INTERNATIONAL TSUNAMI INFORMATION CENTER

NEWSLETTER

ITIC • P.O. BOX 3887 • HONOLULU, HAWAII 96812 • USA

VOLUME IV, Number 1, March 15, 1971

WAVE REPORTING PROCEDURES FOR TIDE OBSERVERS IN THE TSUNAMI WARNING SYSTEM

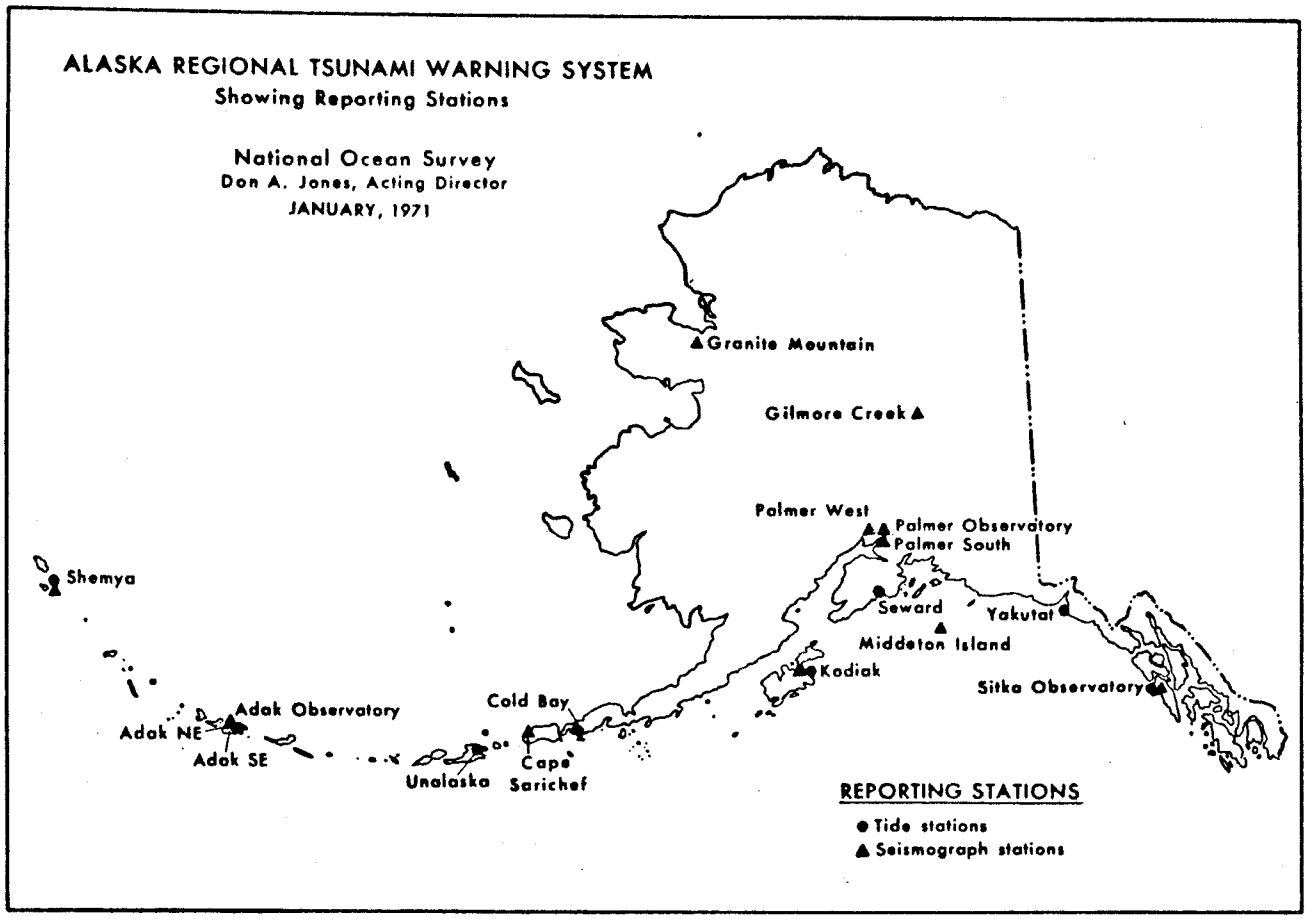
A revised edition of U. S. Department of Commerce Publication No. 30-3, "Wave Reporting Procedures for Tide Observers in the Tsunami Warning System" has been mailed to tide observers participating in the TWS. This publication explains the duties of tide observers in the System. General information on the various types of gages used is supplied. Specific instructions are given on how to respond to test messages and how to report on tsunamis recorded. All tide observers and alternates should be familiar with the information contained in this booklet. Additional copies may be obtained from the Tsunami Services Coordinating Branch, National Ocean Survey, Rockville, Maryland 20852.

NEW U. S. AGENCY

The Tsunami Warning Center at Honolulu Observatory, the Honolulu Field Office, the Pacific Tide Party and various U. S. seismic and tide stations have long been operated by the Coast and Geodetic Survey (C&GS). As a result of a recent reorganization, the C&GS has been renamed the National Ocean Survey (NOS) and becomes an element of a new organization, the National Oceanic and Atmospheric Administration (NOAA). In carrying out its mission to improve man's comprehension and uses of the physical environment and its ocean life, NOAA will warn against impending environmental hazards including hurricane, tornado, flood and tsunami.

NEW SEISMOGRAPH STATIONS IN ALASKA

The seismic network of the Alaska Regional Tsunami Warning System has been expanded recently with the addition of three new stations. Shemya (also a station in the tide gage network), Cape Sarichef and Granite Mountain now operate short period vertical seismographs. Signals from these three new stations are telemetered in real time to the warning center at Palmer Observatory. These new stations will improve Palmer's capability to determine earthquake epicenters along the Aleutian Island chain.



Alaska Regional Tsunami Warning System Showing Reporting Stations.

COMMUNICATIONS TESTED BETWEEN HONOLULU, TOKYO AND KHABAROVSK

The direct transmission of tsunami information between Khabarovsk, Tokyo, and Honolulu was suggested under Recommendation 6 of the Second Meeting of the ICG for the Tsunami Warning System in the Pacific at Vancouver, B.C., May 12-14, 1970 (ITIC NEWSLETTER, Vol III, No. 2, June 25, 1970, page 4). The technical details concerning the use of radio frequencies for the test were agreed upon through correspondence between ITIC, JMA, Tokyo, and the Hydrometeorological Service of the USSR.

At 0200 GMT December 15, 1970, ITIC began broadcasting on the frequencies of 4163 KHz, 8328 KHz, and 16637 KHz. This broadcast continued for five minutes. JMA monitored the broadcasts and reported that they received the dummy message very well on 16637 KHz and nothing on the other two frequencies.

At 0215 GMT, three different frequencies were tested for five minutes. JMA reported no reception on 6245 KHz; message received with some interference on 12480 KHz and 22151 KHz. Reception was best on 16637 KHz of the six frequencies tested.

At the May 12-14, 1970 meeting held in Vancouver, B.C., of the IOC's International Coordinating Group on the Tsunami Warning System in the Pacific, the Group requested that a "dummy" communications test be conducted quarterly.

The results of the tsunami communications test which was conducted on December 4, 1970 are as follows:

GMT	Remarks
0200	TWC initiated test
0205	JMA received message
0210	JMA relayed message to Khabarovsk
0230	Khabarovsk received message
0400	JMA received reply
0407	JMA relayed reply to TWC
0425	TWC received reply from Khabarovsk

Total Travel Time: 2 hours 25 minutes

NEW DIRECTOR FOR ITIC

Captain John B. Watkins, Jr., was appointed the Director of the International Tsunami Information Center in Honolulu and as Honolulu Field Director for the National Ocean Survey, NOAA, on December 24, 1970. Captain Watkins comes to Honolulu after having served as Commanding Officer of the Seattle-based NOAA Ship FAIRWEATHER for the past three years. The former Director, Captain Robert C. Munson, has been transferred to Miami, Florida to take command of NOAA's oceanographic Ship DISCOVERER.

QUAKE ROCKS BATAN

An earthquake rocked the city of Basco on the island of Batan off the northern coast of the Philippines on September 30, 1970, setting off a minor tsunami and a series of aftershocks. Several houses were destroyed but there were no reports of casualties.

Batan is in the path of most typhoons that pass near the Philippines and most houses on the island are made of concrete, a factor which government spokesmen said helped prevent loss of life.

NEW TIDE GAGE INSTALLED IN OKINAWA

Installation of a BRISTOL transmitter and recorder was completed by the Pacific Tide Party on 15 December 1970 at White Beach, Okinawa. This is the newest station to be brought into the Tsunami Warning System and will be a valuable asset in the detection and recording of tsunamis generated in the northwest Pacific. The station will be operated by the U. S. Naval Port Facility at White Beach.

TRAVEL TIME CHARTS

Travel time charts have been completed for and distributed to the following stations: Arica, Baltra Island, Malakal, Okinawa, Rikitea and Suva. Copies of these charts may be obtained by writing to the Director, NOAA, National Ocean Survey, Rockville, Maryland 20852.

NEW NATIONS JOIN INTERNATIONAL GROUP FOR THE TWS

The Intergovernmental Oceanographic Commission has reported that Peru and Thailand have joined the International Coordination Group for the Tsunami Warning System in the Pacific. The Group, which was organized in 1966, now includes fourteen nations. Their next meeting is tentatively planned for May, 1972 at Tokyo, Japan.

EVALUATION OF THE 1960 TSUNAMI AND OTHER MAJOR EMERGENCY SITUATIONS IN HAWAII - Civil Defense Division, State of Hawaii

A 202-page Evaluation of the 1960 Tsunami and Other Major Emergency Situations in Hawaii has been completed by a special four-member team working with State Civil Defense.

"The study was made by the team to aid them in the development of the 600-page State Plan for Disaster Assistance, which they also recently completed," according to John N. Butchart, State Vice Director of Civil Defense.

The study includes eight chapters: Abstract; Geographic/Geologic Features of the Hawaiian Islands; Narrative of the 1960 Tsunami; Review of Emergency Operations and Supporting Activities During the 1960 Tsunami; Legislative Response to the 1960 Tsunami; Evaluation of Other Major Emergency Situations--Frequency and Probability Factors; Planning Factors--The Needs and Demands Set Forth by the Emergency Situation--Matrix of Planning Factors; and Development of Planning Areas--Consolidation of Emergency Situations into Planning Areas by Similarity of Planning Factors.

Writing the study, along with the regular State Civil Defense staff, were John W. Bohn, Jr., Disaster Assistance Planner, and Larry T. Takumi, Assistant Disaster Assistance Planner. They were aided in the project by G. G. Raymond, Special Assistant for Governmental Liaison, and Miss Iris Okamoto, Stenographer.

The work notes, "One of the most devastating tsunamis struck the Islands on May 23, 1960. Sixty-one lives were lost, several hundred people were injured, and real and personal property damaged or destroyed was assessed in excess of $20 million. Combined capabilities of the State and County governments, the Federal government, and the private sector were applied through the various phases of emergency operations in response to a broad range of 'needs and demand' for assistance."

The study points out, "At 10:30 p.m. on May 22, 1960, sirens along the coast signalled the approach of the Chilean tsunami (tidal wave). Some people in the low coastal areas heeded the warning and evacuated. Others were misled by early reports of only slight damage to areas closer to Chile which had already been struck by the wave."

It continues: "Still others felt that the tsunami would not affect them since previous tsunamis had not harmed them or their property. Many were curious and wanted to observe the water rapidly recede from Hilo Bay and bare the ocean bottom.

"For these and many other reasons (including apathy), many people were present in the low lying areas when the first wave arrived 15 minutes past midnight on May 23. The familiar first and abrupt rise of the water level gave no indication of impending danger. When the second wave toppled over the low seawall fronting Hilo Bay with little violent action, some observers conjectured that the other waves would also assimilate rapid tidal fluctuation."

The writers add: "The waters of the second crest withdrew quickly. Shortly after 1 a.m., the crest of the third wave rushed past the end of the breakwater and sped toward the Hilo bay front. The 20-foot bore unleashed its destructive force on the central part of the coastline and rambled eastward. The massive wall flared out to strike the shores of the bay in different directions, rushed inland as far as 3,600 feet, and blanketed 550 acres of Hilo proper."

The study points out that after the bore receded, Hilo was unrecognizable. A thick layer of mud covered the area. The air was impregnated with the stench of the City's disrupted sewer system. Many frame buildings had been reduced to splinters. Light, reinforced concrete structures had been toppled, ten to twenty-ton boulders had been lifted from the bay shore revetment and rolled hundreds of feet. Asphalt concrete pavements had been peeled from their subbases.

Hundreds of automobiles had been demolished. Parking meters had been ripped from their posts. Various forms of public and private property were strewn about the devastated area. Where many structures once stood, only floor slabs remained. The conglomeration of wreckage was such that it took days to determine the number of fatalities and even longer to tally the total of damages and losses.

The study notes that less severe destruction was experienced on Maui, Oahu, Molokai and Lanai. Then it states: "The fact that many people failed to heed the warning and sirens raises the following questions: (1) How widespread was the coverage of the warning system, or more specifically, did the dissemination of the warning messages over the broadcast media and the sirens effectively reach the people residing in the area? (2) Did people understand the warning messages and the meaning of the sirens? (3) Did people know what to expect? (4) Did people know what to do?"

NEW CHIEF OF PACIFIC TIDE PARTY

CDR Francis D. Moran has assumed the position of Chief, Pacific Tide Party effective 22 December 1970. CDR Moran has just completed three years aboard the NOAA Ships SURVEYOR and OCEANOGRAPHER.

CANADAIN EQUIPMENT FOR THE TSUNAMI WARNING SYSTEM IN THE PACIFIC

Three countries have shown interest in acquiring the Foxboro pressure-type tide gages offered by the Canadian Government for use in the Tsunami Warning System. The operating manual and specifications of the gages have been furnished the governments of Philippines, Chile and Korea. To date, the Philippine Government has responded that the gage will fulfill their needs and their request is being processed.