From: Commander, Fourteenth Coast Guard District
To: Commandant (CG) V

Subj: Storm damage at Loran Transmissng Station French Frigate Shoals

Ref: (a) GOOD14 msg 15/23/3 Jan 1954

1. As reported in reference (a), the island on which Loran Transmitting Station French Frigate Shoals is situated was flooded to a depth of several inches by storm waves, concurrent with high tide, during the night of 10-11 January 1954. Damage consisted principally of (1) temporary closing of the runway due to heavy coverage by coral boulders, (2) raveling of the steel sheet piling bulkhead and erosion of the coral fill, and (3) additional collapse of a portion of piling bulkhead on the north side of the island. Damage caused by the storm is shown on photographs, enclosure 2.

2. The runway was cleared with station equipment, supplemented by a small wheeled loader sent to the station, and was open for aircraft near the end of January. During the latter part of February and early part of March the CCG MUKUNI landed a working party and made temporary repairs to the most severely damaged sections of the sheet piling bulkhead, and expanded the cleared strip on the runway.

3. A survey was also made of the island, and the sheet piling bulkhead was found to be weakening at many places. The bulkhead was constructed during World War II, probably prior to 1944, and in the intervening 10 years corrosive conditions prevailing at the island have eroded holes completely through the steel section at many places (see photograph, enclosure 2). Seven plans were developed for improving conditions at the island and for relieving the threat of loss of portions of the island in the next few years. The plans are summarized on enclosure 1, and are shown on the attached drawings, enclosures 3 to 7. Consideration was also given to constructing groins along the northern side of the island but in the absence of littoral drift to feed the groins it appeared impractical to install them. In addition, mobilisation of adequate equipment to install the groins would be approximately equal to that required for a program of replacing the sheet piling bulkhead.

4. On 4 April 1954 the Assistant Commandant, accompanied by the Commander, Fourteenth Coast Guard District, inspected the island. As a result of the inspection it was concluded that, at the present time, the most practical approach to the problem is to permit the bulkhead to continue to deteriorate.
and to provide the station with a bulldozer to fill areas which are eroded by storms. The bulldozer would also be used to haul supplies and equipment ashore over landing mats from landing craft in the event the dock area fails. Current plans are to purchase a bulldozer and a supply of landing mats during fiscal year 1955.

R. M. Freneman
By direction

Encl: (1) Summary Sheet
(2) Sheet of 5 Photographs
(3) Plans a and b (2)
(4) Plans c and d (2)
(5) Plan e (2)
(6) Plan f (1)
(7) Plan g (1)
1/11/54. Debris washed on runway.

1/11/54. Coral washed on runway.

1/11/54. General view of runway, looking east.

2/26/54. Erosion behind failed piling, North side of island.

2/26/54. Corroded piling, NW corner of island.
1/11/54. Debris washed on runway.

1/11/54. Coral washed on runway.

1/11/54. General view of runway, looking east.

2/26/54. Erosion behind failed piling, North side of island.

2/26/54. Corroded piling, NW corner of island.
1/11/54. Debris washed on runway.

1/11/54. Coral washed on runway.

1/11/54. General view of runway, looking east.

2/26/54. Erosion behind failed piling, North side of island.

2/26/54. Corroded piling, NW corner of island.
1/11/54. Debris washed on runway.

1/11/54. Coral washed on runway.

1/11/54. General view of runway, looking east.

2/26/54. Erosion behind failed piling, North side of island.

2/26/54. Corroded piling, NW corner of island.
1/11/54. Debris washed on runway.

1/11/54. Coral washed on runway.

1/11/54. General view of runway, looking east.

2/26/54. Erosion behind failed piling, North side of island.

2/26/54. Corroded piling, NW corner of island.
TO: Chief, Shore Units Division

FROM: Chief, Civil Engineering Division

SUBJECT: French Frigate Shoals LORSTA; report of storm damage

Ref: (a) CGC GD 187 (e) ltr 26 May 1954 H; serial 3234

1. Reference (a) is transmitted for your information, study and comments.

2. Copy of reference (a) and enclosures (1) and (2) may be retained for your files, if desired. However, the remaining enclosures (3) through (7) inclusive are required for studies which will be made by the sections of this division.

Encls: (1) Summary Sheet
(2) Sheet of 5 Photographs
(3) Plans a and b (2)
(4) Plans c and d (2)
(5) Plan e (2)
(6) Plan f (1)
(7) Plan g (1)
French Frigate Shoals LORSTA; report of storm damage

Ref:  (a) CL46GD(e) ltr to Comdt (ECV) dtd 26 May 1954, H4, serial 3234
     (b) ECV-1 memo to OSU dtd 11 June 1954 with 7 enclosures

1. Shore Units Division has retained a copy of reference (a) and enclosures (1) and (2) of reference (b) for file purposes. The report has been noted.

2. No further action by this Division is indicated at this time.

Encl:  (1) Plans a and b (2) - encl 3 of ref (b)
       (2) Plans c and d (d) - encl 4 of ref (b)
       (3) Plan e (2) - encl 5 of ref (b)
       (4) Plan f (1) - encl 6 of ref (b)
       (5) Plan g (1) - encl 7 of ref (b)