

# SANTA BARBARA NEWS-PRESS



The oldest daily newspaper in Southern California, serving the entire county

SANTA BARBARA, CALIFORNIA, MONDAY EVENING, AUGUST 14, 1978

36 pages

## NO QUAKE DEATHS, 65 INJURED

# South Coast cleaning up 'big mess'

By Jerry Rankin  
and John Dell

News-Press Staff Writers

Thousands of persons swapped "Where were you?" stories today while continuing to literally pick up the pieces after the worst earthquake in Santa Barbara County in a quarter century.

No major injuries or structural damage were reported, but Ward Memorial Boulevard to the UCSB campus and Highway 154 over San Marcos Pass both were closed, with the reopening time still indefinite.

And at Ellwood, a freight train derailed in a spectacular accident that blocked the north-south coastal route. It was expected to reopen sometime today.

The Board of Supervisors met this morning as usual and was told that damage to county buildings seemed superficial — fallen plaster, lights and so on. Damage in the county administration building was estimated at up to \$100,000.

South Coast hospitals reported 65 persons treated for injuries, and at Goleta Valley Community Hospital where 50 were treated, the emergency operation went into effect, aided by half a dozen paramedics.

The parking lot was turned into an outdoor emergency

room with signs directing patients to the area for lacerations, burns and so on.

The state's top disaster official, Alex Cunningham, who directs the Office of Emergency Services, met this afternoon with county officials and then toured the area.

Southern California Edison operations manager Gary Bechtel reported that about 10,000 persons in the Goleta and western Santa Barbara area went without power as late as 9 p.m. before service was restored.

About a third of the firm's 16,000-volt circuits were out of operation, and three out of four went down in Isla Vista. About 45 Edison employees worked overnight to restore the system.

Telephone lines were jammed right after the quake and out-of-town callers couldn't get through for long periods today. General Telephone called in 50 additional operators last night and some arrived today from Thousand Oaks to relieve those on duty.

No reliable estimate of damage in dollars was available, but it clearly ran well into the hundreds of thousands, and in the million-dollar range when damage to the train and store inventories was counted.

At the county jail, inmates were taken briefly into the exercise yard, but returned to their cells.

At the airport, the control tower was evacuated and a couple of flights delayed landing.

Off-duty police and firemen were called in, but encountered no major problems or looting.

To the scientists, it was only a "moderate" quake measuring 5.1 on the Richter scale, but it was a major event in the lives of most citizens.

It was the kind of quake that scared the daylight out of most persons, that made you think "My God, it's the BIG one" that scientists say will snap California one of these days and kill a lot of people.

You had to view the quake from inside to understand the damage and the impact on everyday life — to see the books piled on top of smashed records, refrigerators thrown open to spread gooey messes on floors, lights dropped from ceilings, treasured family mementos smashed to an untimely end, and the family cat or dog disappearing down the block as fast as paws could travel.

And this morning, workers at scores of businesses opened the doors to wade through water from toppled bottles, step over fallen ceiling panels and push

back desks and equipment that "walked" across floors during the violent tremor that wrenched Santa Barbara, Ventura and San Luis Obispo counties.

It was easy to tell when the earth trembled — the clock on the courthouse tower stopped at 3:54 p.m.

Theodore Macray, who lives at a hard-hit trailer park at 30 Winchester Canyon Road in Goleta, spoke for thousands of persons when he lamented the loss of "things my mother had for 50, 60, 100 years — all broken."

While the heaviest impact of the quake, which centered about six miles south of Santa Barbara in the quake-prone Channel, was felt in Santa Barbara and Goleta, north county residents felt it, too.

News-Press reporter Gail Steiger was at a matinee performance of "Fiddler on the Roof" at the Hancock Theater in Santa Maria when the roof itself started shaking.

The seats moved from side to side, the overhead light fixtures were swaying. But the performers didn't drop a line. Some people started to leave the theater and there was an audible murmuring in the audi-

# Worst earthquake here in 26 years

Continued from Page A-1

ence," she said.

The Santa Maria police logged more than 100 calls before they stopped counting. Damage was reported in Lompoc and Santa Maria, but it was minor.

The most severe result of the earthquake was the derailling of the Southern Pacific freight train near Haskell's Beach north of Goleta.

Richard Hall of the Southern Pacific general office in Los Angeles, said that the northbound train, en route from Los Angeles to Watsonville, was carrying 49 empty cars and nine cars loaded with plumbing supplies and toilet paper.

"The engineer said he was rounding a curve at 4:15 p.m. at about 50 miles an hour," Hall said. "He saw a kink in the tracks and just couldn't stop in time."

The smashed cars were removed from the tracks by 2:35 this morning, Hall said, and the tracks were expected to be mended by about 4 p.m.

The evening Starlight Amtrak passenger train was held up at El Capitan, he said, and passengers were bused to Los Angeles.

Damage to the train was set at \$380,000, and damage to the track was estimated at \$40,000. No one was injured in the derailment, which sent a pair of wheels flying across Highway 101 into the center divider.

San Marcos Pass remained closed due to a landslide at Windy Gap, just south of Painted Cave Road. Reports that three cars were buried under the slide were false, the California Highway Patrol reported.

Also closed today was the Ward Memorial Boulevard offramp at Highway 101. Chuck Klassen, Caltrans maintenance superintendent, said that bolts had been sheared off at the curving bridge that crosses Highway 101. A bridge engineer came from Sacramento to examine the bridge to see if it is safe to reopen.

Klassen added that bolts had also been sheared off the Win-

chester Canyon Road U.S. 101 overpass, but that the bridge there seemed structurally sound, so it wasn't closed.

Large plate glass windows were shattered at the Butts Buick showrooms at 315 State St. and 315 Chapala St., and at Heiman Toyota, 5611 Hollister Ave., Goleta.

At the White House, 717 State St., window mannekins were tossed backwards, and at the Suds 'n Duds Laundromat in the Mesa Shopping Center, a mini-tidal wave caused by broken water lines sent water cascading throughout the laundromat and into the parking lot.

Radio reports that the roof had collapsed at the Food King in the Magnolia Shopping Center were also proven false. A few sections of acoustical tile did fall down.

South Coast firemen were kept busy checking gas and water line leaks and helping restore order. City firemen answered 36 calls in the seven hours following the earthquake, and county firemen logged 104

calls.

County firemen said they put out several fires started by downed power lines. There were fires on Rhoads Avenue, Rossmore Drive, Ribera Drive, Los Carneros Road, Cathedral Oaks Road, at the married student housing unit of UCSB and near Patterson Avenue, firemen said

Among the calls were requests to help clean up broken pesticide bottles at Duncan's Home and Garden Center, 3965 State St., and to clean up spilled cyanide at 406 E. Gutierrez St.

Most of the calls about gas odors, firemen said, turned out to be from residents whose pilot lights had gone out.

At the harbor, fuel lines beneath the Navy Pier dropped — but didn't break — when the quake sent pilings shaking. The harbor master's office said some damage, including cracked walkways, was reported at Marina I, and there were reports that the sandbar at the harbor entrance shifted visibly during the tremor.

Area mobile home parks were hard hit, with the quake knocking many of the coaches from their jacks. At the newly constructed San Vicente Mobile Home Park on Old Mill Road, 73 of the 227 coaches at the park were so damaged.

And at least 120 of the mobile

homes at the Santa Barbara West Mobile Home Park on Winchester Canyon Road were damaged, most of them yanked off their supports and many left leaning.

Many restaurants closed after the quake to clean up the mess.

Perhaps the hardest hit were markets of any kind, where unlikely and unappetizing mixtures of peanut butter, coffee, beer, eggs and all manner of foodstuffs smeared floors.

Almost all markets suffered broken windows and debris falling from ceilings.

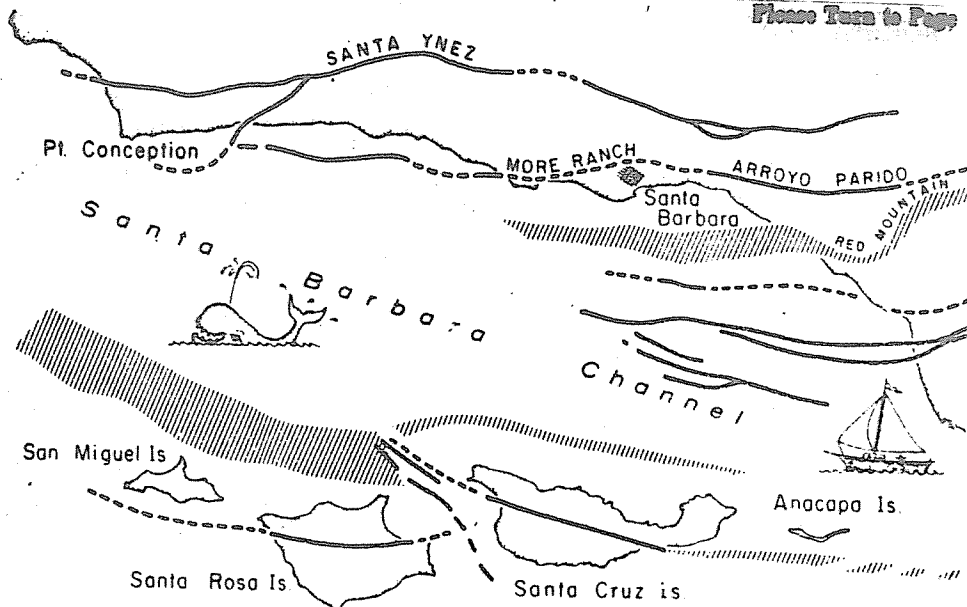
Polly Drumgool was in Vons at Turnpike Road in Goleta, wheeling a loaded cart at the end of an aisle, when a man grabbed her and rushed her out the front door. As the dust subsided, her cart was found covered with debris from the roof.

The quake brought thousands of persons into the streets immediately afterwards.

In downtown Santa Barbara, State Street was jammed with traffic. The area, badly damaged by the 1941 and 1925 earthquakes, escaped lightly this time, although a few plate glass windows lay in small pieces on sidewalks.

The worst damage downtown appeared to be at the Bluebird Cafe on West Anapamu Street, where the roof collapsed, but no one was hurt.

Please Turn to Page



HISTORICALLY, Santa Barbara's earthquakes have occurred on faults underlying the Santa Barbara Channel — and yesterday's was no exception. This map shows some of the major South Coast faults (unbroken and broken lines) and fault zones (shaded areas). Scientists still are trying to determine the exact location of yesterday's quake.

# Bowling lanes resembled groundswells off islands

By Bill Downey  
News-Press Staff Writer

We were at San Marcos Lanes yesterday when the earthquake hit. I could hear it in the distance like a highballing freight train. Then suddenly the building shook like a bedsheet. The sweeping expanse of polished maple lanes resembled groundswells off Santa Cruz Island. Bits of paneling fell like drizzle and the ceiling lurched crazily.

A good-sized Sunday afternoon crowd, mostly youngsters and families, ran for the exits screaming. Most awesome was the thunderous sound of it.

"Don't panic, folks," a desk manager shouted over the paging system. "Take your time and go into the parking lot outside."

He remained at the desk ushering customers outside and calmly made a couple of refunds to bowlers who wanted their money back.

My son, Bill Jr., was finally home from Cornell University in New York. It had been three years since we had seen him. Nor had we met his wife, Celeste, or seen our year-old grandson, Kamali. And the fact that Bill had become a bowler in New York and wanted to test

his father's ancient technique, may have saved us from serious injury or worse.

My wife, Kim, and two daughters, Leslie and Dawn, had come along to watch. No one was home when our floor-to-ceiling, wall-to-wall book case holding over a thousand pounds of books and record albums crashed to the floor. A collection of old 78 RPMs that went back to Bert Williams and Rudy Weidoff, the first great saxophonist, were in pieces. The living room resembled a bomb hit. Books, records and shards of our pottery collection were nearly knee deep.

My son lifted a broken record held together by the label; "Who Cares," by the Nat King Cole Trio.

My friend, Larry Pidgeon, was home alone. I feared. His wife is in Russia with their son. Pidgeon has been on crutches for years and I worried about him having to leap over the furnishings. But when I called he said that his daughter, Charlene, was with him and had been sitting by the pool with a book.

That first surge had sent a small tidal wave over her and the book, Pidgeon said.

At the New Carrillo Retirement Hotel, elderly residents were "remarkably calm" when the building started shaking, causing large plate glass windows at the front of the hotel to shatter, according to manager Bill Griffin.

Although the elevator of the hotel remained in operation, some of the residents who decided to use the stairs clambered down on their hands and knees, rather than risk falling.

Virtually everyone, however, remained in the hotel. "They didn't want to leave. They said this is the safest building around," Griffin added.

Griffin said the stone and steel structure escaped with only a few minor cracks on the second floor.

Residents of the city's cliff area worried about banks weakened by winter rains collapsing, and there was some sliding.

Edward Barbere of 138 Mohawk Road was standing at the top of a cliff talking to fisherman below at the end of Oliver Road: "I was standing on one foot and then other, expecting to be propelled into space as the bank shook back and forth . . . I was scared to death."

A.E. Banks, a local amateur seismologist, said the quake knocked all four of his earthquake monitors out of action in the basement of his home at 747 N. Ontario Road.

Banks, who moved to Santa Barbara the year before the 1925 quake, said it was the strongest local jolt since the 1952 Tehachapi earthquake.

As usual, descriptions of the tremor differed. In Santa Barbara, most residents felt violent back-and-forth shaking of houses and saw automobiles bounce up and down for about 30 seconds, with a brief tremor right after and another aftershock at about 4:10 p.m. that rolled downtown buildings for three or four seconds.

But in the Goleta Valley, some people felt it as an up-and-down shaking that lasted only five to 10 seconds.

The exact location of the quake is "difficult to pinpoint because it was in the channel," according to Dr. Michael Reichle of UCSB's marine science department. However, Reichle said equipment was to be put in place offshore today in

order to get a more accurate estimate of the epicenter from aftershocks.

The first Richter scale reading was put at 4.9 by instruments at Cal Tech in Pomona, but that later was raised to 5.1.

An earthquake of 3.5 on the Richter scale can cause slight damage in the local area, 4 moderate damage, 5 considerable damage, and heavy damage after that.

It is a measure of ground motion as recorded on seismographs and every increase of one number means a tenfold increase in magnitude. The 1925 quake which killed 13 in Santa Barbara measured 6.3.

While the quake was felt as far away as Los Angeles and Palmdale, officials at the Diablo Canyon nuclear plant near San Luis Obispo said it wasn't felt there and didn't measure on quake monitors.

Goleta's 13 elementary school buildings did not escape damage, but what occurred was light, Jack Kramer, director of facilities and services, reported today after a check of all the campuses.

A water heater became uncoupled from its water line at Mountain View School, there was damage to the suspended ceilings in the multi-purpose room at Mountain View and El Rancho, and a few windows were broken district-wide. Light fixture covers also tended to jar loose and fall to the floor.

At the old Goleta School, built 50 years ago just after the 1925 quake and closed in June of 1975 because it failed to meet state school quake standards, did not suffer so much as a crack, Kramer said. There had been some concern recently because of its future use as a civic center, that the roof trusses might fail during a quake. There were no visible signs today that anything had happened to them.

# QUAKE DAMAGE HEAVY

St Barb News Press 14 Aug 1978

## Stow House 'cracks and snaps,' many treasured items destroyed

By Steve Sullivan  
News-Press Staff Writer

"I really thought the whole thing was going to go out from under me," Betty Nelson said, relating what it was like to be on the second floor of Stow House when the quake struck the 106-year-old Goleta Valley landmark yesterday afternoon.

"It was the most scary experience I've ever had — I could see the cracks appearing in the ceiling, plaster started falling on my head, and we could hear china falling and breaking."

Some of the 10 persons she was conducting on the day's last tour "were barreling out fast," Mrs. Nelson said, "and I was telling them to stay in doorways. One woman was in tears, really terrified, but we got her down safely."

She cautioned those who had gone outside to remain in the clear in case of an aftershock. The first long, hard earth roll had caused the aged house to "crack and snap, and creak and groan," she said.

One woman was from Kansas, and recalled that she had been through tornadoes back there, "but never anything like this."

Mrs. Nelson went back into the house to survey the damage with George Adams, and other members of the Goleta Valley Historical Society, which she heads.

(Adams, who had been touring people through the Horace A. Sexton Memorial Museum at the rear of Stow House, said that building shook so hard "I went down on one knee.")

The old house, headquarters of the ranch that once covered 1,043 acres, was built by Sherman P. Stow in 1872, and is the oldest American-built structure in Goleta Valley. Added onto over the years, it sits on a high foundation, with long redwood floor joists and supporting piers forming the entire understructure.

Just about every room suffered some damage. In the Stow Room, where family memorabilia is gathered, a piano once taken aboard a yacht by honeymooning Anne Stow Fithian was found keeled over on its velvet-covered stool, which saved it from heavy damage.

Everywhere, it seemed, plaster had cracked. The intense compression of the wall surface that resulted when the big house "rolled like a ship," sent the lines rippling through paint and wallpaper alike.

The children's room upstairs shook so hard a large mirror came off a dresser, knocking an old lamp down, and sending glass shards over the room where dolls were dressed for tea and seated around a table. Larger standing members of the doll party were dumped unceremoniously on their faces.

Repairs will be time-consuming and expensive, but at least can be accomplished eventually, Mrs. Nelson said, noting, however, that many treasured items which cannot be replaced were toppled to the floor and shattered.

But while vases and lamps were broken, the fireplace marble in the living room, the great chandelier there, and the plaster rosettes the late Dick Smith molded for the ceilings of the living room and dining room were undamaged.

The society hopes to be able to have the cleanup chore done so that tours can resume Saturday and Sunday from 2 to 4 p.m.

Mrs. Nelson said the quake was "quite an experience," "outdoing anything she felt during the quakes of 1932 and 1952.

And she'll always remember, she said, how the big, tall New Haven clock on the stairwell wall started "bonging away" right in the middle of the quake, telling four o'clock.

"We had been trying to make that work ever since we got it," she said, "and no one had been able to get it to chime."

LA / Times 14 Aug 78  
PARAMEDICS HELP

## Santa Barbara Hospital Takes Quake in Stride

BY PATT MORRISON  
Times Staff Writer

SANTA BARBARA—"It was like watching a M.A.S.H. unit on television," one patient at Goleta Valley Community Hospital said.

In keeping with hospital disaster policy, the emergency room moved outside to the parking lot after Sunday's earthquake, as a protection against any possible aftershocks.

Half a dozen off-duty paramedics, including two vacationers from Orange County, helped the hospital staff treat about 50 earthquake victims in the makeshift "alfresco" emergency room.

Hospital kitchen workers handled the paperwork, jotting down victims' names, but never catching those of the paramedics who appeared, worked and left.

By 9 p.m. the cuts were bound and the fears were calmed. The emergency treatment crew moved back inside, worried more about the night chill than the aftershocks which had not materialized.

Immediately after the earthquake, the medical staff set up a 15-gurney train in the parking lot and shuffled

victims into five areas for treatment of burns, lacerations, possible heart attacks, obstetrics and a general medical area dubbed "anxiety and Band-aids."

One woman was admitted to the hospital with burns caused when, jarred by the quake, she spilled scalding water she was using for cooking. Dr. Donald Rink said the woman was listed in good condition.

A pregnant woman was rushed to the hospital, fearing labor had begun when she fell after the quake. But doctors declared it was a false labor and sent her home.

Several people arrived at the parking lot emergency center complaining of chest pains, but none was hospitalized for treatment.

Cuts treated included those of a sandal-shod woman who suffered a foot gash from broken window glass outside a downtown store.

Bahman Maknon, 27, of Los Angeles, treated and placed in a neck brace after he fell in the shower and hurt a neck muscle, admitted ruefully he chose the wrong day to visit relatives in Santa Barbara.

"I thought I was in Disneyland—you know those ride things, I don't know what you call them," Maknon said.

"Are there going to be any more earthquakes tonight?" he asked nervously.

The Goleta Valley Community Hospital received the bulk of injured earthquake victims seeking treatment.

William Arnold, administrator of Santa Barbara Cottage Hospital, said his emergency room treated 10 people, most of them with cuts and gashes. He said one woman who fell on a sidewalk was hospitalized with a dislocated hip, but most patients were released after treatment.

# Offshore platforms survive big quake

By Robert H. Sollen  
News-Press Staff Writer

All 14 offshore oil platforms yesterday survived what was probably the strongest earthquake in the area since the first platforms were set up in the Santa Barbara Channel in the mid-1950s.

Three platforms in state waters shut down for a short time, but there was no structural damage and no oil leaks, according to state and federal officials and oil industry spokesmen.

There was minor damage at the site of the Atlantic Richfield processing plant at Ellwood where ARCO is expanding its oil and gas facility. But damage was confined to incomplete structures and "green" concrete, according to a state Lands Commission staff member.

The ARCO Platform Holly off Coal Oil Point was shut down due to a power outage onshore, but production was interrupted for only a short period.

Two Chevron platforms off Carpinteria shut down automatically due to vibration, according to Bill Ryherd, area supervisor for the company. Production was restored in a short time, he said.

Dennis Rau of the U.S. Geological Survey office in Ventura said that there were USGS inspectors on several of the federal platforms when the 5.1-magnitude earthquake struck shortly before 4 p.m. yesterday. Immediate inspection of all platforms indicated no damage, and none of the structures in federal waters — beyond the three-mile state limit — shut down as result of the quake.

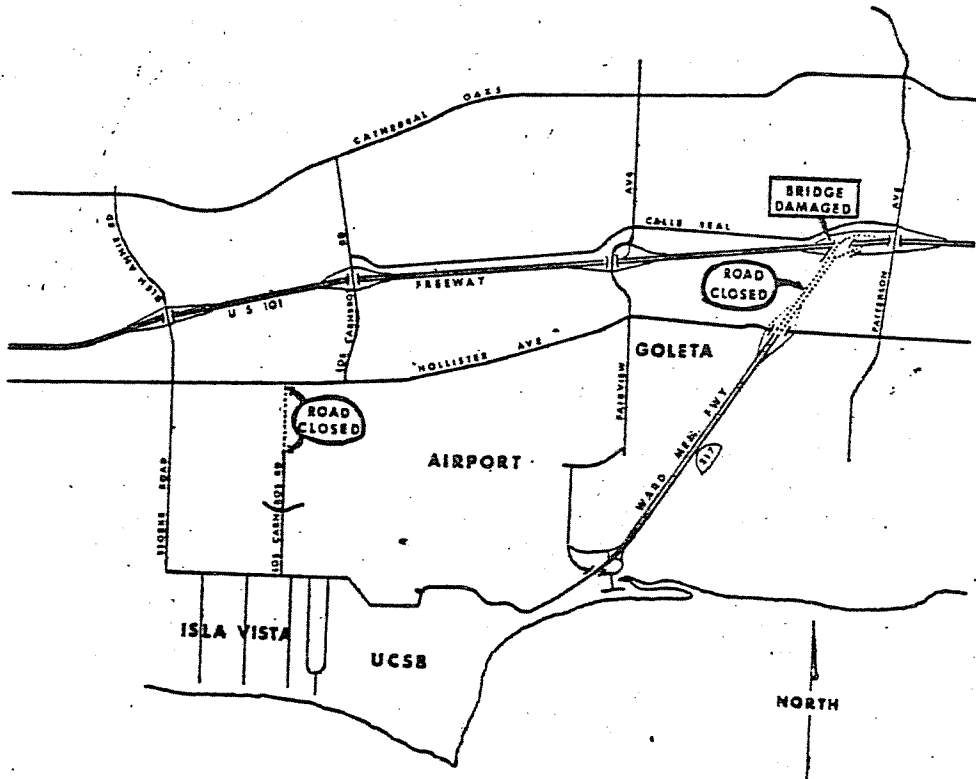
The USGS, which supervises offshore operations in the federal waters, was observing the area from the air today to see if there are any changes in the vast natural seeps as a result of the quake.

The epicenter was described as six miles offshore in the channel. Most of the federal

platforms are about 5.5 miles offshore. Rau of the USGS said that he believes it was the strongest quake in that area since the first of the federal platforms were set up in 1969, and Ryherd said he believes that it was the sharpest jolt since before the state platforms were put in the channel in the mid-50s.

"The design factors are well in excess of the magnitude of the earthquake that we experienced yesterday," said an official on the state Lands Commission staff.

There are seven platforms in state waters and seven in federal waters extending from off Carpinteria nearly to Point Conception.



## ROAD CLOSURES

Earthquake damage has forced the "indefinite" closure of Ward Memorial Boulevard between Calle Real and Hollister Avenue, although it is still open to traffic between Hollister and the UCSB campus. Road work already in progress has also resulted in the closure of a portion of Los Carneros Road.

## FOR ELDERLY—A SPECIAL FEAR

# Aged Residents of Hotel Walk, Crawl to Safety

BY JOHN HURST

LA Times

14 Aug 1978

# California hit by earthquake; damage heavy

(The Houston Post/Mon., Aug. 14, 1978)

SANTA BARBARA, Calif. (AP) — At least 50 people were injured when an earthquake hit the Santa Barbara area, knocking people off their feet and triggering fires, gas leaks, rockslides and a train derailment Sunday, authorities said.

Property damage was labeled as "heavy," with the most serious reported in Goleta, just north of the city. However, the quake was felt in five counties: Santa Barbara, San Luis Obispo, Ventura, Los Angeles and Kern.

Most of the injuries reported were minor. Scores were treated for cuts and bruises at the Goleta Valley Community Hospital, said Dr. Donald Rink.

One woman was admitted to the intensive care unit with burns, he added, but was listed in good condition. Another person suffered a broken back, he said.

The temblor measured 5.1 on the Richter scale and was centered on the ocean floor about six miles south of here in the Santa Barbara Channel, said spokesman Ed Corbett at the Seismology Laboratory at the California Institute of Technology.

Officials kept a wary eye on the sea, fearing damage to several oil-drilling platforms in the channel.

"If the thing opened up a seam out there, we'll be getting oil ashore," one official said. But a sheriff's spokeswoman said the platforms suffered no damage and no oil leaks were reported.

Santa Barbara, 90 miles up the coast

from Los Angeles, sits in the winding path of the San Andreas Fault, which runs from north of San Francisco to the southern end of the San Joaquin Valley and on to the Mexican border, separating the southwestern part of the state from the rest of the country.

Authorities in Santa Barbara received calls from people who said the earthquake knocked them down.

Rockslides closed several highways, said California Highway Patrol dispatcher Terrie Tucker. A road leading to the University of California at Santa Barbara broke apart in spots. Several landslides blocked Highway 154, which connects Santa Barbara to Santa Ynez.

Downed power lines sparked several minor brush fires between Santa Barbara and Goleta, said Tucker.

At nearby Ellwood, 20 cars and one diesel locomotive from a freight train went off the tracks, said Tom Buckley, spokesman for the Southern Pacific Transportation Co. Buckley said there were no injuries and that no dangerous material was involved in the derailment.

Authorities summoned off-duty police and firefighters back to work. Businessmen were advised to check for damage, but to beware of the possibility of gas leaks. Supermarkets and restaurants reportedly were closing.

Authorities said shockwaves were reported as far north as Palmdale and as far south as Thousand Oaks.

SANTA BARBARA—When the first shock hit Sunday, Suzanne Julian was standing at the bathroom sink in her fourth-story hotel room.

The quake, which registered 5.1 on the Richter scale, splashed water from the basin all over her and sent her reeling outside her door into the hallway where she could hear the other residents screaming.

Mrs. Julian was only one of the thousands of people to be terrified by the quake that jarred Santa Barbara.

But her fear and that of the other 170 residents of New Carrillo Retirement Hotel was a special fear.

It was the fear of the elderly. The fear of people who suddenly know they must move fast, but cannot.

For some reason, Mrs. Julian, 91, walked back into her room after the first jolt.

"Then I came in and we had the second crack," she said as she sat in the lobby of the old five-story stucco hotel, "and there wasn't a thing left in my room . . . It was all over the floor. Then I took my purse and I came down here."

The old folks worked their way down the stairs as best they could and without panicking, Mrs. Julian said, even though some of them had to make it on their hands and knees.

"We're all old here," she said. "Some of them are 80 and 90 and they were better off crawling than walking."

"We didn't panic or anything," she continued. "We just rode it out. You could hear on each floor, people calling, 'Are you all right? Are you all right?'"

Apparently, they all made it to the hotel lobby and there, behind windows that had been shattered by the jolt, and under high cracked walls, the old people sat and waited out several strong aftershocks.

Sam L. Carlson, manager of the private hotel, said there was no attempt to evacuate the residents.

"We don't have any earthquake drill," he said. "This building is, I understand, the safest building around."

Later in the evening, Mrs. Julian still sat in the lobby of the old building along with several other residents.

"It was an appropriate time for us," she said of the quake that hit just before 4 p.m. "We would be gathering in the lobby. We do every night."

# Opponents of LNG port now say: 'I told you so'

By Dave Hardy  
News-Press Staff Writer

If yesterday's earthquake was greeted with shock and alarm by some, it was greeted with cheers by opponents of the liquefied natural gas tanker terminal proposed at Point Concepcion.

"As far as we're concerned, it's fantastic. It just shows the instability of the entire area," said Al Baroni of the Citizens Against Government Dumbness which opposes the Point Concepcion site.

"It couldn't have come at a better time," he added, pointing out that the 5.1 magnitude quake was six miles offshore, and not as close as that said to be the "maximum credible earthquake" that could affect the site.

In its July 31 decision, the Public Utilities Commission decided that the greatest known threat to the LNG site is posed by a fault three miles offshore in the Santa Barbara Channel or else the Santa Ynez fault four miles to the north. Both are believed capable of generating earthquakes of 7.5 magnitude.

Western LNG was ordered to design a plant that could withstand such earthquakes in an area that the PUC described as "a seismically active region that has experienced at least

one and probably two major historic earthquakes."

An active fault also cuts across part of the Point Concepcion site, its potential for damage still undetermined.

At the site of the proposed LNG port, Indians, security guards, and Hollister Ranch residents all felt the tremor and their descriptions of its impact varied from "light" to "heavy."

Geologists for the Public Utilities Commission and for Western LNG Terminal Associates, the gas company consortium that plans to build the tanker port, were both dispatched to the scene today to investigate the quake's impact on the site that must be proven safe from earthquakes in order to get final regulatory approval.

According to White Bear, a carpenter and Chumash war chief who has been camped out at the site for the past several weeks, dirt in the geological trenches was disturbed by the earthquake.

He said that when the earthquake hit yesterday afternoon, and he could feel the earth rolling, "like it was yawning."

"It wasn't a heavy jolt," he said, and it didn't knock anyone off their feet. But the Indians at the site were happy and cheered for more, he said.

Al Pizano, of the Southern

California Gas Co., said that security guards for Western LNG also felt the quake but they said it was not a severe jolt.

Pizano added that if the LNG plant "had been in operation today, it would have been able to more than withstand the shocks from that quake." He noted that the plant would probably have been shut down to insure that there was no damage.

Also in the area at the time of the quake was Howard Oaks, general manager of the Hollister Ranch which lies directly east of the LNG site.

Oaks said that he did not feel any tremors himself, but got a report that the main gate house shook "quite a bit" although it was not damaged. He added that no homeowners had yet reported any property damage.

While Oaks missed the action, Beverly Boise-Cossart did not. She is the secretary for the homeowners association and was sitting in its office on the ranch when the earthquake struck.

"It started off slow... then it got pretty heavy," she said. The lights and hanging plants started swinging, and about that time she ran out of the old ranch house, she said.

Another Hollister Ranch resident, Char Walters, said she felt the quake as she was stand-

ing outside.

"It was not strong out here... but you could really tell the earth was moving," she said.

George Allen, the attorney for the Hollister Ranch Homeowners Association, said that the sloshing effect of yesterday's earthquake in local swimming pools and aquariums should be a "real warning" about the impact of an earthquake on the LNG site where three tanks will each hold 23 million gallons of LNG.

The Point Concepcion site was given conditional approval by the Public Utilities Commission July 31 to be the West Coast's first LNG port.

However, the commission pointed out that before a final permit is authorized, an active fault that cuts across the easterly portion of the site must be proven not to be "causative" — a legal term meaning that the fault is not capable of generating an earthquake of magnitude 5.0 or more. Yesterday's was 5.1.

That active fault was discovered in April by a geologist hired by the Hollister Ranch.

Known as the "Arroyo fault," it shows about 2½ feet of vertical slippage along half-inch line. While its vertical slippage is not enough to put it in the "major" category, its length could be. But how far it extends to the east will remain unknown until further geological trenching, opposed by the Indians, can proceed.

Santa Barbara, Calif., News-Press, Monday, August 14, 1978 C A-3

## BLACKOUT AFFECTS 10,000 AFTER QUAKE

About 10,000 people in the Goleta area, including the western part of Santa Barbara, found themselves without electrical power from quake time until about 8 or 9 p.m. yesterday, according to the Edison Co.'s operations manager, Gary Bechtel.

He said that about a third of the company's 16,000 volt circuits were out of operation for that period with other circuits suffering momentary outages.

The Isla Vista area probably took the strongest jolt, losing three of four circuits, including those affecting the traffic light at the corner of Los Carneros and El Colegio roads.

About 45 Edison employees worked overnight to restore the system, said Bechtel, and only 100 customers were without electricity this morning.

# Quake Emergency Declared

LA Times  
15 Aug 1978

## Santa Barbara County Officials to Seek Disaster Aid

BY JOHN HURST  
Times Staff Writer

SANTA BARBARA—A state of emergency was declared by the Santa Barbara County Board of Supervisors Monday evening in the wake of Sunday's earthquake that caused damage expected to total more than \$5 million.

The declaration of emergency is the first step in the bureaucratic quest for state and federal aid.

The earthquake, which registered 5.1 on the Richter scale, caused scattered but widespread damage and heated up the controversy over a proposed liquefied natural gas (LNG) terminal west of here.

The quake hit at 3:54 p.m., stopping the huge clock on the ornate Spanish courthouse tower in the center of town.

"That's the first time that damn thing has been accurate," said a local veteran radio reporter.

The Caltech Seismological Laboratory reported 28 aftershocks exceeding 2.5 on the Richter scale between the first shock and 6 a.m. Monday. The laboratory said there were other small aftershocks too numerous to count.

The main shock knocked out hundreds, perhaps thousands, of windows, broke power lines that ignited grass fires, derailed a Southern Pacific freight train, devastated store shelves, collapsed a restaurant roof, destroyed two house trailers, broke water and natural gas lines—yet killed no one.

Two local hospitals treated 66 people, hospitalizing four who were reported in stable condition.

The quake sent rockslides down onto San Marcos Pass, a steep mountain road to the north, closing it for more than 24 hours. The California Highway Patrol said it was hoped that blasting operations would open the highway by today.

An overpass on Ward Memorial Freeway near UC Santa Barbara remained closed due to structural damage.

The quake, with an epicenter in the ocean floor about six miles south of Santa Barbara, knocked an estimated 50 to 80 cubic meters of soil from a bluff within a quarter of a mile of a proposed LNG facility at Point Con-

Please Turn to Page 2, Col. 6

ception, 40 miles west of here.

Al Pizano, Santa Barbara district manager for the Southern California Gas Co., reported the soil slippage but maintained that it would have had no effect on an LNG facility.

"If, in fact, that plant had been operational," Pizano said, "it would not have had any effect on the facility at all."

Pizano said Western LNG, a firm formed by the Southern California Gas Co. and the Pacific Gas and Electric Co., had not changed its LNG plans as a result of the quake.

He said a team of geologists sent to the site to make a "visual inspection" found no effect of the quake other than the soil slippage.

But Paul Wack, Santa Barbara County assistant planning director and chairman of the county LNG Task Force, was not quite as confident.

"Maybe we're a little more jumpy since we would have the facility in our backyard," Wack said. "We hope the state and Western LNG take (the quake) as seriously as we do."

Meanwhile, activist Tom Hayden announced through his Campaign for Economic Democracy that he had sent Gov. Brown a telegram Sunday

after the quake warning of the seismic dangers of proceeding with the Point Conception LNG site.

Brown's office denied receiving the cable, but Elizabeth Coleman, the governor's press secretary, said that if Brown had received the telegram he would have responded.

"We feel it's premature to make any comment in light of the fact that the process is still ongoing."

In regard to another ongoing Santa Barbara controversy, the local Coast Guard command reported that there was no evidence of oil seepage from the offshore drilling platforms, but said that natural seepage off Isla Vista appeared to have increased 25% to 50%.

On the business front, the glaziers seemed to have the best of it.

Ron Friedli reported that the firm he works for took in 600 orders for window repair in less than a day, pointing out that a normal day's business brings in only 30 to 40.

Millie Riebe, a secretary for a second glazier, said, "All I know is from the time I got in here at 8:30 until now, I've done nothing but write orders."

## 1925 JOLT WAS 6.3

SB News-Press  
August 14, 1978

# South Coast quake serious, not severe

The 5.1 Richter scale reading for yesterday's earthquake falls between levels generally associated with minor (4.0) and severe (6.0) damage.

Devised by Dr. Charles Richter in 1935, the scale measures ground motion as recorded on seismographs. Each increase of one whole number (from 4.1 to 5.1, for example) means a tenfold increase in the magnitude of the quake.

A quake of 3.5 on the Richter

scale, which can cause minor damage, often goes unnoticed. While a quake with a 5.0 magnitude can cause considerable damage, and a 6.0 severe damage, seismologists consider a reading of 7.0 necessary for a "major" quake.

The 1971 Los Angeles-area Sylmar quake, which killed 64, measured 6.5 on the Richter scale. The 1925 Santa Barbara quake, centered in the Santa Barbara Channel, has been es-

timated at 6.3.

Last year, scientists slightly revised the rating scale. Previously, no quake had been given a magnitude greater than 8.9 (8.0 is considered a "great" quake) on the scale. Under the revised system, the 1906 San Francisco quake, previously estimated at 8.3 was assigned a 7.9 magnitude, while the Alaska quake of 1964 went from 8.4 to 9.2, and the 1960 Chilean quake from an 8.3 reading to 9.5.



# Clarion-Ledger

Mississippi's Leading Newspaper For More Than A Century

Monday, August 14, 1978

Jackson, Mississippi

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## Damage Heavy

# Earthquake Hits Santa Barbara

SANTA BARBARA, Calif. (AP) — An earthquake knocked people off their feet in Santa Barbara and triggered fires, gas leaks, rock slides and apparently a railroad derailment Sunday afternoon.

There was at least one injury.

Property damage was labeled "heavy" but was limited to the Santa Barbara area, officials said. The quake was felt in three counties.

THE TREMOR registered 5.1 on the Richter scale at the California Institute of Technology. Officials say a quake of that magnitude can cause considerable damage in the local area.

Authorities in Santa Barbara, which is 90 miles up the coast from Los Angeles, received calls from people who said the earthquake knocked them down.

A restaurant patron downtown was injured when the quake hit, officials said, but his condition was not known.

Rock slides closed several highways, said California Highway Patrol dispatcher Terrie Tucker. A road leading to the University of California at Santa Barbara broke apart in spots. Several land slides blocked Highway 154, which connects Santa Barbara to Santa Ynez.

Downed power lines sparked several minor brush fires outside the city limits, Ms. Tucker said. Authorities said one fire broke out in a trailer park but was quickly brought under control.

A NATURAL GAS LEAK was reported along the main road linking Santa Barbara to Goleta Valley.

A house roof collapsed in the Santa Barbara suburb of Isla Vista, Ms. Tucker said. An auto dealer in Goleta Valley said he lost about one-third of his roof.

At the University of California in Santa Bar-

bara, the jolt opened cases of snakes and they spilled out into a classroom. They were recovered without incident, said spokeswoman Darleen Thompson of the Santa Barbara County sheriff's department. In another building on campus, containers of some noxious chemicals were overturned. The fumes dissipated without harming anyone, city fire officials said.

AT NEARBY ELLWOOD, 20 cars and one diesel locomotive from a freight train went off the tracks, said Tom Buckley, spokesman for Southern Pacific Transportation Co. Buckley said that there were no injuries and that no dangerous material was involved in the derailment. He said that although the cause of the derailment had not been ascertained, the accident occurred within minutes of the earthquake.

The clock on the Santa Barbara courthouse stopped at 3:55 p.m. Residents swarmed onto State Street, the city's main thoroughfare, and could see broken windows and other damage.

Burglar alarms wailed throughout the area, triggered by the broken windows.

Authorities summoned off-duty police and firefighters back to work. Businessmen were advised to check for damage, but to beware of the possibility of gas leaks. Supermarkets and restaurants reportedly were closing.

In nearby Goleta, 10 to 12 miles west of Santa Barbara, part of the roof of an auto dealership reportedly collapsed.

In the Santa Barbara News-Press building, the quake sent plaster and shelving flying from walls. Doors slammed without a push or pull.

RESIDENTS IN Santa Barbara, Ventura and San Luis Obispo Counties felt the jolt.

The quake was centered six miles south of Santa Barbara in the Santa Barbara Channel, a spokesman for the Caltech Seismology Lab said.

# HUGHES NEWS<sup>®</sup>

## CALIFORNIA

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August 25, 1978

## All is back to normal after SB earthquake

Santa Barbara Research Center is alive and well despite the earthquake that rocked the area Sunday, Aug. 13.

The facility survived the tremor without fires or injuries and, thanks to the efforts of a team of dedicated employees was open for business the next day, said Al Paul, Administration director.

"The effect on production at SBRC was kept to a minimum," said Mr. Paul. "In many of our activities, we didn't miss a day of production."

"Although we did have a massive cleanup job, there was no major damage," said Ken Riley, Personnel manager.

Jim Weston, head of Safety and Security at SBRC, said damage could have been much worse had it not been for advanced planning in the form of the Emergency Preparedness Plan.

"Within five minutes after the shock, members of our utility shutdown team from Plant Maintenance were here shutting off the gas lines and all the electricity that wasn't already knocked out.

"The fast action of our team members and the fact that they are trained and knew where to go to turn off the utilities was the most important factor that spared us the ravages of fire," he said.

There were many heroes of the day, from the trained team members to management and other employees, many of whom spent the night in the cleanup effort.

Among those Mr. Weston praised were Dick Tinberg—who stayed until the early morning hours despite the fact his mobile home had suffered serious damage—Larry Pfeifer, and Roy Schrader, the first three team members to show up.

Others included Manny Rey, Purchasing head; Ed Ward, Industrial Relations; Mr. Paul; and Ron Loncaric, Facilities Engineering head, all of whom worked on the recovery operations once the cleanup was under way.

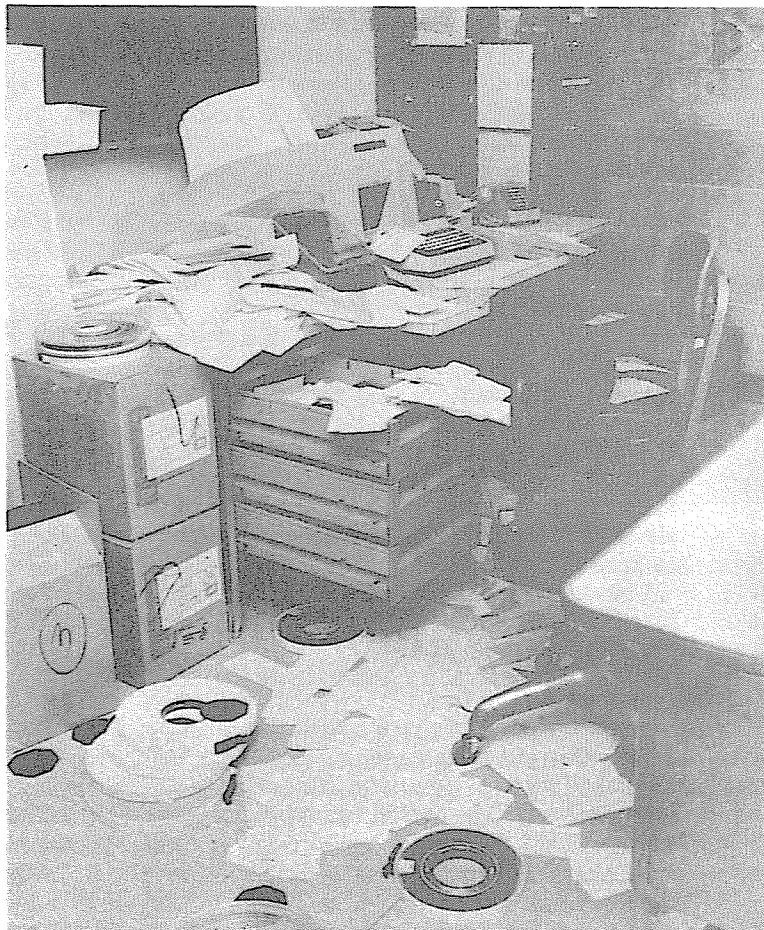
Photographer Tom Ball was there; and Richard Chandos, Larry Smith, and John Zuehlke "seemed to be everywhere at once,

"Over and above the fantastic cooperation of our team members, the structural integrity of the building itself was probably our biggest advantage,

"The biggest disruption and mess was simply the result of tables being tipped over and desks thrown about, losing all of the contents," Mr. Weston said.

The quake did strange things, he explained. For instance, in one part of the building where two labs are separated by a partition-type wall, one lab looked as though the "Schlitz bull" had been let loose in it, and the other was not touched, he said.

"Our first efforts following the quake were directed at preparing for a second shock," he said. "When we decided there wasn't going to be another one, our team members got on the telephones to vendors, so we were first on the list when the local stores received their deliveries of window glass and other things we needed."



EMPLOYEES at Santa Barbara Research Center faced scenes such as this when they came to work Monday following quake.

# Building code compliance should be forced on state

By PAUL BARNES  
Staff Writer

Earthquake damage to buildings on the University of California campus at Santa Barbara has convinced Bob Olson, executive director of the Seismic Safety Commission, that the state should be forced to comply with standard building codes.

Olson, who went to Santa Barbara last week to assess damage done by an earthquake Sunday that registered 5.1 on the Richter scale, said state buildings and freeway overpasses suffered damage.

As an independent agency, Olson said that the university does not have to conform to building codes and does not have to have building plans reviewed by an outside source.

"I AM NOT saying the state was negligent or didn't follow good practice," he said. "But this develops the issue of whether or not state universities should be independent of codes and if an outside agency should review their plan."

Olson said recommendations that the commission will eventually make, based on things it learned in Santa Barbara, may include legislation to bring state buildings under code and review.

The commission, if it does that, won't be the first to do so. The Joint Committee on Seismic Safety, the predecessor of the commission, made the same recommendation in its final report to the Legislature in January 1974.

The committee said:

"STATE LEGISLATION should—as a minimum—require that all state and local jurisdiction abide by...seismically relevant portions of current codes, such as the latest Uniform Building Code."

Olson said state agencies still don't have to comply

because legislation was never passed.

The role of the commission, according to Olson, is to determine the impact of earthquakes, make sure emergency agencies do their job after a quake, and assess damage to determine how structures can be improved for safety.

Olson thinks another important lesson coming out of Santa Barbara has to do with mobile homes.

"There are no standards to enforce anchoring them," he said.

THROUGHOUT THE Santa Barbara area, Olson said mobile homes were knocked from their stands, resulting in damages from \$1,000 to \$8,000 each.

"Street after street of mobile homes were knocked down and bent," he said.

The commission may write its own legislation on anchoring mobile homes, according to Olson.

Monitoring of damage from the quake began a few hours after the quake occurred. Olson said his findings show that response efforts worked well and was a good test of emergency plans in Santa Barbara, even though the quake was only moderate.

The next step, according to Olson, is to review information from such groups as emergency service agencies, fire departments, police departments and the Red Cross.

ANY LEGISLATION the commission wants to recommend could be introduced by either Sen. Al Alquist, D-San Jose, or Assemblyman Jim Keysor, D-San Fernando. Both men are on the 17-member commission.

Olson said he would have a report on the earthquake prepared for the commission by Sept. 14. It would then be up to the members to take action.

"We treat earthquakes as an opportunity to learn and improve," Olson said.



Staff Photo by Scott Semmordorf

Bob Olson, director of the Seismic Safety Commission, points to Santa Barbara on a map during a discussion of the recent quake in that city.

# Water loss cited; dams survive jolt

By Steve Sullivan

News-Press Staff Writer

The quake was felt only mildly at the three dams on the Santa Ynez River, caretakers said today, but damage to water mains and equipment on the South Coast caused the loss of nearly three million gallons of water.

Officials still were looking for any indications that damage could have occurred to the three tunnels bringing water to the coast from Juncal, Gibraltar and Cachuma reservoirs. Lack of debris and cloudiness were proof, they said, that nothing significant had happened.

Goleta County Water District suffered the most serious loss, about two million gallons of water, in two incidents triggered by the quake.

Larry Lane, superintendent, said that despite the two major occurrences, "we were very fortunate," and he praised the "beautiful response from all our personnel."

Within a very short time, he said, 12 employees were on the job, trying to find where the two leaks were, without power or telephone.

At the district's big Corona del Mar treatment plant in the foothills, operators knew something was wrong downstream because a five-million-gallon reservoir rapidly was dropping.

"We started checking creeks," Lane said, and found a regulating valve at the Patterson Avenue reservoir had failed, causing the flow to overflow the huge tank. The other leak was caused by the break of a 10-inch line serving the UCSB married student housing. Before the drain was stopped, the combined flows had brought the Corona del Mar storage down to within six feet of the bottom.

Santa Barbara's Sheffield Reservoir, which failed in the 1925 quake, was relieved of half its water late yesterday so a repair could be made to a leaking valve, C. Charles Evans, who heads the city water department, said. Water was dumped into Sycamore Creek via a diversion device. Flow from Gibraltar was reduced

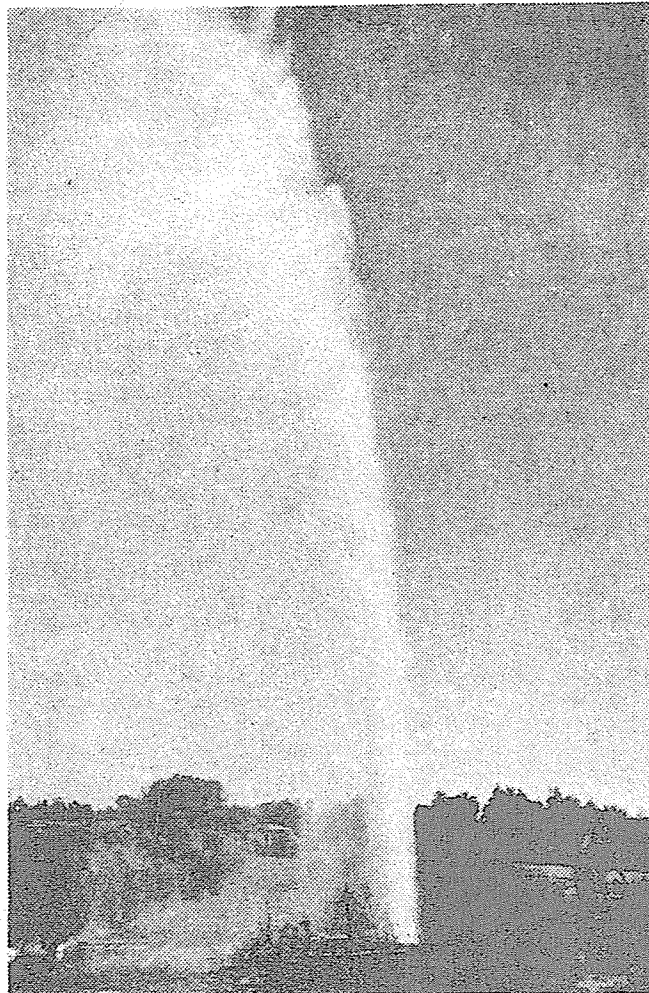
# 101 overpass closed due to damage

One of the most serious casualties of yesterday's earthquake may turn out to be the

Ward Memorial Boulevard overpass spanning Highway 101.

Caltrans inspectors from Sacramento were at the overpass bridge this afternoon, checking out damage and trying to determine whether the 15-year-old structure should remain closed to traffic until repairs are made.

Peter Kim, one of the inspectors, verified that the bridge had been offset "at least 3½ inches" in the quake.



News-Press photo

**GEYSER SPOUTED** on Los Carneros, west of Hollister Avenue, when a water main erupted during the quake.

sharply at the lake.

Evans said the city also had two main breaks — at Robbins Avenue and Mountain Avenue — and "lots of calls about leaks on private property." He said he also was checking on a backed up sewer in the city.

Neil Mendenall, at the Montecito County Water District, said a complete inspection has been made of Juncal Dam, an earthen portion of which is bisected by the Santa Ynez

Fault. There is no evidence of any trouble there, he said.

Leon Lunt, manager of the Cachuma Operation and Maintenance Board, said an investigation of South Coast Cachuma facilities, from Goleta to Carpinteria, indicates no serious damage has occurred. Continued checks were under way today of the big South Coast Conduit, which stretches for 26 miles along the foothills, and its many turnouts.

News-Press  
Santa Barbara  
August 14, 1978

"We're not totally sure about the extent of the damage," he said. "We want to inspect the bridge from a higher point."

The damage is visible from the ocean side of the bridge. Where the bridge joins the roadway, crumbled pieces of concrete lie at the foot of pilings, and two metal guard rails are wrenched from their supports.

Kim said that no monetary estimate could be made of the damage until it is known precisely what the damage is.

He said it may be possible to repair the bridge while traffic passes over it. Metal bolts that were sheared off, he said, will probably be welded instead of rebolted.

"It's going to be a lot of work for a little while," Kim said.

The state Department of Transportation (Caltrans) is initiating a program of shoring up highway overpasses to make them more secure against earthquakes.

Two days before Santa Barbara reeled from a major jolt yesterday, the regional Coastal Commission approved permits for Caltrans to put in "earthquake restrainers" on the Highway 101 overpasses at Salsipuedes Street and Winchester Canyon.

Fifteen more overpasses are scheduled for strengthening in Santa Barbara County, according to Web Beckstead, deputy director for Caltrans in the Fifth District. Nearly all are on the South Coast.

The reinforcing device is a cable that anchors the roadbed of the bridge to the abutments over the caissons on which the overpasses rest. Caltrans started this reinforcement program after the 1971 Sylmar earthquake which ripped some overpasses apart.

He said that contracts for the reinforcement work on the other 13 locations will be contracted for in the near future. They include 13 locations on Highway 101, on Highway 1, and one on Ward Memorial Boulevard.

# UCSB, Isla Vista working to clean up quake debris

By Tom Bolton

Residents and officials in the UCSB/Isla Vista area were hard at work today sorting out what they have called a "royal mess" in the aftermath of yesterday's earthquake.

Minor cuts and bruises were the only injuries reported on campus and in Isla Vista, where scores of buildings, homes and apartments suffered broken windows, minor structural damage and the debris that typically follows a temblor.

Officers of the I.V. Foot Patrol reported that things were "unusually quiet" last night, with no reports of looting. Store owners were on the scene to secure their stores and begin clean-up operations.

Survey teams were checking the campus for damage, but officials said activity there is nearly normal, except for clean-up.

The worst damage on campus was apparently in the chemical and biological laboratories, where workers were reported shoveling out glass and debris. Two eight-inch pipelines that bring sea water into the campus

marine science laboratory were reportedly sheared, temporarily endangering the experiments. Campus officials said efforts were under way to move the animals to another location where salt water would be available.

At San Rafael Dorm, the swimming pool is out of service due to broken pipes. Pipes were also broken in Santa Cruz and Anacapa dorms, although water damage was said to be minimal.

Electricity was out in the area for three to four hours yesterday and some buildings reported no water for a time.

Spilled chemicals and the possible danger of noxious fumes brought county firemen with breathing apparatus to the UCSB chemistry building shortly after the quake.

There was some concern that several rattlesnakes stored in the building had escaped, but officials today reported that all were safe and accounted for. Arrangements were being made today for removal of chemical wastes.

There was a report of structural damage to the older

section of the UCSB library, but a preliminary examination by a structural engineer found that the library and all other campus buildings were safe. But up to one-half of the books at the library came tumbling off the shelves.

UCSB Chancellor Robert Huttenback, his wife and daughter were at their campus residence, University House, when the quake shattered a picture window.

At Francisco Torres in Isla Vista, some 900 cheerleaders attending a training campus escaped without incident, as all were outside the building at the time of the quake. Officials there said damage was slight, and operations returned to normal within one and one-half hours.

On Del Playa Drive, where many homes and apartments had broken windows and other damage, the scene was relatively calm. Families and neighbors gathered in front yards, discussing the quake and regaining their nerve before beginning to clean-up.

UCSB student Gayle McKenzie of 6618A Del Playa said she

was sitting inside her home when the windows on the front side began shattering. "You should see the place, the whole inside is a mess," she said. "I've never been in an earthquake before, so I really don't have anything to compare it with."

Paul Foley, 21, was working at the Fuel Supply Company at 6865 Hollister Ave. when, he said, he was nearly knocked off his feet.

"The pumps started shaking, and I thought the station was going to explode, so I took off for the middle of the parking lot," Foley said. The station office was littered with debris but there was apparently little other damage.

Economically, it was a mixed day for Foley. He said he lost about \$30 when excited customers took off without paying for gas, but he also said that he sold three times more cigarettes in two hours than he normally sells in a day. "This one lady came in, said she quit smoking two years ago, but that the earthquake was too much," Foley said.

(Tom Bolton, a senior at UCSB, is a journalism intern with the News-Press.)

## EARTHQUAKE HISTORY

# Strongest shake since 1952

By Dewey Schurman  
News-Press Staff Writer

Although not a major earthquake, yesterday's tremor was the strongest felt in Santa Barbara since 1952 — and perhaps the strongest centered locally since the famous 1925 Santa Barbara quake.

During the 1925 quake, 13 people were killed, mostly from falling debris and collapsing structures. That was the first major earthquake in California since the 1906 San Francisco quake. Although the 1925 tremor destroyed over 60 buildings, many along a seven-block stretch of State Street, the city

escaped the disastrous type of fire that followed the San Francisco quake, thanks largely to the actions of two utility employees, who shut off the city power house and emergency gas valve during the height of the tremor.

The Richter magnitude scale for measuring earthquake intensity was not developed until 1935, but scientists have given the 1925 quake a 6.3 rating. As such, even it is not considered a "major" quake by most seismologists.

By comparison, another earthquake centered in the Santa Barbara area on Dec. 12,

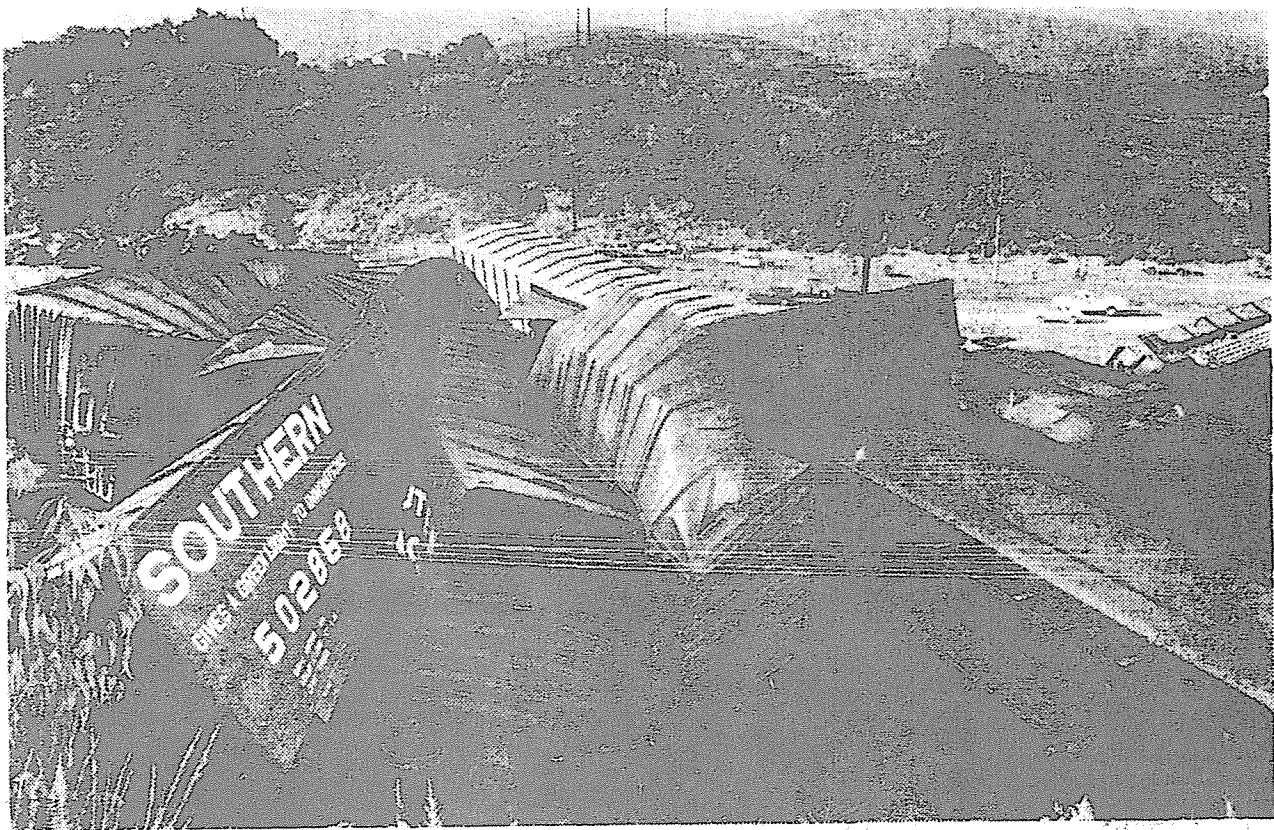
1812, is believed to have been one of the strongest in California's history. That quake destroyed the Mission La Purisima near Lompoc, caused severe damage to other missions 60 miles away, and sent ashore a tsunami or tidal wave up to 15 feet high. Water from that wave was reported up to one-half mile inland in some narrow canyons.

In 1902, a series of quakes from July to December almost totally destroyed the town of Los Alamos, although no fatalities were recorded.

On June 30, 1941, an earthquake recorded at 5.9 on the

Richter scale, also centered in the Santa Barbara Channel, caused an estimated \$100,000 damage, most of that in the 700, 800 and 900 blocks of State Street, where windows were blasted out of stores and buildings.

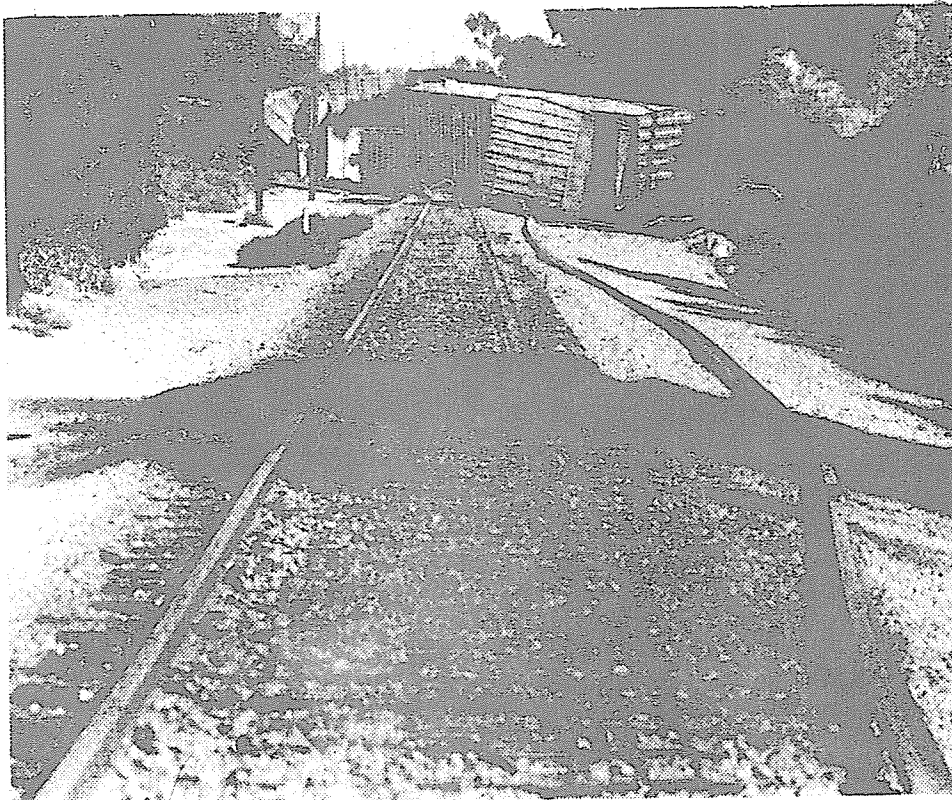
The 1952 Tehachapi earthquake, which resulted in death and widespread damage in Kern County, caused severe cracks in two large buildings in downtown Santa Barbara and also broke many plate glass windows. At that time, most observers described the tremor as the strongest "since the big one of 1925."



Santa Barbara News-Press  
August 14, 1978

News-Press photo by Steve Malone

SHATTERED WRECKAGE of this Southern Pacific freight train blocked the north track in and out of Santa Barbara, after the train derailed when it went on earthquake-damaged tracks.



News-Press photo by Steve Malone

BOWED RAILS sent this northbound Southern Pacific freight train off the track at Ellwood. The derailment was cited as being the worst earthquake-caused damage in the area.

## AIRPORT TOWER LEANS, IS EVACUATED

At the Santa Barbara Airport, workers reported that the control tower was tilted to one side after the quake. But it's doubtful the "leaning tower" will attract any tourists as it looked normal today.

Controllers evacuated the structure and directed flights with portable radio equipment that was set atop one employee's camper parked outside. A county building inspector cleared the tower for use again at 6:30 p.m.

Two United Airlines flights were canceled temporarily but then were recalled and landed.

Claire Bailey, assistant airport director, said that the terminal lights were out. However, a back-up generator kept the runway lights on.

At Peter's Flying Machine, the restaurant atop the airport terminal building, dishes and bar glasses crashed about, causing damage estimated over \$3,000, according to restaurant manager, George Peters.

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# California quake site declared disaster area

The Houston Post/Tues., Aug. 15, 1978

SANTA BARBARA, Calif. (AP) — Local officials Monday declared Santa Barbara County a disaster area in the wake of an earthquake that injured about 60 persons and caused an estimated \$4.5 million in damage.

"Aftershocks, most too weak to be felt, continued through the day in this coastal area as scientists tried to pinpoint the geological fault responsible for Sunday's jolting earthquake.

The county Board of Supervisors voted Monday afternoon to ask the state to declare the county a disaster area, a step that would make homeowners and businessmen eligible for loans and other financial assistance, said Jeff Samsom, assistant county administrative officer.

The local disaster declaration was the first step in seeking the state aid, Samson said.

He said the \$4.5 million damage figure was "a very preliminary estimate. Most of it is private property."

Dozens of mobile homes were badly damaged, though most houses came out of the earthquake with only minor damage, Samson said.

"Most people, I'm afraid, didn't have earthquake

insurance," he added.

Meanwhile, Dr. Michael Reichle said several faults in the Santa Barbara Channel, where the quake was centered, have been identified. The one probably responsible for the quake is known as the Pitas Point fault, he said.

"But it could be a new one we haven't mapped yet," said the University of California at Santa Barbara seismologist, who added that aftershocks measuring up to about 3 on the Richter scale will probably continue for "a day or so and they will die down gradually after that."

"It may be that we'll never be able to tie this down to a particular fault," said Clarence Allen, California Institute of Technology geology professor.

Dennis Meredith, another Caltech spokesman, said quakes in the Santa Barbara channel with magnitudes of about 5 are not rare — possibly occurring once or twice a month. Most are not felt, however.

Sunday's quake was felt in a 100-mile radius across five counties, including suburban Los Angeles, and measured 5.1 on the Richter scale, a measure of ground motion.

## Scientists Seek 'Fault' In Santa Barbara Quake

SANTA BARBARA (AP) — While aftershocks continued Monday, scientists tried to pinpoint the fault responsible for a jolting earthquake that injured about 60 persons in this coastal city.

At the same time, the county Board of Supervisors met to discuss plans for seeking federal and state aid for the many homeowners and businessmen who suffered damage, estimated to be at least \$500,000.

Dr. Michael Reichle said one of several faults in the Santa Barbara Channel, where the quake was centered Sunday afternoon, could have caused the temblor. The one most probably responsible is known as the Pitas Point fault, he said.

"But it could be a new one we haven't mapped yet," said the UC Santa Barbara seismologist.

Reichle said he hopes to find the exact site of the worst earthquake to hit a populated area in California in several years by measuring the continuing flurry of aftershocks. But the task is complicated because the faults are underwater.

He said aftershocks measuring up to about 3 on the Richter scale will probably continue for "a day or so and they will die down gradually after that."

Sunday's quake was felt within a 100-mile radius across five counties, including Los Angeles, and measured 5.1 on the Richter scale, a measure of ground motion.

The system of faults in the Santa Barbara channel is unrelated to the San Andreas fault, potentially the most dangerous fault in California. The San Andreas fault, which comes within 20 miles of Los Angeles and runs into the ocean near San Francisco, comes no closer than 75 miles to Santa Barbara.

Reichle has been experimenting with seismographs on the ocean floor off the coast, but he said his equipment was not in the water Sunday. His students rushed Monday to put the gear back in place.

Other scientists, from the University of Southern California, placed new instruments on the fault-riddled floor of the channel to measure the aftershocks.

"We're not sure how good the geologic maps off that area (the channel) are," said Clarence Allen, a professor of geology and geophysics with the California Institute of Technology. "But we know very well that there are many faults out there. It may be that we'll never be able to tie this down to a particular fault."

Allen said the origin of the quake Sunday was "very close" to the site of a 1941 earthquake that caused widespread damage and injuries in Santa Barbara. It is also was close to the location of a disastrous 1925 tremor that caused 14 deaths.

Dennis Meredith, another Caltech spokesman, said quakes in the Santa Barbara channel with magnitudes of about 5 are not rare — possibly occurring once or

☆ Contra Costa Times

August 15, 1978

twice a month. Most are not felt on the mainland, however.

Coast Guard Petty Officer 2nd Class Raymond Lane said there was no apparent damage to offshore oil rigs and pipelines in the channel from Sunday's quake.

"We didn't get any word on problems out there," he said. "Everything seems secure."

Many of those injured during the 30-second jolt were cut by flying glass and tumbling dishes, police said. Others suffered twisted ankles and similar injuries while rushing from their homes.

The Goleta Valley Community Hospital said four earthquake victims were hospitalized overnight. Two of them — one with a dislocated neck and another with a fractured back — were released Monday, a spokeswoman said. The two still in the hospital Monday included a burn victim and a heart attack patient, she said. Both were listed in stable condition.

Electric, gas and water lines were severed as the ground shifted and twisted but most of the utilities were restored by Monday morning.

"For the most part, it's all back in operation," said Santa Barbara County Sheriff's Deputy Richard Hansen. "We're pretty much back to normal...There are still a couple of gas lines that have to be repaired, but the gas was shut off and there were no leaks," Hansen said.

Many store windows were shattered in Santa Barbara's fashionable downtown shopping area, but Hansen said an emergency deployment of deputies prevented looting.

# DID EARLIER EVENTS TIP OFF EARTHQUAKE

BY GEORGE ALEXANDER

Times Science Writer

The sharp earthquake that jolted Santa Barbara and adjacent areas last Sunday may have been preceded by a smaller temblor a few hours before, by a burst of natural gas from an oil company's off-shore well four days earlier, and by a swarm of tiny seismic events several months ago.

All of these events occurred in the same general region of the Santa Barbara Channel where Sunday's earthquake happened.

Whether the smaller earthquakes and the gas leak are directly linked to the magnitude 5.1 quake remains to be proven. But the U.S. Geological Survey created a special panel Wednesday to look into a possible relationship between the Aug. 9 gas bubble and Aug. 13 quake.

And scientists at the University of Southern California, Caltech and the Geological Survey's Center for Earthquake Studies at Menlo Park, south of San Francisco, also are looking at measurements which their different seismographic instruments recorded.

Their hope, of course, is that they might find some premonitory indications in the small temblors or gas bubble of the later, damaging earthquake.

But a survey of geophysicists and petroleum engineers suggests that some, and possibly all, of these events prior to Aug. 13 may be simply sheer coincidence.

Officials of the Texaco Co., which was digging the exploratory oil well in the Santa Barbara Channel when the gas pocket was struck Aug. 9, said that the bubble was nothing out of the ordinary.

"There are areas along the Gulf (of Mexico) Coast and in the Santa Barbara Channel," said a Texaco official, "where you often hit pockets of gas drilling for oil."

And another Texaco engineer, who was present on the drilling ship, the Zapata Trader, when the gas erupted to the surface, described it as "typical" of such unintentional taps. The firm said that it promptly sealed off

the leak and abandoned the well.

Still, the USGS panel will look into the possibility that the gas bubble and the quake four days later are somehow connected. Russell G. Wayland, director of the panel, said that it was conceivable that the mounting stresses of the earthquake, as it developed, may have resulted in increased pressures being put on the gas trapped below the ocean floor.

The panel, said Wayland, will try to determine if "the earthquake could have caused the pressure or whether the pressure could have caused the earthquake. We want to know if there is a cause-and-effect relationship."

A preliminary report is supposed to be sent to USGS headquarters near Washington, D.C., by the panel by Aug. 31.

Some unexpected good came from Sunday's earthquake. Scientists from USC had installed a series of three seismometers deep in the Santa Barbara Channel floor and a fourth instrument on shore only the day before the temblor.

All four instruments were operating and transmitting data back to the USC campus, according to Dr. Thomas Henyey, an associate professor of geological sciences, when the earthquake struck at 3:54 p.m. PDT.

"Right now," Henyey said, "we're using all of that data to locate the epicenter of the main shock and the distribution pattern of the aftershocks. This will give us some insight into the orientation—the north-south or northwest-southeast bearing of the fault—and the extent of the faulting."

Dr. William (Willie) Lee, a research geophysicist with the USGS Menlo Park center who has concentrated his attention on Santa Barbara Channel seismicity, said that his calculations, based on the USC data, showed the epicenter of the main shock to have been at 34 degrees 21.3 minutes north latitude and 119 degrees 42.3 minutes west longitude, or

about five miles due south and eight miles west of downtown Santa Barbara.

Lee said that the quake occurred along a fault that had been identified several months ago and unofficially designated as "Fault X." He added that some of his colleagues believe that this is a seaward continuation of a small fault which, on the mainland, is known as the Oak Ridge Fault, but that this is being debated.

An initial analysis of the waves generated by the main shock and the aftershocks point to the former having happened at the southeast end of the fault and the latter at the northwest end. This would seem to indicate that the stress which was relieved by the earthquake propagated toward the northwest.

Lee also said that there appears to have been a smaller temblor, measuring magnitude 2.3 on the Richter scale, in the channel area about 3 hours before the main event on Sunday. And there is a record of a swarm of between 50 and 100 small temblors, registering 2.3 to 2.5 magnitude, having occurred in the 34 degree 14 minute north latitude, 119 degree 20 minute west longitude area back in late March and early April.

It isn't clear now that these preceding seismic events, in fact, are related to the magnitude 5.1 shock of last Sunday but a possible relationship will be investigated, Lee said.

However, Prof. Hiroo Kanamori of Caltech expressed reservations about such a relationship. He said that the channel is heavily criss-crossed by many faults and that his impression was that the late March-early April swarm had an epicenter different from the magnitude 5.1 earthquake.

Caltech seismologists, especially Kanamori and several young scientists working with him, have been carefully studying foreshocks and swarms for possible tip-off signs to later, larger quakes. Their research, which is continuing, points to such precursory events in some California earthquakes.



# Quake Emergency Declared

## Santa Barbara County Officials to Seek Disaster Aid

BY JOHN HURST  
Times Staff Writer

SANTA BARBARA—A state of emergency was declared by the Santa Barbara County Board of Supervisors Monday evening in the wake of Sunday's earthquake that caused damage expected to total more than \$5 million.

The declaration of emergency is the first step in the bureaucratic quest for state and federal aid.

The earthquake, which registered 5.1 on the Richter scale, caused scattered but widespread damage and heated up the controversy over a proposed liquefied natural gas (LNG) terminal west of here.

The quake hit at 3:54 p.m., stopping the huge clock on the ornate Spanish courthouse tower in the center of town.

"That's the first time that damn thing has been accurate," said a local veteran radio reporter.

The Caltech Seismological Laboratory reported 28 aftershocks exceeding 2.5 on the Richter scale between the first shock and 6 a.m. Monday. The laboratory said there were other small aftershocks too numerous to count.

The main shock knocked out hundreds, perhaps thousands, of windows, broke power lines that ignited grass fires, derailed a Southern Pacific freight train, devastated store shelves, collapsed a restaurant roof, destroyed two house trailers, broke water and natural gas lines—yet killed no one.

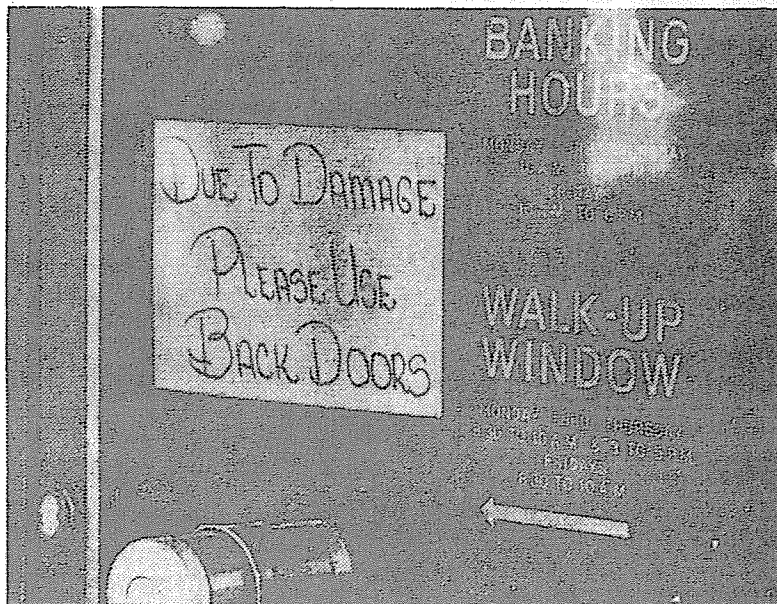
Two local hospitals treated 66 people, hospitalizing four who were reported in stable condition.

The quake sent rockslides down onto San Marcos Pass, a steep mountain road to the north, closing it for more than 24 hours. The California Highway Patrol said it was hoped that blasting operations would open the highway by today.

An overpass on Ward Memorial Freeway near UC Santa Barbara remained closed due to structural damage.

The quake, with an epicenter in the ocean floor about six miles south of Santa Barbara, knocked an estimated 50 to 80 cubic meters of soil from a bluff within a quarter of a mile of a proposed LNG facility at Point Con-

Please Turn to Page 2, Col. 6



DETOUR—Sign on front door of bank in downtown Santa Barbara. Customers were redirected because of loose ceiling from quake.

Times photo by Art Rogers

Continued from First Page  
ception, 40 miles west of here.

Al Pizano, Santa Barbara district manager for the Southern California Gas Co., reported the soil slippage but maintained that it would have had no effect on an LNG facility.

"If, in fact, that plant had been operational," Pizano said, "it would not have had any effect on the facility at all."

Pizano said Western LNG, a firm formed by the Southern California Gas Co. and the Pacific Gas and Electric Co., had not changed its LNG plans as a result of the quake.

He said a team of geologists sent to the site to make a "visual inspection" found no effect of the quake other than the soil slippage.

But Paul Wack, Santa Barbara County assistant planning director and chairman of the county LNG Task Force, was not quite as confident.

"Maybe we're a little more jumpy since we would have the facility in our backyard," Wack said. "We hope the state and Western LNG take (the quake) as seriously as we do."

Meanwhile, activist Tom Hayden announced through his Campaign for Economic Democracy that he had

sent Gov. Brown a telegram Sunday after the quake warning of the seismic dangers of proceeding with the Point Conception LNG site.

Brown's office denied receiving the cable, but Elisabeth Coleman, the governor's press secretary, said that, if Brown had received the telegram he would have responded.

"We feel it's premature to make any comment in light of the fact that the process is still ongoing."

In regard to another ongoing Santa Barbara controversy, the local Coast Guard command reported that there was no evidence of oil seepage from the offshore drilling platforms, but said that natural seepage off Isla Vista appeared to have increased 25% to 50%.

On the business front, the glaziers seemed to have the best of it.

Ron Friedli reported that the firm he works for took in 600 orders for window repair in less than a day, pointing out that a normal day's business brings in only 30 to 40.

Millie Riebe, a secretary for a second glazier, said, "All I know is from the time I got in here at 8:30 until now, I've done nothing but write orders."

—Tues., Aug. 15, 1978

Los Angeles Times

# SANTA BARBARA NEWS-PRESS

SANTA BARBARA, CALIFORNIA, THURSDAY EVENING, NOVEMBER 9, 1978

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## EARTHQUAKE REPORT

# Engineer says UCSB buildings 'performed reasonably well'

By Dewey Schurman  
News-Press Staff Writer

Despite near-major damage to some facilities, buildings on the UCSB campus "performed reasonably well" during the Aug. 13 earthquake that shook the South Coast, a structural engineer said today in a report to the state Seismic Safety Commission.

Stanley Mendes, a local engineer, said the amount of ground shaking and damage was "unanticipated" for an earthquake with a magnitude of 5.1 on the Richter scale. Mendes said accelerograph instruments on the roof of three-story North Hall on the campus showed the highest earthquake acceleration readings (.94 gravity) ever recorded in a building.

Mendes said that although the campus buildings "are representative of similar buildings constructed elsewhere in Southern California, "inadequate construction procedures likely contributed to severe damage" in several buildings.

Mendes noted that until 1975, independent reviews of design calculations and construction plans of buildings were not "customary" on UC campuses — including UCSB. Damage to concrete block walls at two UCSB residence halls (Anacapa and Santa Cruz) "especially points up the need for adequate inspection," he said. Such defects as mislocated reinforcing steel "emphasizes the need for a full-time inspector whose primary concern is the quality

of masonry construction."

Noting that the more than 50 permanent buildings at UCSB were constructed between 1952 and 1970 and "designed to conform with the earthquake safety requirements of the then current edition of the Uniform Building Code," Mendes said "I do not believe that design, per se, should be singled out as the cause of damage . . ."

Until 1973, Mendes said, UCSB buildings "contained some previously undiscovered seismic design inadequacies." After a 1973 report by Mendes himself, structural strengthening was added to North Hall and Campbell Hall. Campbell Hall was undamaged during the quake, and North Hall sustained only "light cracking of shear walls," he said. "I suspect that damage would have been much more severe had not

these buildings been strengthened."

If the earthquake had been of a 6.5 to 7.0 magnitude, and if the school had been in session, "many injuries would likely have occurred and damage would have been much more severe," the report stated.

Mendes indicated that the amount of ground shaking experienced on the campus was unusually high for an earthquake of such magnitude, and said further study will be necessary to determine why the earthquake energies apparently "focused" on UCSB.

## REPORT ON AUG. 13 TEMBLOR AT UCSB

# 24 deaths if quake hit on workday

Two dozen persons would have been killed on the UCSB campus if last summer's earthquake had hit during working hours, according to Dr. Arthur Sylvester, UCSB professor of geological sciences.

The 5.7-magnitude earthquake struck on a Sunday afternoon, Aug. 13.

In a report just issued by the U.S. Geological Survey, it was described as the most damaging earthquake in the nation last year. There were no fatalities, but there were a number of injuries.

Sylvester, who specializes in earthquakes and what to do about them, briefed the county grand jury yesterday in a public meeting.

Much of the damage from last year's quake was on the UCSB campus.

"But with an expenditure of \$25,000 we could increase the earthquake security of the campus by 80 percent," Sylvester said. "It would not require major work — just a lot of little things."

He said that the buildings withstood the shock, but that books, cabinets and other inside facilities were not properly secured and were tumbled or shattered.

"Large, heavy cabinets and bookcases should be secured to the wall," he said. "Injuries are more likely to be caused by such things falling on people than from buildings collapsing."

In residences, he said, one of the major problems is water heaters falling over. "So many water heaters fell down in Goleta during last year's earthquake that nobody even bothered to count them."

But he said that only one house burned as a result of a fire from a damaged gas water heater.

"We can cut our losses enormously if we know what we're up against," Sylvester said. For instance, the city moved its emergency communications equipment out of the basement of City Hall to a more secure location, a lesson learned from the 1971 earthquake in the San Fernando Valley.

In residences, cabinets should have catch

latches, not magnetic ones, he said. Magnetic holders will give way in a sharp jolt. Shelves holding bottles or jars should have a horizontal wire strung a few inches above the shelf to prevent the containers from sliding off.

Water heaters should be secured to a wall or post. Sylvester said he uses webbing for the repair of outdoor furniture to lash his water heater to the wall.

Tilting a high metal cabinet from its position next to him, he illustrated an earthquake menace in the grand jury room where he spoke.

The danger is not that the courthouse will collapse, he said. But the cabinet could crush someone.

—Robert Salton

124

## SANTA BARBARA NEWS-PRESS

WEDNESDAY EVENING, JANUARY 31, 1979

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PAGE B-1

See page 55.

PAGE 2

CALENDAR

SUNDAY, JANUARY 14, 1979

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