

NAVY SOFAR STATION.

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Local Address:
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St. DAVIDS. Bermuda.

Tel.: 3-7191 ext 2118

MARCH 22, 1960.

Commanding Officer,
H.M.A.S. DIAMANTINA,
c/- Royal Australian Naval Headquarters,
Canberra, New South Wales,
AUSTRALIA.

Dear Captain,

All of us here have a great deal of admiration for the way you were able to make sense and organise so nicely our recent shooting operation. The shots we received here apparently came north of the Kerguelen Island, south of Crozet Island, North of Prince Edward Island and followed by the previous track which the Vema had shot, arriving in Bermuda 3 hours and 43 minutes and off New Jersey in 3 hours and 54 minutes. I have not yet heard from our friends in Fernando De Noronha. This, however is a small island off the tip of Brazil, manned by Air Force types and you know how slow they are. ||

The third shot however took a minute longer than the first two on both our records and those at Acpe May, and I wondered if we had a garble in that firing time, which was received here as 19 hours, 14 minutes and 7 seconds. We certainly had a garble in the longitude numbers which read on my message $163^{\circ}43.0'$ and of course I assumed $113^{\circ}43.0'$. I assume you time by a watch rather than with some type of recorder.

Since Jack Nafe's letter indicated that you did not have any way of measuring the depth of shot, I assume the depth you mentioned in your firing message (1350 fathoms) was the depth of water.

In any case, we apparently found a much better hole for the energy to go through than we had when the VEMA shot, for the signal here and off the Jersey coast was well distinguishable. When the Vema shot we had to rerun the magnetic tape several times and look for it in the mud. One of the uncertainties, of course, in both the series is how badly the fact that we had the explosion well below the sound channel hurt us. We are in the process of getting some special detonators made that would give us some more flexibility in our choice of explosion depth and I should like to try the problem again with an explosion somewhere around 500 fathoms. It is thought that this will greatly improve the signal strength received here, since no matter what path we find we are going to run into 500 or 600 fathom water somewhere along it.

In any case, I do appreciate your efficient help and I should be obliged if you would pass along to your Naval Radio people my appreciation to them for their excellent handling of my vague communications.

Sincerely,

Carl Hartdegen
ASSOCIATE DIRECTOR.

CH:BJF