# DIGITIZING GREY LITERATURE FROM THE ANTARCTIC BIBLIOGRAPHY COLLECTION

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### Our agenda today:

- History and Background
- Methodology
- Evaluation and Selection
- Results
- Conclusions



### **History and background**





### 1950: U.S. National Science Foundation (NSF) is established



1962: NSF's Office of Polar Programs/USAP funds clearinghouse for Antarctic Information



1962-1998: Library of Congress prepares the *Antarctic Bibliography* in print and microfiche



- World scientific literature about Antarctica and the Southern Ocean
- Approximately 70,000 entries divided into two sets of information:

- bibliographic records with very brief abstracts of Antarctic research literature from 1962 to 1998, and
- 2) bibliographic records without abstracts of Antarctic research literature from 1951 to 1961.



# Why digitize the grey literature?





Image Credit: National Science Foundation



- 1. Evaluate / select items from *Antarctic Bibliography*
- 2. Deliver sample fiche to OCLC Preservation Service Center (PSC)
- 3. OCLC PSC uses automated process with human quality control to digitize fiche images
- 4. OCLC PSC delivers:
  - Uncompressed 300 dpi grayscale archival TIFF files
  - Derivative bitonal bound PDF files with hidden text
- 5. Post-digitization processing at NSF Library

# Evaluation of items for selection



- Evaluate print and fiche to identify grey literature content
  - Is the item from a mass-produced book or mainstream journal?
  - Is the item available from other libraries or sources? L-29170
  - What type of item is it (technical report, conference proceeding, etc.)?
  - How long is the item (how many pages/fiche cells)?

### L. TERRESTRIAL PHYSICS

L-28991 Petrik, G.V., Sergeev, V.N., Kogan, A.L., Vasil'ev, V.P., Deep seismic studies in West Antarctica, Soviet geology and geophysics, 1983 23(9), p.99-106, For Russian original see 13L-27691. 8 refs.

The results of deep seismic sounding along a 260 km profile in the coastal region of West Antarctica are outlined, confirming the high effectiveness of the differential sounding method, and the TAIGA equipment, under extreme natural conditions. The wave field connected with regional seismic boundaries was analyzed and a seismic cross section, showing structure of the crust and of the upper parts of the mantle, is presented.

### L-29007

Neunhöfer, H., Frischbutter, A., Güth, D., Contribution to Rayleigh wave dispersion in Antarctica and comparison to eastern Europe, Gerlands Beiträge zur Geophysik, 1983 92(5), p.428-434, In English with German and Russian

tion. In spite of several problems, ground tilt observation by means of water-tube tiltmeters was possible in the Antarctic region, even if there was no vault for installing the equipment. (Auth.)

### L-29118

Nakagawa, I., Gravimetric connection between Tokyo and McMurdo Sound, Tokyo. National Institute of Polar Research. Memoirs, Oct. 1983 Special issue No.28, Symposium on Antarctic Geosciences, 3rd, 1982, Proceedings, p.70-80, 5 refs.

A gravimetric connection from Tokyo to McMurdo Sound via Sydney and Christchurch was carried out by means of two LaCoste & Romberg gravimeters in October 1980 as part of international gravimetric connections around the circum-Pacific zone. The gravimetric connection between Tokyo and McMurdo Sound could not be performed so precisely because scale values of the gravimeters employed could not be accurately determined. The gravity measurements in McMurdo Sound, however, were precisely performed using the two gravimeters in spite of low ambient temperatures. It was ascertained

ty Standardization Net 1971 (IGSN 71) clusive of the gravity stations in McMur-

Miller, H., Eckstaller, A., Brodscholl, A., Wallner, K., Summer season 1982/83 geophysics group [Sommerkampagne 1982/83 Gruppe Geophysik], Berichte zur Polarforschung, Aug. 1983 No.13, p.67-70, In German.

In early February 1983 seismic activity measuring equipment was installed at the foot of a nunatak 150 km SE of Georg von Neumayer Station. A sub-array was also installed on an ice rise about 8 km northwest of the station. These gave points of comparison with the station seismic record. The equipment and its operation are described and the array diagram is shown.

### L-29522

Harley, S.L., Regional geobarometry-geothermometry and metamorphic evolution of Enderby Land, Antarctica, Antarctic earth science; fourth international symposium. Edited by R.L. Oliver, P.R. James and J.B. Jago,

Cambridge University Press, 1983, p.25-30, 22 refs. DLC OE350.A57 1983

Experimentally calibrated geothermometers and geobarometers have been used to estimate the temperature and pressure conditions

Kaminuma, K., Segawa, J., Sea the antarctic regions during the Antarctic Research Expeditions. te of Polar Research. Memoirs. No.28, Symposium on Antarctic Proceedings, p.81-92, 3 refs. were conducted on board the icebreak-RE-22 and -23 have some crossing points Gravity data at the crossing points were e sea gravity meter NIPRORI. The iceen Bay for the first time during the cruise ravity survey in the bay revealed a signifiv down to -70 mgal in the area. (Auth.)

### Brodscholl, A., Wallner, K., geophysics group

/83 Gruppe Geophysik], Berichte 1983 No.13, p.67-70, In German. cismic activity measuring equipment was atak 150 km SE of Georg von Neumayer also installed on an ice rise about 8 km hese gave points of comparison with the ne equipment and its operation are dem is shown

obarometry-geothermometry and of Enderby Land, Antarctica, fourth international symposium. .R. James and J.B. Jago, ress, 1983, p.25-30, 22 refs. DLC OE350.A57 1983 ed geothermometers and geobarometers the temperature and pressure conditions

# **Evaluation of fiche for selection**





- Evaluate fiche quality and composition
  - Does the fiche contain more than one item?
  - Are published journal articles intermixed with the grey literature item?
  - Are divider cells present between items?
  - What is the overall quality of the images?



# **Examples of fiche**

Image 2.

items.

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One item on one fiche. Two pages per cell. Divider cells present.

Image 1.

National Science Foundation Library library@nsf.gov

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# **Quality Control corrections**



ARCAN AND ARCHINE AND CALCULATED AND A COMPANY OF A COMPA В FINDINGS 1. The Air-Beam Shelter is easily erected in 1 manhour and is adequate cropped for maintenance and repair of equipment as large as a size 6 snow tractor. 2. The shelter weighs less than 600 pounds and occupies less than 100 cubic 3. Inflation pressure variations occurred due to air temperature and 4. Use of an improved adhesive is required to increase the durability of this shelter. CONCLUSIONS The Air-Beam Shelter appears to be suitable as an equipment mainte-nance and repair shelter at temporary camps or as a portable maintenance shelter. Additional testing is required to determine its durability and low temperature limitations. Figure 1. Portable metal frame maintenance shelter at McMurdo Station. Skew 22 11 91 correction Figure 2. Structural frame of air-inflated maintenance shelter.



# Results

- TIFF files: 2500 (one frame per TIFF)
- Pages: ~ 4500 pages
- Articles: 77
- PDFs : 0 (due to poor image quality of originals)
- Future Work
  - Add metadata to digitized images
  - Create machine readable format
  - Make digitized items available free of charge on the web
  - Refine selection, evaluation, and digitization processes for the remaining grey literature

### **Conclusions and Lessons Learned**



Communicate with peers to avoid duplication of digitization.

Sufficient time and a defined protocol for the selection of materials for digitization are critical.

Develop a plan to add/transform metadata so it is searchable and machine readable.

Carefully assess the quality of the material to be digitized.

Evaluate the need for pre-processing of images.

Image Credit: Josh Landis, National Science Foundation



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Image Credit: Glenn Grant, National Science Foundation