CLEARANCE OF SURFACE ORDNANCE FROM
DESIGNATED AREAS OF KAHO'OLAWE

1. Background. Set forth below is a plan to surface clear designated areas of Kaho'olawe Island of hazardous live ordnance and "hazardous appearing" inert ordnance. The purpose of this clearance operation is to permit expanded access to portions of the island for religious/cultural visitations with reduced supervision by Naval personnel.

2. Assumption and Limitations.

a. The clearance effort will involve a commitment of an EOD search and clearance team (at least 8 personnel) during ten days of each month until the clearance effort is completed. This is necessary in order that training on the Island is not completely shut down for the period of the clearance. Of the ten days per month allowed for clearance work, two will be required to establish and break down a base camp.

b. Clearance procedures to be employed will be designed for minimal effect on the environment and to ensure protection of all archaeological sites. Prior to commencement of the clearance, archaeological sites shall be marked. An archaeologist with experience in surveying the Island of Kaho'olawe shall provide on-site consultation whenever detonation is conducted within impact distance of an identified or potential archaeological site.

c. Based on conditions established for the clearance operation, the most reasonable clearance possible will be conducted. However, in a "surface clearance only" situation, there is always the possibility of ordnance resting just beneath the surface of the soil being exposed by

subsequent erosion action. Also, since the cleared area will be adjacent to an active target range, the possibility exists for future contamination by ordnance "skips" or "ricochets" during firing exercises. As these ordnance items are reported, they will be removed by EOD personnel.

3. Clearance Information. Based on test data, described in Attachments (1) and (2), approximate ordnance clearance rates on the island were established.

With a 12' interval in the search line, a clearance rate of 5.25 acres per man day was derived for areas described as "Good Trafficability" in the Marinco report.[1/] The man days derived were based on the number of men used in the search line, area cleared, and days utilized. In areas described as "Fair" and "Poor" trafficability in the Marinco report, clearance rates were established as .70 acres per man day using an interval of 3' between searchers.

The specified areas to be surface cleared are shown in Attachment (3).[2/] These areas are a mixture of open ground with "good" trafficability and rugged terrain with thick kiawe growth which would be characterized as "fair" and "poor" trafficability areas. In some locations, there are thick, impenetrable, kiawe growths and thick, high, grass areas which will not be searched and cleared. The "minimal damage to the environment" condition will not allow burning

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1/ Chief of Naval Operations, Washington, D.C.: "Kahoolawe": A Report on the Utilization and Feasibility of Clearing the Island of Unexploded Ordnance. 15 October 1976.

2/ Attachment (3) is the map of the Island of Kaho'olawe upon which the Plaintiffs have designated areas to be cleared of ordnance. Plaintiffs have an additional three thousand five-hundred acres to designate.

of high grass or kiawe thickets. Without burning the grass or cutting back the kiawe growth, the areas either will be too dangerous to walk through for ordnance searches or will be physically impossible to penetrate without injury to the searcher. The state of the art in ordnance locators precludes their use in the Kaho'olawe environment. Therefore, these areas will be plotted, bypassed, and briefed to subsequent area users as hazardous places to be avoided. Using an EOD search and clearance team, the area will be searched using a surface search, line abreast, method with the interval varying depending upon the terrain being searched.

4. Search Effectiveness Probability (SEP). SEPs were derived for the good, and the fair and poor trafficability areas. For the areas of good trafficability, a 12' interval is considered reasonable based on intended usage of the area subsequent to the clearance operation. This interval should provide a 92.5% SEP for 20mm projectiles, and a 100% SEP for ordnance items larger than 20 mm. In the fair and poor trafficability areas, a 3' interval will be employed. It is anticipated this interval will provide an SEP of 75% for 20mm projectiles and a 79% SEP for larger ordnance items.

5. Concept of Operation. The Operation will be carried out in two phases: preparation and clearance operations. During the preparation phase the area to be searched will be established on island and a temporary base camp will be constructed. This area will, in general, conform to the boundaries shown in Attachment (3) and will be established in coordination with the archaeology efforts on the island. The clearance operation will commence no later than November, 1980. All live ordnance will be disposed of in place by

detonation. Whenever detonation of live ordnance might destroy or otherwise harm an archaeological site, the Navy shall conduct on-site consultation with an archaeologist with experience in surveying the Island of Kaho'olawe to determine the best manner of proceeding. Inert ordnance and junk will be loaded into vehicles and taken into the impact area and dumped into gulleys and ditches to help arrest the erosion process. All trails to be cleared will be searched and cleared to a width of 7' on either side of the trail. Upon completion of the clearance, the cleared area will be clearly marked so that subsequent users will be aware of the cleared zone boundaries. In the process of the ordnance clearance, junk items will also be removed from the cleared zone. Periodically, test items will be salted in the areas to be searched to provide a check on the effectiveness of the search. While searching in kiawe growth areas, searchers must be equipped with protective head gear and clothing to prevent injury from thorny trees and bushes. The clearance effort will be done in a manner that ensures protection of archaeological sites. Archaeological sites within the areas to be surface cleared will have their boundaries marked for identification as part of the management effort.