

A CONTRIBUTION OF THE NATIONAL CENTER FOR EARTHQUAKE RESEARCH
U.S. GEOLOGICAL SURVEY

EXPLANATION

Lineation formed by surface fault movements, in part accompanying the 1906 earthquake, dashed where location or time of origin is uncertain, dotted where conclusively shown to be evidence of movement.

Lineation formed by surface fault movements of unknown age; believed to be pre-1906 but recent enough so that erosion has not destroyed the evidence of movement. Squared where doubtful.

trench

Geologic or physiographic evidence of fault movement, as determined from 1906 aerial photographs.

damaged barn-1906
GKG p.69

Evidence of fault movement or geographic point reported by G. K. Gilbert in Lawson, A. C., et al., and others (1908).

NOTE

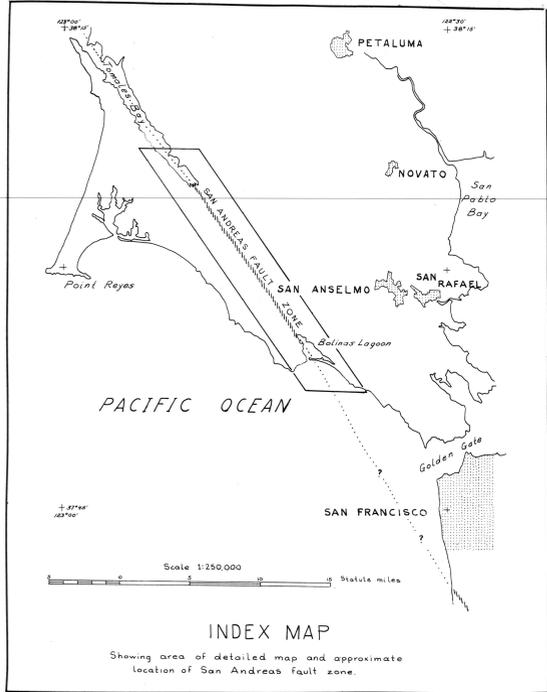
The lines shown on this map depict topographic lineations formed by aligned valleys, aligned ridges, sag depressions, offset or diverted drainages, and other topographic irregularities that are evidence of relatively recent fault movement at the land surface. Some of the lineations underwent movement during the 1906 San Francisco earthquake, but most of them are the result of repeated movements over thousands and perhaps millions of years. The lines are based on data obtained from 1:125,000 scale aerial photographs taken in 1906 and from observations made following the 1906 San Francisco earthquake (Lawson, Chas., and others, 1908). They are located as accurately as the historical records, the aerial photographic evidence, and map scale permit, but where very accurate location of the fault break is important, ground geological studies are essential.

Fault movement accompanying the 1906 earthquake was right-lateral; that is, it was in the sense shown by the arrows in the explanation and on the map. Horizontal displacements of 20 to 35 feet were reported from numerous localities, and a road near the south end of Tomales Bay was offset about 20 feet (Gilbert in Lawson, Chas. and others, 1907, p. 71). Although most of the reports of displacement describe horizontal movement only, at least one fault segment near Bolinas Lagoon also underwent some vertical motion, with the block southeast of the fault uplifted and the block northeast of it dropped relative to sea level (Gilbert in Lawson, Chas. and others, 1908, p. 81-87).

Historical records and geologic evidence show that active faults like the San Andreas move repeatedly along preexisting fracture surfaces, and usually in the same direction as previous movements. Indeed, the lineations shown on this map are the result of cumulative right-lateral fault movements over a long period of time. From time to time new faults may form and old ones may cease to move, but in general fault traces that have moved recently are apt to move again. This map therefore shows where future movement along faults is likely, but it does not rule out the possibility of movement on an entirely new fracture, nor does it eliminate rejuvenation of older, apparently dormant fault segments.

REFERENCES CITED

Lawson, A. C., et al., and others, 1908, The California earthquake of April 18, 1906—Report of the State Earthquake Investigation Commission: Carnegie Inst. Washington Pub. 37, 3 vols., 1 atlas.

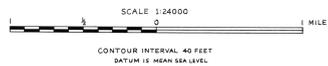


MOST CONSPICUOUS STRANDS OF THE
SAN ANDREAS AND RELATED FAULTS

SOUTHWESTERN MARIN COUNTY
CALIFORNIA

by
Robert D. Brown, Jr.

1967



This map is preliminary and has not been edited or reviewed for conformity with U.S. Geological Survey standards and nomenclature.

Base from U.S. Geological Survey 7.5' topographic series edition sheets: Drake Bay, 1953; Inverness, 1954; San Geronimo, 1954; Double Point, 1954; and Bolinas, 1954. Compiled, Menlo Park, Base Map Unit, 2-24-67.