

# Quake, Tsunami Kill 32 in Tohoku, Hokkaido

The Japan Times Friday, May 27, 1983

## 69 Still Missing, Feared Dead; Akita Suffers Most Casualties

A killer earthquake that registered 7.7 on the Richter scale hit northern Japan Thursday, touching off tsunami (tidal waves) that caused the worst tsunami-related casualties since those caused by a 1960 earthquake in Chile.

The National Police Agency said that as of 10 p.m., the death toll stood at 32 including 26 in Akita Prefecture, four in Aomori Prefecture, and two in Hokkaido.

In addition, 54 were listed as missing in Akita Prefecture, 13 in Aomori Prefecture and two in Hokkaido for a total of 69, the NPA said. Sixty persons were injured.

It was feared that the toll would rise further as little hope was held for the survival of those listed as missing.

The initial quake occurred shortly after noon, registering a maximum intensity of five on the Japanese scale of seven in Akita and Mutsu, Aomori Prefecture.

An intensity of four on the same scale was recorded over wide areas of northern Honshu and southern Hokkaido.

The Meteorological Agency located the focus of the quake about 40 km below the Sea of Japan about 160 km west of Akita.

Shortly after the quake, a series of tsunami about one meter high lashed the shores of Akita, Aomori and Hokkaido, sweeping people and boats away on the sea and in coastal areas.

Damage caused by the earthquake and tsunami spread over eight prefectures including Hokkaido.

Noshiro and the Oga Peninsula in Akita Prefecture and Jusanko in Aomori Prefecture, all along the Sea of Japan coast, accounted for most of the casualties.

Great tsunami warnings were issued for the coastal area 15 minutes after the first quake and tsunami began lashing them shortly afterward.

Workers at a thermal power plant construction site were engulfed by waves rising higher than two meters.

Seven of them were confirmed dead and 17 others were listed as missing.

Most of the victims were thrown overboard from work vessels that capsized after being hit by a high wave.

Students on a trip from two primary schools in Akita Prefecture were having lunch on the tip of Oga Peninsula. Two of the children drowned and three others were in critical condition after they were engulfed by tsunami. Seventeen others were still unaccounted for.

At a coastal aquarium in Oga, a Swiss woman, identified as Magdalena Brandenberger, 38, from Zurich, was found dead after she was swept away by the high waves.

Her husband Walter, an engineer at Japan Roche, was also swept away but managed to reach safety, aquarium officials said.

Telephone and railway services were disrupted temporarily and some of Tohoku Electric Power Co.'s oil storage tanks caught fire.

The Meteorological Agency designated the earthquake as "the 1983 Central Sea of Japan Earthquake."

The government established an emergency relief headquarters and immediately began implementing relief measures.

Aftershocks and tsunami continued intermittently late into the evening in quake-struck areas.

The casualties caused by subsequent tsunami were the worst since tsunami triggered by the Chilean earthquake in 1960 caused 119 confirmed and 20 presumed deaths.

The Akita, Aomori and other prefectural governments set up emergency headquarters to coordinate rescue and relief operations.

The Maritime Safety Agency sent out 57 patrol boats and 12 aircraft to search for those listed as missing but the search ran into difficulties as night set in.

According to Akita and Aomori prefectural police headquarters, 59 houses were damaged, 100 others flooded and numerous roads were damaged in their prefectures.

The JNR said train services remained suspended on portions or all of 10 different lines, including the Aomori-Akita section on the Oue Line.

The Meteorological Agency lifted tsunami warnings for all areas except for the Sanin region at 9 p.m.

According to the MSA, a total of 155 vessels were either overturned or washed ashore by tsunami as of 6 p.m.

Seventeen of them belonged to Hokkaido residents, 88 of them to those living in areas from Aomori to Akita and 46 to those from Fukui to Shimane.

Telephone circuits linking the Tohoku region to other areas were jammed with inquiry phone calls.

Nippon Telegraph and Telephone Public Corp. declined to connect 50 to 90 percent of general phone calls to Aomori and Akita prefectures, to secure circuit space for emergency calls.

However, NTT said none of its offices or telephone exchanges were affected by the quake or tsunami.

The earthquake triggered several fires, including one at a power plant of the Tohoku Electric Power Co. in Akita Prefecture, police said.

In neighboring Aomori Prefecture, the quake broke a crude oil pipeline at an oil refinery in Kohama, police said.

At a building of the Akita Prefectural Agricultural Cooperative located in central Akita, about 100 windowpanes were shattered.

Shimi Okazaki, a female cooperative official, told Kyodo News Service: "Suddenly the world began shaking. I immediately took shelter under a nearby desk but I was too scared to move any further."

"Everything on a shelf came down and a bookcase fell," another official reported.

Computer systems at branch offices of banks in Akita and Aomori broke down due to the earthquake.

Most of them were restored by Thursday night and there were no major troubles for customers, Finance Ministry officials said.

Thursday's quake caused the greatest number of casualties since May 16, 1968, when a fairly strong quake hit southern Hokkaido, causing 52 deaths.

A seismologist said that Thursday's earthquake that occurred off the coast of Akita Prefecture was the biggest one on record in the prefecture.

Keiichi Kasahara, a seismologist at the University of Tokyo's Earthquake Research Institute, also said that some seismologists noticed two years ago that Oga Peninsula in the prefecture was abnormally protuberant.

The Meteorological Agency announced that the focus of the earthquake was 100 km north off Akita Prefecture and at a depth of 40 km.

Kasahara, however, said judging from the fact a tsunami that followed the earthquake reached the coast in a short time, the focus might have been nearer than the spot pointed out by the agency.

### New Hq

In the wake of Thursday's major earthquake, the government set up an anti-disaster measures promotion headquarters and decided to dispatch an inspection team to Akita and Aomori prefectures, hardest hit by the day's quake.

The mission will be headed by Mutsuki Kato, director-general of the National Land Agency, government officials said.

At the initial meeting held Thursday evening, headquarters administrators also decided to take emergency measures to restore roads, railways and other transportation facilities damaged by the quake, while concentrating efforts on the discovery of missing persons.

### No Warning

Ultramodern monitoring equipment did not provide any warning signals prior to Thursday's killer earthquake that hit northern parts of Japan along the Sea of Japan, seismologists said.

They also said the question of how a major earthquake occurs in the Sea of Japan remains unanswered.

The governmental Coordinating Committee for Earthquake Prediction designates Oga Peninsula and its adjacent areas in Aomori Prefecture as an earthquake-prone danger area targeted for special monitoring.

At government request, the state-run Tohoku University continues round-the-clock observation of minor quakes, crustal motion and changes in geomagnetism and earth currents.

The Meteorological Agency has an ordinary monitoring network, while the Geographical Survey Institute regularly checks tidal moves in and around the peninsula.

Professor Akio Takagi of Tohoku University said, however, his observation team

could not detect any sign or phenomena as a harbinger of Thursday's major quake.

The Meteorological Agency located the focus of the quake beneath the ocean floor seabed 160 km off Akita City. The quake's focus was beyond the reaches of these monitoring devices.

Officials of the Geographical Survey Institute said that western parts of Oga Peninsula tend to rise. For instance, ground level at one point of the peninsula's western edge has risen 4 cm. over the past 12 years.

In recent years, some parts of the peninsula have risen at an annual rate of 5 mm., the officials added.

However, institute officials said they are not yet sure these upheavals had anything to do with Thursday's killer earthquake.

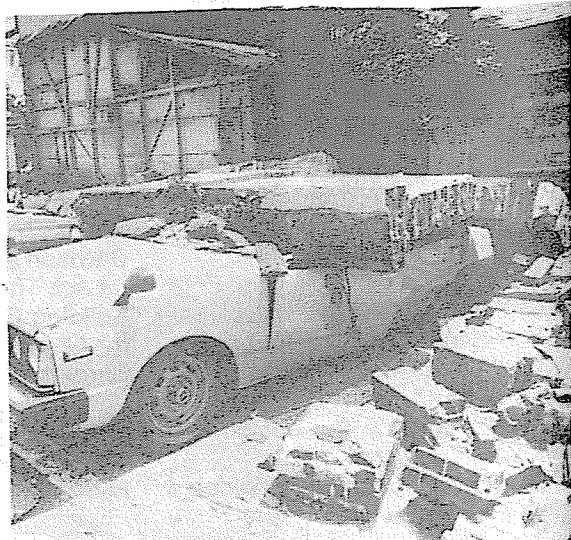
Records show that two major earthquakes were centered beneath the sea off Akita — one in 1939 and the other in 1964. But the intensity of Thursday's quake was more than 10 times that of the previous two quakes.

One senior member of the Coordinating Committee admitted that the day's quake came as a major surprise and embarrassment for him.

Takahiro Hagiwara, professor emeritus at Tokyo University, said the mechanisms of earthquake generation in the Sea of Japan, an inland sea, are believed much more complicated than the one for major quakes which hit areas along the Pacific.

He said it might be difficult to predict the occurrence of a major quake in the Sea of Japan unless a network of undersea seismographs is installed.

In the meantime, Thursday's quake reminds seismologists and anti-disaster officials alike of the destructive power of tsunami that follow a major quake.



Two passenger cars lie crushed under fallen concrete blocks in Akita City after a strong earthquake hit the city around noon on Thursday.

# Huge Waves Clobber Coast

Fri., May 27, 1983  
San Francisco Chronicle

## 41 Dead, 61 Missing in Japan

Tokyo

Rescue workers picked their way around buckled roadways and smashed sidewalks as the death toll mounted yesterday in the wake of Japan's devastating earthquake.

As search efforts halted for the night, the toll stood at 41 dead, and 61 missing and presumed dead, after the temblor, 7.7 on the Richter scale, struck northern Honshu Island yesterday at noon, setting off tidal waves that washed many people out to sea.

More than a dozen elementary school students were among the dead and missing. They had been in a party of 45 youngsters playing on a beach when a rush of water suddenly engulfed them on the Oga peninsula in northern Honshu.

"I saw children floating among the waves," said a farm worker. "Some of the children clung to overturned floats and boats and they were saved first."

Tsuyoshi Tsuruga, an agricultural worker, said one wave "rising to a height I have never seen before" crashed down on the school children.

Also missing were 40 construction workers who were swept into

the Sea of Japan from small boats they had boarded to reach a power station being built near the town of Akita.

The force of the quake knocked down the ceiling of a department store in Akita, killing one shopper and injuring four others.

Concrete walls in the city toppled, crushing autos under their weight.

Akita police listed 24 dead of drowning in the tidal waves.

The quake also touched off fires, twisted railroad tracks and played havoc with electrical power in the Aomori district of the main island and southern Hokkaido Island.

Maritime officials reported 155 ships, mostly fishing boats, capsized, damaged, or run aground.

Waves three to 16 feet high smashed the shoreline at noon, and throughout the afternoon rescue crews recovered bodies and looked for the missing. Officials assume that the number of confirmed deaths will rise when the search resumes today.

If the toll approaches 100, as seems likely, it would be the worst disaster of this sort in Japan since 1960, when giant waves from an earthquake killed 119 people.

The disaster dominated news reports throughout Japan, where tremors rock the ground almost every day. Many office workers, mindful of the 1923 earthquake that killed an estimated 100,000 people in Tokyo and Yokohama, keep little disaster kits by their desks.

Yesterday's earthquake originated about 100 miles off the northern Honshu coast in the Sea of Japan. Aftershocks could be felt hours after the initial tremor, which was so strong that it caused buildings to sway in Tokyo, 280 miles to the south.

Nearly all the damage, however, was confined to the northwestern Honshu corridor, primarily a region of ricefields and fishing villages.

In many places, sidewalks heaved and cracked, and roadway surfaces were quickly made to look like washboards. Nearly 400 houses were reported to have been destroyed or damaged. Telephones were knocked out and service was temporarily halted on a new "bullet train" line. In Akita, tremors set off a fire at an oil-storage tank in an electrical power plant.

Witnesses said the tidal waves moved surprisingly fast. A Swiss woman visiting an Oga aquarium was found dead after she had failed

to climb nearby rocks to safety. Huge waves "approached at a speed much faster than we expected," said an aquarium official.

There were no reports of other foreigners injured or killed in the disaster.

Fourteen minutes after the initial earthquake was recorded, the Central Meteorological Agency warned of imminent tidal waves. But by then the first waves were already striking the Oga peninsula. People on the beach and in boats had no time to flee.

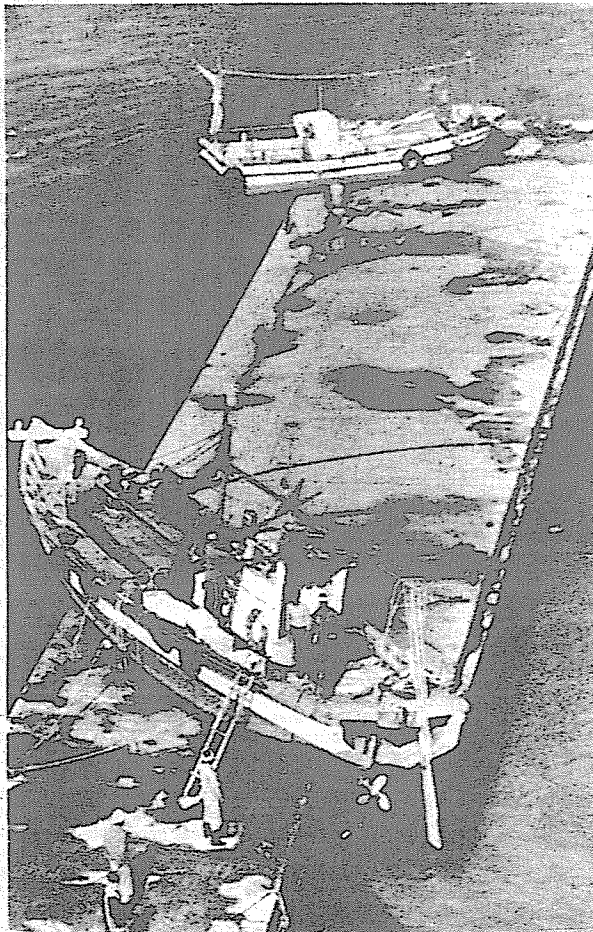
Because yesterday's seismic sea wave occurred on the coast of the Sea of Japan, rather than on the Pacific side of the islands, no effect was anticipated in Hawaii or on the American mainland, according to the Pacific Tsunami Warning Center in Hawaii.

The phenomenon that occurred, commonly called a tidal wave, is more properly designated by its Japanese term — tsunami — or seismic sea wave, because, strictly speaking, tidal waves are what take place twice daily in the movements of high tides around the earth.

A tsunami develops when an earthquake suddenly changes the depth of the ocean floor. The response of the overlying water generates a wave that, in the open sea, may be only a few inches high, although spread over a vast area. It can cross an ocean at speeds as high as 600 miles per hour.

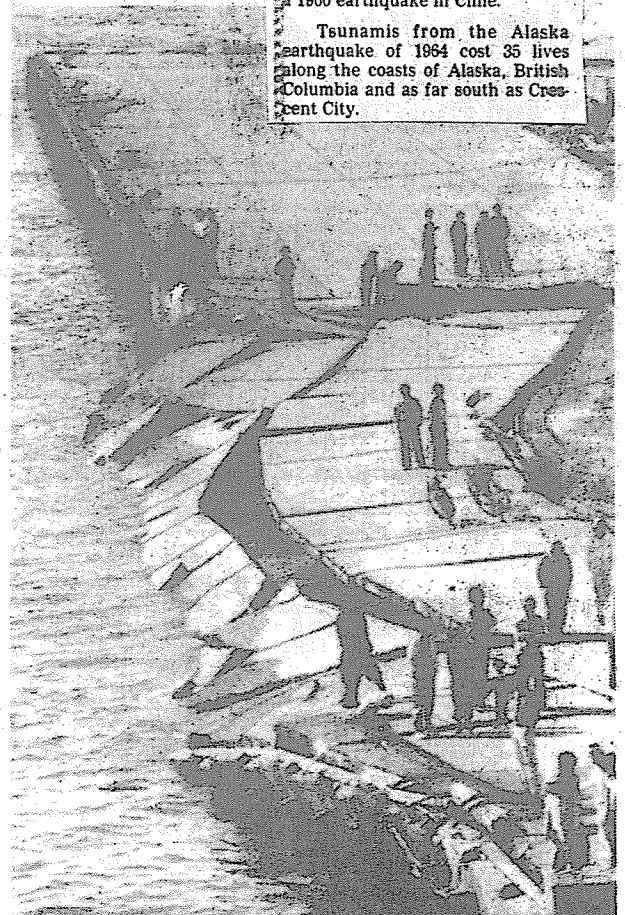
As such a wave piles up against a coast, its height increases rapidly. Where there is an indentation in the coast, the wave can reach heights in excess of 35 feet, as occurred at Hilo, Hawaii, following a 1960 earthquake in Chile.

Tsunamis from the Alaska earthquake of 1964 cost 35 lives along the coasts of Alaska, British Columbia and as far south as Crescent City.



Associated Press

Fishing boats lie on a pier in Akita, Japan, after tidal wave.



AP Wirephoto

Residents of Akita stood on a pier damaged by waves

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# Quake Rips N. Japan

## 35 Dead, 74 Missing

## 7.7 On Richter Scale

A strong earthquake and subsequent tidal waves hit the Sea of Japan coastal areas of northern Japan Thursday afternoon, causing heavy and extensive damage. At least 35 persons were killed and about 74 missing, as of Thursday night.

The death toll was expected to increase.

The quake occurred shortly after noon on Thursday off Akita Prefecture. The magnitude was 7.7 on the Richter scale, the Meteorological Agency said.

The agency named the earthquake "Japan Sea 1983 Earthquake."

The intensity registered 5 on the Japanese scale of 7 in Akita and Mutsu, Aomori Prefecture, 4 in extensive areas in the rest

of Tohoku and part of the northern island of Hokkaido.

The jolt in Akita shattered window panes in many buildings. Many pedestrians stopped in fear and squatted down.

An employee of the Akita Agricultural Cooperative told the press later that "The earth began to shake suddenly. I quickly took shelter under a desk but I was too scared to move any further."

Some people were reported

hurt when the ceiling of a department store in Akita collapsed, trapping several shoppers.

Aftershocks continued for two hours in Akita and other places in the Tohoku district.

The earthquake triggered several fires in Akita and one at a Tohoku Electric Power Co. plant in Akita Prefecture, the National Police Agency said.

In neighboring Aomori Prefecture, the quake broke a crude oil pipeline at an oil

refinery in Kohama, causing a leak.

Telephone services and roads were severed in many places in Akita and Aomori prefectures.

More than 30,000 homes were reported without electricity in Akita, Aomori and Yamagata prefectures.

Services of the Tohoku Shinkansen bullet trains were suspended temporarily.

About 17 boats capsized in the Sea of Japan after the main jolt. In Akita, 30 workers were

Mainichi Daily News  
Friday, May 27, 1983

killed and 45 others reported missing in Noshiro, Akita Prefecture, Thursday afternoon, when their boat capsized in a tidal wave following the strong quake. They were engaged in shore-protection work.

In Oga City, Akita Prefecture, 15 elementary school children and their teacher were washed away by tidal waves and became missing. The incident happened when they were at a beach on a school excursion.

Many residents in the Japan Sea coastal areas evacuated to safety after the Meteorological Agency issued a tidal wave warning.

The National Land Agency asked the Defense Agency Thursday afternoon to mobilize Air Self-Defense Force aircraft to ascertain the damage caused by the earthquake.

## 102 Dead, Missing in Japanese Quake and Huge Waves

By SAM JAMESON,  
Times Staff Writer

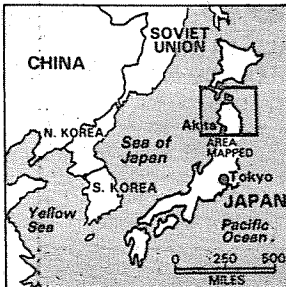
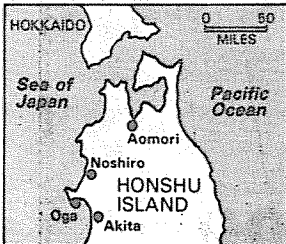
TOKYO—The toll of missing and dead reached 102 early today from Thursday's major earthquake in northern Japan and the 16- to 18-foot-high waves that followed it. Little hope was held out that any of the missing will be found alive.

The epicenter of the earthquake, which struck at noon with a force of 7.8 on the Richter scale, was calculated to be in the Sea of Japan, about 100 miles west of the coast of Akita prefecture (state). Akita is in the northwestern part of the main Japanese island of Honshu.

Three hours later, tsunamis—seismic sea waves—hit the eastern coast of South Korea. At least one person was reported dead and two were missing as more than 100 Korean fishing boats were swamped and overturned.

Rescue workers in Japan continued to search for bodies this morning after the national police said 32 people were confirmed dead and that 70 were reported missing in the coastal area along the Sea of Japan. Another 77 people were reported injured and damage was reported in eight of Japan's 47 prefectures.

On the coast, the waves rushed in too quickly for many to escape. Although Japan's meteorological agency issued a wave warning only 14 minutes after the quake struck, it was too late for many people because the first waves were reported to have hit the coast just 10 minutes after the shock.



Los Angeles Times

The worst incident occurred in Noshiro in Akita prefecture, where laborers were at work on construction of a seaside power plant. Seven of them died and 27 others were missing after a wave roared into the harbor where they were working.

Some workers were tossed off a crane into the swirling waters and others were thrown off boats that capsized.

On the Oga Peninsula in Akita prefecture, two minibuses carrying 45 primary school children arrived at a beach in a fishing village just before the earthquake struck. The children, two teachers and the two drivers had just begun to eat box lunches on the beach when the quake occurred.

A giant wave crashed up on the beach minutes later and engulfed the party. Residents who witnessed the scene rushed into the water in a rescue effort, and some

of the survivors were found clinging to small fishing boats.

Police reported this morning that six of the children were found dead and seven others were still missing.

On the same peninsula, an employee of a seaside aquarium told of escorting about 100 tourists out of the building and up a rocky hill. As the party was making its way up the hill, the aquarium employee saw the first wave coming in and shouted warnings, through a battery-powered hand microphone, to people fishing from rocks on the coast below.

At least five people were swept into the sea and killed at the site, including Magdalena Brandenberger, 39, a Swiss national who was visiting the scenic peninsula with her husband, Walter, an engineer working for a Japanese company. He was reported to be safe.

More than 150 boats were capsized or washed ashore by the waves, and cars parked near the sea also were tossed onto the rocky shoreline.

Window panes broke, water pipes cracked, telephone lines were cut, highways and railways were torn by fissures and cement-block walls were toppled throughout the three prefectures of Akita, Aomori, and Hokkaido, where the quake's force was felt most strongly.

Service on the northern section of the route of the new high-speed Bullet Train, which opened last summer, was suspended during the afternoon but later restored. Six conventional railway lines remained out of service this morning and repairs are expected to take several days.

In the region's cities, residents grabbed pillars in office buildings and crawled under desks and tables in an effort to protect themselves. In private homes, many reportedly wrapped themselves in futon mattresses. Many housewives cooking lunch were believed to have rushed to turn off gas stoves, an action that presumably accounted for the relatively small number of fires reported.

People in the cities of Akita and Aomori rushed from multistory buildings into the streets after the initial shock. Residents said it was impossible to walk during the quake itself. The most serious damage reported on land occurred when part of a third-floor ceiling in a department store in Akita city collapsed, sending four shoppers plummeting to the floor below in a pile of rubble. Two of them were reported seriously injured.

Los Angeles Times

★ Friday, May 27, 1983/

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# Japanese search for 54 missing since quake

TOKYO (UPI) — Thousands of soldiers and sailors searched Japan's north coast Friday for 54 people missing since a powerful earthquake and a series of tidal waves ravaged the area, killing at least 48.

Another three people were killed and 100 boats damaged or sunk when a tsunami or wall of water triggered by the earthquake Thursday thundered into South Korea, authorities said.

Japan's National Police Agency said 48 people were killed by the quake, which registered 7.8 on the Richter scale, and a series of tidal waves smashed the northwest coast, causing \$1.62 billion in damage in seven provinces.

The agency said 54 people, among them children, construc-

tion workers and fishermen, were still missing and 77 others injured in the aftermath of the quake centered 100 miles off Akita, a port city 275 miles northwest of Tokyo.

Throughout the day, the state-run NHK television network broadcast aerial footage of swamped and overturned fishing boats, fissure-cracked highways, twisted railways and widespread damage in residential areas.

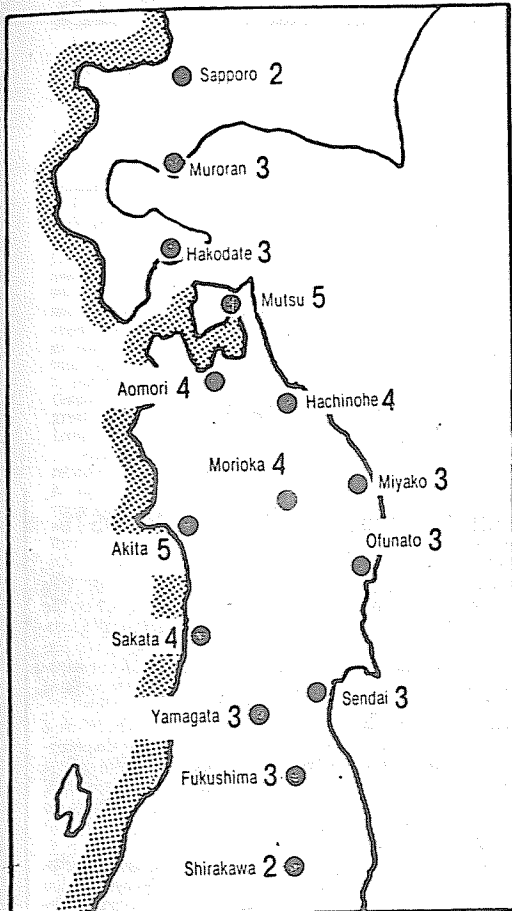
Police said the tremor and tidal waves destroyed 658 houses, sank 561 boats and ruptured highways at 401 places. Seismologists reported more than 320 mild aftershocks.

A spokesman for Japan's Self-defense Forces said thousands of soldiers and sailors and dozens of boats and helicopters were searching for the missing.

A new earthquake registering 5.1 on the Richter scale jolted the Pacific coast of northern Japan four days after a destructive tremor and tidal wave left more than 100 people dead or missing. The quake struck the area of Tokachi, a sparsely populated fishing town on Hokkaido island. No tidal waves were reported. Meanwhile, five more bodies were found from last week's quake, centered in the Sea of Japan, raising the known death toll to 54, with 48 people still missing.

Los Angeles Times  
Monday, May 30, 1983

Intensity of Thursday's Earthquake  
(On the Japanese Scale of 7)



The shaded areas were hit by a tsunami which followed Thursday's earthquake.

List of Major Postwar Earthquakes and Tsunami

Date	Magnitude (Richter scale)	Main Areas Damaged	No. of Dead and Missing Persons
Dec. 1946	8.1	Southern Kinki and Shikoku Regions	1,464
June 1948	7.2	Fukui	5,168
March 1952	8.1	Southern Hokkaido and Northern Tohoku Regions	36
May 1960	Tsunami caused by big quake in Chile	Sanriku areas	139
June 1964	7.5	Niigata	26
Feb. 1968	5.7	Miyazaki	3
May 1968	7.9	Hokkaido and Tohoku	52
May 1974	6.9	Izu Peninsula	30
Jan. 1978	7.0	Izu Peninsula	25
June 1978	7.5	Miyagi	27

Friday, May 27, 1983 The Japan Times

## Divers Hunt Quake Victims

Knight-Ridder News Service

NOSHIRO, Japan — Divers and helicopter crews continued to search late Friday for more than two dozen construction workers swept from a massive offshore concrete wall by an earthquake-spawned tidal wave earlier this week.

Divers brought in the bodies of eight of the workers before nightfall; 26 remained missing.

South of Noshiro, in a holiday cove on the stubby Oga peninsula,

divers brought in the last bodies of 13 schoolchildren who were drowned in the same giant wave Thursday.

Altogether, authorities counted 47 dead and 55 missing Friday after a full day of air and sea search operations along coastal areas.

Damage to property throughout the quake area was still being assessed, but late information indicated that 2,000 houses were destroyed or damaged, roads were damaged at 139 points and 1,300 boats were lost or damaged.

The Denver Post Saturday, May 28, 1983

Rocky Mountain News Mon., May 30, 1983, Denver, Colo.

## 2 new quakes rock region of Japan where 100 lost

TOKYO (UPI) — Two earthquakes, one measuring 5.8 on the Richter scale, jolted the Pacific coast of northern Japan on Monday, five days after a destructive tremor and ensuing tidal waves left more than 100 people dead or missing.

The National Police Agency said it had not received any reports of casualties or property damage, but called the jolts "potentially destructive."

An official at the Meteorological Agency said the first quake hit Tokachi areas of Hokkaido at 5:54 a.m. The agency said the epicenter was 43 miles below sea level just off the Pacific shore of Tokachi, a sparsely populated fishing town.

It was followed by another quake registering 5.2 on the Richter scale that struck the Aomori district in the northern part of the main island of Honshu at 7:02 a.m.

Along the Sea of Japan coast, anxious families maintained a vigil in fishing villages, hoping for

word about 48 relatives still missing after an earthquake Thursday triggered tidal waves and killed 54 people.

Rescuers continued sea-and-air searches even though officials said the missing are presumed dead, washed out to sea in the towering waves that followed Japan's biggest earthquake in 35 years. It measured 7.8 on the Richter scale.

"Look," a rescue official at Noshiro port, where 28 people are missing, said in explaining the reason for the continued searches, "the aggrieved families are waiting at the coasts."

Thousands of families remained without water and gas because the violent shocks severed supply lines.

Minor aftershocks continued, including one shortly after midnight strong enough to send citizens scurrying into the streets in Akita, 275 miles northwest of Tokyo.

## Quakes panic Japanese

Sacramento Union June 10 1983

TOKYO (UPI) — Two major earthquakes rumbled across northern Japan within minutes of each other Thursday night, spreading panic among residents recovering from a quake that killed nearly 100 people two weeks ago.

There were no immediate reports of casualties or extensive damage.

Officials issued tidal wave warnings along the western Japanese coast, where sea water levels rose

about two feet, but the warnings were lifted an hour later.

Japan's Meteorological agency said both quakes were centered in the Sea of Japan about 62 miles off Akita, the same area as the May 26 earthquake that measured 7.8 on the Richter scale.

The agency said the first quake, registering 6.6 on the Richter scale, struck at 9:49 p.m. followed at 10:04 p.m. by a quake measuring 6.0.