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Annex 3.

Measurement
(photographs)

Selected by Tomasz JANIK

INSTRUMENTS

Fig. 1. Setting up the equipment during measurements on Spitsbergen, 1976. Modular equipment, specially adapted to be carried in a backpack.

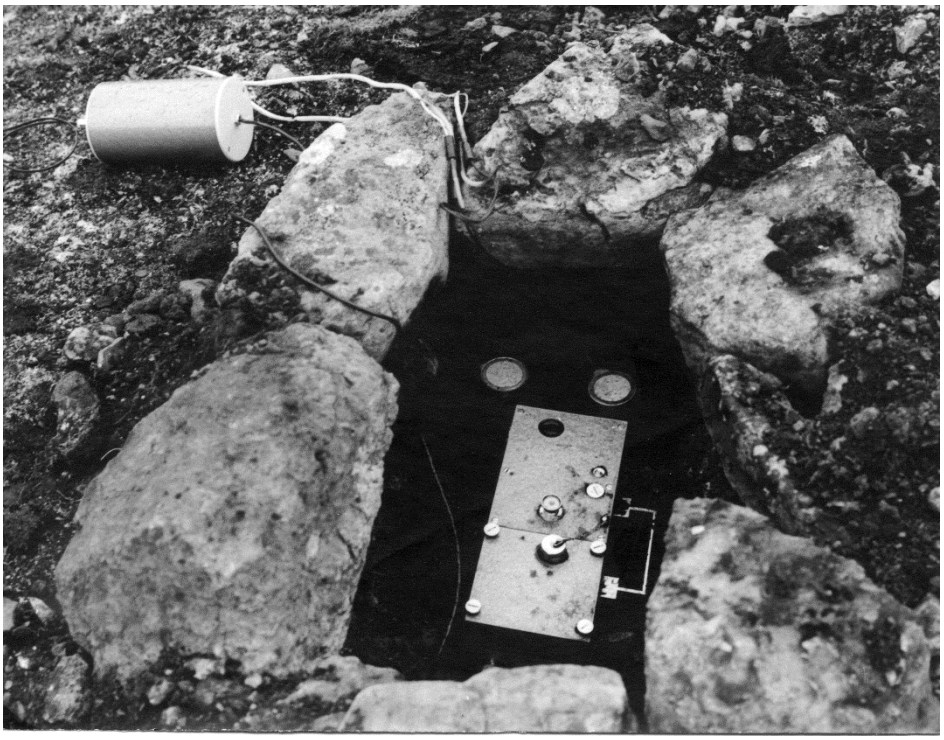

Fig. 2. Setting up the equipment and seismometer (1 s) of the IG PAS design, during research on Spitsbergen in 1976.

Fig. 3. Zbigniew Czerwiński performs recordings using the first model of analogue equipment with simultaneous recording on photosensitive paper and magnetic tape, with manual operation. Antarctica 1979, Keller Peninsula (King George Island).

Fig. 4. Seismometer designed by IG PAS, manufactured by ZUD-GIG (SPI-70) (1 s), measurements in Antarctica.

Fig. 5. Prototype of the PCM station placed in a hus in Spitsbergen, 1985. Operator, Tomasz Janik.

Fig. 6. SM-3, Soviet Union-made seismometer (1 s) during measurements on Spitsbergen, 1985.

Fig. 7. Engineer Andrzej Skrzyński, MSc, securing the seismometer site during measurements on Spitsbergen, 1985.

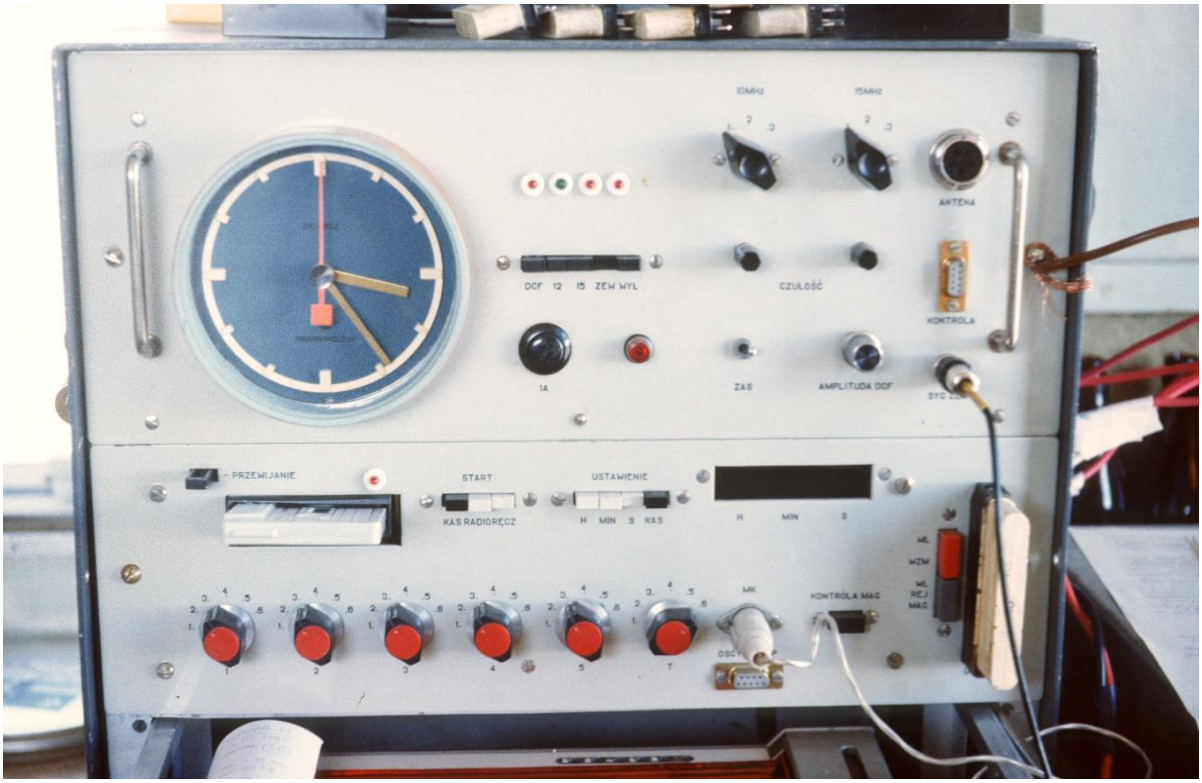

Fig. 8. PDM analogue equipment with parallel recording on photosensitive paper (Japanese ECG recorder) and on magnetic tape, with manual operation.

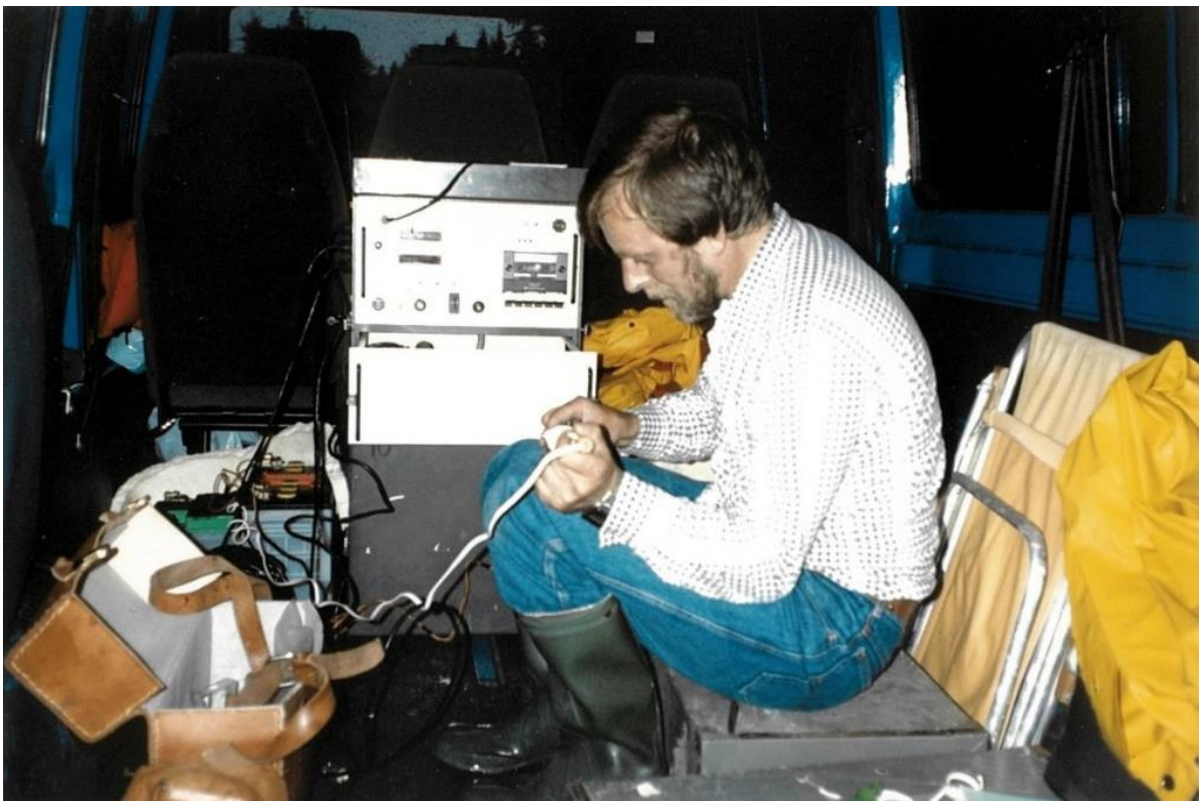

Fig. 9. Zbigniew Czerwiński at the PCM equipment, digital recording on magnetic tape. Parallel analogue recording on photosensitive paper. Measurements in Pomerania, 1991, LT-7 project.

Fig. 10. Tomasz Janik, measurements in Tuchola Forests (Bory Tucholskie) 1997, POLONAISE'97 project. Finnish digital equipment with recording on magnetic tape, with manual operation.

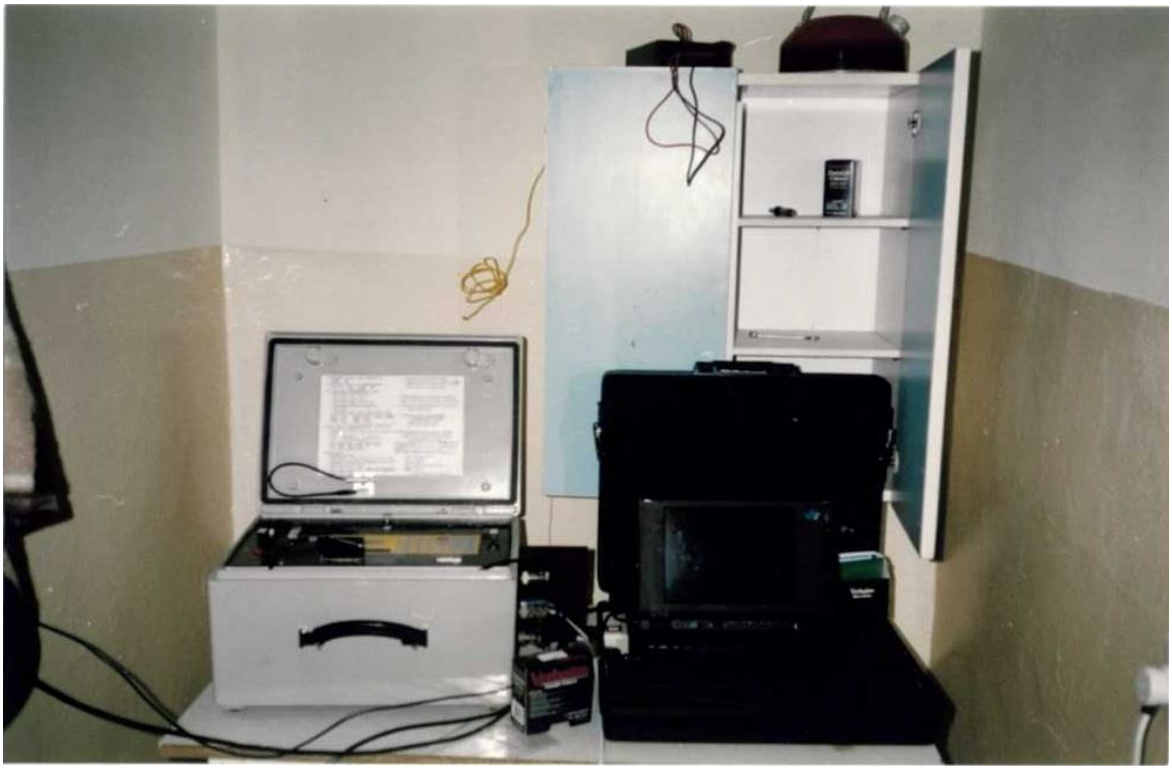

Fig. 11. PSS equipment (field seismic station) MK-3 with digital recording, 1992.

Fig. 12. MK-4P equipment with digital recording and the ability to connect a laptop. Measurements on the EB'95 profile, Lithuania 1995. From the left: Jerzy Krajczyński, Eng. Jan Wiszniowski, MSc, two Lithuanian students, and Eng. Mieczysław Rekowski, MSc.

Fig. 13. Tomasz Janik setting up a Canadian-made 3C, Mark–L4C geophone, used alternatively with SM-3 seismometers for measurements with the MK-3 and MK-4P devices. Measurements during the SVEKALAPKO passive experiment, Finland, 1998.

Fig. 14. Reftek 72 broadband devices. The main base of the POLONAISE'97 project in Toruń.

Fig. 15. Reftek 125 Texan short-period devices – preparations for measurements. The main base of the CELEBRATION 2000 project in Kraków.

Fig. 16. Canadian PRS short-period devices – preparations for measurements. The main base of the CELEBRATION 2000 project in Kraków.

Fig. 17. Transcase with 15 Reftek 125 Texan field seismic short-period devices. Used by our team since 1997 until now. Initially only rented, and since 2000 also owned.

Fig. 18. Reftek 125 Texan (recorder) with geophone (4.5 Hz).

Fig. 19. Drilling holes in the rock bed for the geophone pins of the Reftek 125 Texan. Profile UPPLAND (BASIC), southern Sweden, 2017 *(photo Dariusz Wójcik)*.

Fig. 20. Loading data from the memory of Reftek 125 Texan and CUBE recorders after an experiment performed on the GEORIFT 2013 profile, Kyiv, Ukraine. From the left: Jarosław Grzyb, Wojciech Czuba, Mariusz Majdański, and Dima Gryn'.

Fig. 21. A set of 100 short-period CUBE 3C field seismic stations with three-component geophones. Used since 2013.

Fig. 22. Eng. Dariusz Wójcik, MSc, and his trainee set up a 3C (4.5 Hz) geophone with a CUBE recorder during measurements on the TTZ-South profile, 2018.

Fig. 23. Preparation of the "interior" of the Japanese OBS for measurements onboard Neptunia. Hajime Shiobara (left) and Tomoo Watanabe, West Antarctica 1991 *(photo Marek Grad).*

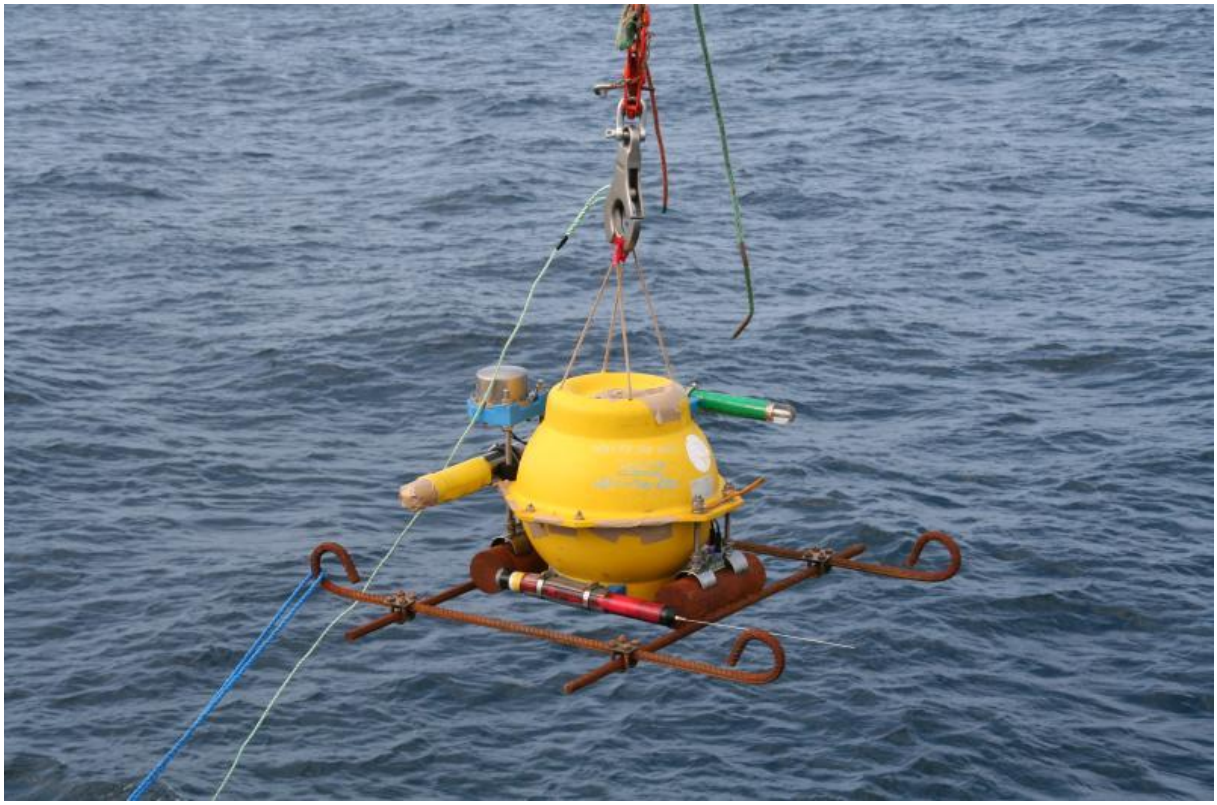

Fig. 24. Deploying of a Japanese OBS during the Horsted experiment, 2005 *(photo Wojciech Czuba).*

Fig. 25. Preparation of Güralp OBSs for measurements, North Atlantic (Norwegian research vessel G.O. Sars). Standing from the right: Szymon Oryński, Weronika Materkowska, Wojciech Czuba (leader), Julia Rewers, Jarosław Grzyb. KNIPSEIS project, 2019 *(photo Dariusz Wójcik)*.

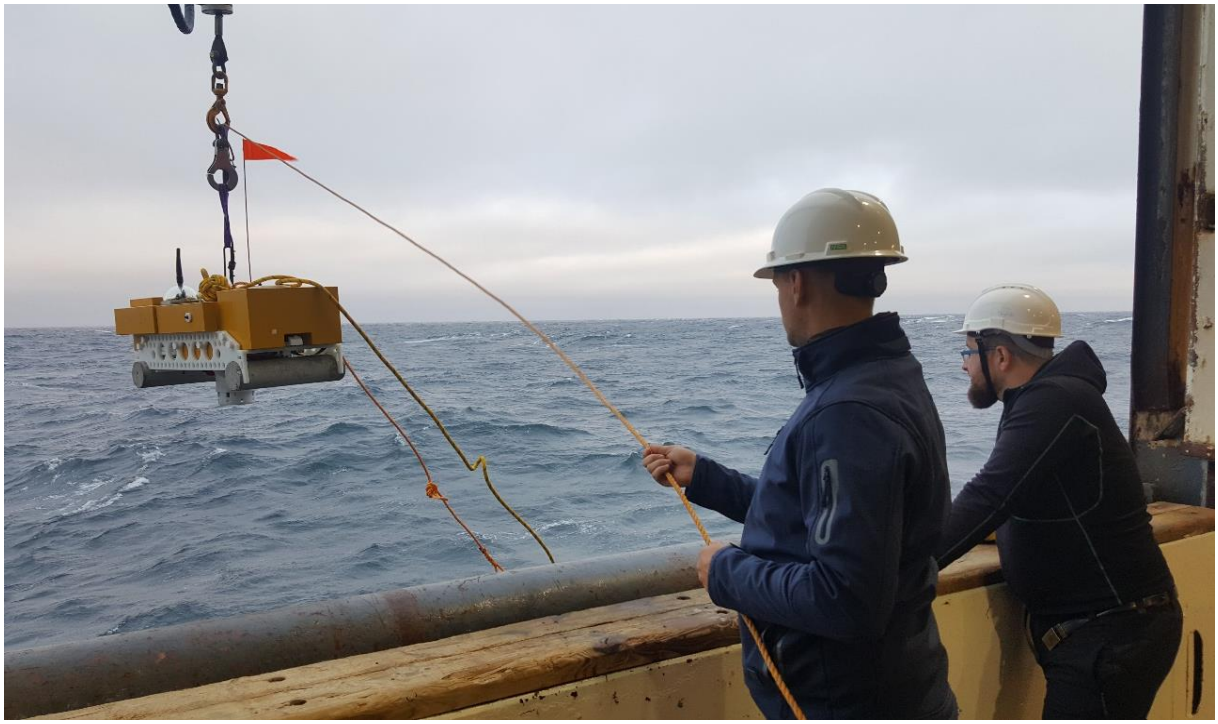

Fig. 26. Deploying a Güralp OBS, Jarosław Grzyb and Szymon Oryński, KNIPSEIS project, 2019 *(photo Dariusz Wójcik).*

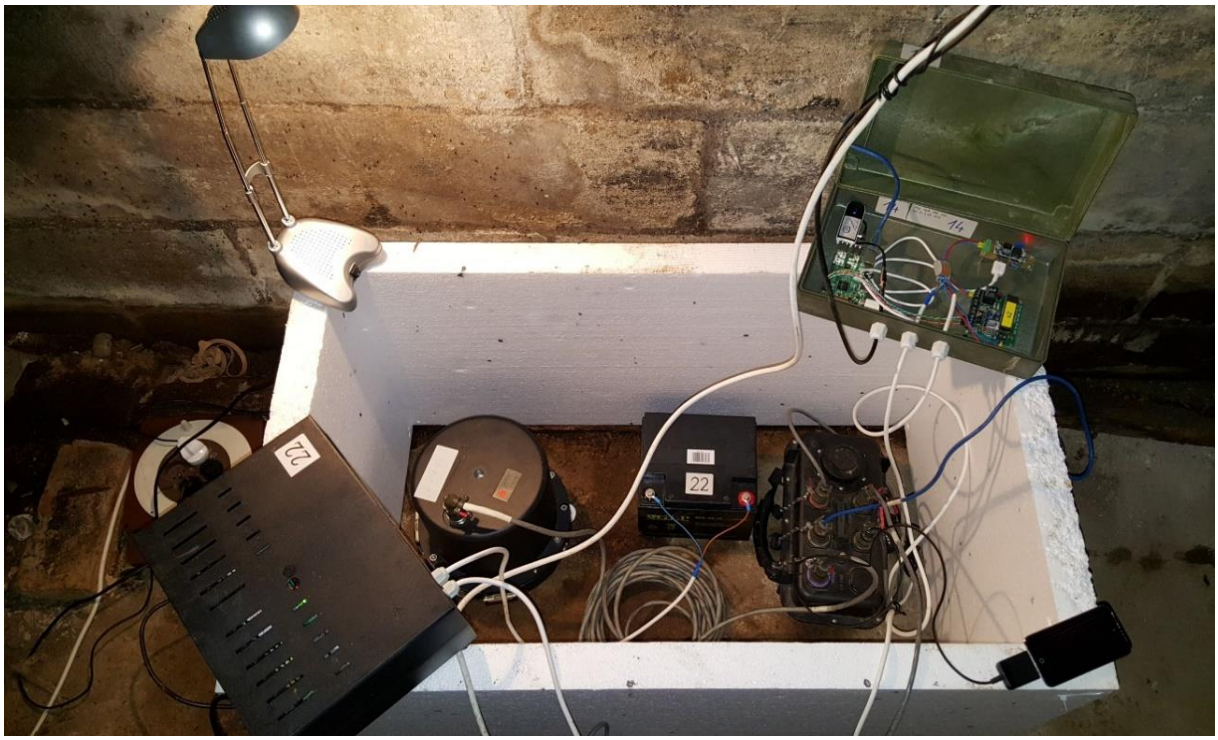

Fig. 27. AniMaLS passive project – Installation of Reftek 130 broadband seismic equipment, 2017 *(photo Piotr Środa).*

Fig. 28. Piotr Środa installs broadband equipment at one of the measurement stations of the AniMaLS project, 2017.

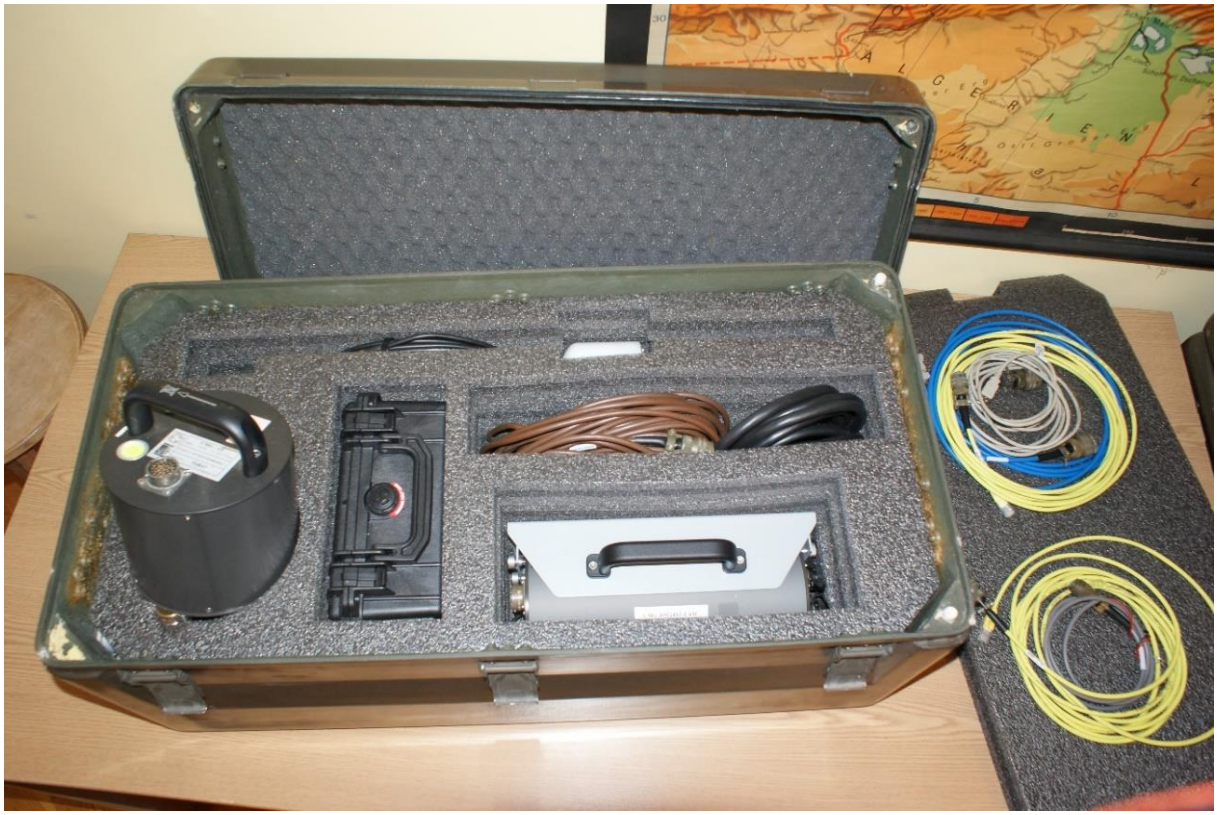

Fig. 29. Güralp CMG-40T broadband seismic apparatus (30 s), 2017.

ACTIVE SOURCES OF SEISMIC ENERGY

Fig. 30. Drilling works at one of the shooting points in the Carpathians (Ukraine), on the PANCAKE profile, 2008.

Fig. 31. One of the Geofizyka Toruń vibrators working on a deep reflective profile POLCRUST-01, 2010.

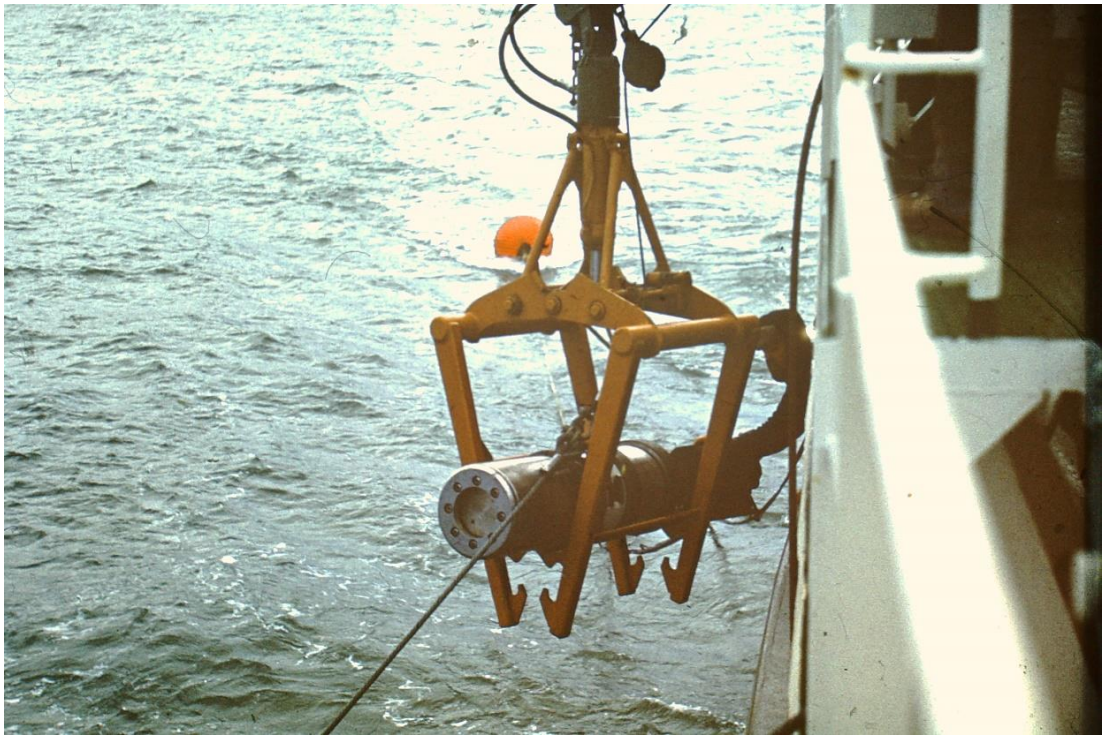

Fig. 32. Lowering one of the Bolt airguns forming a 34-liter array from the deck of ORP "Kopernik" during tests in Isfjorden (Spitsbergen) in 1978 *(photo Jan Pajchel)*.

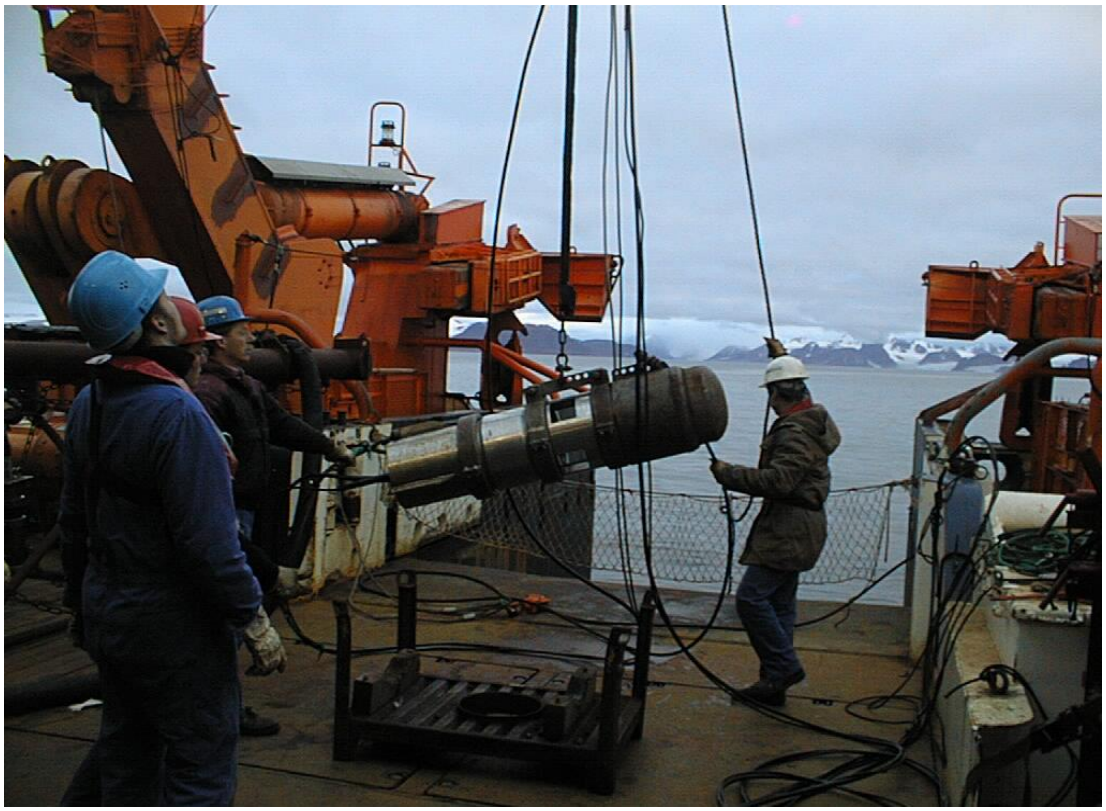

Fig. 33. Preparations for operation of a 30-liter Bolt airgun on board the German ship "Polarstern", during an expedition to the North Atlantic in 1999 *(photo Wojciech Czuba)*.

Fig. 34. The team performing blasting work on the “Jantar’s” lifeboat. Each box contained 25 kg of TNT, the detonations of which were used as a source of seismic energy. 2nd Geodynamic Expedition to the West Antarctica 1984/1985.