

Quaternary Fault and Fold Database of the United States

As of January 12, 2017, the USGS maintains a limited number of metadata fields that characterize the Quaternary faults and folds of the United States. For the most up-to-date information, please refer to the [interactive fault map](#).

Ebert Tank fault zone (Class A) No. 967

Last Review Date: 1997-01-07

Compiled in cooperation with the Arizona Geological Survey

citation for this record: Pearthree, P.A., compiler, 1997, Fault number 967, Ebert Tank fault zone, in Quaternary fault and fold database of the United States: U.S. Geological Survey website, <https://earthquakes.usgs.gov/hazards/qfaults>, accessed 12/14/2020 03:13 PM.

Synopsis	Two short, northwest-trending normal faults form a shallow, narrow graben on lower Pleistocene volcanic rocks and Paleozoic bedrock near the northwestern margin of the Pliocene-Quaternary San Francisco volcanic field. Middle Pleistocene(?) alluvium probably is displaced about 1 m near the southern end of the fault zone, but the alluvial fault scarp is very gentle. Middle Quaternary faulting is implied, and late Quaternary faulting is possible. The graben floor is covered by Holocene alluvium, which is not faulted.
Name comments	Mapped by Menges and Pearthree (1983 #2073), who grouped this fault zone with others in the area as the Double Top fault set;

	<p>this particular fault zone was named and differentiated from other faults in the area by Pearthree and others (1996 #2153). The geology of the areas was mapped by Wolfe and others (1987 #2160).</p>
County(s) and State(s)	COCONINO COUNTY, ARIZONA
Physiographic province(s)	COLORADO PLATEAUS
Reliability of location	<p>Good Compiled at 1:250,000 scale.</p> <p><i>Comments:</i> Trace mapped at 1:50,000 scale, transferred to 1:250,000-scale topographic base map.</p>
Geologic setting	<p>This is one of several fault zones located near the northwestern margin of the Pliocene-Quaternary San Francisco volcanic field, on the erosion surface cut on Paleozoic rocks between the Colorado Plateaus margin and the Grand Canyon. The Ebert Tank faults displace lower Pleistocene volcanic rocks and middle Pleistocene(?) alluvium is displaced vertically about 1 m.</p>
Length (km)	3 km.
Average strike	N32°W
Sense of movement	<p>Normal</p> <p><i>Comments:</i> Predominantly normal movement is inferred from relations.</p>
Dip Direction	NE; SW
Paleoseismology studies	
Geomorphic expression	<p>Northwest-trending scarps formed on Quaternary volcanic rock define a gentle, fairly narrow, symmetric physiographic trough (graben). The southwest-margin scarp is much higher and steeper than the northeast-margin scarp. The bottom of the trough and several tributary valleys that enter the trough perpendicular to it are covered by late Quaternary alluvium, which is not faulted. However, a very gentle (4?), 2-m-high fault scarp is formed on middle Pleistocene(?) alluvium near the southern end of the fault. Both the bedrock and alluvial scarps are quite gentle, implying no</p>

	recent fault ruptures.
Age of faulted surficial deposits	Early Pleistocene, middle Pleistocene
Historic earthquake	
Most recent prehistoric deformation	middle and late Quaternary (<750 ka) <i>Comments:</i> A lower Pleistocene basalt flow and middle Pleistocene(?) alluvium are displaced, but there is no evidence of late Quaternary activity.
Recurrence interval	
Slip-rate category	Less than 0.2 mm/yr <i>Comments:</i> A low slip rate is inferred based on about 1 m of displacement of middle Pleistocene alluvium.
Date and Compiler(s)	1997 Philip A. Pearthree, Arizona Geological Survey
References	#2073 Menges, C.M., and Pearthree, P.A., 1983, Map of neotectonic (latest Pliocene-Quaternary) deformation in Arizona: Arizona Geological Survey Open-File Report 83-22, 48 p., scale 1:500,000. #2153 Pearthree, P.A., Vincent, K.R., Brazier, R., and Hendricks, D.M., 1996, Plio-Quaternary faulting and seismic hazard in the Flagstaff area, northern Arizona: Arizona Geological Survey Bulletin 200, 40 p., 2 pls. #2160 Wolfe, E.W., Ulrich, G.E., Holm, R.F., Moore, R.B., and Newhall, C.G., 1987, Geologic map of the central part of the San Francisco volcanic field, north-central Arizona: U.S. Geological Survey Miscellaneous Field Studies Map MF-1959, 86 p. pamphlet, 2 sheets, scale 1:50,000.

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