PACIFIC OCEAN

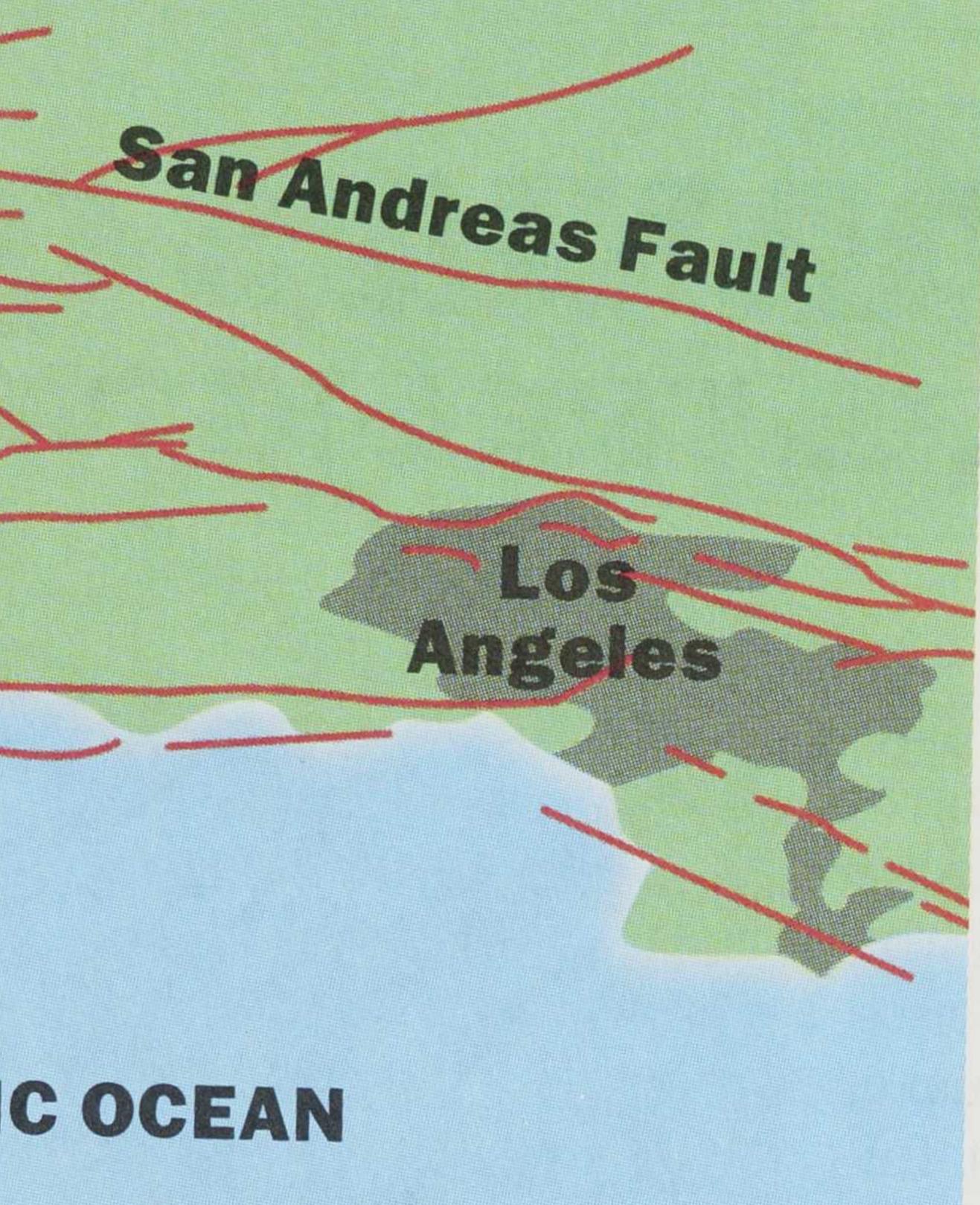
past each other. Then they may break free with quake, they hoped to learn how to predict explosive force.

the so-called Big One?

San Francisco

After the 1906 quake, the northern end of Landers Quake the San Andreas Fault remained relatively Thus, on June 28, 1992, no one expected a quiet. Then, at 5:04 p.m. on October 17, 1989, magnitude 7.5 quake to strike in a sparsely an estimated 50 million Americans were glued settled region near Landers, in southern Calito their TVs to watch baseball's World Series fornia's Mojave Desert. Of this quake Time from San Francisco. Suddenly, the cameras magazine said: "In a few fearsome seconds, it started to bounce. Some 60 miles south of San rerouted roads, realigned parking lots and re-Francisco the two sides of the San Andreas configured the landscape in countless ca-Fault had shot past each other, causing a pricious ways, miraculously taking only one quake that killed 63 people, smashed freelife." For a quake of this magnitude, the damways, crushed automobiles, and left thousands homeless. But that temblor was far less powage was slight. erful than the predicted magnitude 8 for the So this too was not the Big One. In fact, it was not even on the San Andreas Fault but on anticipated Big One.* one of the smaller faults that surround it.

* "Magnitude" refers to the moment magnitude scale. This scale is based directly on the slip of the rock along a fault. The Richter scale measures the amplitude of seismic waves and is therefore an indirect measurement of the severity of an earthquake. The two scales usually show similar results for most earthquakes, though the moment magnitude scale is more precise.



earthquakes and to be able to give a warning The San Andreas Fault passes 33 miles perhaps hours or even days before a quake northeast of Los Angeles and passes into the strikes. This study cost \$15 million, but the Pacific Ocean near San Francisco. Is it any quake never occurred. As William Ellsworth wonder that Californians are concerned about of the U.S. Geological Survey once said, "the interpretation of seismic patterns is an inexact science."

It is possible, however, that the Landers quake, along with a smaller one at nearby Big Bear, may have awakened nearby sections of the San Andreas. Scientists have said the stuck plates along the southernmost section of the

Awake! July 22, 1994

Thrust fault lines in the Los Angeles basin

Back in the spring of 1985, the U.S. Geological Survey predicted that a quake of magnitude 6 would occur within five years of 1988 near the small town of Parkfield, about halfway between Los Angeles and San Francisco. By studying ground movement in advance of this anticipated

The destruction would have been far greater San Andreas have a 40 percent chance of snaphad it not been for strict local building codes. ping loose sometime within the next 30 years. Each earthquake teaches lessons that may That might trigger the long-feared Big One, at magnitude 8 some five times as powerful as make it easier next time. Some freeway overpasses that had been strengthened after previthat at Landers. ous quakes survived this one; others did not. Los Angeles But the real test will come if a greater earth-Then, on January 17 of this year, Los Anquake—a really big one—strikes near a major

geles was jolted awake at 4:31 a.m. Some city. Los Angeles again, maybe? 11 miles beneath the surface of heavily popu-A Second Big One to Come? lated San Fernando Valley in Los Angeles, a 'Oh, No! Not another one! One's too patch of rock is thought to have slipped some much?' Nevertheless, another big one is what 18 feet along a deeply buried fault. This ten-

second jolt of magnitude 6.6 took at least 57 lives. Tragically, 16 people died in one collapsing apartment building. A man who survived was trapped for eight hours under 20 tons of concrete in a fallen parking structure. A freeway collapse severed the city's main route to the north. Churches, schools, stores, and a major hospital closed. As is frequently the case, lower-income families suffered the most because of living in older buildings that had been constructed before modern earthquake codes were established.

This quake demonstrated the problems that may develop with even smaller local faults directly under a major city. As far as people are concerned, any earthquake is the Big One to them if they are sleeping on top of it!

> Flames erupting from a gas line snapped by the 1994 quake



Tina Gerson/Los Angeles Daily News