

G E O L O G Y

Echographic soundings around Surtsey

by

Sigurjón Rist
The State Electricity Authority
Department of Hydrological Survey

At the request of the Surtsey Research Society the Department of Hydrological Survey carried out a echographic sounding on a belt around Surtsey. The measurements were carried out during the last days of July and the beginning of August 1966. At the same time a group from the Icelandic Geodetic Survey (Landmælingar Islands) made a measurement of the coast line and located the survey lines used by the present author.

Depth was sounded on 33 survey lines in direction from the coast. Each line was measured by sailing the boat from the farther end of the line towards the island and the direction was determined by two flags on land. The boat was driven at an even speed towards the coast. The Geodetic Survey group laid out the survey lines and located the boat at the farther end of each line and 3 or 4 times on the way with a range finder.

The instrument used for the soundings was a Elac Casto LAZ ACT 12 Superior. The accuracy of the measurements was found to be within $\pm 1,5$ meters.

The measured area is a 600 meter broad belt around the island. Outside this belt echographic soundings can be made by larger vessel.

The map of the depth (Fig. 1) is drawn on a base, which was compiled by the Icelandic Geodetic Survey on August 24th, 1965. The coast line has changed considerably in the time between August 24th 1965 and July 30th 1966. The Geodetic Survey has compiled a new coast line as of July 30th, 1966. The depth map is drawn on the base from August 24th 1965 with a corrected coast line, since the topographic map of Surtsey for July 30th 1966 had not been completed.

In order to obtain a value for mean sea level a water gauge with automatic recording was put up in the harbour of the Westman Islands.

The contours on the topographic map are drawn with reference to mean sea level and the depth contours are referred to the same line. The 205 line on the water gauge graph (Fig. 2) was taken as mean sea level.

At the same time as the echographic sounding was made, magnetic field measurements were carried out, (Sigurgeirsson, this report). In order to do both echographic soundings and magnetic field measurements at the same time some precautions had to be taken to prevent any disturbances in the magnetic field by the echographic equipment. Thus all metal parts used for mounting the echograph were made of aluminium.

The boat used for the measurements was a rubber raft with a 20 horse power outboard motor.

FIG. 1

Echographic sounding
around Surtsey.

Measured
July 30 - August 2
1966.

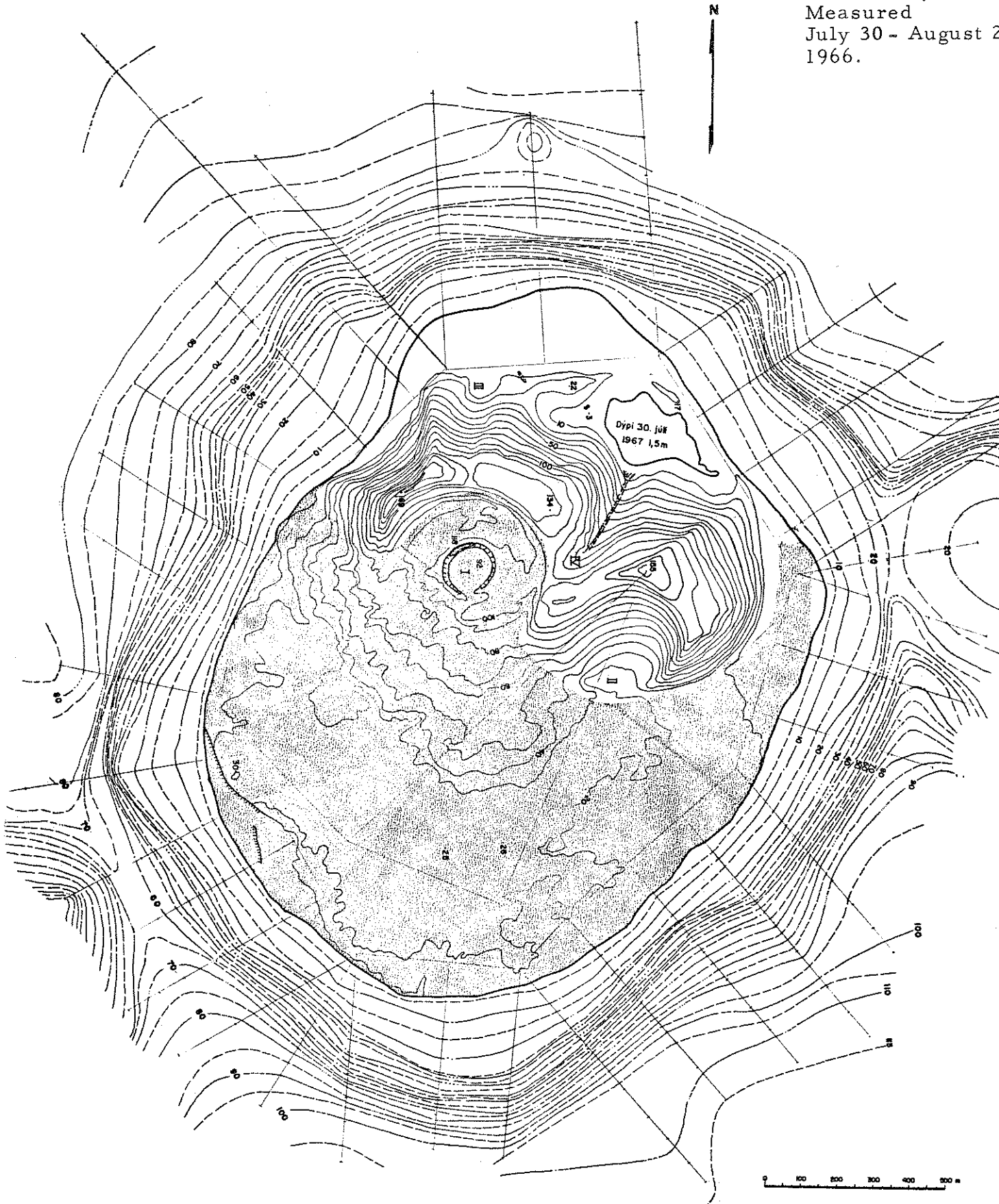
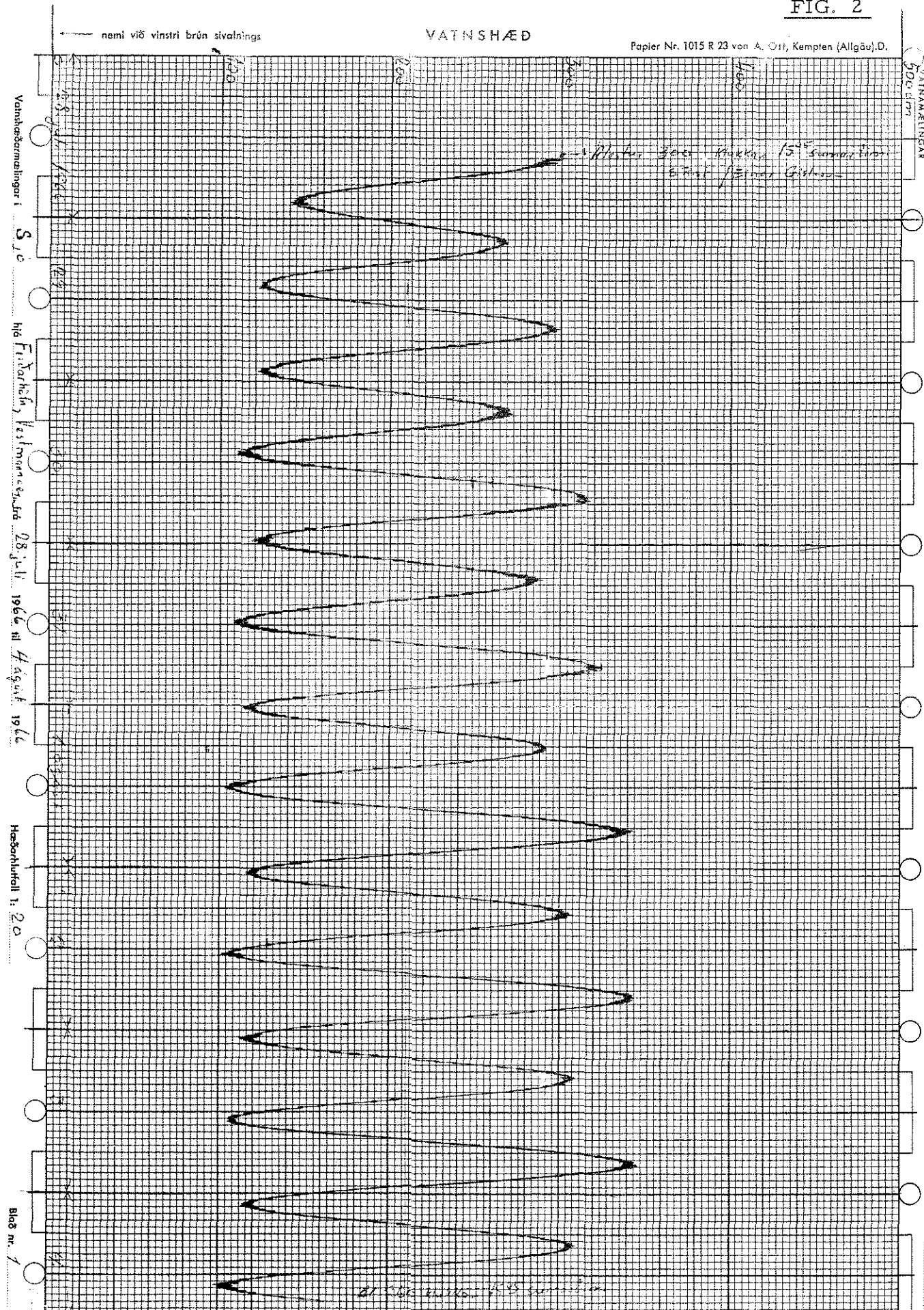


FIG. 2

VATNSHÆÐ

Papier Nr. 1015 R 23 von A. Ott, Kempten (Allgäu), D.



Að allar athugasemdir séu skráðar staðfestir Einar Gestason / S. Ritt