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U. S. COAST GUARD OAN-1

APR 14 1952

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Bruce
VIA AIR MAIL

APR 11 1952

OPERATIONS-SHORE UNITS

From: Commandant
To : Commander, 14th Coast Guard District (c)

Subj: Marianas Loran Chain; operations of

Refs: (a) HQ dispatch #41920# (April, 1952)
(b) CCGD 14 dispatch #22306# (April, 1952)
(c) CCGD 14 dispatch 16#231#

1. This letter supplements the provisions of reference (a) and supplies additional information on the Marianas Chain.
2. When the shift from Potangeras Island to Falalop Island, Ulithi Atoll, was approved in November, 1950, the Hydrographic Office was requested to make the necessary recharting arrangements. New charts were printed by early 1952, but were not distributed because of construction delays at Falalop. Eventhough reference (c) set 1 May, 1952, as the firm date for operation, it was not thought desirable to approach the Hydrographer again with a request for chart distribution until the Coast Guard could be absolutely sure that that date would be met. When reference (b) confirmed the 1 May date, there was insufficient time remaining to distribute the charts, which takes a minimum of one month. Accordingly, Headquarters had to advance the date of operation to 1 June, 1952.
3. In the planning for the change from Potangeras to Falalop, it was decided that when it was completed the whole Marianas Chain would be changed from 1750 to 1850 kilocycles as part of the program to shift into the bands set up by the Atlantic City Radio Regulations. The Hydrographic Office was informed of this change and printed the Loran lines on the new charts for 1850 kilocycles. Therefore, it will be necessary to operate the whole chain on that frequency when Falalop begins providing navigational service.
4. Reference (a) established the target date for the change-over from Potangeras to Falalop as 1 June, 1952. Until that time the old stations on rates 4H2 and 4H3 should be kept in operation. When the change-over is accomplished, the following conditions shall be satisfied:

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(a) Rates

Falalop (Master) to Cocos 2H2
Saipan (Master) to Cocos 2H3

(b) Coding Delays

Coding delays of 1,000 microseconds shall be used at Cocos.

(c) Time Differences

The calculated time difference reading for rate 2H2 is 5249.6 microseconds, and for 2H3 2595.18 microseconds. It is expected that the previous error of 6 microseconds in the Saipan-Cocos rate will remain. The calculated time difference for the Falalop-Cocos rate may be in error by several microseconds because of inexact coordinates. The standard master station time difference established for rate 4H3 shall continue to be used at Saipan. A standard time difference at Falalop shall be established as the average time difference observed during the system check.

(d) Power and Pulse Shapes

Initially, the T-137 transmitter at Falalop shall be modified to match a TDP-1 pulse shape. When Saipan and Cocos are ready to operate with T-137 transmitters, all three stations shall adhere to the following conditions, making the changes simultaneously:

(1) Power

The peak power shall be adjusted to 160 kw at Falalop and Saipan, and to 128 kw at Cocos.

(2) Pulse Shapes

Pulse shapes shall be adjusted so that the rise time from 10% to 90% of the amplitude shall occur in 21 plus or minus 1 microseconds. Widths shall be adjusted to 40 plus or minus 1 microseconds at the half amplitude points.

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5. It is requested that a system check be made in plenty of time to meet the 1 June date. The results of that check should be forwarded to Headquarters by dispatch.

6. You are authorized to release the general description of this changeover and the target date to loran users. It is further requested that you issue local notices to mariners incorporating this information. When these notices are received at Headquarters, weekly notices will be issued, in which the Hydrographic Office will supply information on the charting arrangements.

7. The Hydrographic Office has printed the following charts with loran lines for the relocated Marianas Chain, and has issued orders to have them ready for distribution by 1 June, 1952. Three copies each of these charts were forwarded to you by airmail on 4 April, 1952:

VRL - 206, 6th edition
VRL - 207, 5th edition
VRL - 210, 9th edition
VL 30-28, 6th edition
VL 30-29, 6th edition

VL 30-30, 7th edition
VL 30-42, 5th edition
VL 30-43, 5th edition
VL 30-44, 3rd edition

8. It will be noted from an examination of the new charts that the original erroneous positions of the stations have been perpetuated, so that an auxiliary correction chartlet is necessary on the bottom margin of each chart. To eliminate these errors, Headquarters plans to request the Hydrographic Office to send an astro team to each station of the Marianas Chain for determination of more exact positions. It is anticipated that this team will be available in Honolulu or Guam sometime in the fall of 1952, when the 14th District will be requested to furnish air transportation to the respective stations. You will be notified further when firm arrangements have been made.

9. In regard to the future operations of the Marianas Loran Chain, you are informed that when the Japanese Chains are shifted to 1850 kilocycles in 1953, it will be necessary to change the Marianas rate structure to prevent interference with rate 2H2 Pusan-Miho and 2H3 Tanaga Shima-Pusan. Accordingly, at that time it is planned to make Palalop-Cocos 2L2 and Saipan-Cocos 2L3. You will be informed by letter in sufficient time to accomplish this change.

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10. Due to the importance of the Marianas Chain to Trans-Pacific navigators, it is requested that the Commandant (O) be kept fully informed of the progress of the changes discussed in this letter, particularly if there is any possibility that the 1 June date cannot be met. It is further requested that the changeover not be made operational without Headquarters approval.

R. J. MAUERMAN
By direction

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