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Isidore Zietz

Isidore (Izzy) Zietz passed away in Reston, Virginia, on February 9th, one month shy of his 94th birthday (March, 1919 in the Bronx, NYC). He will be remembered for his seminal contributions to and advocacy of the airborne magnetic method, performed during a career that spanned more than sixty-five years. Izzy entered the geophysical scene a few years after the first aeromagnetic survey was flown for geologic purposes; he leaves us when airborne magnetic studies are routinely conducted from airplanes, helicopters, ultralights, UAVs, ships, and satellites. Perhaps his greatest contribution was his passionate advocacy of the acquisition, utilization, and interpretation of magnetic surveys in the United States throughout the last half of the 20th century.

Izzy grew up in Brooklyn in an extremely poor area, and in his teen-aged years supported himself by delivering fresh eggs to households. He was about 11 years old at the time of the Crash of 1929, and there were few jobs available to him or his friends during the ensuing years. Izzy served in WWII as a staff sergeant in the 30th Engineering Battalion/Topo, in Hawaii from 1944-1946. On most matters Izzy was prompt. But it took him until his 70's, with encouragement from his wife Ruthe, to have his bar mitzvah at a Reformed Congregation in Virginia.

It is difficult to encapsulate the scope of Izzy's activities; so here we present what we feel are a few of his landmarks. Izzy began his professional career on theoretical studies of magnetics. Over a period of two years (1948-1949), he was co-author with Roland G. Henderson on three seminal *Geophysics* papers: 1948-*Analysis of total magnetic-intensity anomalies produced by point and line sources*, 1949-*Upward continuation of anomalies in total magnetic intensity fields*; and 1949-*The computation of second vertical derivatives of geomagnetic fields*, the last two in the same issue of *Geophysics*. The 1948 paper was expanded in the 1967 *SEG Mining Geophysics*, volume II. He was co-author with Henderson, Victor Vacquier and Nelson Steenland in the classic *GSA Memoir 47, Interpretation of aeromagnetic maps*.

Izzy was soon making contributions on the applied side. His use of magnetic anomaly data to interpret the Precambrian basement surface of Indiana (*USGS Professional Paper 316-B*, 1958) was a pioneering effort, using the simple slope method for depth to source determination which he and Henderson developed in their 1948 paper. He was the first US investigator to interpret satellite altitude magnetic anomalies, *Magnetic anomalies from satellite magnetometers*, with Gordon Andreasen and Joseph Cain. His aeromagnetic interpretations continued even after his retirement from the USGS in 1978. In that year he joined Phoenix Corporation of Falls Church, VA, and participated in the interpretation of aeromagnetic surveys of the Kingdom of Jordan, the cover rock sequence in Saudi Arabia, and the island of Jamaica. Those interpretations emphasized the importance of magnetic surveys for resource exploration, and the Saudi Arabian

interpretation identified several basins that were soon determined to be hydrocarbon-rich. After the demise of Phoenix Corporation, Izzy continued to interpret and monitor aeromagnetic surveys for resource exploration, including ones in southern Chile, NE Madagascar, and Libya. We suspect that the interpretation for which he will be most remembered is the discovery, with Elizabeth King, of the Alabama-New York lineament (*The New York-Alabama lineament: geophysical evidence for a major crustal break in the basement beneath the Appalachian basin, Geology*, 1978).

Izzy was tireless in his pursuit of the production of regional- and continental-scale magnetic compilations. He was a strong advocate for production of the magnetic anomaly map of the United States (*Geotimes, Proposed aeromagnetic map of the United States*, 1968). Izzy worked with Jack Kirby, Dave Daniels and Steve Snyder, to patch together small- and large-scale surveys available at the time, culminating with publication of the *Composite Magnetic Anomaly Map of the United States*, GP954A, 1982, and featured in the *SEG* publication, *the Utility of Regional Gravity and Magnetic Anomaly Maps*, 1985, edited by W. J. Hinze. He was a SEG/Geophysics Associate Editor for magnetics and gravity (1966-1967 and 1981-1983). Over the years he taught at American, Catholic, George Washington and George Mason Universities.

One of us (ptt) visited him last June and, despite using a walker to get around and a driver to take him to his USGS office, he was very excited about his latest and very impressive compilation of aeromagnetic data from the eastern United States. He would soon host a visitor from the Ohio State Geological Survey to discuss this latest compilation and was delighted about the possibilities. It is for this passion of the airborne magnetic method that Izzy Zietz will be most remembered.

Contributions from Lewis Zietz (Izzie's son), Andrew Griscom, Peter Johnson and George Vranas are gratefully acknowledged.

Patrick T. Taylor, Michael E Purucker and Richard J. Blakely

