tested by this headquarters little or no breakage due to contact has been experienced.

d. Loops: The original production type loop, for both air and water proved unsatisfactory in that loop breakage was prevelent to an excessive degree in ground, water and air pick-ups. To date no replacement loop has

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been developed and tested sufficiently to insure complete success. Various type loops are being exhaustively tested by this headquarters with reasonable improvement over the original loops. It is anticipated that an effective loop will be designed and tested prior to deployment and will be sturdy enough to effect successful accomplishment of the mission. Results of all loop tests are attached. A complete comprehensive study and testing of this equipment recovery system is being conducted by representatives of the All American Engineering Company. One (1) aircraft of this wing has been instrumented and is being used in these tests. Preliminary report was hand carried to your headquarters by Mr Rolandell. Final report will be forwarded under separate cover.

V FINDINGS:

a. Utilizing present techniques and materials failures in the system must be expected at the following rates:

(1) Loops - 16%

(2) Drogue tearing and no contact with reinforcing lines - 13%

(3) Drogue line or chute reinforcing line a result of severance on sharp edge of thimbles - 13%.

(4) Excessive rate of fall result of chute system not properly deploying - 16%.

(5) Winch failures, i.e. lost cable, burned motors and stripped gears - 5%.

(6) Effective recoveries - 37%.

b. Two (2) piece loop superior to one (1) piece.

c. "B" type nylon superior.

d. Listed below is percentage of effective recoveries utilizing various types of loops during recent tests.

(1) Two piece "B" type - 45%

(2) One piece "C" type - 38%

(3) Two piece "C" type - 28%

(4) One piece "B" type - 26%

(5) Three piece "B" - 25%

(6) 80' two strand "B" type - 23%

[redacted]

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e. 500 foot of steel cable on drum is sufficient and lengthening produced negative gain.

f. More nylon should be added somewhere in system to absorb impact loads.

g. The drogue chute will support twice the amount of reinforcement webbing.

VI RECOMMENDATIONS:

a. Replace all present iron and steel drogue line and loop hardware with bronze fittings.

b. Add 46 feet of nylon to the present drogue line. Though local tests do not reflect an increased recovery rate, the test of the 5 systems dropped was inconclusive and result of main chute failures. It was however proven that the drogue chute will carry the additional nylon. Further tests of this system should be conducted.

c. Double the amount of reinforcement webbing presently being used in the drogue chute.

d. Decrease package weights if at all possible.

7 Incls
1. All American Test
2. 80' two strand Loop Test
3. 1000' cable test
4. 150' drogue line test
5. Modified Winch Test
6. Prod type parachute system test.
7. Ltr 456th, Subj: Trg & Prof Air to Air Recovery

/s/ Jay D. Bogue
/t/ JAY D. BOGUE
Colonel, USAF
Deputy Commander

[redacted]

[redacted]

Evaluation Conducted by:
456th Troop Carrier Wing (M)
15 October 1955

I NOMENCLATURE AND DESCRIPTION: Automatic erecting production water station.

II PURPOSE: To accomplish air to water retrieval of C-119L gondolas.

III DESIGNED CAPABILITY: Telescoping aluminum pole designed to raise and support engaging hook.

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IV EVALUATION:

1. A total of fifty one (51) water station equipped gondolas were dropped during this test. Forty three (43) of these were to be worked for air to water recovery and eight (8) were dropped for evaluation only to be picked by boat.

2. Following malfunctions in the system occurred:

a. Poles failed to erect - twenty seven (27) times due to:

(1) #3 Cannons failed (20)

(2) Chute system collapsed on station (6)

(3) #1 & 2 Cannons failed (3)

(4) Electrical wires broke (2)

(5) Package remained upside down (1)

NOTE: In many instances two or more of these conditions were contributing factors in a particular system.

b. Air to water recovery attempts were made on a total of thirty eight (38) systems, of which twenty one (21) were successfully recovered. Non-recoveries were a result of:

(1) Hook broke off pole (1)

(2) Loop broke (4)

(3) Package leader broke (6)

(4) Station collapsed (5)

(5) Harness failed (1)

V FINDINGS:

a. That # 3 Cannon failed excessively. Cause in many cases has not

Tab H

[redacted]

been determined. In at least two (2) cases, the electrical wiring broke due to harness stretch, however a number of times there appeared no visual damage to the circuit. Batteries and squibs are being further tested to determine if possible the problem area.

b. Gondola harness is poorly stitched.

c. Cutters used to detach pole from harness was in many cases ineffective.

VI RECOMMENDATIONS:

1. Blow test batteries to insure open water passage.

2. Test each battery for a closed circuit.

3. Lengthen wires up to at least ten (10) inches between terminal block on pole and #3 cannon to insure sufficient slack for harness stretch.

4. Spray terminal blocks and #3 squib with a non-conductive lacquer for insulation.

5. Gondola harness should be re-stitched using a #5 nylon thread or suitable substitute.

6. Utilize sharp concave cutters for pole detaching.

7. Paint a portion of the gondola yellow for better visual contact.

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HEADQUARTERS
456TH TROOP CARRIER WING (M)
CHARLESTON AIR FORCE BASE
CHARLESTON, SOUTH CAROLINA

28 May 1955

The long title of this document is;

"PROPOSED PLAN FOR RECOVERY PHASE OF PROJECT 'GRAYBACK'" (Confidential)

The short unclassified title of this document is:

"456 TCW PP 'DRAGNET'"

Classified by authority of the Wing Commander, 28 May 1955

456 TCW TSG # 55 021

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HEADQUARTERS
456TH TROOP CARRIER WING (M)
CHARLESTON AIR FORCE BASE
CHARLESTON SOUTH CAROLINA

28 May 1955

PROPOSED PLAN FOR RECOVERY PHASE OF PROJECT "GRAYBACK"

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HEADQUARTERS
456TH TROOP CARRIER WING (M)
CHARLESTON AIR FORCE BASE
CHARLESTON SOUTH CAROLINA

28 May 1955

Proposed Plan For Recovery Phase of Project "Grayback"

I. GENERAL SITUATION:

1. The 456th Troop Carrier Wing Headquarters with the six (6) assigned squadrons and detachments will deploy by air to areas in the pacific to execute the recovery phase of Project "Grayback" (Conf). The deployment will be accomplished not later than 1 October 1955 and will be accomplished in four (4) phases as follows:

a. Phase I: An advance echelon of the Wing Headquarters, squadrons and detachments will deploy with minimum essential UME equipment so as to be in place at their assigned operational sites not later than 1 August 1955.

b. Phase II: Air movement of 180 day kits complete, UME and UPREAL equipment (less minimum essential equipment to maintain aircraft, and administrative functions at Charleston AFB), and sufficient personnel to accompany and guard each air craft load, to be in place at designated operational areas not later than 1 September 1955.

c. Phase III: Air movement of aircraft with minimum crew, personnel and remaining equipment to be in place at designated operational site not later than 1 October 1955.

d. Phase IV: Air movement of those personnel remaining at Charleston AFB charged with responsibility of closing out unit accounts. These personnel will be primarily supply personnel and are limited to one (1) officer and one (1) airman for each unit.

e. During Phase II and Phase III air movement a time schedule will be met by each participating aircraft. If during air movements a delay should be experienced due to weather or some other factor that would possibly saturate an enroute stop, the entire stream would be halted and then resumed when the cause for the delay has been eliminated. The time schedule will be revised accordingly.

2. It is anticipated that upon deployment, the 456th Troop Carrier Wing headquarters will have the following units assigned or attached who will provide the functions as indicated:

a. Six (6) operational recovery units who with minimum base administrative and logistical support will be self sustaining for a period of 180 days and will be capable of providing aircraft flying hours at the rate of

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three hours per day per assigned aircraft. These units will accomplish the recovery of weapons system C-119L when directed by the Headquarters and will be positioned as follows:

(1) One (1) unit located at Kodiak NAS, Alaska.
(2) One (1) unit located at Adak NAS, Alaska.
(3) One (1) unit located at Misawa Air Base, Japan.
(4) One (1) unit located at Johnson Air Base, Japan.
(5) One (1) unit located at Central Air Base, Iwo Jima.
(6) One (1) unit located at Kadena Air Base, Okinawa.

b. A Tactical Recovery Control Center (TRCC) located at Shiroi Air Base. This TRCC will be controlled by the Commander of the 456th Wing Headquarters thru the Operations Section and will be manned by personnel of the Far East Air Forces. This center will have the capability of:

(1) Plotting all known and forecast positions of recovery aircraft and weapon systems C-119L.

(2) Providing the Commander, 456th TC Wing with immediate and reliable communications with Operational Recovery Units, D/F Evaluation Center, JADF ADCC, and adequate communications with Air-Ground Stations for possible rerouting of aircraft already airborne.

c. The 6926th Radio Squadron Mobile who will provide:

(1) D/F Evaluation Center located within or adjacent to the Tactical Recover Control Center.

(2) Not less than nine (9) D/F sites located within the area of operation. (For detailed location see Tab 'E').

(3) Provide the TRCC with reliable fixes of weapons systems C-119L penetrating the Pacific Area.

d. Communications between sections and units will be provided as outlined in Tab 'E'.

3. The period 1 October 1955 to 1 November 1955 will be utilized for Area Familiarization and crew proficiency training by the recovery units and for operational testing of all sections and units in accordance with the concepts and procedures as outlined herein.

II. MISSION:

1. The 456th Troop Carrier Wing (M) during the period 1 November 1955 to 1 May 1956, will detect, locate, and recover Weapons Systems C-119L penetrating areas lying within recovery range of the six (6) assigned operational recovery units in the Pacific Area.

III. ASSUMPTIONS:

1. That Weapons Systems C-119L will penetrate the Pacific Area within range of operational recovery units.

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2. That sufficient reliable fixes and/or sightings will be provided the Recovery Control Center for evaluation and forecase recovery possibilities.

3. That the Recovery Control Center will be adequately manned with trained personnel from within resources of Far East Air Forces. (See TAB 'E')

4. That the radius of action for recovery aircraft will be limited to safe single engine gross weight limitations as computed utilizing free air temperature and dew-point temperature at time of take-off.

5. That adequate communications, supplies, weather information, personnel and base logistical support, as outlined in existing directives published in support of Project "Grayback" (Conf), will be provided by agencies concerned.

6. That Depot Support will be available within theaters, with a high priority for airlift of supplies, aircraft parts, and equipment.

7. That personnel replacements for the recovery units located in the Alaskan Theater will be provided from TAC resources and those replacements necessary in the Far East will be provided from FEAF resources.

8. That upon return of recovery aircraft to their operating base with a Weapon System C-119L, further transport of this system will be the responsibility of some other agency or agencies.

9. That a possibility exists wherein Weapons Systems C-119L would saturate a given area to the extent that it would preclude recovery of a number of these systems.

10. That the requirements for patrol flights will not raise the expected forecase aircraft utilization rate above three (3) hours per day per assigned aircraft.

11. That recovery aircraft will not be required to stage from other than one of the designated sites of operations unless operational requirements dictate.

12. That the launch site (s) will provide the Tactical Recovery Control Center with the identification and coding of each Weapons System C-119L launched.

13. That Far East Air Forces will provide current intelligence data, Base logistical support, access to existing communications facilities, additional facilities as necessary for the successful completion of the mission, inter and intra theatre airlift as necessary, and personnel and equipment for the manning and operation of the balloon recovery control center.

14. That Alaskan Air Command will provide base logistical support, access to existing communications facilities, additional facilities for the successful completion of the mission and inter and intra theatre airlift as necessary.

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15. Tactical Air Command will provide personnel replacements as necessary within the Recovery units located within the Alaskan Theatre.

IV. CONCEPT OF OPERATIONS:

Project "Grayback" (Conf) is generally divided into two phases, the launching phase and the recovery phase. For the purpose of this plan, the launching phase will consist basically of launching operations and the dispatch to the TRCC of balloon identification, coding, time of launch and any position fix in the launching area; the recovery phase will consist of D/F reconnaissance of the Pacific area, plotting fixes, evaluating these fixes, forecasting trajectories of the balloons, planning recovery operations based on Intelligence, Weather, aircraft capability and possible balloon trajectories and then directing and accomplishing the termination of the balloon flight. This proposed plan will primarily outline the procedures and responsibilities of the recovery phase.

Upon receipt of a launch message the recovery control center will alert the D/F stations to start reconnaissance operations. At this same time all fixes received from the launching site will be plotted so that a forecast may be made by the weather personnel as to the possible penetration points and times in the Pacific area. The D/F sites will relay to the evaluation center all fixes and identifications of each C-119L system. The evaluation center will compile the bearings obtained from each site at a given time on each C-119L system and based on the time and reliability of each bearing dispatch to the control center a fix for plotting purposes. The number and rate of each fix will depend largely upon the amount of C-119L systems in the area and the capability of each D/F site to moniter the C-119L systems.

The plotting section will maintain a plotting board depicted on which will be the Pacific area and location of operational recovery unit sites. On this plotting board the plotters will plot fixes and times of fixes and connect each fix to depict the actual flight path of the C-119L system. Each flight path will be labelled with balloon designators and maintained until termination of the balloon flight. Forecast Trajectories for each balloon flight will be maintained by weather personnel on individual charts. A daily briefing will be conducted by TRCC personnel for the Wing Commander. Normally at these briefings, the decisions to effect aerial recovery within a given area at a designated time by a designated unit will be made by the Wing Commander, Deputy Wing Commander or the Director of Operations from information obtained at this briefing. Other briefings will be conducted as the situation dictates. The aircraft control section will dispatch to the designated unit necessary instructions and information to enable them to successfully intercept and recover C-119L system.

Air Sea Rescue and Fighter coverage will be available throughout the operational areas and be capable of immediate dispatch. In the event recovery operations are to be conducted within or near the bomb line (an area within which potentially unfriendly forces would have a strong capability of interfering with the recovery operations) as designated by the Intelligence

Section, fighter coverage would be required and would be the responsibility of the Liaison Officer of Japan Air Defense Force Attached to the Tactical recovery Control Center.

JAMES L. DANIEL JR
Colonel, USAF
Commander

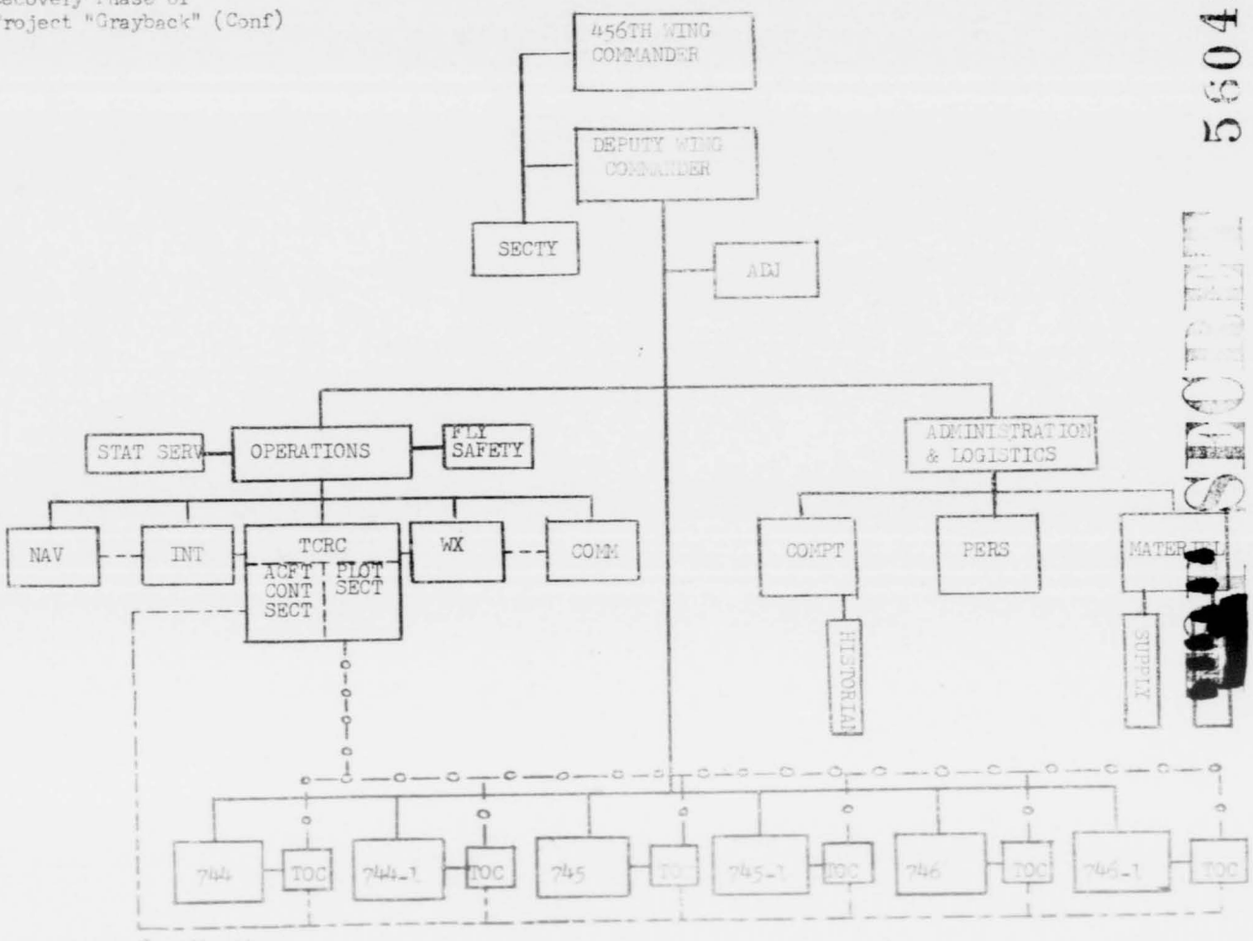
5 Incl:
Tab A - Chain of Command Chart
Tab B - Operational Information Flow Chart
Tab C - Reports
Tab D - Intelligence
Tab E - Communications

DISTRIBUTION:

Copy # 1, # 2	Cmdr, 1st Air Div (MS)
Copy # 3	Cmdr, TAC (INFO)
Copy # 4	Cmdr, 18AF (INFO)
Copy # 5	456 TCW

TAB "A"
Proposed Plan For
Recovery Phase of
Project "Grayback" (Conf)

CHAIN OF COMMAND (TACTICAL & ADMINISTRATIVE)



- - - - - Coordination
——— Mission Assignment, Aircraft and crew in formation
- - - - Plotting information

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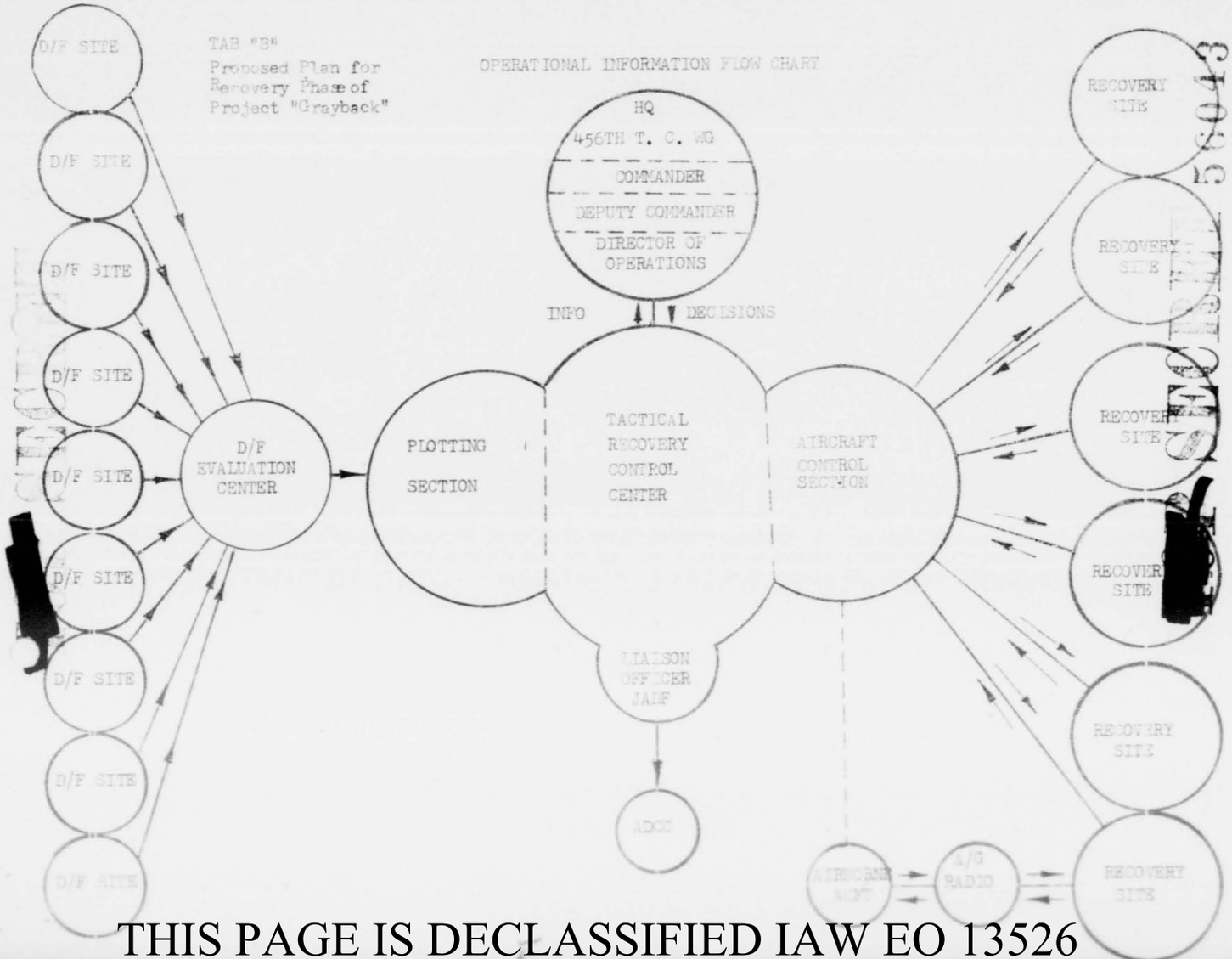
TAB "B"
Proposed Plan for
Recovery Phase of
Project "Grayback"

OPERATIONAL INFORMATION FLOW CHART



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TAB "C"

PROPOSED OPERATION PLAN FOR THE RECOVERY PHASE OF PROJECT "GRAYBACK" (CONF)

REPORTS

1. Operational reports concerning Project "Grayback" (Conf) will be prepared and submitted as outlined in this tab. Air to Ground or Ground to Air reports will be encoded and decoded utilizing AFSAL 510+ (Current).

a. Title: Launch Report

Code: L-1

Addresses: Tactical Recovery Control Center, 450th TC Wg

Submitted by: Launch Control Center

When Submitted: When a successful launch has been accomplished.

Contents: A. Report Code

B. Balloon identification numbers

C. Date time of launching

D. Launch Site

E. Remarks

b. Title: Balloon Code Report

Code: C-1

Addresses: Tactical Recovery Control Center

Submitted by: Launch Control Center

When Submitted: When balloon codes have been assigned

Contents: In four (4) columns

Col I	Col II	Col III	Col IV
Balloon Nbr	Channel Nbr	Code Nbr	Identification

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c. Title: Fix Report

Code: F-1

Addressees: Tactical Recovery Control Center

Submitted by: AFSS Evaluation Center

When submitted: Whenever a fix evaluation has been prepared

Contents: A. Report code

B. Balloon identification number

C. Date/Time (GMT) of fix

D. Class of fix

E. Remarks:

This report will be forwarded by the Tactical Recovery Control Center to the Detachment whose area of responsibility the fix or projected trajectory will enter for their information and planning.

d. Title: Downed Balloon Report

Code: DB-1

Addressees: Launch Control Center

Tactical Recovery Control Center

AFSS Evaluation Center

Submitted by: Any agency receiving the necessary information

When submitted: As soon as information is obtained from any reliable source that a balloon or gondola has gone down.

Contents: A. Report Code

B. Balloon identification number

C. Date/time (GMT) balloon or gondola went down

D. Location

E. Action being taken by reporting agency if any

F. Remarks:

[redacted] SECRET

e. Title: Aircraft and crew status report

Code: ACS-1

Addressee: Tactical Recovery Control Center

Submitted by: Each tactical squadron of 456th TC Wg

When Submitted: Daily as of 0001Z and to reach the TRCC NLT 0300Z

Contents: A. Report Code

B. Detachment identification

C. Number of aircraft at detachment site in commission

D. Number of crews available at site for mission for next 24 hour period

E. Number of unavailable crews and reasons for unavailability.

F. Number of out of commission aircraft, reasons and estimated time in commission.

G. Number of hours flown within last 24 hour period

H. Remarks

f. Title: Aircraft Departure Report

Code: A-1

Addressee: Tactical Recovery Control Center

Submitted by: Detachment CO or aircraft commander when departing [illegible] other than base site [illegible]

When submitted: Whenever aircraft makes a departure other than local non-operational flights.

Contents: A. Report Code

B. Aircraft number

C. Departure point and date-time (GMT)

D. Destination and ETA (GMT)

E. Mission (Recovery, courier, [illegible], etc)

F. Remarks

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g. Title: Aircraft arrival report

Code: A-2

Addressees: Tactical Recovery Control Center

Submitted by: Aircraft Commander (using AFSAL 5104) the Det. 100

When submitted: Upon landing after any flight other than local once operational flight

Contents: A. Report code

B. Aircraft number

C. Arrival point and date/time (GMT)

D. Time left to inspection

E. ETD (if known)

F. Aircraft Status

G. Where to address messages to aircraft commander

H. Remarks

* Items D, E, G, H are only applicable when landing away from home station.

h. Title: Mission Progress Report

Code: A-3

Addressees: Tactical Recovery Control Center

Submitted by: Aircraft commander (using AFSAL 5104) [illegible]

When submitted: When within briefed contact range and when any recover action is taken

Contents: A. Report Code

B. Aircraft number

C. [illegible]

D. [illegible]

E. [illegible]

F. [illegible]

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1. Title: Position Reports

Code: A.4

Addressees: Recovery Control Center

Submitted by: Aircraft commander (using AFSAL 5104)

When submitted: Hourly when on mission

Contents: A. Report code

B. Aircraft number

C. Aircraft location (longitude & latitude) datetime (GMT)

D. Endurance remaining in hours

E. Remarks

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D

TAB "D"

INTELLIGENCE AND SECURITY

I. INTELLIGENCE:

A. Organization.

(1) Headquarters, Wing. The Intelligence Section will be composed of one Intelligence Officer (2054). One Intelligence Operations Technician (20470), and one clerk-typist (70250). The Section will be responsible to the Wing Staff Operations Officer and, through him, to the Wing Commander.

(2) Squadrons and Detachments. The Intelligence Section of each unit will be composed of one Intelligence Officer (2054) and one Senior Intelligence Operations Specialist (20450). The section will be responsible to the Squadron (Detachment) Operations Officer and, through him, to the Squadron (Detachment) Commander.

B. Operations.

1. Headquarters, Wing. The Intelligence Section will be located, as part of the Tactical Operations Section, or adjacent to the Control Center. At this location, all Intelligence information will be processed for dissemination by means of visual displays in the Control Center, and briefs, messages, reports, correspondence, etc., as required, to higher, lateral, and subordinate headquarters. Information effecting the operation as a whole will be received in the section and disseminated within the Wing Headquarters and to individual subordinate units as necessary to fulfill the mission and maintain overall orientation.

c. Liaison with the Intelligence sections of PACAF, FEAF, and SAC will be maintained by means of Intelligence liaison officers from those headquarters.

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stationed in the Control Center, and/or direct telephone lines.

c. Except as indicated in paragraph c below, Intelligence information necessary to support the operation will be provided by FEAF Headquarters, Alaskan Air Command, and 1st Air Division. Information furnished by FEAF and AAC will be sent direct to the Wing Headquarters.

c. Reports of balloon sightings will be made in accordance with established procedures within the theater and relayed by the most expeditious means to the Control Center. (See paragraph g, below.)

d. On the basis of information indicating potential and possible hostile interference with the mission of this command, the Intelligence Section will assist in drawing an operational boundary beyond which aircraft will not be committed for recovery or patrol operations. Further, on the basis of such information, he section will assist in determining approach and return routes and the necessity for fighter escort or alert.

e. In addition to standard CIRVIS reports, all aircraft commanders of the 456th Troop Carrier Wing (M) will be directed to report, immediately upon observation, air and naval activity (and ground activity, if unusual) and affecting the mission in the vicinity of their flights.

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includes operations, training, and administration by and within those sections.

1. Upon direction of 1st Air Division, this command will:

(1) Retain gondolas or packages complete and unopened pending delivery to intra-theater transport aircraft, or

(2) Open gondolas or packages, setting aside individual components for intra-theater transport and disposing of the main container as directed. This does not include film processing.

2. Squadrons and Detachments. Unit Intelligence sections will be located in or adjacent to unit Control Centers. They will receive from Wing Headquarters, process, and disseminate Intelligence information pertinent to their particular units and to the mission as a whole.

a. Unit Intelligence sections will be responsible for debriefing all returned aircrews and for reporting the information so collected to Wing Headquarters with a minimum of delay.

(1) For this purpose, during periods of heavy commitments, the Intelligence sections will be augmented by selected Operations personnel to assist in the debriefings.

b. "Hot news report" will be relayed by the reporting unit immediately to Wing Headquarters.

c. Unit Intelligence sections will be responsible for training unit personnel as required by current 1st Air Division training directives pertaining to Intelligence.

III. SECURITY:

A. Responsibility.

1. Although the Wing Commander is primarily responsible for the security of all classified material within the command, individual squadron and detachment commanders are charged with ensuring classified material is

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properly safeguarded while in their custody.

2. Monitoring and coordinating the security function at each echelon will be the immediate responsibility of the Intelligence sections, as an additional duty.

B. Security Provisions.

1. Air Police assigned to squadrons and detachments will be placed on detached service with the Air Police Squadron at each operating site to increase the Provost Marshal's capabilities of guarding project aircraft.

a. Only properly cleared Air Policemen will be assigned to guard project aircraft.

b. Project aircraft will be guarded at all times as long as present security classifications remain in effect.

c. Only Air Policemen assigned to this command will be used to guard recovered packages and/or their contents, when Air Police are used.

(1) Recovered package or gondolas will be secured by armed guards, aircrew personnel or Air Police, at all times when in custody of this command.

2. All officers of this command will have at least an interim Top Secret clearance and all airmen will have at least an interim Secret clearance prior to deployment.

3. Dissemination of project information within this command will continued to be governed by the "need to know" policy.

III. PUBLIC INFORMATION RELEASES:

A. Press releases required to meet inquiries touching on classified aspects of the operation will be based upon cover plans issued by 1st Air Division. Press releases will be made only to meet direct queries and will be coordinated with 1st Air Division.

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B. The Intelligence sections of each unit will be responsible for the public information program as an additional duty.

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HEADQUARTERS 456TH TROOP CARRIER WING (MEDIUM)
CHARLESTON AIR FORCE BASE, CHARLESTON, SOUTH CAROLINA

TAB "E" to

Proposed plan for Recovery phas of Project (Confidential) GRAYBACK

COMMUNICATIONS - ELECTRONICS ANNEX

MAPS (As required)

1. MISSION. The Communications and Electronics Mission is to provide adequate and timely Point to Point, Air to Ground, Air to Air, and direction Finding Communications in support of Project (C) GRAYBACK, in the Pacific Area.

2. COMMUNICATIONS AND ELECTRONICS TASKS FOR SUBORDINATE UNITS:

a. Headquarters, 456th Troop Carrier Wing (M), will exercise operational control over all Task Organizations in the Pacific Area.

b. The Tactical Recovery Control Center Detachment, (See Attachment # 1) will:

(1) Operate and maintain terminal On-line Teletypewriter equipment with sufficient spares, to terminate, Full Duplex On-line teletype circuits from the Tactical Recovery Control Center at Shimi, Japan to the

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HEADQUARTERS 456TH TROOP CARRIER WING (MEDIUM)

CHARLESTON AIR FORCE BASE, CHARLESTON, SOUTH CAROLINA

TAB "E" to

Proposed plan for Recovery phas of Project (Confidential) GRAYBACK

COMMUNICATIONS - ELECTRONICS ANNEX

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a. Headquarters, 456th Troop Carrier Wing (M), will exercise operational control over all Task Organizations in the Pacific Area.

b. The Tactical Recovery Control Center Detachment, (See Attachment # 1) will:

(1) Operate and maintain terminal On-line Teletypewriter equipment with sufficient spares, to terminate, Full Duplex On-line teletype circuits from the Tactical Recovery Control Center at Shimo, Japan to the

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following sites:

(a) To Tactical Operations Center Kodiak, Alaska

(b) To Tactical Operations Center Adak, Aleutians

(c) To Tactical Operations Center Iwo Jima, Island

(d) To Tactical Operations Center Johsnon Air Force Base, Japan

(e) To Tactical Operations Center Okinawa (Kadena)

(f) To Tactical Operations Center Misawa Air Force Base Japan

(g) To Clark Air Force Base, P. I. (Alternate)

(h) To Midway Island (Alternate)

(i) To Headquarters First Air Division, Offutt Air Force Base, Nebraska

(j) To Far East Air Force Headquarters Relay Center (JAPY)

(2) Install, Operate, and maintain the necessary equipment to provide:

(a) Two (2) Simplex Off-line teletype circuits for the D/F Evaluation Center to the Tactical Recovery Control Center.

(b) Adequate Weather teletype and Facsimile circuits.

(c) Two (2) Full Period Voice circuits from Tactical Recovery Control Center to D/F Evaluation Center.

(d) One (1) Full Period Voice circuit from Tactical Recovery Control Center to Air/Ground Radio Station at Johnson Air Force Base, Japan. (JAPAW)

(e) One (1) Full Period Voice circuit from Tactical Recovery Control Center to Japan Air Defense Force - Air Defense Control Center.

(f) One (1) Full Period Simplex teletype circuit from Tactical Recovery Control Center to JAPAW.

(g) One (1) small switchboard to provide the Tactical Recovery Control Center with adequate inter-headquarters telephone circuits.

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(3) Program for and effect distribution of all Python Tapes utilized in the On-time Teletype Net with the exception of First Air Division Circuits. The First Air Division should receive distribution on Python Tapes from USAF Security Service, San Antonio, Texas.

c. The 6926th Radio Squadron Mobile will establish, operate, and maintain a D/F Evaluation Center adjacent to or within the Tactical Recovery Control Center for the Purpose of receiving, evaluating, and providing the Tactical Recovery Control Center with accurate fixes on Weapons Systems C-119L. These fixes will be obtained, via means of CW Radio Net, from Detachments of the 6926th Radio Squadron Mobile located at the following sites:

(1) Detachment number 1, D/F Facility (2 position) Tokyo, Japan (Mobile)

(2) Detachment number 2, D/F Facility (3 position) Guam, Marianas

(3) Detachment Number 3, D/F Facility (2 position) Wake Island

(4) Detachment number 4, D/F Facility (3 position) Philippines

(5) Detachment number 5, D/F Facility (3 position) Okinawa

(6) Detachment number 6, D/F Facility (2 position) A-6 Korea

(7) Detachment number 7, D/F Facility (3 position) Chitose, Japan

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(8) Detachment number 8, D/F Facility (2 position) Midway Island

(9) Detachment number 9, D/F Facility (3 position) Attu, Aleutians

(10) Detachment number 10, D/F Facility (2 position) Anchorage Alaska

d. Far East Air Force will furnish long-lines necessary for activating the following circuits in support of the Tactical Recovery control center at Shiroi Air Base, Japan:

(1) One (1) Full Period Voice Circuit from the Tactical Squadron Tactical Operations Center at Misawa Air Base, Japan to JAPAW at Johnson Air Force Base, Japan.

(2) One (1) Full Period Voice Circuit from the Tactical Squadron Tactical Operations Center at Johnson Air Force Base, Japan to JAPAW.

(3) One (1) Full Duplex teletype circuit from Tactical Operations Center Johnson Air Force Base, Japan to Tactical Recovery Control Center, Shiroi Air Base, Japan.

(4) One (1) Full Duplex teletype circuit from Tactical Recovery Control Center Shiroi Air Base, Japan to JAPAW.

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(5) One (1) Full Period Simplex teletype circuit from Tactical Recovery Control Center to JAPAW.

(6) One (1) Full Period Voice Circuit from Tactical Recovery Control Center Shiroi Air Base, Japan to Japan Air Defense Force - Air Defense Control Center Nagoya, Japan.

(7) Four (4) Operational Full Period and Two (2) Standby Duplex teletype channels from Airways and Air Communications Service Technical Control (JAP), Fuchu, Japan to Tactical Recovery Control Center, Shiroi Air Base, Japan to support the Kodia, Adak, Iwo Jima, and Okinawa Radioteletype circuits.

(8) Provide Weather Circuits and terminating equipment to provide latest weather data to the Tactical Recovery Control Center, Shiroi Air Base, Japan.

(9) One (1) Full Duplex On-line teletype circuit from Tactical Recovery Control Center, Shiroi Air Base, Japan to JAFX, Tokyo, Japan.

(10) Will procure, install, and maintain as required all terminating equipment for circuits outlined in sub-paragraphs (1) through (9) above, with the exception

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of te etypewriter and On-line equipment at Tactical Operations Centers Johnson Air Force Base, Japan and Misawa Air Force Base, Japan.

e. Airways and Air Communications Service will install, operate, and maintain all Transmitters, Receivers, and associated facilities to support the following:

(1) One (1) Full Period Radioteletype channel from Technical Control, Central Air Force Base, Iwo Jima to Technical Control (JAP), Fuchu, Japan thence to Shiroi, Tactical Recovery Control Center via Far East Air Force circuit.

(2) One (1) Full Period Radioteletype channel from Technical Control Kadena Air Force Base to Technical Control (JAP) Fuchu, Japan thence to Tactical Recovery Control Center via Far East Air Force circuit.

(3) One (1) Full Period Radioteletype channel from Technical Control Elmendorf Air Force Base, Alaska to Technical Control Adak, Aleutian Islands, and one (1) Full Period Radioteletype channel from Technical Control Adak, Aleutian Islands, to Technical Control (JAP) Fuchu, Japan thence to Tactical Recovery Control Center, Shiroi Air Force Base via Far East Air Force circuit.

(4) One (1) High Frequency Aeronautical Station, with four (4) exclusive channels to support the Tactical Squadron at Iwo Jima, Island.

(5) One (1) High Frequency Aeronautical Station, with four (4) exclusive channels to support the Tactical Squadron at Okinawa.

(6) One (1) High Frequency Aeronautical Station, with four (4) exclusive channels to support the Tactical Squadron stagin at Midway, Island.

(7) One (1) High Frequency Aeronautical Station, with four (4) exclusive channels to support a Tactical Squadron stagin at Clark Air Force Base, P. I.

(8) One (1) High Frequency Aeronautical Station, with four (4) exclusive channels to support aircraft stagin at Adak, Aleutian Islands.

(9) One (1) High Frequency Aeronautical Station, with four (4) exclusive channel to support the Tactical Squadrons at Johnson Air Force Base, Japan, and Misawa Air Force Base, Japan.

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(10) One (1) High Frequency Aeronautical Station, with four (4) exclusive channels to support the Tactical Squadron at Kodiak, Alaska. This station is located at Elmendorf Air Force Base, Alaska.

f. Alaskan Air Command Will provide:

(1) One (1) Full Period Duplex Radioteletype channel from Tactical Operations Center Kodiak, Island to Airways and Air Communications Service Technical Control, Elmendorf Air Force Base, Alaska.

(2) One (1) Full Period Voice Channel from Tactical Operations Center Kodiak, Island to High Frequency Aeronautical Station, Elmendorf Air Force Base, Alaska.

(3) One (1) Full Period Duplex teletype channel from Tactical Operations Center, Adak to Airways and Air Communications Service Technical Control, Adak.

(4) One (1) Full Period Voice channel from Tactical Operations Center, Adak to High Frequency Aeronautical Station, Adak.

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(10) One (1) High Frequency Aeronautical Station, with four (4) exclusive channels to support the Tactical Squadron at Kodiak, Alaska. This station is located at Elmendorf Air Force Base, Alaska.

f. Alaskan Air Command Will provide:

(1) One (1) Full Period Duplex Radioteletype channel from Tactical Operations Center Kodiak, Island to Airways and Air Communications Service Technical Control, Elmendorf Air Force Base, Alaska.

(2) One (1) Full Period Voice Channel from Tactical Operations Center Kodiak, Island to High Frequency Aeronautical Station, Elmendorf Air Force Base, Alaska.

(3) One (1) Full Period Duplex teletype channel from Tactical Operations Center, Adak to Airways and Air Communications Service Technical Control, Adak.

(4) One (1) Full Period Voice channel from Tactical Operations Center, Adak to High Frequency Aeronautical Station, Adak.

g. The Tactical Squadrons at each operating site will provide, install, operate, and maintain teletypewriter and On-Line equipment in the Tactical Operations Center.

h. Teletype keying lines and High Frequency Aeronautical Station Voice circuits between the Tactical Operations Center and airways and Air Communications Service Facilities, not here to fore covered will be installed and maintained by the organization having Base Support responsibility at each operating location.

4. COMMUNICATIONS PROCEDURES.

a. All Air to Ground communications procedures will be in accordance with ACP 124 ( ) and ACP 125 ( ).

b. All Point to Point Teletype operations will be in accordance with ACP 127 ( ).

c. All Point to Point CW operation will be in accordance with ACP 124 ( ).

d. Air to Air Communications will be conducted on the Troop Carrier Common HF, VHF, And UHF Frequencies.

e. Call signs and Call words. (See Attachment # 3)

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5. SECURITY AND CRYPTOGRAPHY.

a. AFSAL 5104 ( ) will be employed in transmitting classified information to and from aircraft.

b. On-line Cryptographic facilities will be used in transmitting classified information over point to point teletype circuits.

c. Off-line Cryptographic facilities will be utilized in passing classified information between D/F detachments and the D/F Evaluation Center.

6. IT IS ASSUMED THAT:

a. Once unfriendly forces are aware of this operation, they will attempt to disrupt the D/F, Point to Point, and Air to Ground Communications by use of Electronics Countermeasure Facilities.

b. Radio Communications in the Alaskan and Aleutian Area will be unstable and that maintaining reliable communications in those areas will be difficult. However the Kodiak Naval Air Station has been available to the Squadrons at Kodiak, both Air to Ground and Point to Point facilities as backups.

c. Off-line Cryptographic support will be furnished by the parent organization at each operating site.

7. ESTIMATE OF FACILITIES.

a. The Radioteletype channel serving Adak and Kodiak Squadrons is not considered adequate to support the mission. Past performance of this circuit has proven that it is less than 50% reliable for On-line operation. Therefore since it must support two (2) squadrons it is felt that a high powered CW Radio circuit as a backup, should be activated between Kodiak, Adak, and Shiroi Tactical Recovery Control Center.

b. The High Frequency Aeronautical Station at Elmendorf Air Force Base, Alaska is not considered adequate to support the squadron at Kodiak unless the voice circuit between the Tactical Operations Center at Kodiak and the High Frequency Aeronautical Station can be made 100% efficient.

c. The High Frequency Aeronautical Station at Johnson Air Force Base, Japan is not considered adequate to support the Tactical Squadron at Misawa Air Force Base, due to distance from the High Frequency aeronautical station and base of operation, since the majority of the Misawa squadrons missions will be flown in an opposite direction from the Base of Operation as that of the High Frequency Aeronautical Station. And further, the land line voice circuits for that distance, in Japan, are extremely unreliable. It is deemed necessary that and Air/Ground Station be activated at Misawa.

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d. The proposed manning document (See attachment # 1) for the Tactical Recovery Control Center is considered inadequate, since there are not Cryptographic Maintenance Technicians, and no seven (7) level teletype operations personnel authorized. It is felt that there should be a minimum of five (5) Cryptographic Maintenance (36371-51) personnel authorized and at least four (4) (29170) Communications Center Supervisors. These four (4) 29170's should be M/Sgts since there are not adequate Communications Officers authorized to enable officer supervision at all times.

Attachment # 1 - Tactical Recovery Control Center Manning Document.

Attachment # 2 - Inter-site communications chart.

Attachment # 3 - Call signs and Call words.

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PROPOSED MANNING DOCUMENT

FOR THE CONTROL CENTER

TITLE	AFSC	OFFICERS	AIRMEN
COMMAND			
Commanding Officer	3016	1 Major	
First Sergeant	99970		1 T/Sgt
Adjutant	7024	1 1st Lt	
Apprentice Clerk	70230		1 A/2C
Sr Personnel Spec	70250		1 S/Sgt
Air Operations Officer	1435	1 Capt	
Comm Elect Staff Officer	3016	1 Capt	
Apprentice Clerk	70230		1 A/2C
Supply Officer	6424	1 Capt	1 A/1C
COMMUNICATIONS CENTER			
Communications officer	3034	1 Capt	
Op Comm Center Specl	29130		1 A/2C
Comm Ctr Specl	29150		2A/1C
Sr Comm Ctr Specl	29150		1 S/Sgt
Apprentice Crypto Opr	29230		1 A/2C
Sr Crypto Opr	29250		2 S/Sgts
Sr Crypto Mach Repairman	36251		1 S/Sgt
Teletype Team (3)			
Op Comm Ctr Specl	29130		3 A/2C
Comm Ctr Specl	29150		3 A/1C
Sr Comm Ctr Specl	29150		3 S/Sgts
Comm Mach Repairman	36350		3 A/2C
Tel Switchboard Team			
Comm Opr Helper	29010		2 A/3C
Comm Opr Ctr Specl	29130		2 A/2C
Comm Ctr Specl	29150		1 A/1C

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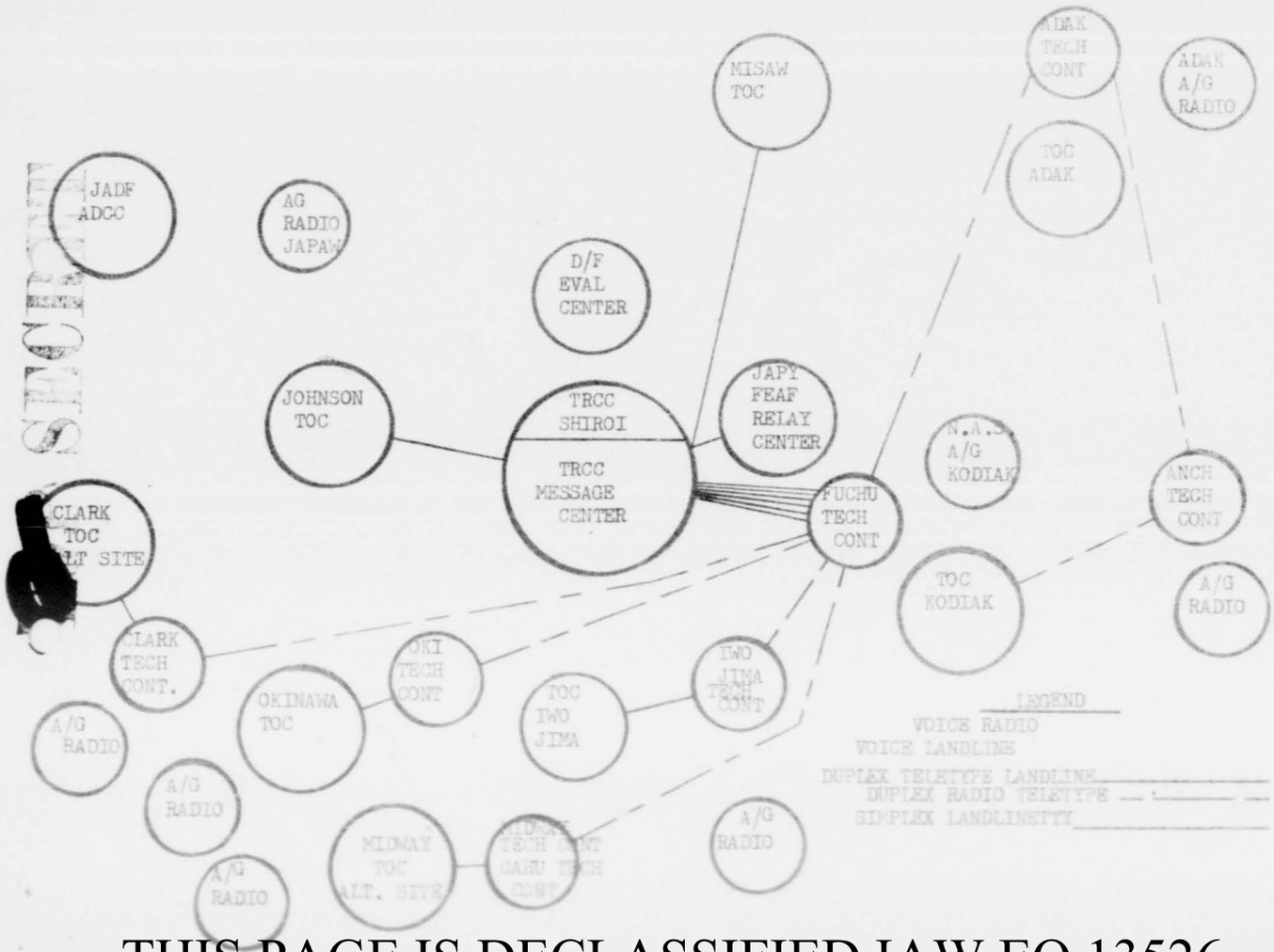
TITLE	AFSC	OFFICERS	AIRMEN
Control Center, Fixed	1635		
Aircraft Controller		4 Capts	
Weather Officer		4 Lts	
Comm Officer		4 Lts	
		1 Capt	
Op AC&W Opr	27330		6 A/2C
Op AC&W Opr	27350		6 A/1C
Sr AC&W Opr	27350		4 S/Sgts
AC&W Supervisor	27370		2 M/Sgts
Comm Opns Helper	29010		11 A/3C
Automotive Mechanic	47151		1 A/1C
Sr Auto Mechanic	47151		1 S/Sgt
Apprentice Clerk	70230		1 A/2C
Draftsman	99350		1 A/1C
Plotter-Teller Team (2)			
Opn AC&W Opr	27330		2 A/2C
AC&W Opr	27350		2 A/1C
Comm Opns Helper	29010		4 A/3C
		20	73

ATT #2 to TAB "E"
Proposed Plan for
Recovery Phase of
Project "GRAYBACK"



SECRET 56043

[redacted]

ATTACHMENT # 1

1. ADDRESS DESIGNATORS: The Address Designators to be used in transmitting messages from the aircraft for the Tactical Recovery Control Center and Tactical Operations Centers are as follows:

a. Tactical Recovery Control Center — FEVER BRAIN

b. TOC 744th Troop Carrier Squadron — FIRE CAMP (ALFA)

c. TOC Det #1, 744th Troop Carrier Squadron — FIRE CAMP (BRAVO)

d. TOC 745th Troop Carrier Squadron — FIRE CAMP (CHARLIE)

e. TOC Det. #1, 745th Troop Carrier Squadron — FIRE CAMP (DELTA)

f. TOC 746th Troop Carrier Squadron — FIRE CAMP (ECHO)

g. TOC Det. #1, 746th Troop Carrier Squadron — FIRE CAMP (FOXTROT)

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HEADQUARTERS
456TH TROOP CARRIER WING (M)
Charleston Air Force Base
Charleston South Carolina

9 September 1955

WOT

SUBJECT: Amendment Number 1 to Operations Order 1-55, dated 22 August 1955

TO: See Distribution

The attachment is a revision to Headquarters 456th Troop Carrier Wing (M) Operations Order 1-55, dated 22 August 1955.

BY ORDER OF THE COMMANDER:

/s/t/JOSEPH F MISENKO
Major, USAF
Adjutant

1 Incl
Appendix 3 to Annex A

Distribution:

6 - Comdr, 744th TCS
6 - Comdr, Det 1, 744th TCS
6 - Comdr, 745th TCS
6 - Comdr, Det 1, 745th TCS
6 - Comdr, 746th TCS
6 - Comdr, Det 1, 746th TCS
2 - Each Wing Staff Section
10 - File

INFO:

5 - Comdr, 1st AD
5 - Comdr, TAC
5 - Comdr, 18th AF

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TAB J

TYPICAL AIRCRAFT LOAD

Maximum Gross Weight 72,800 lbs

Basic Aircraft	46,600 Lbs
Oil (100 gallons)	750 Lbs
Water (57 gallons)	399 Lbs
Crew (7 Personnel)	1,400 Lbs
*Crew Baggage	1,260 Lbs
**Emergency Equipment	566 Lbs
Fuel (3465 gallons)	20,790 Lbs
***Extra Equipment	1,024 Lbs
TOTAL	72,789 Lbs

*Crew Baggage	**Emergency Equipment		***Extra Equipment	
100 lbs personal	One - 20 man raft	165 lbs	4 Chocks	40 Lbs
45 lbs fly gear	Eight - 1 Man dinghy	160 lbs	2 Tool Kits	100 lbs
35 lbs field equipment	Three - D-1 Kits	135 lbs	Extra Oil	50 lbs
180 x 7 = 1260 lbs	Eight-Exposure Suits	32 lbs	2 Extra Poles	350 lbs
	One - Gibson Girl	40 lbs	Rec Gear Box	110 lbs
	Five - URC-4	34 lbs	Eleven - Extra parachutes	374 Lbs
		566 Lbs		1024 lbs

Appendix 3 to Annex A
OPORD 1-55, 456TCW(M)
Page 1 of 1 page

9 September 1955

OPERATIONS ORDER)
NUMBER 1-55)

HEADQUARTERS 456TH TROOP CARRIER WING (M)
Charleston Air Force Base, Charleston, S. C. 22 August 1955

CHART AND MAP REFERENCES: As required.

TASK ORGANIZATIONS:

a.	Headquarters 456th Troop Carrier Wing (M)	Colonel James L. Daniel, Jr.
b.	744th Troop Carrier Squadron (M)	Major Guy E. Ridgway
c.	Det 1, 744th Troop Carrier Squadron (M)	Major Harry B. Ocker
d.	745th Troop Carrier Squadron (M)	Major Joseph G. Nellor
e.	Det 1, 745th Troop Carrier Squadron (M)	Major Jack B. Robbins
f.	746th Troop Carrier Squadron (M)	Major James L. Hill
g.	Det 1, 746th Troop Carrier Squadron (M)	Major Billy J. Gault
h.	Hq Sq 456th Troop Carrier Wing (M)	Captain James R. Curran

1. GENERAL SITUATION: A requirement exists to deploy the 456th Troop Carrier Wing Headquarters and its six (6) assigned squadrons and detachments to locations within the Far East and Alaskan Theatre of Operations. To insure minimum disruption of the wings operational capability and continuation of training at Charleston for as long as possible the following movement phases are established:

Phase I: Movement of an advanced echelon by air to each designated site of operation. This echelon will prepare the operating location to receive the equipment, aircraft and personnel of the parent unit.

Phase II: Movement by water of the flyaway kits and UME (less 31,000 lbs minimum essential UME) to be in place at each operating location not later than 1 November 1955.

Phase III: Movement of the main body will be accomplished in three

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increments:

Increment #1: Movement of personnel other than minimum aircrews and support personnel by surface transportation.

Increment #2: Movement of Tactical Aircraft and Minimum crew.

Increment #3: Movement of Support personnel with minimum essential UME by Surface and Air.

Phase IV: Movement of Rear Echelon personnel and TAT along with Headquarters Squadron Support Personnel and TAT by air.

a. Enemy Forces: Omitted.

b. Friendly Forces:

(1) Alaskan Air Command will provide:

(a) Normal transient refueling, servicing, billeting and messing for Tactical Aircraft enroute through the Alaskan Theatre.

(b) Required administrative and logistical support for units at operating sites located in the Alaskan Theatre.

(c) Airlift of the support element of the 745th Squadron from Whittier Alaska to Adak Alaska on approximately 10 November 1955. (See Annex 'A', "Movement Table")

(2) Far East Air Forces will provide:

(a) Normal transient refueling, servicing, billeting and messing for Tactical Aircraft enroute through the Far Eastern Theatre.

(b) Required administrative and logistical support for units at operating sites located in the Far Eastern Theatre.

(c) Personnel and equipment to man and operate a balloon recovery control center at Shiroi Air Base, Japan.

(d) Transportation for those personnel and equipment off loading at Yokohama and requiring further transportation to Johnson Air Base, Shiroi Air Base, Misawa Air Base and Iwo Jima. (See Annex 'A' "Movement Table")

(3) Tactical Air Command will provide:

(a) Enroute maintenance support at McChord Air Force Base for Tactical Aircraft deployment and be prepared to provide enroute maintenance support at Ardmore Air Force Base, Oklahoma if required as an alternate enroute stop.

(b) Approximately six (6) C-124 sorties for the deployment of the advanced echelon and approximately nine (9) C-124 sorties for the deployment of the support elements of the 744th, Det 1, 744th, Det 1, 745th, Det 1, 746th Troop Carrier Squadrons and the deployment of the rear echelon of all units.

2. MISSION: This Wing will deploy the Wing Headquarters and six (6) tactical units to operating location within the Alaskan and Far East Theatres of Operation and be prepared to accomplish recovery of vehicles as directed by the Wing Commander.

3. TASKS OF SUBORDINATE UNITS:

a. All task units will:

(1) Deploy with personnel, equipment and aircraft so as to be operationally ready not later than 1 December 1955.

(2) Provide enroute maintenance support at their operating locations for Tactical Aircraft of this wing as required.

(3) Provide sufficient qualified Liaison Officers at their operating locations to expedite the billeting, messing and clearing of Tactical Aircraft through their locations as required.

(4) Be prepared for a P.O.M. inspection by representatives of Hq 1st Air Division (MS), during the period 7 thru 12 September 1955.

x. General Instructions:

(1) Commanders are responsible for winterization of all aircraft in accordance with appropriate Tech Orders and such additiona instructions as contained herein.

(2) All items of UME and Flyaway Kits will be packed, crated and shipped IAW instructions contained in Annex 'B', "Logistics" of this order.

(3) Each Tactical Aircraft will have a maximum crew of seven (7) personnel. Footlockers of these crew members will be shipped as Hold Baggage with water movement of the main body.

(4) All flights of Tactical Aircraft will be conducted in compliance with AFR 60-8, AFR 60-16 and AFR 60-22.

(5) Existing directives concerning customs immigration and quarantine will be complied with.

(6) Flight of Tactical Aircraft will be accomplished during VFR in Squadron Formation V's in 'trail'. During IFR conditions aircraft will fly in corridor type operation. The Squadron Commander will be responsible for proper dispatching of aircraft.

(7) Each crew will prepare a For 175 and flight plan (less winds) for each leg of the flight prior to departing Charleston Air Force Base.

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(8) Gross weight of aircraft will be that weight computed from the Safe Single Engine Charts devised by 18th Air Force but in no case will exceed 72,800 lbs. Form F will be prepared for each aircraft for each take-off.

(9) Parking at bases enroute will be as directed by the Base Commander.

(10) Altitudes, times and airspeeds. (See ANNEX 'A')

4. ADMINSTRATION AND LOGISTICAL MATTERS: See ANNEX 'B'.

5. COMMAND AND COMMUNICATIONS:

a. Communications:

(1) Existing Navigation Aids, Facility Charts, Let-Down Manuals will be utilized.

(2) Communication Air to Ground will be in accordance with standard CEI procedures.

(3) Daily flight progress reports will be forwarded to Commander 456th Troop Carrier Wing (M) at Shiroi Air Base, Japan.

(4) Normal emergency communications procedures will be followed.

b. Command:

(1) 456th Troop Carrier Wing (M) Commander, Colonel James L Daniel Jr.
456th Troop Carrier Wing (M) Deputy Commander, Colonel Jay D Bogue.

(2) Operational Control:

(a) Prior to departure from Charleston Air Force Base the Deputy Wing Commander will retain Operational Control

(b) Upon departure from Charleston Air Force Base and until arrival at operating location the Squadron Commander will assume operational control

(c) Upon arrival at operating location the Wing Commander will assume Operational Control

(3) Command Post:

Hq 456th Troop Carrier Wing (M), Charleston AFB, Prior to 15 October 1955.

Hq 456th Troop Carrier Wing (M), Shiroi AB Japan, 15 October to completion of mission.

(4) Wing Mobility Officers are as follows:

Logistics	CWO (W-3)	RICHARD A BANKERT
Personnel	Major	ROBERT L. BODELL
Administration	Major	JOSEPH F. MISENKO
Plans & Operations	Captain	LAWRENCE J. HOLLAND

JAMES L. DANIEL, JR.
Colonel, USAF
Commander

ANNEXES
'A' Operation Plan
'B' Administration & Logistics

OFFICIAL:

JAY D. BOGUE
Colonel, USAF
Deputy Commander

DISTRIBUTION:
6 - Comdr 744th TCS
6 - Comdr, Det 1, 744th TCS
6 - Comdr, 745th TCS
6 - Comdr, Det 1, 745th TC S
6 - Comdr, 746th TCS
6 - Comdr, Det 1, 746th TCS
2 - Each Wing Staff Section
10 - File

INFO:
5 - Comdr, 1st AD
5 - Comdr, TAC
5 - Comdr, 18th AF

ANNEX "A"

CHART OR MAP REFERENCES:

1. GENERAL:

a. The Troop Carrier Units designated in this plan are charged with the following responsibilities:

(1) Preparation of all UME and Flyawa Kits for air and/or surface movement as required. (See Appendix 2 Movement Table)

(2) Processing of supplies, equipment, aircraft and personnel for overseas movement IAW existing directives.

(3) Deployment and support of unit aircraft as required and IAW instructions contained in this order.

(4) Leading of support aircraft under the supervision of the Aircraft Commander or his designated representative.

b. All refueling, messing and billeting enroute will be the responsibility of the Base Commander concerned. Unit Liaison officers at each base will be responsible for effecting the liaison necessary for the expeditious accomplishment of the mission. These Liaison Officer will expedite utilization of base facilities by enroute aircraft and coordinate local movement control of these aircraft within the overall direction of the controlling agency.

c. The Wing Materiel Officer will be responsible for effecting coordination with Charleston Air Force Base Facility chiefs for transportation of personnel, equipment and supplies to the POE for overseas shipment.

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d. The Wing Operations Officer will effect the necessary liaison with CAA and Flight Service to insure a rapid uninterrupted flow of Tactical Aircraft traffic to their appropriate destination.

2. CONCEPT OF OPERATIONS:

a. Period: Present thru 1 Sep 55.

The advanced echelon has been deployed to their respective sites of operations and are in the process of setting up quarters, office and shop space along with required USE from the base so as to be completely prepared to receive the UME & Flyaway Kits and main body of personnel. The remainder of each unit remains at Charleston in order to complete crew training and preparation for overseas movement. Extensive packing and crating of UME & Flyaway kits will be accomplished during this period.

b. Period: 1 Sep thru 1 Oct 55.

All UME and Flyaway Kits (less 31,000 lbs of MIN essential UME for aircraft support) will be packed and rafted so as to be ready for shipment to the port not later than 15 Sep 55. Training and Support of Moby Dick Hi will continue during this period along with the preparation of aircraft for overseas deployment. (Engine changes, TOC, etc.) Between 9 and 12 Sep 55 a team from Hq 1st AD (MS) will conduct a POM inspection of the 456th Troop Carrier Wing. Maximum utilization must be made during this period of all personnel and equipment prior to the readiness dates established.

c. Period 1 Oct thru 13 Nov 55.

During this period a general stand-down of aircraft is established prior to deployment. All UME other than 31,000 of minimum essential will have been shipped to the port. The main body of personnel depart Charleston enroute to

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the port and overseas approximately 8-10 October. Subsequent to 10 Oct 55 all efforts will be pointed towards readying aircraft for overseas movement. To accomplish this each unit will have crew members in addition to the personnel and equipment listed in the Phas II Support Movement and the Rear Echelon personnel. The services of these personnel and equipment will be last as they a re phased out in accordance with a ttached Movement Schedule. During this phasing out period the Wing Materiel Officer will coordinate the use of Maintenance personnel and equipment for most effective utilization.

d. Period: 14 Nov thru 25 Nov 55.

At this time only rear echelon personnel will be located at Charleston AFB. All other personnel, equipment and aircraft will be enroute or at their destination. The rear echelon personnel will close out and clear all base accounts and property charged to the 456th Troop Carrier Wing. This rear echelon will then be airlifted to their appropriate destinations departing Charleston on 25 Nov 55.

APPENDICIES:
1. Route Overlays
2. Movement Schedule
3. Typical Acft Load.

JAMES L DANIEL JR
Colonel, USAF
Commander

OFFICIAL

JAY D BOGUE
Colonel, USAF
Deputy Commander

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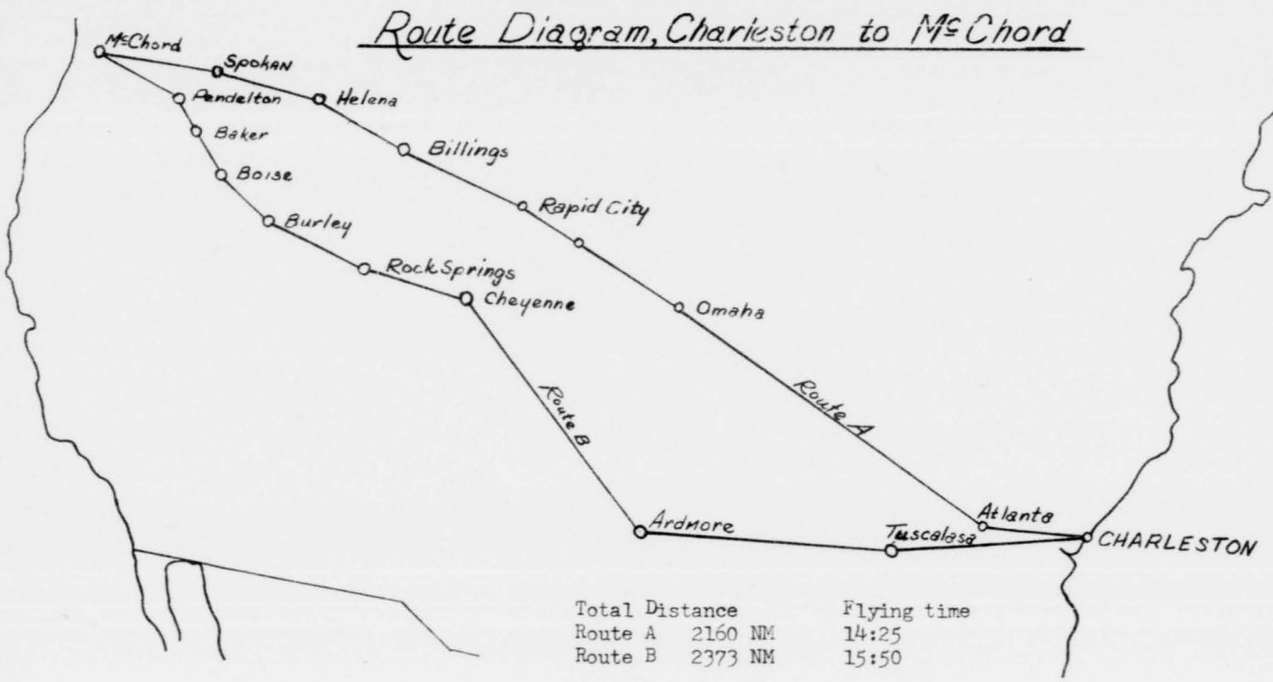
Route Diagram, Charleston to McChord



Total Distance — Flying time

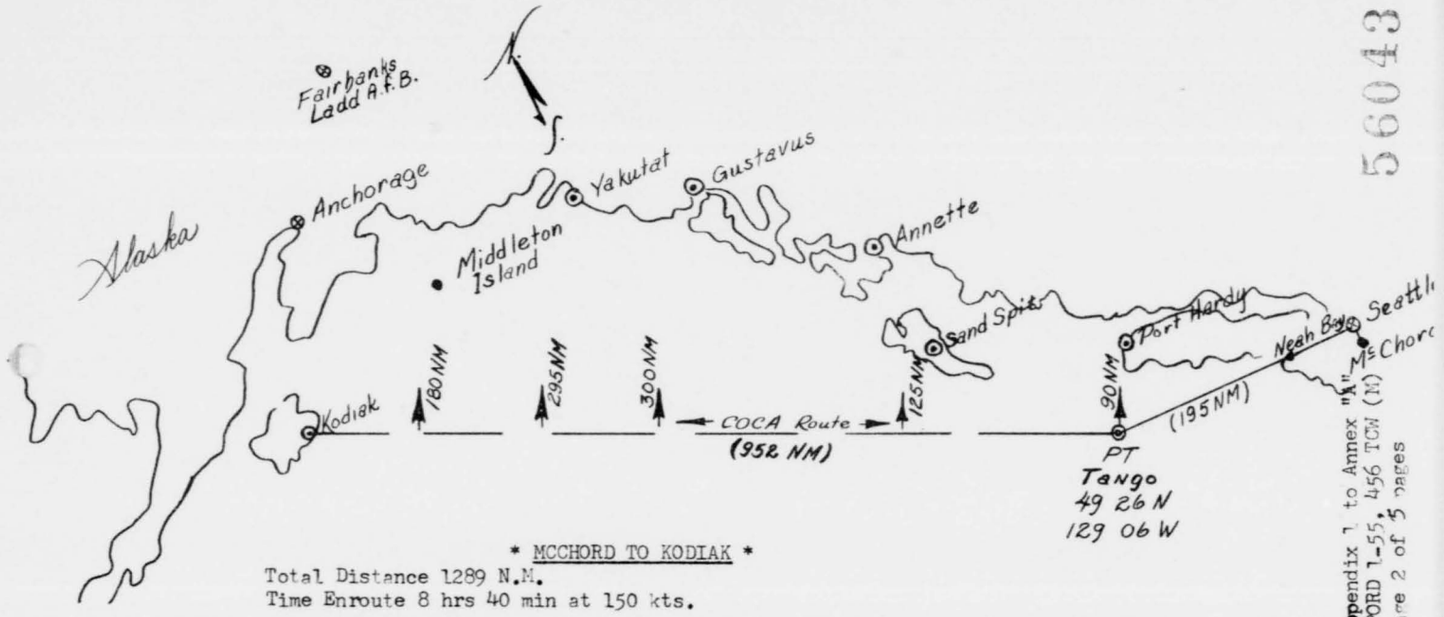
Route A	2160 NM	14:25
Route B	2373 NM	15:50

Appendix 1 to Annex "A"
OPORD 1-55, 456th TCW (M)
Page 1 of 5 pages

EMERGENCY FIELDS					
FIELD	RUNWAY	FUEL	RADIO RANGE	RADIO BEACON	ILA
Sewart	H80	A/		0	0
Offutt	H61	A/		0	0
Ellsworth	H105	A/	0	0	0
Great Falls	H95	A/	0		0
Fairchild	H105	A/			0
Barksdale	H100	A/	0		0
Lowry	H100	A/	0		0
Tinker	H78	A/	0		0
Mt [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TIME ENROUTE WITH HEADWIND		10K	20K	30K
TAS (knots)				
150	Route A	15:25	16:37	18:00
	Route B	17:00	18:15	19:45
160	Route A	14:25	15:25	16:37
	Route B	15:50	17:00	18:15

Route B includes refueling stop at Ardmore AFB Okla



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* MCCHORD TO KODIAK *

Total Distance 1289 N.M.
Time Enroute 8 hrs 40 min at 150 kts.

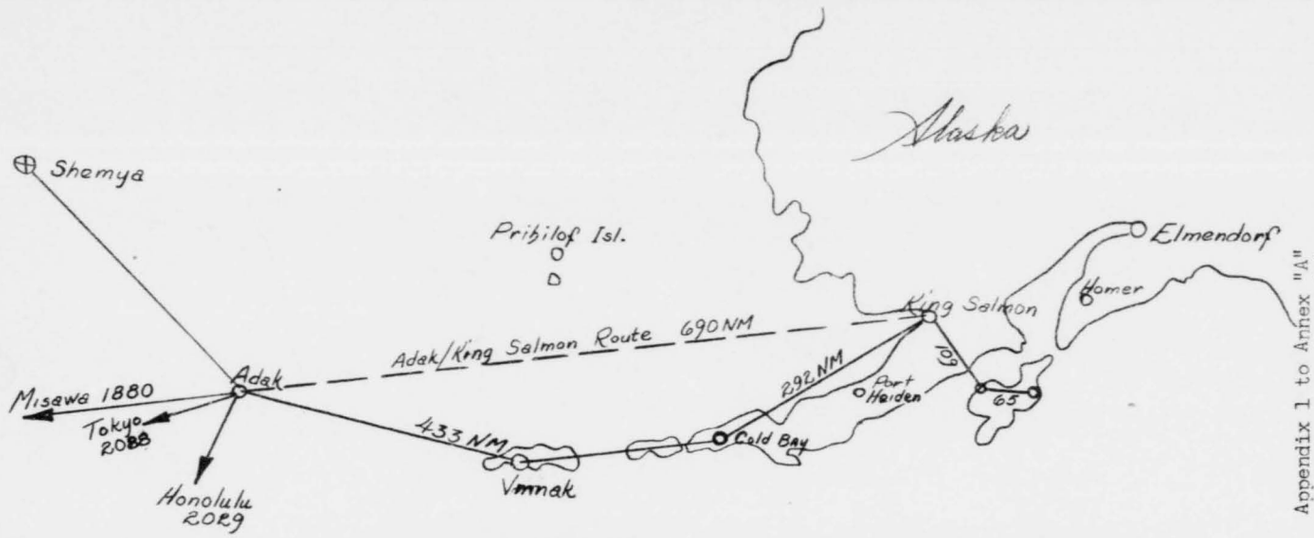
EMERGENCY FIELDS					
FIELDS	RUNWAY	FUEL	RADIO RANGE	RADIO BEACN	ILA
Port Hardy	H50	A/	0		
Sand Spit	H51	--	0	0	
Annette Is	H75		0		
Gustuvas	H75		0	0	ILS
Yakutat	H78		0	0	
Middleton Is	35			0	
Elmendorf	H85	A/	0	0	GCA
Ladd AFB	H92	A/	0	0	GCA

NAVIGATION AIDS

Loran Available 1L2 1L3 2H5 2H4 (Ground waves)
Celestial
Altimetry (Pressure Lines of Position & Bellamy Drift
Radio Bearings

Time enroute with Headwind TAS (knots)	10K	20K	30K	40K
150	9:12	9:55	10:45	11:42
160	8:40	9:15	9:55	10:45

Appendix 7 to Annex "K"
OPORD 1-55, 456 TCW (M)
Page 2 of 5 pages



* KODIAK TO ADAK NAS *

Total Distance 835 N.M.
Flight Time 5 hrs 30 min at 150 kts.

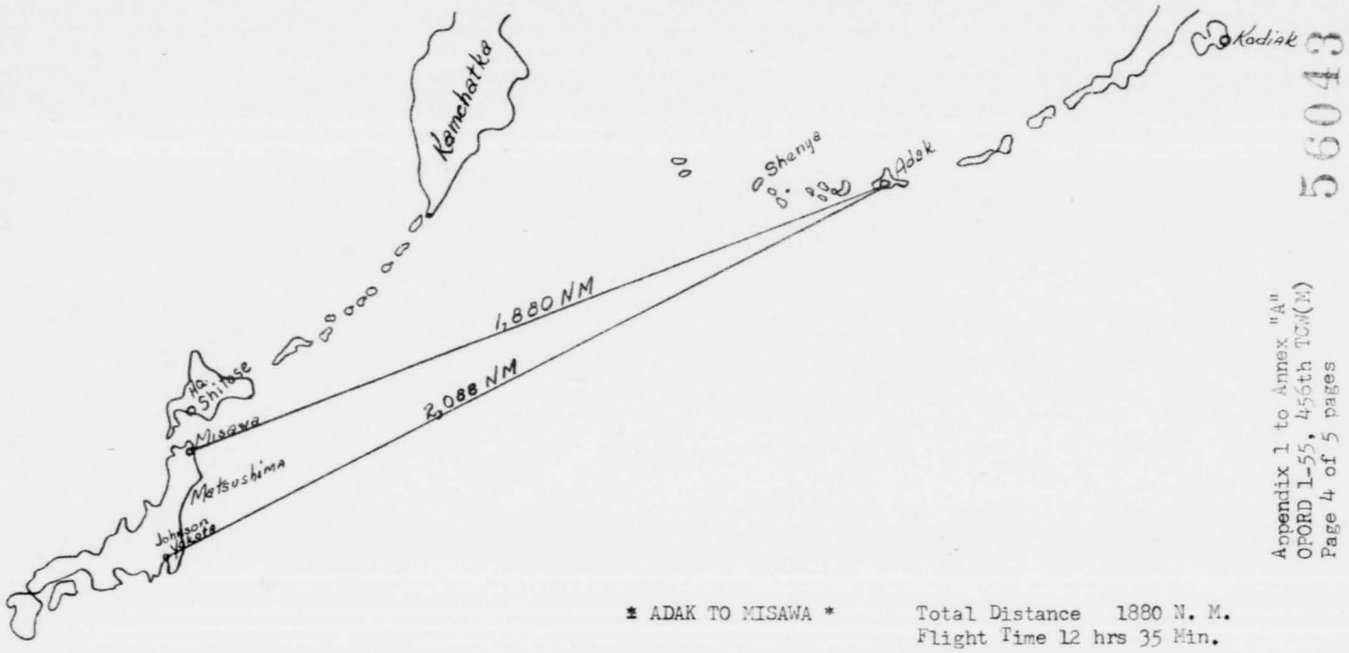
EMERGENCY FIELDS

FIELDS	RUNWAY	FUEL	RADIO RANGE	RADIO BEACON	ILA
King Salmon	H75	A/	0		GCA
Cold Bay	H75	A/	0	0	
Umnak				0	
Shemya	H100				

NAVIGATION AIDS

Loran 1L7 1L6 (Ground Waves)
Radio Bearings
HF/DF
VHF/DF
Celestial
Altimetry (pressue lines of position and Bellamy Drift)

Flight Time with Headwind TAS (Knots)	10K	20K	30K	40K
150	5:58	6:25	6:58	7:35
160	5:30	5:58	6:25	6:58



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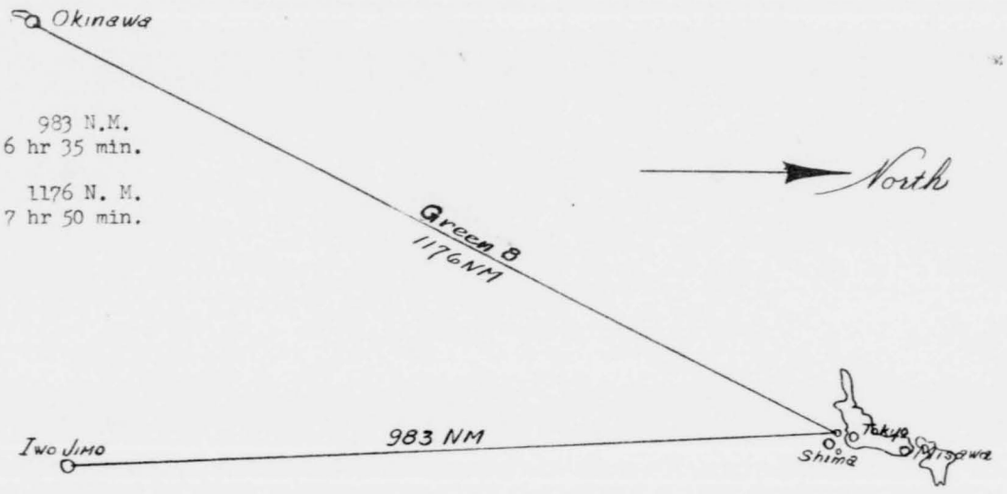
* ADAK TO MISAWA * Total Distance 1880 N. M.
Flight Time 12 hrs 35 Min.

EMERGENCY FIELDS					
FIELDS	RUNWAY	FUEL	RADIO RANGE	RADIO BEACON	ILA
Shemya	H100				
Matsushima	H60			0	
Chitose	H92	A-1		0	GCA
Johnson	H60	A-1	0	0	
Yokota	H80	A-1	0	0	GCA

NAVIGATION AIDS				
Loran 4H6 4H7 2H5 2E4				
Celestial				
HF/DF				
VHF/DF				
Altimetry (Pressure Lines of Position - Bellaway Drift)				
Radio Bearings				
Time Enroute with Headwind TAS (Knots)	10K	20K	30K	40K
150	13:25	14:26	15:40	17:05
160	12:35	13:25	14:26	15:40

Route Diagram Misawa to Okinawa and Iwo Jima



DISTANCE:
Misawa to Iwo Jima 983 N.M.
Estimated Flt time 6 hr 35 min.

Misawa to Okinawa 1176 N. M.
Estimated Flt Time 7 hr 50 min.

Appendix 1 to Annex "A"
OPORD 1-55, 456th TCW (M)
Page 5 of 5 pages

EMERGENCY FIELDS ENROUTE				
Field Runway	Fuel	Radio Range	Radio Beacon	ILA
Matsushima H60			0	
Johnson H70	A/	0		0
Yokota H80	A/	0		0
Tachikawa H50	A/	0		0
Haneda H84	A/	0		0

NAVIGATION AIDS					
Loran 4H6 4 H7					
Radio Bearings HF/DF VHF/DF					
Flight Time w/Headwind TAS (Knots)		10K	20K	30K	40K
150	Iwo Jima	7:02	7:35	8:12	8:55
	Okinawa	8:23	9:00	9:47	10:46
160	Iwo Jima	6:35	7:02	7:35	8:12
	Okinawa	7:50	8:23	9:00	9:47

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PHASE I ADVANCED ECHELON (Air Movement)

UNIT	DESTINATION	PERSONNEL		DEPT DATE CHASN	WEIGHT & CUBE				REMARKS:
		OFF	AMN		Pers & Bag		Cargo		
					Wt	Cube	Wt	Cube	
Hq Sq 456	Shiroi	5	11	2 Aug	3900	78	7362	331.7	1. Three (3) officers of Hq Sq and three (3) amn of 746-1 delivered the Administrative Acft overseas.
744 TCS	Kadena	2	18	8 Aug	6000	120	17,500	1172.0	
744-1 TCS	Iwo Jima	2	20	9 Aug	5752	132	18,337	1286.0	
745 TCS	Adak	2	20	4 Aug	6600	132	18,752	716.4	
745-1 TCS	Misawa	2	20	9 Aug	6600	132	17,816	710.0	
746 TCS	Kodiak	2	19	6 Aug	6300	126	22,977	1341.0	
746-1 TCS	Johnson	2	23	2 Aug	6900	138	12,744	291	
TOTALS		17	131		42,052	858	115,488	5848.1	

PHASE II FLYAWA KIT & UME (Surface Movement)

	READINESS DATE CHASN	DESIG SHIPPING	ARRIVAL DATE AT DEST	PORT	DESTINATION	UME		FLYAWAY KIT		TOTAL	
						Weight	Cube	Weight	Cube	Weight	Cube
744	15 Sep	7410-BX	Not later than 1 November 1955	Frisco	Kadena	135,524	10,571	74,677	6,003	210,201	16,574
744-1	15 Sep	7410-EX		Frisco	Iwo Jima	129,851	13,146	75,595	5,730	205,446	18,876
745	15 Sep	7410-CX		Seattle	Adak	161,967	12,757	91,742	7,465	253,709	20,222
745-1	15 Sep	7410-FX		Frisco	Misawa	169,715	14,108	93,513	7,039	263,228	21,147
746	15 Sep	7410-DX		Seattle	Kodiak	145,383	14,298	103,857	8,287	249,240	22,585
746-1	15 Sep	7410-GX		Frisco	Johnson	128,269	13,620	125,015	11,169	253,284	24,789
Hq 456	15 Sep	7410-AX		Frisco	Shiroi	18,919	1,216	-----	----	18,919	1,216
TOTALS	----			---	-----	889,628	79,716	564,399	45,693	1,454,027	125,409

Note; Readiness date at the Port will be supplied by the appropriate Port Commander

PHASE III PERSONNEL MAIN BODY (Surface Movem

UNIT & DESIGNATOR	PERSONNEL			TAT		READINESS DATE		PORT & SAILING DATE	ARRIVAL PLACE & DATE	NA OF SH
	OFF	CIV	AMN	WEIGHT	CUBE	CHASN	PORT			
Hq 456 TCWg 7410-A	5	0	48	12,582	317	8 Oct	**	Frisco 20 Oct	Yokohama 3 Nov	Mo
744 TCS 7410-B	4	2	124	19,275	1265	10 Oct	* *	Frisco 22 Oct	Okinawa 9 Nov	And
744-1 TCS 7410-E	2	3	123	30,200	1250	10 Oct	* *	Frisco 22 Oct	Yokohama 4 Nov	And
745 TCS 7410-C	5	3	165	58,200	1746	5 Oct	* *	Seattle 17 Oct	Adak 23 Oct	Fr
745-1 TCS 7410-F	*6	2	122	50,200	1016	8 Oct	* *	Frisco 20 Oct	Yokohama 3 Nov	Mo
746 TCS 7410-D	5	2	166	31,780	1922	9 Oct	* *	Seattle 21 Oct	Kodiak 26 Oct	Fu
746-1 TCS 7410-G	4	2	118	22,500	965	8 Oct	* *	Frisco 20 Oct	Yokohama 3 Nov	M

*WOJG Bice assigned to Hq 456 TCWg wi
* *To be announced by the appropriate P

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PHAS III SUPPORT MOVEMENT (Surface)

UNIT & DESIGNATOR	PERSONNEL		CARGO		READINESS CHASN	DATE PORT	PORT & SAILING DATE	NAME OF SHIP	A P D
	OFF	AMN	WEIGHT	CUBE					
745 TCS 7410-CCX	1	56	31,000	3200	25 Oct	* *			Ala
746 TCS 7410-DDX	1	56	31,000	3200	25 Oct	* *			11
TOTAL:	2	112	62,000	6400					

* * To be announced by the appropriate Port

PHASE III PERSONNEL MAIN BODY (Surface Movement)

UNIT & DESIGNATOR	PERSONNEL			TAT		READINESS DATE		PORT & SAILING DATE	ARRIVAL PLACE & DATE	NAME OF SHIP	DESTINATION	REMARKS:
	OFF	CIV	AMN	WEIGHT	CUBE	CHASN	PORT					
Hq 456 TCWg 7410_A	5	0	48	12,582	317	8 Oct	**	Frisco 20 Oct	Yokohama 3 Nov	Morton	Shiroi AB	FEAF will provide trans from port to destination
744 TCS 7410_B	4	2	124	19,275	1265	10 Oct	* *	Frisco 22 Oct	Okinawa 9 Nov	Anderson	Kadena AB	FEAF will provide trans from port to destination
744-1 TCS 7410_E	2	3	123	30,200	1250	10 Oct	* *	Frisco 22 Oct	Yokohama 4 Nov	Anderson	Central AB	FEAF will provide trans from port to destination
745 TCS 7410_C	5	3	165	58,200	1746	5 Oct	* *	Seattle 17 Oct	Adak 23 Oct	Freeman	Adak NAS	AAC will provide trans from port to destination
745-1 TCS 7410_F	*6	2	122	50,200	1016	8 Oct	* *	Frisco 20 Oct	Yokohama 3 Nov	Morton	Misawa AB	FEAF will provide trans from port to destination
746 TCS 7410_D	5	2	166	31,780	1922	9 Oct	* *	Seattle 21 Oct	Kodiak 26 Oct	Funsten	Kodiak NAS	AAC will provide trans from port to destination
746-1 TCS 7410_G	4	2	118	22,500	965	8 Oct	* *	Frisco 20 Oct	Yokohama 3 Nov	Morton	Johnson AB	FEAF will provide trans from port to destination

*WOJG Bice assigned to Hq 456 TCWg will deploy with Det 1, 745 TC Sq.
* *To be announced by the appropriate Port Commander.

PHAS III SUPPORT MOVEMENT (Surface)

UNIT & DESIGNATOR	PERSONNEL		CARGO		READINESS CHASN	DATE PORT	PORT & SAILING DATE	NAME OF SHIP	ARRIVAL PLACE & DATE	DEST	REMARKS.
	OFF	AMN	WEIGHT	CUBE							
745 TCS 7410_CCX	1	56	31,000	3200	25 Oct	* *			Whittier, A Alaska 10Nov	Adak	AAC will furnish trans from Whittier to Adak NAS
746 TCS 7410_DDX	1	56	31,000	3200	25 Oct	* *			Kodiak 11 Nov 55	Kodiak	
TOTAL:	2	112	62,000	6400							

* * To be announced by the appropriate Port Commander

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PHASE III SUPPORT MOVEMENT (Air)

UNIT & DESGINATOR	PERSONNEL		CARGO		READINESS DATE AT CHASN	DEPARTURE CHASN	DESTINATION AND ARRIVAL TIME	REMARKS
	OFF	AMN	WEIGHT	CUBE				
744TCS 7410-BZZ	2	41	31,000	3200	11 Nov	12 Nov	Kadena AB 17 Nov	1. Each unit will have two C-124 acft for this airlift. Pers will be computed at 315 lbs each. Footlockers will not accompany pers but will go as hold baggage on Phas III, Water Movement of pers. Units will prepare manifests prior to readiness date and acft will be loaded day prior to departure. 2. Each unit will appoint a project officer to aid in briefing, messing and transportation of aircrews
744-1TCS 7410-EZZ	1	42	31,000	3200	11 Nov	12 Nov	Central AB 17 Nov	
745-1TCS 7410-FZZ	1	42	31,000	3200	11 Nov	13 Nov	Misawa AB 18 Nov	
746-1TCS 7410-GZZ	2	41	31,000	3200	11 Nov	13 Nov	Johnson AB 18 Nov	
TOTALS	6	168	24,000	12800				

PHASE III TACTICAL AIRCRAFT (Air)

UNIT & DESIGNATOR	PERSONNEL		NO ACFT	DEPT DATE CHASN	MCCHORD		KODIAK		ADAK		MISAWA		JOHNSON		CENTRAL		KADENA	
	OFF	AMN			ARR	DEPT	ARR	DEPT	ARR	DEPT	ARR	DEPT	ARR	DEPT	ARR	DEPT	ARR	DEPT
746 TCS 7410-DZ	32	24	8	1 Nov	1 Nov	2 Nov	2 Nov	---	---	---	---	---	---	---	---	---	---	---
745 TCS 7410-CZ	32	24	8	4 Nov	4 Nov	5 Nov	5 Nov	6 Nov	6 Nov	---	---	---	---	---	---	---	---	---
745-1TCS 7410-FZ	32	24	8	7 Nov	7 Nov	8 Nov	8 Nov	9 Nov	9 Nov	10 Nov	10 Nov	---	---	---	---	---	---	---
746-1TCS 7410-GZ	32	*25	8	10 Nov	10 Nov	11 Nov	11 Nov	12 Nov	12 Nov	13** Nov	14 Nov	15 Nov	15 Nov	---	---	---	---	---
744-1TCS 7410-BZ	35	21	8	12 Nov	12 Nov	13 Nov	13 Nov	14 Nov	14 Nov	15 Nov	15 Nov	16 Nov	Fly Over		16 Nov	---	---	---
744TCS 7410-BZ	32	24	8	13 Nov	13 Nov	14 Nov	14 Nov	15 Nov	15 Nov	16 Nov	16 Nov	17 Nov	Fly Over		---	---	17 Nov	---
Hq 456 7410-AZ	5	0	1	14 Nov	14 Nov	15 Nov	15 Nov	16 Nov	16 Nov	17 Nov	17 Nov	18 Nov	18 Nov	---	---	---	---	---
TOTALS	200	142	49															

*Engineers from 746-1 will act as Engineer on acft being flown by Hq 456 TCWG

**746

PHASE IV REAR ECHELON MOVEMENT (Air)

UNIT	Personnel		Cargo		DEPT CHARLESTON	ARRIVE DESTINATION	REMARKS
	OFF	AMN	WEIGHT	CUBE			
746 TCS	1	4	500	50	Acft will be inplace Chas for loadin in sufficient time to depart Chas 25 Nov 55.	Acft will arrive at each destination in order as listed herein so as to arrive at the last destination (Kadena) NLT 1 December 1955	1. All personnel and baggage will be computed at 315 lbs each. Footlockers of these personnel will be shipped as hold baggage with water movement of main body of personnel. 2. Itinerary of C-124 Acft will be McChord, Kodiak, Adak, Misawa, Johnson, Iwo Jima and Kadena. 3. Designator for all units is 7410-AAIX *Civilian, Mr Stein included in this figure.
745 TCS	1	4	500	50			
745-1TCS	1	3	500	50			
746-1 TCS	1	4	500	50			
Hq 456 TCWg	*10	5	7,500	750			
744-1 TCS	1	5	500	50			
744 TC S	1	4	500	50			
TOTAL	16	29	10,500	1050			

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Appendix 2 to Annex "A"
OPORD 1-56, 456th TCW (M)
Page 5 of 5 pages

TYPICAL AIRCRAFT LOAD

Maximum Gross Weight 72,800 lbs

Basic Aircraft	46,600 lbs
Oil (100 gallons)	750 lbs
Water (57 gallons)	399 lbs
Crew (7 personnel)	1,400 lbs
*Crew Baggage	1,260 lbs
**Emergency Equipment	460 lbs
Fuel (3500 gallons)	21,000 lbs
***Extra Equipment	650 lbs
TOTAL	72,519 lbs

*Crew Baggage	**Emergency Equipment		***Extra Equipment	
100 lbs personal	One - 20 man raft	165 lbs	4 Chocks	40 lbs
45 lbs fly gear	Eight - 1 man dinghy	160 lbs	2 Took Kits	100 lbs
35 lbs field equipment	Three - D-1 Kits	135 lbs	Extra Oil	50 lbs
180 x 7 = 1260 lbs		460 lbs	2 Extra Poles	350 lbs
			Rec Gear Box	110 lbs
				650 lbs

ANNEX 'B'

ADMINISTRATION AND LOGISTICS

1. GENERAL: Each unit will be responsible for insuring their unit deploys will all assigned personnel, aircraft and equipment and effecting the proper coordination, selection and utilization of equipment and personnel to be used as support for this deployment. All directives will be adhered to, and aircraft and equipment will be in the best possible condition prior to deployment.

2. UNIT AIRCRAFT:

a. Engine Changes:

(1) All engines installed on operational aircraft will have a maximum operating time of 375 flying hours in accordance with Technical Order 00-25-4, dated 1 March 1955, revised 10 May 1955.

(2) The Wing Maintenance Officer will determine and coordinate the schedule of engine changes to permit proper control of aircraft engines being assembled by the base engine build-up shop.

(3) Ten (10) R-33 50-89 Engine Power Packs, complete with all accessories will be in place at each deployment site on arrival of the assigned aircraft except the fourteen (14) power packs to be prepared by the base engine build-up shop and shipped to deployment sites after the departure of this organization.

b. Propellors:

(1) All propellers will have Technical Order 3HA1-1-502 complied with prior to deployment. Propellers will be removed and shipped to WRAMA for compliance with Technical Order 3HA1-1-502 and will be returned with time zeroed; which will provide newly overhauled propellers for all aircraft.

(2) Ten (10) propellers, complete with all technical orders complied with will be in place at the deployment sites on arrival of the aircraft, crated and packed for overseas shipment. Maintenance personnel arriving at deployment sites by water transportation will immediately insure that a minimum of two (2) propellers are assembled prior to arrival of the first operational aircraft.

c. Inspections:

(1) The unit commander will insure that a periodic inspection is completed prior to departure of the unit aircraft. (AFM 75-37)

(2) All aircraft will have a minimum of fifty (50) hours to a periodic inspection remaining on deployment of the aircraft.

(3) The provisions of a letter from this headquarters authorizing 130 hours between periodic inspections will not apply for the final inspections performed prior to deployment of the aircraft. Although the final inspection will be for 130 hours, it will be accomplished within 15 flying hours prior to deployment.

(4) All aircraft will be winterized in accordance with Technical Order 1C-119B-7, dated 23 November 1953, revised 28 April 1955, prior to departure.

d. Technical Orders:

(1) All outstanding technical orders will be complied with prior to departure of aircraft from home station. (AFM 75-37)

(2) An accurate and complete list of outstanding technical orders not complied with, by aircraft serial number, will be submitted to the Wing Maintenance Officer on 1 October 1955. This list will

be all inclusive, with detailed explanation why technical order has not been complied with, for submission to Headquarters AMC, the only agency with authority for granting non-compliance waiver prior to overseas movement.

(3) No safety of flight technical orders will not be waived but will be complied with prior to departure.

e. Aircraft 263 Equipment:

(1) All retained 263 equipment will be carried on the unit aircraft.

(2) 263 equipment to be stored for the duration of operational mission will be disposed of in accordance with instructions received from headquarters AMC, Equipment to be stored and not deployed with each aircraft is:

1 APN-12 Received-Transmitter-Complete

2 APN-12 Control Boxes (#C-169A and #C-170)

1 APN-12 Indicator

14 Litter Strap Storage Bags, Short Litter Straps & Long Litter Straps

11 Litter Posts (78-313233 and 78-313223)

56 Litter Strap Assy

15 Troop Seats (78-771200, 78-771201, and 170-771229-30)

56 Troop Safety Belts (C-3 #FDL-78)

2 Tiedown Ring Stowage Bags

Tie down Rings
Tie down Devices
Cargo Tie Downs

(NOTE: Sufficient Tie Down Equipment will be retained to tie down aircraft in accordance with T.O.)

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2 Aerial Deliver Guid Curtains

5 APN-12 Antenna Assy (AT 225-APN)

20 Monorail Trollies

2 Cargo Loading Ramps (NOTE: Retain 2 Ramps per unit)

(3) A-16 Kits will be shipped with the UME Phase II surface shipment.

f. Aircraft Readiness: All aircraft will be completely processed, with the exception of minor maintenance, five (5) days prior to scheduled departure date from Charleston Air Force Base. (See Annex 'A').

3. FLY AWAY KIT (180 DAY):

a. Fly Away Kit for each unit will be packed for water shipment not later than 15 September 1955 and will be shipped IAW instructions received from appropriate Port Commander to arrive at the destination not later than 1 November 1955.

b. The Fly Away Kit of the 746, 745, Det 1, 746 and Det 1, 745 Squadrons will be unpacked immediately upon arrival at destination and be readily available for the enroute aircraft support of Tactical Aircraft deploying through their operatin location.

c. All outstanding requisitions for Fly-A-Way Kit will be cancelled 5 September 1955 and lists of shortages by squadron will be forwarded to the 3103rd Logistic Control Group, Oakland Army Base, California. Oakland Army Base will requisition all items appearing on the shortage lists and forward the items by aerial re-supply to the operating locations.

4. UNIT MISSION EQUIPMENT:

a. Shipment of UME is broken down into three (3) separate increments for each unit:

(1) Advanced Shipment: Those items of equipment necessary to the needs of the Advance Echelon to set up each operating location

in order to receive the remainder of the units equipment and personnel. This shipment accompanied the Advance Echelon Air movement.

(2) Support Shipment: This shipment includes approximately 31,000 pounds of minimum essential UME for each Tactical Squadron and will be shipped by both air and surface means to the appropriate destination. (745 and 746th Squadrons will ship their support equipment and personnel by surface means approximately 25 October 1955. The remaining squadrons UME will be utilized from 20 - October 1955 to 11 November 1955 to maintain aircraft).

(3) Main shipment will be accomplished by surface means. All UME other than listed in (1) and (2) above will be packed and crated and be ready for shipment by 15 September 1955. A final shortage list bearing the base requisition number, depot to which submitted and item number will be forwarded on 28 August 1955 to the 3103rd Logistic Control Group, Oakland Army Base, California. Action will be taken by the 3103rd to obtain these shortages from the appropriate depots and forward the items to the operating sites.

b. The Wing Materiel Officer will be responsible for the proper utilization of all UME equipment utilized for maintenance of aircraft subsequent to 15 September 1955 at Charleston Air Force Base.

c. Each unit will insure that all UME is immediately unpacked and made serviceable upon arriving at destination. The 746th, 745th, Det 1, 746th and Det 1, 745th Troop Carrier Squadrons will have sufficient UME available for the

support of Tactical Aircraft deploying through their bases.

5. SUPPLIES:

a. CPM supply will continue to function and support completely the aircraft of this wing until all aircraft have departed Charleston Air Force Base. This supply will be operated by personnel surplus to and not deploying with this wing and/or one (1) Supply Technician (64151) from each Tactical Squadron of this wing. The CPM supply account will be cleared as far as possible subsequent to the departure of the last Tactical Aircraft and prior to the deployment of the rear echelon. The completion of the clearing will be accomplished by those personnel presently TDY to CPM and surplus to the needs of the Wing prior to their returning to their parent organizations.

b. Each unit commander will insure that supply responsibility, accountability and control is maintained in accordance with Vol IV, AFM 67-1 and further that all supply accounts are properly cleared prior to the departure of the rear echelon.

c. 746th, 745th, Det 1, 746th and Det 1, 745th Units will be responsible for supplies required by Tactical Aircraft deploying through their bases.

6. ALLOWANCES OF CLOTHING & EQUIPMENT:

a. Unit will move to overseas destination with organizational clothing and equipment and individual equipment as authorized in current Organization Composition as augmented. Items listed in the UAL and MEAL code designations "WAB MAJ AF COMDR" (preceeding the unit of issue) are authorized with the exception of MEAL Code 39. Authority is granted to issue and retain lockers, trucks, within the allowance of one per airman.

b. Units will be fully equipped with individual equipment and organizational clothing and equipment as prescribed for the appropriate zone, Section II and III, Table of Allowances 1-21. Items annotated "WAB MAJ AIR COMMANDS" in Sections 2 and 3, TA1-21 are authorized.

c. All personnel will deploy with their full mandatory personal clothing allowance as prescribed in Vol X, AFM 67-1.

7. INSTRUCTIONS FOR SHIPMENT:

a. All organizational equipment shipped to water Port of Embarkation will be marked:

TO: Port Transportation Officer
Applicable POE

FOR: 7410 (Applicable Letters)

GU-1 (Kodiak)	GU-4 (Johnson)
GU-2 (Adak)	GU-5 (Kadena)
GU-3 (Misawa)	GU-6 (Iwo Jima)

For Example: A shipment to Johnson would be addressed as follows:

TO: Port Transportation Officer

San Francisco, California

FOR: 7410 - (Applicable Letters) - GU-4

b. Personnel traveling by water are authorized as cabin baggage the following:

(1) Airman - 1 Duffel Bag and one hand bag and field pack.

(2) Officers - 1 Type B-4, hand bag and field pack.

(3) All personnel both officers and airmen will depart home station wearing web belt complete with canteen, canteen cup and cover, plus field pack with two blankets, can meat, knife, fork and spoon. The gas mask will not be required to be worn.

c. Footlockers will accompany the personnel water move as "TAT" equipment and will be carried as hold baggage aboard the vessel.

d. Movement of personnel (Main Body) from home station to Port of Embarkation will be made by train. Readiness dates, deployment dates and arrival dates are as indicated in Movement Table (See Annex 'A').

8 UNIFORMS:

a. All movement of personnel both of officer and airmen will be in Class "A" uniform with the exception of the movement of the Tactical Aircraft which will be at the discretion of the Wing Commander. All airmen will have in an accessible readiness condition one complete sun-Tan and one complete blue uniform plus a clean pair of fatigues.

9. RATIONS:

a. Rations for surface movement will be furnished by the common carrier, i.e., train or boat.

b. In-flight lunches for the flight echelons will be the responsibility of the Aircraft Commander.

10. REPORTS: When the action directed herein has been accomplished, report will be prepared by Wing Statistical Services and sent to Headquarters Eighteenth Air force, by means of the Air Force Organization Status Change Report (RCS: AF-01) in compliance with AFR 20-49.

11. PERSONNEL:

a. Units of this headquarters will deploy at strength indicated below:

5 6043

Unit Strengths	Officers	Civilian	Airmen	Total
Hq 456th Trp Carr Wg (M)	*25	1	64	90
744th Trp Carr Sq (M)	41	2	211	254
Det 1, 744th Trp Carr Sq (M)	41	3	211	255
745th Trp Carr Sq (M)	41	3	269	313
Det 1, 745th Trp Carr Sq (M)	41	2	211	254
746th Trp Carr Sq (M)	41	2	269	312
Det 1, 746th Trp Carr Sq (M)	41	2	211	254
TOTALS:	271	15	1446	1732

*WOJG Bice of Hq 456 will ship with Det 1 of 745 TCS

The provision of paragraph 22a(1) and (2), AFM 75-37, are waived by par 11g of USAF message AFOOP-OC-C 41917, 17 June 1955. Deviations will be only as specifically authorized by this headquarters.

b. Requisitions for Personnel Replacements: Requests for personnel replacements will be directed to this headquarters which will in turn direct a requisition to Headquarters USAF, through the Commander, 1st Air Division (Metro Survey), SAC, Offutt AFB, Nebraska. Requisition for for aircrew members, key airmen personnel, and officers will be submitted as required and by the most expeditious means. Requisitions for other personnel will be submitted monthly, to arrive at this headquarters not later than the fifth working day of each month, in either letter form or by electrical means depending on time element and the interests of economy. These requisitions will not be submitted after the report due at this headquarters on the fifth working day of February 1956, unless an anticipated operational requirement so dictates.

c. Category B Freeze Status: Personnel assigned to units will immediately be placed in a Category B reporting status, providing they meet and continue

to meet the requirements of Section B, AFM 75-37. For the purpose of Project DRAG NET, the provisions of par 7a(1) and (2), Section c, Chapter 2, Part 1, AFM 35-11 are waived by paragraph 10e, letter Hq 18AF, OPR-L, Subject: movement order 456th Troop Carrier Wing (M), 23 June 1955, and paragraph 11g, message Hq USAF AFOOP-OC-C 41917, 17 June 1955. The provisions of par 9b(1), Section C, Chapter 2, Part 1, AFM 35-11, are waived by message 18AFPMP-O-1 7-1542, 25 July 1955, and message Hq USAF AFPMP-1-B 111463, 19 July 1955. Special requirements for retainability in this organization are as follows:

(1) Possess an AFS as shown on Unit Manning Documents at a skill level commensurate with the required degree of skill.

(2) Be physically qualified to perform duty in the AFS and physically qualified for overseas service at the location to which the unit of assignment is operating.

(3) Possess final or interim clearance for access to classified materiel through TOP SECRET for officers and through SECRET for Airmen.

(4) Have active duty service retainability through 1 May 1956. Personnel will not be removed from Category B freeze status without written approval of this headquarters.

d. Training Requirements: Training of individuals will be a continuing process as required by AFR 50-22 and other current directives. Special training for Project DRAG NET will be accomplished as directed by this headquarters.

e. Screening of Personnel for Deployment: Unit Commander will take necessary action to determine those personnel who are not eligible for deployment to the overseas destination. Such personnel will be made available to this headquarters for reassignment at the earliest practicable dat, but in no

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event later than fifteen (15) days prior to the deployment or discontinuance of the activity in which the individual is working. Deviations from this instruction will be permitted only upon written request through proper channels.

f. Readiness Date: For the purposes of administrative matters in which a time element is the deciding factor, the readiness date for the 456th Troop Carrier Wing (M) and it's subordinate units is the date the individual normally would deploy to the overseas location of his unit of assignment (Ref: Letter Hq 456th Troop Carrier Wing WPO MIL 2, Submission of Request for Pregnancy Deferment, 16 August 1955).

g. Disposition of Ineligible Personnel: All personnel surplus to the requirements of this organization will be reassigned as instructed by the commander, Eighteenth Air Force, except as listed below who will be reassigned to the prent organization at Charleston Air Force Base.

(1) Personnal on whom final action has not been received concerning compassionate reassignment, and who would fall under the provisions of the dislocation allowance law if moved PCS prior to request of final action on the reassignment request.

(2) Personnel assigned to this wing Prior to 1 March 1955 ineligible for Project DRAG NET at that time.

(3) Personnel in confinement.

(4) Personnel hospitalized.

(5) Personnel absent without leave.

h. Processing for Overseas Movement: Charleston Air Force Base, S.C., is designated as the Port of Embarkation for both air and surface moves as concerns processing of personnel for overseas movement (AFM 75-37). Unit Commanders

will be responsible for complete processing of individuals assigned. Personnel to be processed subsequent to deployment of the unit headquarters will be handled by the parent organization of Charleston Air Force Base, S.C. in accordance with AFM 35-6.

i. Personnel Records: Personnel records will accompany the unit upon deployment of the unit headquarters.

j. Forms 5: They will remain in the custody of the Unit Operations officer.

k. DD Form 93: The Unit Commander will be responsible for submitting to this headquarters an extra copy of DD Form 93, Record of Emergency Data, to be left in custody of the Commander, Charleston Air Force Base, as provided by par 28e, AFM 75-37.

l. Passports: Unit Commanders will determine requirements for passports for their personnel prior to 1 September 1955. Instructions in this matter will be obtained from the Staff Intelligence Officer, this headquarters (Ref: Ltr this Hq WIN MIL 7-4, Passports, 20 July1955).

m. Movement of Dependents, household goods or automobiles to the overseas destination is not authorized except for Colonels per message Hq USAF AFPMP AIMAJCOM 728/55, 20 June 1955.

n. Orders for Technical Representatives and other Civilian Personnel to accompany this headquarters or subordinate units will be issued by this headquarters as prescribed in Chapter 12, AFM 30-3.

12. DISLOCATION ALLOWANCES: Commanders of all units will take immediate and continuing action to screen all personnel assigned to the unit after 1 July 1955 to determine whether any individual has drawn or is eligible for a

dislocation allowance payment. Where it is determined that an individual is eligible or has drawn a dislocation allowance payment for travel in the current fiscal year, this headquarters will be so notified by the unit commander as required by letter, this headquarters, WPO MIL 10, Sample Letter, 30 July 1955. Additional references are:

a. WPO FIN 1-1 Personnel Policies Affecting Dislocation Allowance Payments, 22 April 1955.

b. WPO MIL 10 Dislocation Allowance, 1 June 1955.

c. WPO FIN 1-1 Eligibility Criteria for Dislocation Allowance, 8 June 1955.

d. WPO FIN 1-1 Dislocation Allowances, 29 June 1955.

e. WPO MIL 10 Secretarial Waiver of Second PCS in Current Fiscal Yr, 3 Aug 55.

f. WPO MIL 10 Entitlement to Dislocation Allowance, 3 August 1955.

13. STRENGTH REPORTS: The Wing Personnel Officer will prepare, ten days in advance of the movement of the main body and unit administration functions, the assigned strength of the entire organization, indicating separately by grade and UAFSC, the number of officers, warrant officers, and airmen. Shortages by grade and UAFSC will be similarly, but separately listed, with indication of actions taken to fill such shortages, as required by par 55b, AFM 75-37.

14. PRE-EMBARKATION PERSONNEL ROSTERS: Unit Commanders will prepare and forward to this headquarters personnel rosters required by par 55c, AFM 75-37. Rosters will reach this headquarters in three (3) copies, not earlier or later than ten (10) days prior to the movement of the unit headquarters giving the following information:

a. Movement Phase.

b. Name, grade, and service number.

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c. It is recommended that copies of this roster be made available to the commanders of advanced and rear echelons. Further recommend that these rosters be reproduced in sufficient copies to make them available for use by all supervisory personnel while enroute to destinations. The attention of Unit Commanders is directed to the provisions of AFM 75-5, Joint Ocean Shipping Procedures, as pertains to preparation of passenger lists, in the event this organization is directed by the Port Commander to prepare such lists. If these passenger lists are required, those elements of the move will not be required in unit personnel rosters, and may be substituted therefor.

15. LEAVES AND PASSES:

a. Prior to Departure: Unit Commanders will grant pre-departure leaves to as many assigned personnel as practicable without diminishing unit effectiveness. Priority will be give to personnel desiring to move families to another area. Duration of leaves is left to the discretion of unit commanders in accordance with AFR 35-22.

b. At Operating Location: The duration and place of leaves will be as directed by this headquarters to conform with the policies of theatre and local commanders, and in accordance with existing Air Force directives.

c. Emergency Leaves: Emergency leaves after unit deployment will be granted upon approval of this headquarters. Unit Commanders may not disapprove such leave or in any way delay the forwarding of such request by the most expeditious means to this headquarters. At the discretion of the Unit Commander, an individual may commence travel if the case is of such urgency to warrant this action, and this headquarters will be so notified. The Commander's reasons for the action will be adequately explained. Except

as indicated in the preceding paragraphs, unit commanders will follow the provisions of AFM 75-37 and related directives.

16. FINANCE: Pay records will accompany each echelon as it deploys. Units will designate on Special Orders one (1) officer in each echelon of personnel moves as courier for the Unit's Military Pay Records (DD Form 113). This officer will, on the day preceding departure, secure from the Base Finance officer the pay records of all personnel of his organization to deploy with that echelon. Records will be receipted for, hand carried to the overseas destination, and delivered to the appropriate Finance Officer upon arrival. Records may be obtained from the Base Finance Officer upon submission, three (3) working days in advance, a Military Pay Order listing the names of individuals concerned with a copy of Special Orders attached.

17. FINAL OVERSEAS PROCESSING: Processing of AF Forms 502 will be accomplished by this headquarters (Ref: 18AF Message OPR-L 7-0605, 11 Jul 55). A team, composed of one (1) non*commissioned officer representing each interested Staff Section, will process outgoing personnel by echelon in a schedule to be announced by this headquarters. Final processing of all personnel will be accomplished prior to the movement of the unit administrative headquarters.

18. LATE ARRIVAL OF PERSONNEL: Any personnel arriving at Charleston Air Force Base after deployment of this headquarters will be processed by the Commander, Charleston Air Force Base and shipped to the Headquarters, 456th Troop Carrier Wing (M), Shiroi Air Base, Japan, by the first available military air transportation.

19. a. Funds of units of the 456th Troop Carrier Wing, Medium, held by the Custodian, Central Base Fund, Charleston Air Force Base, S.C. will be transferred

by a check issued by the Custodian to a designated officer for transfer to new location in accordance with paragraph 14h, AFR 176-2.

b. Unit Fund Property of the 456th Troop Carrier Wing (M) may be moved with and by the respective unit to new location as authorized by paragraph 14g, AFR 176-2.

c. Unit Fund Property declared excess will be disposed of as outlined in paragraph 23, AFR 176-2.

(Authority: Ltr. OPR-L, Hq 18th AF dtd 8 July 1955, Subj: Amendment #1, Move-Order, 456th TCW (M)).

JAMES L. DANIEL, JR.
Colonel, USAF
Commander

OFFICIAL:

/s/ Jay D. Bogue
/t/ JAY D. BOGUE
Colonel, USAF
Deputy Commander

HEADQUARTERS EIGHTEENTH AIR FORCE
Donaldson Air Force Base
South Carolina

7 September 1955

OPR-L

SUBJECT: Amendment Number 2, Movement Order, 456TH Troop Carrier Wing (Medium)

TO: See Distribution

1. Pursuant to the instructions of Headquarters United States Air Force message AFOOP-OP-U2 44514, 29 August 1955, and Headquarters Tactical Air Command message PC-D 8-3259, 31 August 1955, the following changes will be made to letter, Headquarters Eighteenth Air Force, Subject: Movement Order, 456TH Troop Carrier Wing, Medium, 23 June 1955.

a. Delete paragraph 2 in its entirety and add new paragraph 2 as follows:

Unit Designation and other Pertinent Data

Unit	Shipment NR	APRX STR OFF	APRX STR AMN	T/O	WT EQP to ACMP Troops
HQ, 456TH TRP CARR WG (M) (less ECH)	7410-A	0	53	1-1021 P-A, 15 AUG 52, 1 X Part II and 1-1021, 1 JUN 52, 1 X Part IIB	
ADV Air ECH HQ 456TH TRP CARR WG (M)	7410-AIX	6	11		
744TH TRP CARR SQ (M) (less ECH)	7410-B	5	121	1-1361 P, 1 DEC 51, 1X Part II as augmented	
ADV Air ECH 744TH TRP CARR SQ (M)	7410-BIX	2	20		
745TH TRP CARR SQ (M) (less ECH)	7410-C	10	176	1-1361 P, 1 DEC 51, 1X Part II as augmented	

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HQ Eighteenth AF OPR-L Subject: Amendment Number 2, Movement Order, 456TH Troop Carrier Wing (Medium)

Unit	Shipment NR	APRX STR OFF	APRX STR AMN	T/O	WT EQP to ACMP Troops
ADV Air ECH 745TH TRP CARR SQ (M)	7410-CIX	2	20		
746TH TRP CARR SQ (M) (less ECH)	7410-D	2	159	1-1361 P, 1 DEC 51, 1X Part II as augmented	
ADV Air ECH 746TH TRP CARR SQ (M)	7410-DIX	2	20		
DET NR 1 744TH TRP CARR SQ (M) (less ECH)	7410-E	4	119		
ADV Air ECH DET NR 1 744TH TRP CARR SQ (M)	7410-EIX	2	20		
DET NR 1 745TH TRP CARR SQ (M) (less ECH)	7410-F	6	120		
ADV Air ECH DET NR 1 745TH TRP CARR SQ (M)	7410-FIX	2	20		
DET NR 1 746TH TRP CARR SQ (M)(less ECH)	7410-G	5	115		
ADV Air ECH DET NR 1 746TH TRP CARR SQ (M)	7410-GIX	2	20		
Support ECH 744TH TRP CARR SQ (M)	7410-BZZ	0	43		31,000 lbs UME

Unit	Shipment NR	APRX STR OFF	APRX STR AMN	T/O	WT EQP to ACMP Troops
Support ECH DET NR 1 744TH TRP CARR SQ (M)	7410-EZZ	0	43		31,000 lbs UME
Support ECH DET NR 1 745TH TRP CARR SQ (M)	7410-FZZ	0	43		31,000 lbs UME
Support ECH DET NR 1 746TH TRP CARR SQ (M)	7410-GZZ	0	53		31,000 lbs UME
Rear ECH 745TH TRP CARR SQ (M)	7410-CCX	0	57		
Rear ECH 746TH TRP CARR SQ (M)	7410-DDX	0	57		
Rear AIR ECH HQ 456TH TRP CARR WG (M) plus Squadrons	7410-AAIX	14	32		11,500 lbs UME
Air ECH 744TH TRP CARR SQ (M)	7410-BZ	32	24		
Air ECH 745TH TRP CARR SQ (M)	7410-CZ	32	24		
Air ECH 746TH TRP CARR SQ (M)	7410-DZ	32	24		

Unit	Shipment NR	APRX STR OFF	APRX STR AMN	T/O	WT EQP to ACMP Troops
Air ECH DET NR 1 744TH TRP CARR SQ (M)	7410-EZ	32	24		
Air ECH DET NR 1 745TH TRP CARR SQ (M)	7410-FZ	32	24		
Air ECH DET NR 1 746TH TRP CARR SQ (M)	7410-GZ	32	24		

Present station for the 456TH Troop Carrier Wing, Medium, is Charleston Air Force Base, Charleston, South Carolina. Full equipment; i.e., 3A, 3B and 3C of MEAL, is authorized for Tables of Organization composition cited.

b. Delete the last two sentences of paragraph 6, beginning with, "All outstanding requisitions - - - - - -."

c. Delete so much of paragraph 7, beginning with, "Readiness dates for meeting - - - - -," and substitute the following: Readiness dates are:

Shipment NR	POE	APOE	RD
7410 AIX			Departed
7410 BIX			Departed
7410 CIX			Departed
7410 DIX			Departed
7410 EIX			Departed
7410 FIX			Departed
7410 GIX			Departed
7410-C	SEPE		5 October 1955
7410-A, F and G	SEPE		8 October 1955

HQ Eighteenth AF OPR-L Subject: Amendment Number 2, Movement Order, 456TH Troop Carrier Wing (Medium)

Shipment NR	POE	APOE	RD
7410-D	SEPE		9 October 1955
7410-B and E	SEPE		10 October 1955
7410-CCX and DDX	SEPE		26 October 1955
7410-BZZ, EZZ, FZZ and GZZ		Travis	11 November 1955
7410-AAIX		Travis	25 November 1955
7410-DZ		McChord	1 November 1955
7410-CZ		McChord	4 November 1955
7410-FZ		McChord	7 November 1955
7410-GZ		McChord	10 November 1955
7410-EZ		McChord	12 November 1955
7410-BZ		McChord	13 November 1955

d. Delete the second sentence, para 12, beginning with, "Packing, crating, and transporting of organizational - - - - -," and substitute, "Packing, crating, and transporting of organizational equipment and impedimenta will be funded from funds that have been made available to the Commander, 456TH Troop Carrier Wing, Medium."

e. Change the word "at" to "from" in the fourth sentence, paragraph 12, which reads, "Prior to EDCSA of main body, - - - - -."

f. Delete the last sentence in paragraph 12.

BY ORDER OF THE COMMANDER:

/s/ A. N. Bozeman
/t/ A. N. BOZEMAN
Major, USAF
Asst Command Adjutant

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(See next page)

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HEADQUARTERS EIGHTEENTH AIR FORCE
Donaldson Air Force Base
South Carolina

OPR-L 8 July 1955

SUBJECT: Amendment Number 1, Movement Order, 456TH Troop Carrier Wing (Medium)

TO: See Distribution

1. Pursuant to the instructions of Headquarters United States Air Force and Headquarters Tactical Air Command, the following changes will be made to letter, Headquarters Eighteenth Air Force, Subject: Movement Order, 456th Troop Carrier Wing (Medium), 23 June 1955.

a. Change so much of paragraph 2 as reads: "Strength, officer and airmen", to read: "Approximate strength, officer and airmen.

b. Change so much of paragraph 2, page 5 as reads: Movement of personnel in the support echelon will be identified by suffix as follows "to read;, "Movement of equipment in the support echelon will be identified by suffix as follows." Also add: Hq 456th Troop Carrier Wing (Medium); suffix A33.

c. So much of paragraph 7a which reads; Advance Air Echelon, 15 July 1955, to read; Advance Air Echelon, 25 July 1955.

d. Delete paragraph 11c and add new paragraph 11c as follows: Unit is assigned APO 73, San Francisco, California as mailing address. Paragraph 31, Air Force Manual 75-37 (POM) is applicable.

e. Add to paragraph 12 the following:

(1) Funds of units of the 456th Troop Carrier Wing, Medium, held by the Custodian, Central Base Fund, Charleston Air Force Base, South Carolina, will be transferred by a check issued by the Custodian to a designated officer for transfer to new location in accordance with paragraph 14 h, AFR 176-2.

(2) Unit Fund Property of the 456th Troop Carrier Wing, (Medium), may be moved with and by the respective unit to new location as authorized by paragraph 14g, AFR 176-2.

(3) Unit Fund Property declared excess will be disposed of as outlined in paragraph 23, AFR 176-2.

BY ORDER OF THE COMMANDER:

Distribution:
(See next page)

/s/ A. N. BOZEMAN
/t/ A. N. BOZEMAN
Major, USAF
ASST Command Adjutant

HQ Eighteenth AF OPR-L Subject: Amendment Number 1, Movement Order, 456TH Troop Carrier Wing (Medium)

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56043

HEADQUARTERS EIGHTEENTH AIR FORCE
Donaldson Air Force Base
South Carolina

OPR-L

23 June 1955

SUBJECT: Movement Order, 456TH Troop Carrier Wing (Medium)

TO: Commander
456TH Troop Carrier Wing (M)
Charleston Air Force Base
Charleston, South Carolina

1. Pursuant to the authority contained in Departments of the Army and the Air Force telegraphic movement directive AFOOP-OC-C 41917, 17 June 1955, and message, Headquarters, Tactical Air Command, PC-C 6-2051, 21 June 1955, the units designated in paragraph 2 below, are directed to prepare for foreign service and to move through the appropriate Port of Embarkation to Shiroi Air Base, Honshu, Japan and/or to such operating locations as may be determined by the Commander, First Air Division, (SAC) Offutt Air Force Base, Nebraska.

2. Unit designation and other pertinent data:

Advanced Echelon.

Unit	Strength OFF	Strength AMN	Mode of Travel	Port RD	Destination
HQ 456TH	6	10	Air	25 JUL	Shiroi, Japan
744TH	2	20	Air	25 JUL	Kadena, Okinawa
745TH	2	20	Air	25 JUL	Adak, Alaska
746TH	2	20	Air	25 JUL	Kodiak, Alaska
DET 1, 744TH	2	20	Air	25 JUL	Central AB, Iwo Jima
DET 1, 745TH	2	20	Air	25 JUL	Misawa, Japan
DET 1, 746TH	2	20	Air	25 JUL	Johnson AB, Japan

The above advanced echelons will depart by air direct from Charleston AFB through their appropriate APOE as directed by Commander, Eighteenth Air Force.

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Unit Tactical Aircraft and Crew Echelons.

Unit	Strength OFF	Strength AMN	Mode of Travel	Port RD	Destination
HQ 456TH	7	6	Air	10 SEP	Shiroi, Japan
746TH	32	24	Air	10 SEP	Kodiak, Alaska
745TH	32	24	Air	13 SEP	Adak, Alaska
DET 1, 745TH	32	24	Air	16 SEP	Misawa, Japan
DET 1, 746TH	32	24	Air	17 SEP	Johnson AB, Japan
DET 1, 744TH	32	24	Air	18 SEP	Central AB, Iwo Jima
744TH	32	24	Air	19 SEP	Kadena, Okinawa

Movement of Main Body.

Unit	Strength OFF	Strength AMN	Mode of Travel	Port RD	Destination
746TH	5	205	Air	1 SEP	Kodiak, Alaska
745TH	5	205	Air	5 SEP	Adak, Alaska
DET 1, 745TH	5	144	Air	7 SEP	Misawa, Japan
DET 1, 746TH	5	144	Air	10 SEP	Johnson AB, Japan
DET 1, 744TH	5	147	Air	13 SEP	Central AB, Iwo Jima
744TH	5	147	Air	16 SEP	Kadena, Okinawa
HQ 456TH	8	45	Air	17 SEP	Shiroi, Japan

Fly-away-Kit Echelon.

HQ Eighteenth AF OPR-L Subject: Movement Order, 456TH Troop Carrier Wing (Medium)

Unit	Strength OFF	Strength AMN	Mode of TVL	Port RD*	Destination
746TH		14	Air	1 THRU 25 AUG	Kodiak, Alaska
745TH		14	Air	1 THRU 25 AUG	Adak, Alaska
DET 1, 745TH		14	Air	1 THRU 25 AUG	Misawa, Japan
DET 1, 746TH		14	Air	1 THRU 25 AUG	Johnson AB, Japan
DET 1, 744TH		14	Air	1 THRU 25 AUG	Central AB, Iwo Jima
744TH		14	Air	1 THRU 25 AUG	Kadena, Okinawa

*Exact RD as determined by Commander TAC.

Rear Echelon.

Unit	Strength OFF	Strength AMN	Mode of TVL	Port RD	Destination
HQ 456TH	1	1	Air	25 SEP	Shiroi, Japan
744TH	1	4	Air	25 SEP	Kadena, Okinawa
745TH	1	4	Air	25 SEP	Adak, Alaska
746TH	1	4	Air	25 SEP	Kodiak, Alaska
DET 1, 744TH	1	4	Air	25 SEP	Central AB, Iwo Jima
DET 1, 745TH	1	4	Air	25 SEP	Misawa, Japan
DET 1, 746TH	1	4	Air	25 SEP	Johnson AB, Japan

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UNIT	SHIPMENT NR	T/O
HQ, 456TH TRPCARWG (M)	7410 - AI	1-1021 P-A, 15 AUG 52, 1 X Part II and 1-1021, 1 JUN 52, 1 X Part IIB
ADV Air ECH, HQ 456TH TRPCARWG (M)	7410 - AIX	
744TH TRP CARR SQ (M) (less ADV ECH and DET)	7410 - BI	1-1361P, 1 DEC 51, 1 X Part II as augmented
ADV Air ECH 744TH TRP CARR SQ (M)	7410 - BIX	
745TH TRP CARR SQ (M) (less ADV ECH and DET)	7410 - CI	1-1361P, 1 DEC 51, 1 X Part II as augmented
ADV Air ECH 745TH TRP CARR SQ (M)	7410 - CIX	
746TH TRP CARR SQ (M) (less ADV ECH and DET)	7410 - DI	1-1361P, 1 DEC 51, 1 X Part II as augmented
ADV Air ECH 746TH TRP CARR SQ (M)	7410 - DIX	
DET NR 1 744TH TRP CARR SQ (M) (less ADV ECH)	7410 - EI	
ADV Air ECH, DET NR 1 744TH TRP CARR SQ (M)	7410 - EIX	
DET NR 1 745TH TRP CARR SQ (M) (less ADV ECH)	7410 - FI	
ADV Air ECH, DET NR 1 745TH TRP CARR SQ (M)	7410 - FIX	
DET NR 1 746TH TRP CARR SQ (M) (less ADV ECH)	7410 - GI	

HQ Eighteenth AF OPR-L Subject: Movement Order, 456TH Troop Carrier Wing (Medium)

UNIT	SHIPMENT NR	T/O
ADV Air ECH, DET NR 1 746TH TRP CARR SQ (M)	7410 - GIX	

Present station for the 456TH Troop Carrier Wing (Medium) is Charleston Air Force Base, Charleston, South Carolina. Movement of personnel in unit aircraft will be identified by suffix as follows:

UNIT	SUFFIX
744TH TRP CARR SQ (M) DET NR 1 (less ADV ECH)	BZ EZ
745TH TRP CARR SQ (M) DET NR 1 (less ADV ECH)	CZ FZ
746TH TRP CARR SQ (M) DET NR 1 (less ADV ECH)	DZ GZ

Movement of personnel in the support echelon will be identified by suffix as follows:

UNIT	SUFFIX
744TH TRP CARR SQ (M) DET NR 1	BZZ EZZ
745TH TRP CARR SQ (M) DET NR 1	CZZ FZZ
746TH TRP CARR SQ (M) DET NR 1	DZZ GZZ

Full equipment; i.e., 3A, 3B and 3C of MEAL, is authorized for Tables of Organization composition cited.

3. Change of Station.

This movement will be a permanent change of station without a permanent change of command assignment. The 456TH Troop Carrier Wing, (Medium) is attached to the First Air Division for operation control. Upon arrival at the various operating locations, the 456TH Troop Carrier Wing, (Medium) will be attached to the appropriate overseas command for administration and logistical support. All personnel will be assigned PCS to Shiroi Air Base, Japan with extended TDY to the locations indicated in paragraph 2. Personnel will proceed direct to operating locations from the continental United States.

4. Preparation for Overseas Movement.

Instructions for preparation and movement are contained in the following publications:

a. AFM 75-37 (POM), 30 September 1954.

b. AFR 123-4.

c. AFR 205-1.

d. Volume 8 of AFM 67-1.

5. Allowances of Clothing and Equipment.

a. Unit will move to overseas destination with organizational clothing and equipment and individual equipment as authorized to the Tables of Organization composition indicated in paragraph 2, as augmented. Items listed in the UAL with MEAL code designations "WAB MAJ AF COMDR" (preceding the unit of issue) are authorized with the exception of MEAL code 39. Carbines, caliber 30, will not be issued in lieu of pistols, automatic, caliber 45. Authority is granted to issue and retain lockers, trunk, within the allowance of one per airman. Lockers, trunk, will be utilized during the movement in packing organizational clothing, individual equipment and personal property which will accompany the organization as hold baggage.

b. Units will be fully equipped with individual equipment and organizational clothing and equipment as prescribed for the appropriate Zone, Sections II and III, Table of Allowances 1-21, prior to departure from home station. Items annotated "WAB MAJ AIR COMMANDS" in Sections 2 and 3, Table of Allowances 1-21 are authorized.

6. Equipment Movement from Home Station.

a. Unit will move from Home Station with UME plus 180 day level of aircraft spares. Replacement requisitions will be bases on maintaining normal levels. Stock levels should be adjusted during the period of operation to insure a minimum of spares on hand at the completion of the project. All outstanding requisitions will be cancelled 10 days prior to the readiness dates indicated in paragraph 7. List of shortages of equipment and spares will be forwarded by the 456TH Troop Carrier Wing, (Medium) to SMAMA, Grand Union Material Depot for aerial resupply to forward operating locations.

b. The Air Echelon will deploy with all assigned tactical aircraft.

c. The authorized UAL items and spares to accompany the unit in unit aircraft in the advance echelons will be as determined by the Commander, 456TH Troop Carrier Wing (Medium).

7. Port Designation and Readiness Dates.

a. Unit will move through McChord Air Force Base Aerial Port of Embarkation and/or Travis Air Force Base Aerial Port of Embarkation, San Francisco Port of Embarkation and/or Seattle Port of Embarkation. Movement through water Port of Embarkation will be on the call of the appropriate Port Commander only. Readiness dates for meeting the dates indicated in paragraph 2 are:

Advanced Air Echelon	15 July 1955
Main Body	10 September 1955

The Commander, First Air Division will advise the appropriate Aerial Port of Embarkation Commander of the dates and approximate time of arrival of the Echelons at the Aerial Ports of Embarkation.

8. Method of Movement.

a. Movement to the Port will be in accordance with the provisions of AFR's 75-2, 75-38, 75-75 and 75-79.

b. Movement to the overseas operating locations will be made by military air transport and/or water transport if determined necessary by the Commander, First Air Division. Personnel moving by air are authorized one hundred pounds of personal baggage for air transport.

9. Instructions for Shipment.

a. All organizational equipment shipped to water port of embarkation will be marked:

TO: Port TRANS O
applicable PE

FOR: 7410 (applicable letters)

10. Instructions for the Port Commander.

Port Commanders will advise the Director of Operations, Headquarters USAF; Commander, Tactical Air Command; Commander in Chief, Far East Air Force; Commander, Eighteenth Air Force; Commander, First Air Division in accordance with the provisions of paragraph 64 and paragraph 67G, as applicable, AFM 75-37 (POM).

11. Other Instructions.

a. Direct communication is authorized between all recipients of this order within the continental United States in accordance with paragraph 5 of AFM 75-37 (POM).

b. Unit personnel processing will be accomplished prior to departure from home station by base personnel.

c. Applicable APO and complete military address as established in paragraph 31, AFM 75-37 will be used.

d. Movement of dependents to overseas theater is not authorized. Movement of dependents to ZI location as designated by their military sponsors is authorized in accordance with the provisions of Joint Travel Regulations.

e. Provisions of paragraph 22, AFM 75-37 (POM) are waived. Unit will deploy at strengths indicated in paragraph 2. All AFSC authorizations will be manned at one hundred per cent from within Eighteenth Air Force resources. Provisions of paragraph 7a, Section C, Part I, Chapter 2, AFM 35-11, relative to ZI residency are waived.

f. Provisions of paragraph 71, AFM 75-37 (POM) are applicable.

g. Reports of the dates of departure and arrival and other action will be made by means of Air Force Organizational Status Change

HQ Eighteenth AF OPR-L Subject: Movement Order, 456TH Troop Carrier Wing (Medium)

Report, RCS: AF - 01. Commander, 456TH Troop Carrier Wing, (Medium) is responsible for obtaining from the advance echelons of each unit information necessary to complete all reports required by the Commander, Eighteenth Air Force, and Commanders of higher echelons of command. After EDCSA referenced reports will be the responsibility of appropriate overseas command and/or command exercising operational control. EDCSA will be established at the time the main body moves in accordance with AF Regulation 35-13.

h. Military pay records (DD Form 113) will be grouped in accordance with destination of the individuals and will be receipted for, hand carried and delivered to the appropriate overseas finance officer by an officer. If no officer is available, this duty will revert to the senior non-commissioned officer. Personnel should be advised to utilize various authorized allotment procedures to adequately provide for dependents prior to departure from Charleston Air Force Base.

12. Cite permanent change of station open allotment accounting classification 5763500 048-202 P532-99 S99-999 for all PCS costs from home station in accordance with the provisions of AFM 172-1 except transportation costs of organizational equipment and impedimenta from home station to port. Packing, crating, and transporting of organizational equipment and impedimenta will be a Charleston Air Force Base responsibility and will be funded by Military Air Transport Service in accordance with Chapter 2, Paragraph 40204, AFM 172-1. Upon arrival at operating location and/or permanent station, open allotment will cease. Prior to EDCSA of main body, costs incident to TDY at operating location will be chargeable to 4X8 funds available to the Commander, 456TH Troop Carrier Wing, (Medium) fund citation 5763400 078-3016 P4X8 02 S38-607 will be used. After EDCSA TDY and other costs applicable to appropriated funds, as provided for in AFM 172-1, will be chargeable to 4X8 funds available to Commander, 456TH Troop Carrier Wing (Medium), fund citation 5763400 078-3016 P4X8 - 99 SXX-XXX will be used as indicated below. Fiscal station number of permanent station will be substituted for SXX-XXX prior to citation of funds. Reports concerning these funds will be submitted in accordance with the desires of the Funding Command. Shiroi Air Base, Honshu, Japan is considered to be permanent station and personnel departing therefrom under proper orders will be in a TDY status utilizing 456TH Troop Carrier Wing, (Medium) funds.

BY ORDER OF THE COMMANDER:

/s/ Harry W. Craig
/t/ HARRY W. CRAIG
Colonel, USAF
Command Adjutant

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HEADQUARTERS
456TH TROOP CARRIER WING (M)
APO 73

13 November 1955

STANDARD OPERATING PROCEDURE)
NUMBER 11A)

SOP FOR 456TH TCW RECOVERY OPERATIONS CONTROL CENTER

1. PURPOSE AND SCOPE:

To outline Standard Operating Procedures for operation of the Recovery Operations Control Center (ROCC).

2. GENERAL:

a. The Recovery Operations Control Center will:

(1) Continuously monitor the position and movement of all balloon flights.

(2) Direct and monitor the position and movement of all aircraft flights.

(3) Dispatch to Squadron Recovery Center:

(a) Actual fixes and forecast trajectories of all balloons entering the squadron's area of responsibility, giving 1ADIV Manual 55-8 line number.

(b) Twice daily the weather along the forecast trajectory for each balloon.

(c) Aircraft alerts.

(d) Aircraft patrol missions.

(e) Aircraft scrambles.

(f) Successful launches during previous 24 hours.

(g) Balloon termination during previous 24 hours.

(h) Balloon flights that Shiroi ROCC has in D/F contact.

(i) Miscellaneous messages from time to time of operational nature.

[redacted]

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3. DUTIES:

a. The Director of Operations will:

(1) Be responsible for the overall operation of the Recovery Operations Control Center and its attached units.

(2) Inform and advise the Commander and/or his deputy on all matters relating to recovery operations.

(3) Coordinate all Wing Staff activities relative to the operation of the Recovery Operations Control Center.

(4) Supervise the preparation of plans and programs to conform with directives of the Wing Commander and higher headquarters.

(5) Issue instructions for recovery and patrol action as directed by the Wing Commander.

b. The D/F Officer will:

(1) Upon reporting for duty receive a thorough briefing from the officer being relieved.

(2) Receive, evaluate, and plot on individual overlays all fixes received on balloons.

(3) Initiate and complete his portion of the ROCC Balloon History Form (ROCC Fm 4) and forward it to the Mission Assignment Officer.

(4) Initiate and complete his portion of the Forecast Trajectory and Weather Form (RO CC Fm 5) and forward to the weather section.

(5) Call the fixes on each balloon to the plotters on the Board and make certain that each balloon is properly plotted and identified.

(6) Be prepared to brief the Commander on all phases of current status related to his position.

(7) Prepare and dispatch the GTX T-1 and GTX F-2 reports and review and dispatch the GTX F-3A report in the proper format at required times.

[redacted]

c. The Mission Assignment Officer will:

(1) Assist the Director of Operations in the supervision of the Control Center.

(2) Be in charge of ROCC during his tour of duty.

(3) Upon reporting for duty he will receive a thorough briefing on the status of all balloon flights, aircraft, and special conditions from the officer being relieved and receive a weather briefing and be familiar with the weather situation in all areas of operation.

(4) Take action incident to normal operations, including directing patrol flights, recovery flights, diversion of aircraft, and ground-cutdown of balloons.

(5) Immediately advise the Director of Operations on all matters of unusual nature.

(6) Insure timely and accurate submission of all required reports.

(7) Be responsible for compiling and delivery to Statistical Services all associated records for mission analysis once a balloon flight is terminated.

(8) Complete the Mission Assignment portion of the Balloon History Form (ROCC Fm 4) and forward to the Controller. The Balloon History Form will be handled as a suspense item until the mission is assigned and the form forwarded to the Controller.

d. The Controller will:

(1) Upon reporting for duty receive a thorough briefing on the status of all aircraft flights and other conditions related to his position from the officer being relieved as well as a weather briefing in all operational areas.

(2) Receive all take-off reports (GTX R-1), aircraft position reports (GTX R-1B), and aircraft landing reports (GTX R-2) and will relay this information to the plotters on the Board, insuring that aircraft are properly plotted and identified.

[redacted]

(3) Be responsible for clearing balloon from the plotting board when the GTX R-1A report has been received.

(4) Be responsible for notifying 5th AF COC when aircraft are disptached on a recovery mission, giving the following:

(a) Aircraft take-off time.

(b) Estimated coordinates and ETA at area of interception.

(c) Estimated time of return to base of intended landing.

(d) Immediately of any changes in above information.

(e) Any related information concerning movement of recovery aircraft that 5th AF may require.

(5) Complete the Balloon History Form (ROCC Fm 4) and forward with all related paper work, to the Floor Supervisor for assembly.

(6) As aircraft are dispatched on recovery missions, reflect the proper information on the Aircraft and Crew Status Board.

(7) Prepare and dispatch the Recovery Recapitulation Report (GTX R-6) daily as of 1200Z listing the balloon identification and flight number, date-time of recovery, means of recovery, and where recovered.

e. The Combat Readiness Officer will:

(1) Receive the Status Report of Recovery Aircraft and Crews (GTX R-5).

(2) Display the correct up-to-date information on the Aircraft and Crew Status Plotting Board.

(3) Be prepared to advise the Commander and Mission Assignment Officer of the combat capability of recovery squadrons in terms of combat ready crews and number of aircraft in-commission.

(4) Prepare and dispatch the Daily Status Recapitulation Report (Recovery Squadrons) (GTX R-3A) as of 1800Z to arrive First ADIV not later than 2400Z.

f. The Navigation Officer will:

(1) Based on temperature and dew points of each operating location and overall weather situation, determine daily, the maximum safe radius of each recovery squadron.

(2) Receive a weather briefing covering all operational areas upon reporting for duty.

(3) Maintain close liaison with the Weather Officer on duty and be prepared to assist the Mission Assignment Officer on determining best areas for recovery action date, and time.

(4) During unfavorable weather conditions and hours of darkness when the ground cut-down system will have to be used, be prepared to pin point, to the closest possible degree of longtitude and latitude of the downed target for relay to 5th AF COC.

g. The Staff Weather Officer will:

(1) Maintain up-to-date information on present and forecast weather at all recovery squadron bases.

(2) Be familiar with weather conditions in all recovery areas of operation.

(3) Be prepared to advise and assist the Mission Assignment Officer on best areas for recovery of balloons entering operational area.

(4) Maintain a visual display of weather information in ROCC for recovery operational areas.

h. The Launch Monitor Officer will:

(1) Receive the GTX L-1A Report (Launch Recapitulation).

(2) Send daily to each recovery squadron the following information:

(a) Successful launches during previous 24 hours.

(b) Balloon terminations during previous 24 hours.

(c) Balloon flights that ROCC has in D/F contact.

NOTE: The above information will be transmitted by line number in accordance with First ADIV Manual 55-9.

(3) Notify the ROCC weather section of successful launches during previous 24 hours, giving balloon identification and flight number and a 48-hour forecast trajectory which will include coordinates at 6-hour intervals (ROCC Fm 7).

(4) Maintain a log of successful launches (ROCC Fm 6) which will include:

(a) Date/time of launch.

(b) Balloon identification and flight number.

(c) HF transmitter activation time (ZULU).

(d) Estimated arrival time in recovery area (based on forecast trajectory and speed of travel obtained from weather).

(e) Termination time of balloon flight (ZULU).

i. Plotters will:

(1) Maintain the Plotting Board.

(2) Identify and plot all balloon positions as received from the D/F Officer.

(3) Identify and plot all aircraft positions as received from the Controller.

(4) Keep the Aircraft and Crew Status Board up-to-date as information is received from the Combat Readiness Officer and/or the Controller.

(5) Post the current weather information on the Weather Wing Board as received from the ROCC weather section.

[redacted]

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(6) Continually strive for improvement in neatness and readability on all information depicted on the ROCC Plotting Boards.

j. D/F Evaluation:

(1) Receive balloon bearings from the D/F detachments of the 6926th Radio Squadron, Mobile.

(2) Convert these bearings to fixes using extreme caution in evaluation in order to obtain the best possible fix from bearing information received.

(3) Relay to the H/F Officer in the Control Center the following information:

(a) Balloon identification and number.

(b) Coordinates to the nearest tenth of a degree and time of fix.

(c) Quality of fix such as: Excellent, Good, Fair, Poor, etc.

(d) When fixes are not obtainable, bearing information will be relayed to H/F Officer.

k. The Weather Section will:

(1) Upon receipt of launch information on balloons, prepare forecast trajectories on each balloon and advise the Mission Assignment Officer on possible areas and estimated time of penetration into recovery area.

(2) Provide the Mission Assignment Officer with a trajectory forecast plotted on a weather plotting chart and forecast weather along the trajectory for each balloon on which positions are being maintained.

(3) Be prepared to brief the Mission Assignment Officer, Controller, and Navigation Officer on weather condition in all recovery areas of responsibility.

(4) Maintain current terminal weather and forecast terminal weather conditions for all recovery bases and depict same on the weather plotting board in the Control Center.

(5) Maintain detailed records on weather, forecast and actual trajectories or balloons to be used for weather mission analysis,

1. The Communications Section will:

(1) Advise the Mission Assignment Officer of communications capability when he reports for duty.

(2) Insures a communications check with recovery squadron at 30 minute intervals.

(3) Insure proper disptach and receipt of all messages.

(4) Provide and maintain adequate teletype circuits and attempt to keep all circuits in at all times. When outages occur utilize every measure available to bring circuits back in.

(5) Provide and maintain adequate communications within ROCC Compound.

m. The 456th Wing Intelligence Officer will:

(1) Maintain close liaison with 5th AF Intelligence.

(2) Establish an area within which potentially unfriendly forces would have capability of interferring with recovery operations.

(3) Brief the Commander, Director of Operations, and Mission Assignment Officer on intelligence matters of any nature which may adversely affect the recovery mission.

4. This SOP supersedes SOP 11, dated 10 September 1955.

BY ORDER OF THE COMMANDER:

OFFICIAL:

s/t/ JOSEPH F. MISENKO
Major, USAF
Adjutant

JOSEPH F MISENKO
Major, USAF
Adjutant

Attachments: 8

1. Position Chart, ROCC
2. Formats for required reports
3. Forms to be used in ROCC

[redacted]

[redacted]

ATTACHMENT #1

456TH TCW

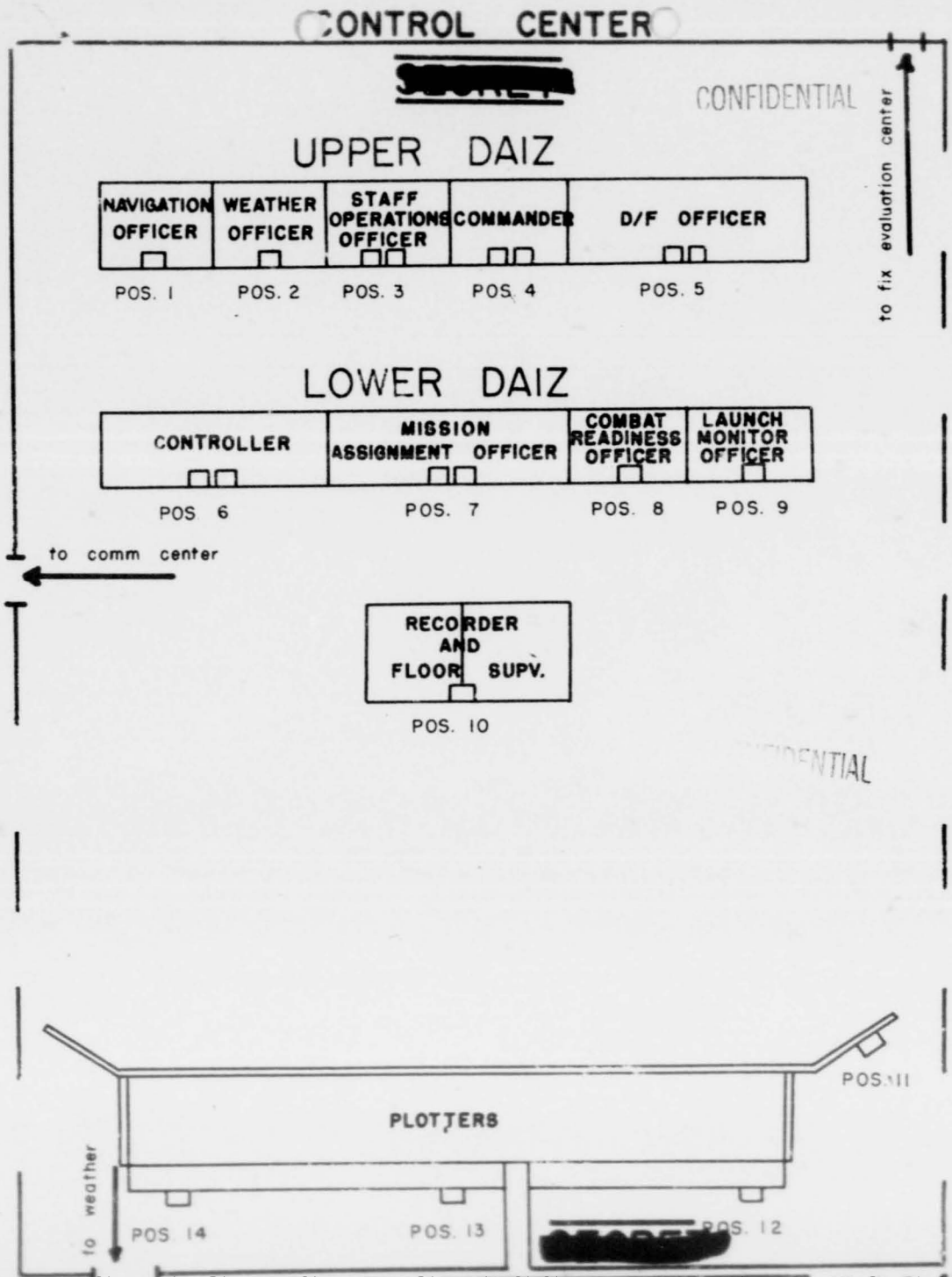
STANDARD OPERATING PROCEDURE
NUMBER 11A

POSITION CHART

FOR

ROCC

[redacted]



[redacted]

ATTACHMENT #2

456TH TCW

STANDARD OPERATING PROCEDURE
NUMBER 11A

FORMATS

FOR

REQUIRED REPORTS

[redacted]

[redacted]

BALLOON TRAJECTORY REPORT

CONFIDENTIAL

1. REPORT CODE: GTX F-2

2. SUBMITTED BY: COMMANDER 456TH TOW, SHIROI, JAPAN

3. ADDRESSEE: COMMANDER 1ADIV, OFFUTT AFB, NEBRASKA

4. WHEN SUBMITTED: RECAPITULATION DAILY AS OF 1500Z

5. HOW SUBMITTED: BY TELETYPE

6. FORMAT:

A. REPORT CODE

B. BALLOON FLIGHT NUMBER AND ACTUAL TRAJECTORIES WITH FIXES AT APPROXIMATELY 6 HOUR INTERVALS FOR THE PRECEEDING 24 HOURS. GIVE DATE/TIME ZULU AND COORDINATES (TO NEAREST TENTH OF A DEGREE) OF EACH FIX USED AND AN EVALUATION OF EACH FIX (EXCELLENT, GOOD, FAIR, POOR). THE FIRST TRANSMISSION RECEIVED FROM EACH BALLOON (SINGLE BEARING OR FIX) WILL BE REPORTED BY DATE TIME AND ANNOTED "FIRST TRANSMISSION". DO NOT FORWARD BEARINGS. (CONTINUE THIS FORMAT AS NECESSARY TO PROVIDE INFORMATION ON ALL BALLOONS ALOFT DURING PERIOD).

C. REMARKS

7. CLASSIFICATION: REPORTS WILL BE CLASSIFIED A MINIMUM OF "CONFIDENTIAL".

8. EXAMPLE: CONFIDENTIAL/BALLOON MESSAGE NBR 134.

A. GTX F-2
B. (1) GAR-10 12/0500Z FIRST TRANSMISSION
12/0600Z 42.5N 160.2E EXCELLENT
12/1200Z 41.3N 167.9E EXCELLENT
12/1800Z 41.1N 174.8E GOOD
12/2400Z 41.0N 179.7W FAIR

(2) GAR-11 12/0600Z FIRST TRANSMISSION
12/0730Z 42.7N 155.5E FAIR
ONLY USEABLE FIX

(3) OBE-17 NO FURTHER BEARINGS THIS FLIGHT POSSIBLE TERMINATION

(4) ADA-21 CONTINUE THIS FORMAT AS NECESSARY TO PROVIDE INFORMATION ALL BALLOONS LAUNCHED.

C. INCLUDE ANY PERTINENT REMARKS CONCERNING BALLOON FIXES AND TRAJECTORIES.

[redacted]

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[redacted]

DAILY STATUS REPORT (D/F DETACHMENTS)

1. REPORT CODE: GTX F-3A

2. SUBMITTED BY: COMMANDER 456TH TCW SHIROI JAPAN

3. ADDRESSEE: COMMANDER 1ADIV OFFUTT AFB NEBRASKA

4. WHEN SUBMITTED: DAILY AS OF 1800Z SO AS TO ARRIVE 1ADIV BY 2400Z OR IMMEDIATELY UPON ANY D/F SITE GOING OUT OF OR COMING INTO COMMISSION.

5. HOW SUBMITTED: BY TELETYPE

6. FORMAT:

   A. REPORTS CODE

   B. IDENTIFICATION AND OPERATIONAL STATUS OF EACH TRACKING SIGHT. IF ALL SITES ARE OPERATIONAL AND ANTICIPATE NO DIFFICULTIES STATEMENT TO THE EFFECT "ALL SITES OPERATIONAL" WILL SUFFICE.

7. CLASSIFICATION: REPORTS WILL BE CLASSIFIED A MINIMUM OF "CONFIDENTIAL".

8. EXAMPLE: CONFIDENTIAL/BALCON MESSAGE

   A. GTX F-3A

   B. ALL SITES OPERATIONAL EXCEPT:

   C. BEARINGS OF DETACHMENT 7 and 9 HAVE BEEN MARGINALLY ACCEPTABLE. COMMANDER 6925th RSM VISITING SAME TO DETERMINE CAUSE.

[redacted]

[redacted]

DAILY STATUS RECAPITULATION (RECOVERY SQUADRONS)

1. REPORT CODE: GTX R-3A

2. SUBMITTED BY: COMMANDER 456TH TCW, SHIROI, JAPAN

3. ADDRESSEE: COMMANDER 1ADIV, OFFUTT AFB, NEBRASKA

4. WHEN SUBMITTED: DAILY AS OF 1800Z SO AS TO ARRIVE 1ADIV BY 2400Z

5. HOW SUBMITTED: BY TELETYPE

6. FORMAT:

A. REPORTS CODE

B. FOR EACH RECOVERY SQUADRON GIVE THE FOLLOWING:

(1) NUMBER OF AIRCRAFT IN COMMISSION
(2) NUMBER OF AIRCRAFT AOCP (indicate parts required)
(3) NUMBER OF AIRCRAFT ANFE (indicate inoperable equipment)
(4) NUMBER AND LOCATION OF AIRCRAFT AT OTHER THAN HOME STATION
(5) NUMBER OF OPERATIONALLY READY CREWS AVAILABLE
(6) NUMBER OF NON-OPERATIONALLY READY CREWS (give reasons)
(7) INDICATE ANY SUPPORT ACTION REQUIRED BY HQ 1ADIV

7. CLASSIFICATION: REPORTS WILL BE CLASSIFIED A MINIMUM OF "CONFIDENTIAL".

8. EXAMPLE: CONFIDENTIAL/BALCON MESSAGE NUMBER 187.

A. GTX R-3A

B. 744TH TCS KADENA

(1) 6
(2) ONE AOCP HYDRAULIC BY PASS VALVE
(3) ONE ANFE IW CONTROL BOX
(4) ONE SHIROI COORDINATING MATTERS WITH 456TH TCW
(5) SEVEN
(6) A/C COMMANDER MIMMS HOSPITALIZED DENGUE FEVER, TO BE AVAILABLE 2 JAN 56
(7) NONE

[redacted]

[redacted]

RECOVERY RECAPITULATION REPORT

1. REPORT CODE: GTX R-6

2. SUBMITTED BY: COMMANDER 456TH TCW SHIROI JAPAN

3. ADDRESSEE: COMMANDER 1ADIV OFFUTT AFB NEBRASKA

4. WHEN SUBMITTED: DAILY AS OF 1200Z SO AS TO ARRIVE OFFUTT BY 1800Z

5. HOW SUBMITTED: BY TELETYPE

6. FORMAT:

   A. REPORT CODE

   B. LIST FOR EACH BALLOON RECOVERED DURING THE PREVIOUS 24 HOURS, THE FLIGHT NUMBER, DATE/TIME OF RECOVERY, MEANS OF RECOVERY AND COORDINATES OF RECOVERY.

   C. REMARKS

7. CLASSIFICATION: REPORT WILL BE CLASSIFIED A MINIMUM OF "CONFIDENTIAL".

8. EXAMPLE: CONFIDENTIAL/BALCON MESSAGE NUMBER 174.

   A. GTX R-6

   B. ADA-43 29/1433Z USN CRUI SER "WASP" 45.1N 149.7E
      GAR-13 29/2305Z 456th TCW AIR 40.2N 139.8E
      GAR-17 29/0143Z 456th TCW WATER 36.1N 137.1E
      GIE-4 29/0647Z ARS SA-16 WATER 36.2N 137.4E
      OBE-31 29/2340Z NEAR OSAKA CITY JAPAN BY FARMER, NOW IN HANDS OF COMMANDER ITAMI AIR BASE.

   C. REMARKS: USS OMAHA WITH ADA-43 DUE SAN FRANCISCO 04/1715Z JAN. REQUEST YOU ARRANGE PICK UP AND DISPOSITION.

[redacted]

[redacted]

BALLOON TERMINATION REPORT

1. REPORT CODE: GTX T-1

2. SUBMITTED BY: COMMANDER 456th TCW SHIROI JAPAN

3. ADDRESSEE: COMMANDER 1ADIV OFFUTT AFB NEBRASKA

4. WHEN SUBMITTED: DAILY. WHEN INFORMATION IS RECEIVED FROM ANY RELIABLE SOURCE THAT A BALLOON FLIGHT HAS TERMINATED, OR UPON ASSUMPTION THAT FLIGHT HAS TERMINATED DUE TO REASON(S) OTHER THAN PLANNED TERMINATION.

5. HOW SUBMITTED: BY TELETYPE

6. FORMAT:

   A. REPORT CODE

   B. BALLOON FLIGHT NUMBER

   C. DATE/TIME OF TERMINATION (APPROXIMATE IF NECESSARY)

   D. LOCATION (GEOGRAPHIC COORDINATES AND APPROXIMATE DISTANCE FROM NEAREST PROMINENT LAND MARK, IF ANY)

   E. ACTION BEING TAKEN TO RETRIEVE EQUIPMENT, IF ANY

   F. REMARKS

7. CLASSIFICATION: REPORT WILL BE CLASSIFIED A MINIMUM OF "CONFIDENTIAL"

8. EXAMPLE:

   A. GTX T-1

   B. GAR-15

   C. 15/2245Z APPROXIMATELY

   D. COORDINATES

   E. NONE

   F. BALLOON LAST FIXED OVER INACCESSABLE AREA IN BLANK COUNTRY. NO TRANSMISSION IN 24 HOURS

[redacted]

[redacted]

GONDOLA DISPOSITION REPORT

CONFIDENTIAL

1. REPORT CODE: GTX D-1

2. SUBMITTED BY: COMMANDER 456th TCW SHIROI JAPAN

3. ADDRESSEE: COMMANDER 1ADIV OFFUTT AFB NEBRASKA

4. WHEN SUBMITTED: DAILY RECAPITULATION AS OF 1500Z FOR PREVIOUS 24 HOUR PERIOD WHEN MATERIALS FROM BALLOON(S) HAVE BEEN RECOVERED BY ANY AGENCY AND RETURNED TO UNITED STATES CONTROL AND DISPOSITION ACTION HAS BEEN IMPLEMENTED OR COMPLETED.

5. HOW SUBMITTED: BY TELETYPE

6. FORMAT:

A. REPORT CODE

B. BALLOON FLIGHT NUMBER

C. RECOVERY LOCATED AND AGENCY

D. PLANNED DISPOSITION/DISPOSITION COMPLETED

E. REMARKS

7. CLASSIFICATION: REPORT WILL BE CLASSIFIED A MINIMUM OF "CONFIDENTIAL"

8. EXAMPLE:

CONFIDENTIAL/BALCON MESSAGE NUMBER 199

A. GTX D-1

B. ADA-55

C. RECOVERED BY FISHERMAN IN MANILA BAY AND TURNED OVER TO COMMANDER CLARK FIELD

D. TO LEAVE CLARK ON MATS FLIGHT C-300. ETA TRAVIS AFB 25/2200Z

E. COMMANDER CLARK AFB ADVISES PACKAGE TAMPERED WITH BY PERSON OR PERSONS UNKNOWN

[redacted]

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[redacted]

ATTACHMENT #3

456TH TCW

STANDARD OPERATING PROCEDURE
NUMBER 11A

FORMS

FOR

ROCC

[redacted]

[redacted]

OO_____

DE UJAJD_____

O_____Z

FM VIOLET

TO_____

BT

/CONFIDENTIAL/BALCON MESSAGE NUMBER_____PD ACFT SCRAMBLE ORDER PD

A NBR ACFT_____PD

B TAKE OFF TIME_____Z

C 55-9 LINE NUMBER_____

D LAST FIX_____DEG LAT_____DEG LONG AT_____Z

E GEOREF_____

F LAST KNOWN GROUND SPEED_____PD

G FORECAST TRAJECTORY (TIME AND COORDINATES)_____
_____
_____
_____
_____
_____PD

H RECOMMENDED COORDINATES FOR INTERCEPTION_____DEG LAT
_____LONG PD

I FORECAST WX AT INTERCEPTION AREA_____
_____
_____
_____
_____
_____PD

BT_____
_____
_____/_____Z OCT UJAJD

_____
(RELEASING OFFICER)

ROCC FORM # 1 (17 Nov 55)

[redacted]

[redacted]

OO_____

DE UJAJD_____

O_____Z

CONFIDENTIAL

FM VIOLET

TO_____

/CONFIDENTIAL/BALCON MESSAGE NUMBER_____PD
ACFT PATROL PD

A_____ACFT

B_____TAKE OFF TIME

C_____GEOREF(S) FOR PATROL PD

D_____HR PATROL

E REMARKS_____

F GENERAL WEATHER FOR AREA TO BE PATROLLED_____

_____PD

BT

_____/ _____Z OCT UJAJD

_____
(RELEASING OFFICER)

ROCC FORM # 2 (17 Nov 55)

CONFIDENTIAL

[redacted]

[redacted]

OO_____

DE UJAJD_____

O_____Z

FM VIOLET

CONFIDENTIAL

TO_____

BT

/CONFIDENTIAL/BALCON MESSAGE NUMBER_____PD

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BT

_____/ _____Z NOV UJAJD

CONFIDENTIAL

_____

(RELEASING OFFICER)

ROCC FORM # 3 (17 Nov 55) [redacted]

[redacted]

CONFIDENTIAL

456TH TCW ROCC BALLOON HISTORY FORM

BALLOON IDENTIFICATION_____ LINE NUMBER_____

1. D/F OFFICER:

FIX:

COORDINATES_____
TIME_____
ROCC FORM # 5 TO WEATHER_____ (YES - NO)_____
BALLOON ON PLOTTING BOARD_____ (YES - NO)_____
TO MISSION ASSIGNMENT OFFICER_____ ZULU

_____
(D/F OFFICERS INITIALS)

2. MISSION ASSIGNMENT OFFICER:

UNIT RECOMMENDED_____
NUMBER OF AIRCRAFT RECOMMENDED_____
ALERT OR SCRAMBLE_____
TERMINAL WEATHER_____ (IFR - VFR)_____
FORCAST TERMINAL WEATHER_____ (IFR - VFR)_____
ALERT REQUIRED_____ (YES - NO)_____
RECOVERABLE WEATHER_____ (YES - NO)_____
TO WEATHER OFFICER_____ (YES - NO)_____

_____
MISSION ASSIGNMENT OFFICERS INITIALS

3. STAFF WEATHER OFFICER:

RECOMMENDED AREA FOR RECOVERY:

COORDINATES_____
WEATHER_____
_____
_____
TO COMMANDER_____ ZULU

_____
(WEATHER OFFICERS INITIALS)

4. COMMANDER:

APPROVED_____ (YES - NO)_____
REMARKS_____
_____
_____
_____

_____
(COMMANDERS INITIALS)

ROCC FORM # 4 (17 Nov 55) [redacted]

5. MISSION ASS[redacted]MENT OFFICER[redacted]

ALERT OR SCRAMBLE MESSAGE NUMBER _____
INTO WEATHER _____ ZULU
BACK FROM WEATHER _____ ZULU
INTO COMMUNICATIONS CENTER _____ ZULU
TO CONTROLLER _____ ZULU

(MISSION ASSIGNMENT OFFICERS INITIALS)

6. CONTROLLER:

BALLOON IDENTIFICATION _____
SQUADRON _____
AIRCRAFT NUMBER(S) _____
TAKE OFF TIME _____ ZULU
ETA AT RECOVERY AREA _____ ZULU
ELECTRONIC CONTACT TIME WITH BALLOON _____ ZULU
TYPE OF RECOVERY _____ (AIR OR WATER)
TIME RECOVERED _____ ZULU
COORDINATES OF RECOVERY _____
NUMBER OF RECOVERY AIRCRAFT _____
AIRCRAFT COMMANDERS NAME _____
LANDING BASE AND ETR _____ ZULU
LANDING TIME _____ ZULU
THIS FORM WITH RELATED PAPERS TO FLOOR SUPERVISOR _____ ZULU

(CONTROLLERS INITIALS)

REMARKS: _____

[redacted]

BALLOON TRAJECTORY AND AREA WEATHER FORCAST

BALLOON IDENTIFICATION:_____
LAST FIX:_____
TIME:_____
D/F OFFICERS INITIALS:_____

TIME OF FORCAST:_____ ZULU::::::::::FORCASTER:_____

DATE AND TIME ZULU	LATTITUDE	LONGITUDE	AREA WX FORCAST

_____
(RECEIVED BY)

TIME OF RECEIPT_____ZULU

ROCC FORM # 5 (17 Nov 55)

[redacted] LAUNCH MONITOR LOG

SITE OF LAUNCH	DATE/TIME OF LAUNCH	BALLOON ID AND FLIGHT NUMBER 55-2 LINE #	TRANSMITTER ACTIVATION	DATE/TIME ETA AT REC AREA	DATE/TIME OF FLIGHT TERMINATION

ROCC FORM # 6 (17 Nov 55)

[redacted]

SUCCESSFUL LAUNCH LOG
(Previous 24 hours)

SITE OF LAUNCH	DATE/TIME OF LAUNCH	BALLOON ID FLIGHT NUMBER	FORECAST TRAJECTORY AT 6 HOUR INTERVALS						
			6	12	18	24	36	42	48

ROCC FORM # 7 (17 Nov 55)

COMBAT READINESS

SQUADRON:_____ [redacted]

DATE/TIME:_____

		REMARKS AS REQUIRED
Nr. A/C In-Comm		
Nr. A/C AOCP		
Nr. A/C ANFE		
Nr. & Location of A/C at other than home Sta.		
Nr. of Combat Ready Crews Available		
Nr. of Combat Crews Non-Ready (Give Reasons)		
Support Required of 456th TCW		

NOTE: INFORMATION ENTERED ON THIS FORM TO BE OBTAINED FROM THE GTX R-3 REPORT FROM INDIVIDUAL SQUADRONS

ROCC FORM # 8 (22 Sep 55)

[redacted]

[redacted]

HEADQUARTERS
456TH TROOP CARRIER WING (M)
APO 73

13 November 1955

STANDARD OPERATING PROCEDURE)
NUMBER 11B)

SOP FOR SQUADRON RECOVERY CENTER

1. PURPOSE:

To outline Standard Operating Procedures for operation of each Squadron Recovery Center.

2. SCOPE:

This SOP is applicable to all squadrons of the 456th Troop Carrier Wing (M).

3. GENERAL:

a. The Squadron Recovery Center will:

(1) Continuously monitor the position and plot movement of all balloons entering their area of responsibility.

(2) Brief, dispatch, monitor, and plot all patrol and recovery aircraft flights.

(3) Submit all required operational reports in the correct format at times indicated (see Attachment Number 2, Reports).

4. DUTIES:

a. The Squadron Operations Officer will:

(1) Supervise the operation of the Squadron Recovery Center on a 24 hour basis.

(2) Brief combat crews and dispatch aircraft in accordance with instructions received from Headquarters, 456 th Troop Carrier Wing Recovery Operations Control Center.

(3) Supervise the crew alert system in accordance with instructions contained herein.

[redacted]

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TAB M

(4) Insure timely, in the correct format, dispatch of operational reports (see Attachment Number 2.).

(5) Maintain close liaison with the Squadron Communications Section to keep fully informed on communications capability and will be thoroughly familiar with all means of communication with 456th Troop Carrier Wing Recovery Operations Control Center and the air-ground station.

(6) Keep his commander informed on all matters pertaining to recovery operations.

(7) Promptly inform his commander and 456th Troop Carrier Wing (M) ROCC on all matters that may adversely affect recovery operations.

(8) Insure maximum possible recovery capability at all times.

b. The Squadron Intelligence Officer will:

(1) Keep the commander and operations officer fully informed on all up-to-date intelligence matters.

(2) Brief and dibrief the combat crews dispatched on recovery or patrol mission.

(3) Brief the commander and operations officer on all matters of any nature that may adversely affect the recovery mission.

(4) Relay to 456th Troop Carrier Wing ROCC information received from patrol debriefing that may be of operational value.

(5) Assist in the operation of the Squadron Recovery Center as directed by the Operations Officer.

c. The Squadron Communication Section will:

(1) Maintain constant and reliable communications with Hq 456th Troop Carrier Wing ROCC and the air-ground station.

(2) Keep the Commander and Operations Officer advised of communications capability.

(3) Insure proper dispatch and receipt of all messages.

(4) Maintain on-line teletype capability at all times, and when circuit outages occur exercise every means available to being circuits back in.

(5) Investigate and be thoroughly familiar with all means of communication with Hq 456th Troop Carrier Wing HOCC.

(6) Assist in the plotting of aircraft and balloons received by the Center.

5. AREAS OF RESPONSIBILITY FOR EACH RECOVERY SQUADRON:

(see Attachment Number 1)

6. TYPES OF ALERT:

a. Standby Alert

(1) A team consisting of two (2) aircraft and two (2) combat crews will be kept on standby alert and will be capable of being airborne within 30 minutes after receiving notice to perform a recovery mission.

NOTE: Due to climatic conditions, some squadron may not be able to make the 30 minute take-off. In on case should take-off be grater than One (1) hour after receipt of mission.

(2) When standby alert crews have been dispatched on a recovery mission, the General Alert Crews will be immediately placed on standby alert and the same procedure outlined in paragraph (1) above will apply.

b. General Alert

(1) In addition to the Standby Alert System, each recovery squadron will have the capability of having two (2) aircraft and crews airborne within three (3) hours.

(2) When any given unit has two (2) teams airborne on recovery missions, a standby alert will not be required. The remaining crews will be rotated on general alert.

[redacted]

c. Maximum Effort:

When the situation dicatates, and as directed by Hq 456th Troop Carrier Wing ROCC, each unit will provide their maximum capability. Normally, during a maximum effort period, the standby and general alerts will not apply. The unit will dispatch aircraft as rapidly as possible, consistent with established flight safety practices, to accomplish its assigned mission.

d. Squadron Commanders will be responsible for establishing the alert systems outlined above and will keep in mind adequate crew rest and other flight safety practices when preparing his combat crew alert rotation system.

e. There may be periods where the alert system will not be required and this headquarters will so advise Recovery Squadrons by teletype message.

7. REPORTS:

The formats for required reports to successfully monitor Recovery and/or Patrol Missions are outlined in Attachment Number 2 of this SOP. These formats are also outlined in 1ADIV Manual 55-8 as well as other formats of required reports for recovery squadrons.

8. PATROL FLIGHT PROCEDURES:

a. Hq 456th Troop Carrier Wing ROCC will order patrol flights to be accomplished within designated areas under the following conditions:

(1) When forecast trajectories and rate of travel of launched balloons indicated possible penetration into recovery areas of responsibility and the D/F Net is unable to establish contact with the balloon (s).

(2) When D/F contact with balloon is lost and termination of balloon flight has not been established.

b. The Squadron Recovery Center will dispatch patrol flights under thefollowing conditions:

(1) When directed by Hq 456th Troop Carrier Wing ROCC.

(2) When communications have failed between the Squadron and Wing Recovery Centers for any eight (8) hour period. The squadron recovery center will dispatch sufficient patrol flights to insure adequate coverage of their area of responsibility.

[redacted]

[redacted]

c. The Squadron Recovery Center will:

(1) Establish routes that will insure adequate coverage of a designated patrol area.

(2) Pre-plan routes to be flown so as to insure adequate coverage of their area of responsibility should communications with Hq 456th Troop Carrier Wing ROCC fail.

(3) Dispatch to the ROCC all fixes or bearings received from patrol aircraft, utilizing the GTX F-1 report.

d. The Patrol Flight will:

(1) Fly prescribed patrol route and maintain a continuous listening and visual watch for balloon (s). (listening watch on VHF and liaison)

(2) Maintain continuous listening watch with their squadron recovery center for possible recovery or diversion orders.

(3) Fix and report all electronic contacts or visual sightings of balloons to 456th Troop Carrier Wing ROCC and Squadron Recovery Center. Including all known pertinent information.

e. Squadrons will establish Standard Operating Procedures for ground cut-down systems based on information contained in 456th Troop Carrier Wing (M) Operations Order 2-55.

BY ORDER OF THE COMMANDER:

OFFICIAL:

JOSEPH F MISENKO
Major, USAF
Adjutant

/s/t/JOSEPH F MISENKO
Major, USAF
Adjutant

ATTACHMENTS:

1. Areas of Responsibility
2. Reports

5

[redacted]

5 6043

[redacted]

4561H TCW

STANDARD OPERATING PROCEDURE
NUMBER 11B

FORMATS

FOR

REQUIRED REPORTS

[redacted]

[redacted]

RECOVERY INTENTION REPORT

CONFIDENTIAL

1. REPORTS CODE: GTX R-1

2. SUBMITTED BY: COMMANDER EACH RECOVERY SQUADRON/OR AIRCRAFT COMMANDER WHEN DEPARTING FROM OTHER THAN 456th RECOVERY BASES

3. ADDRESSEE: VIOLET ROCC

4. WHEN SUBMITTED: UPON DEPARTURE OF AIRCRAFT TO RECOVER A BALLOON

5. HOW SUBMITTED: BY TELETYPE (HF WHEN STAGED)

6. FORMAT:

   A. REPORT CODE

   B. BALLOON FLIGHT NUMBER

   C. DATE/TIME OF DEPARTURE AND ETA AT RECOVERY AREA

   D. AIRCRAFT NUMBERS DISPATCHED ON RECOVERY MISSION

   E. REMARKS

7. CLASSIFICATION: REPORT WILL BE CLASSIFIED A MINIMUM OF "CONFIDENTIAL"

8. EXAMPLE:

   A. GTX R-1

   B. ADA-10

   C. 29/0200Z 29/0430Z

   D. MUDHEN 22 and 44

   E. RECOVERY WEATHER MARGINAL, WILL ADVISE

CONFIDENTIAL

[redacted]

[redacted]

RECOVERY RESULTS REPORT

1. REPORT CODE: GTX R-1A

2. SUBMITTED BY: COMMANDER OF RECOVERY AIRCRAFT

3. ADDRESSEE: VIOLET ROCC AND PARENT SQUADRON

4. WHEN SUBMITTED: IMMEDIATELY AFTER TARGET HAS BEEN RECOVERED

5. HOW SUBMITTED: BY HF RADIO ENCODED BY CURRENT AFSAL 5104

6. FORMAT:

   A. REPORT CODE
   B. BALLOON FLIGHT NUMBER
   C. FIRST CONTACT TIME WITH TARGET
   D. TYPE RECOVERY (AIR OR WATER)
   E. TIME OF RECOVERY
   F. COORDINATES OF RECOVERY
   G. AIRCRAFT NUMBER
   H. AIRCRAFT COMMANDERS NAME
   I. BASE OF INTENDED LANDING/ETA
   J. REMARKS

7. CLASSIFICATION: REPORT WILL BE CLASSIFIED A MINIMUM OF "CONFIDENTIAL"

8. EXAMPLE:

   A. GTX R-1A
   B. ADA-12
   C. 09/0300Z
   D. AIR
   E. 09/0430Z
   F. 40.0N 140.5E
   F. MUDHEN 22
   H. DANIEL
   I. JOHNSON AB 09/0830Z
   J. ENTER ADIZ AT 39.0N 140.0E AT 09/0500Z

[redacted]

[redacted]

AIRCRAFT POSITION REPORT

1. REPORT CODE: GTX R-1B

2. SUBMITTED BY: COMMANDER EACH RECOVERY SQUADRON

3. ADDRESSEE:: SHIROI ROCC AND PARENT SQUADRON

4. WHEN SUBMITTED: EACH 30 MINUTES UNTIL RETURN FROM MISSION USING SLOT TIMES ASSIGNED BY AACS

5. HOW SUBMITTED: HF RADIO

6. FORMAT:

   A. REPORT CODE

   B. AIRCRAFT NUMBER(S)

   C. AIRCRAFT POSITION (LONG, LAT) DATE/TIME

   D. ENDURANCE REMAINING IN HOURS

   E. REMARKS: TO INCLUDE ELECTRONIC CONTACTS, VISUAL CONTACTS, ETC. (NOTE: REPORT WILL BE ENCODED BY CURRENT AFSAL 5104 WHEN ITEMS OF SENSITIVE NATURE ARE INCLUDED IN REMARKS)

7. CLASSIFICATION: WILL BE UNCLASSIFIED UNLESS SENSITIVE INFORMATION INCLUDED IN PART E. "CONFIDENTIAL" FOR TRANSMISSION PURPOSES FROM SQUADRON TOC TO WING ROCC

8. EXAMPLE:

   CONFIDENTIAL/FALCON MESSAGE NUMBER 192

   A. GTX R-1B

   B. GIRLIE 22 and 27

   C. 40.5N 140.5E 29/0300Z

   D. 9 PLUS 30

   E. GIRLIE 22 - LEFT ENGINE ROUGH

[redacted]

[redacted]

AIRCRAFT ARRIVAL REPORT

1. REPORT CODE: GTX R-2

2. SUBMITTED BY: COMMANDER EACH RECOVERY SQUADRON OR AIRCRAFT COMMANDER IF AT OTHER THAN HOME BASE

3. ADDRESSEE: SHIROI ROCC

4. WHEN SUBMITTED: IMMEDIATELY AFTER AIRCRAFT HAVE LANDED

5. HOW SUBMITTED: BY TELETYPE

6. FORMAT:

   A. REPORT CODE

   B. AIRCRAFT NUMBER(S)

   C. ARRIVAL POINT AND DATE/TIME

   D. TIME LEFT TO INSPECTION

   E. AIRCRAFT STATUS

   F. ETD AND DESTINATION IF KNOWN

   G. WHERE TO ADDRESS MESSAGES TO AIRCRAFT COMMANDER

   H. REMARKS:

      NOTE: F G & H APPLICABLE ONLY WHEN AIRCRAFT IS AT OTHER THAN HOME BASE

7. CLASSIFICATION: REPORT WILL BE CLASSIFIED A MINIMUM OF "CONFIDENTIAL"

8. EXAMPLE:

   A. GTX R-2

   B. EASY 22 and 55

   C. MISAWA

   D. EASY 22, 37 HOURS, EASY 55 23 HOURS

   E. IN COMMISSION

   F. N/A

   G. N/A

   H. N/A

[redacted]

[redacted] CONFIDENTIAL

STATUS REPORT RECOVERY AIRCRAFT AND CREWS

1. REPORT CODE: GTX R-3

2. SUBMITTED BY: COMMANDER EACH RECOVERY SQUADRON

3. ADDRESSEE: VIOLET ROCC

4. WHEN SUBMITTED: DAILY AS OF 1800Z SO AS TO ARRIVE SHIROI ROCC BY 2000Z

5. HOW SUBMITTED: BY TELETYPE

6. FORMAT:

A. REPORT CODE

B. FOR EACH RECOVERY SQUADRON GIVE THE FOLLOWING:

(1) NUMBER OF AIRCRAFT IN COMMISSION
(2) NUMBER OF AIRCRAFT AOCP (indicated parts required)
(3) NUMBER OF AIRCRAFT ANFE (indicate inoperable equipment)
(4) NUMBER AND LOCATION OF AIRCRAFT AT OTHER THAN HOME STATION
(5) NUMBER OF OPERATIONALLY READY CREWS AVAILABLE
(6) NUMBER OF NON-OPERATIONALLY READY CREWS (give reasons)
(7) INDICATED ANY SUPPORT ACTION REQUIRED BY HQ 1ADIV

7. CLASSIFICATION: REPORTS WILL BE CLASSIFIED A MINIMUM OF "CONFIDENTIAL"

8. EXAMPLE:

CONFIDENTIAL/BALCON MESSAGE NUMBER 187

A. GTX R-3

B. 744TH TCS KADENA

(1) 6
(2) ONE AOCP HYDRAULIC BYPASS VALVE
(3) ONE ANFE 1W CONTROL BOX
(4) ONE ACFT SHIROI COORDINATING MATTERS WITH 456TH TCW
(5) SEVEN
(6) A/C COMMANDER MIMMS HOSPITALIZED DENGUE FEVER, TO BE AVAILABLE 2 JAN 56
(7) NONE

[redacted]

[redacted]

AIRCRAFT SEARCH MISSION REPORT

1. REPORT CODE: GTX R-4

2. SUBMITTED BY: COMMANDER EACH RECOVERY SQUADRON

3. ADDRESSEE: VIOLET ROCC

4. WHEN SUBMITTED: UPON DEPARTURE AND ON RETURN FROM PATROL MISSION IN SEARCH OF UNKNOWN OR UNACCOUNTED FOR BALLOONS

5. HOW SUBMITTED: BY TELETYPE

6. FORMAT:

   A. REPORT CODE

   B. AIRCRAFT NUMBER(S)

   C. DATE/TIME (ZULU) OF DEPARTURE OR ARRIVAL AND LOCATION.

   D. PURPOSE AND AREA TO BE PATROLLED OR RESULTS OF PATROL

   E. REMARKS

7. CLASSIFICATION: REPORT WILL BE CLASSIFIED A MINIMUM OF "CONFIDENTIAL"

8. EXAMPLE:

   CONFIDENTIAL/BALCON MESSAGE NUMBER 122

   A. GTX R-4

   B. GIRLIE 33 and 44

   C. DEPARTED KODIAK 29/1050Z

   D. AREA PATROL NORTH AND EAST OF SHEMYA

   E. BELIEVED THAT BALLONS GAR-10 AND ADA-15 LOCATED IN THIS AREA

[redacted]

[redacted]

~~GONDOLA DISPOSITION REPORT~~

1. REPORT CODE: GTX D-1

2. SUBMITTED BY: COMMANDER EACH RECOVERY SQUADRON

3. ADDRESSEE: VIOLET ROCC

4. WHEN SUBMITTED: WHEN MATERIALS FROM A BALLOON HAVE BEEN RECOVERED BY 456th TCW UNITS, OR RETURNED TO THEM BY ANY RECOVERY AGENCY, AND DISPOSITION ACTION HAS BEEN IMPLEMENTED

5. HOW SUBMITTED: BY TELETYPE

6. FORMAT:

   A. REPORT CODE

   B. BALLOON FLIGHT NUMBER

   C. RECOVERY LOCATION AND AGENCY

   D. PLANNED DISPOSITION

   E. REMARKS

7. CLASSIFICATION: REPORT WILL BE CLASSIFIED A MINIMUM OF "CONFIDENTIAL"

8. EXAMPLE:

   A. GTX D-1

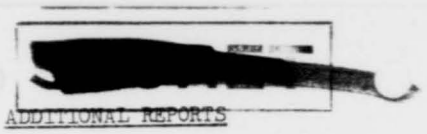
   B. GAR-48

   C. 40.3N 150.2# by DET 1, 745 TCS

   D. PLAN AIRLIFT TO TOKYO BY 315TH AD FLIGHT C-300, 12/2330Z DEC

   E. NONE

[redacted]



ADDITIONAL REPORTS

GTX R-5 RECOVERY REPORT (LONG FORM)

NOTE: TO BE SUBMITTED AS OUTLINED IN 1ADIV MANUAL 55-8, (REPORTING GUIDE)

SACMAR IN FLIGHT WEATHER REPORT

NOTE: TO BE SUBMITTED AS OUTLINED IN ADIV MANUAL 55-8 (REPORTING GUIDE) EXCEPT THAT "ADDRESSEE" WILL BE - SHIROI ROCC AND PARENT SQUADRON WHILE IN FLIGHT.

OPERATIONS ORDER)
NUMBER 2-55)

REAR ECHELON 456TH TROOP CARRIER WING (M)
Charleston Air Force Base, Charleston,
South Carolina, 26 October 1955

CHART AND MAP REFERENCES: As required.

TASK ORGANIZATIONS:

744th Troop Carrier Squadron (M)	Major Guy E Ridgway
Det 1, 744th Troop Carrier Squadron (M)	Major Harry B Ocker
745th Troop Carrier Squadron (M)	Major Joseph G Nellor
Det 1, 745th Troop Carrier Squadron (M)	Major Jack B Robbins
746th Troop Carrier Squadron (M)	Major James L Hill
Det 1, 746th Troop Carrier Squadron (M)	Major Billy J Gault

1. GENERAL SITUATION: Omitted.

2. MISSION: This wing will deploy six tactical units to operating sites throughout the Alaskan-Aleutian theatre and the Far East theatre. Movement will commence on or about 1 November 1955, and will continue through approximately 20 November 1955.

3. TASKS FOR SUBORDINATE UNITS:

a. All tasks units will:

(1) Deploy with personnel, remaining equipment, and aircraft so as to be in place and operationally ready not later than 1 December 1955.

(2) Provide enroute support, as may be required, at their operating locations, to insure rapid movement of aircraft enroute.

X. GENERAL INSTRUCTIONS

1. All units will cut their own flight orders using squadron flight order number and including the following basic paragraph with specific aircraft number, itinerary, and dates applicable.

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(a) The following named crew members WP on or about_____Nov 55 in C-119F aircraft _____fr Chasn AFB, SC, to Ardmore AFB, Ok'ahoma; to McChord AFB, Washington; to Kodiak Alaska, etc. (As applicable) for the purpose of aircraft movement to overseas operating locations pursuant to the authority contained in Departments of the Army and AF telegraphic movement directive AFOOP-OC-C 41917, 17 June 55, and MSG TAC PC-C 6-2051, 21 Jun 55 and 18th AF Ltr OPR-L 23 Jun 55, par 6b CIPAP. Upon completion of flifht will be assigned SHIROI AB, Japan with temporary duty sta_____on or about _____Nov 55. Authority Wg Msn Nr. 55-10-600.

(b) Basic itinerary to be used to destination is Charleston AFB, S.C.; Ardmore AFB, Ok'ahoma; McChord AFB, Washington; Kodiak, Alaska; Adak, Alaska; Misawa AB, Japan; Johnson AB, Japan; Siroi AB, Japan; Itazuke, Japan; Kadena AB, Okinawa.

(c) One (1) copy of all flight orders will be forwarded to 456th Wing Operations prior to departure and each aircraft commander will have one copy of the flight order for each enroute stop.

2. Routes - Times (See Annex 'A').

3. Enroute kits containing necessary maps and charts will be provided along with pilot's flimsy by 456th Wing Operations.

4. All flights will be "Corridor Operations" with fifteen (15) minute intervals between aircraft departure.

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5. Weather decision for planning purposes will be made by the Unit Commander and the 456th Wing Operations Officer at 1800 hours day prior to scheduled departure.

6. Each squadron will prepare flight plans, to include times enroute and estimated fuel required by 1930 hours day prior to departure.

7. Route briefing to be conducted by the Squadron Commander at 2000 hours the day prior scheduled departure from Charleston.

8. The 456th Wing Operations will effect necessary liaison with CAA and flight service to insure rapid, uninterupted flow of tactical aircraft to their appropriate destination.

9. Gross weight of aircraft will be as computed from the safe single engine charts (18thAF) but in no case will exceed 72,800 pounds. For 'F' will be prepared for each aircraft for each takeoff.

10. Ardmore AFB, Oklahoma will be utilized for refueling. 456th Wing Operations will effect liaison with the Commander, Ardmore AFB, to insure minimum delay for refueling and such other support as necessary.

11. 456th Wing Operations will coordinate with Base Weather for a weather briefing, including winds, for each crew departing Charleston AFB enroute Ardmore AFB,

12. Each C-119 aircraft departing will have complete 4U projects Electronic Equipment Systems installed. Security measures in accordance with AFR 205-1 will be complied with at all times.

13. Each Squadron Commander will be responsible for route briefing to the next destination for all aircraft staging through his operating location. This briefing will include flight plan, estimated fuel required, communications and general data.

4. ADMINISTRATION AND LOGISTICAL MATTERS: All administrative and logistical matters will be in accordance with 456th Troop Carrier Wing Operations Order 1-55, 22 August 1955, as amended.

5. COMMAND AND COMMUNICATIONS:

(a) Communications:

1 Existing navigational aids, facility charts, and letdown manuals will be used on flight from Charleston to McChord AFB, Tacoma, Washington.

2 Air to Ground communications will be in accordance with current ACP procedures. (ICAO procedures may be used if necessary).

3 On the flight between Charleston and McChord, position reports will be sent via HF radio, by a designated serial lead aircraft only, to AACS HF ground radio stations in the United States with instructions to forward the message to the following addressees:

456TH TROOP CARRIER WING OPERATIONS, (CLIFF HEATH) CHASN, SC

and

456TH WING OPERATIONS COMMAND POST, McChord AFB, Tacoma, Washington, ATTN: Colonel Bogue.

4 First and last aircraft in serial will make position reports to appropriate CAA facility over designated check points. All aircraft will transmitt position reports in the blind over designated check points on Troop Carrier Common, VHF or UHF.

5 When four (4) hours out of McChord, the lead aircraft will include in its hourly position report, a revised ETA for McChord AFB.

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6 Information and material concerning communications and navigation (AUTHENTICATION SHEETS AND PROCEDURES, EMERGENCY PROCEDURES, POSITION REPORTS, REQUESTING WEATHER, ETC.) will be provided by the overseas briefing section at McChord AFB, Tacoma, Washington. Additional information concerning sites, relaying procedures, etc., (Classified) will be distributed by Wing Operations in separate flimsy form, prior to aircraft departure from Charleston AFB.

6. The following messages will be sent by 456th Wing Operations, 456th Troop Carrier Wing Liaison officer, McChord AFB, or Squadron Commander, as appropriate, after arrival and departure of last aircraft of each serial from staging bases.

a. Departure Message or Arrival Message:

Addresses:

TO: Comdr 1st Air Div, Offutt AFB, Nebr.

INFO: Comdr 456 TRPCARWG CHASN AFB SC

COMDR TAC, LANGLEY AFB, VA

COMDR 18 AF DONALDSON AFB, SC

COMDR 456 TRPCARWG SHIROI AB, JAPAN

456 TRPCARWG COMMAN D POST (ATTN: COL. BOGUE)
MCCHORD AFB, WASH. (Where applicable)

Text of message:

1 Departure message:

a ACFT TAIL NOS.** DEPARTURE DATE/TIME GROUP ETA (Next Station)

b REMARKS: Reason for delay

** Include all in serial.

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2 Arrival message:

a ACFT TAIL NOS.** DATE/TIME GROUP STATUS

b REMARKS: Will include delays, with reason & ETIC & ETD

7. In the event an aircraft encounters difficulty of any nature, and is forced to leave the stream a complete description of the difficulty and the plans of the concerned Aircraft Commander will be given to the serial lead aircraft commander on Troop Carrier Common VHF or UHF radio.

a. The Aircraft Commander, will after landing, call all pertinent information to the appropriate liaison officer via long distance telephone (collect).

8. All times and dates stated are GREENWICH CIVIL TIME. Time conversion to local time for each staging base as follows:

McChord	GCT/DATE	-8 hrs.
Kodiak	GCT/DATE	-10 hrs.
Adak	GCT/DATE	-11 hrs.
Misawa	GCT/DATE	+ 9 hrs.
Itazuke	GCT/DATE	+ 9 hrs.
Kadena	GCT/DATE	+ 9 hrs.

(b) Command:

1 Colonel Jay D. Bogue will command.

THIS PAGE FOR AUTHENTICATION AND DISTRIBUTION ONLY.

JAY D. BOGUE
Colonel, USAF
Deputy Commander

ANNEX
'A' Operations

OFFICIAL:

RAYMOND J. OHLHUES
Major, USAF
Director of Operations

DISTRIBUTION:

10 - Comdr, 744th TCS
10 - Comdr Det 1, 744th TCS
10 - Comdr, 745th TCS
10 - Comdr Det 1, 745th TCS
10 - Comdr, 746th TCS
10 - Comdr Det 1, 746th TCS
2 - Each Staff Section
10 - File

INFO:

5 - Comdr 1st AD
5 - Comdr TAC
5 - Comdr 18AF

OPERATIONS ORDER)
NUMBER 2-55)

REAR ECHELON 456TH TROOP CARRIER WING (M)
Charleston Air Force Base, Charleston, South Carolina, 26 October 1955

ANNEX 'A - OPERATIONS

1. Troop Carrier Units designated in the operations order are to follow the standard aircraft loading as follows. Fuel load may vary due to temperature/dew points. Typical aircraft load for departing Charleston.

Basic Aircraft	46,600
Oil (100 gallons)	750
Water/Alcohol (57 gale)	399
Crew (7 personnel)	1,400
* Crew Baggage	1,260
** Emergency Equipment	566
Fuel (2814) gale	16,885
*** Extra Equipment	140
	68,000 pounds

* Crew Baggage

100 lbs personal
45 lbs Flying Gear
35 lbs Field Equipment

** Emergency Equipment

One (1) 20 man dinghy	165 lbs
Eight 1 man dinghy	160 lbs
Three D-1 kits	135 lbs
Eight exposure suits	32 lbs
One Gibson Girl	40 lbs

*** Extra Equipment

4 chocks	40 lbs
2 tool kits	100 lbs

456TH TROOP CARRIER WING (M)
MOVEMENT TABLE

ORGN	CHALK NO.	DEPART CHANS	McCHORD ARR	McCHORD DEPART	KODIAK ARR	KODIAK DEPART	ADAK ARR	ADAK DEPART
746 TCSQ	1	31 Oct 1130	2 Nov 0315	3 Nov 1000	3 Nov 1915			
	2	1145	0330	1015	1930			
	3	1200	0345	1030	1945			
	4	1215	0400	1045	2000			
	5	1230	0415	1100	2015			
	6	1245	0430	1115	2030			
	7	1300	0445	1130	2045			
	8	1315	0500	1145	2100			
745 TCSQ	1	3 Nov 1130	5 Nov 0315	6 Nov 1000	6 Nov 1915	7 Nov 1800	8 Nov 0030	
	2	1145	0330	1015	1930	1815	0045	
	3	1200	0345	1030	1945	1830	0100	
	4	1215	0400	1045	2000	1845	0115	
	5	1230	0415	1100	2015	1900	0130	
	6	1245	0430	1115	2030	1915	0145	
	7	1300	0445	1130	2045	1930	0200	
	8	1315	0500	1145	2100	1945	0215	

All Times are ZULU and all dates 1956. Enroute times based on 140 knots Ground Speed.

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Appendix 1 to ANNEX 'A'
CFORD 2-55
456 TCW
26 Oct 55

ORGN	CHALK NO.	DEPART CHASN	McCHORD		KODIAK		ADAK		MISAWA		JOHNSON	
			ARR	DEPART	ARR	DEPART	ARR	DEPART	ARR	DEPART	ARR	DEPART
		5 Nov	8 Nov	9 Nov	9 Nov	10 Nov	11 Nov	11 Nov	12 Nov			
DET 1 7455 TCSq	1	1130	0315	1100	1915	1800	0030	1600	0530			
	2	1145	0330	1015	1930	1815	0045	1615	0545			
	3	1200	0345	1030	1945	1830	0100	1630	0600			
	4	1215	0400	1045	2000	1845	0115	1645	0615			
	5	1230	0415	1100	2015	1900	0130	1700	0630			
	6	1245	0430	1115	2030	1915	0145	1715	0645			
	7	1300	0445	1130	2045	1930	0200	1730	0700			
	8	1315	0500	1145	2100	1945	0215	1745	0715			
		9 Nov	11 Nov	12 Nov	12 Nov	13 Nov	14 Nov	14 Nov	15 Nov	16 Nov	16 Nov	
DET 1 7466 TCSq	1	1130	0315	1000	1915	1800	0030	1600	0530	0001	0230	
	2	1145	0330	1015	1930	1815	0045	1615	0545	0016	0245	
	3	1200	0345	1030	1945	1830	0100	1630	0600	0031	0300	
	4	1215	0400	1045	2000	1845	0115	1645	0615	0046	0315	
	5	1230	0415	1100	2015	1900	0130	1700	0630	0101	0330	
	6	1245	0430	1115	2030	1915	0145	1715	0645	0116	0345	
	7	1300	0445	1130	2045	1930	0200	1730	0700	0131	0400	
	8	1315	0500	1145	2100	1945	0215	1745	0715	0146	0415	

All Times Are ZULU and all dates 1955. Enroute times based on 140 knots Ground Speed.

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Appendix 2 to ANNEX 'A'
OPURD 2-55
456 TCW
26 Oct 55

ORGN	CHALK NO.	DEPART CHASN	McCHORD ARR	McCHORD DEPART	KODIAK ARR	KODIAK DEPART	ADAK ARR	ADAK DEPART	MISAWA ARR	MISAWA DEPART	JOHNSON ARR	JOHNSON DEPART	ITAZUKE ARR	ITAZUKE DEPART	KADENA ARR	KADENA DEPART
DET 1 744 CS		11 Nov	13 Nov	14 Nov	14 Nov	15 Nov	16 Nov	16 Nov	17 Nov	18 Nov			18 Nov			
	1	1130	0315	1000	1915	1800	0030	1600	0530	0001			0550			
	2	1145	0330	1015	2000	1815	0045	1615	0545	0016			0605			
	3	1200	0345	1030	2015	1830	0100	1630	0600	0031			0620			
	4	1215	0400	1045	2030	1845	0115	1645	0615	0046			0635			
	5	1230	0415	1100	2045	1900	0130	1700	0630	0101			0650			
	6	1245	0430	1115	2100	1915	0145	1715	0645	0116			0705			
	7	1300	0445	1130	2115	1930	0200	1730	0700	0131			0720			
	8	1315	0500	1145	2130	1945	0215	1745	0715	0146			0735			
744 TCS		12 Nov	14 Nov	15 Nov	15 Nov	16 Nov	17 Nov	17 Nov	18 Nov	19 Nov					19 Nov	
	1	1130	0315	1000	1915	1800	0030	1600	0530	0001					0745	
	2	1145	0330	1015	1930	1815	0045	1615	0545	0016					0800	
	3	1200	0345	1030	1945	1830	0100	1630	0600	0031					0815	
	4	1215	0400	1045	2000	1845	0115	1645	0615	0046					0830	
	5	1230	0415	1100	2015	1900	0130	1700	0630	0101					0845	
	6	1245	0430	1115	2030	1915	0145	1715	0645	0116					0900	
	7	1300	0445	1130	2045	1930	0200	1730	0700	0131					0915	
	8	1315	0500	1145	2100	1945	0215	1745	0715	0146					0930	

All Times are ZULU and all dates 1955. Enroute times based on 140 knots Ground Speed.

Appendix 3 to ANNEX 'A'
OPORD 2-55, 456 TCW
26 Oct 55

56043

FLIGHT PLAN

Charleston to Ardmore (Direct)

TO	Rte.	ALT	TC	WIND	DC	TH	VAR /corr	MAG Heading	TAS KTS	Ground Speed	Distance This Leg	Time This Leg	Total Time	Total Dist.	Est. Fuel Remain
Augusta	R/10		A/W								113			113	
Atlanta	R/10		A/W								116			229	
Birmingham	R/10		A/W								118			347	
Columbus	DIR		271								86			433	
Greenville	DIR		268								131			564	
Texarkana	DIR		270								150			714	
Ardmore			287								156			870	

Appendix 4 to ANNEX 'A'
OPORD 2-55
456 TCW
26 Oct 55

FLIGHT PLAN

Charleston to Ardmore (Airways)

TO	ROUTE	TC	ALT	TAS	GS	DISTANCE	TIME	TOTAL TIME	TOTAL DISTANCE
Augusta	V-18	A/W				111			111
Atlanta	V-18	A/W				117			228
Anniston	V-18	A/W				81			309
Birmingham	V-18	A/W				34			343
Tuscaloosa	V-18	A/W				46			389
Meridian	V-18	A/W				80			469
Jackson	V-18	A/W				81			550
Monroe	V-18	A/W				93			643
Shreveport	V-18	A/W				89			732
Quitman	V-18	A/W				80			812
Dallas	V-18	A/W				69			881
Ardmore	V-15					82			963

Appendix 5 to ANNEX 'A'
OPORD 2-55
456 TCW
26 Oct 55

5C049

Flight Plan Airways to McChord (Airways)

TOs	ROUTE	ALT	TAS	CS	DISTANCE	TIME	TOTAL TIME	TOTAL DIST.
Oklahoma City	V-162				84			
Gage	V-117				115			119
Garden City	V-17				106			305
Goodland	V-17				96			401
Akron	V-132				83			484
Chayanne	V-132				95			579
Douglas	V-19				91			670
Casper	V-19				52			722
Sheridan	V-19				112			834
Billings	V-19				88			922
Livingstone	V-2				75			997
Helena	V-127				87			1084
Missoula	V-2				92			1176
Millan Pass	V-2				73			1249
Spokane	V-2				83			1329
Ephrata	V-2				75			1404
Seattle	V-2				129			1533
McChord	DIR				19			1552

FLIGHT PLAN

Ardmore to McChord (Airways)

TO	ROUTE	ALT	TAS	Ground Speed	DISTANCE	TIME	TOTAL TIME	TOTAL DISTANCE
Oklahoma City	V-163				84			
Gage	V-117				115			199
Garden City	V-17				106			305
Goodland	V-17				96			401
Akron	V-132				83			484
Cheyenne	V-132				95			579
Cherokee	V-118				132			711
Rock Springs	V-4 V-4				65			776
Malad City	V-4				158			934
Burley	V-4				67			1001
Boise	V-4				126			1127
Baker	V-4				98			1225
The Dalles	V-182				138			1363
Portland	V-112				72			1435
McChord	V-23				90			1525

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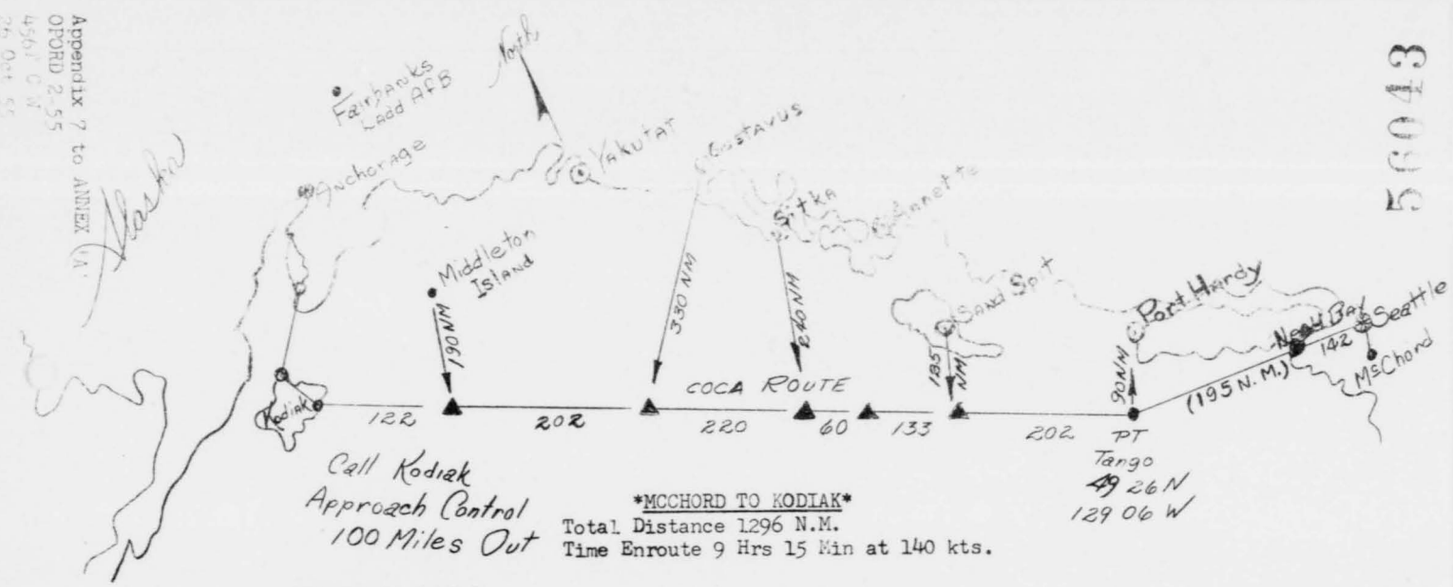
Appendix 6 to ANNEX 'A'
OPORD 2-55
456 TCW
26 Oct 55



MCCHORD TO KODIAK
Total Distance 1296 N.M.
Time Enroute 9 Hrs 15 Min at 140 kts.

EMERGENCY FIELDS

FIELDS	RUNWAY	FUEL	RADIO RANGE	RADIO BEACON	ILA
Port Hardy	H50	A/	0		
[illegible] Spit	H51	--	0	0	
Annette Is	H75		0		
Gustavus	H75		0	0	ILS
Yakutat	H78		0	0	
Middleton Is	35			0	
Elmendorf	H85	A/	0	0	GCA
Ladd AFB	H92	A/	0	0	GCA

Loran Available 1L2 1L3 2H5 2H4 (Ground Waves)
Celestial
Altimetry (Pressure lines of position & Bellamy drift)
Radio Bearings

Time Enroute with Headwind	10K	20K	30K	40K
TAS (Knots)				
150	9:15	9:55	10:45	11:42
160	8:40	9:15	9:55	10:45

FLIGHT PLAN
McChord to Kodiak

MCChord

TO	ROUTE	ALT	TC	WIND	DRIFT	TH	V	MH	TAS	GS	DIST	TIME	DIST TOTAL	TOTAL TIME	FUEL REMAIN
Seattle	A-1	5000	018				-22				29		29		
Dongeness	A/1	5000	320				-23				53		82		
Port Angles	R79	5000	241				-23				13		95		
Neah Bay	R79	7000	289				-23				47		142		
Pt Tango	DIR	5000	295				-24				195		337		
SW Leg Sand Spit	Coca	↓	300				-25				202		539		
SW Leg Annette	↓	↓	300				-25				153		692		
SW Leg Sitka	↓	↓	300				-25				60		752		
SW Leg Gustavus	↓	↓	300				-25				220		972		
Abeam Middletown	↓	↓	300				-25				202		1174		
Kodiak	↓	↓	300				-25				122		1296		

RADIUS OF ACTION

$\frac{TAS}{\frac{1}{2}T} = \frac{GSR}{PSR\ (hr\text{-}Min)}$

PSR _____HRS_____MIN_____N.M.

PSR in N. M. PSR x Outbound GS

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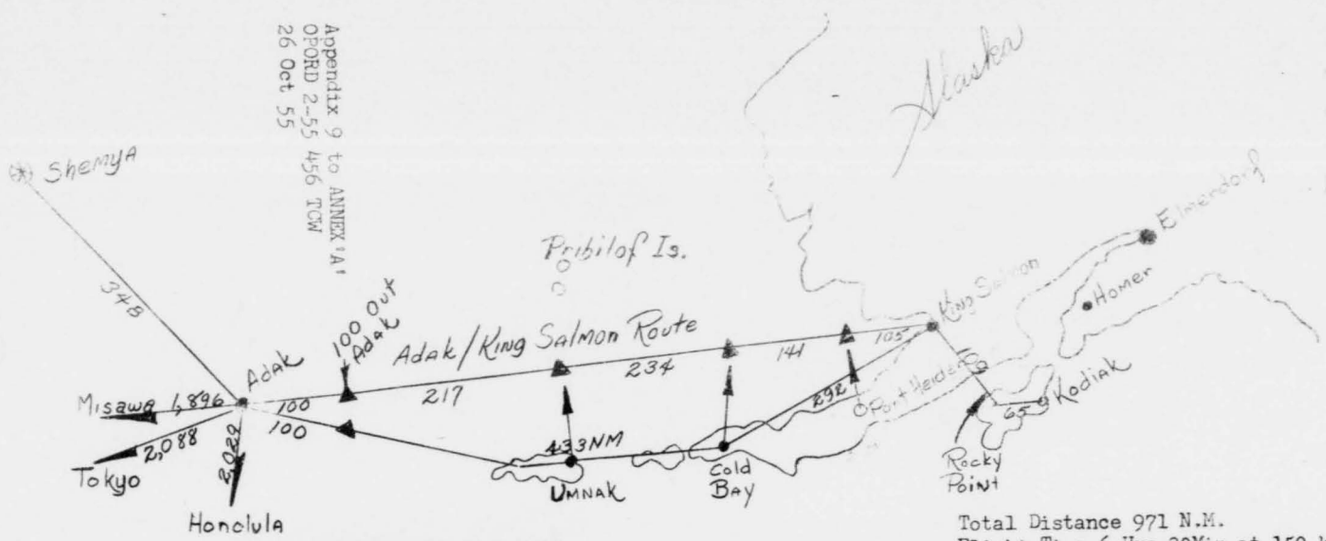
Appendix 8 to ANNEX 'A'
OPORD 2-55
456 TCW
26 Oct 55

Appendix 9 to ANNEX 'A'
OPORD 2-55 456 TCW
26 Oct 55



KODIAK TO ADAK NAS

Total Distance 971 N.M.
Flight Time 6 Hrs 30Min at 150 kts.

EMERGENCY FIELDS

FIELDS	RUNWAY	FUEL	RADIO RANGE	RADIO BEACON	ILA
King Salmon	H75	A/	0		GCA
Cold Bay	H75	A/	0	0	
Umnak				0	
Shemya	H100				

NAVIGATION AIDS

Loran 1L7 1L6 (Ground Waves)
Radio Bearings
HF/DF
VHF/DF
Celestial
Altimetry (pressure lines of position and Bellamy drift)

Flight Time with Headwind

TAS (knots)	10K	20K	30K	40K
150	7:00	7:30	8:05	8:50
160	6:30	7:00	7:30	8:05

FLIGHT PLAN

KODIAK NAS TO ADAK NAS

56043

KODIAK

TO	ROUTE	ALT	TC	WIND	DH	TH	VAR + or-	MAG Heading	TAS KTS	Ground Speed	Distance This Leg	Time This Leg	Total Time	Total Distance	Est Fuel Remaining
Rocky Point	B-27	7M	254				-22				65			65	
King Salmon	B-27	9M	312				-21				109			174	
Abeam Port Heiden		10M	238				-20				105			279	
NW Leg Cold Bay Range		10M	238				-18				141			420	
Abeam Umnak		10M	238				-15				234			654	
100 NM Out Adak		8M	238				-13				217			871	
ADAK		8M	238				-10				100			971	

RADIUS OF ACTION

$\frac{TAS}{\frac{1}{2}T} = \frac{GSR}{PSR\ (Hr\text{-}Min)}$

PSR in N.M. PSR x Outbound GS

PSR_____HR_____MIN_____N.M.

Appendix 10 to ANNEX 'A'
OPORD 2-55
496 TCW
26 Oct 55

Appendix 11 to ANNEX 'A'
CPCRD 2-55
456 TCW
26 Oct 55

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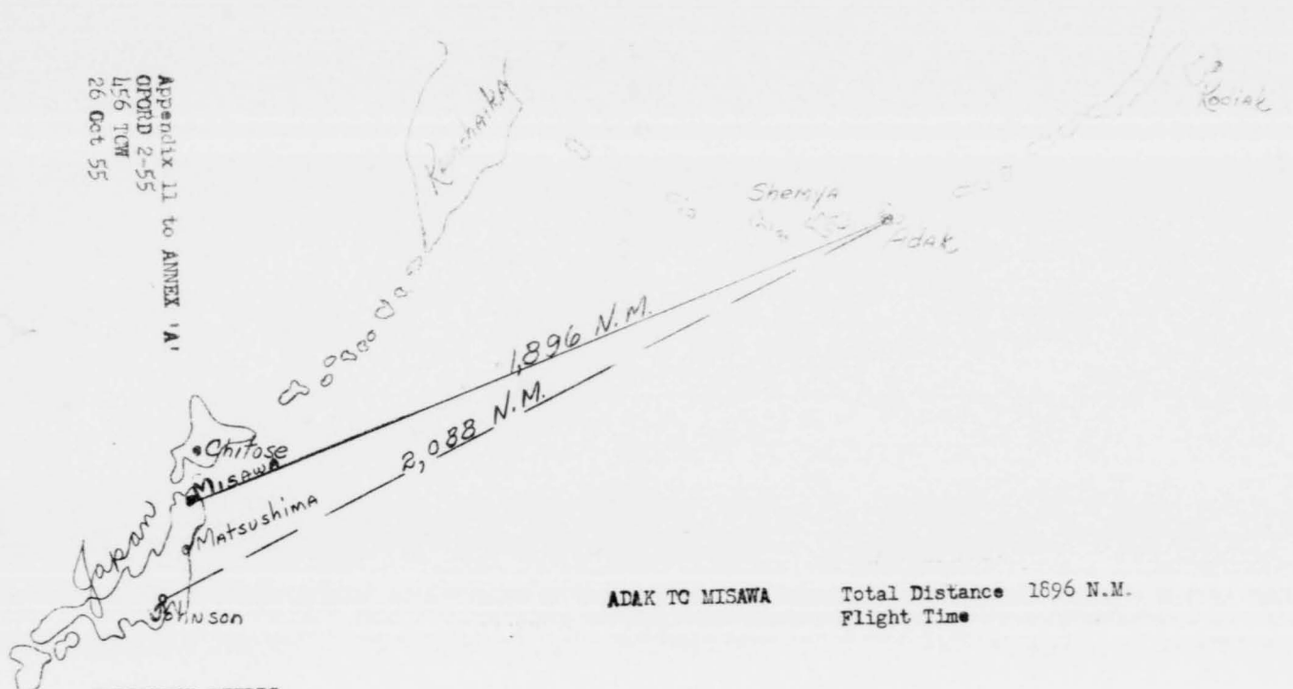


ADAK TO MISAWA Total Distance 1896 N.M.
Flight Time

EMERGENCY FIELDS

FIELDS	RUNWAY	FUEL	RADIO RANGE	RADIO BEACON	ILA
Shemya	H100				
Matsushima	H60			0	
Chitose	H92	A/		0	GCA
Johnson	H60	A/	0	0	
Yokota	H80	A/	0	0	GCA

Loran 4H6 4H7 2H5 2H4
Celestial
HF/DF
VFH/DF
Altimetry
Radio Bearings

Time Enroute with Headwind TAS (Knots)	10K	20K	30K	40K
150		13:30	14:35	15:55	17:05
160		12:40	13:30	14:35	15:55

FLIGHT PLAN

ADAK

Adak NAS to Misawa Japan

TO	ROUTE	ALT	TC	DC	TH	VAR +or-	MAG Heading	TAS KTS	Ground Speed	DIST THIS LEG	Time This Leg	Total Time	Total Dist.	Est Fuel Remaining
51°20'N 179°10'W			248°			8E				100			100	
50°00'N 175°42'E			248°			6E				215			315	
49°00'N 172°00'E			248°			3E				160			475	
48°00'N 168°15'E			248°			2E				160			635	
47°00'N 164°40'E			248°			0				162			797	
45°55'N 161°00'E			248°			1W				170			967	
44°50'N 157°12'N			248°			3W				170			1137	
43°40'N 153°32'E			248°			4W				175			1312	
42°40'N 150°00'E			248°			5W				180			1492	
41°40'N 145°45'E			254°			6W				200			1692	
41°10'N 143°35'E			254°			6W				102			1794	
MISAWA			254°			7W				102			1896	

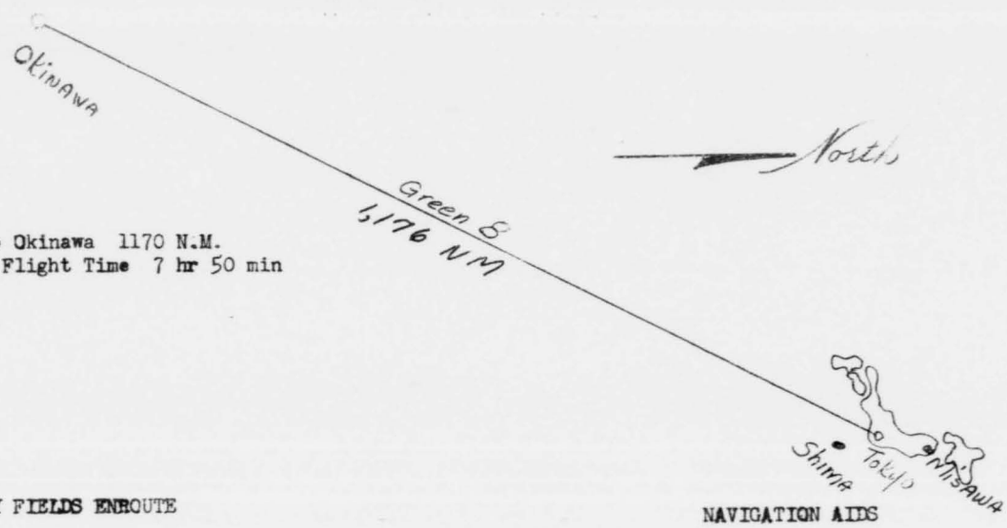
RADIUS OF ACTION

$\frac{TAS}{\frac{1}{2}T} = \frac{GSR}{PSR}$ (Hr-Min) PSR _____ HRS _____ MIN _____ N.M.

Appendix 12 to ANNEX 'A'
OPORD 2-55
456 TCW
26 Oct 55

Appendix 13 to ANNEX 'A'
OPORD 2-55
456 TCW
26 Oct 55

ROUTE DIAGRAM MISAWA TO OKINAWA



DISTANCE:

Misawa to Okinawa 1170 N.M.
Estimate Flight Time 7 hr 50 min

EMERGENCY FIELDS ENROUTE

Field Runway	Fuel	Radio Range	Radio Beacon	ILA
Mesushima H60	A/		O	
Johnson H70	A/	O		O
Yokota	A/	O		O
Tachikawa H50	A/	O		O
Haneda H84	A/	O		O

NAVIGATION AIDS

Loran
LH6 LH7
Radio Bearings
HF/DF
VFH/DF

Flight Time with Headwind TAS (Knots)	10K	20K	30K	40K
150	8:23	9:00	9:47	10:46
160	7:50	8:23	9:00	9:47

FLIGHT PLAN
Misawa to Okinawa

MISAWA
TO

	Rt.	ALT	TC	WIND	DC	TH	VAR W or E	MAG Heading	TAS K'S	Ground Speed	Distance This Leg	Time This Leg	Total Time	Total Dist.	Est. Fuel Remaining
Miyako	R-2		A/W								56				
Matsushima	R-2		A/W								92			148	
Oshima	G-8		A/W								146			394	
△ Nectar	G-8		233°				4W				100			494	
△ Oscar	G-8		233°				4W				120			614	
△ Papa	G-8		233°				4W				133			747	
△ Okinawa ADIZ	G-8		233°				4W				134			881	
△ Golf	G-8		233°				4W				137			1018	
△ Okuma	G-8		233°				4W				127			1145	
△ Kadena			233°				4W				31			1177	

RADIUS OF ACTION

$\frac{TAS}{\frac{1}{2}T} = \frac{GSR}{PSR}$ (Hr-Min) PSR_____HR_____MIN_____N.M.

PSR in N.M. PSR x Outbound GS

Appendix 14 to ANNEX 'A'
OPORD 2-55
456 TCW
26 Oct 55

FLIGHT PLAN

Misawa to Itazuke

TO	Rt.	Min. ALT	TO	WIND	DC	TH	VAR for-	MAG Heading	TAS KTS	Ground Speed	Distance This Leg	Time This Leg	Total Time	Total Distance	Est. Fuel Remain
Matsushima	B-2	8000	A/W								148				
O'Shima	G-8	6000	A/W								246				349
Fukuoka	G-10	6000	A/W								455				849
Itazuke	B-4		A/W								8				857

Appendix 15 to ANNEX 'A'
OPORD 2-55
456 TCW
26 Oct 55

56043

THIS SIDE FOR AUTHENTICATION AND DISTRIBUTION ONLY

JAY D. BOGUE
Colonel, USAF
Deputy Commander

APPENDICIES

1. Movement Table
2. Movement Table
3. Movement Table
4. Flight Plan Charleston to Ardmore (Direct)
5. Flight Plan Charleston to Ardmore (Airways)
6. Flight Plan Ardmore to McChord (Airways)
7. Route Diagram McChord to Kodiak
8. Flight Plan McChord to Kodiak
9. Route Diagram Kodiak to Adak
10. Flight Plan Kodiak to Adak
11. Route Diagram Adak to Misawa
12. Flight Plan Adak to Misawa
13. Route Diagram Misawa to Okinawa
14. Flight Plan Misawa to Okinawa
15. Flight Plan Misawa to Itazuka

OFFICIAL:

RAYMOND J. OHLHUES
Major, USAF
Director of Operations

Spare Parts Consumption List

Ardmore Air Force Base

QUANTITY	NOMENCLATURE
5 Each	Water Regulators
72 Each	Spark Plugs
1 Each	Distributor
2 Each	Sync Boxes
1 Each	Rudder Trim Actuator
2 Each	Prop Oil Cans
9 Each	Prop De-icing Timer Assemblies
4 Each	Directional Gyros (Pilot Side)
2 Each	Torque Indicators
2 Each	Auxiliary Power Plants
2 Each	Turbine Cooler Caps
4 Each	Cowl Flap Screw Jacks
3 Each	Main Inverters
2 Each	Instrument Inverters
1 Each	Main Tire Assembly
1 Each	Valve Air Pressure
1 Each	Carburetor

McChord Air Force Base

QUANTITY	NOMENCLATURE
72 Each	Spark Plugs
1 Each	Inverter Instrument
1 Each	Directional Gyro
1 Each	Brake Assembly
1 Each	Reel Antenna
1 Each	Oscillator
2 Each	Valve Assembly
1 Each	Cooler Oil
1 Each	Resistor
1 Each	Filter Hydraulic
3 Each	Switch
2 Each	Relay
1 Each	Amplifier
11 Each	Bulb
12 Each	Packing
16 Each	Seal "O" Ring
4 Each	Valve Assembly Complete
12 Each	Packing
1 Each	Socket
1 Each	Arm Assembly
1 Each	Valve
1 Each	Generator Tachometer
1 Each	Ammeter
3 Each	Distributor
1 Each	Cover Assembly
1 Each	Starter

56043

McChord Air Force Base (Cont'd)

QUANTITY	NOMENCLATURE
1 Each	Vibrator
1 Each	Engine S/N W-550329
1 Each	Compass, Fluxgate
1 Each	Regulator, Voltage

Kodiak Naval Air Station

QUANTITY	NOMENCLATURE
1 Each	Clamp
1 Each	Inverter
3 Each	Amplifier
1 Each	Pipe
2 Each	Brush Assembly
1 Each	Bulb
5 Each	Indicator
1 Each	Synchronizer
44 Each	Spark Plugs
1 Each	Timer Assembly
1 Each	Directonal Gyro
1 Each	Control
1 Each	Filter
1 Each	Act Assembly
1 Each	Valve
1 Each	Battery
1 Each	Tube Drain
1 Each	Torque Indicators
1 Each	Control
1 Each	Fire Extinquisher
1 Each	Carburetor
5 Each	Bolt
1 Each	Coil
1 Each	Prop Control
1 Each	Accumulator
1 Each	Valve, Air Pressure
1 Each	Cover Glass
2 Each	Sync Box
1 Each	Elevator
1 Each	Transformer
1 Each	Light
1 Each	Control Prop
1 Each	Screw Jack
1 Each	Regulator
1 Each	Prop Assembly Comp

Spares Cannibalized at Kodiak Naval Air Station

QUANTITY	NOMENCLATURE
1 Each	Prop Reversing Control
1 Each	Pipe Hydraulic

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Spare Cannibalized at Kodiak Naval Air Station (Cont'd)

QUANTITY	NOMENCLATURE
2 Each	Hydraulic Press Regulator
1 Each	Intake Pipe
1 Each	Exhaust Pipe
1 Each	Elevator Push, Pull Rods
1 Each	Spinner Injection Valve
1 Each	Flight Hood

Spare Parts Consumption List

Adak Naval Air Station

QUANTITY	NOMENCLATURE
1 Each	Pipe Assembly
2 Each	Gasket
5 Each	Plug
1 Each	Control Water Injector
1 Each	Cover and Bushing Assembly
1 Each	Shield
1 Each	Power Plant (APU)
1 Each	Synchronizer
1 Each	Brake Assembly
4 Each	Valve Assembly
4 Each	Actuator
2 Each	Screw Jack
1 Each	Gen Assembly
1 Each	Inverter
2 Each	Flasher Assembly
2 Each	Unit Assembly
1 Each	Coil
2 Each	Plug Spark
61 Each	Regulator Assembly
1 Each	Gasket
2 Each	Pump Assembly
3 Each	Indicator
3 Each	Transmitter
2 Each	Amplifier
1 Each	Receiver
1 Each	Junction Box
1 Each	Wire Steel
1 Lb	Screw Sheetmetal
15 Each	Distributor
2 Each	Rocker Box Cover
2 Each	

Misawa Air Base

QUANTITY	NOMENCLATURE
1 Each	Tach Indicator
1 Each	Propeller

56013

Misawa Air Base (Cont'd)

QUANTITY	NOMENCLATURE
3 Each	Hydraulic Pump
2 Each	Cooling Shields
2 Each	Nose Wheels and Tires
36 Each	Spark Plugs
1 Each	Main Inverter
1 Each	Hyd Line ("A" Deck)
1 Each	Distributor