

# 1895 HALLOWEEN EARTHQUAKE

## MIDWEST SHAKEN A CENTURY AGO

A moderately strong earthquake struck the midwest at 5:07 AM (Central Standard Time) October 31, 1895. The quake, centered in Charleston Missouri, had an estimated magnitude of 6.8 on the Richter scale. It was felt as far away as Pittsburgh, New Orleans and Topeka. Although this quake was widely felt throughout the midcontinent, it caused serious damage only in the epicentral area. No substantial buildings collapsed, no one was killed, and there were few injuries.

**Chicago quivers** All 12,000 telephone switches on the main Chicago exchange lit simultaneously, creating chaos for the telephone company operators and announcing the arrival of the Central US's strongest earthquake since 1812. The quake rattled windows and awakened many in Chicago, but caused little damage.

**Felt in St. Louis** Farther south, in St Louis, the seismic waves were much stronger. Frightened people still in their night clothes, ran into the predawn darkness. Minor damage to old brick buildings was reported.

**Damage worst in Cairo and Charleston** The most serious damage occurred in Cairo at the far southern tip of Illinois and in Charleston, Missouri, 10 miles to the south. Hundreds of chimneys were broken, plate glass windows were shattered and china and glassware smashed. The front gable of the two storey brick library building in Cairo, only 11 years old, was parted from the roof. It was left standing, but had to be removed and replaced. Every building in Charleston's commercial block suffered some damage.

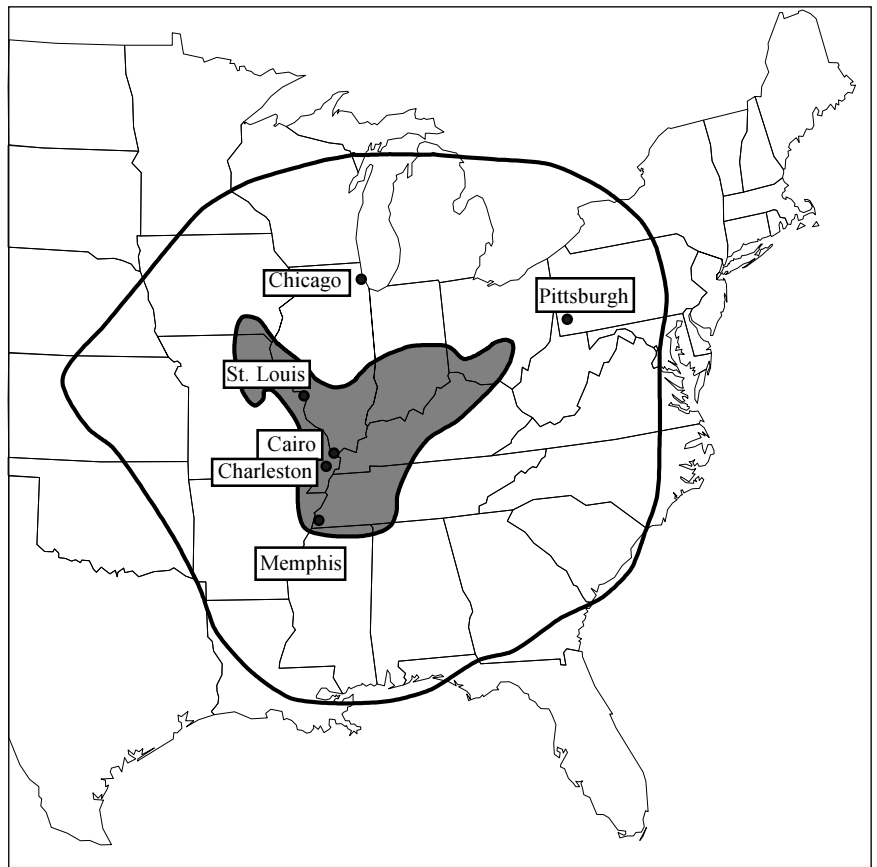
**Reports from other cities** Memphis, Tennessee, suffered no damage, except that two chimneys in the suburbs were shaken down.

In Pittsburgh, Pennsylvania, a slight earthquake shock was felt in the suburbs of Bellevue and McKeesport.

Every building in Indianapolis was shaken. Thousands of people were awakened.

The earthquake rattled windows in Kansas City, Missouri. Electric lights flickered at the Union depot.

Chimneys were damaged and plaster walls cracked in Grayville and Albion, Illinois; Princeton, Indiana; and Paducah, Kentucky.



Area affected by 1895 Halloween earthquake. Smaller shaded area indicates minor to major damage. Shaking was felt inside the larger area.

### 1995 and beyond

Scientists calculate that moderately strong earthquakes, such as the Halloween 1895 quake, occur in the Central US every 70 to 90 years. There has not been one of this magnitude since 1895. Arch Johnston, director of the Center for Earthquake Research and Information in Memphis calculated the likelihood of a magnitude 6.3 quake or greater occurring within the next 50 years to be between 86 % and 94 %.

### Continuing research

The written accounts of the 1895 earthquake help us to plan for future moderate quakes in the midwest. But because we have had no other severe earthquakes for a full century, several questions remain unanswered.

■ **Buildings** Many turn-of-the-century buildings still stand today. It is likely that these old buildings will not fare well in another moderately large earthquake. Of particular concern is the number of old, unreinforced masonry schools.

■ **Codes** Very few communities have building codes with seismic provisions. Many new buildings have not been adequately designed to withstand even moderate earthquakes. How will these buildings fare?

■ **Site conditions** The summer and fall of 1895 was noted for its dry conditions. Would the effects of a similar earthquake be stronger in a wet season, particularly in low lying areas along the major rivers where wet soft soils would amplify intensities even more?

Sources — USGS Open File Report 80-778; Chicago Tribune and St. Louis Post-Dispatch editions from November 1, 1895.

