Tsunami Safety Rules

1. All earthquakes do not cause tsunamis, but many do. When you know that an earthquake has occurred, stand by for a tsunami emergency message.

2. An earthquake in your area is one of nature’s tsunami warning signals. Do not stay in low-lying coastal areas after a strong earthquake has been felt.

3. Tsunamis are sometimes preceded by a noticeable fall in sea level as the ocean retreats seaward exposing the seafloor. A roar like an oncoming train may sometimes be heard as the tsunami wave rushes toward the shore. These are also nature’s tsunami warning signals.

4. A tsunami is not a single wave, but a series of waves carrying a massive volume of water that can flood and inundate land for hours. The first wave may not be the largest. Stay out of danger areas until an “all-clear” is issued by a recognized authority.

5. A small tsunami at one point on the shore can be extremely large a few kilometers away. Don’t let the modest size of one make you lose respect for all.

6. All warnings to the public must be taken very seriously, even if some are for non-destructive events. The tsunami of May, 1960 killed 61 people in Hilo, Hawaii, because some thought it was just another false alarm.

7. All tsunamis are potentially dangerous, even though they may not damage every coastline they strike.

8. Never go down to the shore to watch for a tsunami. When you can see the wave, you are too close to outrun it. Most tsunamis are like flash floods full of debris. Tsunami waves typically do not curl and break, so do not try to surf a tsunami.

9. Sooner or later, tsunamis visit every coastline in the Pacific and all oceans. If you live in any coastal area, be prepared and know nature’s tsunami warning signs.

10. During a tsunami emergency, your local civil defense, police, and other emergency organizations will try to save your life. Give them your fullest cooperation.
The phenomenon we call a “tsunami” is a series of travelling ocean waves of extremely long length and period, generated by disturbances associated primarily with earthquakes occurring below or near the ocean floor. Underwater volcanic eruptions and landslides can also generate tsunamis, although these sources are significantly less frequent. As the tsunami crosses the deep ocean, sometimes at speeds exceeding 800 km/h (480 mph), its length from crest to crest may be 100 km or more (60 miles) and its period five minutes to an hour, but its height in the deep ocean from trough to crest may only be a few tens of centimeters (a foot or less), even for a very destructive tsunami. It cannot be felt aboard ships in the open ocean. As the tsunami enters shallow water near coastlines in its path, its wave velocity decreases and its wave height increases. It is in these shallow waters that tsunamis become a threat to life and property for they can crest to heights of more than 20 m (30 feet), strike with devastating force, and flood low-lying coastal areas.

The PTWC serves as the PTWS’s main tsunami service provider. PTWC works closely with other international, sub-regional and national centres in monitoring seismic and sea level stations around the Pacific Ocean for large earthquakes and tsunami waves. The PTWC makes use of more than 500 high-quality seismic stations around the world to locate and size potentially tsunamigenic earthquakes, and accesses more than 500 coastal sea level and 60 deep-ocean (DART) pressure systems globally to verify the generation and evaluate the severity of a tsunami. The system disseminates tsunami threat information to designated national authorities across the Pacific as guidance for country decision-making on tsunami warnings. Other tsunami service providers such as the US NTWC and NWPTAC provide regional alerts to the U.S. A. West Coast, Alaska and Canada, and the Northwest Pacific and South China Sea regions, respectively.

The Pacific Tsunami Warning and Mitigation System is one of the most successful international scientific programmes with the direct humanitarian aim of mitigating the effects of tsunami to save lives and property.

**Tsunami Travel Times for 1960 Chile Tsunami**

(1-hour contour interval)

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<tr>
<th>STATION TYPE</th>
<th>PTWC</th>
<th>NWPTAC</th>
<th>US NTWC</th>
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<td>Coastal</td>
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The IOC and the U.S.A. maintain the International Tsunami Information Center (ITIC). Established in 1965 and staffed by the U.S.A. National Oceanic and Atmospheric Administration (NOAA) and Chilean Navy Hydrographic and Oceanographic Service (SHOA), the ITIC works closely with U.S.A. NOAA’s Pacific Tsunami Warning Center (PTWC), and other international tsunami service providers such as Japan’s Northwest Pacific Tsunami Advisory Center (NWPTAC) and NOAA’s US Primary Tsunami Warning Center (US NTWC).

ITIC’s primary responsibilities include:

- monitoring the international tsunami warning activities in the Pacific and other oceans and recommending improvements in communications, data networks, acquisition and processing, tsunami forecasting methods, and information dissemination;
- bringing to Member and non-member States information on tsunami warning systems, on the affairs of IOC and ITIC, and on how to become participants in the global TWS;
- assisting Member States in the establishment of national and regional warning systems, and the reduction of tsunami risk through comprehensive mitigation programmes, and capacity building;
- acting as a clearinghouse for the development of educational and preparedness materials, event data collection and historical archiving, and the fostering research and its application to prevent loss of life and mitigate losses from tsunami.