

Major quakes, tsunami

Japan is no stranger to earthquakes. The following is a list of major earthquakes and tsunami that have struck the country this century. Strength is according to the Richter scale unless otherwise specified.

- Aug. 14, 1909** — 41 people killed and 978 houses destroyed in a 6.8 earthquake in Shiga and Gifu prefectures.
- March 15, 1914** — 94 people killed in a 7.1 earthquake in Akita Prefecture.
- Sept. 1, 1923** — Fires after the Great Kanto Earthquake, which registered 7.9, killed about 140,000 people in Tokyo and Yokohama, with more than 560,000 homes destroyed.
- May 23, 1925** — A 6.8 quake killed 428 people in western Japan.
- March 7, 1927** — A direct hit earthquake of 7.3 killed 2,935 people in Kyoto Prefecture. The quake's focal point was located immediately beneath the surface.
- Nov. 26, 1930** — A main temblor of 7.3 and aftershocks killed 272 people in northern Izu, Shizuoka Prefecture.
- March 3, 1933** — Tsunami as high as 27.8 meters killed 3,064 people on the coast of Miyagi Prefecture.
- 1945** — A 6.8 quake that killed 1,961 people in Aichi Prefecture was kept secret by military authorities during World War II.
- Dec. 7, 1944** — Tsunami and an initial shock of 7.9 killed 998 people in Wakayama Prefecture.
- Dec. 21, 1946** — About 1,400 people were killed, 13,042 buildings collapsed and 2,598 structures were destroyed by fire in an 8 earthquake centered off Wakayama Prefecture.
- June 28, 1948** — 3,769 were people killed, 36,184 buildings collapsed and 3,851 buildings burned down in a 7.1 earthquake in Fukui Prefecture.
- March 4, 1952** — 33 people died, 815 buildings collapsed and 91 people were washed away in an 8.2 quake focused off Hokkaido.
- May 23, 1960** — A tidal wave originating from an 8.5 quake off Chile killed 142 people and destroyed 1,599 buildings in northeastern Japan.
- June 16, 1964** — 26 people were killed and 1,960 buildings destroyed in a 7.5 earthquake in Niigata Prefecture.
- Feb. 21, 1968** — An earthquake registering 5 on the Japanese scale of 7 killed three and injured 42 in Miyazaki Prefecture.
- May 16, 1968** — 52 people perished and 673 buildings collapsed in a 7.9 earthquake focused in the seabed off Tokachi, Hokkaido.
- May 9, 1974** — 30 were killed and 134 buildings destroyed in a 6.9 earthquake focused off Izu Peninsula, Shizuoka Prefecture.
- Jan. 14, 1978** — 25 people were killed and 94 buildings collapsed in a 7 quake off Izu Oshima island, Tokyo.
- June 12, 1978** — 28 perished and 1,183 buildings were destroyed in a 7.4 earthquake focused off Miyagi Prefecture.
- March 21, 1982** — An earthquake registering 6 on the Japanese scale of 7 injured 136 in Urakawa, Hokkaido.
- May 26, 1983** — 104 people were killed and 934 buildings collapsed in Akita and Aomori prefectures in a 7.7 earthquake focused in the Sea of Japan.
- Sept. 14, 1984** — 29 people were killed in an earthquake registering 6 on the Japanese scale of 7 in Otaki, Nagano Prefecture.
- Jan. 15, 1993** — One person was killed and 34 buildings destroyed in a 7.8 quake centered off Kushiro, Hokkaido.
- July 12, 1993** — More than 200 people were killed and 307 injured in a 7.8 quake and tsunami off Okushiri Island, Hokkaido.
- Oct. 4, 1994** — An 7.9 earthquake off eastern Hokkaido injured 436 people.
- Dec. 28, 1994** — 3 people were killed and 688 injured in an earthquake with a magnitude of 7.9 off the Sanriku area (covering Aomori, Iwate and Miyagi prefectures.)
- Jan. 7, 1995** — A 6.9 aftershock from the Dec. 28 earthquake in Hachinohe, Aomori Prefecture, killed one person.
- Jan. 17, 1995** — More than 5,300 people are killed and injured in an earthquake with a magnitude of 7.2 in the Kansai region.

Predicting Quakes

Scientists still can't tell us when the next big one will hit

By TETSUSHI KAJIMOTO

The Great Hanshin Earthquake provided a chilling reminder for Tokyoites, who have long lived in fear of a second Great Kanto Earthquake, of the devastating impact that a major temblor can have in a heavily populated urban area.

A worst-case scenario drawn up three years ago by the Tokyo Metropolitan Government predicts more than 9,300 dead, 147,000 injured and 632,000 buildings destroyed in Tokyo if an earthquake of 7.9 on the open-ended Richter scale — the same magnitude as the Great Kanto Earthquake of 1923 — occurs beneath Sagami Bay.

The impact would be worst if such a temblor hits in winter, at around 6 p.m., with a north wind of at least 6 meters per second.

A quake somewhat smaller in magnitude, equal to the one that hit the Hanshin area with a magnitude of 7.2, just beneath Tokyo would cause a disaster on a similar scale, according to the latest computer simulations by the Tokyo Fire Defense Agency.

The agency says that if a quake of the size of the Jan. 17 quake hits in the same predawn hours, some 68,000 people would be either killed or injured. If it occurs in the evening rush hour, at around 6 p.m., the number of deaths and injuries would rise to 86,000 or more.

Immediately after the quake in Kansai, Kiyoo Mogi, chairman of the Coordinating Committee for Earthquake Prediction, said he sees "no direct relationship" between it and the possibility of a major quake hitting Kanto. Some say, however, that a major quake could happen in the Kanto region at any time.

According to the Meteorological Agency, the number of quakes strong enough to be felt by people has increased sharply in the Tokyo area since December. Ten such quakes were observed in December and the same number were reported by early January.

An agency official said the phenomenon could merely be a coincidence. More than 40 minor quakes occur in the area each year, and the recent temblors may have coincidentally been concentrated in the last two months and are not likely to cause a chain reaction, he said.

However, Katsuyuki Abe, a researcher at the Earthquake Research Institute of the University of Tokyo, said, "An earthquake with a vertical shock of a (Richter) magnitude of 7 can occur anywhere and at any moment in the region," adding that a "nest" of large faults lies beneath Tokyo.

"These faults may cause quakes by themselves, but they can also be triggered in a chain reaction by one big temblor, which is likely to occur by early in the next century," said Katsuhiko Ishibashi, head of the Applied Seismology Division at the International Institute of Seismology and Earthquake Engineering.