

field Scientists propose new earthquake alert system

By Andrew Bridges
THE ASSOCIATED PRESS

LOS ANGELES — Scientists working in Southern California have proposed a way of interpreting feeble tremors that herald a large earthquake, a step that could help in providing advance warning.

The system theoretically could give anywhere from seconds to tens of seconds of advance notice — enough time to send school children diving below their desks or to cut the flow of gas through pipelines vulnerable to rupture, scientists said. Details appear Friday in the journal *Science*.

Similar systems already are used in California and Japan on a smaller scale. The latest system would not predict or forecast earthquakes, but rather interpret the staggered way in which a quake's energy travels to the surface.

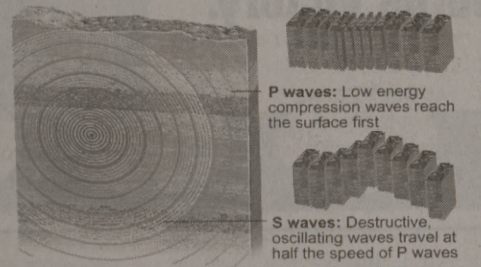
The first indication at the surface that a large earthquake has occurred is typically the jolt caused by the arrival of a fast-moving but low-energy wave called the primary or P wave.

It is followed by the more energetic but slower-moving S or shear wave that causes far more violent shaking.

Richard Allen of the University of Wisconsin-Madison and Hiroo Kanamori of the California Institute of Technology developed a way to determine the location, origin, time and — most importantly — magnitude of an earthquake from as little as four seconds of measurements of the P wave. The system would rely on seismic instruments already deployed across the greater Los Angeles region.

Tapping into an earthquake's advance notice

Scientists are developing an early warning system that could provide as much as 40 seconds of notice before an earthquake strikes. The system detects a quake's primary, or P, waves, which precede the more destructive shear, or S, waves.



SOURCES: ESRI, University of Wisconsin-Madison; Science

"If we can detect this P wave and use the information contained in it to estimate the hazard associated with an earthquake, then there is the potential to issue a warning before any significant ground motion reaches the surface," Allen said.

The amount of forewarning would depend on the distance of the sensors from an earthquake's epicenter.

If directly above the epicenter, there would be no time for a warning, since the S wave would arrive almost immediately after the P wave. At 37 miles from the epicenter, the system could give a magnitude estimate 16 seconds before the arrival of the S wave and the strong ground motion that accompanies it, Allen said.

NEWS IN BRIEF

Alleged hero arrested, among arson suspects

ABILENE, Texas (AP) — Arson was the cause of an apartment fire in which a man was hailed as a hero for rescuing some occupants, then was arrested on a probation violation after he appeared on TV. Kris Leija has now been named as a suspect in the arson, investigators said.

Abilene Assistant Fire Marshal Randy Doan said a small amount

of hydrocarbon accelerant was found in a trailer where the apartment fire appeared to have started.

The identity of the hydrocarbon will be determined by analysis in the state fire marshal's lab. Common hydrocarbons are gasoline, natural gas and a variety of oils, the Abilene Reporter-News reported.

After Leija's bond hearing Wednesday, his attorney, Sam Moore, said no one — including

his client — had been ruled out as a possible suspect.

Leija, 22, said he was passing the apartment complex on his bicycle early Sunday when he noticed the blaze. He braved the flames three times, rescuing four children, including one in a baby seat, and ignored paramedics who warned him of danger.

Video footage showed Leija collapsing on his hands and knees from apparent exhaustion afterward.

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