The Cause of the Johnstown Flood

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Abstract:
The Johnstown flood occurred in 1889, when an earth and rock dam failed during a record rainfall in eastern Pennsylvania. The flood was one of the worst civil disasters in the U.S.; 2,200 people were killed and the town virtually destroyed. The history of the dam's design, rehabilitation and other changes to the structure are described, and their likely contribution to the failure outlined. An argument is put forth that contests the findings of investigations at the time, which found that the original designer of the dam had designed and built the dam without regard to freak storms, and that he did not provide for an adequate spillway. The designer had died by the time of the failure and could not defend himself. This author argues that the dam was constructed differently than the investigators at the time assumed. If the reconstruction of the dam had been built according to the original specifications, the disaster would not have occurred, says the author.

Subject Headings: Floods | Earthfill dams | Failure analysis | Hydraulic design | Dam failures | Rocks | Rainfall | History | Pennsylvania | United States

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The Johnstown Flood was one of America's most devastating natural disasters, killing more than 2,200 people and causing $17 million worth of damage, which in 1889 was quite a lot of money. The disaster, also known as the Great Flood of 1889, occurred on May 31 and was the result of a number of factors, not the least of which was a record rainfall. Johnstown was a town in Pennsylvania that had been founded in 1800 by Swiss immigrant Joseph Johns and had found prosperity by virtue of being on the Pennsylvania Main Line Canal and on the main route of the Pennsylvania Railroad. The Johnstown area was also home to the Cambria Iron Works, which employed many German and Welsh immigrants throughout the 19th Century.