



## Selfridge's Seismograph

by Willy Aspinall and Roger Musson

### H. GORDON SELFRIDGE

The British broadcaster *ITV* and the American television drama producer *Masterpiece* (WGBH Boston, formerly known as *Masterpiece Theatre*) recently created an eight-part television drama series about the life of the founder of the famous department store, Selfridge's, on Oxford Street in London, England. The series, entitled "*Mr. Selfridge*," was broadcast in weekly episodes from January 2013 in Britain, and on *PBS* in the United States beginning 31 March 2013, and was well received by the audiences in both countries.

For several years, Selfridge's store housed a Milne–Shaw seismograph with which the owner, the American, H. Gordon Selfridge, used to create media publicity whenever a major earthquake occurred worldwide. At least four photographs of the installation survive together with an image of an information display chart showing global earthquakes detected by the instrument between 1932 and 1934.

Selfridge was born in 1856 in Ripon, Wisconsin, and in 1879 joined Field, Leiter and Company (later Marshall Field & Company), the famous Chicago retailer. His career flourished, and he married Rose, daughter of the prominent Chicago Buckingham family, amassing a fortune that he then invested in his eponymous department store in London, which opened in March 1909.

Selfridge's success in London was due to inventive and innovative marketing. Breaking with British retailing tradition, merchandise was put on open display in which customers could, with well-mannered restraint and under the careful supervision of rather superior shop assistants, examine and handle the goods, a latitude unheard of in Britain in those days. Scandal was caused in polite circles when Selfridge placed his perfume counter—in other stores conventionally and more decorously sited in a secluded corner of a ladies floor—in a prominent position on the ground floor, directly opposite the main doors. It proved a profitable move.

Gordon Selfridge was said to have been interested in education and science, and attracted shoppers with educational and scientific exhibits: in 1909, after the first cross-Channel flight, Louis Blériot's monoplane was exhibited at Selfridge's, where it was seen by 12,000 people (Honeycombe, 1984). The first public demonstration of television, by John Logie Baird,

was made from the first floor of Selfridge's in April 1925. In a similar vein, Selfridge never missed an opportunity to take advantage of topical events or notable people, staging a replica of Sir Ernest Shackleton's unsuccessful South Pole expedition with a public lecture by the explorer, and hosting appearances by the ballerina Anna Pavlova and by Sherlock Holmes author, Sir Arthur Conan Doyle. The latter conducted a séance in the store, seemingly in a spirit of scientific enquiry.

### THE SEISMOGRAPH IN SELFRIDGE'S STORE

In May–June 1932, a Milne–Shaw seismograph was installed on an upper floor in Selfridge's store in London (Fig. 1). The exact stimulus for this initiative is obscure: the instrument was set to work a year after the 1931 magnitude 5.8  $M_w$  Dogger Bank earthquake off the east coast of England—the highest magnitude historical event to affect the British Isles—which was widely felt, stirring great public interest in earthquakes. It is likely Gordon Selfridge's scientific interest would have been piqued and with it possibly his instinct for publicity, but there is reason to suppose that the instrument's maker, J. J. Shaw, approached Selfridge, rather than vice versa.

Whatever the motivation, Shaw constructed the instrument as a so-called one-off modification of the standard Milne–Shaw so that it could be attached to one of the building's main stanchions, the idea being to minimize the effects of its (seismologically) adverse location. Selfridge's instrument was one of three set up by Shaw for public interest around this time; the second was installed in the Science Museum in London and whereas the location of the third is uncertain, it may have been at Down House, Kent, formerly the home of Charles Darwin (Lovell and Henni, 1999).

Shaw described the setting up of the instrument in a letter to J. P. Rothé at Strasbourg. The letter is dated 30 May 1930, and exists both as a handwritten French text and a typed English one with a British Association Seismological Committee letterhead (see Musson, 2013); both are preserved in the Archives départementales du Bas-Rhin, Strasbourg. Shaw wrote of the store, "It is a wonderfully rigid building. We cut away the masonry and suspended a 130 kg pendulum from one of the massive iron columns which rises from the basement to the top of the building 30 meters high. Although the seismograph is located on the 3rd floor, with many people walking around, the trace of the pointer is remarkably steady. Selfridge's idea was to let the public see how earthquakes are recorded. We quite expected the movement of the building to mask



▲ **Figure 1.** The Milne–Shaw seismograph installed on the third floor of Selfridge’s store in Oxford Street, London, with the boom anchored to one of the main structural elements of the building. The date of the photo is probably 1934 (also Fig. 4).

(obliterate) all but the largest seismograms, but all appear so steady that I think even small records will be clear.”

John Johnson Shaw (Fig. 2) was born in 1873 at Lower Gornal, Staffordshire, the son of a grocer and pawnbroker. In 1896, while holidaying on the Isle of Wight, Shaw met the eminent seismologist, Professor John Milne, who had retired there and set up a private seismograph of his own design, after holding academic posts in Tokyo and Cambridge. This meeting was the start of a lifelong partnership. The young Shaw started work on building a seismograph at home, using bicycle parts and other materials lying around the house, with a tin for the drum—driven by an old clock; the whole mechanism was mounted in a soap box. With this instrument, he soon became a regular source of information for the press, who were keen to have his comments whenever earthquakes occurred. However, Shaw’s position vis-à-vis the press suffered when Selfridge latched on to the benefits of the publicity and the store started to act as the principal British source of immediate information after major global seismic events. For a time, Selfridge’s store actually usurped Shaw’s role in this regard.



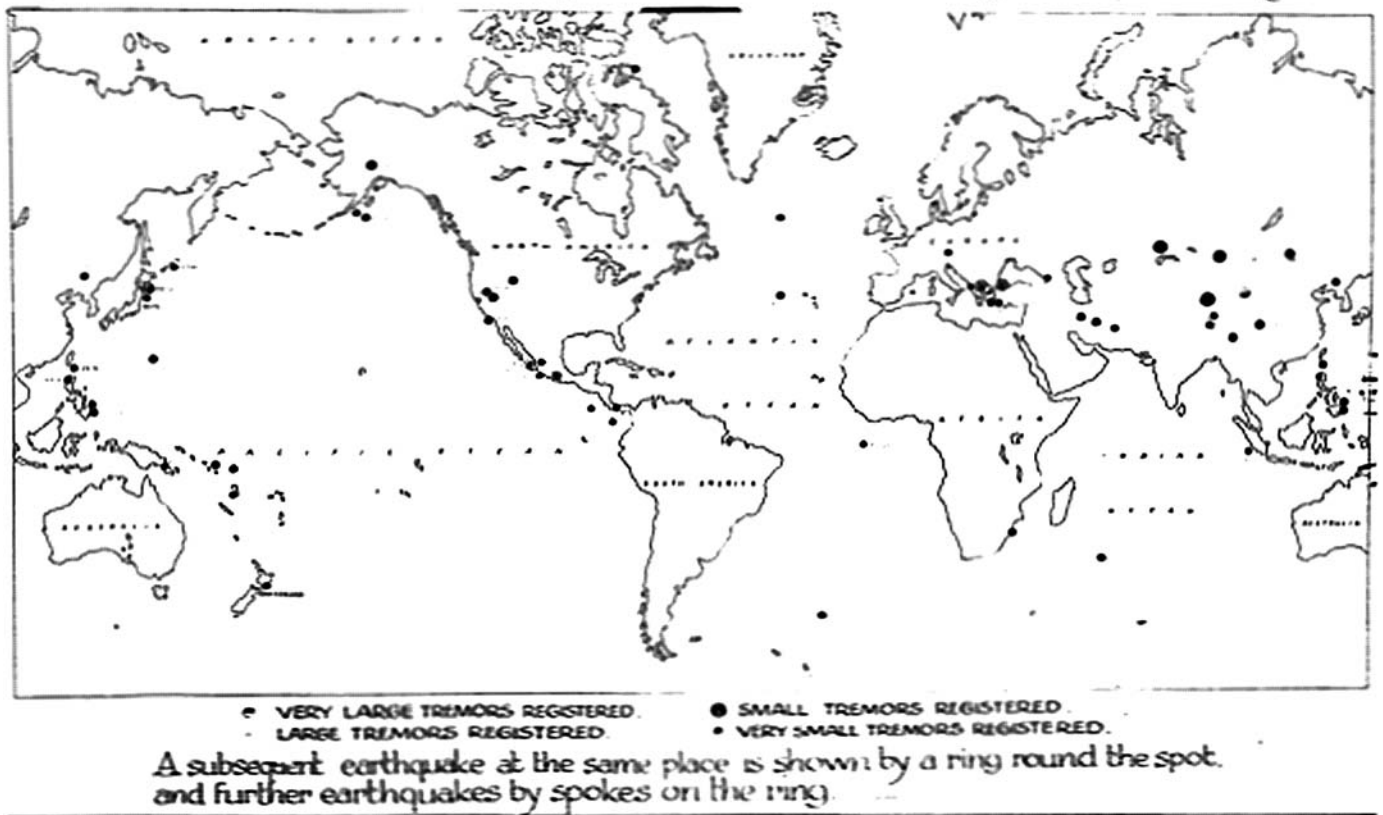
▲ **Figure 2.** J. J. Shaw in 1923 (photo from *The Times* newspaper).

By 1913, the Milne–Shaw seismograph had been developed, with Shaw introducing improved damping characteristics to Milne’s original design; he assembled the instruments at his home in West Bromwich. This type of instrument went on to become widely used around the world—partly stimulated by demand from commercial telegraph companies who needed to locate, as accurately as possible, underwater cable breaks caused by earthquakes. In addition to organizations, such as the United Kingdom Meteorological Office, and several private enthusiasts, established long-term users included Stonyhurst College in Lancashire, England—the overarching Jesuit Seismological Association had been formed in 1925, with headquarters in Saint Louis, Missouri (Udías and Stauder, 1996). Some Milne–Shaws were still in use into the 1960s at various observatories.

## EARTHQUAKE RECORDS

Selfridge’s seismograph apparently recorded at least 66 global earthquakes in the period from June 1932 through 1934, according to the epicenter markers on a chart displayed in the store (Fig. 3). These records included an  $M_w$  5.3 Belgium earthquake of 11 June 1938, which was also felt in London, as well as some notable earthquakes in the United States (see caption to Fig. 3). Another view of the instrument in operation is shown in Figure 4; a picture postcard of this image was printed and sold. At the outbreak of war in 1939, the seismograph was removed from its location near the store’s Post Office to another part of the store near the Information Bureau, but (presumably because it was no longer anchored) it did not record well (Musson, 2013). It was then removed

# LOCATION OF EARTHQUAKES REGISTERED SINCE JUNE 1932 BY THE SEISMOGRAPH AT SELFRIDGE'S



▲ **Figure 3.** Display chart of earthquakes registered on the Selfridge’s seismograph from June 1932. The date of the map is unknown, but the map includes some faint handwritten date annotations, including two 1933 earthquakes in America that were probably at Cook Inlet, Alaska (magnitude 6.9), and Long Beach, California (magnitude 6.4). It is not clear how “very large tremors,” etc. were defined; the terms may mean the size of the disturbance on the seismograph record, rather than the magnitude of the event at source (“very large tremors” are faintly marked on the image copy, the original probably displaying them as colored markers).

from display and stored in the office of the Publicity Manager’s secretary (S. Roskell, personal comm., 2012).

Sadly, only a few recordings survive from its days in the Oxford Street store. Some were published in facsimile in newspapers and magazines. One surviving original seismogram is held by the British Geological Survey in Edinburgh. It appears that Selfridge’s maintained what was referred to as the “Bulletin Book,” and parts of seismograms of notable earthquakes were clipped out of the original record and pasted into this volume. The volume has not been traced, but may still exist in the Selfridge archives. These were held until recently by the History of Advertising Trust, Norwich, but have now been returned to Selfridge’s and are not currently accessible. In addition, a few records survive from the period when the instrument was running in Edinburgh, and are held by the Royal Museum of Scotland (Lovell and Henni, 1999).

Ultimately, it seems clear from a biography of the store’s founder that Gordon Selfridge’s interest in seismology was less than his desire for publicity in that, by means of earthquake announcements, he was able to obtain occasional but promi-

nent and gratis mentions in *The Times* and other prominent newspapers (Williams, 1956; p. 111 *et seq.*). That publicity was the chief purpose behind the seismograph in Selfridge’s store is underlined by Mr. Selfridge’s insistence that the instrument be positioned in a public place on the third floor, and not in the basement as preferred by the expert, Shaw.

## POSTSCRIPT

In 1947, the whole device was given to the Science Museum in South Kensington with inventory number 1947-121 (Lovell and Henni, 1999). Because the Science Museum already had a comparable instrument, in 1961 it was loaned to the Royal Museum of Scotland in Edinburgh. There, it was a working exhibit (although uncalibrated) until the late 1970s when it was deemed to constitute a health hazard due to the use of benzene (a carcinogen) in the daily smoking of the record paper. The instrument was donated permanently to the museum in 1985, but put in storage in 1990 following gallery



▲ **Figure 4.** Another view of the Selfridge’s store Milne–Shaw seismograph. The man in the lab coat could have been J. J. Shaw himself—the general appearance is similar (see Fig. 3). It is highly unlikely the person wearing a dress was a seismologist explaining the squiggles, much more probable that she was an employee or one of the young ladies Gordon Selfridge retained from time to time to go around his store evoking the “Spirit of Selfridge’s”. The photograph dates from 1934.

redevelopment (Lovell and Henni, 1999; *Daily Mail* 23 May 1995, 46 pp).

H. Gordon Selfridge died 8 May 1947 (aged 91) in Putney, London, and is buried, with his wife and mother, in St Mark’s Churchyard, Highcliffe, Dorset where, for a few years at the peak of his success he had been the tenant of Highcliffe Castle. Because of overwhelming public approval for the TV series

“*Mr. Selfridge*,” in Britain and in the United States, in April 2013 *ITV* announced it would produce ten additional episodes, to be aired in 2014. Thus far, Selfridge’s seismograph has not featured in any of the many dramas of H. Gordon Selfridge’s colorful life that have been portrayed in the TV series. ☒

## ACKNOWLEDGMENTS

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