

In the 1950's, a priest from Warwick (Qld) was inspired to discover cyclone related microseismic research on his home built instruments

By Col Lynam 23/01/2017

This is a story about Inspiration and how it comes about.

During my attempts at curating and revitalising the University of Queensland Seismograph Stations' (UQSS) collection, I came across 1956 correspondence and 2 seismograms from the late Father Joe McKey from St Mary's Church in Warwick, Queensland. One of these seismograms appears below, and shows how well the 1956 Magnitude 7.1 BIAK (Indonesia) earthquake was captured on Fr. McKey's home built "Milne Shaw" seismograph. The other phenomena to note is the enlarged microseismic background noise at the top of the seismogram, for which his research is recognised. This was a "Tropical low moving SE from inland NSW, strong high in Tasman Sea, strong NE-E gradient. Complex lows formed near coast".

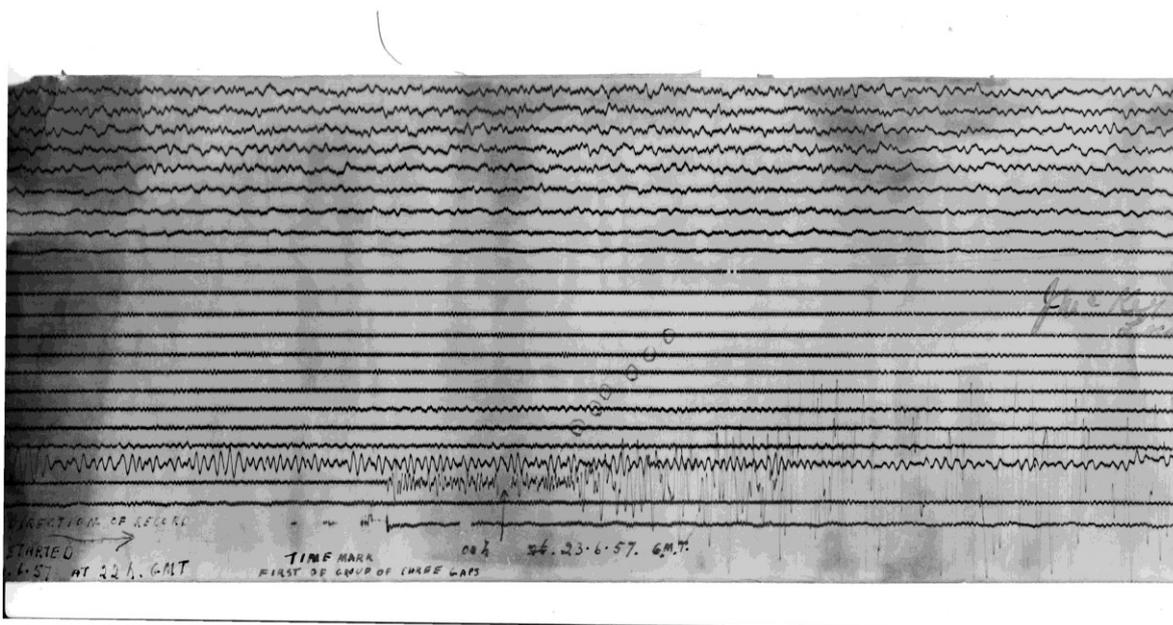


Figure 1. 1957 seismogram from E-W "Milne Shaw" model built by Fr. Joe McKey

M 7.1 - Biak region, Indonesia

1957-06-22 23:50:35 UTC 1.723°S 136.592°E 59.1 km depth

What is noteworthy about this Roman Catholic priest is his inspired search for mechanical and scientific knowledge. In spite of a long term illness (possibly T.B.) he qualified as a pilot, gained a Diploma of Engineering by correspondence (Sydney), **purchased a lathe and then made 5 seismographs**. He was a member of the Queensland Astronomical Society (1940). The British astronomical Association (1951) and American Society of Seismologists gave him membership in "recognition of his valuable work in microseismic research dealing with the recording of long distance cyclones on seismographs." (Ansell, 1983)

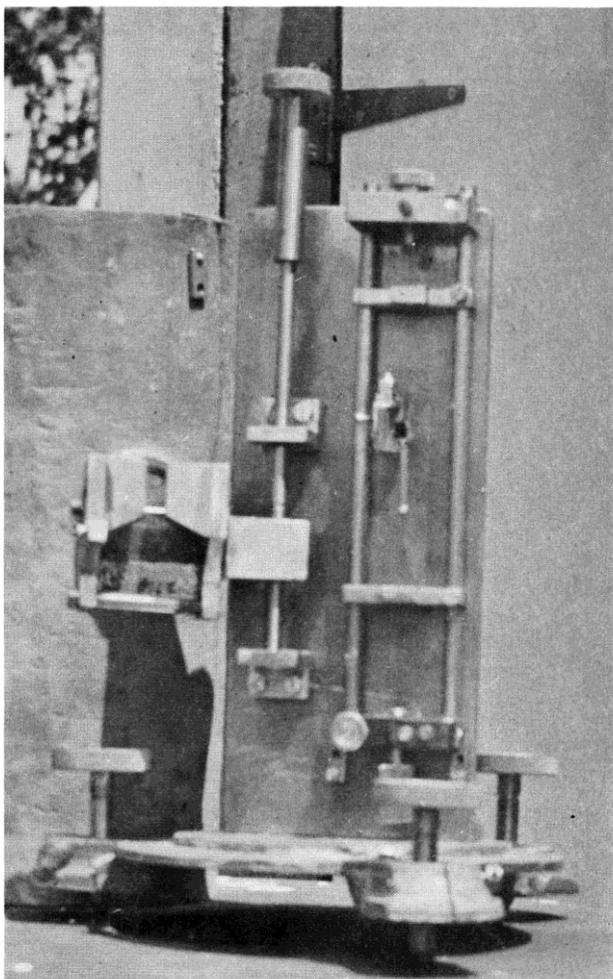


Figure 2.
Wood-Anderson Seismometer by Fr. J. McKey.

In L.J. Ansell's biography of Fr. Joe McKey there is a description of the seismograph observatory that he had built:

The building of the seismograph and its accurate timing took years of patient experimentation. It is housed in a home-made cement vault In Father McKey's backyard in Locke Street, a foot below bedrock level.

Today he has 2 complete sets of instruments in two separate vaults. Each would cost approximately a thousand pounds if obtained from an instrument firm.

To the layman, his seismographs look mysterious and rather crude contraptions, built of preserves tins, rough bits of timber, Masonite and brass sheets. Each instrument is resting on a home-made rock block, separated from the concrete floor by a bitumen layer.

But under the crude looking covering is a very sensitive instrument – in fact so sensitive that a single cigarette paper dropped on it deflects its beam on the chart. The seismograph is actually a pendulum arm, hinged on a jewel base and brought back to its normal position after each deviation by an oil damping system.(extract (p100) **Joseph McKey Priest-Scientist- Historian** by L.J. Ansell, cfc (ISBN0 9593145 3 9) published by The Diocese of Toowoomba (Aug 1983))

Significant in this story is the UQ Dept. of Geology Research Assistant, Mr Albert Crawfoot who, in 1953, "was able to give Fr McKey much of his design information for constructing a seismograph" (Ansell, p. 101). Mr Crawfoot also corresponded with another Queensland amateur seismologist (Mr Arthur Hill in Dimbulah, North Queensland) who also built a seismograph.

It is possible that both of these men were inspired by a small article in the Courier Mail (21 Mar 1952)

Tremor Cult May Spread. Mr Albert Crawfoot, scientific assistant at the Queensland University Seismograph Station believes a cult of earthquake reading may develop in Australia. Since his home-made 5 pound seismograph favourably recorded the Japanese earthquake early this month, Mr Crawfoot has had several inquiries from people in Melbourne and North to Cairns. He intends sending them directions and photographers. He can visualise tiny seismograph stations dotted about the

Commonwealth if 'earthquake reading' becomes a vogue. Mr Crawfoot said this would be beneficial scientifically to Australia.

This surely then is a sequence of Inspiration that Op-Ed columnist for the New York Times wrote about in 2016:

Inspiration does not happen to autonomous individuals. It is a beautiful contagion that passes through individuals. The word itself comes from the Latin *inspirare*, meaning "to breathe into." One inspiring achievement – say the space program – has a tendency to raise the sense of possibility in others – say, a little boy who dreams of being an astronomer. Then the one who is inspired performs his own feats and inspires others, and so on down the line.

<http://www.ny.times.com/2016/04/15/opinion/what-is-inspiration.html>



Figure 3. Wilson Lamerson seismometer - University of Qld model - also built by Fr. Joe McKey

Where did the inspiration come from? In the 1969 University of Queensland gazette (V69, p.11) we get a sense of the dedicated work, investment of time and effort and controversy that set the fuse.

In 1946 Owen Jones became the officer-in-charge of the seismological station that had been established through the efforts of the head of the Department of Geology and Mineralogy, the late Professor W.H. Bryan. Owen Jones greatly developed the station, and was responsible for the expansion into a two station network with the installation at Charters Towers. This came from his application for International Geophysical Year funds. As a result of his devoted work, the seismological records coming from the Department have long been recognised as consistently of high quality and are of world-wide significance.

Owen Jones and his collaborators were pioneers in the highly controversial use of microseisms for locating and keeping track of cyclones. He was eventually able to get government support for the installation in North Queensland of an array of seismographs for this purpose.

The manning of the station and the correlation of data became an increasing burden. Owen Jones (with one half time assistant only) did this work 365 days a year for many years. Moreover, microseismic work involved attendance and work at the University at one time or another at any hour of the day or night In addition to these activities, he was deeply involved in considerable work of highly classified nature. This began soon after the war and related to detection of nuclear blasts throughout the world.

In recent years the direction of the station has been taken over by Dr. J.P. Webb. However, it was the foresight of Owen Jones that made possible the foundation on which Professor Wilson has since been able to organise a sound course in Geophysics.

Where did the inspiration stop?

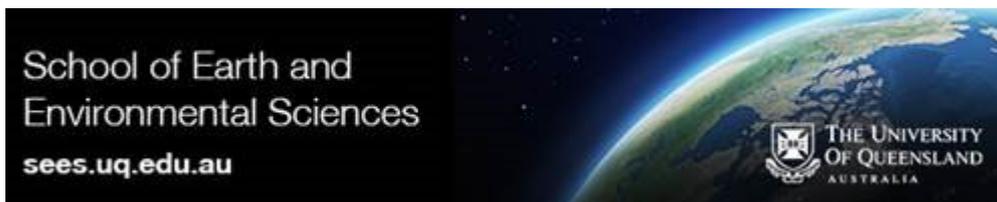
What sequence of events has led to the total community disinterest in seismology by governments and university academics? When did the gyrations of plate boundaries and resultant massive tsunamis become so passé? Has the era of the 3D graphical display media overshadowed the sheer terror that tectonic movements will visit upon us? What other world do we think we are living in?

Colin Lynam

Honorary Seismologist | Earth and Environmental Sciences
The University of Queensland
Email: lynam@uq.edu.au | Ph: 07 33432917 | Fax: 07 3365 6899 | Ph (mob) 61438339221

Post: Level 2, Building 35 University of Queensland Brisbane Australia 4072

<http://www.sees.uq.edu.au/>



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