June 7, 1975  Fortuna Earthquake
J. F. Meehan
Structural Safety Section
Office of Architecture and Construction
State of California

The 5.2 Richter Magnitude earthquake occurred at 01:46:19.7 local time, June 7, 1975, with the UC Berkeley reported epicenter at 40°26.5'N, 124°07.9'W and a depth of 9 kilometers. This epicenter is approximately 2 1/2 miles southwest of Scotia, 4 1/2 miles south-southwest of Rio Dell and about 11 miles due south of Fortuna in Humboldt County, Northwestern California.

The radio news at 5:30 a.m., June 7, 1975, in Sacramento reported every pane of glass was broken in downtown Fortuna and the grocery store aisles were littered with the contents from the shelves.

Telephone calls were made the morning of Saturday, June 7, 1975, to various possible sources of specific information. The Warning Officer at the Office of Emergency Services in Sacramento read a news wire report filed by the Humboldt County Sheriff's Office at 6:12 a.m. It was basically the same as the radio report. A call to the Humboldt County Sheriff provided essentially the same information. No damage was reported in Eureka but many people felt the shock.

No damage was reported to the Scotia School by the local Deputy Sheriff.

The Fortuna Elementary School principal reported that there was no damage at his school and had not heard of any other school damage. He called back several days later and reported some cracks in the paint at the corners of the building. The maintenance man at the Redwood Memorial Hospital in Fortuna reported several jars fell from shelves in the kitchen and that several bars in the traction room fell from their supports. There are no hospitals in Rio Dell.

An officer in the Rio Dell Police Department reported that there was some plaster on the floor of the gymnasium at the "old school". He saw this in an early morning tour of the town and the phone call prompted the officer to take another look at the school and call back about 1:00 p.m.

The officer called back and reconfirmed the ceiling plaster on the multi-purpose room floor, reported broken glass in several buildings to the rear of the school and some "thread line" cracks in the building surface.

At this point the decision to visit the area was made to observe the damage before it is cleaned up. I departed Sacramento at 3:00 p.m. Saturday.
Rio Dell (population about 1000)

Rio Dell Elementary

I arrived in Rio Dell Sunday morning June 8. The above-mentioned officer was on duty and showed me the damage he previously reported by phone. This is a post Field Act School plant. The multi-purpose room plaster ceiling had several spots of rain water damage and the earthquake dropped a few small pieces of plaster from around the previous holes in the outer layer of plaster. Plaster also fell from a hole previously punched in the wall. A previously cracked pane of glass fell to the multi-purpose room floor. Three athletic trophies fell from the top of a 6 foot high wood cabinet. Similar trophies in the lower shelves remained in position. Several file top drawers opened about 6 inches. Cabinets in several rooms spilled some of their contents to the floor. Concentric ring light fixtures were in the classrooms and they were intact. The previously mentioned cracked windows at the rear of the building were actually in a commercial building on the adjacent property. The school principal advised that those windows had been cracked prior to the earthquake. The "thread line" cracks reported by the patrolman did not appear to be significant.

Rio Dell Primary

The Rio Dell Primary School located adjacent to the elementary site had no damage except a few small chairs in the kindergarten may have toppled during the earthquake. This wood frame building contained many large 4' wide and 6' high undamaged plate glass panes.

Earth Slide

An earth slide in a steep side-hill cut covered about 2 or 3 hundred yards of railroad track directly across the Eel River opposite Rio Dell. The truck was displaced laterally and buried. Several dozers were working on the slide to remove the debris from the track bed. (See attached photo)

Fire Department

The fire department reported that they removed 36 cracked and damaged chimneys and more were scheduled for inspection.

Water Department

No damage was reported to a large steel water tank on the hillside. They reported several well pumps had difficulty getting started.

Fortuna (population about 4200)

Super Market Building

This building is of recent construction, probably not over 3 or 4 years old. There was a considerable amount of T-bar ceiling damage
around perimeter and along strips on the column lines. Many fluorescent light tubes fell to the floor. Grocery stock was thrown to the floor from shelves. Several shelves failed. The building is of wood roof framing supported on square steel tube columns. At the rear of the store the concrete wall is within about 4 feet of the ceiling. The top of the wall was spalled adjacent to each square steel tube column indicating some "working" at this point. It could not be determined if the steel tube columns were anchored to the concrete tilt-up wall.

Several larger panes of glass were broken and replaced with plywood and one pane was in position but broken at the corner.

Fortuna High School

A considerable amount of T-bar ceiling damage occurred in the recently constructed Communicative Arts Building. This building is of hexagon shape with a library in the center and classrooms opposite each side. The ceiling in the library is a combination concealed splined T-bar construction using 12" x 12" tile. A large piece of the ceiling, about 6' x 8', fell to the floor directly over the exit next to the checkout desk. A triangular piece of ceiling about 4' x 6' fell to the floor and on top of the carrels at the rear of the room. At both of these locations tile, splines, T-bars and insulation fell to the floor. Tile fell from each side of the hexagon shape room except along the east and west sides where the tile were intact. Several individual tile fell from the middle portion of the ceiling. A few books fell from the shelves. A glass shelf in a cabinet supporting a display failed. This was a piece of 12" wide plate glass spanning about 3'. No light fixtures fell. No damage occurred in any of the adjacent classrooms except a few ceiling light panels were displaced. The approved drawings required 45° ceiling bracing wires each way for each 96 square feet and vertical hanger wires at 4' on centers. At least one set of the diagonal wire bracing was installed which was visible beside one of the failed openings.

In the rehabilitated auditorium, several 4' x 4' pieces of ceiling tile supported by T-bars fell to the top of the seats. One light fixture was hanging at an angle and another partially opened and hanging at an angle.

In the Gymnasium constructed in the 1950's, vertical rods, supporting the steel truss lower chord X-bracing at two locations, failed at the connection to the roof. The top connection was a steel casting, with an eye and the eye failed. One pair of angle X-bracing bent upward at least a foot because the rod was bent such that the tip of the rod was about a foot below the ceiling sheathing.

The ceiling sheathing around the end of the hanger rod was scratched considerably indicating several vertical cycles of motion.

The lower chord angle X bracing was bowed out of shape in several other locations and the concrete columns were spalled a bit when the bracing penetrated the concrete columns.

(See attached photos)
Bank Building

T-bar ceiling damage around perimeter.

Auto Show Room

It was reported that a newly installed T-bar ceiling in an automobile show room was completely damaged.

General - Fortuna

Plate glass window damage was in about 20% of the store fronts. There was some chimney damage in Fortuna but considerably less than Rio Dell. The proprietor of a hardware store reported the cloth sacks containing 25 pounds of lead shot each were stacked on the floor about 3' high prior to the earthquake. The sacks were found to have been spread almost evenly on the floor after the shock.

The manager at the Fortuna Pacific Gas and Electric Office reported that there was no gas leakage in their distribution system, however, some gas leaks did develop in the homes where the appliances shifted. Some outages occurred when the electric lines swung together. The manager also reported a 100 foot long crack about 1/4" wide in the sidewalk adjacent to their office.

A crack in the pavement was also reported in the King Salmon trailer court north of Fortuna.

The early press reported that the epicenter was 30 miles southwest of Eureka. Therefore, visits were made to Ferndale and Petrolia.

Ferndale

No damage occurred in the Ferndale High School or in the elementary school.

Petrolia

No damage occurred to the school building here. PG & E field personnel were not aware of any ground ruptures or slides in their area south of Petrolia.

General

Although the earthquake was relatively small and, judging from lack of items toppling from table tops and shelves, the shaking appeared to be rather minimal; however, the damage to suspended lay-in tile ceilings and integral light fixtures was quite severe.

JFM/sem
7/3/75
SUPPLEMENTAL INFORMATION

College of the Redwoods

On July 7, 1975, a visit was made to the College of the Redwoods at Loleta (between Fortuna and Eureka). Several 8' x 8' light fixtures in the library building fell. Each corner of the fixture was hung with a two to three foot long chain and the "S" shaped end link opened thus allowing the fixture to fall.

Two plate glass panes in the library center court cracked at the top corners. These panes were 45° mitered and cemented together at the corners. The cracked panes were located diagonally opposite the court.

The base ceramic tile in the men's gym dressing room were spalled off on the three columns and along a wall.

Light cracks developed in the fireplace stone veneer in the dormitory lounge. Also some additional cracking developed in the entry slab and in the wall junctions in the dormitory entrance.
Fortuna High School Library at main exit
Fortuna High School Library ceiling over main exit

Fortuna High School Library ceiling fell on the carrels
Fortuna High School Auditorium

Rio Dell landslide over Western Pacific Tracks