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4. The wind patterns at Taongi will permit a firing frequency limited essentially by technical and operational considerations only. It is further assumed that local contamination at Taongi which might result from acceptable wind patterns will not preclude firing.

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at Taongi and Eniwetok irrespective of the manner in which [illegible] is used. In this circumstance we would recommend that Taongi be used for large shots and Eniwetok for small shots plus large shots not to exceed the 5 MT limit for all three situations. For the generalized operation assumed in IV. we would not consider firing small shots at Taongi, though in principle, there is no objection.

2. Having assumed the availability and suitability of Taongi for firing large shots, we recommend that shots scheduled for Bikini be limited in size and location to those which would permit operations to be carried out without the necessity for pre-shot evacuation of personnel from the atoll. This condition is met automatically in Situations 2 and 3 and could be met under Situation 1 by limiting the yield to 5 MT and placing hazardous shots safely with respect to Enyu Island.

3. The nature of Taongi atoll itself, particularly its small size, is [redacted] the first shot there would no longer be support facilities ashore and that subsequent operations would have to be conducted from afloat. This would clearly be

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ducted in a fashion similar to Bikini operations in the latter part of Castle but modified by a few important differences between the two locations.

VII. Concept of Taongi Operations

Our conclusions up to this point are: first, that Taongi operations will be ship-based; and second, that Taongi operations will be of the same general character under all three of the situations proposed in II. The qualifications on this second conclusion is that the number of shots scheduled for Taongi would undoubtedly be larger if the Bikini site were restricted or abandoned as a firing site.

There is also a qualification on the first conclusion in that there are

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somewhat two ways in which to carry out a ship-based operation. In both cases, the support facilities are afloat and the firing system is afloat. The difference is that in one case, the major diagnostic instrumentation is done remotely, from a ship in the fashion of certain of the Ivy Mike experiments (fireball, time-interval), and in the other, the major instrumentation is done ashore in the fashion carried out on Castle shots fired south of Yurochi. Whether the tests are performed one way or the other depends upon the adequacy of the remote instrumentation to provide the desired experimental data.

Though the two modes of conducting the experiments do not alter the basic nature of the sea-based operation, they do lead to variations in detail. We have investigated the implications of these variations arising from the differences in mode of experimentation as well as the implications of the variations in the general nature of the operation arising from the differences between Taongi and Bikini.

We asked Mr. Joe B. Sanders of ALCO to obtain from the AEC engineering and construction contractor, Holmes and Narver, Inc., estimates of the manpower, time and money required to provide that we termed the minimum and the maximum

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hour's run by LCU from the Tacoma passage. They further cautioned that the unloading operation would be risky and that suitable sea conditions were likely to

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It is also the opinion of TG 7.3 that LCM's should not be used in the open ocean

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orable conditions to be eight days, since the LSD could not return to Eniwetok before its LCU's could be put back in Taongi lagoon. The LCU's in this case would have to be equipped to support a minimum crew for at least five days.

If an LSD is assigned full-time duty to support the Taongi boat pool, the LCU's need not be equipped to support their crews. Furthermore, a five-day firing interval may be maintained. Inclosure 3 contains estimated LSD schedules.

3. Scientific Personnel

Regardless of whether instrumentation is installed ashore, it will be necessary to provide living and working space afloat. We estimate the total com-

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indicated in VII.2. above. It is nevertheless desirable to supplement this [illegible], if at all possible, by furnishing limited helicopter transportation. Such transportation is believed to be necessary in the case of instrumentation ashore in order to provide adequate transportation to points which may be heavily contaminated. Helicopters are useful but not absolutely necessary for post-shot survey of lagoon contamination.

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of the Task Force. For this purpose, we believe three SA-16 aircraft or equivalent are necessary and that a suitable seadrome should be built.

In the event that the construction of extensive facilities ashore makes construction of an airstrip necessary, we recommend that regular airlift be provided for as long as conditions permit. In this connection, we recommend further that shot sites be selected and shot schedules be arranged to cause the least

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airstrip for test aircraft would not be necessary. If, however, an airstrip were built at Taongi for other purposes, it is likely it would be equipped for emergency use by test aircraft.

7. Communications

Communications between Eniwetok and Taongi would have to be at least equivalent to communications between Eniwetok and Bikini during Castle. Prior to the operational phase, Holmes and Narver would require facilities as indicated in Inclosure 2.

It would be desirable, but probably not technically feasible, to have voice ciphony equipment between Eniwetok and Taongi or Bikini and Taongi.

Generally speaking, we expect operations in the Taongi are to resemble Bikini operations during Castle. The important differences result from two factors: first, that Taongi is small, shallow, and has no anchorage for ships; and second, that Taongi is over twice as far from Eniwetok.

VIII. Concepts for EPG

Having outlined a concept of operations for Taongi, we may now proceed to the three situations described in II. In all three situations we consider the generalized operation of 25 shots assumed in IV.

1. Situation 1

In this first case Taongi has been added to the EPG and no restrictions beyond those existing during Redwing have been imposed on Bikini. The acquisition of Taongi is of advantage, however, as it permits us internally to impose a limi-

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tation which will simplify our operations at Bikini and expedite the firing of the series.

We do not know at this stage whether remote instrumentation from a ship

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to prohibit the firing of shots which could produce objectionable radiological conditions on atolls outside the EPG. Such a limitation means that either the yield or the manner of firing must be adjusted to produce essentially no fallout outside the EPG danger area. In the case of our generalized operation shots in excess of about 50 KT may not be fired on towers or on the surface at Bikini. There are therefore at least about half of the shots to be fired either at Taongi or at Eniwetok. Ten of these are larger than 1 MT.

In this circumstance, we would recommend the following distribution:

a. Most of the shots satisfying the Bikini restriction should be scheduled there.

b. Five shots larger than 5 MT are scheduled for Taongi.

c. Two or three of the shots between 1 MT and 5 MT are scheduled for Taongi.

d. The remaining shots are scheduled for Eniwetok.

In this case, it is desirable to establish two small-shot facilities at Bikini in order to permit somewhat freer use of the Eniwetok site for larger or more difficult shots.

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The reasons for moving shots in the range 1 to 5 MT are simply that, being barge shots, they may be moved easily, and their movement to Taongi relieves the scheduling problem at Eniwetok.

The only advantage to be found in Situation 3 is that certain types of support may be reduced below the Redwing level.

A tabulation of major support requirements (exclusive of TG 7.5 support) for the three situations described is presented in Inclosure 4.

4 Incls:
1. Chart (from J-3)
2. Memo, J6-3465 (from J-6)
3. LSD Schedules (from J-3)
4. Tabulation of Major Support Requirements (from J-3)

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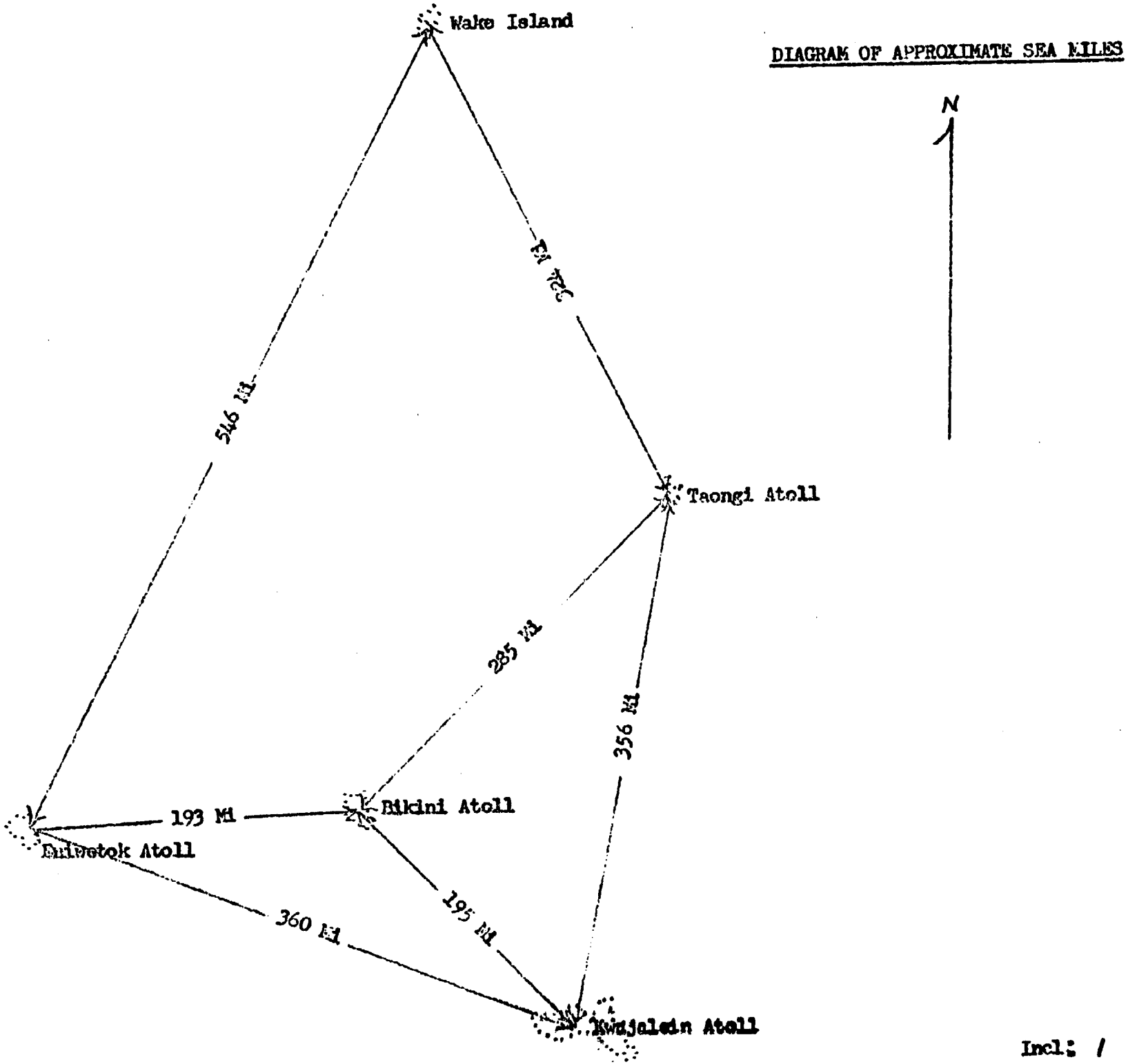
DIAGRAM OF APPROXIMATE SEA MILES



Incl: 1

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