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ANNEX B - ESTIMATE OF SUPPORTABILITY

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HEADQUARTERS  
Provisional Marine Aircraft Group 10  
First Marine Aircraft Wing, FMFPac  
FPO San Francisco 96602

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8 December 1973

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From: Commanding Officer  
To: Commanding General, Ninth Marine Amphibious Brigade  
Subj: Estimate of Supportability

Ref: (a) CTG 79.1 msg 080245Z Nov73 (C)  
(b) MCAS (H) Futema Weather Service Officer's ltr AOW:WFS:ws over 3146 dtd 24Oct73  
(c) CG 1st MAF msg 260717Z Nov73 (C)  
(d) III MAF msg 290509Z Nov73 (C)  
(e) PROV MAG-10 msg 230814Z Nov73 (C)  
(f) 3rd FSR msg 222304Z Nov73

Encl: (1) GENERAL SYNOPTIC PICTURE OF SOUTH KOREA  
(2) SYNOPTIC PICTURE OF IWAKUNI

1. MISSION

a. PROV MAG-10. PROV MAG-10's mission will be to conduct air operations in support of a joint US/ROK brigade-sized amphibious operation in the vicinity of NAA-RI, Republic of Korea.

b. Previous Decisions

(1) The aviation task force will be composed of fixed wing, helicopter, AAW and air control elements.

(2) The majority of aviation elements will be pre-positioned prior to D-day.

(3) Aviation command and air control agencies will be primarily located in the vicinity of Pohang airfield, ROK, with the following exception:

(a) DASC would be externally lifted by helicopter into position on Hill 222 near Blue Beach.

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(b) ASRT would be externally lifted by helicopter into position on Hill 293, about 15km north of the DASC.

c. Purpose of Estimate. The purpose of this estimate is to reflect the LF Aviation Commander's analysis of his capability to support Exercise FLYAWAY during the period 27 Jan - 9 Feb 74.

2. SITUATION AND CONSIDERATIONS

a. Enemy Situation. Not applicable.

b. Friendly Forces

(1) Present Task Organization. PROVMAF-10 forces currently consist of:

- (a) PROVMAF Headquarters
- (b) VMFA-115 (det or squadron)
- (c) VMA-311 (det or squadron)
- (d) Det HML-367 (4 UH-1E's)
- (e) Det VMO-6 (OV-10A's)
- (f) Det H&HS-18 (TACC/TADC)
- (g) Det MACS-4 (TAOC)
- (h) Det MASS-2 (DASC, ASRT)
- (i) Det Battery, 2nd LAAM Bn (Hawk Unit)
- (j) Det 3rd RE Platoon
- (k) Det MAES-36
- (l) Helicopter Package (TEA)

(2) Indefinite Helicopter Package. Of particular impact is the absence of a decision concerning the assignment of an ARG or a definite helicopter mix for the operation. This, naturally, has limited detailed embarkation and deployment planning. Furthermore, a decision not to use ARG ALPHA results in increasing logistic support problems by an order of magnitude. These problems are discussed in the following paragraph.

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(3) ARG ALPHA. If ARG ALPHA is not available for the exercise, helicopter support could be severely curtailed due to significant logistic problems involved in deploying a viable helicopter package to Korea.

(a) Helicopter Availability

1 The majority of MAG-36 CH-53 assets are already committed to ARG ALPHA. Remaining assets available for assignment to FLYAWAY are limited to the point that medium lift CH-46 helicopters will have to shoulder the major portion of the exercise workload. This limitation may be particularly crucial in view of the rugged terrain characteristic of the land AOA.

2 Current maintenance problems being experienced with the CH-46 aircraft could limit its participation in the exercise. Per reference (9), CH-46's participating in the exercise must be equipped with ISIS blades. At present, MAG-36 has only 4 aircraft so equipped. Barring unforeseen blade supply problems, at least 11 CH-46's should have the ISIS blades by mid-January.

(b) Additional Air/Sea Lift Required. Current allocations of amphibious shipping and airlifts are already assigned; additional shipping or airlifts will have to be provided to deploy a composite helicopter detachment from Okinawa to Korea. These additional requirements would be minimized by flight ferrying the CH-53's and CH-46's, but the necessary ground support equipment and any UE-1E's assigned would still require air or surface transport. Furthermore, due to a shortage of internal fuel tanks and adverse weather conditions, the flight ferry operation could take up to ten days to accomplish.

(c) POL Requirement. Should ARG-ALPHA not be available, additional requirements to supply and store POL would be necessary. Helicopter operations from Taegu or Pohang would require installation of a TAFDS to enable PROVMAF-10 to operate without dependence on fuel from Korean sources. Additional airlifts and shipping would be required to transport the fuel and TAFDS equipment to the AOA.

c. Exercise Area Considerations

(1) Weather. Weather forecast for the coastal region of South Korea during the proposed exercise time frame could play a significant part in limiting the support capabilities of the aviation component. All air operations in support of Exercise FLYAWAY in the AOA will be flown in a clear air environment to preclude the possibility of engine and air frame icing build-up and to ensure safety of flight. No aircraft will be launched into an icing environment unless the assigned priority is "mandatory". The following

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paragraphs summarize the climatological conditions that could limit or possibly even prevent flight operations in support of Exercise FLYAWAY. Reference (b) relates.

(a) Surface Winds. Surface winds are forecast to maintain a northerly direction with average velocities in the 10-20 knot range. Gale force winds, 33 knots or greater, can also be expected on occasion along exposed coastal stations such as Pohang. These forecast wind conditions could possibly affect aviation support as a result of fixed-wing cross wind take-off and landing limitations and helicopter rotor engagement limitations. Even more critical is the tendency for wind velocities to increase with altitude, especially near ridgelines and mountain peaks. Helicopter flight operations in the vicinity of mountainous terrain (peaks in AOA range from 400 ft - 3500 ft) can be expected to be extremely hazardous during high wind conditions.

(b) Precipitation. Precipitation in the form of rain can also be expected along the coastal areas. This is the dry cold season for South Korea, and a minimal amount of precipitation is forecast during the proposed exercise time frame. Nevertheless, any precipitation encountered at all can be expected to curtail or quite possibly even terminate flight operations due to engine and airframe icing build-up. F-4, A-4, CH-53 and CH-46 aircraft have engine anti icing equipment only, while OV-10 and AH-1J aircraft have no anti icing equipment. Insufficient hangar facilities could also prove crucial; aircraft open to the elements will be subject to ground icing should precipitation occur. If this occurs, a considerable amount of time would be required to remove the ice prior to flight operations. Rotor blade covers for helicopters are available, however, the airframe itself will be vulnerable to icing build-up.

(c) Weather Effect on Maintenance. Weather is not expected to adversely effect aircraft maintenance at Kwang Ju, Iwakuni, or on board the LPH, as a result of sufficient hangar space in which to work on aircraft. However, should aircraft be positioned at Pohang or Taegu, weather could appreciably effect the capability of maintenance personnel to perform day to day maintenance on the aircraft due to the lack of hangar space. The absolute minimum low temperature for Jan - Feb is -1 to +8 degrees F; this, combined with the high winds expected near the coastal region, could drop the chill factor extremely low (-45 F). Also, aircraft that are not hangared will be subjected to extreme cold and can be expected to require more maintenance than aircraft that are not.

## (2) Terrain

### (a) Air Base Locations

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1 Pohang AB. VFR only field located near port of Pohang. The runway is suitable for C-117, C-130 and helicopters. Maintenance facilities are non-existent. The E-W runway orientation and proximity to shoreline renders the runway vulnerable to northerly winds. Pohang AB is located about 20 miles north of the beaches and about 220 miles NW of Iwakuni, Japan as measured along prescribed airways.

2 Taegu AB. All weather field located in a valley about 40 miles west of Pohang and about the same distance northwest of the beaches. Maintenance facilities are extremely limited. Runways can handle all types of aircraft and are not subject to dangerous cross winds.

3 Kwang Ju AB. All weather field located about 100 miles west-south-west of Taegu and about 130 miles (air route mean distance about 200 miles) from the beaches. Maintenance facilities are quite adequate. Runways can handle all types of aircraft and are not vulnerable to dangerous cross winds.

4 NCAS, Iwakuni. All weather field with maintenance facilities located about 160 miles (air route mean distance about 220 miles) east of POHANG or the beaches.

(b) AOA Terrain. The land AOA is basically mountainous with peaks ranging from 400 feet near the coast to 3500 feet further inland. There are only a limited number of hard surface roads. Helicopter LZ's are virtually non-existent if helicopters are prohibited from landing on cultivated areas; LZ's on ridge and hill tops are only large enough for one aircraft at a time. The rugged terrain will create a heavy demand for helicopter support throughout the exercise.

#### d. Assumptions

(1) Sufficient C-141 and/or C-130 flights will be provided to support all the courses of action considered in this estimate.

(2) Sufficient amphibious shipping will be available to transport helicopters, aviation ground support equipment and command and control assets.

(3) Command, control and logistic elements of the ProvMag will be administratively inserted into Pohang, ROK prior to D-day.

(4) Air facilities at Kwang Ju, Taegu and Pohang will be available for use.

(5) Fuel cannot be obtained from Korean sources without immediate

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replenishment in kind.

(6) Sufficient fuel will be available to landing force aviation to support the operation with assets as assigned.

(7) No OV-10's will be based at Pohang due to marginal runway conditions.

(8) The deployment of an OV-10 detachment to Taegu is logistically infeasible unless other exercise units are also positioned there.

### 3. MAIN COURSES OF ACTION (COA)

a. COA #1. Operate two fixed wing squadrons (1 VMA, 1 VMFA) from Kwang Ju; one VMO detachment and one tanker detachment (VMGR) from Taegu, and one composite helicopter squadron aboard ARG-ALPHA.

b. COA #2. Operate two fixed wing detachments from Kwang Ju (1 VMA, 1 VMFA); one VMO detachment and one tanker detachment (VMGR) from Taegu, and one composite helicopter squadron aboard ARG-ALPHA.

c. COA #3. Operate two fixed wing detachments/squadrons (1VMA, 1VMFA) from Kwang Ju; one VMO detachment, one tanker detachment (VMGR), and one composite helicopter detachment from Taegu.

d. COA #4. Operate two fixed wing squadrons (1 VMA, 1 VMFA) and one tanker detachment (VMGR) from Iwakuni, and one composite helicopter squadron aboard ARG-ALPHA.

e. COA #5. Operate two fixed wing squadrons (1 VMA; 1 VMFA) and one tanker detachment (VMGR) from Iwakuni; one VMO detachment and one composite helicopter detachment from Taegu.

f. COA #6. Operate two fixed wing squadrons (1 VMA, 1 VMFA), and one tanker detachment (VMGR) from Iwakuni, and one composite helicopter detachment from Pohang.

### 4. EVALUATION

#### a. Course of Action #1

##### (1) Advantages

(a) Maximum helicopter assets available to support exercise

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(b) Forecast weather for launch and recovery of fighter/attack aircraft at Kwang Ju is better than that forecast for Iwakuni.

(c) Fuel for helicopters available from amphibious shipping.

(d) Helicopter assets aboard amphibious shipping with hangar, maintenance, and billeting facilities available.

(e) VMO support available.

(2) Disadvantages

(a) Fuel for fixed wing at Taegu and Kwang Ju would have to be replaced in kind to maintain required levels in Korea.

(b) Considerable airlift requirements to transport two full squadrons to/from Kwang Ju.

(c) Increased coordination required to manage aviation assets at three locations.

b. Course of Action #2

(1) Advantages

(a) Maximum helicopter assets available to support exercise.

(b) Forecast weather for launch and recovery of fighter/attack aircraft from Kwang Ju is better than that forecast for Iwakuni.

(c) Fuel for helicopters available from amphibious shipping.

(d) Helicopter assets aboard amphibious shipping with hangar, maintenance, and billeting facilities available.

(e) VMO support available.

(f) Slight reduction in airlift requirements over COA #1.

(2) Disadvantages

(a) Fuel for fixed wing at Taegu and Kwang Ju would have to be replaced in kind to maintain required levels in Korea.

(b) Sizeable airlift requirements to transport fixed wing detachments to/from Kwang Ju.

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(c) Any further reduction in the number of fixed wing assets (VMA/VMFA) could considerably affect capability to provide sustained support.

(d) Increased coordination required to manage aviation assets at three locations.

c. Course of Action #3

(1) Advantages

(a) VMO support available.

(b) Less coordination required to manage aviation assets at only two locations.

(2) Disadvantages

(a) Reduced helicopter assets available to support exercise.

(b) Largest requirement to transport/replenish fuel to maintain required levels in Korea.

(c) Largest number of airlifts required to transport fixed wing and helicopter assets to Korea.

d. Course of Action #4

(1) Advantages

(a) Maximum helicopter assets available to support exercise.

(b) Fuel for fixed wing aircraft would be acquired from Marine Corps sources.

(c) Fuel for helicopters would be drawn from amphibious shipping.

(d) Helicopter assets aboard amphibious shipping with hangar, maintenance and billeting facilities available.

(e) No airlift requirements to move detachments/squadrons to Kwang Ju/Taegu.

(f) Less coordination required to manage aviation assets at only two locations.

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03A34273(2) Disadvantages

- (a) No VMO support available.
- (b) Forecast weather for launch and recovery at Iwakuni less favorable than that forecast for Kwang Ju.

e. Course of Action #5(1) Advantages

- (a) Fuel for fixed wing aircraft, less VMO, would be acquired from Marine Corps sources.
- (b) No airlift requirements to move VMA/VMAF squadrons to Kwang Ju.
- (c) VMO support available.
- (d) Less coordination required to manage aviation assets at only two locations.

(2) Disadvantages

- (a) Reduced helicopter assets available to support exercise.
- (b) Fuel for helicopters at Taegu would have to be replaced in kind to maintain required levels in Korea.
- (c) Sizeable number of airlifts required to transport helicopter assets to Taegu.
- (d) Forecast weather for launch and recovery at Iwakuni less favorable than that forecast for Kwang Ju.

f. Course of Action #6(1) Advantages

- (a) Least number of airlift requirements to support the exercise.
- (b) Least requirement to transport fuel into Korea other than COA #4.
- (c) Minimum number of aircraft to be transported or flight ferried to the AOA.

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(d) Less coordination required to manage aviation assets at only two locations.

(2) Disadvantages

(a) Least helicopter assets available to support exercise.

(b) No VMO support available.

(c) Fuel for helicopters at Pohang would have to be replaced in kind to maintain required levels in Korea.

(d) Forecast weather for launch and recovery less favorable for Iwakuni than that forecast for Kwang Ju.

5. CONCLUSIONS

a. Most Favorable Courses of Action

(1) Course of Action #4. Considering the existing fuel situation, scheme of maneuver, characteristics of the area of operations and the other influencing factors, course of action #4 could be best supported in the easiest and most economical manner. The fuel required to support this course of action is not the least required of all the main courses of action, but the impressive size of the aviation element employed and the associated training acquired would greatly outweigh the minimum amount of fuel saved in any other course of action. Airlift requirements to support this course of action would be the least required of any of the courses of action considered. In that aspect, fuel would be reduced. Time enroute and time on station for the fighter/attack aircraft operating out of Iwakuni would be approximately the same as operating out of Kwang Ju, and the airlifts required to move the squadrons from Iwakuni to Kwang Ju would not be required. Also, the requirement to supply fuel for operations out of Kwang Ju would be negated. Time on station for helicopters would significantly increase with ARG-ALPHA available due to a shorter transit distance to the AOA from shipping vice operations from Taegu. A VMO detachment would not be used in this course of action; see assumption (8).

(2) Course of Action #6. If ARG-ALPHA will not be available, then an increased requirement to airlift/sealift helicopter assets to Korea will be necessary. Considering the additional logistical problems that would be encountered without ARG-ALPHA, course of action #6 could be best supported from the aviation commanders' point of view. The reduced helicopter assets (composite helicopter detachment) in this course of action would be co-located with the ProvMag Headquarters at Pohang and thus the positive control of these minimal assets would be enhanced.

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The method of fuel supply for operations out of Pohang is considered the primary problem with this course of action; solutions to this problem are discussed later in this report.

b. Salient Disadvantages of Less Desirable COA's

(1) Overall. The other courses of action would require numerous additional airlifts and/or shipping to transport fixed wing and/or helicopter assets to Korea. Additionally, the possibility of having to acquire fuel from Korean sources exists in each of them.

(2) Particular Disadvantages of COA's # 3, 5, and 6. If ARG ALPHA is not available to support the exercise, several significant problems will have to be resolved to successfully support the exercise. Of prime importance is a decision date for final determination concerning availability of ARG ALPHA. This should be prior to the departure of the USS DENVER from Okinawa to permit her being utilized to transport helo assets (4 UH-1E).

(a) Ferrying Helicopters to the AOA from Okinawa. At least ten (10) days should be allowed to ferry aircraft (8 CH-46; 2 to 4 CH-53) to Taegu/Pohang from Okinawa should shipping not be available to transport the helo assets to the AOA. Internal tank assets are extremely limited; only 3-4 aircraft can be moved at any one time. The tanks would then have to be flown back to Okinawa by C-130 for the next shuttle.

(b) ISIS Blades. Reference (c) states that CH-46 aircraft not equipped with ISIS blades will only fly in case of operational necessity. MAG-36 presently has 4 CH-46 aircraft equipped with the ISIS blades. By 15 Jan 74 approximately eleven (11) MAG-36 CH-46's should be ISIS equipped if current projections hold true. Consequently, sufficient CH-46 assets should be available to support the exercise.

c. Significant Aviation Limitations and Problems

(1) POL. Informal liaison with UNC Korea established that fuel from Korean sources would not be available for use during the exercise. This necessitates the use of USN/USMC fuel sources.

(a) Quid Pro Quo Negotiations. While reference (d) addressed the replenishment in kind of Korean fuel assets used during the exercise on a Quid Pro Quo basis, it should be noted that JP-4 is the only fuel that is used by USAF aircraft in Korea. It should therefore be assumed that replacement in kind would necessitate JP-4 for JP-4.

(b) Kwang Ju. Flight operations from Kwang Ju will require

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either replenishment in kind of fuel acquired, or a significantly large logistical effort to establish a TAFDS and maintain its level. Rail tank cars are used to transport fuel to Kwang Ju, however, liaison with the Kwang Ju POL officer indicated a shortage of tank cars and that the probability of their availability for USMC POL transportation to Kwang Ju is almost non-existent.

(c) Taegu. Liaison indicates that a pipeline is available from Pohang (Camp Libby) to Taegu which could be utilized to transport USN/USMC POL. However, at the same time it was ascertained that there were no storage facilities at Taegu for utilization by USN/USMC. This would necessitate the emplacement of a TAFDS system at Taegu thereby increasing surface or airlift requirements.

(d) Camp Libby. POL storage facilities are at Camp Libby and could possibly be used to store fuel for operations from Pohang, if the necessary coordination were effected. This would allow fuel to be pumped direct from amphibious shipping to Camp Libby; then fuel trucks could transport the fuel to a TAFDS that would be established at Pohang airfield.

(e) Pohang. Fuel for flight operations from Pohang would have to be stored at the airfield by TAFDS. A minimum number of additional airlifts would be required to transport the TAFDS to Pohang. Fuel could be supplied to the TAFDS from amphibious shipping. However, the ships would have to offload the fuel at Camp Libby or to an AAFS unit that would have to be established at Pohang. The establishment of an AAFS would require numerous additional airlifts and/or sealifts and a problem would still exist in transferring the fuel from the AAFS to the TAFDS at Pohang. See paragraph 4 of reference (e).

(2) Space Heaters. Because of shipping schedules, the PROVMA base camp will be in country in excess of 30 days. Furthermore, isolated detachments will be operating equipment on high terrain completely exposed to the weather. It is considered essential that some suitable type of tent/space heater be available to maintain personnel efficiency and avoid frostbite casualties. Reference (f) indicated that space heaters (TAM #V4540) were NIS and offered a substitute (TAM #V4520). Initial inspection indicates that the substitute items are in an extremely poor condition and are unsatisfactory for PROVMA use.

d. Possible Solutions to the Stated Problems

(1) POL

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(a) Quid Pro Quo Negotiations. Every effort should be made to allow in-kind replacement of fuel by amphibious shipping via the facilities at Camp Libby, preferably at the conclusion of the exercise to avoid overcompensation.

(b) Kwang Ju. It is suggested that fixed wing aircraft operate from Iwakuni to eliminate any need for fuel replacement.

(c) Taegu. If the helicopter squadron or VMO detachment is deployed to Taegu, a TAFDS system must be installed at Taegu and arrangements made to use the pipeline from Camp Libby to pump JP-5 from Camp Libby to the TAFDS at Taegu.

(d) Camp Libby. Necessary coordination be effected to secure the use of POL storage facilities.

(e) Pohang. A minimum TAFDS will have to be established at Pohang in any event; however deployment of a helicopter detachment to Pohang will require additional TAFDS. It is suggested that the TAFDS be resupplied by fuel trucks transporting fuel from Camp Libby.

(2) Space Heaters. Should the substitute space heater (TAM #V4520) be improved to serviceable condition, additional airlift and or shipping will have to be made available. Should the substitute space heater be unservicable/unrepairable, sufficient heaters would have to be airlifted from CONUS Force Service Regiments.

R. A. KUCI  
Colonel, U. S. Marine Corps  
Commanding

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03A34273GENERAL SYNOPTIC PICTURE  
OF SOUTH KOREA

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During the period January through March, Korea experiences its dry cold season, resulting in good air operations. This feature is the result of the enormous Siberian High Pressure which is at its peak size during this period.

Cyclone (low pressure) and frontal activity is still at a minimum, therefore precipitation is still somewhat low, generally less than two inches per month of which there are only 7-9 days of recordable precipitation. The type of precipitation is mostly rain along coastal areas with sprinklings of snow flurries, while inland, snow is the dominant precipitation form.

Surface winds still maintain a Northerly direction with average velocities in the 10-20 knot range, but gale force winds, 33 knots or greater, can be expected at least 6 days of the January through March period along exposed coastal stations such as Pohang. Typhoons are a rarity for the period January through April and are considered insignificant for this study.

During the month of April the Siberian High begins to recede Northward and weaken. As this occurs, South Korea becomes under the influence of a Southwesterly flow resulting in a marked increase in cloudiness and precipitation. (see enclosure)

The Polar front has begun its northward trek behind the receding Siberian High and waves along the front are common occurrence near the Southeast China coast, moving over the Japan Island of Kyushu.

Surface winds become more of a Westerly component with velocities decreasing to an average of 6-12 knots.

Precipitation amount almost doubles over previous three months average and is in the form of rain. Snow is very rare during April.

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Enclosure (1)

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CLIMATIC SUMMARY FOR TAEJU

<u>ELEMENT</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>
Absolute Max Temp F. . . . .	69	66	78	87
Mean Max Temp F. . . . .	39	44	55	66
Mean Min Temp F. . . . .	21	25	34	44
Absolute Min Temp F. . . . .	-1	8	19	27
Mean Relative Humidity % . . . . .	70	69	69	69
Mean Precipitation (in) . . . . .	0.91	1.32	1.79	3.06
Mean Snowfall (in) . . . . .	4.0	1.0	0.9	0.0
Mean No. days w/Precipitation 0.1"+ . . . . .	2.3	3.0	3.7	5.9
 Avg No. Days Cig = gtr 1,000' . . . . . and Vsby = gtr 3 miles	 28.2	 25.7	 30.5	 29.0
 Avg No. Days Cig = gtr 2,500' . . . . . and Vsby = gtr 3 miles	 27.6	 25.0	 28.6	 26.2
 Avg No. Days Cig = gtr 6,000' . . . . . and Vsby = gtr 3 miles	 24.2	 21.4	 22.8	 21.4
 Avg No. Days Cig = gtr 10,000' . . . . . and Vsby = gtr 3 miles	 21.6	 20.7	 21.5	 19.9
 Freq. Cig less than 1,500' and/or . . . . . Vsby less than 3 miles (avg no. days)	 7.1	 7.4	 3.0	 5.1
 Freq. Cig less than 300' and/or . . . . . Vsby less than 1 mile (avg no. days)	 1.9	 1.8	 0.3	 0.5

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Enclosure (1)



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SYNOPTIC PICTURE OF IWAKUNI  
Month of JANUARY

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The Siberian anticyclone brings a flow of continental Polar air which is augmented every 4 to 7 days by a fresh outbreak from the Northwest. The outbreaks of cold Arctic air produce brief periods of inclement weather due to the rapid movement of the leading edge of the air mass. Lows which form in the East China Sea and the Yellow Sea and which pass to the south of the station produce prolonged periods of overcast sky conditions and continuous light precipitation. The majority of these lows move east-southeastward across Southern Honshu and Kyushu.

December and January produce the annual minimum amount of precipitation, with snow falling on the average of 7 days during January. The total amount of snow in a 24 hour period is rarely more than a trace and this usually melts upon contact with the ground. The most snow that has been observed in a 24 hour period was an accumulation of two inches which remained for four days before melting. Frost is also likely to occur on 6 days during January.

Typhoons rarely occur north of 15°N latitude during January.

SYNOPTIC PICTURE OF IWAKUNI  
Month of FEBRUARY

The winter monsoon reaches a peak during the first part of this month. Most of the lows now pass between Naze (47909) and Kyushu and continue eastward, staying south of Japan. Some deep lows with a particularly strong outbreak of Polar air start in the Lake Baikal area and travel north of Korea producing a secondary low and an intensifying cold front in the Sea of Japan. This type of cold frontal passage usually brings winds of 20 knots from the northwest, with winds as high as 35 knots having been experienced on two occasions in the past.

Snow falls 5 days during the month; but, as in January, it is usually only a trace and melts as it falls. The heaviest snowfall experienced during February was 9 inches in 1956; it melted rapidly however and remained on the ground only 2 days. Frost normally occurs 6 days during the month.

Typhoons rarely affect this area during February.

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Enclosure (2)

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CLIMATIC SUMMARY FOR IWAKUNI

<u>ELEMENT</u>	<u>JAN</u>	<u>FEB</u>
Avg Max Temp F. . . . .	47	49
Avg Min Temp F. . . . .	34	35
Mean Relative Humidity %. . . . .	69	69
Mean Precipitation (in) . . . . .	2.48	2.56
Mean Snowfall (in) . . . . .	1.3	2.2
Avg No. days w/Precipitation. . . . .	5	5.1
 Avg No. Days Cig = Less 1,500'. . . . . and Vsby less than 3 miles	 5	 7
 Avg No. Days Cig = Less 300'. . . . . and Vsby less than 1 mile	 0.3	 1.4
 Avg No. Days Cig = gtr 1,000. . . . . and Vsby = gtr 3 miles	 29.4	 26.0
 Avg No. Days Cig = gtr 2,000. . . . . and Vsby = gtr 3 miles	 28.6	 25.0
 Avg No. Days Cig = gtr 2,500. . . . . and Vsby = gtr 3 miles	 26.0	 21.0
 Avg No. Days Cig = gtr 6,000. . . . . and Vsby = gtr 3 miles	 21.0	 18.0
 Avg No. Days Cig = gtr 10,000 . . . . .	 18.0	 17.0
 Freezing Level Average Height 2,000'		

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ANNEX C - COMPENDIUM OF OPERATION ORDER

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PROVISIONAL MARINE AIRCRAFT GROUP-10  
1st Marine Aircraft Wing, FMFPac  
FPO, San Francisco 96602

10 January 1974

PROVMAG-10 PARTICIPATION IN EXERCISE FLYAWAY

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\* ENCLOSURES AVAILABLE MAG-36 FILES

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1.

PROVMAG-10 KEY STAFF

COMMANDING OFFICER	COL R. A. KUCI 203 22 39 30/9907
EXECUTIVE OFFICER	LTCOL L. W. SMITH 578 40 94 91/7565
OPERATIONS OFFICER	LTCOL V. P. HART 527 38 12 00/7522
AIR CONTROL OFFICER	LTCOL C. D. GODDARD 443 32 66 55/6708
S-1	CAPT J. R. TAYLOR 532 40 32 23/7562
S-2	CAPT R. R. KERSEY 540 48 49 81/7562
S-4	MAJ B. L. DANIELS 422 44 99 45/7564
AVIATION SAFETY OFFICER	CAPT G. O. HENKEL 369 44 21 30/7596
CEO	MAJ D. D. HALL 482 34 89 15/2502
LEGAL OFFICER	CAPT V. N. EDEN 455 44 50 40/4402
EMBARKATION OFFICER	CAPT T. J. DOYLE 460 38 14 69/7557
CAMP ENGINEER	CAPT J. D. WINTERSTEEN 193 34 28 96/1302
CHAPLAIN	LT (CHC) R. C. SCHALL USNR 384 36 11 99/ 4105
SERGEANT MAJOR	1STSGT W. L. THRONE 197 22 14 51/9999

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2.

PROVMAG-10 TASK ORGANIZATION

## PROVMAG-10 HEADQUARTERS

VMFA-115	LTCOL C. V. SMILLIE
VMA-311	LTCOL J. H. MILLER
HMM-164(-)(REIN)	LTCOL K. H. WILCOX -
DET VMO-6	MAJ J. R. ZELlich
DET HML-367	MAJ R. A. FETTERLY
DET MACS-4	LTCOL R. L. MURRAY
DET MASS-2	LTCOL C. D. GODDARD
DET MAES-36	
DET VMGR-152	
DET VM CJ-1	
DET H&HS-18 (TACC)	
DET MWCS-18	
DET MATCU-66	
DET LAAM BN	
DET FAAD BTRY	

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3.

MOVEMENT TO OBJECTIVE AREA

10-15Jan74 Eighteen (18) PATMA C-130 airlifts of base camp equipment from Kadena AB to Pohang Airfield. \*

13Jan74 LSD ANCHORAGE loads MACS-4, MASS-2 personnel and heavy equipment at White Beach Okinawa.

16Jan74 LSD ANCHORAGE off-loads embarked personnel, equipment and 10,000 gallons of JP-5 via LCM at Pohang port.

18Jan74 LSD ANCHORAGE loads H&HS-18 (TACC), M&CS-18, crash truck, fuel trucks, generators, heavy equipment and communications gear at Iwakuni.

18Jan74 Flight-ferry two CH-53D's from MCAS(H) Futema to Taegu AB via MCAS Iwakuni

19Jan74 C-141 departs Kadena AB for Taegu AB with personnel and equipment for VMO-6 and HMM-164 units at Taegu.

20Jan74 Three (3) OV-10A aircraft depart from MCAS(H) Futema for flight-ferry to Taegu AB. Aircraft should arrive the same day, enroute weather permitting.

21Jan74 LSD ANCHORAGE off-loads embarked personnel, equipment and 20,000 gallons of JP-5 via LCM at Pohang port.

21Jan74 Estimated time of arrival at Taegu AB of the two (2) CH-53D flight-ferry aircraft.

26Jan74 LPD DENVER loads PROVMAF staff nucleus, four (4) UH-1E and two (2) CH-53D aircraft at White Beach pier.

29Jan74 LPD DENVER off-loads personnel and aircraft at Pohang port.

\* Eighteen C-130 airlifts required due to the paucity of surface transport.

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4.

EMPLOYMENT OF PROVMAg RESOURCESVMFA-115

During the week of 23-30Jan74, randomly scheduled flights of squadron aircraft will be flown from Iwakuni to the AOA to familiarize aircrews with PROVMAg and Korean air control procedures. 30Jan74 (R-Day) 3 F4 events (6 sorties) will be flown under actual exercise conditions. Aircraft will participate in air intercepts on VMA-311 A-4 aircraft (controlled by MACS-4 TACC). In addition, they will accomplish aerial refueling with VMGR-152 tankers. 1Feb74 through 6Feb74, the squadron will be tasked daily for six pre-planned events (12 sorties) for the play of the problem. All air operations in the AOA will be conducted under VFR conditions. IFR departures and recoveries are planned for these Iwakuni based aircraft.

VMA-311

During the week of 23-30Jan74, randomly scheduled flights of squadron aircraft will be flown from Iwakuni to the AOA to familiarize aircrews with PROVMAg and Korean air control procedures. 30Jan74 (R-Day) four A-4 events (8 sorties) will be flown under actual exercise conditions. Aircraft will participate in CAS missions and act as aggressor air for intercepts conducted by MACS-4 TACC and VMFA-115 aircraft. In addition, they will accomplish aerial refueling with VMGR-152 tankers. 1Feb74 through 6Feb74, the squadron will be tasked daily for nine pre-planned events (18 sorties) for the play of the problem. Like the F-4 missions, all A-4 operations will be conducted under VFR conditions. CAS missions will only be flown during daylight hours and 5,000 feet ceiling and 5 miles visibility must prevail in the AOA. IFR departures and recoveries are planned for these Iwakuni based aircraft. Taegu AB will serve as the emergency divert field in Korea for all exercise aircraft.

HMM-164(-)(REIN)

The advance elements of this composite squadron will be flown to Taegu AB from Kadena AB on 15 and 18Jan74 via VMGR-152 MARLOG flights. On 18Jan74 LtCol WILCOX (CO) will depart MCAS(H) Futenma leading the flight-ferry of two CH-53D's to Taegu AB. ETA is estimated to be 21Jan74 depending on enroute weather. The flight will be conducted during daylight hours and VFR conditions only. Upon arrival at Taegu AB, these helicopters and crews will be utilized to airlift PROVMAg-10 personnel and equipment to remote radio relay and air control sites within the AOA.

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On 20Jan74, three OV-10A aircraft will depart MCAS(H) Futema for Taegu AB. The flight will be conducted under VFR conditions. Upon arrival at Taegu AB, the pilots will begin familiarization flights in the AOA. In addition, orientation flights will be conducted for Korean air officers for TAC(A) missions with ROK Marine ground units. During the play of the problems, VMO participation will consist of TAC(A), photo, observation, radio-relay, paradrop and close-in air support (CIAS).

On 26Jan74, four HML-367 UH-1E helicopters will be flown aboard the LPD DENVER at Okinawa. The two additional CH-53D's from HMM-164 will also be flown aboard at this time. Upon the arrival of the LPD DENVER off Pohang on 29Jan74, the UH-1E and CH-53 aircraft will be flown to Taegu AB. During the play of the problem, the UH-1E aircraft will be used for light logistic, observation, medevac, VIP and administrative transport. From sunset to sunrise, one UH-1E will be on 15 minute alert at Pohang for actual medevacs. This aircraft will be backed-up by a CH-53D on 30 minute alert at Taegu for any emergency mission the UH-1E may not be able to accomplish, i.e. overwater flight, heavy lift, etc.

The CH-53D aircraft will be used for normal heavy lift missions. This will include airlift of the UYQ-3 to its remote position on Hill 222, R-Day and D-Day USMC troop-lifts from the LPD DENVER and ROK troop-lifts from the LSD ANCHORAGE. The scheme of maneuver ashore also calls for limited helicopterborne operations.

LtCol WILCOX will have operational control of all PROV MAG resources operating from Taegu AB.

DET MACS-4

This unit will be transported to Pohang port via the LSD ANCHORAGE - arriving there on 21Jan74. As soon as the equipment is off-loaded by LCM on the beach, it will be transported to Pohang airfield and placed in operation ASAP. A manual TAOC utilizing the UPS-1 radar and either the TPS-22 or TPS-32 (whichever is in the best operating condition) will be established adjacent to the PROV MAG-10 Pohang base camp. A manual TAOC is considered more than adequate to handle the limited fixed-wing participation. In addition, there are no NTDS ships involved in the exercise. A maximum of 7 to 10 USMC fixed-wing aircraft will be operating in the AOA at any one time. A maximum of 9 to 12 air intercepts will be performed daily.

DET MASS-2

This unit will also be transported to Pohang port via the LSD ANCHORAGE. The equipment will initially be moved to Pohang airfield. During the week of 23 to 30Jan74, the DASC (UYQ-3) will be

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airlifted by CH-53D to Hill 222. The DASC will be tied in to the 9thMAB FSCC (located at the base of Hill 222) by wire communications. It is not planned to relocate the DASC during the play of the problem. It was planned to airlift the ASRT to Hill 293. However, as of this writing, the ASRT to be used on this exercise is in a down status due to major TPQ-10 electronic and parts problems. The other two ASRT's assigned to MASS-2 are not available as one is being utilized at Cubi Point and the other one is being surveyed. Should the defective ASRT be restored to an up status or a replacement ASRT be received from CONUS in sufficient time prior to D-Day, one will be utilized in the exercise.

DET MABS-36

Commence loading at Kadena AB on 10Jan74. Eighteen PATMA C-130 loads required between 10-15Jan74 to move PROV MAG-10 base camp equipment to Pohang airfield due to the paucity of Navy shipping. The base camp will be constructed to accommodate 600 personnel under canvas in a cold weather environment. It is planned to have most of the base camp constructed before the majority of personnel and air control equipment arrive via ship on 16 and 21Jan74. Base camp personnel loading will consist of the following:

PROVMAG Staff	35
DET MACS-4	150
DET MASS-2	50
DET MABS-36	120
DET H&HS-18	120
DET MWCS-18	
DET MATCU-66	25
MISCELLANEOUS	<u>50</u>
	550 TOTAL

In addition, PROV MAG-10 has been tasked by 9thMAB to billet 25 TECG personnel and to temporarily billet one rifle company for a few days.

It is estimated that fuel requirements to run the base camp/air control power generating equipment and the tent heating stoves will be approximately 2,200 gallons of JP-5 daily.

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As soon as the messhall facilities are operational, "A" rations will be served to all personnel.

See TAB A for base camp layout.

DET VMGR-152

As a result of scheduled runway construction at MCAS (H) Futema, VMGR-152 aircraft will deploy to Kadena AB and MCAS Iwakuni. Routine MARLOG flights (13 total) will transit the route between Kadena AB, MCAS Iwakuni, Pohang airfield and Taegu AB about every 3 days during the period 15Jan through 21Feb74.

During the week of 23 to 30Jan74 random refueling tracks will be controlled by the TAOC. Where possible, MARLOG aircraft will be used briefly for these practice missions. On 30Jan74 and during the period 1 through 6Jan74, three aerial refueler missions will be conducted daily. Taegu AB will be available for tanker replenishment.

VMGR-152 transport may be required to assist in the retrograde of PROVMAAG-10 personnel. MARLOG flights will be used to the maximum extent for this purpose. This extra use is the result of the late debarkation by ship of PROVMAAG resources. Although the FINEX date is 6Feb74, some PROVMAAG personnel and considerable equipment will have to remain at Pohang airfield waiting for surface shipping until 21Feb74.

DET VMCJ-1

This detachment will operate out of MCAS Iwakuni and conduct electronics reconnaissance/countermeasures and photo reconnaissance in support of 9thMAB forces and serve as aggressor recon aircraft as the play of the problem and VMCJ-1 resources permit. Provide electronic reconnaissance reports and imagery reproductions to PROVMAAG-10 S-2 via most expeditious means.

DET H&HS-18

Embark from MCAS Iwakuni on 18Jan74 via the LSD ANCHORAGE for Pohang port. On 21Jan74 move ashore via LCM and establish a manually operated TACC in close proximity to the TAOC at Pohang airfield. Considering the scope of the fixed-wing and helicopter participation, a manually operated TACC is considered more than adequate.

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DET MACS-18

Embark from MCAS Iwakuni on 18Jan74 via the LSD ANCHORAGE for Pohang port. On 21Jan74 move ashore via LCM and provide necessary communication support (personnel and equipment) to establish and maintain PROVMAg-10 air control communications facilities. Covered circuits will be used on all PROVMAg UHF and FM tactical nets.

DET MATCU-66

Deploy from Kadena AB during 10-15Jan74 period via PATMA C-130 aircraft for Pohang airfield. MATCU will set-up UHF and FM tower frequencies to control PROVMAg air traffic in and out of Pohang airfield. In addition, MATCU personnel will be available to augment USAF tower operators at Taegu should this be required.

DET LAAM BN

Embark from CONUS (MCAS Yuma) via C-141 aircraft for Taegu AB. The detachment will be moved by surface transportation to Pohang airfield where it will be tactically positioned on a ridge 2.5 kilometers to the west of Pohang airfield. This assault fire unit will provide air defense protection for the Pohang port and airfield complex and will be manually tied into the TAOC. To date, it has not been confirmed that this unit will participate.

DET FAAD BTRY

Embark from CONUS (MCAS El Toro) via C-141 with the LAAM detachment for Taegu AB. The detachment will motor convoy to Pohang airfield for utilization by PROVMAg and aggressor forces. The TECG will employ this detachment for a portion of the exercise against 9thMAB air support operations. When available to PROVMAg they will be used for close-in air defense of the DASC, ASRT and airfield complex. To date, it has not been confirmed that this unit will participate.

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5. RETROGRADE FROM THE OBJECTIVE AREA

7Feb74 LPD DENVER loads four UH-1E and two CH53D at Pohang port.

9Feb74 LPD DENVER off-loads four UH-1E and two CH-53D at Okinawa.

12-22Feb74 Eighteen (18) PATMA C-130 airlifts of base camp equipment from Pohang AB to Kadena AB.

14Feb74 Flight-ferry two (2) CH-53D's from Taegu AF to MCAS(H) Futema via MCAS Iwakuni. ETA MCAS(H) Futema 15Feb74.

21Feb74 LSD POINT DEFIANCE loads H&HS-18 (TACC), MWCS-18, crash truck, fuel trucks, generators, heavy equipment and communications gear at Pohang port.

23Feb74 LSD POINT DEFIANCE off-loads embarked personnel and equipment at MCAS Iwakuni.

24Feb74 LST CAYUGA loads MACS-4, MASS-2 personnel and heavy equipment at Pohang port.

27Feb74 LST CAYUGA off-loads embarked personnel and equipment at Okinawa.

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ANNEX D - COMMUNICATIONS REPORT

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I. INTRODUCTION. Communications were generally reliable and provided the Commander with the Control structure required for Command of Air assets. The UHF/VHF ground to air Communications were exceptionally reliable. Secure voice applications caused only minor outages of a limited nature. The salient communication shortfall was the inability to establish reliable teletype with the USS DENVER and HMM-164 at Taegu. (TAA Net) The arrangements that were made with Marine Advisor Detachment Pohang for DCS entry proved invaluable.

## II. OPERATIONAL SUMMARY

### A. Planning:

1. Communications planning started early in the planning cycle. Arrangements were made to fly a CH-53 into the Pohang area on 7 November 1973, this helicopter provided the means to test various types of communications from different sites. These tests proved the feasibility of the location of the DASC and PROV MAG-10 CP locations from a communications prospection. The result was excellent Communications from PROV MAG-10 to the DASC throughout the exercise.
2. Detail and Coordinated planning was made difficult because the 9th MAB staff was committed to the sailing schedule of the ship (DENVER). Only one formal communications conference was held and that was in late October 1973.
3. Planning was complicated by the rotation of the ACEO (Capt GALLINA) prior to the exercise and by the fact that his replacement (Capt PARUNZSKI) was unable to be present during the exercise because of personal considerations. This resulted in the CEO operating without an assistant during the exercise.
4. The presail conference was far too short. The result was that the detail coordination so vital to communications success was lacking. An example was the 48 hour effort to install the 9th MAB to PROV MAG-10 Multi-channel system, (Link 5) which when finally installed was secured 5 minutes later. This effort failed because detailed coordination was missing.
5. PROV MAG-10 planned for and coordinated its Communications Guard through the Marine Advisory Detachment, Pohang, Korea. No other unit had made previous arrangements and unilaterally decided the PROV MAG should assume their Communications Guard. Example of this was the TEGG, RLT-9 and ANGLICO. In addition, the 9th MAB sent numerous messages to PROV MAG-10 with passing instructions for RLT-7. This created an impossible situation for the PROV MAG Communication Center. Non-delivery of messages resulted when units or their representatives were not available. In addition it placed an unplanned burden on the MarAdvDet, Pohang personnel.
6. Marine Air Support Squadron Two does not presently have its own Crypto Account. This required advance planning to provide their needs from MWCS-18. This situation resulted in shortages of Crypto equipment in the

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PROVMAG-10 CP and created a dangerous accounting problem for the MWCS-18 Crypto Officer. MASS-2 should obtain their own Crypto Account as soon as feasible.

7. A systems control management concept was planned, installed and utilized. It proved to be invaluable as a management tool. The ability to monitor all circuitry from a central location provided the required status information to effectively and methodically correct communications problems. The Systems Control Center was manned on a 24 hour a day basis by a watch officer who had the required information and tools to influence the communication situation. The management of PROVMAG-10 Communications would have been impossible without the system control concept. Continued use and refinement of the SYSCON concept is imperative.

B. Embarkation/Movement Highlights:

1. Embarkation of PROVMAG-10 Communications elements was typified by a minimum of problems. The movement of PROVMAG-10 elements into the objective area as early as 10 January and the subsequent withdrawal on 23 February created the need for HF Communications with Iwakuni and Futema. This administrative requirement was excessively long and marginally effective.

C. Pre D-Day Operations:

1. Initial communications were established with PROVMAG-10 units beginning 25 January with the objective of having all circuits installed and checked out by 28 January. This objective was met and minimum problems were encountered. Activation of circuits was intentionally delayed to avoid the unnecessary use of equipment causing excessive deadlining.

2. The LF CMD #1 and LF TAC net were established with DENVER on 29 January. It became apparent that TTY equipment would be a problem throughout the exercise. Additionally, the VHF circuits would not reach the DENVER in the objective area. Therefore, PROVMAG-10 provided a manual relay on Hill 293 for the LF TAC net. This relay operated successfully from 30 January through 6 February 1974.

D. Operations Ashore Day by Day:

1. No specific comments.

E. Withdrawal Communications:

1. The following retrograde Communications were provided PROVMAG-10 rear in Pohang:

a. Local telephone.

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- b. Wing liaison Net.
- c. Autodin entry (MarAdvDet Pohang)
- d. Autovon entry (Young San)

## III. TRAINING OBJECTIVES:

- 1. Initial indications are that COMSEC was highly successful. The high utilization of secure voice and emphasis on proper procedures reduced COMSEC violations. PROVMA-10 observed only two Beadwindow violations.
- 2. No need arose for DCS entry, thus no DCS entry was attempted.
- 3. Communications training levels were enhanced in all occupational fields.

## IV. PROBLEMS/LESSONS LEARNED

- 1. Problem. Ship to shore communications.

- a. Discussion. PROVMA-10 communications personnel devoted hundreds of man hours (technicians, and operators in radio, wire, teletype and crypto equipment) to establish communications with ship board units via the TAA and LF CMD #1 teletype nets. The reliability was marginal and loss of communications could not be explained. The result was short tempers and accusations of incompetence between operators which further detracted from the efforts to establish communications.

- b. Recommendation. That the opportunity be provided for major Marine communications units to participate in CPX's with amphibious shipping on a regular basis. This will allow the operators to observe each other's techniques and to solve compatibility problems between equipments.

- 2. Problem. Lack of communications in PROVMA-10 relay facilities.

- a. Discussion. PROVMA-10 multichannel personnel planned and emplaced a relay team on hill 293 for use with Link 9 multichannel link. The decision was based on the communications requirements and the locations of the supported units. This relay became the only one available to the entire landing force and was instrumental in completing communications via the LF Tac Net and multichannel Link 5. Both were previously unassigned missions, both were performed in an excellent manner.

- b. Recommendation. That all pre-exercise communication conferences discuss locations and responsibilities of prospective relay sites, especially in obviously difficult terrain. Emphasis should be given to the old rules such as "Senior to Subordinate".

- 3. Problem. Helo lifts for communication relay sites.

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a. Discussion. Although planning for helo-lifts was conducted well prior to requirements, lack of understanding on the part of the communicators caused delays in loading at the LZ.

b. Recommendation. That HST personnel be assigned or made available to review loading plans and possibly avoid complications at the landing zone.

4. Problem. Coordination/cooperation between MABS-36 Communication Platoon and MWCS-18 Detachment.

a. Discussion. In addition to long lines, multichannel links and specific support of TACC operations, Detachment MWCS-18 was tasked with total PROVMAg comm engineering and systems control. This last responsibility made MWCS-18 the controlling organization in all PROVMAg communication and MABS-36 Communication Platoon became subordinate. However, MABS-36 preceded MWCS-18 into the exercise and began to establish communications including the systems control facility. This left MWCS-18 personnel with a communication system well into construction and system control equipment with which they were unfamiliar. The result was confusion in chain of command, mission assignments and system capabilities.

b. Recommendation. That it be determined early which is the supporting unit and which is being supported. Additionally the systems control facility and personnel should be embarked together and arrive early in the AOA.

5. Problem. Generator support.

a. Discussion. In the case of MWCS-18, generators were provided only days before embarkation after many changes in the original request. It was possible to op-check the equipment but not enough time to completely familiarize the using personnel with operating procedures. The result was inoperable generators, down because of blown head gaskets (too much ether used when starting), use of wrong fuel, ice in fuel and air lines, and miscellaneous broken parts. Although MWCS-18 requested and brought generator mechanics from WERS-17, these personnel were required to support all of PROVMAg-10.  
not available.

b. Recommendation. That generators be provided to the using unit at least 4 weeks prior to embarkation for op-check and familiarization, and that the unit be provided with enough spare parts and mechanics to be self sufficient.

6. Problem. Lack of HF radio assets.

a. Discussion. Because of the unreliability of AN/TRC-75 and AN/TSC-15 radio equipment in general, its use on admin circuits such as the Wing Liaison Net only creates additional strain on equipment and personnel assets.

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b. Recommendation. That the requirement for the Wing Liaison Net be reviewed in light of availability of AUTOVON, MARS, couriers, etc., and the unreliability of tactical equipment and the lack of trained personnel in long haul communications. If it is determined that the net is necessary, an operating schedule should be arranged around the effectiveness of the assigned frequencies and the periods of maximum utilization.

7. Problem. Administrative communications between PROV MAG detachments and their parent units.

a. Discussion. (See paragraph 6 above) The MARS station brought in by GySgt C. M. BONI, MWCS-18 was extremely effective and used extensively for both personal and official calls. During Exercise FLYAWAY, a total of 87 personal calls and 36 official calls were made.

b. Recommendation. That a MARS unit be deployed with every exercise, and, in addition to being available for personal calls be used for official business between parent units and PROV MAG.

8. Problem. Syscon information displays.

a. Discussion. Syscon tried to manage communications as well as act as Techcon. Management data was not clearly displayed. Charts were constantly changed to show more pertinent information. Charts should have been larger to be more easily read. Callsigns, frequencies, units, and related information was not readily available nor easily obtained.

b. Recommendation. Syscon should use large display boards for posting circuit, equipment, frequency and call sign information. The bigger, the better. Even though carefully planned, charts may not have been designed perfectly once the exercise starts and changes are dictated. Therefore, extra space should be allowed for additional information to be placed on them. Acetate covered maps of the AOA are excellent for representing the communication system that is to be managed. There should be a special message file to keep account of all messages pertinent to the management of the system. This should be established in the early planning stages of the exercise so that the management system has a continuous record of the changing communications requirements.

9. Problem. The operation of TechCon.

a. Discussion. TechCon operation was slowed and confused by a patch panel that belonged to another unit. All circuits were able to be monitored, but not all circuits could be patched over to another one. Changes were required in the main frame a week after the installation had begun. This resulted in minor mix ups in the circuitry.

b. Recommendation. TechCon must be constructed as simply as possible, otherwise, it fails to help manage the system, and only complicates it. The patch panel must have the capability of patching any two circuits together. This would be with the possible exception of comm center teletype circuits which should be supervised and patched at the comm center due to the specialized circuitry (keying switch to AN/TRC-75 and 60 ma on the teletype line). The main frame and patch panel should have all circuits

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organized according to radio remote lines, local telephone lines, trunk lines, etc. TechCon must have the capability of monitoring any circuit at the patch panel, it requires hot lines to Syscon, trouble shooting teams and subordinate techcon facilities. TechCon should also have the capability of contacting local civilian communication agencies involved in the exercise.

10. Problem. Syscon/TACC working relationship, and mutual understanding.

a. Discussion. Although the overall rapport between communications and TACC personnel was very good, basic misunderstandings of each other's mission and capabilities causes instances of irritation.

b. Recommendation. Cross-training should be initiated to instruct communications personnel on the mission of TACC, the purpose of the various radio nets and communication facilities it requires, and its communication priorities. TACC personnel should understand the capabilities and limitations of the communications equipment available to them and the time required to install or restore the communications system.

11. Problem. Crypto support for PROVMAg-10 Units.

a. Discussion. MWCS-18 was tasked with providing crypto support (KY-28, KY-38, KYK-38 and key lists) to MASS-2, RLT-9 and TACC. The only prior commitments were KY-38's to MASS-2 and Authentication/OpCodes to TACC. As a result, crypto assets were spread too thin and lack of back-up equipment required additional support from FMAW.

b. Recommendation. That MASS-2 establish its own CMS account and that CMS requirements be published early and adhered to by all units.

12. Problem. Co-location of MABS-36 and MWCS-18 CMS equipment within the comm center.

a. Discussion. The storage facilities for CMS equipment of both MABS-36 and MWCS-18 were inadequate and difficult to control due to co-location under field conditions and the free access to both organization's comm center personnel. When CMS material was required, confusion existed as to which unit would provide, and occasionally, material was taken from the wrong account.

b. Recommendation. That all CMS equipment and publications be consolidated, signed for, and accounted for, by the comm center OIC.

13. Problem. Comm Center organization.

a. Discussion. MABS-36 was tasked with providing comm center facilities for the PROVMAg. It was also determined that the TAA Net, an MWCS-18 responsibility, would be co-located in the comm center. Unfortunately, both organization's senior comm center chiefs were of equal rank (SSgt) and coordination was difficult.

b. Recommendation. That under the circumstances, the unit responsible for comm center facilities, provide an experienced comm center chief or preferably, a comm center officer. This individual should be

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completely familiar with CMS procedures and be responsible for all CMS material.

14. Problem. Lack of a centralized ground peculiar electronic maintenance facility.

a. Discussion. MWCS-18 electronic maintenance was tasked with providing limited crypto repair to the PROVMAg in addition to supporting MWCS-18. However, maintenance was provided to MAG-36, TAOC, and TEGG for ground peculiar equipment.

b. Recommendation. That electronics personnel be drawn from all PROVMAg units desiring support and centralized under one maintenance officer responsible to the PROVMAg CEO.

15. Problem. Inadequate Comm Center personnel.

a. Discussion. MABS-36 provided the communication center for PROVMAg-10. Their manning levels would have been adequate except for the following:

(1) Unplanned for Comm Guard for TEGG, RLT-9, RLT-7, ANGLICO.

(2) Functional TTY nets were terminated in Comm Center vice TACC because of space limitations in the TACC.

The result was the MABS-36 personnel although dedicated were not adequate for effective management of this rather complex situation.

b. Recommendation. That two watch officers be provided for the PROVMAg Communication Center through an augmentation process.

16. Problem. The TAA Net (RATT) proved to be almost totally ineffective.

a. Discussion. The TAA net from 9th MAB to PROVMAg-10 was inoperative except for approximately 6 hours. Frequencies were a contributing factor however, PROVMAg-10 was unable to determine what the basic reason for failure was. The TSC-15 Van seemed totally unable to pass TTY.

b. Recommendation. The Wing CEO should establish a program to investigate the causes of TTY failure within the Wing (Failed on both PAGASA II and FlyAway) to determine if equipment or training or both is to be blamed.

17. Problem. High deadline rate HF equipment.

a. Discussion. PROVMAg-10 had a requirement for 3 HF nets within its Pohang CP, 9 HF equipments (TRC-75/TSC-15) were available for these requirements. The average deadline rate consumed 5 - 6 of these equipments leaving little or no backup. The MWCS-18 maintenance facility at Pohang was able to repair many of the failures but equipment availability was a continuing problem.

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b. Recommendation. The TSC-15/TRC-75 family of equipment has been in the field since 1961. The reliability of this "old" equipment is suspect and the Marine Corps should be investigating a "new" generation of HF equipment.

18. Problem. Extreme interference on HF frequencies.

a. Discussion. 9th MAB requested that PROVMAAG-10 conduct interference/propagation studies on HF frequencies assigned in the objective area. This was done and the more effective frequencies were reported to 9th MAB. The overriding conclusion reached was that all HF frequencies assigned were heavily cluttered with interference from North Korea, Thailand and Peoples Republic of China.

b. Recommendation. That HF frequency studies be conducted in the AOA prior to the assignment of frequencies and that the most effective frequencies be suggested to the clearing agency rather than the quantitative request currently in use.

19. Problem. Lack of suitable tactical BUSSBAR System for electrical power.

a. Discussion. Standby generators were available for use by the Communication Systems Control Officer. However when a generator failure occurred an inordinate amount of time was consumed by the generator personnel to physically rewire generators.

b. Recommendation. That a tactical BUSSBAR System be procured or fabricated to permit rapid changes of generators from standby to on line status.

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ANNEX E - MEDICAL REPORT

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**CONFIDENTIAL****I. INTRODUCTION**

Operation FLYAWAY 1974 was a joint USMC/ROK Marine Amphibious Assault Exercise conducted from mid January to late February 1974 in Pohang, South Korea and adjacent areas. The operational base camp unit at Pohang, ROK consisted of approximately six hundred U. S. Marines, with an additional detachment of approximately one hundred and twenty men at Taegu. Pohang units functioned as communications/logistics/control center commanders while the detachment at Taegu was responsible for airborne logistics supply/medevac. Further detailed enumerations of the non-medical aspects of this operation are available from the departments concerned.

This medical critique serves a dual purpose, first, as a post operation critique for the PROVMAg-10 commanders to evaluate medical performance, demands and shortcomings, and second, as an operational guide to future medical officers who may find themselves detached on a similar operation. The notes detailed under the planning section of this critique are directed primarily toward informing the medical officer of the problems, both medical and administrative, encountered during this operation. The discussion section of the critique contains suggestions for modification of existing procedures pertinent to both medical and PROVMAg officers.

**A. Planning Critique.**

When initially informed that I would be in charge of the medical department for Operation FLYAWAY 1974, I attempted to locate a medical critique from one of the two recent cold weather expeditions in order to review the type of problems I might expect to encounter. Requesting this information from both MAG-36 and First MAW medical sources, I was informed that no such critique was available. The inability to benefit from the lessons learned on previous operations obviously made planning for this deployment far more difficult and much less efficient. I was able to obtain some information as to the weather conditions and probable illnesses to be anticipated from non-medical personnel but no specifically medical information was available from reliable sources.

Availability of this medical critique, with its' impressions and suggestions, will be assured by filing several copies with both MAG-36 and the Futema Medical Department.

Extensive pre-deployment planning was evident in this operation from the logistics/communications point of view, despite the fact that a definite date for deployment could not be set until approximately two weeks prior to actual departure from Okinawa. This administrative problem was due to political considerations and the severe fuel shortages. Detailed planning commenced two weeks prior to deployment. This is a reasonable time frame for notification for a warm weather deployment, however, cold weather medical supply blocks do not exist in WESTPAC inventories, and substantial alterations were necessary to the standard 650 medical supply blocks to prepare them for cold weather utilization. Had medical planning started earlier, the inefficient last minute rush to obtain unusual medical supplies

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could have been averted.

Minimal detailed information concerning the availability of local medical facilities and laboratory equipment was available prior to departure. Information such as the availability of X-ray equipment, the type of X-ray and laboratory facilities available from the local Korean dispensary and hospital, would have reduced the amount of redundant equipment brought to the operating area by USMC medical personnel. In fact, excellent X-ray machines are available, however, X-ray film is in short supply locally, necessitating a supply request to Futema Dispensary for the necessary film, and a delay of three days before the available radiologic equipment could be utilized. A similar problem was encountered with routine laboratory chemistries. We embarked the equipment required for routine CBCs, urinalysis, gram stains, and blood collection equipment for drawing CBCs and VDRLs. However, local supplies to supplement these were largely unavailable. Had medical opinion been sought in the early phases of planning this operation, many of these delays and difficulties could have been averted or circumvented. Prior to departure from Okinawa, medical lectures covering cold weather survival, aspects of frostbite, snowblindness, and aviation problems specific to cold weather exposure were delivered to all available groups participating in this operation. One group in particular was omitted. The communications teams deployed to the outlying hills of Pohang were exposed to some of the most severe temperatures and winds, and their lecture of survival was not scheduled in the planning phase. They were required to assemble while at Pohang the day prior to their departure, reducing the time available to them to prepare for their expedition. It seems advisable to contact all participating groups during the planning stages of such an operation and give them maximal time for indoctrination before they actually arrive in the field.

The requirement for Gamma Globulin immunizations as prophylaxis against hepatitis in Korea was ambiguous. Several BuMed Instructions require that these immunizations be given prior to deployment to this area. However, neither of the two previous operations followed these instructions. Local Korean legislation requires that the immunizations be current, especially Gama Globulin. This ambiguity necessitated dispensing Gamma Globulin to all hands once the PROVMAF was located in Korea. In the future it seems advisable to consult local medical authorities prior to deployment concerning unusual immunization requirements, thus permitting the collection of sufficient supplies to complete immunizations before deployment. It is of interest that the Air Forcedetachment stationed at Taegu is not required to maintain current Gamma Globulin immunizations.

More intense medical screening of personnel to be deployed should be instituted prior to the next operation. Several Marines currently under treatment for pulmonary tuberculosis arrived in Korea without their isoniazid tablets, one man taking antihypertensive medication did not have his prescription refilled prior to arrival in the operating area, and seventeen men were seen during the operation for dental problems which should have been treated prior to their leaving their home base. One of these dental problems, currently under treatment at a crucial stage, required intensive treatment and was sent back to Okinawa as a MedEvac. This particular man was not in a critical billet, and he could easily have been replaced prior to deployment had this condition been noted in a preliminary medical screening. If possible, routine dental care should be scheduled so as to be completed prior to departure, or the man left with his parent command. Local Korean dental officers were most cooperative in seeing and treating our

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routine dental problems, however, this imposes an unnecessary additional patient burden on their already crowded clinics.

The routine checking and updating of immunization records, "shot cards", is mandatory before such an operation. The processing of all deployed troops through medical records to obtain and update their shot cards should be an integral part of the check out process before boarding the aircraft. The importance of maintaining a current immunization record can be appreciated when one considers the delay involved in obtaining and updating the card should emergency leave be necessary. The shot card is also the only convenient source of record for a man's Gamma Globulin or tetanus immunization.

Taking the entire permanent medical record of all deployed personnel creates a largely unnecessary embarkation/storage problem for the medical personnel. Pertinent and essential information regarding the patient's health background can be obtained from his shot card and any allergy data on his "dog tags" or Allergy Alert Card (which should be carried by all men allergic to any medication). The importance of updating shot cards, correcting and completing ongoing medical or dental treatment, refilling all unusual medication prescriptions (for medications not usually stocked in a field hospital block), and requesting that all personnel wearing corrective lenses obtain a second pair of glasses before deployment, should be stressed by the medical officer in a message to be distributed to all commands concerned. This information could also be mentioned in the survival lectures theoretically delivered to all hands.

Standards of camp sanitation are of vital concern to the medical officer. The Manual of Naval Preventive Medicine, NAVMED P-5010, contains most of the essential information relating to food sanitation, sanitation of living spaces, drinking water standards and quality control testing methods, and rodent and insect control methods. Locally available Korean water was non-potable by U. S. standards, and had to be chlorinated before use. The procurement of water, its' chemical treatment, and quality control, were largely the responsibility of the medical department on this operation.

NAVMED P-5010 should be an essential part of the medical supply block.

The treatment of the illnesses of foreign nationals, ROK Marines, presented an interesting medical and political problem. Several detachments of ROK Marines were stationed within the base camp, functioning as drivers, translators, and logistic coordinators. The language barrier was no great problem when dealing with minor illnesses, but became a substantial obstacle when accurate diagnosis of severe illness was necessary. In an effort to maintain the excellent working relationship between the U. S. Marines and the ROK Marines, minor illnesses were treated in our sick bay, but serious disorders were referred to the local Korean Medical Battalion or the Korean Army Hospital for care. This arrangement proved very satisfactory to all parties concerned, and in fact provided an interesting and educational route for cultural exchange.

Venereal disease, predominately gonorrhea, was prevalent in the

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local Pohang area. Conversations with local medical authorities revealed that venereal disease could be expected after contact with a streetwalker in as many as 85% of the contacts, the odds of disease were reduced to 30% by contact with the girls from the bars themselves. These statistics proved to be slightly, but not significantly, erroneous. Notice of these statistics was published in a medical newsletter posted in clear view of all troops outside the enlisted mess hall. The newsletter also published the fact that prophylactics were available at the guard tent, through which all men going on liberty were processed. The quality of the prophylactics supplied proved dubious, and mention of this fact will be made later. Several men arrived in Korea with partially treated or totally untreated venereal disease. These men were treated, and placed in a no liberty status until they were no longer infective. Pre-deployment screening would have eliminated this problem.

The medical department at Pohang was charged with providing 24 hour SAR and Medevac coverage during the actual operation. This necessitated including two corpsmen, willing to fly in this capacity, in the staff selected to deploy on this operation. These two corpsmen were not placed on flight status and were not entitled to flight pay. Review lectures on emergency medical care were given to all deployed corpsmen, and this proved entirely satisfactory. A UH1-E (Huey) helicopter was permanently stationed at Pohang as SAR/Medevac aircraft during the actual amphibious assault from 31 January to 6 February 1974. A stretcher and Ambu bag were maintained in the SAR tent, and a modified Unit 1 first aid kit was carried by the designated Medevac corpsman. Medevac procedures were somewhat flexible, based primarily on the severity of the injury and the nationality of the patient. All injured ROK Marines were to be brought directly to Pohang, and if the injury was minor and not requiring hospitalization, they were treated by the USMC Medical Staff. If an injury was lifethreatening, the ROK Marine patient was transferred from the Pohang airstrip to the appropriate Korean hospital via our ambulance. All minor injuries not requiring prolonged hospitalization of U. S. Marines were treated at Pohang. All cranial injuries, penetrating injuries to the chest or abdomen, and compound fractures were to be transferred directly to Taegu for intensive care. If shock intervened in these severe injuries, the patient was to be brought to Pohang, stabilized, then transferred to Taegu. The severe injuries of U. S. Marines were to be evaluated by the Medical Doctor at Taegu and if found to be beyond the capacity of the Taegu dispensary, the patient was transferred to a U. S. Army helicopter and flown to Young San Army Hospital, Seoul, Korea.

One final note seems pertinent to the planning of future cold weather exercises. The medical supply blocks of MAG-36 are designed for tropical deployment, and no specifically cold weather medications are kept on the supply register. This necessitates breaking down at least one 650 supply block for the essential laboratory equipment, medications, and supplementing with specific cold weather supplies (low molecular weight dextran, extra blankets, more antihistamines, more oral decongestants...). Henceforth, a list of these supplies and their relative amounts will be maintained in the supply log of MAG-36, hopefully reducing the amount of equipment to be exchanged.

#### B. Embarkation.

All medical supplies scheduled for deployment were compiled and loaded aboard the ambulance to be taken to Pohang by airlift. This com-

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pacting of the medical gear greatly simplified embarkation and permitted expeditious use of the supplies once the sick bay tent was erected at the base camp. The tent was erected by MABS-36 personnel, and furnished by the one corpsman sent with the advance party. This corpsman was responsible for initial stocking of the sick bay tent, and carried a Unit One first aid bag to treat any minor injuries sustained by the advance party. This arrangement was very satisfactory, and the work load was well within the capacity of one corpsman. Unusual seasonal snow delayed the arrival of the next airlift flight for two days, however, two additional corpsmen were embarked on the next available flight. These two corpsmen carried most of the perishable medical supplies, (antibiotics, intravenous fluids...). When the PROV-MAG-10 staff arrived on 15 January, the medical officer and one corpsman were with them. This staggered personnel deployment avoided unnecessary utilization of medical personnel until a physical plant was assembled and stocked and ready for use. No significant injuries occurred during this initial period, and the embarkation proceeded as planned. By the time the medical officer arrived with the narcotics and other controlled drugs, a safe was available in the Camp Commandant's tent for secure storage.

C. Day to Day Operations and Patient Census.

Routine sick call was established at Pohang once all medical personnel had arrived and the sick bay tent was erected and stocked. Sick call hours for routine illnesses were 0830 to 1030 and 1300 to 1500 seven days per week. Emergencies were seen at any time. These sick call hours were published in the medical newsletter and posted outside the enlisted mess hall and sick bay.

The average daily patient census was 21 men, ranging from a low of 12 to a high of 38 patients on 30 January, the day liberty in Pohang was secured. A list of the predominant illnesses seen appears below:

<u>DISEASE</u>	<u>NUMBER OF PATIENTS</u>
Upper Respiratory Infection (URI)	638
Viral (Flu) Syndrome	120
Venereal Disease	
Non Specific Urethritis	30
Gonorrhea	46
Lymphogranuloma Venereum	3
Syphilis	0
Pediculosis Pubis (Crabs)	10
Chancroid	4
Minor Lacerations	20
Fractures and Severe Sprains	9
Mess Physical Examinations	18
Urinary Tract Infections	4
Miscellaneous	
Enteritis	39
Cellulitis	5

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Dental Problems	10
Drug Abuse Problems	0
Psychiatry	4
Burns	12
I&D Abscess	6

<u>MEDEVAC CASUALTIES</u>	<u>USMC</u>	<u>ROK MARINES</u>
Upper G. I. Bleeding	1	
Appendicitis	1	
Dental Emergency	2	1
Fractures (TIB-FIB)		5
Inguinal Hernia	1	

Initial supplies of cold medications; Ornade, Actifed, Dimetapp, Afrin, Cepacol, Tylenol, proved insufficient and several resupply requests were necessary to continue providing treatment. Gonorrhea was more prevalent than initially expected and our supply of penicillin and benemid was underestimated.

Review of the number of patients with the presenting complaints listed on the previous page will give some estimate of the type and amount of specific medications required.

It is essential that Medevac routes and procedures be established and confirmed prior to D Day. Frequently used telephone numbers for the Korean Hospital and the Battalion Aid Station should be clearly posted near the telephone in sick bay. Less frequently utilized telephone numbers such as the USAF Dispensary at Taegu, Camp Henry Hospital, and Young San Army Hospital, Seoul, should also be readily available before they are needed.

The medical complement of four corpsmen and one medical officer, not necessarily a Flight Surgeon, proved adequate for the number of men served. My four corpsmen included one X-ray technician, one Pharmacy technician, one Sanitation/Supply technician and one field corpsman. As mentioned previously it is necessary to assure that at least two of the corpsmen are willing to fly as Medevac corpsmen.

Gastrointestinal distress syndrome was a common complaint among the advance party. Interviews revealed that the probable source was locally prepared food, and non-potable water. Once these findings were published the incidence of gastrointestinal problems rapidly decreased. Kaolin and Pectin, and rarely Lomotil, resolved these problems. No cases of refractory enteritis were seen.

Gamma Globulin immunizations (0.01 cc/lb) were given to all hands at Pohang during the first six days of the operation. This was a local requirement of the Korean government. Validation of shot cards was attempted following these immunizations, however, many men had not brought their shot cards with them from their parent command. A validated shot card, or in its' absence, a note from sick bay stating the man had received his immunizations,

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was required before liberty privileges were granted.

Head sanitation initially was a difficult problem. "Two holers" were supplied, each head requiring four fifty gallon drums (alternating drums while the first two are being burned). An adequate supply of drums was embarked, however the drums were utilized for other facilities, and they had to be reappropriated for sanitation. Once the drums were replaced, it initially proved difficult to collect the working party, fork lift, truck and diesel fuel necessary to burn the filled cans. This administrative problem was finally resolved through the Camp Commandant. A similar problem existed with the urine tubes. Due to the extremely high water table in the area (18" below field level), it was necessary to relocate the tubes every other day in order to prevent soil saturation and pooling of urine at the base of the tubes. Soda lime was utilized to sanitize the immediate area, but with almost nightly snow falls, this proved inadequate.

Procurement of potable water for drinking and use in the mess hall fell under medical jurisdiction. Initially two water tankers were available to transport potable water from the water point at Camp Libby to Pohang. One of these trucks became inoperative one week after arrival in Korea. The water from Camp Libby was theoretically potable, however frequent checks of chlorine content and Ph failed to substantiate this, and further chlorination was routinely necessary. The procedures for chlorination and quality control of potable water are contained in NAVMED P-5010, and proved quite satisfactory. Non-potable water from the U. S. Army Treatment Point #1, was utilized for showering. This water was not chlorinated. Temperature extremes in the evenings required that the water buffalos be stored inside to prevent freezing, this required the use of at least one extra tent when the base camp was fully populated with the RLT and associated units. Two and occasionally three procurement runs were necessary per day to supply the base camp with the required potable water. The base camp also chlorinated all water supplied to outlying units. Water testing equipment was to be included with the water buffalos delivered by the ships, however this was not the case, and the equipment from Camp Libby Water Processing Plant had to be borrowed daily to assure quality control. Eventually the spectrophotometer was obtained from MABS-36 utilities.

Routine biweekly sanitation inspections of the base camp tents, mess hall and showers were conducted. Minor discrepancies were corrected with removal of unsanitary food storage procedures in individual tents. The mess hall, shower and head facilities revealed no major discrepancies.

Rodent control did not prove to be the problem anticipated. Rare field mice were noted, however no rats or other rodents were frequent visitors to camp, and posed no sanitation hazard. Rat poison was embarked to the base camp but was not used.

On several occasions the X-ray unit at the Korean Army Hospital was utilized to evaluate possible fractures. The ROK cooperation in this matter was much appreciated. No fractures in USMC troops were diagnosed, however had it been necessary, casting equipment was obtainable from the ROK facilities.

In dealing with ROK Medevac cases the intraservice division between Navy, ROK MC, and Army became obvious. The Korean interpreter insisted that

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only Army patients be taken to the Army Hospital, stating that Navy and Marine patients would not receive as good medical care at the Army facility as at the battalion station. Life threatening injuries, regardless of service affiliation, should be taken directly to the Army hospital, as their emergency supplies and personnel are prepared to handle such cases more expeditiously than the Battalion Aid Station. This intraservice division is a political, administrative problem, and should the need arise, I feel certain that USMC personnel would be well cared for at either facility.

Medevac cases were all screened by the Pohang Medical Department at the base camp. ROK casualties requiring more than minor care were transferred to the respective ROK facility across the runway. USMC casualties were treated locally at the base camp if possible, and if the illness or injury exceeded our supply capability, they were transferred to Taegu for more intensive care. The USS DENVER served as an intermediate assessment point for all Medevac cases if the severity and proximity of injury required more immediate care. This Medevac system worked well. The one case of upper gastrointestinal bleeding medevaced to Taegu was hospitalized at Camp Henry, stabilized with fluid replacement, then transferred to Kue Army Hospital, Okinawa for diagnostic X-ray evaluation. Medevac alternatives should be considered based on local weather, availability of aircraft, and degree of injury, as explained above.

#### D. Withdrawal.

Retrograde of the Pohang Medical Department followed the general guidelines established by the PROVMA-10 Commander. Medical treatment was available until the last man left the base camp. Nonessential supplies and laboratory equipment were packed and loaded aboard the ambulance for retrograde on 15 February 1974. Two corpsmen accompanied this shipment, leaving two men to attend the needs of the skeleton retrograde team. Medical supplies at this time consisted of cold medications, and a Unit 1 first aid kit. Arrangements for evacuation of serious injuries were made through Taegu and Camp Henry and the local ROK facilities. Utilization of these facilities was not required. The two remaining corpsmen and supplies were loaded aboard the USS DENVER and transferred to Futema, Okinawa at the completion of Operation FLYAWAY 1974. Retrograde proceeded smoothly. Narcotics and the controlled drugs were retrograded with the medical officer on 8 February.

### III. TRAINING OBJECTIVES

The training of medical personnel in the care of men exposed to cold weather environments was the primary goal of the medical department at Pohang, secondary only to the actual care and maintenance of the men involved. Specific training objectives and lessons learned will be discussed in detail in the following section of this critique.

### IV. PROBLEMS ENCOUNTERED AND LESSONS LEARNED

As noted in the critique of the planning section of this report, the first four items pertain jointly to the future PROVMA-10 Staff and the Medical Officer. The subsequent items are primarily directed to the medical officer alone, hopefully making the next deployment more efficient and comprehensive.

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**CONFIDENTIAL****A. Administrative Planning Phase.**

The presence and availability of the medical critique is obvious, and henceforth should be no problem, as this report will be incorporated in permanent MAG-36 files and the files of the Futema Dispensary. The need for medical consultation in the planning phases should be emphasized, and will subsequently reduce the transition problems encountered on this operation in setting up the base camp medical facilities. The medical officer should be responsible for assessing the locally available medical equipment, establishing medevac correlation with the helicopter squadron representative, and evaluating local medical requirements for immunization and endemic diseases.

The Medical Officer should allow sufficient time to deliver brief, concise lectures on cold weather survival factors, local regulations, prevalence of and protection from venereal disease, sanitation requirements, and the safety of local food and water. These lectures should be planned so as to include all hands, special effort being directed to contact all men scheduled for outlying detachments.

Pre-deployment screening of all hands is essential. Specific attention should be directed to completing all on-going medical and dental care before embarkation, and if this is not possible, assigning an alternate man to this billet. Patients requiring unusual medications should be directed to obtain a refill of their prescription to ensure sufficient medication for the anticipated length of the operation. Processing of all hands through the medical records section of their parent command is essential to up-date and validate their shot cards with delinquent immunizations and stress the importance of carrying the shot card with them at all times. If possible, this screening procedure should follow a check-out process required of all hands, such as the procurement of cold weather survival clothing. This would insure participation by all hands. All personnel requiring corrective lenses should procure a second pair of glasses before deployment if their defective vision would prohibit them from safely performing their job should they break their lenses.

Sanitation inspections and control will fall under medical responsibilities. One of the deployed corpsmen will be responsible for quality control of potable water, and sanitation inspections of base camp facilities in conjunction with the medical officer. NAVMED P-5010 should be included in the medical supplies embarked to the field. Sufficient germicide, brooms, brushes and other cleaning gear for sanitation purposes should be included in the medical officers check off list of supplies.

Directives regarding the treatment of foreign nationals should be discussed with the local medical authorities before deployment, as well as establishing the policies governing use of available medical equipment, and deploying essential material not locally available. If deploying to the Pohang area, X-ray facilities are available, but X-ray film will have to be brought with the medical supplies. Blood collection tubes for CBC and VDRL examinations and blood drawing equipment should be included in the routine cold weather deployment block. Additional cold medications are necessary, and should be anticipated in the planning phase of the operation. Several cases of gasoline from the mess hall stoves spraying into the messman's eyes were treated. It would be advisable to procure an ophthalmic steroid-

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antibiotic preparation for such cases. Several minor burns were also treated from the mess hall, requiring sulfamylon or furacin treatment.

Venereal disease is prevalent in this area and respective amounts of penicillin, spectinomycin and tetracycline should be anticipated. Several cases of chancroid and lymphogranuloma venereum were brought to Pohang by the troops and may present some future venereal problem. Policy regarding liberty for men having venereal disease was strictly enforced. A list of infective patients was given to the guard tent and these men were restricted to base. Liberty was granted to these men only after they were cured, and carried a note from sick bay stating that they were now available for liberty. All men going on liberty were processed through the guard tent. The prophylactics supplied (Tahiti Brand) ruptured in use and another brand name should be procured.

SAR and MEDEVAC procedures have already been discussed and will vary with each operation, but the general guidelines should be the same. The established pattern worked very well.

Anticipating future cold weather operations, a list of specific cold weather supplies will be maintained in the supply section of MAG-36. This seems more advantageous than compiling a complete cold weather supply block, which would be largely outdated if utilized but once per year.

Pilots involved in cold weather operations over water require some protection from the extremely cold water should they be forced to ditch in the ocean. Current protection involves the use of a vented wet suit. This offers some protection to the wearer, however helicopters have no facilities for pressure venting these suits, and they become extremely confining and hot. The necessary tight fit of this wet suit compromises venous return from the legs and drastically increases pilot fatigue. Most of the pilots involved in Operation FLYAWAY were flying 6 to 8 hours a day and additional fatigue and leg cramps are not necessary. Either an air circulating pump or another type of vented exposure suit should be developed.

#### V. SPECIAL COMMENTS

Operation FLYAWAY 1974 was a well coordinated, highly successful amphibious exercise. Approached in the correct frame of mind, and with suitable preparation, such an exercise can be one of the most enjoyable medical experiences in WestPac.

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ANNEX F - SUPPLY REPORT

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I. INTRODUCTION. A Group Supply Officers stores was not established for this operation. No appropriated funds were furnished but an allocation of requirements was established and CG, 9th MAB 252322Z Jan 74 (C) advised all deployed units that expenses for supply support would be defrayed by the using units.

## II. OPERATIONAL SUMMARY

A. Planning. Planning of the Group Supply procedures during this operation was coordinated between the Group Supply Officer MAG-36, Group Supply Officer PROVMAg-10, MCP Officer MAG-36 and the Fiscal Officer MAG-36.

1. Aviation Supply. At the outset it was determined that all aviation packups for support of MAG-36 deployed squadrons would be consolidated and handled by the Squadron Supply Officer, HMM-164 (-) Reinforced. This consolidation of packups insured one centralized and single contact for supply support. Replenishments of stocks or NORS/NFE requirements were addressed directly to the Supply Officer, MAG-36 by message or telephone. Rotatable spares included in the packups were to be handled in the same manner as at the CCS.

2. Marine Corps Supply. Marine Corps Supported units such as MACS-4, MASS-2, WETS-17 and MWCS-18 planned their own requirements and deployed with their organic spares and packups. In addition, the PROVMAg-10 Group Supply Officer obtained a limited amount of secondary repairables from 3rd FSR for support of the PU 708.

B. Embarkation/Movement Highlights. There were no significant embarkation/movement highlights. All additional equipments/spare parts requested was initially obtained and embarked. Subsequent requirements were obtained and transported to the requiring unit by air.

C. Pre D-Day Operations. Packup requirements were submitted by the using units to the Group Supply Officer MAG-36. All requirements were packed and prepared by the Group Supply Officer for embarkation. Determination of requirements was made and supporting activities furnished the peculiar items for cold weather operations. Spare heaters were obtained from 3rd FSR and CONUS supporting activities. Cold weather clothing was obtained from CG, FMFPac training allowances. Additional requirements such as radio jeeps, vehicles, tentage, rations and general supplies were requisitioned or obtained from other FMAW units.

D. Operations Ashore on Day by Day Basis. Routine daily supply operations were established. Issues and receipts of supplies did not reveal any significant problem areas. There were no major Group Supply level operations. Procurement of fuel (MOGAS, JP-4 and Diesel) was made through agreement with the PDSK, U. S. Army Pohang. MCI rations were obtained from the subsistence distribution U. S. Army Pusan.

E. Withdrawal.

1. No specific comments.

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## III. TRAINING OBJECTIVES

A. No specific comments.

## IV. PROBLEMS ENCOUNTERED/LESSONS LEARNED

A. One problem area encountered was that a significant amount of additional personnel, not previously anticipated, required billeting. These personnel were from the III MAF TECG, 1st Radio Bn, 1st Anglico, 2nd LAAM Bn, RLT-9 and 2nd FAAD. This billeting responsibility required that additional space heaters be provided and ration recomputations be made.

B. A shortage of burner units for the space heaters existed. This shortage was caused by lack of the internal metal tubing and gas can cap valves. The internal metal tubing snapped off at the threaded ends when attempting to screw the tubing into the valve cap. The MABS utilities personnel alleviated the situation by retreading the tubing and attaching rubber hose fittings. Many gas can cap valves leaked due to the rubber gasket on the cap not fitting tightly. As a result, personnel were obtaining another cap from supply. The only caps available were those obtained from another complete stove. This contributed to the shortage of stoves. There were 32 space heaters which could not be utilized because they were incomplete.

C. Space heaters provided by PROV MAG-10 for non organic units were as follows:

<u>BLSG</u>	<u>1st ANGLICO</u>	<u>1st Radio Bn</u>	<u>TECG Hq</u>
5	9	3	8

D. Only one refueler for JP-4 was deployed at Pohang. This created a problem since the PDSK Camp Libby was not initially set up to provide JP-4 direct from their dispensing area. A special filter unit had to be brought in from PDSK HQ at Taegu to pump fuel into our 2000 gallon refueler from the Camp Libby day tank. The refueler then delivered the JP-4 to 10,000 gallon TAFDS bladders. Between two and three trips a day were made from PROV MAG-10 base camp and Camp Libby to procure the required JP-4. The trip to Camp Libby was approximately 25 minutes long and was extremely dangerous due to road conditions, weather conditions and the fact that the refueler had to drive through the center of Pohang City each time to and from Camp Libby.

## V. SPECIAL COMMENTS

A. For an operation of this duration and with the various aviation units deployed, Group Supply procedures and Fiscal procedures should have been established in writing either as a group order or group bulletin.

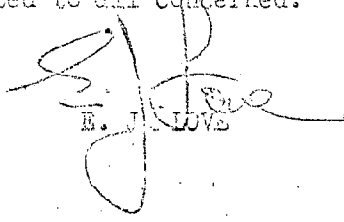
B. There was no requirement for an Aviation Supply Officer MOS 3060. In this operation most of the requirements were for Marine Corps furnished equipment and supplies. A Supply Officer MOS 3002 or 3010 would have filled the billet perfectly with written instructions from the Fiscal Officer on appropriation data.

CONFIDENTIAL

HEADQUARTERS  
Provisional Marine Aircraft Group 10  
35th Marine Amphibious Unit, FMF Pacific  
FPO San Francisco, California 96602

6:51JL:gew  
3120  
JUL 24 1974

From: Commanding Officer  
To: Commanding General, 1st Marine Aircraft Wing  
Subj: After Action Report, Exercise KANGAROO I; submission of  
Ref: (a) CTG 79.3 LOI 260531Z April 74 (C)  
Encl: (1) Exercise KANGAROO I, After Action Report with Appendices  
1. In accordance with the instructions contained in reference (a), the subject report is hereby submitted.  
2. For the most part, Exercise KANGAROO I appeared to be routine for the fixed wing units and for the MAAG-2 Detachment. However, the deployment of eight medium and heavy helicopters to operate from non-aviation ships was not routine. If operations of this type are anticipated in the future it is strongly recommended that the HQM-164 portion of this report be disseminated to all concerned.

  
E. J. LOVE

Copy to: CG 1st MAW (7)  
CO MAAG-18 (3)

TAB I

EXERCISE KANGAROO I

PROWAG-10 AFTER ACTION REPORT

Enclosure (1)

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## PART I

OPERATION SUMMARY

The PROVMAG-10 Staff of three officers, one SNCO, and one enlisted man embarked on the USS JUNEAU (LPD-10) at White Beach, Okinawa, Japan on 24 May 1974. The task force for Exercise KANGAROO I sailed from Okinawa, Japan on 24 May 1974 and proceeded to Subic Bay, Republic of the Philippines, where a rehearsal was conducted on 26 May 1974. On 30 May 1974 the task force sailed for the Amphibious Objective Area (AOA) in Shoalwater Bay, Australia and conducted an amphibious landing on 11 June 1974 (D-Day). On 13 June (D+2) the PROVMAG Staff was lifted ashore by helicopter. Control was passed ashore at 1000 on 14 June (D+3). At 1600 on 15 June (D+5) control was passed back afloat and 33rd MAU and PROVMAG Staffs returned to the command ship. However, the DASC continued to function as the controlling agency for air until the securing of flight operations at approximately 1900. After flight operations were secured on D+5 the control of air again became the responsibility of the TADC afloat. The exercise was terminated as scheduled on 17 June 1974. Operational summaries for the MASS-2, VMA-211, and F-4E Detachments are contained in Appendices A, B, and C, respectively.

## PART II

EXERCISE OBJECTIVES

All exercise objectives applicable to PROVMAG-10 were accomplished during KANGAROO I. However, the exercise objective of utilizing the DASC in control of close air support operations was not realized to the degree desired by the PROVMAG. This is attributed to the lack of communications between the requesting units and the controlling agencies. This was corrected to some degree by using a Forward Air Controller (Airborne) when a OH-46 was available for this purpose. The communication problem is addressed in more detail in Appendix A. In all other aspects the operation was considered a success.

CONTROL OF CLOSE AIR SUPPORT AND HELICOPTER OPERATIONS

The following is a summary of how all air was controlled within the Amphibious Objective Area, and includes a brief description of the fixed wing aircraft procedures for transiting from RAAF Base Amberley, to the AOA and returning to RAAF Base Amberley.

A. Helicopter Operations: When air control was afloat prior to D+3 and after D+5, CATT controlled helicopters through the HEC which was operationally under the TADC. After control was passed ashore the HEC controlled the aircraft until they reached "foot dry", at which time the aircraft reported to the DASC who actually had control of the aircraft for an assigned mission.

Enclosure (1)

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Upon mission completion, or when returning to the ships for fuel or cargo, HDC again controlled the aircraft when "feet wet". The DASC controlled the missions when control was ashore, and HDC's function at this time was primarily to "guide" the aircraft over water. The following are procedures used for control of helicopters in the AOA:

1. Control Afloat - Pre-planned missions (Helicopter)
  - a. BLT 2/9 submitted helicopter requests via Helicopter Request Net to MAU.
  - b. CLF prepared recommended FRAG Order and passed to CATF.
  - c. CATF issued FRAG Order to PROV MAG after approval. CATF passed approved missions to CLF. CLF passed to BLT 2/9.
  - d. PROV MAG submitted FRAGS to HMM-164. HMM-164 wrote the schedule, passed to PROV MAG, CATF, and CLF.
2. Control Afloat - On Call (Helicopter)
  - a. BLT 2/9 submitted request to CATF via TAR/HR Net.
  - b. CATF, coordinating with CLF, and with PROV MAG concurrence, issued FRAG Order to helicopters which completed mission after coordinating with BLT 2/9 FAC.
3. Control Afloat - Unscheduled Logistics (Helicopter)
  - a. BLT 2/9 submitted logistic requirements to LSU via LF LOG Net.
  - b. LSU coordinated with HDC.
  - c. CATF issued order to PROV MAG and helicopters passing mission information to LSU.
  - d. LSU coordinated with BLT 2/9.
4. Control Ashore - Pre-planned (Helicopter)
  - a. BLT 2/9 submitted pre-planned helicopter request to CLF via MAU TAC Net
  - b. MAU and PROV MAG jointly issued FRAG Order to HMM 164 via RATT, passing approved missions to BLT 2/9.
  - c. HMM-164 issued flight schedule to TADC, MAU and PROV MAG. PROV MAG passed schedule to DASC.



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## 5. Control Ashore - Unscheduled Missions (Helicopter)

- a. BLT submitted request to DASC via TAR/HR Net.
- b. After request approved and assigned mission number by MAU, mission coordinated with PROVIMAG.
- c. DASC issued order to helicopters for execution.

## 6. Control Ashore - Unscheduled Logistics (Helicopter)

- a. BLT 2/9 and MAU submitted logistic request to LSU via LF LOG Net.
- b. LSU after determining helicopter requirements coordinated with HDC.
- c. HDC requested mission approval from MAU via DASC on Helicopter CMD Net.
- d. After request approved and assigned mission number by MAU, mission coordinated with PROVIMAG.
- e. DASC issued order to helicopter for execution.

B. Fixed Wing Operations: All friendly fixed wing CAS operations were flown by Marine A4's operating from RAAF Base Amberley, located 350 NM south of the AOA. After filing VFR flight plans the aircraft flew established high altitude airways above 18,000 feet to Wattle, a designated holding point outside of the AOA. Control to this point was handled by Department of Civil Aviation (DCA), Sydney, and Air Control Center (ACC), located at JFHQ, Rockhampton. At Wattle, the aircraft were turned over to TADC located aboard USS JUNEAU, TADC assumed control of CAS aircraft from ACC and held them in orbit at Point Reef. The following are the procedures used for control of fixed wing aircraft in the AOA:

## 1. Control Afloat - Pre-planned missions

- a. TADC would brief flight on mission and direct them to "feet dry".
- b. At "feet dry" aircraft were turned over to assigned FAC for CAS mission run.
- c. Upon completion of mission FAC turned aircraft back to TADC which sent them to Point Reef to orbit/refuel.

## 2. Control Afloat - On Call mission

- a. FAC called mission to TADC on TAR Net.

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- b. TADC directed aircraft "feet dry" and turned aircraft over to FAC.
- c. FAC briefed aircraft, ran mission, and returned them to TADC.
- d. TADC directed flight back to holding point.
- 3. Control Ashore - Preplanned Mission
  - a. TADC passed CAS aircraft to DASC.
  - b. DASC briefed aircraft and turned aircraft over to FAC.
  - c. FAC ran mission and turned aircraft back to DASC
  - d. DASC sent aircraft back to orbit and turned control back to TADC
- 4. Control Ashore - On Call Mission
  - a. FAC requested CAS aircraft from DASC over TAR Net.
  - b. DASC got approval from MAU and PROVMAF, requested aircraft from TADC.
  - c. TADC turned aircraft over to DASC.
  - d. DASC briefed flight, turned over to FAC.
  - e. FAC ran mission, turned aircraft back to DASC, which turned them back to TADC.

Refueling aircraft would proceed to the AOA in the same manner as CAS aircraft. They would orbit near Point Reef at 15,000 feet and refuel the A-4's when they arrived on station, after CAS missions, and prior to returning to base.

All flight operations were under visual flight rules (VFR) and in only one case were aircraft forced to return to Amberley RAAF Base due to weather.

### PART III

#### COMMENTS AND RECOMMENDATIONS

##### A. PROBLEMS

###### 1. TOPIC: MARLOG FLIGHTS

DISCUSSION: The MARLOG flights for this exercise were established to provide logistical support for the aviation units participating in the exercise. However, as the units involved in the exercise proceeded to the exercise area it became apparent that the MARLOG flights were expected to support the entire task force and not just the aviation units. Not only did the cargo and number of passengers become a problem but coordination became unmanageable. The delay in messages, as well as the uncertainty as to whether or not commands were even receiving messages concerning MARLOG matters confused matters.

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RECOMMENDATION: That the requirement for logistical support by air be established in the planning phase of the exercise and formalized procedures be established. These procedures should provide for liaison personnel as well as centralized control and provide the necessary services for all forces involved.

B. POTENTIAL AREAS FOR IMPROVEMENT IN DOCTRINE, TACTICS AND TECHNIQUES

1. TOPIC: Airborne DASC

DISCUSSION: Exercise KANGAROO I would have been an ideal exercise in which to employ the airborne DASC. The flight operations were conducted from 0700 until approximately 1800. There was basically no radar coverage in the AOA (the LPD had radar but was not capable of using it for air control) and all operations were VFR. Once the BLT was ashore it was quickly out of communication with the Command Ship as a result of terrain masking. The airborne DASC could have remained on station for most of the flight operations during this exercise and the terrain masking would have been eliminated. There seem to be few exercises so ideally suited for the airborne DASC and it is a capability worth exercising.

RECOMMENDATION: That in future exercises the possible use of the Airborne DASC be given appropriate consideration.

2. TOPIC: Non-aviation ships (LSD's and LPD's) for deployment of Marine Helicopters

DISCUSSION: Even though it may not be in the interest of the Marine Corps to admit it, Exercise KANGAROO I did prove that the Marine Corps can deploy a respectable lift capability aboard non-aviation ships, travel over a great distance and with minimal supply support conduct a successful operation. Appendix C discusses many of the problems associated with this type of deployment. It also provides some deck loading; thereby providing information not found in any publications.

RECOMMENDATION: If it is anticipated that deployment of Marine helicopters aboard non-aviation ships is to become common occurrence, it is recommended that higher headquarters initiate action to correct the discrepancies noted in Appendix C.

3. TOPIC: Length of Exercise

DISCUSSION: The Landing Forces participation in Exercise KANGAROO I was limited to one week. This period also included a tactical withdrawal and as a result control was ashore for only two days. Since all flight operations were during daylight hours only, the DASC was able to control aircraft only seven hours the first day and 12 hours the second day. Therefore, there was insufficient time to try different tactics and techniques in an attempt to correct problems. That is to say, with more time the DASC could have been relocated or the ships could have shifted position in an effort to improve communications, more time would also have allowed the communicators to explore some of their theories concerning dead spots and the swinging at anchor as a cause of poor communications.

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RECOMMENDATION: That exercise of this nature, especially where the forces have traveled such a great distance, be of longer duration; two weeks at the minimum.

4. TOPIC: MAU Staff

DISCUSSION: The Air Officer on the MAU Staff had no helicopter experience. He was not familiar with helicopter capabilities, limitations, or operations. Although the Air Officer was fairly knowledgeable by the end of the exercise, his inexperience in the beginning resulted in some confusion. A pilot with a helicopter background would have proved valuable to the MAU Staff especially in the planning phase of the exercise.

RECOMMENDATION: That appropriate action be initiated to insure that there is at least one aviator on each MAU Staff, who has an extensive helicopter background.

Enclosure (1)

EXERCISE KANGAROO I

MASS-2 DETACHMENT AFTER ACTION REPORT

APPENDIX (A)

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INTRODUCTION

Exercise KANGROO I tasked Marine Air Support Squadron 2 with providing a Direct Air Support Center capable of supporting a MAU sized unit and making a tactical landing at Shoalwater Bay, Australia in support of BLT 2/9. Operational equipment included AN/UYQ-3, AN/GRM-38, and additional separate radio units. MWCS-18 supported MASS-2 with one AN/MRC-109.

The highlight of the operation was the tactical landing and location of the DASC without prior knowledge of the terrain other than Map recon. Utilization of a secondary DASC site when the primary site proved unuseable demonstrated the flexibility of the detachment and equipment. Determining the feasibility of communications from the alternate site, the DASC became fully operational within four hours. Once established, the DASC was able to act as a relay site between the command ship (USS JUNEAU LPD-10) and the supported ground unit (BLT 2/9).

PART I OPERATIONAL SUMMARYA. PLANNING

1. Various conferences determined the scope of the operation and therefore, the personnel and equipment required. Equipment procurement and conditioning and training DASC operators were conducted concurrently at MCAS Futema throughout the month prior to embarkation. DASC drills were predicated on actual exercise information (i.e. exercise area, call signs, procedures, etc.) as it became available.

2. The method and time for moving the DASC ashore was not determined until D-1. The possibility of being helilifted into position dictated palletized or van packaging of DASC components; shipboard space limitations dictated efficient mobile loading of all equipment. As completed, the MASS-2 Detachment equipment was mobile loaded, palletized and prepared for transport to the operating area by either helicopter lift or landing craft.

3. Training of detachment personnel as conducted at MCAS Futema included discussions on:

- a. Communications Security
- b. Shipboard Customs and Procedures
- c. Geography and Wildlife of the AOA
- d. Operational Procedures
- e. Australian Customs and Culture

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4. Additional training included twelve hours of Exercise KANGAROO oriented DASC drills and qualification of all detachment personnel in Helicopter Support Team procedures.

5. Supply Support Planning: Due to the length of the exercise it was determined the DASC would be self-sufficient for 5 days to include; fuel, water, and rations. (Australian day rations were authorized)

#### B. EMBARKATION/MOVEMENT HIGHLIGHTS

##### 1. Preembarkation Chronology

- 21 May 1974 - Final Vehicle Staging in MASS-2 Compound
- 22 May 1974 - Vehicles convoyed to White Beach
- 23 May 1974 - Vehicles embarked aboard USS JUNEAU (LPD-10)
- 24 May 1974 - MASS-2 Detachment personnel to White Beach and embarked aboard USS JUNEAU (LPD-10) and USS ALAMO (LSD-33)

2. At 0200 on D+1 the detachment with all equipment was loaded aboard LCM-8 boats and moved to the beach. Soft sand and mud prevented movement of vehicles beyond the high water line, and movement away from the beach was delayed until each truck was pulled to firm ground by a bulldozer.

3. MASS-2 vehicles joined a convoy in an assembly area near Red Beach and held until ground forces secured the intended DASC operating area at approximately 1000 on D+1.

4. Movement to the DASC location over approximately five miles of deeply trenched, unpaved, dusty, primitive roads was uneventful.

5. Arriving at the DASC location at 1230 on D+1, the DASC became operational and camp facilities erected by 1600 the same day.

6. At 0500 on D+5 teardown of the DASC site commenced. Vehicles were loaded and moving toward Red Beach by 0730, arriving at 0845, driving directly onto the causeway to the first wave of boats. Backloading was completed by 1000.

C. PRE D-DAY OPERATIONS. Although the DASC was not operational prior to D+1, the joint training and coordination sessions held in the SACC between DASC and TADC personnel are considered to have been highly beneficial to both agencies.

#### D. OPERATIONS ASHORE

##### 1. Chronology Summary

D-Day (11 June 1974) 2000 - Preparations for landing completed.  
2100 - First serial launched. Boat scheduled to assist in causeway placement.

D+1 (12 June 1974) 0200 - All serials launched and landed across Red Beach.

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0230 - Personnel and equipment arrive assembly area

1030 - Convoy departs assembly area.

1130 - Report received from recon party (DASC personnel) placed ashore the previous day that primary DASC site is unsuitable due to terrain considerations.

1230 - Arrived at alternate DASC site

1600 - DASC operational. Satisfactory communications on all nets.

1800 - DASC secured except for two nets maintained throughout the night for emergency communications.

D+2 (13 June) 0630 - DASC operational and guarding exercise nets.

0700-1800 - DASC assisted other agencies in maintaining communications with ship and relaying information.

1800 - DASC secured except for emergency nets.

D+3 (14 June) 0630 - DASC operational

1000 - Control passed ashore

1800 - DASC secured except for emergency nets

D+4 (15 June) 0630 - DASC operational

1630 - SAD was informed that ESCC had secured.

2010 - Control of air was returned afloat.

2030 - DASC secured except for emergency nets

D+5 (16 June) 0500 - Commenced compound teardown

1000 - All personnel and equipment aboard assigned shipping

## 2. Operational Summary

TAR Received	4
TAR Completed	4
HR Received	32
HR Completed	32

NOTE: See PART II, C, Training Objectives - These TAR's received for 2 hour periods were for targets of opportunity. The FAC Airborne would run on numerous targets even though DASC records showed only 1 TAR.

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PART II TRAINING OBJECTIVES

## A. OBJECTIVE: Exercise passage of command and control ashore

DISCUSSION: On D+3 at 1000 passage of control was exercised smoothly. The DASC had sufficient time prior to passage of control ashore to monitor all required nets and gain a more than adequate appreciation of current air operations. On D+4 at 2012 the DASC returned control of Air to TADC (USS JUNEAU).

## B. OBJECTIVE: Exercise planning and execution of Fire Support Coordination

DISCUSSION: Although Fire Support Coordination was adequately planned for this Operation, FSCC was unable to pass restrictive-air-plan information due to its lack of input from the Artillery batteries as caused by the inadequacy of communication with the ground units.

## C. OBJECTIVE: Exercise the DASC in control of CAS and Helo-operations

DISCUSSION: Once the DASC was fully operational and in a relay site, as the helicopters arrived in the AOA, the DASC would maintain communications between the Helicopter Direction Center (HDC) and helicopters. Once control passed ashore, the DASC maintained excellent control of the helicopter requests from the MAU CP.

On the few occasions the DASC did control fixed wing for Close Air Support, the control passed smoothly from TADC to DASC to FAC Airborne and back again.

2. Due to the unreliability of communications between the ground units, the MAU CP, the ship, and the DASC, some of the standard DASC procedures were altered. This became particularly evident in the use of TAR's. With the use of a FAC Airborne the concept of fixed wing orbiting within the AOA, one TAR might encompass several CAS missions, when the FAC Airborne was controlling the CAS targets of opportunity. On both D+3 and D+4, the ground unit FAC was airborne in a CH-46 controlling CAS aircraft which remained in orbit, on his call, over the land AOA. This method of control was agreed to by DASC in consideration of communications difficulties encountered.

PART III PROBLEMS ENCOUNTERED

## 1. TOPIC: Passage of Control Ashore

A. DISCUSSION:

1. By 1600 on D+1 the DASC was established ashore, fully operational, and communications satisfactory set with TADC (USS JUNEAU). Coordination of air support was passed ashore on D+3 at 1000-40 hours after the DASC was operational.

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2. This delay in passing control of air ashore was brought about by two factors; the 33rd MAU Operation Order established a specific schedule for passage of control ashore. It requires control of artillery to be passed, followed by control of naval gunfire and, finally, links coordination of air support to overall passage of control ashore to the LF Commander; Passage of coordination of air support ashore was delayed until the FSOC was established and in communication with DASC on both radio and wire lines.

3. The practice of predicating passage of coordination of air support upon the availability or readiness of an FSOC may be unnecessary in some instances. The facilities provided by the FSOC are duplicated within the SACC and TACC, both of which normally are communicating with the DASC. The presence of an operational DASC ashore represents an extension of the CATF's control capability which should not be overlooked for use in relaying requests from ground units. Further, by performing this service, the DASC is monitoring and working all nets for which control is eventually passed ashore and achieves an early appreciation of the ground/air picture. Therefore, at any time during this period of control being afloat, the DASC is ready and capable of assuming partial or full coordination of air support regardless of the control status of other supporting arms.

#### B. RECOMMENDATIONS

1. That coordination of air support by the DASC be considered separately from control of the other supporting arms.

2. That, if the situation warrants, passage of coordination of air support to the DASC be effected as soon as the DASC has established communications with pertinent agencies and gained an appreciation of the air/ground situation.

#### 2. TOPIC: Communications Difficulties with the Command Ship

##### A. DISCUSSION:

1. The location of the USS JUNEAU (LPD-10) TAOC throughout the exercise was inappropriate for the command vessel. With its location to the east of the Northwestern edge of the Amphibious Objective Area (AOA), and masked by terrain (high hills) from the location of both the DASC and FSOC (MAU CP), UHF and VHF (FM) communications became intermittent and unreliable. At this point, the paucity of radio equipment aboard the USS JUNEAU (LPD-10) TACC, particularly HF, became crucial. In many cases numerous nets of a given type were covered on an either/or basis on a dial-a-frequency radio system. This prevented the consistent utilization of a specific radio on a given net, particularly in the case of HF radios.

2. Complicating the situation was the movement of the ship while at anchor. Each tidal evolution presented a changing silhouette and consequent radio antenna masking to the DASC/FSOC locations. This was particularly

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noticeable during the operational hours 1200-1500 each day when communications difficulties were at a peak.

3. These problems, taken separately, presented difficulties to which solutions are obvious. However, recognition and identification of the overall ship to shore communications problems was time consuming to the extent that highly detrimental effects were noted throughout the entire air control spectrum for the duration of the exercise. This inability to communicate was particularly harmful in the correction of procedural techniques.

B. RECOMMENDATIONS:

1. That the command ship be positioned so as to avoid terrain masking from the ground forces and support facilities ashore.

2. That the command ship be anchored fore and aft to preclude masking caused by movement of the ship.

3. That the amount of radio equipment on an LPD be recognized as inadequate for an operation of this scope.

4. That the communications facilities of a second ship be utilized as an adjunct to the command ship and ground unit radios be utilized to coordinate between the two ships.

3. TOPIC: Communication Difficulties with the Ground Units

A. DISCUSSION:

1. Battalion 2/9 relied heavily on PRC-77's VHF (FM) for primary communications with the DASC and TADC on TAR/HR-2 (Covered). It was found that as the ground units moved further south in the AOA, the PRC-77's became too weak to maintain reliable communications. Again, as in Operation Fly-A-Way HF radio equipment organic to the Tactical Air Control Parties (TACP's) was not taken ashore due to the difficulties and inconveniences inherent in the PRC-47. The stated policy of not utilizing the organic HF radios in the LVTC-7's while in motion precluded all but short-range, line-of-sight communications (VHF(FM)) between the DASC and FAC/ALO.

2. Prior to passage ashore, the Senior Air Director (SAD) in the DASC was informed by FSCC that one of the supported FAC's had an inoperative PRC-75 (UHF) and was unable to direct close air strikes. The following day the SAD was informed that the second FAC was also without PRC-75 (UHF) communication. This precluded ground control of fixed wing strikes by anyone other than the Battalion ALO using a PRC-41. This situation necessitated the commitment of a CH-46 as an observation platform and communications media for the Battalion Forward Air Controller.

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B. RECOMMENDATIONS:

1. That the TACP be required to maintain an HF radio capability during any operation ashore.

2. That a suitable replacement be found for the PRC-75, and, in the interim, that FAC's be equipped with the PRC-41A (UHF).

3. That the requirement for the FAC/ALO to maintain constant communications with the DASC be recognized and that one of the more powerful VHF (FM) radios in the LVTC-7 be made available for his use while underway.

4. TOPIC: Misuse of Assigned Exercise Radio Nets

A. DISCUSSION: Limited shipboard communications and other previously mentioned overall communications difficulties necessitated a contingency type usage of many specific purpose radio nets. During one period, the primary tactical air control net (Blue) was being used for control of refuelers, close air support strikes, and helicopter direction all at the same time. In another instance, the secondary helicopter direction net (Purple) was heavily loaded with small boat control traffic. Intermittant communications on the TAR/HR-2 led to tactical requests and other non-administrative traffic being passed over the Tactical Air Command Net, which had been dedicated to purely administrative traffic between the various air control agencies.

B. RECOMMENDATIONS:

1. That the limited communications equipment of the LPD without augmentation be recognized as inadequate for an operation of this scope.

2. Where LPD or LSD shipping is utilized as the command vessel, a secondary command ship be designated to handle a portion of the communications load, with ground unit radios utilized to provide the required coordinations between ships.

5. TOPIC: Proper Establishment of Land Lines AshoreA. DISCUSSION:

1. Land lines between DASC and FSCC, when not co-located, must be given installation priority. This installation was not completed until 1530 (D+2) and contributed to the delayed passage of control ashore.

2. On D+2 an Alert Helicopter was positioned in an LZ in the vicinity of the Beach Support Area (BSA). Once control was passed ashore, the DASC assumed primary launch authority for this helicopter. At no time during this Operation was DASC provided with the programmed radio-relay channel to this Alert helicopter. Consequently, to launch the alert helicopter, the DASC had to call TADC (USS JUNEAU) for assistance. This method, as can be seen from previous discussions of DASC/TADC communications problems, created unacceptable delays and confusion in launching.

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**B. RECOMMENDATIONS:**

1. That installation of wire lines between the DASC and FSCC be given appropriate priority in recognition of the nature of the traffic involved.

2. That a single DAD/FSC hotline be expeditiously installed rather than await the establishment of switchboards and TECCOM facilities.

3. That, in the case of an alert helicopter pad remoted from the DASC, suitable plain voice communications be established immediately, with replacement by radio relay as time permits.

**6. TOPIC: Improper Embarkation Technique**

**A. DISCUSSION:** During embarkation on 23 May 74 vehicles loading procedures were considered unsatisfactory. Attempts to expedite the loading of vehicles on the upper vehicle storage area, poor vehicle placement, and limited availability of adequate tie-down cloverleafs caused vehicles to receive superficial damage once underway. In several cases stowed cargo (Conex Boxes) covered or blocked otherwise available and needed cloverleafs, preventing the required four point vehicle tiedown. Prior to this, as the vehicles were being driven aboard, poorly given directions and inadequately planned clearance between trucks caused minor collisions which were the main source of vehicle damage.

**B. RECOMMENDATIONS:** Reinstruct the combat cargo personnel in vehicle loading, handling, and tiedown procedures, with emphasis on the cost of vehicle repairs.

EXERCISE KANGAROO I

VMA-211 DETACHMENT AFTER ACTION REPORT

APPENDIX (B)

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INTRODUCTION

During the period of 2-17 June VMA-211 conducted operations in support of Exercise KANGAROO I. The movement of eight A4E aircraft from Iwakuni, Japan to RAAF Amberley, Australia commenced on 2 June and was completed on 8 June. A total of twenty nine sorties and 114 flight hours were accumulated during this phase. Tactical flight operations commenced on 10 June and continued through 17 June during which 54 sorties and 198 flight hours were flown.

PART I OPERATIONAL SUMMARY

A. PLANNING. The transit stage of the operation was accomplished through the combined efforts of MAG-12 Operations, VMA-211 and VMGR-152. Emphasis was appropriately placed on the in-flight refueling for each of the three to Amberley from Iwakuni. Three aircraft encountered mechanical problems on the flight to Cubi Point resulting in a stopover at Naha Air Base, Okinawa before proceeding to Cubi Point. The flight from Cubi Point to Darwin progressed according to plans. Seven of the A4Es landed as scheduled at Amberley on 6 June. A single aircraft returned to Darwin shortly after take off with an electrical system failure. The follow up maintenance crew performed the necessary repairs and the eighth A4 arrived in Amberley on 8 June.

B. EMBARKATION AND MOVEMENT HIGHLIGHTS.

1. A task force of eleven Air Force C-130s with two Marine C-130s carrying the advance party and chase crew was involved in the move to Amberley. An Air Force "ALICE" team was provided and was an invaluable asset in coordinating the deployment of VMA-211. All aspects of embarkation tasks between Iwakuni and Amberley were accomplished in an extremely efficient manner.

2. Although the appropriate notification and acknowledgement messages had been sent, little or no coordination towards arranging working spaces and billeting had been made at Cubi Point. The two and one half day planned layover at Cubi Point prior to the most demanding flight of the movement allowed sufficient time to work on the aircraft. The layover at Darwin was well coordinated and excellent support was received at Darwin.

C. OPERATIONS.

1. On 10 June, four area familiarization sorties were flown into the AOA. Additionally six sorties were provided in support of the Orange Forces to intercept amphibious forces approaching the AOA. A total of 28.3 hours were flown that day.

2. During the period 11-17 June the squadron was tasked to provide eight sorties per day which in turn would provide continuous close air support aircraft within the AOA. Without exception this schedule was met with all flights making their scheduled take off and on station times. On 17 June the four scheduled sorties were cancelled by the controlling agency after they had launched to the AOA. A total of forty four sorties and 170.2 flight hours were flown during this period.

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## PART II TRAINING OBJECTIVES

A. The major training objective for the fixed wing aircraft in KANGAROO I was to demonstrate the ability of Marine Tactical Aircraft to deploy long distances (5000 miles) and arrive at a minimum support facility in a high state of combat readiness. This objective was achieved in a professional manner. The type of operational flying conducted from RAAF Amberley was particularly demanding because of the flight hours per sortie ratio of 4.0 hours. Other factors were: Flying into an unfamiliar area; communications with foreign controllers; and conforming to somewhat different procedures while conducting a variety of tactical support missions within the AOA.

B. The fact that the AOA was located 350 NM from Amberley necessitated refueling operations to provide constant on call aircraft during daylight hours. Hence all aircrews performed in-flight refueling on an average of three times per flight and were capable of conducting multiple tactical missions during each flight. The training received by the pilots involved was invaluable.



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## PART III COMMENTS AND RECOMMENDATIONS

1. TOPIC: Low utilization rate of A-4 aircraft

A. DISCUSSION: During the 44 sorties and 170 flight hours flown in support of the operation only 29 tactical targets were assigned to the on call aircraft. The low utilization rate resulted in the loss of valuable training for both the air crews and the ground units.

B. RECOMMENDATION: On exercises of this type provide additional air control teams to the BLT as a means of giving the TAC parties, as well as the aviation units, more training.

2. TOPIC: Liberty Uniform

A. DISCUSSION: The Marine enlisted men going on liberty were required to wear uniforms while the Australian and New Zealand enlisted men wore civilian clothing. The uniforms restricted the selection of liberty activities, especially in the area of sports.

B. RECOMMENDATION: That in future exercises in Australia that all Marines be allowed to wear civilian attire on liberty.

3. TOPIC: Payment for Enlisted Messing

A. DISCUSSION: Instructions on the method of payment for enlisted messing were not received at Amberley until 18 June, two days before the return trip. This caused concern on the part of both the Marines and the Australians.

B. RECOMMENDATION: That all messing details be firmly established prior to deployment.

## PART V SPECIAL COMMENTS

During the course of the operation, all fixed wing requirements set forth in the exercise operations order were accomplished in a timely fashion. The VMGR-152 detachment was instrumental in the accomplishment of the fixed wing air missions. They devoted nineteen sorties in support of Blue and Orange air providing approximately 286,000 pounds of fuel during air refueling operations over the objective area for VMA-211 alone.

The physical layout and facilities at Amberley were excellent and there were ample, well lighted, parking spaces for the aircraft. All maintenance tents had been erected and wired for electricity by the RAAF prior to our arrival. The primary problem encountered on the deployment from a maintenance viewpoint was a lack of supply assets. This was, however, an anticipated problem area. The MARLOG support and material pickup proved adequate. The IMA Detachment from H&HS-12 provided excellent support for all embarked units.

Due to the exceptional foresight and very efficient coordination by the RAAF at Amberley prior to and during the course of KANGAROO I no problems arose

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that hindered the operation of VMA-211 or the supporting units. During the entire operation the Americans were received with a very cooperative attitude by the Australians.

EXERCISE KANGAROO I

HMM 164 DETACHMENT AFTER ACTION REPORT

APPENDIX (C)

## PART I OPERATIONAL SUMMARY

a. The eight plane detachment from Marine Medium Helicopter Squadron 164 began flight operations in support of Exercise KANGAROO I on 23 May 1974. Between that date and 27 June 1974 the detachment flew 326.9 hours, carrying 3225 passengers and 324.3 tons of cargo, on 763 sorties. There were a total of 514 shipboard landings: 417 day and 97 night.

This summary is broken down into three sections:

Pre D-Day            23 May 1974 - 10 June 1974  
 Operations Ashore   11 June 1974 - 17 June 1974  
 Post Operation       18 June 1974 - 27 June 1974

(1) Pre D-Day

(a) Pre D-Day flight operations for the detachment from Marine Medium Helicopter Squadron 164 commenced on D-19 (23 May 1974) and ended on D-1 (10 June 1974)

(b) D-19 (23 May 1974) Three CH-53's and four CH-46's flew onload of cargo from MCAS Futema to the USS JUNEAU.

(c) D-18 (24 May 1974) Flew four CH-53's and two CH-46's aboard USS JUNEAU and two CH-46's aboard USS Fort FISHER for transit to the Objective Area.

(d) D-17 (25 May 1974) Flew one MEDEVAC mission from the USS ALAMO to the USS JUNEAU.

(e) D-15 (27 May 1974) Flew all aircraft, four CH-53's and two CH-46's, from USS JUNEAU to NAS Cubi Point, RP. Two CH-46's returned and day and night carrier qualified six pilots. All aircraft and crews RON'd at NAS Cubi Point.

(f) R-Day (28 May 1974) Launched eight aircraft in support of R-Day operations. Launch sequence began at 1300 and all eight aircraft were airborne by 1332. Shortly after launch one CH-53 (YT-34) diverted to the beach. The air portion of the rehearsal went smoothly despite poor communications, limited maneuvering air space, and interference from the traffic pattern at NAS Cubi Point:

YT-32 dropped a rotor blade while folding, blade was replaced

YT-34 repair of failed utility hydraulic system

YT-35 weather

(g) D-13 (29 May 1974) Recovered three CH-53's aboard USS JUNEAU

(h) D-9 (2 June 1974) Flew three CH-46's launched in support of "holy helo" operations.

(i) D-6 (5 June 1974) Launched one CH-46 and one CH-53 for transport of an emergency leave case. The CH-53 launched after dark in marginal weather conditions to the airfield at Wewak, New Guinea. One CH-46 launch at 2215 to the

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USS ALAMO for a MEDEVAC mission.

(j) D-5 (6 June 1974) One CH-46 performed a shuttle service of equipment and personnel between ships of the ARG. The entire mission was flown under EMCON conditions. A MEDEVAC was hoisted from the deck of the USS WADDELL.

(k) D-4 (7 June 1974) One CH-46 flight to the USS ALAMO for a passenger pick-up.

(l) D-3 (8 June 1974) One CH-46 functional check flight and a mail drop on the USS WADDELL.

(m) D-2 (9 June 1974) Two CH-46's accomplished VERTREP from HMAS TARBATNESS to the ARG. One CH-46 performed ship's shuttle between ships of the ARG including the hoist drop of two Australian civilians and three US Marines aboard the USS BRISTOL COUNTY.

(n) D-1 (10 June 1974) Three CH-46 launches flew ship's shuttles and squadron maintenance personnel between ships of the ARG.

(o) The following reflects the Operations Conducted from D-19 (23 May 1974) to D-1 (10 June 1974).

(1) CH-53

<u>DAY</u>	<u>HOURS</u>	<u>PAX</u>	<u>CARGO</u>	<u>SORTIES</u>
D-19	4.1	00	22000	6
D-18	2.3	60	5500	5
D-17	0.0	00	00000	0
D-16	0.0	00	00000	0
D-15	4.6	7	00000	4
D-14	8.6	96	00000	16
D-13	0.8	00	00000	3
D-12	0.0	00	00000	0
D-11	0.0	00	00000	0
D-10	0.0	00	00000	0
D-9	0.0	00	00000	0
D-8	0.0	00	00000	0
D-7	0.0	00	00000	0
D-6	1.7	01	00000	2
D-5	0.0	00	00000	0
D-4	0.0	00	00000	0
D-3	0.0	00	00000	0
D-2	0.0	00	00000	0
D-1	0.0	00	00000	0
	22.1	164	27500	36

(2) CH-46

<u>DAY</u>	<u>HOURS</u>	<u>PAX</u>	<u>CARGO</u>	<u>SORTIES</u>
D-19	12.5	20	26500	20
D-18	2.5	0	1000	4

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<u>DAY</u>	<u>HOUR</u>	<u>PAX</u>	<u>CARGO</u>	<u>SORTIES</u>
D-17	0.3	3	00000	02
D-16	0.0	0	00000	00
D-15	5.2	0	00000	40
D-14	10.8	67	00000	17
D-13	0.0	0	00000	00
D-12	0.0	0	00000	00
D-11	0.0	0	00000	00
D-10	0.0	0	00000	00
D-9	2.3	34	2200	10
D-8	0.0	0	00000	00
D-7	0.0	0	00000	00
D-6	1.7	16	00000	04
D-5	1.7	2	00000	08
D-4	0.3	2	00000	02
D-3	0.8	0	00000	04
D-2	6.6	72	38000	42
D-1	<u>1.5</u>	<u>34</u>	<u>200</u>	<u>09</u>
TOTAL	46.2	250	71900	162

(2) Operations on a Day to Day Basis from D-Day (11 June 1974) to FINEX (17 June 1974).

(a) D-Day (11 June 1974)

1 Pre L-Hour lifts included one CH-53 to Rockhampton to pickup the CG, III MAF and party, and 19 members of the media; one CH-53 for BLT 2/9, and one CH-46 for 33rd MAU for visual reconnaissance of the AOA, Sensor implants and reconnaissance unit inserts. Starting at noon one CH-53 took CG III MAF and Press Corps representatives from USS JUNEAU to Sabina Point to observe the landing, and one CH-46 took a Recon Rapelling Team to Sabina Point for a demonstration insert.

2 The L-Hour launch went smoothly with all aircraft airborne within 20 minutes. There were four CH-46's and two CH-53's available for the L-Hour lift. All aircraft crossed the beach on schedule.

3 From 1530 to 1800 the six available aircraft ran on-call waves in support of the landing force.

4 Thirteen hours, or over one third of the total daily flight time was spent in the Delta pattern, awaiting assignment.

(b) D+1 (12 June 1974)

1 Morning launch included a CH-53 to Rockhampton for personnel and cargo, a CH-53 for a VIP V/R of the AOA and a section of CH-46's to complete D-Day on-call missions.

2 All launches went smoothly and on schedule until approximately 1000 when there were five downed aircraft.

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- a CH-53 (YT-31) at Rockhampton with a fuel leak.
- b CH-53 (YT-34) in the AOA with bad tail rotor blades
- c CH-53 (YT-32) still down aboard JUNEAU with a bad red sleeve and spindle
- d CH-46 (YT-07) precautionary landing in the AOA to inspect the AFT TRANSMISSION.
- e CH-46 (YT-06) down aboard FORT FISHER with one bad generator.

2 By 1200 three aircraft had returned to an up status. The afternoon missions included a VIP to Rockhampton, a company size Troop lift, a SCAMP insert, a RECON insert, and administrative and logistic missions in support of the landing force.

4 There were 14 hours, or approximately 30% of the daily flight time spent in the Delta pattern.

(c) D+2 (13 June 1974)

1 One CH-53 made two trips to Rockhampton for passenger, cargo and VIP pick-ups.

2 Three CH-46's and two CH-53's flew missions in support of the landing force including troop lifts, resupply, FAC(A), VIP, and MEDEVAC.

3 One CH-53, YT-31, RON'd at LZ Bluejay due to Darkness and low fuel.

4 Company resupplies incomplete due to darkness and a lack of suitable LZ's.

(d) D+3 (14 June 1974)

1 Two CH-46's launched at 0630 for emergency resupply of water and rations; mission delayed due to ground fog. The aircraft cleared the fog by hovering over it.

2 One CH-53 to Rockhampton, required assistance when engine failed to start. Aircraft YT-31 returned from LZ Bluejay and flew maintenance personnel and equipment to Rockhampton.

3 Remaining CH-53 and three CH-46's continued to fly missions in support of the landing force, including logistic resupply, VR's for CO 33rd MAU, and FAC(A).

4 Planning and utilization of aircraft was such that an emergency resupply was necessary at 1745, and then it did not include most urgently needed item (water).

(e) D+4 (15 June 1974)

1 Two early CH-46 launches were for code 5 pick up at Rockhampton and FAC(A) missions.

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2 The third CH-46 and three CH-53's launched for fuel resupply, artillery displacement and a two company troop lift. The last two missions were delayed due to air strikes in the AOA. Artillery ammunition resupply was not completed and the last aircraft was not recovered from the troop lift until after 1900.

3 33rd MAU CP was lifted back aboard the USS JUNEAU.

(f) D+5 (16 June 1974)

1 Two CH-46's made trips to Rockhampton; one for an Admin/Passenger run and one for CG, III MAF.

2 Remaining aircraft, three CH-53's and one CH-46 continued to fly missions in support of the landing force, including artillery ammunition resupply and cargo and personnel retrograde.

3 Artillery retrograde from Mt. Hummock to the USS JUNEAU was delayed due to darkness, mission was begun three hours late because the unit had not completed firing.

(g) D+6 (17 June 1974)

1 Three CH-46's were launched: one at 0630 to return CG, III MAF to Rockhampton, one to take other personnel to Rockhampton and one on a "Functional Check Flight".

2 Three CH-53's completed the retrograde of the artillery battery, the BSA, and lifted the Aggressor Marines from the AOA to the USS JUNEAU.

3 CH-46 (YT-15) recovered aboard the USS JUNEAU at 1235 K, ending the ashore phase of KANGAROO I.

(h) The following reflects the operations conducted from D-Day (11 June 1974) to D+6 (17 June 1974).

1 CH-53

<u>DAY</u>	<u>HOURS</u>	<u>PAX</u>	<u>CARGO</u>	<u>SORTIES</u>
D-Day	13.9	283	70000	40
D+1	22.6	332	49100	34
D+2	13.4	68	19000	36
D+3	11.9	113	9100	23
D+4	24.1	352	116300	59
D+5	15.7	283	52600	29
D+6	<u>14.4</u>	<u>268</u>	<u>70000</u>	<u>38</u>
TOTAL	116.0	1499	386100	259

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2 CH-46

<u>DAY</u>	<u>HOURS</u>	<u>PAX</u>	<u>CARGO</u>	<u>SORTIES</u>
D-Day	19.4	316	11000	36
D+1	25.8	178	29400	55
D+2	17.4	103	6900	29
D+3	26.9	63	13600	46
D+4	26.8	256	20400	55
D+5	10.6	128	400	25
D+6	<u>4.7</u>	<u>25</u>	<u>3000</u>	<u>8</u>
TOTAL	131.6	1069	84700	254

3 TOTAL ALL AIRCRAFT

<u>DAY</u>	<u>HOURS</u>	<u>PAX</u>	<u>CARGO</u>	<u>SORTIES</u>
D-Day	33.3	599	81000	76
D+1	48.4	510	78500	89
D+2	30.8	171	25900	65
D+3	38.8	176	22700	69
D+4	50.9	608	136000	114
D+5	26.3	211	53000	54
D+6	<u>19.1</u>	<u>293</u>	<u>73000</u>	<u>46</u>
TOTAL	247.6	2568	470800	513

(i) Operations on a Day to Day basis from D+7 (18 June 1974) to D+16 (27 June 1974).

1 D+7 (18 June 1974) The last CH-46 was recovered from the USS FORT FISHER: all eight aircraft were aboard the USS JUNEAU. Two CH-46's cross-decked 150 Mid-Pac Marines, (The Aggressor Force, from the USS JUNEAU to the USS TULARE) under "other than ideal conditions".

2 D+9 (20 June 1974) - D+14 (25 June 1974) In port Sydney, Australia.

3 D+15 (26 June 1974) One CH-46 flew prisoners from the USS JUNEAU to AMBERLEY Airfield, Brisbane, Australia.

4 D+16 (27 June 1974) The squadron cross-decked from the USS JUNEAU; all aircraft and personnel moved aboard the USS CLEVELAND. One CH-46 flew three emergency leave cases to Bundaberg, Australia.

5 D+7 (18 June 1974) to D+16 (27 June 1974)a CH-53

<u>DAY</u>	<u>HOURS</u>	<u>PAX</u>	<u>CARGO</u>	<u>SORTIES</u>
D+7	0.0	0	00000	0
D+8	0.0	0	00000	0
D+9	IN PORT SYDNEY			
D+10	IN PORT SYDNEY			

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<u>DAY</u>	<u>HOURS</u>	<u>PAX</u>	<u>CARGO</u>	<u>SORTIES</u>
D+11		IN PORT	SYDNEY	
D+12		IN PORT	SYDNEY	
D+13		IN PORT	SYDNEY	
D+14		IN PORT	SYDNEY	
D+15	0.0	0	00000	0
D+16	<u>4.0</u>	<u>52</u>	<u>45000</u>	<u>16</u>
TOTAL	4.0	52	45000	16

b CH-46

<u>DAY</u>	<u>HOURS</u>	<u>PAX</u>	<u>CARGO</u>	<u>SORTIES</u>
D+7	2.7	150	12400	24
D+8	0.0	0	00000	0
D+9		IN PORT	SYDNEY	
D+10		IN PORT	SYDNEY	
D+11		IN PORT	SYDNEY	
D+12		IN PORT	SYDNEY	
D+13		IN PORT	SYDNEY	
D+14		IN PORT	SYDNEY	
D+15	1.4	22	2000	4
D+16	<u>2.9</u>	<u>19</u>	<u>19000</u>	<u>8</u>
TOTAL	7.0	191	33400	36

## PART II EXERCISE OBJECTIVES

A. HMM-164 Detachment was tasked to provide helicopter support for the amphibious landing and subsequent operations ashore. Logistical helicopter lift was provided to the maneuver elements from a seaborne mobile logistics base. All tasks were accomplished.

## PART III PROBLEMS ENCOUNTERED

1. TOPIC: Prior coordination of Airspace and facilities at NAS Cubi Pt., Phillipines.

A. DISCUSSION: A lack of successful and detailed preplanning with NAS Cubi Pt., caused unnecessary delays in getting supply support, ground support equipment and use of the aircraft wash rack. Also, arrangements made for use of airspace within Subic Bay caused eight helicopters to have to share airspace with the aircraft in the traffic pattern at Cubi Pt. during the landing rehearsal.

B. RECOMMENDATIONS:

1. Prior arrangements be made for priority use and extended hours of operation of base facilities at Cubi Pt. e.g. Washrack, Base Transportation, and Ground Support Equipment during evolutions of this nature.

2. That the field be closed by NOTAM, to all but necessary arrivals and departures during the actual time of the rehearsal.

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## 2. TOPIC: Landing Zone Availability and Preparation

A. DISCUSSION: Good natural landing zones within the AOA were few and those were significantly degraded by previous brush fires. Those prepared by the ground units were in many cases unsuitable. Some units prepared no LZ at all in a fragged drop point. When a zone was cut it was often not large enough to accept both types of A/C (46's and 53's). Many zones were in burned out areas which caused landing A/C to go IFR in the zone because of the clouds of ash.

B. RECOMMENDATION: That HST personnel and Ground Commanders insure that all HLZ's are properly prepared and will accommodate the types of A/C requested. Fires in the AOA particularly in LZ's must be extinguished or the zones will become unsuitable.

## 3. TOPIC: Helicopter Expedient Refueling System (HERS)

A. DISCUSSION: Because of the limited number of refueling spots available in assigned shipping, a HERS was a necessity. The HERS was operational on D+1. Areas that reduced its effectiveness were:

1. COMMUNICATIONS: The communications link with DASC which was scheduled was never installed. As a result, aircraft shutting down at the BSA could only be contacted by having another helicopter land and pass messages. No other means of communications was used and it is supposed no communications with BSA existed, since the HERS and BSA were co-located.

2. Use of aviations fuel: The HERS was located in the BSA adjacent to the BSA fuel farm. Use of the HERS solely for aircraft must be stressed. The contamination resulting when bladders are mixed or when vehicles are refueled can be catastrophic for aircraft.

3. Control of HERS: The relationship of the HERS to the BSA was never established. Personnel assigned remained under control of the aviation detachment.

4. Damage to HERS: Four of six fuel bladders were punctured during recycling by incorrect handling aboard ARG shipping. Fork lifts were used to scrape the bladders from the flight deck with the bladder curling under the fork lift and being punctured.

B. RECOMMENDATIONS: That a HERS unit be taken on all operations of this type and be installed as soon as possible. In addition:

1. A communications link with the HDC afloat and/or DASC be established.

2. HERS be recognized as Helicopter expedient only in the AD-LOG Order and in Operation.

3. That the HERS be situated with the BSA and support be provided from the LSU.

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4. That all personnel handling fuel bladders be thoroughly instructed in proper handling.

5. That fuel bladders be conspicuously marked "JP".

4. TOPIC: Meteorological and Topographical Description of AOA as it Affects Flight Operations.

A. DISCUSSION: Weather information provided was correct except for the failure to include fog as a flight restriction. Two of the seven operation days were hampered by morning fog in the AOA and surrounding area. The costal area inward for 500 meters has numerous suitable LZ's, however, surface crust is approximately 18" thick and on two occasions would not support a CH-53. The interior has limited LZ on the Western Boundary and few in the Central and Eastern areas. The few that existed had been burned and were unusable because of the heavy ash layer.

B. RECOMMENDATIONS:

1. That fog be included as a restrictive factor to airborne operations in the meteorological summary.

2. That LZ limitations including thin hard crust on costal LZ's be included in topographic description of the AOA.

5. TOPIC: Intelligence

A. DISCUSSION: A joint Intelligence Center (JIC) was established from the time of embarkation through D+3. From D+3 through D+5 the MAU G-2 and BLT 2/9 S-2 were ashore. During this phase message traffic was unavailable between ship and shore based intelligence units. Intelligence relayed from aircraft in the AOA to any other agency was not passed on to our squadron intelligence unit on the LPD.

B. RECOMMENDATIONS:

1. Due to the high degree of coordination available and the accessibility of information a JIC is most desirable.

2. Steps must be taken to test communications networks between shore based and ship based intelligence sections.

6. TOPIC: Interagency Communications

A. DISCUSSION: Communications between the agencies aboard ship; HDC, PRI-FLY, Combat Cargo, Troop Ops, SACC, etc. and later ship-to-shore between DASC and HDC afloat were poor and caused numerous delays and rescheduling of aircraft. Coordination among the above agencies was minimal; progress of missions types of A/C required, expected delay times, etc., were not passed.

B. RECOMMENDATIONS:

1. That coordination and communications between Intra-ship agencies be delineated and rehearsed prior to embarkation of an aviation unit.

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(2) That Ship-to-Shore communications be improved.

7. TOPIC: Operational Communications

a. DISCUSSIONS: Air to Ground communications during the exercise were characterized by the following:

(1) Lack of a secure voice capability by both the ground units in the AOA and the ship facilities.

(2) Difficulty in contacting the appropriate unit on the L. Z. control net.

(3) A great deal of traffic between DASC and the HDC afloat on HD 1 and HD 2.

b. RECOMMENDATIONS:

(1) That all units, Marine and Navy, have the capability to cover all UHF and VHF nets.

(2) That units maintain an alert watch on assigned nets.

(3) That the HDC afloat and DASC be provided with a separate radio net for coordination.

8. TOPIC: Billeting and Office Spaces

a. DISCUSSION: Billeting spaces were adequate. The absence of a pilot ready room was overcome by having all officers billeted in close proximity and using the state rooms for most briefs. An office space on the flight deck level was made available for maintenance control and proved adequate. No space for operational administrative functions was provided and an officer stateroom was used. It was barely adequate and it made rest for the officers occupying the room impossible, especially during the operations when rest between flights was imperative.

b. RECOMMENDATION: Office spaces must be provided to the aviation element for maintenance control and administration/operations; both spaces should be secure as both used to store pilferable and classified items.

9. TOPIC: Aviation Maintenance Communications

a. DISCUSSION: Prior to embarkation aboard the USS JUNEAU, a facilities conference was held between ship personnel and their Marine counterparts of HMM-164. Spaces were identified for use by the detachment and communications, where lacking, were defined. A central maintenance/material control space had organic ship telephone communications with all maintenance shop spaces and ship spaces. Additionally a telephone line was installed from Maintenance Control to the supply point in the lower storage area. This enabled all functional areas to be in direct communication,

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b. RECOMMENDATIONS:

(1) That future deployments of this nature utilizes the communications organic to the ship and if necessary, install field lines and phones as the need arises.

(2) That facility conferences be mandatory prior to deployment in order to eliminate communications problems areas.

10. TOPIC: Individual Material Readiness List (IMRL)

a. DISCUSSION: A facilities conference was held between ship's personnel and squadron personnel. Aviation support items organic to the ship were reviewed and found to be inadequate. The deploying squadron (detachment of 8 aircraft) identified their requirements and provided their own IMRL support. These items included the following:

Tie-down chains	Air compressor
Nitrogen cart	Hydraulic cart
Rust lick cart	NC-10A power unit
Water wash cart	Jacks (5 and 10 Ton)

Intermediate Maintenance Activity (IMA) support was not required but in two instances (manufacture of Hydraulic lines) IMA services were required. Spares were brought in a supply pack-up, eliminating the requirement for 2nd echelon repair. MARLOG couriers provided the necessary link between Organizational Maintenance Activities (OMA) and IMA.

b. RECOMMENDATIONS:

(1) That IMRL requirements be identified early well before deployment, as was done on this operation.

(2) That sufficient spares of high failure IMRL items be made available in a pack-up.

(3) That IMRL items listed above be provided by the ship from assets located at Subic Bay's AIMD. The squadrons should augment items on a limited basis only.

11. TOPIC: Aviation Consolidation Allowance List (AVCAL)

a. DISCUSSION: Det HMM-164 consisted of four CH-53s and four CH-46s requiring aviation supply support during the deployment. AVCALs are normally provided on LPHs but not LPDs/LSDs. Attached helo based onboard LPDs/LSDs provided their own support based on the following:

(1) 3M documentation of high failure items

(2) Maintenance personnel experience

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## (3) Past operational experience

b. RECOMMENDATIONS:

(1) That post operational supply usage for KANGAROO I be made available to next deploying unit.

(2) That supply pack-ups provided be staged and packed by individuals augmented to the detachment.

(3) Maint/Supply policies be adhered to with respect to requisitioning, retrograding and documenting usage of supply pack-ups.

12. TOPIC: Aircraft Utilization

a. DISCUSSION: Throughout the entire operation aircraft spent a great deal of time in the Delta Pattern (D-Day 10 Hours, D+1 14 Hours Etc). Although this situation was partially relieved through experience and the establishment of the HERS it was never completely eliminated. The HDC afloat was never able to keep track of all airborne aircraft or task them effectively.

b. RECOMMENDATION: All airborne aircraft should either be gainfully employed on a mission or should be returned to base and shut-down until needed.

13. TOPIC: Mission Coordination

a. DISCUSSION: The HDC afloat was unable to combine or coordinate different missions as they arose during the day. If a mission were delayed or an add-on mission was fragged HDC did not normally make a determination as to relative priorities nor were they able to combine missions for better A/C utilization.

b. RECOMMENDATION: That the HDC afloat be staffed with personnel familiar with helicopter operations and that they establish priorities between conflicting missions and combine missions where practicable.

14. TOPIC: Staffing of HDC afloat

a. DISCUSSION: The HDC as a component of the TACRON provided little if any assistance until after D+5 when control was passed back from shore to ship. The communications, although lacking covered circuits, were adequate when operating but lack of training, understanding of responsibilities, and knowledge of helicopter operations limited HDC's effectiveness. The fact that the Helo assault and subsequent helo operations were not totally coordinated through the HDC by users added to their operating limitations. Reliance on flight leader directions, and eventually individual aircraft commanders, to continue the air movement was evident. Subsequent to D+5, HDC demonstrated a degree of experience from earlier operations and control was more positive.

b. RECOMMENDATIONS:

(1) That personnel assigned to HDC be familiar with helicopter operations.

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2. That coordination between HDC and the landing force air officer be continuous.

15. TOPIC: Aircraft Deck Handling and Training

A. DISCUSSION: During operation KANGAROO I, LPD-10 was utilized as the primary operating deck for the amphibious operation. Four CH-53's and two CH-46's located the LPD required close supervision during deck handling of aircraft due to the extremely crowded conditions.

Personnel aboard appeared to have no formal or informal training on deck handling procedures e. g. towing, securing by tiedown chains, chocking, of aircraft etc., and were unaware of the problems that may arise through improper procedures. This resulted in the detachment having to set up training sessions with the ships LSE's and deck handling crew on the proper procedures to be utilized.

All of the above mentioned problems were a direct result of lack of experience and training. It was only through the diligence and constant supervision of the aircraft detachment aboard that no major incidents occurred due to improper deck handling procedures. Practices deck handling of aircraft during the operation is much too late for adequate results. Aircraft were towed into each other on more than one occasion simply because deck handlers did not know what they were looking at.

B. RECOMMENDATIONS: The following recommendations are provided:

1. That LPH's be prime candidate for any amphibious assault involving helicopter operations afloat.

2. That the ship's deck handling crew must be given formal training concerning the handling procedures of the aircraft types that will be assigned to the ship with specific emphasis placed on:

- a. The towing limitations on the nose gear of each type aircraft.
- b. The turning radius and size limitations inherent to each type aircraft.
- c. The required tie-down and chocking procedures for each type aircraft.

d. The importance of insuring that all gear allowed on the flight deck be properly secured, and the flight deck be free of all potential FOD.

3. That a minimum of 2 weeks must be provided for on-the-job training, to include a complete launch, recovery and stack sequence with all aircraft daily during the last 2 days of QJT, or as required, until it can be accomplished in a safe yet expeditious manner.

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16. TOPIC: Operational Consideration of ARG Bravo Shipping

A. DISCUSSION: The KANGAROO I Det. embarked with 4 CH-53's and 4 CH-46's aboard two ships, 4 CH-53's and 2 CH-46's aboard the LPD and 2 CH-46's on the LSD. This arrangement was necessary to facilitate the L-Hour launch. Minimum time to launch all six helos from the LPD was 40 minutes. The launch sequence commenced at L-1 to insure adequate time for wave rendezvous. Additionally, it allowed time for respot in the event an aircraft had mechanical problems.

1. Refueling was programmed beginning with the completion of the first wave and was completed after wave 3. Both the LPD and LSD had refuel capabilities. The LSD was prime refueler for the 46's, one aircraft capability and the LPD refueled the 53's, 2 aircraft capability, although both helo models were refueled on both ships on subsequent refueling. Only one, Fort Fisher (LSD-40), of the two LSD's had refueling capability.

2. Both the CH-46 and CH-53 were required for the support requested however, only a limited number of lifts, the 155 Howitzer, were beyond the capabilities of the CH-46. Two CH-53's vice the four embarked would have been sufficient for KANGAROO I where meteorological conditions allowed the CH-46 to lift the 105 Howitzer, the decrease in CH-53's would have reduced operational restrictions imposed by the limited flight decks.

B. RECOMMENDATIONS:

1. That any mix of Helicopters selected to support amphibious operations include both the CH-46 and CH-53. That meteorological conditions considered, a reduced number of CH-53's be embarked.

2. That planning for L-Hour include recycle of aircraft through the refueling evolution.

17. TOPIC: LPD Flight Operations

A. DISCUSSION: Flight operations of the magnitude required for KANGAROO I when conducted from non-aviation shipping are hazardous. Inexperience, non-compliance with NWIP-42 and restricted deck space produced safety hazards, that were overcome only by pilot vigilance and luck. Expeditious launch & recovery sequences cannot be expected. By offsetting two CH-53's for the first launch, all aircraft can be launched in approximately 40 minutes. One hour is required for recoveries since only one landing spot is clear after the first two aircraft are landed, lack of qualified personnel in any of the positions within the air department, and inability of the ships personnel to understand the complexities of flight operations or avail themselves of sufficient predeployment training placed the major burden for operations and training on the squadron.

B. RECOMMENDATIONS

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1. That strict compliance with NWIP-42 be mandatory. (The ship had no copy of that publication).

2. That the Air Officer and sufficient deck personnel be qualified in LPH operations.

3. That sufficient deck handling practice be provided prior to embarking helo's, and an operational inspection be given prior to deployment (it should be noted that the JUNEAU was so inspected at Subic Bay during the rehearsal landing and received a satisfactory despite the fact two CH-53's were landed off center with at least 4 feet of blade overlap.

18. TOPIC: Deck Loading/Spotting Limitations of the LPD

A. DISCUSSION: Four CH-46's and four CH-53's were assigned in support of KNAGAROO I, a MAU operation. The aircraft were based on two ships, four CH-53's and two CH-46's on the LPD-10 and two CH-46's on the LSD-33. The problems encountered on the LPD were:

1. The positioning of all aircraft in an effort to minimize the number of launch evolutions.

2. The spotting of the first two aircraft for launching, with two aircraft extending beyond the foul line (See fig. 1).

3. The recovery of aircraft in a predetermined sequence in order to reduce deck handling and positioning for the next launch sequence.

The positioning of aircraft on the flight deck was determined through the use of a template, drawn to scale, of the aircraft and flight deck. This enabled the flight deck crew and Marine personnel to pre-plan their spotting in conjunction with the flight schedule. The first two CH-53's were spotted aft of their normal take-off point because stacked aircraft were forward of the foul line. These positions were used for take-off only. A safety margin of twelve feet rotor blade clearance was maintained at all times. The second launch evolution, the CH-53 and CH-46 forward of the foul line were then spotted in their normal positions and normal launch procedures continued.

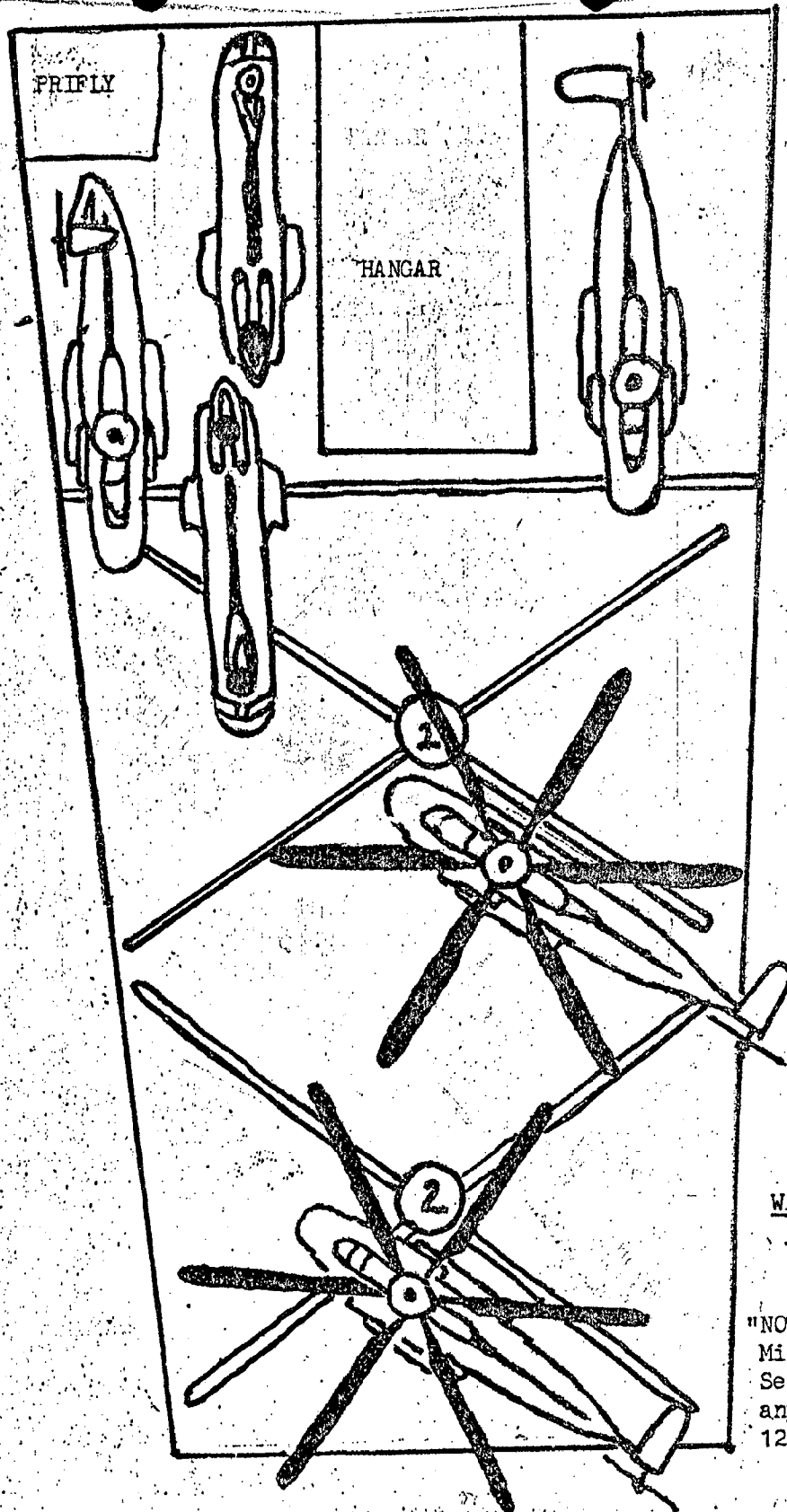
The recovery of aircraft were in reverse order of launch with the exception of the last two CH-53's. One landed on spot #2, folded and was moved to spot #1. The other CH-53 landed on spot #2 and remained spread if required. The LPD-10 could have handled six CH-46's without difficulty, two on each spot and four fouled and stacked.

B. RECOMMENDATIONS:

1. That LPH's be the prime candidate for any amphibious assault involving helicopter operations afloat.

2. That the mix of helicopters on a non-aviation ship be determined after the MAU-MAB provides the concept of operations and the anticipated

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WARNING

"NOT DRAWN TO SCALE"  
Minimum Blade Tip  
Separation from  
any Obstacle is  
12 feet

FIG 1

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sorties of troops, cargo, etc. The mix determined would then dictate the deck loading on each non-aviation ship.

3. That numbers of CH-53's be limited, when non-aviation ships are used for operations afloat.

4. The LPD (AUSTIN CLASS) is capable of launching and recovering any of the following helicopter mixes of ARG landings:

- a. 6 CH-46
- b. 2 CH-53, 4 CH-46
- c. 4 CH-53, 2 UH-1E, or 2 UH-1N
- d. 4 CH-53, 2 CH-46 (Not recommended)

The LPD (AUSTIN CLASS) with a clear deck can carry and have a launch and recovery capability with:

- a. 4 CH-53, 6 CH-46
- b. 12 CH-46
- c. 8 CH-53

#### PART IV POTENTIAL AREA FOR IMPROVEMENT IN DOCTRINE, TACTICS AND TECHNIQUES

A. Deployment of aviation elements aboard non-aviation shipping has been a topic of discussion in numerous after action reports. The restrictions, limitations and undesirability of such deployments are documented after each foray in a compilation of discrepancies. The fact that this and many previous amphibious ready groups without aviation shipping attached, have met with complete or partial success indicates a more positive approach be taken to improve the success ratio and optimize the use of amphibious shipping. This report directs itself to two "Real World" conclusions: Helicopter elements will continue to deploy on Non-aviation shipping; success of the landing and subsequent operations ashore will be dependent on helicopter support.

B. Exercise KANGAROO I provided an excellent vehicle to test helicopter capabilities aboard non-aviation shipping. The duration of the deployment was in excess of 45 days, the supply line extended more than 5000 miles, all operations were seaborne and heavy reliance was placed on helicopter support for success of the exercise. Four CH-53 and four CH-46's, representing more than 50% of the lift capability of an LPH configured composite squadron, were embarked taxing to the maximum the available flight deck space and aviation support.

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C. Evident on the initial planning for KANGAROO I was the limited definitive guidance available regarding capabilities and operating potential of the LPD and LSD decks. Ships characteristic diagrams provided available deck space but nothing specific could be found stating maximum aircraft loading for seaborne operations. On a trial and error basis the loading was determined to be 4 CH-53's and 2 CH-46's for the LPD (AUSTIN CLASS) 2 CH-46's for the LSD (ANCHORAGE CLASS) and 0 for the LSD (THOMASTON CLASS). KANGAROO I operations indicate a more desirable load to be 2 CH-53's and 4 CH-46's on the LPD. Deck spotting and launch recovery with the heavy mix realignment of designated launch/recovery spots and prohibited use of both spots for recovery of the last two helicopters.

D. Training for the LPD flight deck crew in the form of carrier qualification and spot/respot practice proved the crew to be totally unqualified for operation of the typed planned for KANGAROO I. LSE's were not familiar with hand signals, two vehicle operators could not respot aircraft and the air officer was unfamiliar with his ships capabilities and limitations and unsure of his responsibilities. The status of the ships air section cannot be listed as a shortcoming of the individuals involved but rather on the direction or emphasis their training follows, primarily that of supporting ground elements with occasional aircraft recoveries. Transfer of sufficient qualified personnel from aviation ships to provide a trained base from which to expand is essential.

E. Supply and maintenance support comments are of a general nature only. The absence of an IMRL and AVCAL are already known. The space limitations of the LPD and desirability for centralized maintenance and supply support are the Primary Limitations to effective helicopter operations from non-aviation ships. When an LPD is used as base for extended helicopter support aviation spaces for maintenance and supply should be explicitly defined as on aviation shipping to preclude extending the limitations already imposed by the LPD's characteristics. The HDC facilities provided for adequate control of the quantity of helicopters involved in KANGAROO I. Personnel capabilities limited its effectiveness. Excessive delays, incomplete instructions, and a general lack of the anticipation required for efficient helicopter control resulted in Delta time (Orbit over ship) approaching 30% of the total aircraft flight time on D-Day. Future operations should include an HDC officer, preferably Marine, that is familiar with helo ops.

F. Effective staffing and pre-deployment training will alleviate the operational control problems encountered aboard the LPD during KANGAROO I. The LPD, as a base for helicopter operations, has proven effective. Its full potential, although approached during KANGAROO I, has not yet been achieved; however, with the incorporation of recommendations included in this report and the establishment of an SOP for deployment, the full potential of non-aviation shipping as a helicopter base for amphibious operations can be realized.



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IN REPLY REFER TO:  
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MAR 29 1974

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enclosure (1) to the basic correspondence

FIRST ENDORSEMENT on CG, 1st MAW ltr 3P:TEB:pwd 5750  
Serial 003PA05974 of 28 February 1974

From: Commanding General, Fleet Marine Force, Pacific  
To: Commandant of the Marine Corps (Code HD)

Subj: Command Chronology for period 1 July to 31 December 1973

1. Forwarded.

*R. E. Haebel*  
R. E. HAEBEL  
By direction

Copy to:  
CG, 1st MAW

*let maw*

**SECRET**

*let maw*