History of the Mapping and Geological & Geophysical Exploration of the Aleutians —
A Progress Report

John Fournelle
Dept. of Geology & Geophysics
University of Wisconsin-Madison

Photo by Ray Platt
How this got started

- Personal interest: Shishaldin, Unimak, 1980s
- Old clipping & Bill Page’s letter

- Oral history of Gene Cameron (1998)
Goals

• Acquire oral histories of participants of the USGS project in the Aleutians, 1946-54 (scientific studies published 1955-1971 in USGS Bulletin 1028A-U)

• Acquire related papers, correspondence, diaries and photographs (from families, archives)

• The circle widens: Pre-WWII work — Coast & Geodetic Survey, Fitzgerald and Navy, Jaggar and HVO,

• ... some interesting characters and questions
PREFACE

In October 1945 the War Department (now Department of the Army) requested the Geological Survey to undertake a program of volcano investigations in the Aleutian Islands–Alaska Peninsula area. The first field studies, under general direction of G. D. Robinson, were begun as soon as weather permitted in the spring of 1946. The results of the first year's field, laboratory, and library work were assembled as two administrative reports. Part of the data was published in 1950 in Geological Survey Bulletin 974–B, Volcanic activity in the Aleutian arc, by Robert R. Coats. The remainder of the data has been revised for publication in Bulletin 1028.

The geologic and geophysical investigations covered by this report were reconnaissance. The factual information presented is believed to be accurate, but many of the tentative interpretations and conclusions will be modified as the investigations continue and knowledge grows.

The investigations of 1946 were supported almost entirely by the Military Intelligence Division of the Office, Chief of Engineers, U. S. Army. The Geological Survey is indebted to the Office, Chief of Engineers, for its early recognition of the value of geologic studies in the Aleutian region, which made this report possible, and for its continuing support.
1945: Umnak Island - Okmok erupts next to strategic airbase at Ft. Glenn

(from “Exploring Aleutian Volcanoes” by Robinson, National Geographic, October 1946)
“Volcano General” Emmons

- 1912, Baptism under fire: young 2nd Lt. Delos C. Emmons on ship near Kodiak, showered by hot Katmai ash
- 1935, Hawaiian Dept Air Officer, involved with bombing of Mauna Loa lava threatening Hilo
- 1944-46, Commanding General of Alaskan Department; Okmok crisis
- 1946, posted to War Department, Washington, D.C. Supported military funding of Aleutian volcano study
1946: Field work and Race to Print

- Summer 1946: 4 field teams
- 6 reports (3 by Coats) plus introduction assembled in record time
- Aim: Secure Army funding for following year (and leverage) … and it was successful
1949: M.S. Eider

- Robinson acquired from US F&WS as “surplus”
- Skippered by Alaskan Carl Vevelstäd, with engineer Charlie Best
- 1949-54: supported 27 geologists & field assistants on 22 islands, from Attu to Unalaska
- “Bureaucratic screams of anguish” from USGS HQ
Summers in the Aleutians

• Howard Powers (right) and George Fraser provided leadership in the field
• Many college students got hooked on field geology (and some chose lab studies instead)

George Snyder, Little Sitkin, 1951. Photo by Dick Robie.

Powers Family Photo
Geophysics in the Aleutians

- In 1999 at the National Archives outside DC, I came across 4 boxes of documents from a USGS geophysical observatory at Adak.
- The existence of Aleutian geophysical work in the period 1947-54 is undocumented in the published literature.
- Another important facet and a new set of individuals to consider—particularly Austin Emory Jones.
Adak Geophysical Observatory

• 1947, Joel Swartz of the USGS sent his college-age son Bill to Adak to set up seismographs
• A difficult job; some GI assistance
• 1949, Austin Jones was hired. He moved his family and stayed through the end of the USGS Aleutian Volcano Project, in the fall of 1954

Finger Bay Seismic Hut, Adak, September 1948. Photo by Joel Swartz (Swartz family)
Austin E. Jones (1898-1985)

- 1915, at eruption of Mt. Lassen
- A.B. Physics & Eng UC-Berkeley 1924; seismo. ass’t to Byerly 2 years; magnetic studies of Lassen lavas in 1927-28 (with R.H. Finch)
- Summer 1929 hired by Jaggar (HVO), sent to Kodiak & Dutch Harbor to set up seismic stations
- 1931-35, “first modern seismologist” at HVO (Tom Wright, pers. comm.)
- M.S. at UH (seismo study of Kilauea eruption 1931-32). Pondered questions of oceanic crust layering (not popular) and need for coring ocean floor.
- Unpublished study of Kilauea ash
- ? Family commitments and the Depression axed his quest for Ph.D. studies at Harvard (with R. Daly)
Austin Jones — 1940s

- 1939: “The amateur’s seismograph” in *Scientific American*.
- Depression & war years: oil co. work in TX; C&GS seismo work in Boulder City, NV
- 1945 to Paricutin for magnetic studies with C&GS (where are the records?)
- 1947 tsunami (Unimak): wrote Transactions of AGU, suggesting chain of scientific observatories around Pacific (Jaggar first suggested this in 1928)
- 1948, Jones repeated suggestion, to survey from Joint Research & Development Board. Robinson had proposed in 1947 to JRDB a military-backed study of Aleutian volcanoes that included geophysical studies
Austin Jones — 1950s, Aleutians

- In 1949, Jones was hired by USGS to operate Adak geophysical station; remained to 1954.
- He wrote several papers, never published, including one on the energy balance of Aleutian volcanoes.
- He mentioned “documents taken from my desk in the USGS Baltimore Geophysics office”. Cold war security? (his son thinks so)
- 1954-62, he did work for C&GS in Dutch Harbor (seismographs, tidal gauge); IGY
Seismicity and Aleutian Subduction … 1952 … 1962

Left: from Coats’ seminal 1962 paper “Magma type and crustal structure in the Aleutian arc” (in *The Crust of the Pacific Basin*, AGU Mono.)

Above: from unpublished manuscript by Austin Jones in National Archives, dated 1952

“Bob Coats knew Austin Jones and thought very highly of him” (Garniss Curtis, 2000)

Francis X. Popper. Four-legged transport on Unimak, 1940. USC&GS photo. Skip Theberge. saved this and many others from the garbage can of history. On the NOAA web site, .
Summary

• 34 individuals interviewed
• 30 colleagues and family members contacted/interviewed
• 5 archives visited
• dozens of hours of tapes to index/transcribe

David Jones and his father’s diaries, photos and files. Spokane, 2001.
Preserve History... Now

- Oral histories: with training, almost anyone can do it
- Individuals’ records and documents; what happens to them?
- Agency files....some archived, some not, some indexed, some not ....
Tools

VHS Tape available from the Maine Folklife Museum (~$40). An excellent “how to” introduction to recording oral histories.

Background research on individual to be interviewed; outline & questions

Tape recorder and mike