Marine Geological Cruise Report

from

Nordfjord, Måløy Plateau,
South Storegga Slide, North Sea Fan,
North Sea Plateau and Hardangerfjorden

R/V "G.O. SARS"

UoB Cruise No. GS140-05
IMR Cruise No. 2005109

30. June -14. July, 2005

H. Haflidason[1]
H.P. Sejrup[1]
A. Nygård[1]
B.O. Hjelstuen[1]
K.J. Grasmo[1]
J.A. Vikebø[1]
S. Monsen[1]
A. Hughes[2]
E. Pask[3]
F. Germond[4]
N.P. Rabbe[5]

[1]University of Bergen, Dept. of Earth Science, Allegt. 41, N-5007 Bergen, Norway
[2]University of Sheffield, Dept. of Geography, Winter Street, Sheffield, S10 2TN, UK
[3]University of Wales, School of Ocean Sciences, Menai Bridge, Bangor, Anglesey, LL59 AB, UK
[4] INTECHMER: Institut National des Sciences et Techniques de la Mer, digue de collignon BP324 50110 Cherbourg, France.
[5]University College of Sogn and Fjordane, 6851 Sogndal, Norway

Bibliographic reference:

Haflidason, H., Sejrup, H.P., Nygård, A., Hjelstuen, B.O., Grasmo, K.J., Vikebø, J., Monsen, S., Hughes, A., Pask, E., Germond, F. and Rabbe, N.P., 2005. Marine Geological Cruise Report to Nordfjord, Måløy Plateau, South Storegga Slide, North Sea Fan, North Sea Plateau and Hardangerfjorden Report No. 100-05/01, Department of Earth Science, University of Bergen, Bergen, 85 pp.

First Published 2005

ISSN

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1. INTRODUCTION

The marine geological survey to Nordfjord, Måløy Plateau, south Storegga Slide, North Sea Fan and the North Sea Plateau (Fig. 1) is carried out in a co-operation between the University of Bergen (UoB), University of Sheffield and the Geological Survey of Norway (NGU). The cruise is a scientific contribution to three national/international research projects: SEDITRANS (NFR-project), EUROMARGIN (ESF-project) and RAPID (NFR/NERC-project), shortly described below.

The report will give a short overview of the scientific objectives, a short description of the survey areas and a general description of the cruise performance. Figure 1 shows the survey area with ship track lines, whereas the general survey log is provided in Table 1.

1.1. Project description and objectives

1.1.1. SEDITRANS

The SEDITRANS project is a national project financially supported by the Norwegian Research Council (NFR), UoB and NGU. The overall focus of the project is “Past and current valley-to-fjord sediment transport - processes and products (SEDITRANS): A transect from Jostedals-breen to Nordfjorden, western Norway”. The overall aim is to contribute to the understanding of the fjord-valley system in time and space. Parts of the system will be investigated through a qualitative as well as a quantitative approach. The main time intervals are: a) Last deglaciation/late glacial, b) Holocene and c) Little Ice age to present.

A major aim for the marine component of the project is to use acoustic equipment to map the seafloor and the different sediment packages (e.g. deltas, turbidites, mass flow events and pelagic sediments). The seismic profiles collected will also be used as a background in identifying and genetic interpretation of sediments deposited since the last deglaciation. In addition, cores will be sampled at selected sites to provide a chronologic framework, and to estimate sedimentation rates.

On the present cruise the main fjord system and most of the tributary fjords were mapped with aid of EM1002 (Fig. 2). Along the track lines the TOPAS profiler (parametric sounder) was run successfully, frequently penetrating through more than 50 m of deposits with a resolution as high as 30 cm. A number of gravity cores were retrieved primarily to date the end moraine complexes (Fig. 2, Table II, Appendix I).

Associated with the SEDITRANS project a survey on the Måløy Plateau was performed (Fig. 3). The main objectives in this region was to map the outline of an end moraine ridge system (c. 13 ^{14}C ka) and to collect cores (Table II, Appendix I), some for radiocarbon dating of the ridge system.

1.1.2. EUROMARGIN

The EUROMARGIN project "Slope Stability on Europe's Passive Continental Margins" is an international project financially supported by the European Science Foundation (ESF). The general objective is to improve the knowledge of past and present seabed stability. This is essential for the understanding of the sediment dynamics of the European continental margins as a whole. During one single slide event enormous sediment volumes can be transported on very gentle slopes over distances exceeding hundreds of kilometres. In this project we focus on systematic advancement in our understanding of sediment dynamics of submarine slides in the context of global change. On the mid-Norwegian margin we prioritise the following research objectives: **(1)** slide headwall development on upper continental slopes, **(2)** slope stability of glacier-fed siliciclastic margins and **(3)** slide frequencies in regions of long-term instability in relation to sea-level change.

For the EUROMARGIN project the cruise was dedicated to a detailed survey along a small pronounced headwall area along the southern part of the main headwall of the Storegga Slide (Figs. 1 and 4). This area, named Storneset, has preserved a 20-30 m thick pile of laminated sediments deposited probably during the last deglaciation period. The survey is aimed to map in detail the geometry of a small Storegga Slide headwall area for better understanding of the headwall development.

1.1.3. RAPID CLIMATIC CHANGE

The RAPID CLIMATIC CHANGE project "Punctuated disintegration of the NW European Ice Sheet and rapid climate change" is a joint NFR/NERC scientific project. The

main marine geological objectives are to: **a)** Constrain the timing of Norwegian Channel Ice Stream (NCIS) events during the last glacial period, **b)** Ascertain North Atlantic footprint of ice-rafted debris from the NCIS and assess correlations between NCIS events and known ocean and climate excursions, **c)** Reconstruct dimensions of the NCIS and estimate range of ice flux, **d)** Review evidence for major ice-dammed lakes, and compute their water volume and likely drainage routes, **e)** Compile geophysical and bathymetric data for the North Sea to develop the hypothesis of a grounded-ice break-up event and constrain its timing, and **f)** Estimate the ice volume involved and likely melt water pathways to the North Atlantic.

The firm existence of glaciation over the North Sea (into the Fladen Ground Area) (Figs. 1 and 6), as well as the existence of an ice-stream issuing through the Norwegian Channel has only recently been established. These two major parts of the Fennoscandian Ice Sheet, joining the continental ice to that of the British Isles, provide a potentially important source for meltwater and icebergs to have entered the North Atlantic in the past. In this project we aim to establish the area, volume and history of the ice sheet over the North Sea and the NCIS during the last glacial maximum. This will provide the basis for modelling experiments, employing a state-of-the-art iceberg trajectory model, to examine the likely path of icebergs from this region of Europe, and their potential impact on North Atlantic convection processes, and hence the global thermohaline circulation.

This research will benefit a number of scientific and policy areas. Reconstructing the evolution of the European Ice Sheet near the North Sea during the last glaciation will assist organizations and policies that rely on recent geological history. A better reconstruction of past ice sheets also provides revised surface boundary conditions for climate models of the period, which are important verification tools for climate models of our global future. Understanding the past contribution of European Ice Sheets to the freshwater balance of the North Atlantic allows us to refine understanding of the ease with which the thermohaline circulation of the ocean can change, and its climatic consequences for western Europe. While there are currently no ice sheets in western Europe there is considerable debate about the sensitivity of the convection processes in the NE Atlantic to potential thermohaline collapse in the near future. This work will help define this debate.

1.2. Scientific Party

Haflidi Haflidason	UoB	Cruise leader, Principal scientist
Hans Petter Sejrup	UoB	Principal scientist
Atle Nygård	UoB	Research scientist
Berit O. Hjelstuen	UoB	Research scientist
Kristin Johanne Grasmo	UoB	Dr.scient.-student
Astrid Lysså	NGU	Scientist
Anna Hughes	UoS	PhD-student
Edward Pask	UoW	Master-student
Fabien Germond	INTECHMER	B.Sc-student
Nils Petter Rabbe	SFUC	B.Sc-student
Jarle André Vikebø	UoB	Technician
Stig Monsen	UoB	Technician
Asgeir Steinsland	IMR	Survey Engineer
Jarle Wangenstein	IMR	Survey Engineer

UoB: University of Bergen, Dept. of Earth Science, Allegt. 41, 5007 Bergen, Norway
NGU: Geological Survey of Norway, P.O. Box 1870 Trondheim, Norway
UoS: University of Sheffield, Dept. of Geography, Winter Street, Sheffield, S10 2TN, UK
UoW: University of Wales, School of Ocean Sciences, Menai Bridge, Bangor, Anglesey, LL59 5AB, UK
INTECHMER: Institut National des Sciences et Techniques de la Mer, digue de collignon BP324 50110 Cherbourg, France.
SFUC: Sogn og Fjordane University College, 6851 Sogndal, Norway
IMR: Institute of Marine Research, Nordnesgt. 50, P.O. Box 1870 Bergen, Norway

2. METHODS

2.1. Research vessel

R/V G.O.SARS is the newest addition to the fleet of the Norwegian research ships, is considered one of the most advanced research vessels in the world. The vessel was put into duty May 2003 and replaced the older “G.O.Sars” from 1970. The new G.O.SARS has a length of 77.4 m, beam of 16.4 m and a displacement of 4067 tonnes, and is owned by the Institute of Marine Research and the University of Bergen.

R/V G.O.SARS is outfitted with diesel-electric propulsion plant and 2 Teco Westinghouse DC motors and has a top speed of 17.5 knots. Its engines are noise reduced, lowering the noise emission under water by 99% compared to conventional research vessels. The main duties are research operations within the areas of fishery, acoustic, environmental and geology.

To accommodate these tasks the vessel is arranged with two sheltered hangars midship for environmental and geological research operations. These hangars have 6 winches all with 6000 m cable length (either with electrical or optical cording) for lowering scientific equipment to the deepest parts of the Norwegian Sea. The vessels heavy duty cranes and handling equipment are located in the main mid-ship hangar and on the aft deck. These include 6 cranes for lifting equipment from 2 tonnes up to 16 tonnes, and one CTD davit crane with a capacity of 2 tonnes. One Z-frame crane, with a capacity of 8 tonnes, is located on the stern. The operation centre is arranged on the 5th deck, controlling all acoustic and hydrographical equipment. Furthermore, the vessel is arranged with 15 specialised laboratories. A number of sensitive transducers are located in two independent drop keels.

The acoustic equipment on R/V G.O.SARS is state of the art, consisting of the following:

- An echo sounder (EK 60) that can operate on 6 different frequencies simultaneously (18, 38, 70, 120, 200, 400 kHz).
- 2 multibeam echo sounders, EM300 with a 30 kHz transducer and EM1002 with a 95 kHz transducer
- Kongsberg TOPAS PS18 sonar
- Simrad HIPAP acoustic positioning system
- 2 R.D.I. ADCP, acoustic doppler current profiler, 75 and 150 kHz

The TOPAS and EM300 systems are hull mounted, while the other acoustic transducers are placed in retractable drop keels, lowering the transducers below the air bubble layer close to the hull, which decreases noise and enables data acquisition up to wind speeds of 9 Beaufort. The drop keel also improves the stability of the ship.

R/V G.O.SARS has room for 45 persons in 19 single berth cabins and 13 double berth cabins and it has a crew of 15. We thank the captain John Hugo Johnsen and the crew on R/V G.O.SARS for their help in collecting the data on this cruise.

2.2. Navigation

The shipboard navigation system is a Simrad Kongberg system. The GPS part is a dual antenna system for heading and position determination. This system is able to create position accuracy of 2m 2^{o} (Differential GPS signal via satellite). No post-processing was carried out. The logged navigation has datum WGS84. ASCII files including positional fixes for every 30 sec survey time provided in a geographic co-ordinates (lat. and long.)

format were made available for later plotting purposes. In addition, UTM co-ordinates (Zone 31, Central Meridian, WGS84) were supplied. These data are also in spreadsheet format (Tables II – IV, VI).

2.3. Sound Velocity Sources

The 911*plus* CTD system was used at all stations to establish velocity profiles. The system includes:

- SBE 9*plus* **Underwater Unit** with sensors for C (conductivity), T (temperature), P (pressure) and O (oxygen) and a submersible pump.
- SBE 11*plus* **Deck Unit**
- Computer for display logging and read time date acquisition.

2.3.1. SBE 9*plus* Underwater Unit

Standard underwater units have aluminium housings rated to 6800 meters, and are supplied with one conductivity and one temperature sensor (fitted with a *TC Duct* and constant-flow pump), and an internally mounted, temperature-compensated Paroscientific Digiquartz pressure sensor for 6800 meter (10,000 psia) full scale range.

2.3.2. SBE 11*plus* Deck Unit

SBE 11*plus* Deck Units include RS-232 and IEEE-488 computer interfaces, NMEA 0183 interface for adding GPS position to CTD data, 12-bit A/D input channel for surface PAR sensor, switch-selectable 115/230 VAC operation, audio tape interface (data backup), LED readout for raw data, and audible bottom contact (or altimeter) alarm. Calibration coefficients are stored in EEPROM, and a separate microcontroller converts raw CTD data to temperature, depth, salinity, etc. The SBE 11*plus* is prewired for installation of the optional sub-carrier modem (including water sampler control push buttons and status lights).

2.3.3. Standard Carousel

The heart of the Carousel is the magnetically-actuated lanyard release. A pressure-proof electromagnet at each bottle position is energized on command to release the latch holding the bottle lanyard. The standard Carousel includes the electronics/release assembly (12-position), mounting hub, adapter plates, protective frame, and CTD extension stand with a 9*plus* CTD underwater unit.

2.3.4. SEA-BIRD Software

• SEASAVE - real-time data acquisition and simultaneous keyboard control of bottle firing. A typical real-time CTD data plot shows how the software automatically marks the display with bottle numbers, keeps track of which bottles have been fired, and creates a *bottle data* file during real-time data collection.

• SBE Data Processing - filtering, aligning, averaging, and display of CTD and auxiliary sensor data and derived variables.

2.4. Simrad Multibeam Echosounders

The Kongsberg Simrad Multibeam echo sounders EM300 and EM1002 are designed for seabed mapping at variable depths, and therefore have variable resolution capacities. The echo sounders consist of three units:

a) Transducer arrays
b) Transceiver unit
c) Operator station

a) The transducer arrays are different in form for the different models, but are used for both transmitting and receiving pulses. Both arrays are positioned on the front of the drop keel hull.

b) The transceiver unit is a wall mounted cabinet with integrated shock and vibration absorbers. It contains transmission and reception electronics, the processors for beam formation, bottom detection and control of all parameters with respect to gain, ping rate and transmission angles.

c) The operator station contains processors for beam-formation, bottom detection and parameter control as well as the operator interface. It detects:

- depth and sounding positions
- raw ranges and beam pointing angles
- seabed imaging
- vessel position and attitude
- sound speed data
- system installation and set-up parameters

The system does not require operator intervention during normal operation, but tracks the bottom automatically while adjusting mode, gain and range dependant parameters as required. To improve bottom detection, leading to an improved data quality, the system is interfaced with the high frequency sonar.

2.4.1. Data Processing

There are three software packages that are commonly used during the processing process:

- The Neptun software, which is used for post-processing of bathymetric data (i.e. cleaning and filtering of raw data etc.).
- The Triton software, which is used for seabed sediment classification. This software extracts signal features from the seabed image data, and applies this data to a statistical classification procedure in order to obtain the best estimate for seabed sediment type as a function of position in the form of a map overlay.
- The Cfloor or the Fladermaus softwares are used for digital terrain modelling and plot generation. These terrain models can easily produce contour maps, 3D plots, combined bathymetry and acoustic imagery, depth profiles along specified routes, volume calculations etc.

2.4.2. EM 1002

The Kongsberg Simrad EM 1002 multibeam echo sounder is used for high resolution seabed mapping from water depths of 2 m to approximately 1002 m. The system has a maximum ping rate of more than 10 Hz, with 111 beams per ping. The beamwidth is 2*2°, which gives swath coverage of up to 7,5 times the distance from the transducer face to the bottom, or maximum depth of about 1200 m. The EM 1002 system has a frequency of 95 kHz, which is robust for pollution and particles in the water and therefore results in good accuracy and resolution.

Three different pulse lengths are used for different depths; 0,2 ms for depths less than 200 m, 0,7 ms for intermediate depths and 2,0 ms for depths larger than 600 m. These pulses give depth resolutions of 2, 4 or 8 cm. On the cruise the normal procedure was however to switch to EM300 when reaching ca. 600-700 m water depth for achieving highest quality on the bathymetrical data.

The transducer is semicircular with a radius of 45 cm and 160° angular extent. The beam width is 2*2°, and its height, width and length is 398 mm, 887 mm, and 473 mm, respectively. Eight 20 m long underwater cables connect the transducer to the transceiver unit. Because of the curved shape, the accuracy is dependent upon variation in sound speed at the transducer depth. On R/V G.O. SARS the transducer and the receiver are located in a drop keel.

2.4.3. EM 300

The Kongsberg Simrad EM 300 multibeam echo sounder is designed to do seabed mapping from 10 m depth to approximately 5000 m depth. Optimal data acquisition depths are considered to be below 300 m water depth. The system has a maximum ping rate of 10Hz, with 135 beams per ping. The beam widths are 1*2°, which gives a swath width in shallow water up to 5 times the water depth, or maximum swath widths of up to 5000 m. It has a nominal sonar frequency of 30 kHz, which gives an optimal balance between small dimensions, narrow beams and good range capability.

Four different pulse lengths are used depending on the depth; 15 ms pulse length for depths larger than 4000 m, 5 ms for deep water, 2 ms for intermediate depths and 0,7 ms for depths shallower than 50 m. The different pulses give depth resolutions from 1 to 16 cm. There are two transducers on this model, one for transmitting and one for receiving pulses. The transmitter has 1° beamwidth and the receiver has 2° beam-width.

2.5. TOPAS (Parametric Sub-bottom Profiler System)

The TOPAS PS18 system is a single, narrow beam sub-bottom profiler system with electronic roll, pitch and heave stabilisator. The range resolution is normally less than 0.3 m, and penetration capability is normally more than 150 m.

The TOPAS is designed around a parametric antenna utilizing the non-linear propagation characteristics of water to generate a low frequency acoustic pulse from a short, high frequency burst or from the inter-modulation of two high frequency signals. The received echoes are amplified, digitized, processed and displayed on-line, and can be printed out during the process. Raw, unprocessed data may be stored for later processing.

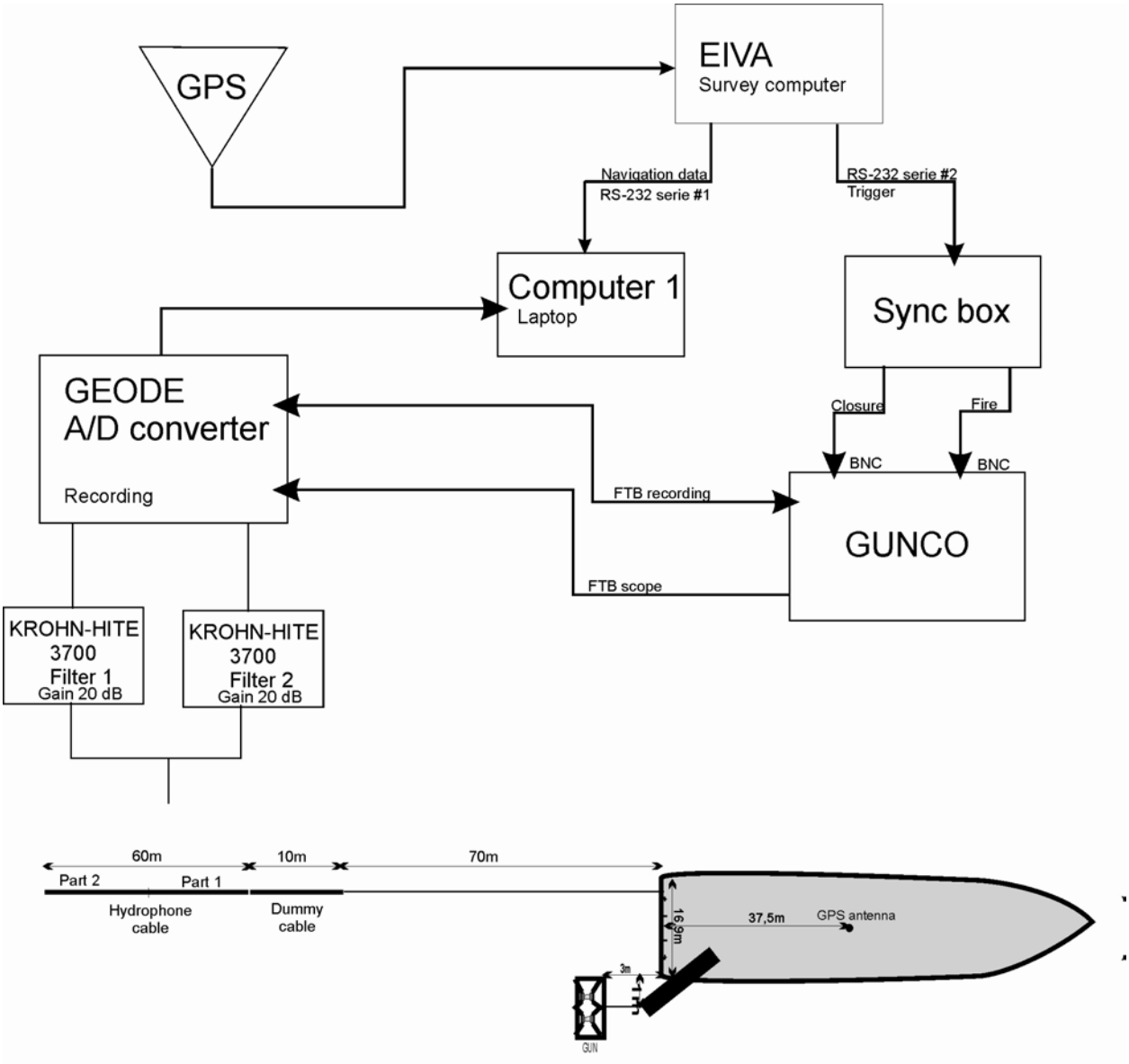
There are several types of pulses that can be used, depending on the different depth and different use that is needed. Generally, high frequency gives high resolution but low penetration, and for both the Ricker- and the Chirp pulse, max and min frequency is 6000 Hz and 500 Hz respectively.

The high resolution pulse is called the Ricker pulse, and gives detailed information (ca. 30 cm resolution) about the top 5-10 m sediments in water depths less than 2000-3000 m. This mode gives short, single pulses with power spectrum centered around 3,5 kHz. Ricker pulse is a wide-band wavelet and requires a high signal-to-noise ratio for optimal performance. Ping interval depends on wavelet type, water depth and operation mode. It range from 200-15000 ms, but default ping/shot interval for Ricker pulse is 300-500 ms in shallow areas.

2.6. Air-Gun System

The primary seismic source utilized onboard was a single Bolt 40 cubic inch (40“). The 40“ air gun was only used on regional reconnaissance lines in the central North Sea (< 150 m) to build a regional tie line between the shallow boreholes in the Fladen (BH77/2, BH81/26) and the Sleipner (B2001) area and into the 3D seismic area located west of the Norwegian Channel (Figs. 1 and 6, Table VI). The air-gun was towed at a depth of approximately three meters from a simple, buoyed wire cable sling, at approximately 5 m astern on the starboard side. An EIWA survey computer connected with the GPS navigation controlled the trigging, which was set to every 12 m along the survey track. The trig signal was received by the gun controller (GUNCO), which performed the actual trigging of the air gun. The gun was fired at a pressure of ca. 130 kg/cm^2. Backup profiling equipment included also one Bolt Air gun of 40“. The Air-gun seismic signal was received by a Mark (Model 08400) two channel seismic streamer (Houston based company), with a one 10 m active section containing 21 elements denoted as Channel 1, and one with a 14 m active section containing 8 elements denoted as Channel 2. The streamer was towed off the port stern approximately 50 meters behind the ship. The raw seismic signal was amplified (20 db) and filtered between 20 and 200 Hz, by a Khron-Hite filter. The signals were converted from analogue to digital form by a Geometrics GEODE A/D converter. The signal from Channel 1 and 2 were recorded as SEG-Y files on a Windows-based system

(GEODE) for later processing. A schematic diagram of the air-gun system setup is shown below.



Schematic diagram of air-gun setup on R/V G.O.Sars

3. FIELD OPERATIONS

A summary of ship-board operations is provided in Table 1.

3.1. Weather and sea state conditions

The weather conditions during the cruise were generally very good for surveying. Only one short period with wind up to 16-18 m/s and waves up to 8-10 m were recorded during the middle part of the cruise. These bad weather conditions resulted in a shut down of the multibeam surveying in a period of ca. 6 hours and a cancellation of the planned air-gun profile line on the upper North Sea Fan. The sea state was generally very calm with waves usually less than 1 m.

3.2. Equipment performance

Stability of the ship was optimal at all time with a heave lower than 6 degrees and low noise to signal ratio. The dGPS system functioned optimal.

The TOPAS parametric profiler was run with success during the entire survey. Even during the period of high sea state and strong wind the instrument recording was found to be reasonably good after reducing the ship speed. Vibration from the air compressor for the main engine, located close to the receiver, was still visible on the records, but the signal to noise level is high enough at depths of less than 1500 m that it does not degrade the data quality significantly. It is however critical to find a better solution on this problem before the 2006 cruise season. It is recommended that the sampling rate is set at a max ca. 40 kHz to reduce the magnitude of the data collected with the TOPAS instrument. Testing done during the cruise revealed that using this is a lower limit will also preserve the resolution and the quality of the data sampling. Other noise sources, less pronounced (60 hz) seem to occur, but they have not been localized. The replay and printing of the TOPAS data resulted in overall a reasonable quality with high penetration and high resolution along the survey lines. The software version installed to handle the raw data has still serious limits in terms of output possibilities. The consequence was that the profile lines had to be exported as screen shots files and be pasted into a photo software for allowing printing on an ordinary laser printer. The next generation of the TOPAS software will hopefully address these problems.

The EM1002 system (drop keel mounted) performed optimal. Velocity profiling always delivered quality data at the first attempt. The EM300 system is hull mounted and was only run during a short period on the North Sea Fan and on the South Storegga Slide in areas where the water depth was more than 500-600 m. The system was functioning optimal throughout the entire survey on the North Sea Fan and on the South Storegga Slide.

The gravity coring system functioned very well throughout the cruise. Gravity coring was performed at a few locations close to late glacial end moraine complexes where the sediments where both compact and stiff and covered with a lag of sandy shelly rich sediments. At most of the core sites the gravity corer penetrated the target unit or the target reflectors, and was recovered successfully.

The Calypso Corer Winch did not function properly the first days on the cruise due to a software error. That resulted in a minor reorganization of the cruise schedule and a cancellation of the Calypso corer sites both in Nordfjord and at Storneset (Fig. 1). The error on the winch cable meter that was identified on Cruise GS138-04 in October 2004 has been attempted repaired by reprogramming the CPU card. The CPU card was removed prior to the present cruise and sent to Kley France for reprogramming. The programming error faced in the start of the cruise seems to be related to the installation of the new CPU card. After correcting the programming/installation error the winch system behaved as normal. Before starting the Calypso Corer operation in the Hardangerfjord (Ålfjorden) (Fig. 7) the winch system was through a thorough testing to control the reliability of the CPU reprogramming carried out by Kley France and to identify errors or failures that still exist. An own report has been written about the testing by Jarle Wangenstein, survey engineer.

3.3. General cruise performance

- The overall survey time is considered to have been very effective with only minor stops due to equipment failure or sea state conditions.
- A total of 6-12h delay in survey time due to the failures on the Calypso Corer winch systems.
- The weather conditions were very good throughout the cruise, with an exception of ca. 6 hours when high sea state and strong wind resulted in a reduced survey speed and cancellation of the air-gun line on the North Sea Fan

- Only one Calypso corer was retrieved (Fig. 7) out of at least three that were planned. The corer operation identified several grades of low safety on the full-scale operation (max core length of 21.5 m) that needs to be improved before a new operation can be carried out.
- 15 gravity cores (max 3.5 m) (Table II, Appendix I), one Calypso core reaching a length of 20 m (Table II, Appendix I), and a total of c. 4000 km of TOPAS and multibeam survey lines (Tables IV and V, Figs. 1-6) were collected during the cruise.

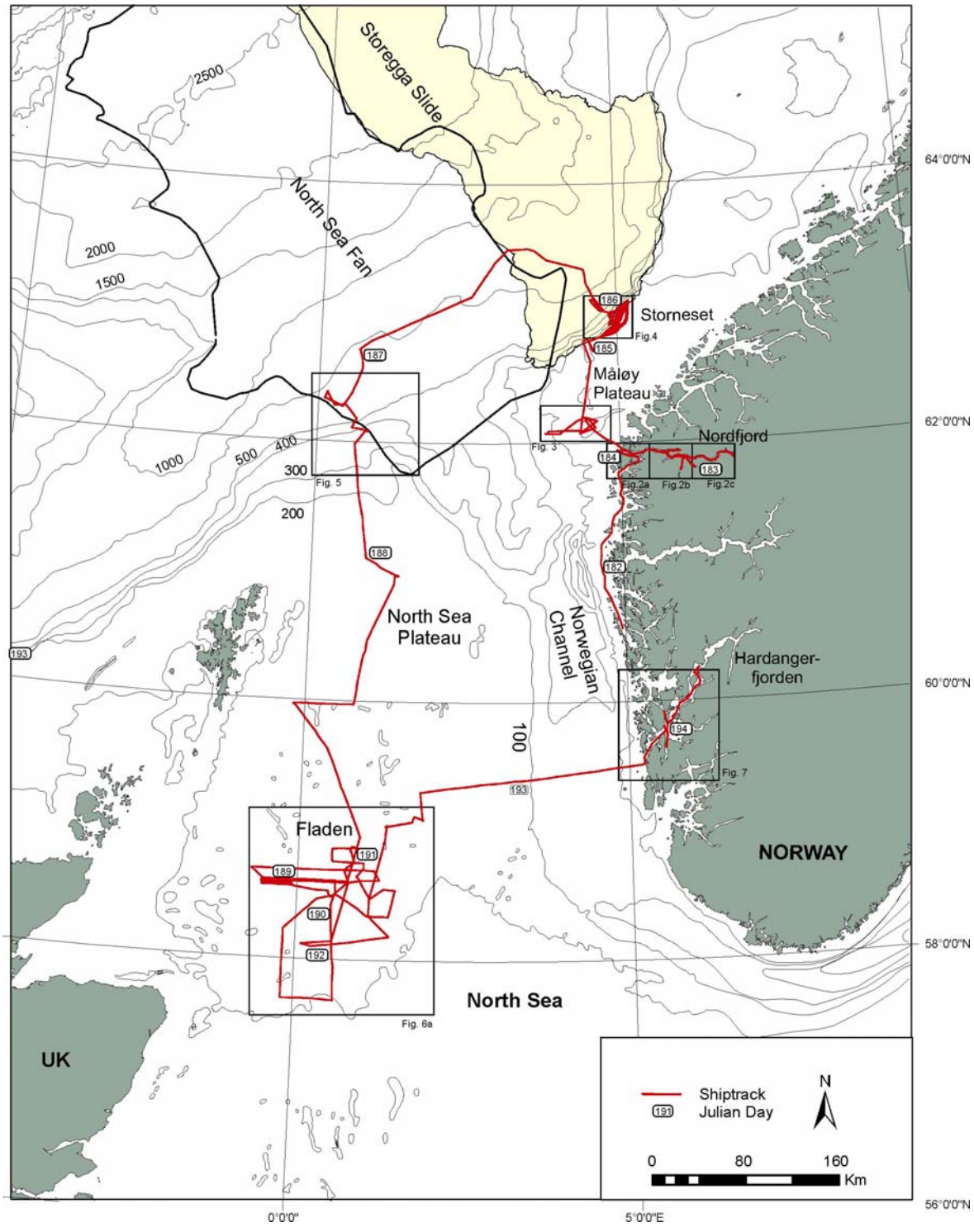


Figure 1. Overview map showing the outline of the marine geological survey GS140-05. Location of Figs. 2-7 are indicated.

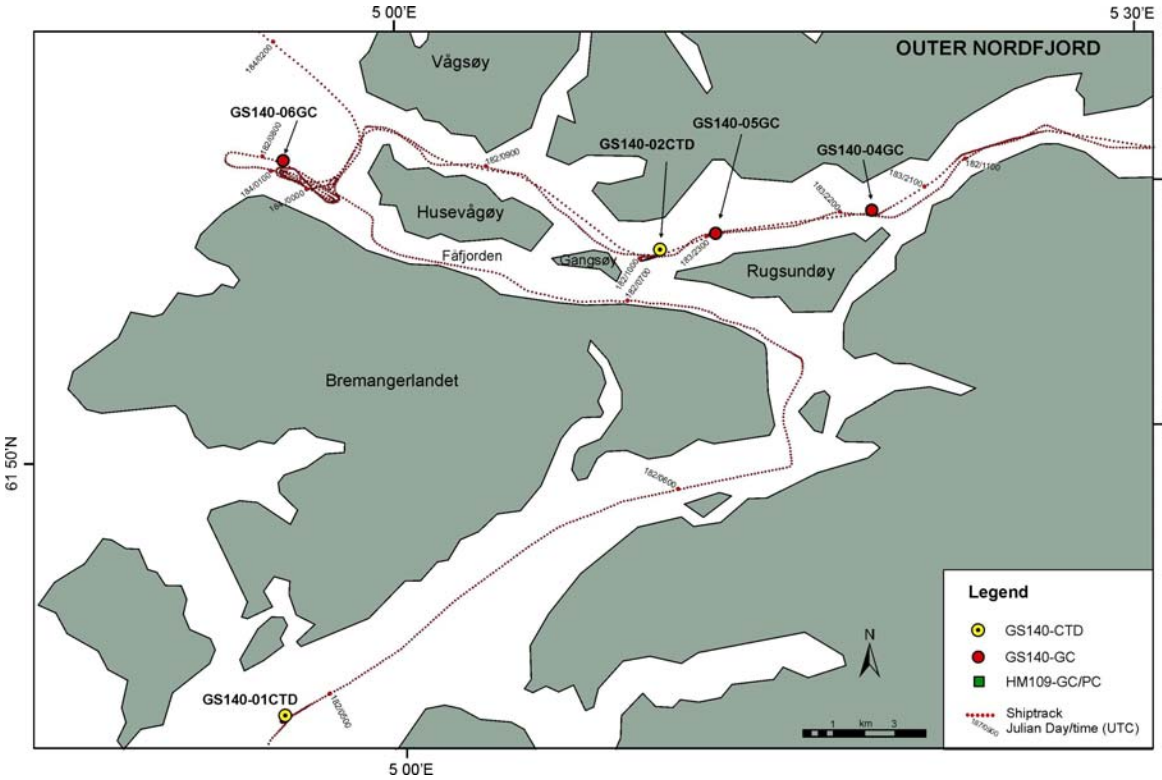


Figure 2a. Survey area in the outer part of Nordfjord, west Norway

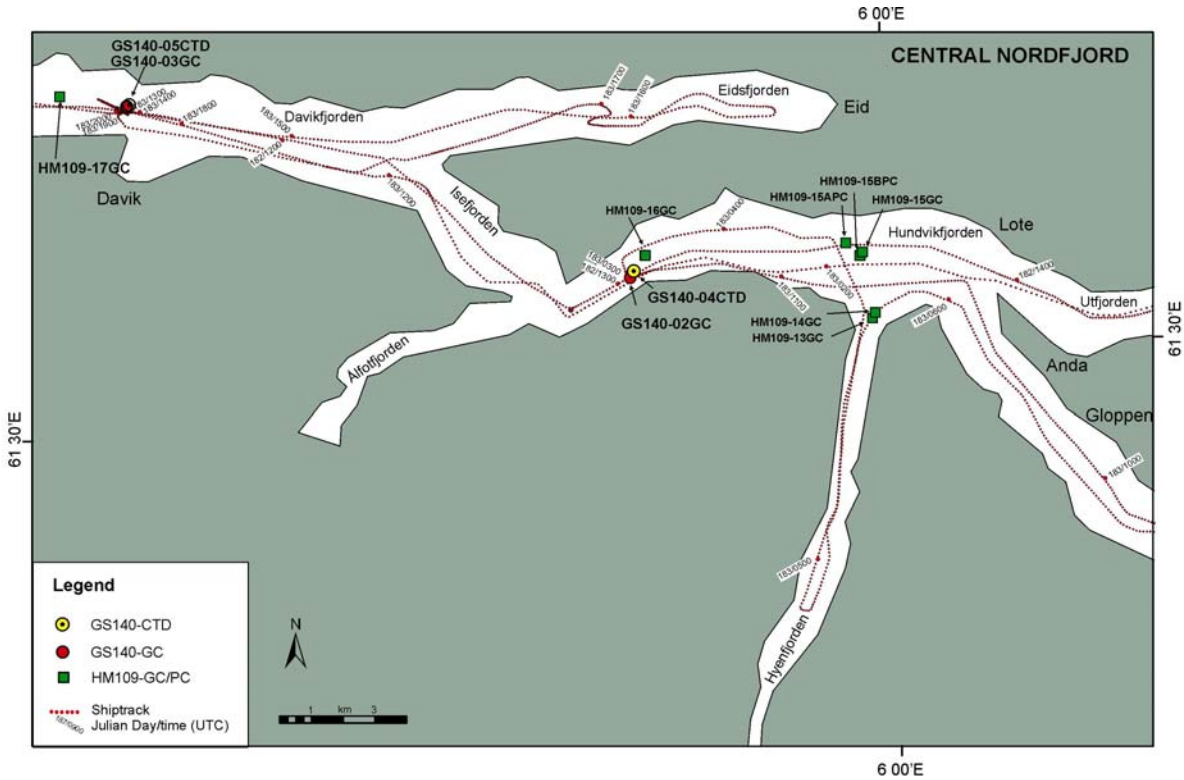


Figure 2b. Survey area in the middle part of Nordfjord, west Norway.

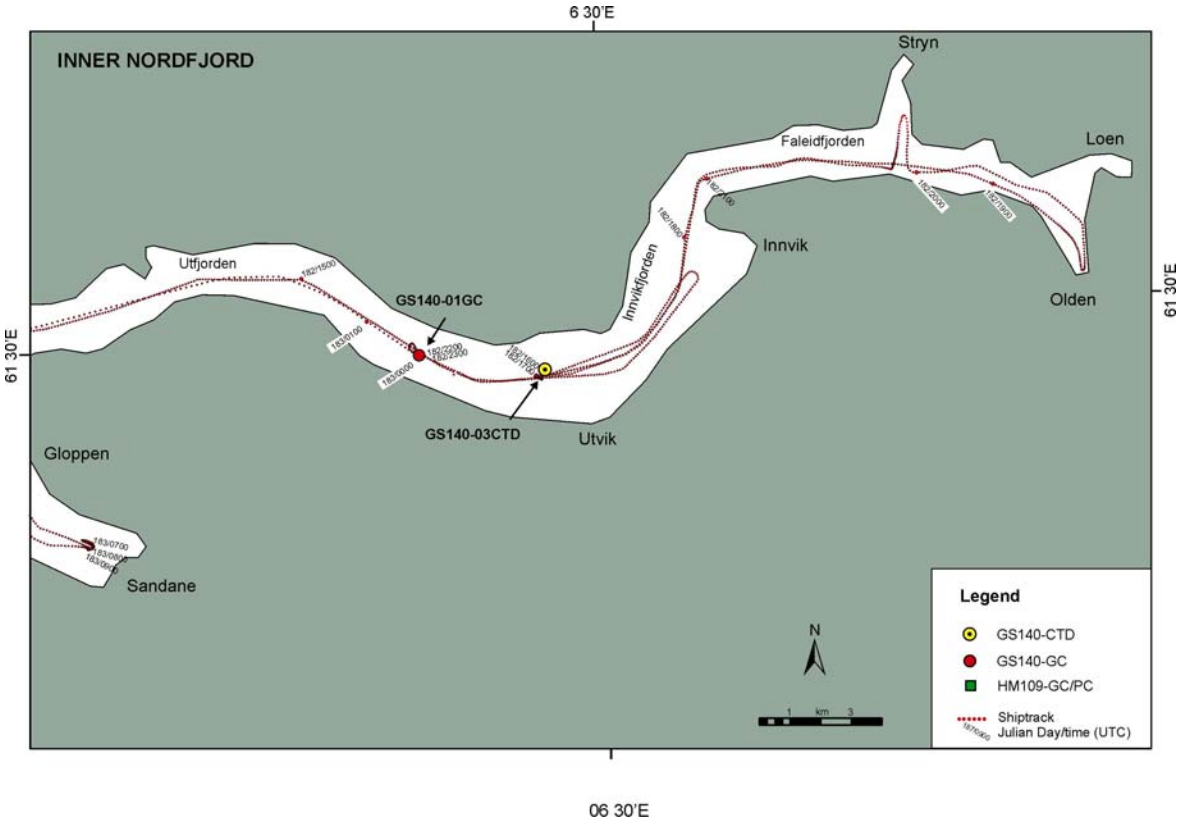


Figure. 2c. Survey area in the inner part of Nordfjord, W-Norway

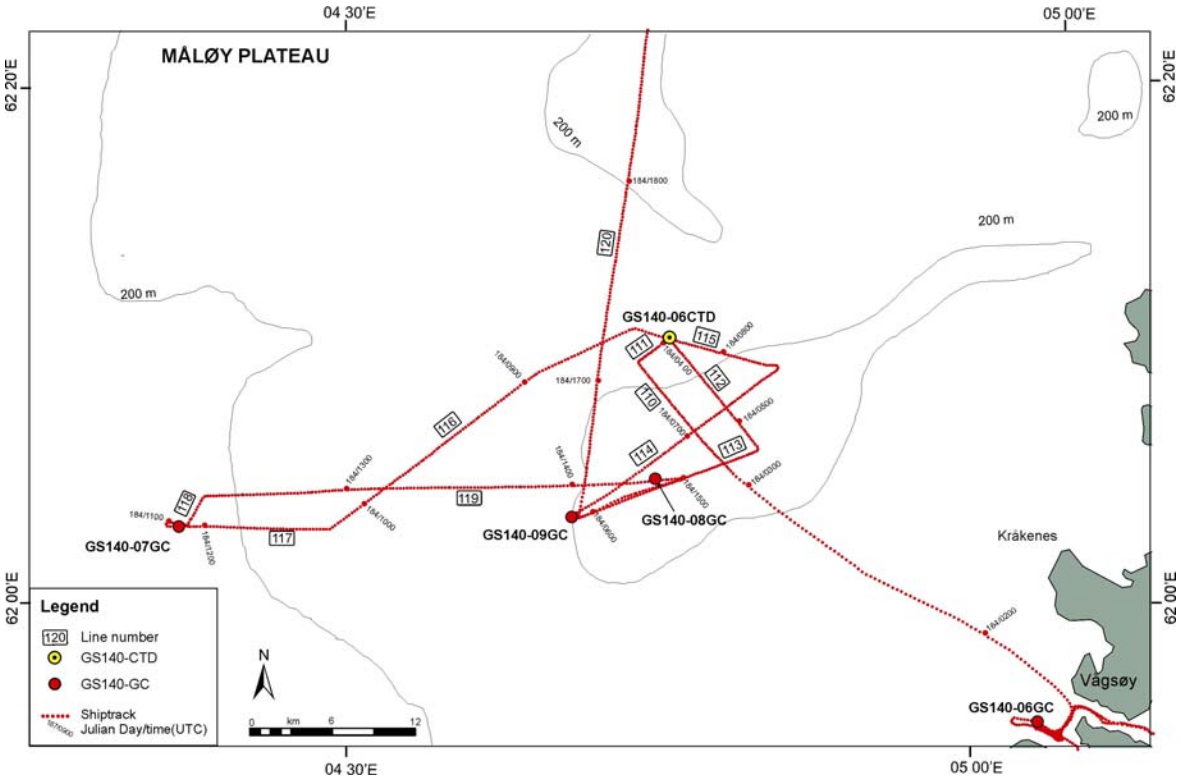


Figure 3. Survey area on the Måløy Plateau.

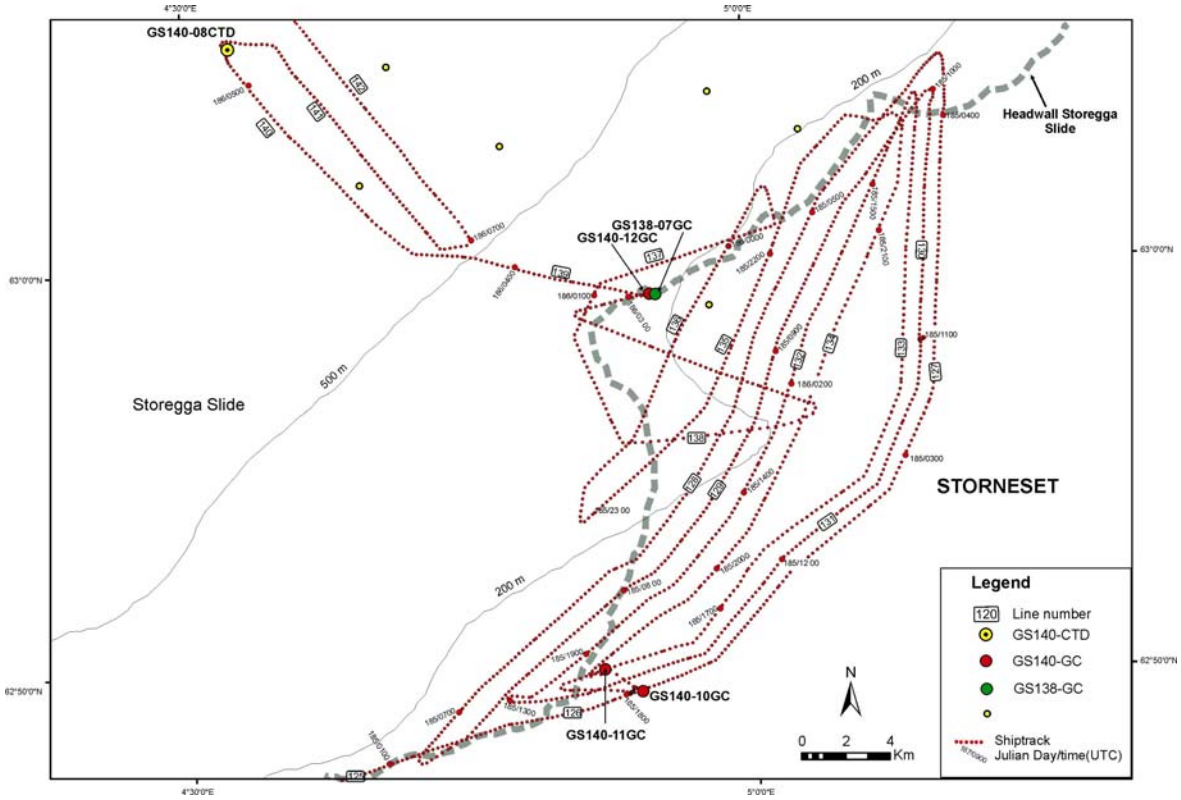


Figure 4. Survey area on the south Storegga Slide headwall, Storneset.

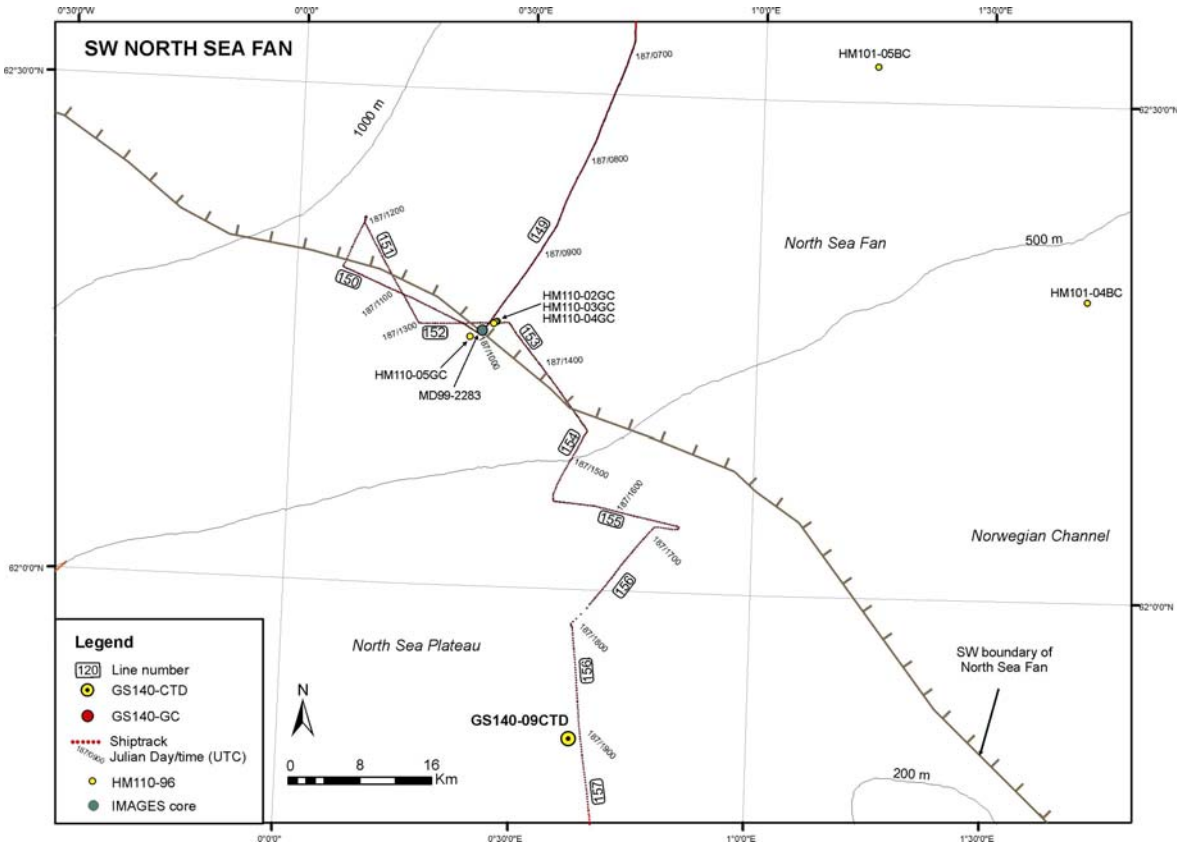


Figure 5. Survey area on the SW North Sea Fan.

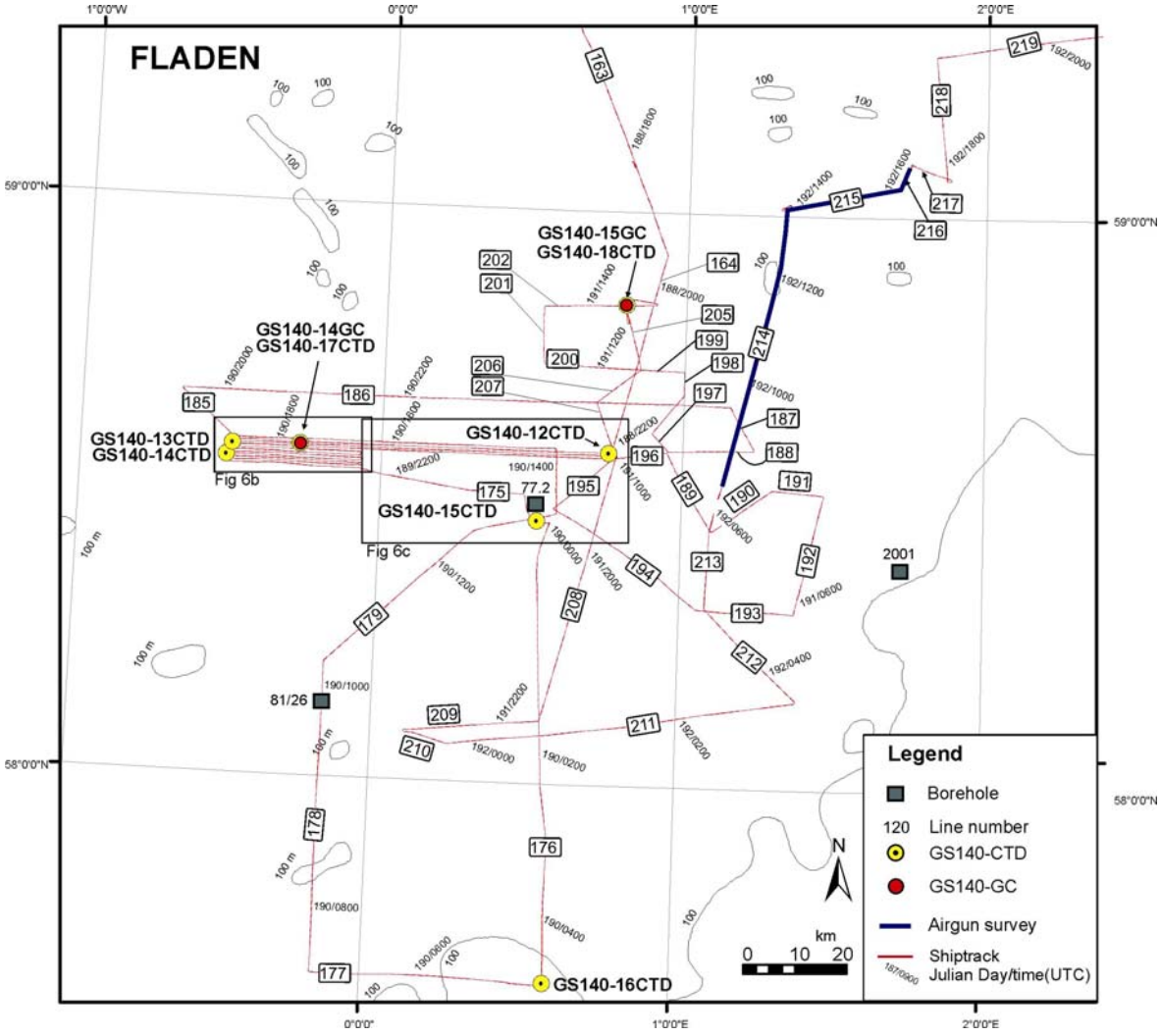


Figure 6a. Survey area in the central North Sea, Fladen Ground.

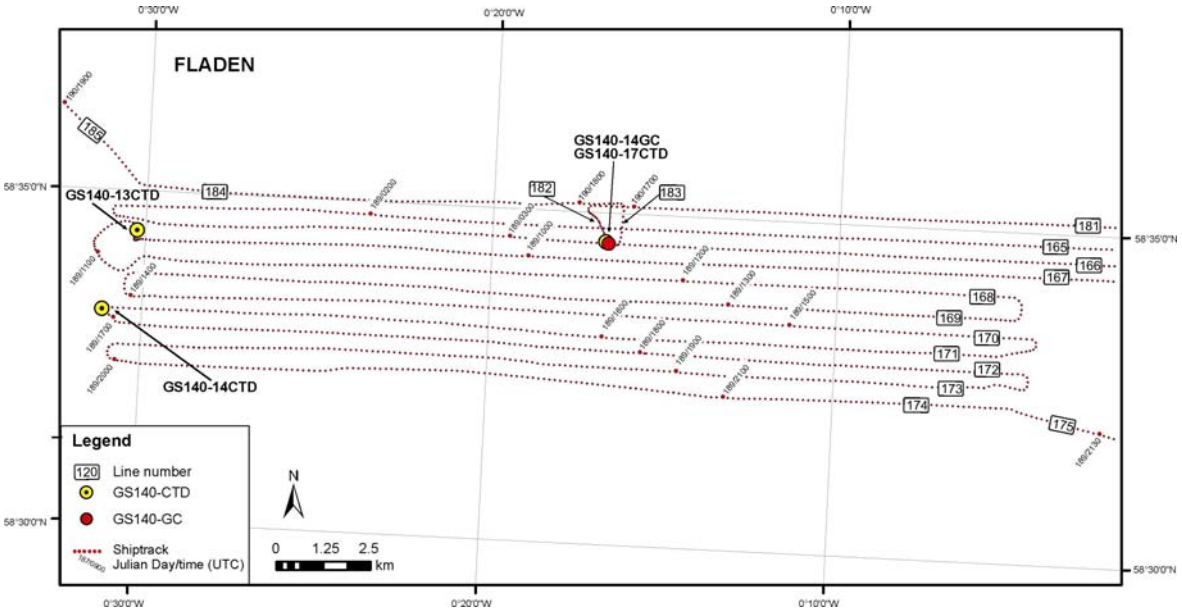


Figure 6b. Survey area in the central North Sea, Fladen Ground. Figure location in Fig. 6a

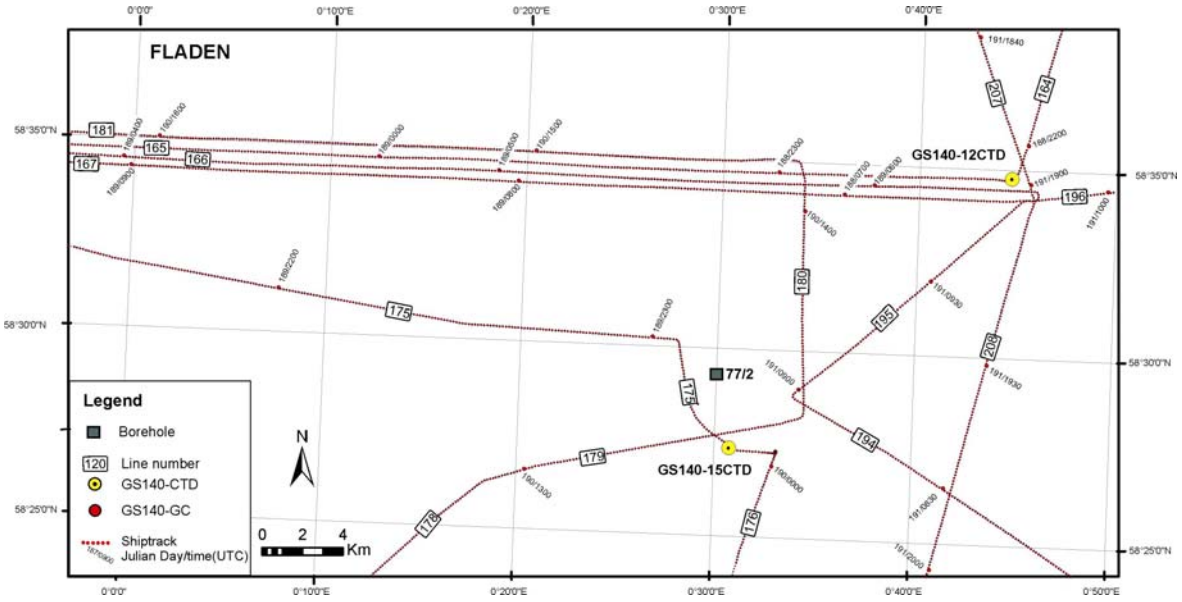


Figure 6c. Survey area in the central North Sea, Fladen Ground. Figure location in Fig. 6a.

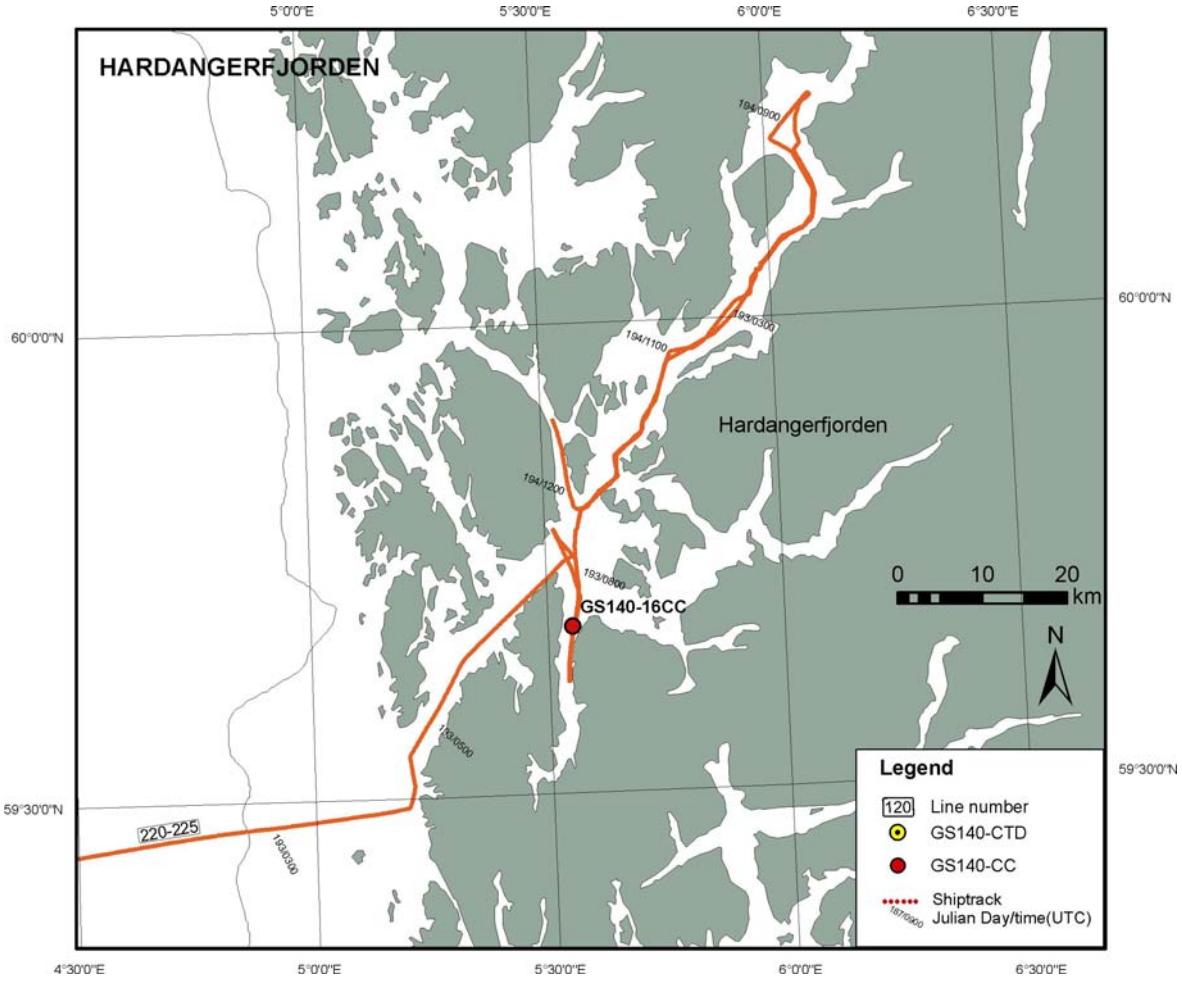


Figure 7. Survey area in the Hardangerfjorden area.

Table I

General Survey log

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Date	Time (UTC)	Julian Day	Subject
30.06.2005		181	Connection interface error with the winch - led 0I is switch off means no program, need to restore it
01.07.2005	04:00	182	Arrived at Frøysjøen area
01.07.2005	04:30	182	Start velocity profile St 01 CTD (sta0342)
01.07.2005	04:55	182	Start acquisition EM1002/TOPAS (PC time (winter) used on TOPAS profile); survey speed 7.4 knot;
01.07.2005	04:55	182	Topas file size set 100 MB - format .raw sample rate 70 kHz gain 33dB HP-filter 2kHz - Ricker - Ping interval 800ms
01.07.2005	04:55	182	Mutibeam file name Frøysjøen
01.07.2005	06:30	182	Drop keel from 1.5 m position to 0.49 m
01.07.2005	07:20	182	Reduce survey speed to 5,8kt
01.07.2005	07:37	182	Sharp turn of boat
01.07.2005	07:45	182	Boat turned 360°
01.07.2005	07:51	182	TOPAS (Ricker pulse) logging off
01.07.2005	07:51	182	TOPAS (Ricker pulse) logging on
01.07.2005	06:39	182	Frøysjøen EM1002 survey mean speed 3.7 m/s
01.07.2005	07:49	182	Boat turning 180° EM1002 logging off, end of multibeam survey line 3
01.07.2005	07:52	182	EM1002 logging on; Start of Froysjoen multibeam survey line 4
01.07.2005	08:07	182	EM1002 logging off; End of Froysjoen multibeam line 4, turn around 360° to go into Nordfjord
01.07.2005	08:10	182	EM1002 logging on; Start of Froysjoen multibeam survey line 5
01.07.2005	08:28	182	EM1002 logging off; End of Froysjoen multibeam survey line 5
01.07.2005	08:31	182	EM1002 logging on, Start of Froysjoen multibeam survey line 6
01.07.2005	08:31	182	TOPAS (Ricker pulse) logging off; end TOPAS line 2
01.07.2005	08:36	182	TOPAS (Ricker pulse) logging on; start TOPAS line 3 Vågsøyfåfjorden
01.07.2005	09:03	182	Wind speed 4.0kt, water temperature 13.5°C
01.07.2005	09:17	182	Mean wind speed 8.0kt
01.07.2005	09:20	182	Reduced survey speed to 2.9 m/s
01.07.2005	09:23	182	Inceased survey speed to 6.3kt
01.07.2005	09:34	182	Reduced survey speed to 4.6kt
01.07.2005	09:35	182	Reduced survey speed to 0.5kt
01.07.2005	09:36	182	EM1002 logging off; end of multibeam Froysjoen survey line 6
01.07.2005	09:36	182	TOPAS (Ricker pulse) logging off; end of TOPAS line 3
01.07.2005	09:36	182	Boat stopped, Start velocity profile St 02 CTD (sta0343)
01.07.2005	09:56	182	End velocity profile St 02 CTD
01.07.2005	10:06	182	TOPAS (Ricker pulse) logging on; start TOPAS line 4; survey speed 5kt
01.07.2005	10:19	182	Survey speed 6,7 kt
01.07.2005	10:44	182	Boat turning; survey speed 6,5kt
01.07.2005	10:48	182	TOPAS ping interval changed to 900 ms
01.07.2005		182	Notice that the TOPAS auto named is based on the time of the computer (-1h than the local time so +1h to the UTC)

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General Survey log

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Date	Time (UTC)	Julian Day	Subject
01.07.2005	11:12	182	Boat turning
01.07.2005	11:18	182	TOPAS ping interval changed to 1100 ms
01.07.2005	11:30	182	Survey speed 7 kt
01.07.2005	11:45	182	Survey speed 8 kt
01.07.2005	12:16	182	Entered military dumping area
01.07.2005	12:45	182	TOPAS (Ricker pulse) logging off; end of TOPAS line 4
01.07.2005	12:47	182	Boat turning - start of loop
01.07.2005	12:48	182	TOPAS failed to start logging - crashes on restart!
01.07.2005	12:52	182	EM1002 logging on; line 8
01.07.2005	12:54	182	TOPAS (Ricker pulse) restarted; start acquisition of TOPAS line 5; survey speed 8.0kt
01.07.2005	13:49	182	Survey speed 6,0 kt
01.07.2005	13:56	182	TOPAS trigger interval 600 ms
01.07.2005	14:07	182	TOPAS trigger 1000 ms trigger interval
01.07.2005	14:47	182	Since TOPAS restart file size cut to 10 MB
01.07.2005	14:48	182	TOPAS file size reset to 100MB
01.07.2005	16:19	182	Boat turning 180°; survey speed 6.7kt
01.07.2005	16:51	182	TOPAS (Ricker pulse) logging off, end of TOPAS line 5
01.07.2005	16:51	182	EM1002 logging off; end mulitbeam survey line 8
01.07.2005	16:52	182	Boat stopped; Start velocity profile St 03, water depth 437 m
01.07.2005	17:28	182	End velocity profile St 03 CTD (sta0344)
01.07.2005	17:38	182	EM1002 logging on; start multibeam survey line 9
01.07.2005	17:38	182	TOPAS (Ricker pulse) logging on, start TOPAS line 6, survey speed 7.0 kt
01.07.2005	18:16	182	Boat turning into Faleidfjorden, survey speed 6.3kt
01.07.2005	18:57	182	Lost the seabed on TOPAS line 6
01.07.2005	19:04	182	Wind speed 15kt
01.07.2005	19:07	182	Boat turning into Djupekjegla survey speed 6.8kt
01.07.2005	19:25	182	Boat turning 180 °, TOPAS (Ricker pulse) logging off, end TOPAS line 6
01.07.2005	19:25	182	EM1002 logging off, end multibeam survey line 9
01.07.2005	19:27	182	TOPAS (Ricker pulse) logging on, start TOPAS line 7, survey speed 7.1kt
01.07.2005	19:27	182	EM1002 logging on, multibeam survey started line 10
01.07.2005	19:57	182	Wind speed 4kt
01.07.2005	19:59	182	Boat turning 90° into Stryn,
01.07.2005	20:09	182	Boat turning 180°, TOPAS (Ricker pulse) logging off, end TOPAS line 7
01.07.2005	20:09	182	EM1002 logging off, end multibeam survey line 10
01.07.2005	20:09	182	TOPAS (Ricker pulse) logging on; start TOPAS line 8, survey speed 5.9kt
01.07.2005	20:09	182	EM1002 logging on; start multibeam survey line 11
01.07.2005	20:28	182	Boat turning 90° west, 3.3kt
01.07.2005	20:34	182	Survey speed increase to 7.2kt
01.07.2005	22:00	182	TOPAS (Ricker pulse) logging off; end line 8
01.07.2005	22:00	182	EM1002E loggin off, end multibeam survey line 11
01.07.2005	22:53	182	Arrive Station 01 GC, core tube length 3m

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General Survey log
UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Date	Time (UTC)	Julian Day	Subject
01.07.2005	23:30	182	First core attempt empty, restart gravity core; only the bottom is good enough
02.07.2005	00:00	183	Second attempt not enough sediment, core discarded
02.07.2005	00:45	183	Third attempt; 1.50m sediment length
02.07.2005		183	Transit to Station 02, speed 11.0kt
02.07.2005	01:48	183	EM1002 logging on, survey speed 9.0kt
02.07.2005	01:48	183	TOPAS (Ricker pulse) logging on, survey speed 9kt
02.07.2005	02:09	183	EM1002 logging off, end multibeam survey Nordfjorden line 005 and TOPAS (Ricker pulse) logging off
02.07.2005	02:30	183	On station 02 GC
02.07.2005	03:00	183	core taken
02.07.2005	03:10	183	Start velocity profile St 04 CTD (sta0345)
02.07.2005	03:37	183	End velocity profile St 04 CTD
02.07.2005	03:48	183	TOPAS (Ricker pulse) loggin on and EM1002 logging on, start multibeam survey line 10; survey speed 6 kt
02.07.2005	04:00	183	Boat turning 180° to move eastwards Hundvikfjorden
02.07.2005	04:18	183	Boat turning into Hyenfjorden; survey speed 7.9kt
02.07.2005	04:28	183	Lost the seabed
02.07.2005	05:06	183	Boat turning 180°, TOPAS (Ricker pulse) logging off
02.07.2005	05:06	183	EM1002 logging off, end survey line 10
02.07.2005	05:06	183	TOPAS (Ricker pulse) logging on; 7.2kt
02.07.2005	05:06	183	EM1002E logging on, start multibeam survey line 11
02.07.2005	05:49	183	Turn into Hundvikfjorden again
02.07.2005	05:49	183	EM1002 logging off, end survey line 11
02.07.2005	06:02	183	Turn into Sandane; EM1002 logging on, start multibeam survey line 12
02.07.2005	06:50	183	Boat stopping at Sandane, TOPAS (Ricker pulse) logging off
02.07.2005	06:50	183	EM1002E logging off, end survey line 12
02.07.2005	09:39	183	Boat starting, EM1002E logging on, start multibeam survey line 13
02.07.2005	09:39	183	TOPAS (Ricker pulse) logging on; 7.2kt
02.07.2005	09:56	183	TOPAS (Ricker pulse) logging off; 7.2kt
02.07.2005	10:13	183	TOPAS (Ricker pulse) logging on; 7.2kt
02.07.2005	11:29	183	90° turning ; 8.8 kt
02.07.2005	11:43	183	Survey speed 9,5 kt
02.07.2005	12:01	183	Survey speed 8kt
02.07.2005	12:36	183	TOPAS (Ricker pulse) logging off and EM1002 logging off
02.07.2005	12:40	183	On station ; waiting the storage of the calypso winch
02.07.2005	14:44	183	Decide to continue the survey in Eidsfjorden
02.07.2005	15:26	183	TOPAS (Ricker pulse) logging on and EM1002 logging on multibeam survey line 16 ; survey speed 8,6 kt
02.07.2005	15:33	183	TOPAS (Ricker pulse) logging off
02.07.2005	15:53	183	TOPAS (Ricker pulse) logging on, survey speed 8kt
02.07.2005	16:19	183	End of Eidfjorden, boat turned 180 °
02.07.2005	16:19	183	EM1002 logging off end survey line 16
02.07.2005	16:19	183	TOPAS (Ricker pulse) logging off

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General Survey log
UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Date	Time (UTC)	Julian Day	Subject
02.07.2005	16:20	183	EM1002 logging on, start multibeam survey line 17
02.07.2005	16:20	183	TOPAS (Ricker pulse) logging off, speed 6.8kt
02.07.2005	16:25	183	Changed TOPAS gain to 28dB
02.07.2005	16:45	183	Survey speed 5.5kt
02.07.2005	16:51	183	Boat turning 160° survey speed 2.7kt
02.07.2005	16:52	183	EM1002 logging off
02.07.2005	16:56	183	Boat turning 100°
02.07.2005	16:58	183	EM1002 logging on, multibeam survey line 18 survey speed 5kt
02.07.2005	17:07	183	Increased TOPAS gain to 3,12dB
02.07.2005	17:24	183	Increased TOPAS gain to 34 dB
02.07.2005	17:35	183	Changed TOPAS (Ricker pulse) survey route to cross area of 'pockmarks' in Davikfjorden
02.07.2005	17:44	183	Survey speed 7.3kt
02.07.2005	18:16	183	EM1002 logging off, end multibeam survey line 18 (TOPAS still running)
02.07.2005	18:16	183	Boat turning 180° to go into postion for core Station 03 and CTD velocity profile
02.07.2005	18:22	183	At core Station 03GC
02.07.2005	18:22	183	TOPAS (Ricker pulse) logging off
02.07.2005	18:44	183	Gravity corer off deck
02.07.2005		183	Bug within TOPAS restared with the same settings as at start
02.07.2005		183	Problem with the echosounder, incorrect depth calcuation;
02.07.2005	18:58	183	Gravitycorer along boatside again - did not hit the bottom as echosouder depth wrong
02.07.2005	19:06	183	Gravitycorer start lowering - second attempt
02.07.2005	19:20	183	Gravitycorer at seabed, Station 03 GC
02.07.2005	19:31	183	Gravitycorer on deck
02.07.2005	19:42	183	Start velocuity profile St 05 CTD (sta0346) - taken at same location as gravity core
02.07.2005	20:04	183	End velocity profile St 05 CTD
02.07.2005	20:05	183	Transit to core station 04 (no logging of EM1002/TOPAS)
02.07.2005	20:34	183	TOPAS (Ricker pulse) logging on at core station 04
02.07.2005	21:09	183	TOPAS (Ricker pulse) logging off, NO coring attempt
02.07.2005	21:11	183	At core station 05 - renamed to Core station 04
02.07.2005	21:26	183	Gravitycorer off deck
02.07.2005	21:42	183	Gravitycorer at bottom
02.07.2005	21:55	183	Core on deck
02.07.2005	22:00	183	Transit to station 05
02.07.2005	22:51	183	Core station 05, water depth 408m; core length 1.5m
02.07.2005	22:58	183	Transit to core station 06, speed 10kt
02.07.2005	23:55	183	TOPAS (Ricker pulse) logging on, survey speed 4.4 kt, short survey of core station 06 area
03.07.2005	00:03	184	TOPAS (Ricker pulse) logging off
03.07.2005	00:08	184	TOPAS (Ricker pulse) logging on for cross section of the core station 06 area

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General Survey log

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Date	Time (UTC)	Julian Day	Subject
03.07.2005	00:23	184	TOPAS (Ricker pulse) logging off and logging on
03.07.2005	00:34	184	TOPAS (Ricker pulse) logging off
03.07.2005	00:35	184	TOPAS (Ricker pulse) logging on
03.07.2005	00:43	184	TOPAS (Ricker pulse) logging off
03.07.2005	00:47	184	TOPAS (Ricker pulse) logging on
03.07.2005	00:56	184	TOPAS (Ricker pulse) logging off
03.07.2005	01:04	184	On core station 06
03.07.2005	01:31	184	Transit out of the fjord to the next survey area in open sea
03.07.2005	01:40	184	TOPAS (Ricker pulse) logging on and EM1002 logging on; 40kHz recording length 300ms, survey speed 11 kt
03.07.2005	01:40	184	Tried to change the clock of the TOPAS computer to the UTC hour (one hour less than before), however did not work
03.07.2005	02:47	184	TOPAS shut down
03.07.2005	02:58	184	EM1002 logging off and logging on
03.07.2005	03:27	184	TOPAS (Ricker pulse) logging on; rename line number; Måløy Plataeu survey starting from line 110; survey speed 7kt
03.07.2005	03:50	184	TOPAS (Ricker pulse) logging off, end of TOPAS line 110 and EM1002 logging off and on
03.07.2005	03:50	184	TOPAS (Ricker pulse) logging on, start line 111, survey speed 6kt
03.07.2005	04:04	184	TOPAS (Ricker pulse) logging off, end of line 111
03.07.2005	04:04	184	EM1002 logging off, end of multibeam survey line 23
03.07.2005	04:10	184	Start velocity profile St 06 CTD (sta0347)
03.07.2005	04:21	184	End velocity profile St 06 CTD
03.07.2005	04:22	184	EM1002 logging on, multibeam survey line 1
03.07.2005	04:22	184	TOPAS (Ricker pulse) logging on, start survey line 112
03.07.2005	05:12	184	Boat turning 90°;TOPAS (Ricker pulse) logging off, end of survey line 112
03.07.2005	05:12	184	TOPAS (Ricker pulse) logging on, start survey line 113
03.07.2005	06:11	184	Wind speed 11 kt, survey speed 7.4 kn, sunny, flat sea
03.07.2005	06:16	184	EM1002 logging off, end multibeam survey line 1
03.07.2005	06:16	184	TOPAS (Ricker pulse) logging off, end of survey line 113
03.07.2005	06:19	184	EM1002 logging on, multibeam survey line 2, boat turning
03.07.2005	06:19	184	TOPAS (Ricker pulse) logging on, survey line 114
03.07.2005	06:25	184	Survey speed 8.1kt
03.07.2005	06:48	184	Survey speed 7.1kt
03.07.2005	07:34	184	EM1002 logging off, end of line 2, boat turning
03.07.2005	07:34	184	TOPAS (Ricker pulse) logging off, end of line 114
03.07.2005	07:37	184	EM1002 logging on, start of multibeam survey line 3
03.07.2005	07:37	184	TOPAS (Ricker pulse) logging on, start of line 115, survey speed 6.8kt
03.07.2005	08:14	184	Survey speed 7.2 kt, sunny, windspeed 10.5kt
03.07.2005	08:24	184	Boat turning, EM1002 logging off, end of multibeam survey line 3
03.07.2005	08:24	184	TOPAS (Ricker pulse) logging off, end of line 115
03.07.2005	08:24	184	EM1002 logging on, multibeam survey line 4

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General Survey log
UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Date	Time (UTC)	Julian Day	Subject
03.07.2005	08:24	184	TOPAS (Ricker pulse) logging on, start of line 116, survey speed 7.8kt
03.07.2005	08:59	184	Survey spped 8.3 kt
03.07.2005	09:35	184	Survey speed 7.5 kt
03.07.2005	09:48	184	Survey speed 7.5 kt, sunny, windspeed 16kt
03.07.2005	10:15	184	TOPAS (Ricker pulse) logging off, end of the line 116; EM1002 logging off and logging on
03.07.2005	10:15	184	TOPAS (Ricker pulse) logging on, start of line 117, survey speed 8.0kt
03.07.2005	11:01	184	TOPAS (Ricker pulse) logging off, end of line 117; EM1002 logging off
03.07.2005	11:02	184	Return to core station 07
03.07.2005	11:16	184	On station 07
03.07.2005	11:50	184	Core on deck
03.07.2005	12:08	184	TOPAS (Ricker pulse) logging on, start line 118; EM1002 logging on, multibeam survey line 7
03.07.2005	12:20	184	EM1002 logging off, end of line 7; EM1002 logging on, start of multibeam survey line 8;
03.07.2005	12:20	184	TOPAS (Ricker pulse) logging off, end line 118; TOPAS (Ricker pulse) logging on, start line 119; survey speed 8.0 kt
03.07.2005	14:41	184	TOPAS (Ricker pulse) logging off ;EM1002 logging off
03.07.2005	14:51	184	On core station 08
03.07.2005	15:02	184	Core on deck, length 208m
03.07.2005	15:19	184	Transit to the core station 09
03.07.2005		184	Swell increase to 1m
03.07.2005	15:59	184	On core station 09
03.07.2005	16:16	184	core on deck
03.07.2005	16:21	184	EM1002 logging on, start line 9 (going towards the Storegga Slide area)
03.07.2005	16:21	184	TOPAS (Ricker pulse) logging on, start line 120, survey speed 10.1kt
03.07.2005	16:29	184	Reduced speed to 7.9kt
03.07.2005	16:48	184	Reduced speed to 7.3kt, windspeed 21kt
03.07.2005	16:55	184	Incereased speed to 7.8kt
03.07.2005	17:23	184	Edge of Måløy Plateau survey area, stopped print screen after this point, continued TOPAS (Ricker pulse) line 120
03.07.2005	17:37	184	EM1002 stopped logging automatically due to disk becoming full, removed some data
03.07.2005	17:44	184	EM1002 logging restarted line 10
03.07.2005	17:52	184	Survey speed 7.5kt, windspeed 15.2kt
03.07.2005	18:42	184	Survey speed 7.4kt, windspeed 18kt, light rain
03.07.2005	19:27	184	Survey speed 7.3kt, windspeed 11.5kt, drizzle/mist
03.07.2005	19:51	184	Survey speed 8.4kt, windspeed 15.2kt
03.07.2005	20:16	184	EM1002 logging off, end of line 10, due to lowering of keel
03.07.2005	20:23	184	Keel lowered to 1.504 m
03.07.2005	20:25	184	EM1002 logging on, start multibeam survey line 11, wind speed 14.0kt
03.07.2005	20:38	184	TOPAS (Ricker pulse) logging off, end of line 120, turning 40° W
03.07.2005	20:38	184	TOPAS (Ricker pulse) logging on, start of line 121, survey speed 7.4kt

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General Survey log

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Date	Time (UTC)	Julian Day	Subject
03.07.2005	21:45	184	Entered Storegga Slide
03.07.2005	21:57	184	On St 07 CTD
03.07.2005	21:57	184	EM1002 logging off, end of line 11
03.07.2005	21:57	184	TOPAS (Ricker pulse) logging off, end of line 121
03.07.2005	22:00	184	Start velocity profile St 07 CTD (sta0348)
03.07.2005	22:16	184	End velocity profile St 07 CTD
03.07.2005	22:27	184	TOPAS (Ricker pulse) logging on, start line 122
03.07.2005	22:39	184	TOPAS (Ricker pulse) logging off, end line 122; TOPAS (Ricker pulse) logging on, start line 123;
03.07.2005	22:39	184	EM1002 logging off and on;survey speed 8kt
03.07.2005	23:29	184	TOPAS (Ricker pulse) logging off and logging on, end line 123 - start line 124
04.07.2005	00:19	185	TOPAS (Ricker pulse) logging off, end of line 124
04.07.2005	00:23	185	TOPAS (Ricker pulse) logging on, start line 125; EM1002 logging on, survey speed 7 kt
04.07.2005	00:53	185	Opened the beam from 67° to 70°
04.07.2005	01:44	185	TOPAS (Ricker pulse) logging off and on, end line 125 start line 126
04.07.2005	02:05	185	Start screen shots of profile
04.07.2005	02:12	185	TOPAS (Ricker pulse) logging off and on, end line 126 and start line 127 ; survey speed 8kt
04.07.2005	04:17	185	TOPAS (Ricker pulse) logging off, end line 127; EM1002 logging off
04.07.2005	04:22	185	TOPAS (Ricker pulse) logging on, start line 128 and EM1002 logging on
04.07.2005	06:07	185	Survey speed 8.1kt
04.07.2005	06:11	185	Boat turning to meet survey line previous year's cruise to extend coverage
04.07.2005	06:22	185	Boat in correct position, now following the survey line from previous year
04.07.2005	07:11	185	Boat turning 180 °stop EM1002
04.07.2005	07:11	185	TOPAS (Ricker pulse) logging off, end line 128
04.07.2005	07:15	185	EM1002 logging off
04.07.2005	07:15	185	TOPAS (Ricker pulse) logging on, start line 129
04.07.2005	07:27	185	Survey speed 6.9kt
04.07.2005	07:45	185	TOPAS gain increased to 27dB
04.07.2005	08:00	185	Started the real- time thermosalinity measurements
04.07.2005	08:09	185	Results of thermpsalinity measurements in
04.07.2005	08:49	185	Boat turning slightly to follow line of previous survey
04.07.2005	10:01	185	TOPAS (Ricker pulse) logging off, end line 129; EM1002 logging off ; 180° turning
04.07.2005	10:02	185	TOPAS (Ricker pulse) logging on, start line 130; EM1002 logging on, start line 18; survey speed 6kt
04.07.2005	10:35	185	Survey speed 8,5kt
04.07.2005	10:50	185	TOPAS (Ricker pulse) logging off, end line 130; EM1002 logging off due to machine problem
04.07.2005	11:08	185	TOPAS (Ricker pulse) logging on, start line 131; EM1002 logging on, start line 19; survey speed 8,5 kt
04.07.2005	13:01	185	TOPAS (Ricker pulse) logging off, end line 131; EM1002 logging off
04.07.2005	13:02	185	TOPAS (Ricker pulse) logging on, start line 132; EM1002 logging on, start line 20; survey speed 8kt

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General Survey log
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Date	Time (UTC)	Julian Day	Subject
04.07.2005	15:20	185	EM1002 logging off
04.07.2005	16:23	185	TOPAS (Ricker pulse) logging on and off, start new line 133
04.07.2005	15:25	185	EM1002 logging on, start line 21
04.07.2005	16:23	185	Survey speed 8.6 kt, but has been up to 10 kt
04.07.2005	17:31	185	EM1002 logging off, boat turning 90° to go to core station 10
04.07.2005	17:31	185	Stop print screen from TOPAS, but still logging towards the core station
04.07.2005	17:43	185	Stop TOPAS (Ricker pulse) line 133. Boat stopping at core site 10
04.07.2005	18:13	185	Core on deck, no penetration
04.07.2005	18:15	185	Boat starting direction northwest
04.07.2005	18:43	185	TOPAS (Ricker pulse) logging om
04.07.2005	18:50	185	TOPAS (Ricker pulse) logging off
04.07.2005	19:13	185	Start lowering gravity corer at station 11
04.07.2005	19:15	185	Corer at bottom
04.07.2005	19:22	185	Corer on deck
04.07.2005	19:28	185	Turning boat into postion to continue survey
04.07.2005	19:31	185	TOPAS (Ricker pulse) logging on, start line 134
04.07.2005	19:31	185	EM1002E logging on, start line 22, survey speed 8.4 kt
04.07.2005	20:11	185	Survey speed 7.4 kt, wind speed 2.0 kt
04.07.2005	20:20	185	Survey speed 8.4 kt
04.07.2005	21:18	185	Boat turning ca 180°; TOPAS (Ricker pulse) logging off, end of line 134
04.07.2005	21:18	185	EM1002 logging off
04.07.2005	21:25	185	TOPAS (Ricker pulse) logging on, start line 135
04.07.2005	21:25	185	EM1002 logging on
04.07.2005	23:02	185	TOPAS (Ricker pulse) logging off
04.07.2005	23:02	185	EM1002 logging off
04.07.2005	23:06	185	TOPAS (Ricker pulse) logging on, start line 136
04.07.2005	23:06	185	EM1002 logging on
05.07.2005	00:13	186	TOPAS (Ricker pulse) logging off
05.07.2005	00:13	186	EM1002 logging off
05.07.2005	00:19	186	TOPAS (Ricker pulse) logging on, start line 137
05.07.2005	00:19	186	EM1002 logging on
05.07.2005	00:24	186	TOPAS (Ricker pulse) pause, line 137 continued (ship turned ¨~90°)
05.07.2005	01:26	186	EM1002 logging off
05.07.2005	01:27	186	TOPAS (Ricker pulse) logging off, line 137
05.07.2005	01:27	186	TOPAS (Ricker pulse) logging on, line 138 - survey speed 11 kt - transit
05.07.2005	01:32	186	Ping interval 500 ms
05.07.2005	01:53	186	TOPAS (Ricker pulse) logging off, line 138
05.07.2005	01:55	186	TOPAS (Ricker pulse) logging on, line 139
05.07.2005	02:40	186	TOPAS (Ricker pulse) logging off, line 139
05.07.2005	02:56	186	On core station 12 - core labelled GS140-10GC – but is to be changed
05.07.2005	03:32	186	TOPAS (Ricker pulse) logging on, line 140 and EM1002 26 logging on ; survey speed 8 kt
05.07.2005	04:28	186	EM1002 logging off

Table I

General Survey log

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Date	Time (UTC)	Julian Day	Subject
05.07.2005	04:28	186	EM300 logging on
05.07.2005	04:29	186	Changed TOPAS (Ricker pulse) ping interval to 1360; gap in print screen shots - change in seabed position
05.07.2005	04:56	186	Changed gain on TOPAS (Ricker pulse) to 36
05.07.2005	05:04	186	Boat turning, EM300 logging off
05.07.2005	05:04	186	TOPAS (Ricker pulse) logging off, end line 140
05.07.2005	05:13	186	Boat stopping, on St 08 CTD
05.07.2005	05:13	186	Start velocity profile St 08CTD (sta0349)
05.07.2005	05:45	186	End velocity profile St 08CTD
05.07.2005	05:49	186	Boat start and turn 180 °
05.07.2005	05:56	186	Changed TOPAS trace length from 150 ms to 200 ms
05.07.2005	06:00	186	TOPAS (Ricker pulse) logging on, line 141
05.07.2005	06:00	186	EM300 logging on
05.07.2005	06:27	186	survey speed 7.0 kt; wind speed 12 kt, sunny
05.07.2005	06:50	186	Lost seabed
05.07.2005	06:55	186	Boat tuning, EM300 logging off
05.07.2005	06:55	186	TOPAS (Ricker pulse) logging off, end of line 141
05.07.2005	07:03	186	TOPAS (Ricker pulse) logging on, start line 142
05.07.2005	07:03	186	EM300 logging on
05.07.2005	07:59	186	End of North Sea Fan area, TOPAS (Ricker pulse) logging off, end of line 142
05.07.2005	07:59	186	EM300 logging off
05.07.2005	07:59	186	TOPAS (Ricker pulse) logging on, start of line 143, survey speed 7.4kt
05.07.2005	07:59	186	EM300 logging on
05.07.2005	08:19	186	Changed topas ping interval to 1450
05.07.2005	08:35	186	Changed topas ping interval to 1520
05.07.2005	08:42	186	Changed topas ping interval to 1550
05.07.2005	09:10	186	Changed topas ping interval to 1610
05.07.2005	09:27	186	Lost seabed
05.07.2005	09:27	186	Changed topas ping interval to 1710
05.07.2005	09:30	186	Changed topas ping interval to 1900
05.07.2005	09:31	186	Reduced TOPAS trace length to 150 ms
05.07.2005	09:57	186	TOPAS (Ricker pulse) logging off, end of line 143;
05.07.2005	09:57	186	TOPAS (Ricker pulse) logging on, start line 144; survey speed 8,4 kt
05.07.2005	12:05	186	TOPAS (Ricker pulse) logging off, end of line 144;
05.07.2005	12:05	186	TOPAS (Ricker pulse) logging on, start line 145; survey speed 8kt ideal for EM300
05.07.2005	12:28	186	EM1002 change max depth to 1500m
05.07.2005	13:23	186	TOPAS (Ricker pulse) logging off and logging on end line 145 and start line 146
05.07.2005	14:35	186	TOPAS (Ricker pulse) logging off and logging on; end line 146 and start line 147
05.07.2005	15:01	186	Changed TOPAS trace length 200 ms instead of 150 ms
05.07.2005	15:39	186	Attempted TOPAS (Chirp pulse) logging on
05.07.2005	15:46	186	TOPAs (Chrip pulse) logging off; TOPAS (Ricker pulse) logging on
05.07.2005	16:32	186	Changed TOPAS gain to 34 dB

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General Survey log

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Date	Time (UTC)	Julian Day	Subject
05.07.2005	17:13	186	Changed TOPAS gain to 32 dB
05.07.2005	17:43	186	Boat turning, EM300 logging off
05.07.2005	17:43	186	TOPAS (Ricker pulse) logging off, end line 147
05.07.2005	17:43	186	EM300 logging on
05.07.2005	17:43	186	TOPAS (Ricker pulse) logging on, start line 148, survey speed 9.0kt
05.07.2005	17:52	186	Wind speed 6.0 kt
05.07.2005	19:12	186	Wind speed 17.8 kt, survey speed 10.2 kt
05.07.2005	19:42	186	Wind speed 22.0kt
05.07.2005	20:27	186	Wind speed 26kt survey speed 9.7 kt
05.07.2005	21:08	186	Wind speed 25.3 kt, swell increase to 5m
05.07.2005	21:15	186	Reduced survey speed to 9.2 kt
05.07.2005	21:16	186	Wind speed 30.0 kt
05.07.2005	21:49	186	Wind speed 36.0kt
05.07.2005	21:49	186	Reduced survey speed to 7.6kt
05.07.2005	23:49	186	Increase in wave height to 8m, boat stopped
05.07.2005	23:43	186	EM300 logging off
05.07.2005	23:49	186	TOPAS (Ricker pulse) logging off, end of line 148
06.07.2005	06:01	187	TOPAS (Ricker pulse) logging on, start line 149
06.07.2005	06:02	187	Wind speed 15.0kt
06.07.2005	07:31	187	Survey speed 7.9 kt
06.07.2005	07:56	187	Survey speed 5.6kt
06.07.2005	09:45	187	EM300 logging on, survey speed 5.8kt
06.07.2005	10:06	187	Boat turing 90 degrees, TOPAS (Ricker pulse) logging off, end of line 149
06.07.2005	10:06	187	EM300 logging off
06.07.2005	10:08	187	TOPAS (Ricker pulse) logging on, start line 150
06.07.2005	10:08	187	EM300 logging on
06.07.2005	10:11	187	TOPAS ping interval changed to 1500
06.07.2005	10:30	187	TOPAS trace length down to 150
06.07.2005	11:23	187	Boat turns 90° to starboard
06.07.2005		187	TOPAS trace length increased to 200
06.07.2005	11:52	187	TOPAS logging off, end of line 150
06.07.2005	11:52	187	EM300 logging off
06.07.2005	11:58	187	TOPAS (Ricker pulse) logging on, start line 151
06.07.2005	11:58	187	EM300 logging on
06.07.2005	12:05	187	TOPAS trace length 150
06.07.2005	12:46	187	TOPAS trace length 200
06.07.2005	12:54	187	TOPAS (Ricker pulse) logging off, end of line 151
06.07.2005	12:54	187	EM300 logging off
06.07.2005	12:56	187	TOPAS (Ricker pulse) logging on, start of line 152
06.07.2005	12:56	187	EM300 logging on
06.07.2005	13:34	187	TOPAS (Ricker pulse) logging off and on, stop line 152 and start line 153; EM300 logging off and logging on
06.07.2005	14:47	187	TOPAS (Ricker pulse) logging off and on, stop line 153 and start line 154; EM300 logging off and on

Table I

General Survey log
UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Date	Time (UTC)	Julian Day	Subject
06.07.2005	15:17	187	EM1002 logging on (at the same time at the EM300)
06.07.2005	15:22	187	TOPAS (Ricker pulse) logging off and on, stop line 154 and start line 155
06.07.2005	16:27	187	TOPAS (Ricker pulse) logging off, end of line 155
06.07.2005	16:27	187	EM300 logging off
06.07.2005	16:27	187	EM1002 logging off
06.07.2005	16:27	187	Noticed that EM1002 is running on the wrong survey file name and speed profile
06.07.2005	16:40	187	TOPAS (Ricker pulse) logging on, start of line 156
06.07.2005	16:40	187	EM1002 logging on, survey speed 7.4kt
06.07.2005	16:52	187	Wind speed 15.0kt
06.07.2005	16:58	187	TOPAS line 156 marks the start of North Sea survey area
06.07.2005	17:40	187	TOPAS (Ricker pulse) logging off, end of line 156
06.07.2005	17:40	187	EM1002 logging off
06.07.2005	17:45	187	Start velocity profile St 09 CTD (sta0350)
06.07.2005	17:59	187	End velocity profile St 09 CTD
06.07.2005	18:09	187	EM1002 logging on
06.07.2005	18:09	187	TOPAS (Ricker pulse) logging on, start line 157, survey speed 7.6kt
06.07.2005	18:20	187	Reduced 'TOPAS gain to 29dB
06.07.2005	18:32	187	survey speed 9.5kt
06.07.2005	19:50	187	wind speed 9.0kt
06.07.2005	20:43	187	Changed TOPAS ping interval to 500
06.07.2005	21:57	187	TOPAS trace length reduced to 100
06.07.2005	23:42	187	TOPAS (Ricker pulse) logging off, end of line 157
06.07.2005	23:43	187	TOPAS (Ricker pulse) logging on, start of line 158
07.07.2005	01:27	188	EM1002 logging off; TOPAS (Ricker pulse) logging off, end of line 158
07.07.2005	01:27	188	On core station 13
07.07.2005	01:49	188	Core on deck, nothing in the core as core barrell broke
07.07.2005	01:49	188	Start velocity profile St 10 CTD (sta0351)
07.07.2005	01:58	188	End velocity profile St 10 CTD
07.07.2005	02:11	188	TOPAS (ricker pulse) logging on, start line 159; EM1002 logging on to cross a ridge close to the core station
07.07.2005	02:25	188	EM1002 logging off to input the CTD curve; celerity rubbish
07.07.2005	02:30	188	EM1002 logging on
07.07.2005	06:10	188	Changed TOPAS gain to 20dB
07.07.2005	06:12	188	Changed TOPAS gain to 23dB
07.07.2005	06:18	188	Wind speed 1.0 kt
07.07.2005	06:18	188	Survey speed 9.1 kt
07.07.2005	06:20	188	Changed TOPAS gain to 20dB
07.07.2005	06:34	188	Changed TOPAS gain to 17dB
07.07.2005	06:37	188	Changed TOPAS trace length to 150 ms
07.07.2005	06:45	188	Changed TOPAS gain to 23dB
07.07.2005	06:47	188	Changed TOPAS gain to 22dB
07.07.2005	07:06	188	Wind speed 6.0 kt
07.07.2005	07:09	188	Changed TOPAS gain to 21 dB

Table I

General Survey log
UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Date	Time (UTC)	Julian Day	Subject
07.07.2005	08:44	188	Boat stopping.EM1002 logging off
07.07.2005	08:44	188	TOPAS (Ricker pulse) logging off, end of line 159
07.07.2005	08:44	188	On CTD station 11
07.07.2005	08:49	188	Start velocity profile St 11 CTD (sta0352)
07.07.2005	08:56	188	End velocity profile St 11 CTD
07.07.2005	08:57	188	Note velocity profile indicates that line 159 was logging 2m/s out
07.07.2005	08:57	188	EM1002 logging on
07.07.2005	08:57	188	TOPAS (Ricker pulse) logging on, start line 160, survey speed 3.4 kt
07.07.2005	09:09	188	Boat turning. EM1002 logging off
07.07.2005	09:09	188	TOPAS (Ricker pulse) logging off, end line 160
07.07.2005	09:10	188	TOPAS (Ricker pulse) logging on, start of line 161
07.07.2005	09:10	188	EM1002 logging on
07.07.2005	09:17	188	Survey speed 8.9 kt
07.07.2005	12:09	188	TOPAS (ricker pulse) logging off end of line 161
07.07.2005	12:09	188	EM1002 logging off
07.07.2005	12:10	188	TOPAS (Ricker pulse) logging on, start line 162
07.07.2005	12:10	188	EM1002 logging on
07.07.2005	14:52	188	TOPAS (Ricker pulse) logging off and on, stop line 162 and start line 163; EM1002 logging off and on
07.07.2005	16:27	188	Changed TOPAS trace length to 150
07.07.2005	16:35	188	Increased TOPAS gain to 24dB
07.07.2005	17:24	188	Survey speed 8.1 kt
07.07.2005	17:24	188	Wind speed 8.7 kt
07.07.2005	18:36	188	Boat turning 180°
07.07.2005	18:36	188	EM1002 logging off
07.07.2005	18:36	188	TOPAS (ricker pulse) logging off
07.07.2005	18:42	188	Line 163 aborted "something" seen in the sea -going back
07.07.2005	18:47	188	TOPAS logging on, start of line 164
07.07.2005	18:47	188	EM1002 logging on
07.07.2005	19:05	188	Changed TOPAS gain to 19
07.07.2005	19:16	188	Changed TOPAS gain to 17
07.07.2005	19:52	188	Boat turning 30°
07.07.2005	20:13	188	Changed gain to 21
07.07.2005	20:23	188	Changed gain to 24
07.07.2005	20:32	188	Changed trace length to 100 ms
07.07.2005	21:02	188	Changed trace length to 130 ms
07.07.2005	21:24	188	Changed gain to 19
07.07.2005	22:08	188	TOPAS (Ricker pulse) logging off, end of line 164
07.07.2005	22:08	188	On station St 12 CTD
07.07.2005	22:08	188	EM1002 logging off
07.07.2005	22:10	188	Start velocity profile St 12 CTD (sta0353)
07.07.2005	22:19	188	End velocity profile St 12 CTD
07.07.2005	22:23	188	TOPAS (Ricker pulse) logging on, start of line 165 (Fladen Ground survey area); survey speed 10 kt

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General Survey log

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Date	Time (UTC)	Julian Day	Subject
07.07.2005	22:24	188	EM1002 logging on
08.07.2005	02:18	189	TOPAS (Ricker pulse) logging off, end of line 165
08.07.2005	02:18	189	EM1002 logging off
08.07.2005	02:19	189	EM1002 logging on
08.07.2005	02:20	189	EM1002 logging off
08.07.2005	02:21	189	EM1002 logging on
08.07.2005	02:22	189	TOPAS (Ricker pulse) logging on, start of line 166
08.07.2005	06:30	190	Boat turning, TOPAS (Ricker pulse) logging off, end of line 166
08.07.2005	06:30	190	EM1002 logging off
08.07.2005	06:32	190	TOPAS (Ricker pulse) logging on, start of line 167
08.07.2005	06:32	190	EM1002 logging on
08.07.2005	06:33	190	Changed TOPAS gain to 17dB
08.07.2005	06:35	190	Survey speed 9.9 kt
08.07.2005	09:40	190	Changed TOPAS gain to 16 dB
08.07.2005	10:38	190	TOPAS (Ricker pulse) logging off, end of line 167
08.07.2005	10:39	190	EM1002 logging off
08.07.2005	10:39	190	On station St 13 CTD, water depth 121m
08.07.2005	10:47	190	Start velocity profile St 13 CTD (sta0354)
08.07.2005	10:58	190	End velocity profile St 13 CTD
08.07.2005	11:14	190	EM1002 logging on
08.07.2005	11:15	190	TOPAS (Ricker pulse) logging on, start of line 168
08.07.2005	12:33	190	TOPAS (Ricker pulse) logging off and on, end of line 168, start of line 169; EM1002 logging off and on
08.07.2005	14:00	190	TOPAS (ricker pulse) logging off and on, end of line 169, start line 170; EM1002 logging off and on
08.07.2005	15:17	190	TOPAS (ricker pulse) logging off, end of line 170; EM1002 logging off
08.07.2005	15:22	190	EM1002 logging on; TOPAS (Ricker pulse) logging on, start of line 171
08.07.2005	16:44	190	EM1002 logging off, boat turning
08.07.2005	16:44	190	TOPAS (ricker pulse) logging off, end of line 171
08.07.2005	16:46	190	On station St 14 CTD, water depth 126 m
08.07.2005	16:49	190	Start veolocity profile St 14 CTD (sta0355)
08.07.2005	16:56	190	End velocity profile St 14 CTD
08.07.2005	17:07	190	TOPAS (Ricker pulse) logging on, start of line 172
08.07.2005	17:07	190	EM1002 logging on
08.07.2005	17:26	190	Wind speed 10.0 kt
08.07.2005	17:26	190	Survey speed 8.8 kt
08.07.2005	18:31	190	Boat turning, EM1002 logging off
08.07.2005	18:31	190	TOPAS (Ricker pulse) logging off, end of line 172
08.07.2005	18:33	190	EM1002 logging on
08.07.2005	18:33	190	TOPAS (Ricker pulse) logging on, start of line 173
08.07.2005	19:55	190	Boat turning, EM1002 logging off
08.07.2005	19:55	190	TOPAS (Ricker pulse) logging off, end of line 173
08.07.2005	19:58	190	EM1002 logging on
08.07.2005	19:58	190	TOPAS (Ricker pulse) logging on , start of line 174
08.07.2005	20:03	190	Survey speed 8.4kt, windspeed 12.0kt

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General Survey log

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Date	Time (UTC)	Julian Day	Subject
08.07.2005	21:21	190	EM1002 logging off
08.07.2005	21:21	190	TOPAS (Ricker pulse) logging off, end of line 174
08.07.2005	22:23	190	EM1002 logging on
08.07.2005	22:23	190	TOPAS (Ricker pulse) logging on, start of line 175, survey speed 8.8kt
08.07.2005	23:00	190	Sharp turn, EM1002 logging off and logging on
08.07.2005	23:05	190	Close to the core 77/2
08.07.2005	23:20	190	Turn towards basin
08.07.2005	23:34	190	TOPAS (ricker pulse) logging off, end line 175
08.07.2005	23:34	190	EM1002 logging off
08.07.2005	23:38	190	Om tation St 15 CTD
08.07.2005	23:39	190	Start velocity profile St 15 CTD (sta0356)
08.07.2005	23:48	190	End velocity profile St 15 CTD
08.07.2005	23:56	190	TOPAS (ricker pulse) logging on, start of line 176
09.07.2005	00:22	191	Reduced EM1002 angle to 65°
09.07.2005	04:39	191	TOPAS (ricker pulse) logging off, end of line 176
09.07.2005	04:39	191	EM1002 logging off
09.07.2005	04:39	191	On station St 16 CTD, water depth 92 m
09.07.2005	04:45	191	Start velocity profile St 16 CTD (sta0357)
09.07.2005	04:58	191	End velocity profile St 16 CTD, boat turning west
09.07.2005	04:57	191	TOPAS (Ricker pulse) logging on, start of line 177
09.07.2005	04:57	191	EM1002 logging on
09.07.2005	07:24	191	TOPAS (Ricker pulse) logging off, end of line 177
09.07.2005	07:24	191	EM1002 logging off
09.07.2005	07:27	191	TOPAS (Ricker pulse) start of line 178
09.07.2005	07:27	191	EM1002 logging on
09.07.2005	09:48	191	Increased TOPAS gain to 19dB
09.07.2005	10:37	191	TOPAS (Ricker pulse) logging off, end of line 178; EB1002 logging off
09.07.2005	10:40	191	10:40 Log gap ~3 mi! Covered with Fladen Ground screenshot saved as "178_25 data gap"
09.07.2005	10:41	191	TOPAS (Ricker pulse) logging on, start of line 179; EB1002 logging on
09.07.2005	12:42	191	Boat made slight turn
09.07.2005	13:34	191	TOPAS (Ricker pulse) logging off and on, end of line 179 and start of line 180; EM1002 logging on and off
09.07.2005	14:14	191	Gentle turn
09.07.2005	14:15	191	Sharp turn, EM1002 logging off and on; TOPAS (Ricker pulse) logging off and on, end of line 180, start of line 181
09.07.2005	17:04	191	TOPAS (Ricker pulse) logging off, end of line 181
09.07.2005	17:04	191	EM1002 logging off, boat turning 90° to south
09.07.2005	17:05	191	TOPAS (Ricker pulse) logging on, start line 182
09.07.2005	17:05	191	EM1002 logging on
09.07.2005	17:14	191	TOPAS (Ricker pulse) logging off, end of 182
09.07.2005	17:14	191	EM1002 logging off
09.07.2005	17:14	191	On station St 17 CTD
09.07.2005	17:20	191	Start velocity profile St 17 CTD (sta0258)
09.07.2005	17:27	191	End velocity profile St 17 CTD
09.07.2005	17:27	191	On station St 14 GC
09.07.2005	17:33	191	Gravity corer off deck

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UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Date	Time (UTC)	Julian Day	Subject
09.07.2005	17:38	191	Gravity corer at seabed
09.07.2005	17:43	191	Gravity corer on deck
09.07.2005	17:54	191	EM1002 logging on
09.07.2005	17:54	191	TOPAS (Ricker pulse) logging on, start line 183
09.07.2005	17:59	191	EM1002 logging off
09.07.2005	17:59	191	TOPAS (ricker pulse) logging off, end of line 183
09.07.2005	18:02	191	EM1002 logging on
09.07.2005	18:02	191	TOPAS (ricker pulse) logging on, start of line 184
09.07.2005	18:22	191	Gap in data in TOPAS, something strange happened ? Loss of signal from equipment
09.07.2005	18:25	191	EM1002 logging off and logging on
09.07.2005	18:45	191	Slight turn of boat, TOPAS logging off and logging on, end of line 184, start of line 185
09.07.2005	19:00	191	Survey speed 9.5 kt, windspeed 9.0 kt
09.07.2005	19:28	191	EM1002 logging off, boat turing west
09.07.2005	19:28	191	TOPAS (Ricker pulse) logging off, end of line 185
09.07.2005	19:29	191	EM1002 logging on
09.07.2005	19:29	191	TOPAS logging on, start of line 186
09.07.2005	19:33	191	Survey speed 9.2 kt, windspeed 5 kt
09.07.2005	19:52	191	Changed TOPAS gain to 16dB
09.07.2005	19.53	191	Changed TOPAS TVG
09.07.2005	20:00	191	Increased TOPAS gain to 19dB
09.07.2005	21:35	191	Survey speed 9.0 kt, wind speed 7.0 kt
10.07.2005	01:08	192	TOPAS (Ricker pulse) logging off, end of line 186
10.07.2005	01:08	192	EM1002 logging off
10.07.2005	01:08	192	EM1002 logging on
10.07.2005	01:08	192	TOPAS (Ricker pulse) logging on, start of line 187
10.07.2005	01:10	192	Survey speed 11 kt
10.07.2005	01:35	192	TOPAS (Ricker pulse) logging off, end of line 187
10.07.2005	01:35	192	TOPAS (Ricker pulse) logging on, start of line 188
10.07.2005	01:35	192	EM1002 logging off
10.07.2005	01:35	192	EM1002 logging on
10.07.2005	02:30	192	TOPAS (Ricker pulse) logging off, end of line 188
10.07.2005	02:30	192	EM1002 logging off
10.07.2005	02:30	192	EM1002 logging on
10.07.2005	02:30	192	TOPAS (Ricker pulse) logging on, start of line 189
10.07.2005	03:27	192	TOPAS (Ricker pulse) logging off, end of line 189
10.07.2005	03:27	192	EM1002 logging off
10.07.2005	03:27	192	EM1002 logging on
10.07.2005	03:28	192	TOPAS (Ricker pulse) logging on, start of line 190
10.07.2005	04:14	192	TOPAS (Ricker pulse) logging off, end of line 190
10.07.2005	04:14	192	EM1002 logging off
10.07.2005	04:16	192	EM1002 logging on
10.07.2005	04:16	192	TOPAS (Ricker pulse) logging on, start of line 191
10.07.2005	04:45	192	TOPAS (Ricker pulse) logging off, end of line 191
10.07.2005	04:45	192	EM1002 logging off
10.07.2005	04:46	192	EM1002 logging on

Table I

General Survey log

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Date	Time (UTC)	Julian Day	Subject
10.07.2005	04:46	192	TOPAS (Ricker pulse) logging on, start of line 192
10.07.2005	06:05	192	Boat turning west, EM1002 logging off
10.07.2005	06:05	192	TOPAS (ricker pulse) logging off, end of line 192
10.07.2005	06:06	192	EM1002 logging on
10.07.2005	06:06	192	TOPAS (Ricker pulse) logging on, start of line 193
10.07.2005	07:09	192	TOPAS (ricker pulse) logging off, end of line 193
10.07.2005	07:09	192	TOPAS (Ricker pulse) logging on, start of line 194
10.07.2005	08:58	192	Boat turning, EM1002 logging off
10.07.2005	08:58	192	TOPAS (Ricker pulse) logging off, end of line 194
10.07.2005	09:01	192	EM1002 logging on
10.07.2005	09:01	192	TOPAS (Ricker pulse) logging on, start of line 195
10.07.2005	09:26	192	Changed TOPAS gain to 20 dB
10.07.2005	09:46	192	Boat turing, EM1002 logging off
10.07.2005	09:46	192	TOPAS (Ricker pulse) logging off, end of line 195
10.07.2005	09:47	192	EM1002 logging on
10.07.2005	09:47	192	TOPAS (Ricker pulse) logging on, start of line 196
10.07.2005	10:19	192	TOPAS (Ricker pulse) logging off, end of line 196
10.07.2005	10:19	192	EM1002 logging off
10.07.2005	10:20	192	TOPAS (Ricker pulse) logging on, start of line 197
10.07.2005	10:22	192	EM1002 logging on
10.07.2005	10:36	192	TOPAS (Ricker pulse) logging off, end of line 197
10.07.2005	10:36	192	EM1002 logging off
10.07.2005	10:36	192	EM1002 logging on
10.07.2005	10:36	192	TOPAS (Ricker pulse) logging on, start of line 198
10.07.2005	11:05	192	EM1002 logging off and logging on
10.07.2005	11:05	192	TOPAS (Ricker pulse) logging off and on, end of line 198 and start of line 199
10.07.2005	11:22	192	EM1002 logging off and logging on
10.07.2005	11:22	192	TOPAS (Ricker pulse) logging off and on, end of line 199 and start of line 200
10.07.2005	12:49	192	EM1002 logging off
10.07.2005	12:49	192	EM1002 logging on
10.07.2005	12:50	192	TOPAS (ricker pulse) logging off, end of line 200
10.07.2005	12:50	192	TOPAS (Ricker pulse) logging on, start of line 201
10.07.2005	13:28	192	EM1002 logging off
10.07.2005	13:28	192	EM1002 logging on
10.07.2005	13:28	192	TOPAS (ricker pulse) logging off, end of line 201
10.07.2005	13:28	192	TOPAS (Ricker pulse) logging on, start of line 202
10.07.2005	14:05	192	EM1002 logging of automatically due to lack of space on disk
10.07.2005	14:33	192	EM1002 logging on, increased disk size
10.07.2005	14:37	192	EM1002 logging off
10.07.2005	14:37	192	EM1002 logging on
10.07.2005	14:39	192	TOPAS (ricker pulse) logging off, end of line 202
10.07.2005	14:39	192	TOPAS (Ricker pulse) logging on, start of line 203
10.07.2005	15:02	192	EM1002 logging off and logging on
10.07.2005	15:02	192	TOPAS (Ricker pulse) logging off and on, end of line 203 and start of line 204
10.07.2005	15:11	192	EM1002 logging off; TOPASS (Ricker pulse) logging off, end of line 204
10.07.2005	15:11	192	Boat turning towards core station St 15 GC and CTD station St 18 CTD

Table I

General Survey log

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Date	Time (UTC)	Julian Day	Subject
10.07.2005	15:27	192	On station
10.07.2005	15:33	192	Gravity core off deck
10.07.2005	15:43	192	Gravity core on deck
10.07.2005	15:50	192	Start velocity profile St 18 CTD (sta0359)
10.07.2005	15:54	192	End velocity profile St 18 CTD
10.07.2005		192	Going to take a new core at the same station; St 16 GC
10.07.2005	16:47	192	Gravity core off deck
10.07.2005	16:53	192	Gravity core at sea bottom
10.07.2005	17:01	192	Gravity core on deck
10.07.2005	17:09	192	TOPAS (Ricker pulse) logging on, start of line 205
10.07.2005	17:09	192	EM1002 logging on
10.07.2005	17:51	192	EM1002 logging off
10.07.2005	17:51	192	TOPAS (Ricker pulse) logging off, end of line 205
10.07.2005	17:52	192	EM1002 logging on
10.07.2005	17:52	192	TOPAS (ricker pulse) logging on, start of line 206
10.07.2005	18:24	192	Boat turning EM1002 logging off
10.07.2005	18:24	192	TOPAS (Ricker pulse) logging off, end of line 206
10.07.2005	18:25	192	EM1002 logging on
10.07.2005	18:51	192	Changed TOPAS gain to 18dB
10.07.2005	18:55	192	Changed TOPAS gain to 17dB
10.07.2005	19:01	192	Boat turning. EM1002 logging off
10.07.2005	19:01	192	TOPAS (Ricker pulse) logging off, end of line 207
10.07.2005	19:02	192	EM1002 logging on
10.07.2005	19:02	192	TOPAS (ricker pulse) logging on, start of line 208
10.07.2005	20:35	192	EM1002 increased coverage to 2000m
10.07.2005	20:41	192	Atle attempted to change the velocity profile on EM1002 logging off momentarily and logging on again
10.07.2005	20:55	192	Changed TOPAS trace length to 100 ms
10.07.2005	21:38	192	Changed TOPAS gain to 19
10.07.2005	21:51	192	Boat turning. EM1002 logging off
10.07.2005	21:51	192	TOPAS (Ricker pulse) logging off, end of line 208
10.07.2005	21:52	192	EM1002 logging on
10.07.2005	21:52	192	TOPAS (ricker pulse) logging on, start of line 209
10.07.2005	23:14	192	EM1002 logging off
10.07.2005	23:14	192	TOPAS (Ricker pulse) logging off, end of line 209
10.07.2005	23:14	192	TOPAS (ricker pulse) logging on, start of line 210
10.07.2005	23:16	192	EM1002 logging on
10.07.2005	23:44	192	EM1002 logging off
10.07.2005	23:44	192	TOPAS (Ricker pulse) logging off, end of line 210
10.07.2005	23:44	192	TOPAS (ricker pulse) logging on, start of line 211
10.07.2005	23:44	192	EM1002 logging on
11.07.2005	03:24	193	TOPAS (Ricker pulse) logging off, end of line 211
11.07.2005	03:24	193	EM1002 logging off
11.07.2005	03:24	193	EM1002 logging on
11.07.2005	03:25	193	TOPAS (ricker pulse) logging on, start of line 212
11.07.2005	04:45	193	Boat turning. EM1002 logging off

Table I

General Survey log

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Date	Time (UTC)	Julian Day	Subject
11.07.2005	04:45	193	TOPAS (Ricker pulse) logging off, end of line 212
11.07.2005	04:45	193	EM1002 logging on
11.07.2005	04:45	193	TOPAS (ricker pulse) logging on, start of line 213
11.07.2005	05:32	193	TOPAS (ricker pulse) line 213, boat turned
11.07.2005	05:32	193	TOPAS (ricker pulse) logging on, start ine 214; survey speed lowered to 3.5 kt
11.07.2005	06:36	193	TOPAS gain set to 19dB
11.07.2005	07:05	193	TOPAS gain set to 15dB
11.07.2005	07:16	193	Air gun streamer in water
11.07.2005	07:23	193	Air gun streamer out
11.07.2005	07:32	193	Set pressure on air gun
11.07.2005	07:34	193	Pressure on air gun
11.07.2005	07:35	193	Air-gun out
11.07.2005	07:43	193	Start shooting air gun every 12 meters
11.07.2005	07:45	193	Air gun - no sensor
11.07.2005	07:54	193	Air gun shooting
11.07.2005	07:57	193	Restarting air gun program
11.07.2005	08:00	193	Lost in-signal on air gun
11.07.2005	08:02	193	Air gun In-signal OK
11.07.2005	08:08	193	30 meters off air gun survey line
11.07.2005	08:13	193	Noise on air-gun Ch. 2 (mechanical problem occurred after streamer in sea)
11.07.2005	08:15	193	Increased pressure on air gun to 12.7 mA (ca 138 Bar)
11.07.2005	08:15	193	10 meters off air gun survey line - still decreasing
11.07.2005	08:19	193	6-7 meters off air gun survey line
11.07.2005	08:20	193	On survey air gun line again
11.07.2005	08:24	193	Shut down power to GEODE/data gap/air gun on
11.07.2005	08:30	193	Trying to fix air gun channel 2
11.07.2005	08:31	193	Geode online again
11.07.2005	08:32	193	Restarting air gun program
11.07.2005	08:32	193	Still problem with air gun channel 2 (broken cabel ?)
11.07.2005	08:38	193	Shut down air gun channel 2
11.07.2005	08:45	193	Log off system - not recording air-gun. Trying to cut off some cm of the cable
11.07.2005	08:57	193	Cutting cabel- but still problem with air gun channel 2
11.07.2005	08:58	193	Shut down air gun system again - not logging air-gun data
11.07.2005	09:01	193	Start air-gun again - recording only Channel 1
11.07.2005	09:30	193	Air gun channel 2 ok, shut off/on gain (to narrow filter)
11.07.2005	09:38	193	Playing around with the gain setting om air gun Channel 2
11.07.2005	10:02	193	Increased TOPAS ping interval to 1000 ms
11.07.2005	11:05	193	After a lot of noise problems on air gun channel 2, analogue low/high cut filter settings of 90-120
11.07.2005	11:12	193	Air gun streamer cable disconnected to test a new connection box from deck. Aim to reduce the 60 Hz on Ch. 2
11.07.2005	11:20	193	Air gun streamer cable connected on new connection box; no improvement of signal on Ch. 2
11.07.2005	11:30	193	Air gun streamer cable switched back to previous connection
11.07.2005	13:20	193	Air gun too near surface. Probable effect on signal
11.07.2005	13:40	193	EM1002 logging off
11.07.2005	13:40	193	EM1002 logging on

Table I

General Survey log

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Date	Time (UTC)	Julian Day	Subject
11.07.2005	13:40	193	TOPAS (Ricker pulse) logging off, end of line 214
11.07.2005	13:40	193	TOPAS (ricker pulse) logging on, start of line 215
11.07.2005	13:42	193	End of air gun line 2
11.07.2005	13:44	193	Boat turning south
11.07.2005	13:47	193	EM1002 logging off
11.07.2005	13:47	193	Problem with Air Gun, water depth too shallow, boat made a loop, Air Gun logging off
11.07.2005	14:05	193	EM1002 logging on
11.07.2005	14:08	193	Sol air gun line 3 - 5.1 knots - air gun deeper in the water
11.07.2005	16:38	193	Increased TOPAS gain from 16dB to 19dB
11.07.2005	16:39	193	Boat turning. EM1002 logging off
11.07.2005	16:39	193	TOPAS (Ricker pulse) logging off, end of line 215
11.07.2005	16:40	193	EM1002 logging on
11.07.2005	16:40	193	TOPAS (ricker pulse) logging on, start of line 216
11.07.2005	17:04	193	EOL airgun line 3
11.07.2005	17:05	193	Air Gun logging off and on deck. Decrease speed to 3kt
11.07.2005	17:15	193	Boat turning. EM1002 logging off
11.07.2005	17:15	193	TOPAS (Ricker pulse) logging off, end of line 216
11.07.2005	17:17	193	EM1002 logging on
11.07.2005	17:17	193	TOPAS (ricker pulse) logging on, start of line 'TEST'
11.07.2005	17:18	193	Decreased ping interval from 1000ms to 500ms
11.07.2005	17:22	193	Decreased speed to 2.3 kt due to do routine testing of boat
11.07.2005	17:36	193	EM1002 logging off
11.07.2005	17:36	193	TOPAS (Ricker pulse) logging off, end of line 'TEST'
11.07.2005	17:37	193	EM1002 logging on
11.07.2005	17:37	193	TOPAS (ricker pulse) logging on, start of line 217
11.07.2005	17:57	193	EM1002 logging off
11.07.2005	17:57	193	TOPAS (Ricker pulse) logging off, end of line 217
11.07.2005	18:04	193	EM1002 logging on
11.07.2005	18:02	193	TOPAS (ricker pulse) logging on, start of line 218
11.07.2005	19:09	193	EM1002 logging off
11.07.2005	19:09	193	TOPAS (ricker pulse) logging off, end of line 218, end FLADEN GROUND survey
11.07.2005	19:10	193	EM1002 logging on, going towards Leirvik start Norwegian Channel survey
11.07.2005	19:10	193	TOPAS (ricker pulse) logging on, start line 219, Norwegian Channel survey
11.07.2005	19:44	193	Reduced TOPAS gain to 17dB
11.07.2005	19:48	193	Increased TOPAS gain to 18dB
11.07.2005	20:00	193	Changed TOPAS trace length to 120 ms, survey speed 11 kt, wind speed 11 kt
11.07.2005	20:09	193	Changed TOPAS trace length to 100ms
11.07.2005	20:44	193	Survey speed 11 kt
11.07.2005	21:31	193	Survey speed 10.9 kt, windspeed 12 kt
11.07.2005	22:40	193	TOPAS ping interval 500 ms
11.07.2005	23:30	193	TOPAS trace length 150ms
12.07.2005	00:29	194	TOPAS trace length 100ms
12.07.2005	01:22	194	Tested TOPAS (chirp pulse) to see if we can see deeper
12.07.2005	01:24	194	Returned to TOPAS (ricker pulse)
12.07.2005	04:22	194	Boat turned

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General Survey log

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Date	Time (UTC)	Julian Day	Subject
12.07.2005	04:24	194	Changed trace length to 250ms
12.07.2005	04:25	194	Missed the seabed
12.07.2005	04:41	194	Boat turning
12.07.2005	05:10	194	TOPAS (ricker pulse) logging off, end of line 219, end Norwegian Channel survey
12.07.2005	05:10	194	TOPAS (ricker pulse) logging on, start line 220, start Hardangerfjorden Survey
12.07.2005	06:10	194	Boat turned and "stopped" in the middle of fjord, going to do some tests
12.07.2005	06:19	194	EM1002 logging off
12.07.2005	06:19	194	TOPAS (ricker pulse) logging off, end of line 220
12.07.2005	06:57	194	EM1002 logging on
12.07.2005	07:17	194	EM1002 logging off
12.07.2005	07:18	194	Boat stopped at Leirvik
12.07.2005	07:52	194	TOPAS (ricker pulse) logging on, start line 221
12.07.2005	07:52	194	EM1002 logging on
12.07.2005	08:49	194	EM 1002 logging off, boat turning 360 degrees, going out fjord again
12.07.2005	08:49	194	TOPAS (ricker pulse) logging off, end line 221
12.07.2005	08:51	194	TOPAS (ricker pulse) logging on, start line 222, gain 28dB
12.07.2005	08:51	194	EM1002 logging on
12.07.2005	09:11	194	TOPAS (ricker pulse) logging off, end line 222
12.07.2005	09:11	194	EM 1002 logging off, boat turning and "stopping"
12.07.2005	09:15	194	Going to test crane and winch
12.07.2005	19:00	194	Calypso corer off deck
12.07.2005	19:34	194	Calypso corer on sea floor
12.07.2005	20:10	194	Calypso corer beside boat
12.07.2005	21:28	194	Calypso corer on deck
12.07.2005	23:32	194	TOPAS (ricker pulse) logging on, start line 223, gain 28, passing Leirvik
12.07.2005	23:58	194	Crossing the Huglomoraine at the outer end of Hardangerfjorden
13.07.2005	00:00	195	Trying chirp on the hard moraine surface, no success
13.07.2005	00:05	195	Ricker pulse
13.07.2005	02:24	195	ping interval 1000ms
13.07.2005	03:19	195	stop topas line 213
13.07.2005	04:00	195	Stopped cutting the core, problem getting the liner out
13.07.2005	07:55	195	TOPAS (ricker pulse) logging on, line 224
13.07.2005	07:55	195	EM1002 logging on
13.07.2005	07:55	195	TOPAS trace lenght changed top 250ms
13.07.2005	07:56	195	TOPAS gain changed to 20dB
13.07.2005	07:56	195	TOPAS ping interval chnaged to 1100
13.07.2005	07:56	195	TOPAS gain changed to 23dB
13.07.2005	07:56	195	TOPAS gain changed to 35dB
13.07.2005	08:05	195	Boat turning
13.07.2005	08:13	195	Boat turning
13.07.2005	08:18	195	Boat turning
13.07.2005	08:47	195	Lost the seabed
13.07.2005	08:48	195	Boat turning 90°
13.07.2005	09:05	195	Lost the seabed
13.07.2005	09:08	195	Boat turning, TOPAS logging off, end of line 224

Table I

General Survey log

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Date	Time (UTC)	Julian Day	Subject
13.07.2005	09:09	195	TOPAS logging on, start of TOPAS line 225
13.07.2005	09:28	195	Boat turning
13.07.2005	09:32	195	Boat turning
13.07.2005	09:55	195	Lost the seabed
13.07.2005	09:56	195	Changed TOPAS ping interval to 1300
13.07.2005	10:27	195	Boat turning
13.07.2005	10:35	195	Boat turning
13.07.2005	10:40	195	Boat turning
13.07.2005	10:53	195	Changed TOPAS trace length to 300ms
13.07.2005	11:01	195	Boat turning
13.07.2005	11:09	195	Boat turning
13.07.2005	11:37	195	Boat turning
13.07.2005	11:48	195	Boat turning
13.07.2005	11:56	195	Boat turning
13.07.2005	12:09	195	Boat turning
13.07.2005	12:09	195	Lost the seabed
13.07.2005	12:13	195	TOPAS logging off, end of line 225. End of Topas run

Table II

Core Stations Log
UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Date	Time UTC/ Julian Day	Subject	Geographical coordinates (WGS 84; Zone 31)		UTM coordinates (ED50; Zone 31)	
			Latitude	Longitude	Easting	Northing
01.07.2005	22:53 / 182	On station St 01 GC	61° 49.757' N	06° 23.496' E	6860040	678672
02.07.2005	00:45 / 183	Gravity core on deck St 01 GC				
02.07.2005	02:30 / 183	On station St 02 GC	61° 51.606' N	05° 51.025' E	6862091	650042
	03:00 / 183	Gravity core on deck St 02 GC				
02.07.2005	18:22 / 183	On station St 03 GC	61° 54.900' N	05° 32.500' E	6867540	633566
	18:44 / 183	Gravity core off deck St 03 GC				
	19:31 / 183	Gravity core on deck St 03 GC				
02.07.2005	21:11 / 183	On station St 04 GC	61° 54.038' N	05° 19.199' E	6865493	621982
	21:26 / 183	Gravity core off deck St 04 GC				
	21:55 / 183	Gravity core on deck St 04 GC				
02.07.2005	22:51 / 183	Gravity core core off deck St 05 GC	61° 53.806' N	05° 13.423' E	6864886	616944
	22:58 / 183	Departure station St 05 GC				
03.07.2005	01:04 / 184	On station St 06 GC	61° 55.343' N	04° 57.362' E	6867297	602795
	01:13 / 184	Gravity core off deck St 06 GC				
	01:31 / 184	Departure station St 06 GC				
03.07.2005	11:16 / 184	On station St 07 GC	62° 03.668' N	03° 47.055' E	6881441	541150
	11:50 / 184	Gravity core on deck St 07 GC				
03.07.2005	14:51 / 184	On station St 08 GC	62° 25.193' N	04° 28.341' E	6884910	576988
	15:19 / 184	Departure station St 08GC				
03.07.2005	15:59 /184	On station St 09 GC	62° 03.748' N	04° 19.688' E	6882133	569510
	16:16 / 184	Gravity core on deck St 09 GC				
04.07.2005	17:43 / 185	On station St 10 GC	62° 49.625' N	04° 53.281' E	6967951	596282
	18:13 / 185	Gravity core on deck St 10 GC				
04.07.2005	19:13 / 185	Gravity core off deck St 11 GC	62° 50.174' N	04° 51.757' E	6968942	594960
	19:22 / 185	Gravity core on deck St 11 GC				
05.07.2005	02:56 / 186	On core station St 12 GC	62° 59.302' N	04° 54.714' E	6985918	596943
07.07.2005	01:27 / 188	On station St 13 GC	60° 56.888' N	01° 23.462' E	6758296	412935
	01:49 / 188	Gravity core on deck St 13 GC				
09.07.2005	17:33/191	Gravity core off deck St 14 GC	57° 34.679' N	00° 16.596' W		
	17:38/191	Gravity core on bottom St 14 GC				
	17:43/191	Gravity core on deck St 14 GC				

Table II

Core Stations Log
UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Date	Time UTC/ Julian Day	Subject	Geographical coordinates (WGS 84; Zone 31)		UTM coordinates (ED50; Zone 31)	
			Latitude	Longitude	Easting	Northing
10.07.2005	15.33/192	Gravity core off deck St 15a GC	58° 50.335' N	00° 47.073' E	372231	6524447
	15:43/192	Gravity core on deck St 15a GC				
10.07.2005	16:47/192	Gravity core off deck St 15b GC	58° 50.335' N	00° 47.073' E	372231	6524447
	16.53/192	Gravity corer at bottom St 15b GC				
	17:01/192	Gravity core on deck St 15b GC				
12.07.2005	19:00/195	Calypso corer off deck St 16 CC	59° 40.077' N	05° 33.002' E	6618563	643684
	19:34/195	Calypso corer on sea bottom St 16 CC				
	20:10/195	Calypso corer alongside boat St 16 CC				
	21:28/195	Calypso corer on deck St 16 CC				

Table III **Velocity Stations Log**
UoB Cruise No. GS140-05 (IMR Cruise No. 20051009)

Date	Time UTC/ Julian Day	File name	Station	Depth (m)	Geographical coordinates (WGS 84; Zone 31)		UTM coordinates (ED50; Zone 31)	
					Latitude	Longitude	Northing	Easting
01.07.2005	04:00 / 182	sta0342	Start velocity profile St 01 CTD End velocity profile St 01 CTD	370	61° 45.480 ' N	04° 56.680' E	6848973	602748
01.07.2005	09:36/ 182 09:56 / 182	sta0343	Start velocity profile St 02 CTD End velocity profile St 02 CTD	400	61° 53.448' N	05° 11.159' E	6864165	614984
01.07.2005	16:52 / 182 17:28 / 182	sta0344	Start velocity profile St 03 CTD End velocity profile St 03 CTD	437	61˚ 49.458' N	06° 28.035' E	6859325	682702
02.07.2005	03:10 / 183 03:37 / 183	sta0345	Start velocity profile St 04 CTD End velocity profile St 04 CTD	372	61° 51.606' N	05° 05.025' E	6862102	650041
02.07.2005	19:42 / 183 20:04 / 183	sta0346	Start velocity profile St 05 CTD End velocity profile St 05 CTD	582	61° 54.900' N	05° 32.500 'E	6867540	633566
03.07.2005	04:10 / 184 04:21 / 184	sta0347	Start velocity profile St 06 CTD End velocity profile St 06 CTD	205	61° 10.696' N	04° 27.443' E	6895110	575976
03.07.2005	22:00 / 185 22:16 / 185	sta0348	Start velocity profile St 07 CTD End velocity profile St 07 CTD	298	62° 46.449' N	04° 24.516' E	6961522	571987
04.07.2005	05:13 / 186 05:45 / 186	sta0349	Start velocity profile St 08 CTD End velocity profile St 08 CTD	900	63° 05.495' N	04° 32.384' E	6996942	577835
06.07.2005	17:45 / 188 17:59 / 188	sta0350	Start velocity profile St 09 CTD End velocity profile St 9 CTD	272	61° 58.061'N	00° 37.496'E	6860085	375106
07 07.2005	01:49 / 189 01:58/189	sta0351	Start velocity profile St 10 CTD End velocity profile St 10 CTD	148	60° 56.888'N	01° 23.462' E	6758296	412935
07.07.2005	08:49 / 189 08:56 / 189	sta0352	Start velocity profile St 11 CTD End velocity profile St 11 CTD	129	59° 58.480' N	00° 45.794' E	6650916	375251
07.07.2005	22:08 / 189 22:10 / 189	sta0353	On station St 12 CTD Start velocity profile St 12 CTD	141	58° 34.934' N	00° 44.812' E	6495948	369096

Table III			**Velocity Stations Log** **UoB Cruise No. GS140-05 (IMR Cruise No. 20051009)**					
Date	Time UTC/ Julian Day	File name	Station	Depth (m)	Geographical coordinates (WGS 84; Zone 31)		UTM coordinates (ED50; Zone 31)	
					Latitude	Longitude	Northing	Easting
	22:19 / 189		End velocity profile St 12 CTD					
08.07.2005	10:47 / 190 10:58 / 190	sta0354	Start velocity profile St 13 CTD End velocity profile St 13 CTD	121	58° 34.466' N	00° 30.134' W		
08.07.2005	16:49 / 190 16:56 / 190	sta0355	Start velocity profile St 14 CTD End velocity profile St 14 CTD	126	58° 33.257' N	00° 31.038' W	6493308	355637
08.07.2005	23:39:00/190 23:48:00/190	sta0356	Start velocity profile St 15 CTD End velocity profile St 15 CTD	143	58° 27.531' N	00° 33.301' E	6482692	355111
09.07.2005	04:45/191 04:58/191	sta0357	Start velocity profile St 16 CTD End velocity profile St 16 CTD	92	57° 39.658' N	00° 35.109' E	6393745	356024
09.07.2005	17:20/191 17:20/191	sta0358	Start velocity profile St 17 CTD End velocity profile St 17 CTD	128	57° 39.658' N	00° 16.596' W		
10.07.2005	15:27/192 15:50/192 15:54/192	sta0359	On station St 18 CTD Start velocity profile St 18 CTD End velocity profile St 18 CTD	146	58˚ 50.338' N	00˚47.064' E	6524447	372231

Table IV

Topas Data Files

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Line No.	File name	RAW file			
		size, Mb	Date/JulianDay	Start (UTC)	End (UTC)
NORDFJORD					
1	GS140-05_01_20050701055817	10	01.07 2005/182	04:58	05:00
2	GS140-05_02_20050701060029	102	01.07 2005	05:00	05:22
3	GS140-05_03_20050701062202	102	01.07 2005	05:22	05:43
4	GS140-05_04_20050701064333	102	01.07 2005	05:43	06:06
5	GS140-05_05_20050701070632	102	01.07 2005	06:06	06:31
6	GS140-05_06_20050701073104	102	01.07 2005	06:31	06:55
7	GS140-05_07_20050701075540	102	01.07 2005	06:55	07:20
8	GS140-05_08_20050701082014	102	01.07 2005	07:20	07:44
9	GS140-05_09_20050701084448	25	01.07 2005	07:44	07:50
10	GS140-05_10_20050701085141	102	01.07 2005	07:51	08:16
11	GS140-05_11a_20050701091616	63	01.07 2005	08:16	08:31
11	GS140-05_11b_20050701093502	102	01.07 2005	08:35	08:59
12	GS140-05_12_20050701095937	102	01.07 2005	08:59	09:24
13	GS140-05_13_20050701102412	50	01.07 2005	09:24	09:36
14	GS140-05_14_20050701110457	102	01.07 2005	10:04	10:29
15	GS140-05_15_20050701112931	102	01.07 2005	10:29	10:54
16	GS140-05_16_20050701115445	102	01.07 2005	10:54	11:23
17	GS140-05_17_20050701122314	102	01.07 2005	11:23	11:57
18	GS140-05_18_20050701125700	102	01.07 2005	11:57	12:30
19	GS140-05_19_20050701133046	43	01.07 2005	12:30	12:45
20	GS140-05_20_20050701135417	10	01.07 2005	12:54	12:57
21	GS140-05_21_20050701135740	10	01.07 2005	12:57	13:01
22	GS140-05_22_20050701140102	10	01.07 2005	13:01	13:04
23	GS140-05_23_20050701140425	10	01.07 2005	13:04	13:07
24	GS140-05_24_20050701140747	10	01.07 2005	13:07	13:11
25	GS140-05_25_20050701141109	10	01.07 2005	13:11	13:14
26	GS140-05_26_20050701141432	10	01.07 2005	13:14	13:17
27	GS140-05_27_20050701141754	10	01.07 2005	13:17	13:21
28	GS140-05_28_20050701142117	10	01.07 2005	13:21	13:24
29	GS140-05_29_20050701142439	10	01.07 2005	13:24	13:28
30	GS140-05_30_20050701142803	10	01.07 2005	13:28	13:31
31	GS140-05_31_20050701143125	10	01.07 2005	13:31	13:34
32	GS140-05_32_20050701143447	10	01.07 2005	13:34	13:38
33	GS140-05_33_20050701143810	10	01.07 2005	13:38	13:41
34	GS140-05_34_20050701144132	10	01.07 2005	13:41	13:44
35	GS140-05_35_20050701144455	10	01.07 2005	13:44	13:48
36	GS140-05_36_20050701144817	10	01.07 2005	13:48	13:51
37	GS140-05_37_20050701145139	10	01.07 2005	13:51	13:55
38	GS140-05_38_20050701145502	10	01.07 2005	13:55	13:57
39	GS140-05_39_20050701145726	10	01.07 2005	13:57	13:59
40	GS140-05_40_20050701145916	10	01.07 2005	13:59	14:01
41	GS140-05_41_20050701150107	10	01.07 2005	14:01	14:03
42	GS140-05_42_20050701150258	10	01.07 2005	14:02	14:04
43	GS140-05_43_20050701150449	10	01.07 2005	14:04	14:06
44	GS140-05_44_20050701150639	10	01.07 2005	14:06	14:09

Table IV

Topas Data Files

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Line No.	File name	RAW file			
		size, Mb	Date/JulianDay	Start (UTC)	End (UTC)
NORDFJORD cont.					
45	GS140-05_45_20050701150931	10	01.07 2005/182	14:09	14:12
46	GS140-05_46_20050701151235	10	01.07 2005	14:12	14:15
47	GS140-05_47_20050701151539	10	01.07 2005	14:15	14:18
48	GS140-05_48_20050701151843	10	01.07 2005	14:18	14:21
49	GS140-05_49_20050701152147	10	01.07 2005	14:21	14:24
50	GS140-05_50_20050701152451	10	01.07 2005	14:24	14:27
51	GS140-05_51_20050701152755	10	01.07 2005	14:27	14:31
52	GS140-05_52_20050701153059	10	01.07 2005	14:30	14:34
53	GS140-05_53_20050701153403	10	01.07 2005	14:34	14:37
54	GS140-05_54_20050701153707	10	01.07 2005	14:37	14:40
55	GS140-05_55_20050701154011	10	01.07 2005	14:40	14:43
56	GS140-05_56_20050701154315	10	01.07 2005	14:43	14:46
57	GS140-05_57_20050701154619	102	01.07 2005	14:46	15:17
58	GS140-05_58_20050701161701	102	01.07 2005	15:17	15:47
59	GS140-05_59_20050701164744	102	01.07 2005	15:47	16:18
60	GS140-05_60_20050701171826	102	01.07 2005	16:18	16:49
61	GS140-05_61_20050701174908	8	01.07 2005	16:49	16:51
62	GS140-05_62_20050701183805	102	01.07 2005	17:38	18:08
63	GS140-05_63_20050701190849	102	01.07 2005	18:08	18:39
64	GS140-05_64_20050701193932	102	01.07 2005	18:39	19:10
65	GS140-05_65_20050701201014	49	01.07 2005	19:10	19:25
66	GS140-05_66_20050701202705	102	01.07 2005	19:27	19:57
67	GS140-05_67_20050701205749	37	01.07 2005	19:57	20:09
68	GS140-05_68_20050701211003	102	01.07 2005	20:10	20:40
69	GS140-05_69_20050701214047	102	01.07 2005	20:40	21:11
70	GS140-05_70_20050701221124	102	01.07 2005	21:11	21:42
71	GS140-05_71_20050701224209	62	02.07 2005/183	21:42	22:00
72	GS140-05_72_20050702024845	68	02.07 2005	01:48	02:09
73	GS140-05_73_20050702044700	102	02.07 2005	03:47	04:17
74	GS140-05_74_20050702051743	102	02.07 2005	04:17	04:48
75	GS140-05_75_20050702054825	62	02.07 2005	04:48	05:07
76	GS140-05_76_20050702060829	102	02.07 2005	05:08	05:39
77	GS140-05_77_20050702063912	102	02.07 2005	05:39	06:09
78	GS140-05_78_20050702070955	102	02.07 2005	06:09	06:40
79	GS140-05_79_20050702074037	33	02.07 2005	06:40	06:50
80	GS140-05_80_20050702104057	102	02.07 2005	09:40	10:11
81	GS140-05_81_20050702111142	102	02.07 2005	10:11	10:42
82	GS140-05_82_20050702114224	38	02.07 2005	10:42	10:54
83	GS140-05_83_20050702121305	102	02.07 2005	11:13	11:43
84	GS140-05_84_20050702124348	102	02.07 2005	11:43	12:14
85	GS140-05_85_20050702131430	73	02.07 2005	12:14	12:36
86	GS140-05_86_20050702155636	102	02.07 2005	14:56	15:27
87	GS140-05_87_20050702162718	19	02.07 2005	15:27	15:33
88	GS140-05_88_20050702165316	87	02.07 2005	15:53	16:19

Table IV

Topas Data Files

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Line No.	File name	RAW file			
		size, Mb	Date/JulianDay	Start (UTC)	End (UTC)
NORDFJORD cont					
89	GS140-05_89_20050702172102	102	02.07 2005/183	16:21	16:51
90	GS140-05_90_20050702175146	102	02.07 2005	16:51	17:27
91	GS140-05_91_20050702182705	102	02.07 2005	17:27	18:05
92	GS140-05_92_20050702190523	47	02.07 2005	18:05	18:23
93	GS140-05_93_20050702213430	61	02.07 2005	20:34	21:09
94	GS140-05_94_20050703010915	23	03.07 2005/184	00:09	00:23
95	GS140-05_95_20050703012320	17	03.07 2005	00:23	00:33
96	GS140-05_96_20050703013536	12	03.07 2005	00:35	00:43
97	GS140-05_97_20050703014010	102	03.07 2005	00:40	01:16
98	GS140-05_98_20050703014723	14	03.07 2005	00:47	00:56
99	GS140-05_99_20050703021617	85	03.07 2005	01:16	01:46
100	GS140-05_100_20050703245434	13	03.07 2005	23:54	00:02
MÅLØY PLATEAU					
110	GS140-05_110a_20050703040255	102	03.07 2005/184	03:02	03:27
110	GS140-05_110b_20050703042726	97	03.07 2005	03:27	03:50
111	GS140-05_111a_20050703045052	55	03.07 2005	03:50	04:04
112	GS140-05_112a_20050703052157	102	03.07 2005	04:21	04:46
112	GS140-05_112b_20050703054628	102	03.07 2005	04:46	05:11
112	GS140-05_112c_20050703061058	7	03.07 2005	05:10	05:12
113	GS140-05_113a_20050703061254	102	03.07 2005	05:12	05:37
113	GS140-05_113b_20050703063724	102	03.07 2005	05:37	06:01
113	GS140-05_113c_20050703070154	59	03.07 2005	06:01	06:16
114	GS140-05_114a_20050703071914	102	03.07 2005	06:19	06:43
114	GS140-05_114b_20050703074344	102	03.07 2005	06:43	07:08
114	GS140-05_114c_20050703080814	102	03.07 2005	07:08	07:32
114	GS140-05_114d_20050703083244	8	03.07 2005	07:32	07:34
115	GS140-05_115a_20050703083712	102	03.07 2005	07:37	08:01
115	GS140-05_115b_20050703090142	94	03.07 2005	08:01	08:24
116	GS140-05_116a_20050703092442	102	03.07 2005	08:24	08:49
116	GS140-05_116b_20050703094913	102	03.07 2005	08:49	09:13
116	GS140-05_116c_20050703101344	102	03.07 2005	09:13	09:38
116	GS140-05_116d_20050703103814	102	03.07 2005	09:38	10:02
116	GS140-05_116e_20050703110244	48	03.07 2005	10:02	10:14
117	GS140-05_117a_20050703111420	102	03.07 2005	10:14	10:38
117	GS140-05_117b_20050703113851	85	03.07 2005	10:38	10:59
118	GS140-05_118a_20050703130808	51	03.07 2005	12:08	12:20
119	GS140-05_119a_20050703132052	102	03.07 2005	12:20	12:45
119	GS140-05_119b_20050703134522	102	03.07 2005	12:45	13:09
119	GS140-05_119c_20050703140952	102	03.07 2005	13:09	13:34
119	GS140-05_119d_20050703143422	102	03.07 2005	13:34	13:58
119	GS140-05_119e_20050703145852	102	03.07 2005	13:58	14:23
119	GS140-05_119f_20050703152322	75	03.07 2005	14:23	14:41
120	GS140-05_120a_20050703172053	102	03.07 2005	16:20	16:45
120	GS140-05_120b_20050703174523	102	03.07 2005	16:45	17:09

Table IV

Topas Data Files

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Line No.	File name	RAW file			
		size, Mb	Date/JulianDay	Start (UTC)	End (UTC)
MÅLØY PLATEAU cont					
120	GS140-05_120c_20050703180954	102	03.07 2005/184	17:09	17:34
120	GS140-05_120d_20050703180954	102	03.07 2005	17:09	17:34
120	GS140-05_120e_20050703183425	102	03.07 2005	17:34	17:58
120	GS140-05_120f_20050703185855	102	03.07 2005	17:58	18:23
120	GS140-05_120g_20050703192325	102	03.07 2005	18:23	18:47
120	GS140-05_120h_20050703194755	102	03.07 2005	18:47	19:12
120	GS140-05_120l_20050703201225	102	03.07 2005	19:12	19:36
120	GS140-05_120m_20050703203655	102	03.07 2005	19:36	20:01
120	GS140-05_120n_20050703210125	102	03.07 2005	20:01	20:25
120	GS140-05_120o_20050703212556	50	03.07 2005	20:25	20:37
STORNESET/SOUTH STOREGGA SLIDE					
121	GS140-05_121a_20050703213755	102	03.07 2005/184	20:37	21:02
121	GS140-05_121b_20050703220226	102	03.07 2005	21:02	21:26
121	GS140-05_121b_20050703222656	102	03.07 2005	21:26	21:51
121	GS140-05_121c_20050703225127	25	03.07 2005	21:51	21:57
122	GS140-05_122a_20050703232731	50	03.07 2005	22:27	22:39
123	GS140-05_123a_20050703233936	102	04.07 2005/185	22:39	23:04
123	GS140-05_123b_20050704240406	102	04.07 2005	23:04	23:28
123	GS140-05_123c_20050704242836	2	04.07 2005	23:28	23:29
124	GS140-05_124a_20050704243003	102	04.07 2005	23:30	23:54
124	GS140-05_124b_20050704245434	101	04.07 2005	23:54	00:18
125	GS140-05_125a_20050704012248	102	04.07 2005	00:22	00:47
125	GS140-05_125b_20050704014718	102	04.07 2005	00:47	01:11
125	GS140-05_125c_20050704021150	102	04.07 2005	01:11	01:36
125	GS140-05_125d_20050704023620	37	04.07 2005	01:36	01:45
126	GS140-05_126a_20050704024535	102	04.07 2005	01:45	02:01
126	GS140-05_126b_20050704031005	5	04.07 2005	02:10	02:11
127	GS140-05_127a_20050704031132	102	04.07 2005	02:11	02:36
127	GS140-05_127b_20050704033602	102	04.07 2005	02:36	00:00
127	GS140-05_127c_20050704040033	102	04.07 2005	03:00	03:25
127	GS140-05_127d_20050704042503	102	04.07 2005	03:25	03:49
127	GS140-05_127e_20050704044933	102	04.07 2005	03:49	04:14
127	GS140-05_127f_20050704051404	10	04.07 2005	04:14	04:16
128	GS140-05_128a_20050704052231	102	04.07 2005	04:22	04:47
128	GS140-05_128b_20050704054702	102	04.07 2005	04:47	05:11
128	GS140-05_128c_20050704061132	102	04.07 2005	05:11	05:36
128	GS140-05_128d_20050704063602	102	04.07 2005	05:36	00:00
128	GS140-05_128e_20050704070031	102	04.07 2005	06:00	06:25
128	GS140-05_128f_20050704072502	102	04.07 2005	06:25	06:49
128	GS140-05_128g_20050704074932	90	04.07 2005	06:49	07:11
129	GS140-05_129a_20050704081720	102	04.07 2005	07:17	07:41
129	GS140-05_129b_20050704084150	102	04.07 2005	07:41	08:06
129	GS140-05_129c_20050704090620	102	04.07 2005	08:06	08:03
129	GS140-05_129d_20050704093051	102	04.07 2005	08:30	08:55

Table IV

Topas Data Files

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Line No.	File name	RAW file			
		size, Mb	Date/JulianDay	Start (UTC)	End (UTC)
STORNESET/SOUTH STOREGGA SLIDE cont					
129	GS140-05_129e_20050704095522	102	04.07 2005/185	08:55	09:19
129	GS140-05_129f_20050704101952	102	04.07 2005	09:19	09:44
129	GS140-05_129g_20050704104422	67	04.07 2005	09:44	00:00
130	GS140-05_130a_20050704110226	102	04.07 2005	10:02	10:26
130	GS140-05_130b_20050704112657	94	04.07 2005	10:26	10:49
131	GS140-05_131a_20050704120824	102	04.07 2005	11:08	11:32
131	GS140-05_131b_20050704123255	102	04.07 2005	11:32	11:57
131	GS140-05_131c_20050704125725	102	04.07 2005	11:57	12:21
131	GS140-05_131d_20050704132155	102	04.07 2005	12:21	12:46
131	GS140-05_131e_20050704134625	59	04.07 2005	12:46	00:00
132	GS140-05_132a_20050704142509	102	04.07 2005	13:25	13:49
132	GS140-05_132b_20050704144939	102	04.07 2005	13:49	14:14
132	GS140-05_132c_20050704151409	102	04.07 2005	14:14	14:38
132	GS140-05_132c_20050704153839	102	04.07 2005	14:38	15:03
132	GS140-05_132d_20050704160309	70	04.07 2005	15:03	15:02
133	GS140-05_133a_20050704162233	102	04.07 2005	15:22	15:47
133	GS140-05_133b_20050704164703	102	04.07 2005	15:47	16:11
133	GS140-05_133c_20050704171133	102	04.07 2005	16:11	16:36
133	GS140-05_133d_20050704173603	102	04.07 2005	16:36	00:00
133	GS140-05_133e_20050704180033	102	04.07 2005	17:00	17:25
133	GS140-05_133f_20050704182504	78	04.07 2005	17:25	17:43
134	GS140-05_134a_20050704203052	102	04.07 2005	19:30	19:55
134	GS140-05_134b_20050704205523	102	04.07 2005	19:55	20:19
134	GS140-05_134c_20050704211954	102	04.07 2005	20:19	20:44
134	GS140-05_134d_20050704214424	102	04.07 2005	20:44	21:08
134	GS140-05_134e_20050704220854	40	04.07 2005	21:08	21:18
135	GS140-05_135a_20050704222453	102	04.07 2005	21:24	21:49
135	GS140-05_135b_20050704224923	102	04.07 2005	21:49	22:13
135	GS140-05_135c_20050704231353	102	04.07 2005	22:13	22:38
135	GS140-05_135d_20050704233823	100	05.07 2005/186	22:38	23:02
136	GS140-05_136a_20050705240548	102	05.07 2005	23:05	23:03
136	GS140-05_136b_20050705243020	102	05.07 2005	23:30	23:54
136	GS140-05_136c_20050705245451	77	05.07 2005	23:54	00:13
137	GS140-05_137a_20050705011849	21	05.07 2005	00:18	00:24
137	GS140-05_137b_20050705012418	102	05.07 2005	00:24	00:48
137	GS140-05_137c_20050705014848	102	05.07 2005	00:48	01:15
137	GS140-05_137d_20050705021524	48	05.07 2005	01:15	01:27
138	GS140-05_138a_20050705022744	102	05.07 2005	01:27	01:48
138	GS140-05_138b_20050705024855	12	05.07 2005	01:48	01:51
138	GS140-05_138c_20050705025136	14	05.07 2005	01:51	01:54
139	GS140-05_139a_20050705025443	102	05.07 2005	01:54	02:15
139	GS140-05_139b_20050705031508	102	05.07 2005	02:15	02:36
139	GS140-05_139c_20050705033617	9	05.07 2005	02:36	02:38
139	GS140-05_139d_20050701055400	10	05.07 2005	04:54	04:56

Table IV

Topas Data Files

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Line No.	File name	RAW file			
		size, Mb	Date/JulianDay	Start (UTC)	End (UTC)
STORNESET/SOUTH STOREGGA SLIDE cont					
139	GS140-05_139e_20050701055604	10	05.07 2005/186	04:56	04:58
140	GS140-05_140a_20050705043311	102	05.07 2005	03:33	04:02
140	GS140-05_140b_20050705050235	102	05.07 2005	04:02	04:48
140	GS140-05_140c_20050705054855	29	05.07 2005	04:48	05:04
141	GS140-05_141a_20050705065957	102	05.07 2005	05:59	06:41
141	GS140-05_141b_20050705074147	35	05.07 2005	06:41	06:56
142	GS140-05_142a_20050705080320	102	05.07 2005	07:03	07:45
142	GS140-05_142b_20050705084507	35	05.07 2005	07:45	07:59
NORTH SEA FAN					
143	GS140-05_143a_20050705090018	102	05.07 2005/186	08:00	08:44
143	GS140-05_143b_20050705094408	102	05.07 2005	08:44	09:34
143	GS140-05_143c_20050705103408	31	05.07 2005	09:34	09:56
144	GS140-05_144a_20050705105627	102	05.07 2005	09:56	11:01
144	GS140-05_144b_20050705120959	77	05.07 2005	11:09	12:05
145	GS140-05_145a_20050705130547	102	05.07.2005	12:05	13:02
145	GS140-05_145b_20050705142033	4	05.07.2005	13:20	13:23
146	GS140-05_146_20050705142335	95	05.07.2005	13:23	14:35
147	GS140-05_147a_20050705153625	102	05.07 2005	14:36	15:49
147	GS140-05_147b_20050705164927	102	05.07 2005	15:49	16:47
147	GS140-05_147c_20050705174747	99	05.07.2005	16:47	17:44
148	GS140-05_148a_20050705184445	102	05.07.2005	17:44	18:43
148	GS140-05_148b_20050705194305	102	05.07.2005	18:43	19:41
148	GS140-05_148c_20050705204126	102	05.07.2005	19:41	20:39
148	GS140-05_148d_20050705213946	102	05.07.2005	20:39	21:38
148	GS140-05_148e_20050705223806	102	05.07.2005	21:38	22:36
148	GS140-05_148f_20050705233626	102	06.07.2005/187	22:36	23:34
148	GS140-05_148g_20050706243446	26	06.07.2005	23:34	23:49
149	GS140-05_149a_20050706070130	102	06.07.2005	06:01	06:59
149	GS140-05_149b_20050706075951	102	06.07.2005	06:59	07:58
149	GS140-05_149c_20050706085811	102	06.07.2005	07:58	08:56
149	GS140-05_149d_20050706095631	102	06.07.2005	08:56	09:54
149	GS140-05_149e_20050706105450	20	06.07.2005	09:54	10:06
150	GS140-05_150a_20050706110811	102	06.07.2005	10:08	11:03
150	GS140-05_150b_20050706120316	93	06.07.2005	11:03	11:52
151	GS140-05_151a_20050706125750	100	06.07.2005	11:57	12:53
152	GS140-05_152_20050706135513	88	06.07.2005	12:55	13:34
153	GS140-05_153a_20050706143450	102	06.07.2005	13:34	14:02
153	GS140-05-153b_20050706152054	47	06.07.2005	14:20	14:47
154	GS140-05_154_20050706154726	84	06.07.2005	14:47	15:24
155	GS140-05_155a_20050706162433	102	06.07.2005	15:24	16:05
155	GS140-05_155b_20050706170523	55	06.07.2005	16:05	16:27
NORTH SEA PLATEAU/NORTH SEA					
156	GS140-05_156a_20050706173924	102	06.07.2005/187	16:39	17:20
156	GS140-05_156b_20050706182014	52	06.07.2005	17:20	17:40

Table IV

Topas Data Files

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Line No.	File name	RAW file			
		size, Mb	Date/JulianDay	Start (UTC)	End (UTC)
NORTH SEA PLATEAU/NORTH SEA					
157	GS140-05_157a_20050706190801	102	06.07.2005/187	18:08	18:48
157	GS140-05_157b_20050706194851	102	06.07.2005	18:48	19:29
157	GS140-05_157c_20050706202941	102	06.07.2005	19:29	20:10
157	GS140-05_157d_20050706211031	102	06.07.2005	20:10	20:47
157	GS140-05_157e_20050706214733	102	06.07.2005	20:47	21:08
157	GS140-05_157f_20050706220758	102	06.07.2005	21:07	21:28
157	GS140-05_157g_20050706222825	102	06.07.2005	21:28	21:48
157	GS140-05_157h_20050706224850	102	06.07.2005	21:48	22:17
157	GS140-05_157i_20050706231720	102	06.07.2005	22:17	22:47
157	GS140-05_157j_20050706234750	102	07.07.2005/188	22:47	23:18
157	GS140-05_157k_20050707241821	82	07.07.2005	23:18	23:42
158	GS140-05_158a_20050707244316	102	07.07.2005	23:43	00:13
158	GS140-0_158b_20050707011346	102	07.07.2005	00:13	00:44
158	GS140-05_158c_20050707014417	102	07.07.2005	00:44	01:14
158	GS140-05_158d_20050707021446	40	07.07.2005	01:14	01:26
159	GS140-05_159a_20050707031124	102	07.07.2005	02:11	02:41
159	GS140-05_159b_20050707034154	102	07.07.2005	02:41	03:12
159	GS140-05_159c_20050707041222	102	07.07.2005	03:12	03:42
159	GS140-05_159d_20050707044250	102	07.07.2005	03:42	04:13
159	GS140-05_159e_20050707051318	102	07.07.2005	04:13	04:43
159	GS140-05_159f_20050707054355	102	07.07,2005	04:43	05:14
159	GS140-05_159g_20050707061426	102	07.07,2005	05:14	05:44
159	GS140-05_159h_20050707064456	102	07.07.2004	05:44	06:15
159	GS140-05_159i_20050707071527	102	07.07.2005	06:15	06:42
159	GS140-05_159j_20050707074255	102	07.07.2005	06:42	07:03
159	GS140-05_159k_20050707080321	102	07.07.2005	07:03	07:23
159	GS140-05_159l_20050707082346	102	07.07.2005	07:23	07:44
159	GS140-05_159m_20050707084411	102	07.07.2005	07:44	08:04
159	GS140-05_159n_20050707090436	102	07.07.2005	08:04	08:25
159	GS140-05_159o_20050707092501	98	07.07.2005	08:25	08:44
160	GS140-05_160a_20050707095750	43	07.07.2005	08:57	09:09
160	GS140-05_160b_20050707100906	0.2	07.07.2005	09:09	09:09
161	GS140-05_161a_20050707101025	102	07.07.2005	09:10	09:40
161	GS140-05_161b_20050707104056	102	07.07.2005	09:40	10:11
161	GS140-05_161c_20050707111127	102	07.07.2005	10:11	10:42
161	GS140-05_161d_20050707114158	102	07.07.2005	10:41	11:12
161	GS140-05_161e_20050707121229	102	07.07.2005	11:12	11:43
161	GS140-05_161f_20050707124259	89	07.07.2005	11:42	12:09
162	GS140-05_162a_20050707131100	102	07.07.2005	12:11	12:41
162	GS140-05_162b_20050707134130	102	07.07.2005	12:41	13:12
162	GS140-05_162c_20050707141200	102	07.07.2005	13:12	13:42
162	GS140-05_162d_20050707144230	102	07.07.2005	13:42	14:13
162	GS140-05_162e_20050707151300	102	07.07.2005	14:13	14:43
162	GS140-05_162f_20050707154330	26	07.07.2005	14:43	14:51

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Topas Data Files

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Line No.	File name	RAW file			
		size, Mb	Date/JulianDay	Start (UTC)	End (UTC)
NORTH SEA PLATEAU/NORTH SEA cont					
163	GS140-05_163a_20050707155136	102	07.07.2005/188	14:51	15:22
163	GS140-05_163b_20050707162206	102	07.07.2005	15:22	15:52
163	GS140-05_163c_20050707165236	102	07.07.2005	15:52	16:23
163	GS140-05_163d_20050707172306	102	07.07.2005	16:23	16:44
163	GS140-05_163e_20050707174403	102	07.07.2005	16:44	17:04
163	GS140-05_163f_20050707180431	102	07.07,2005	17:04	17:25
163	GS140-05_163g_20050707182459	102	07.07.2005	17:24	17:45
163	GS140-05_163h_20050707184525	102	07.07.2005	17:45	18:05
163	GS140-05_163i_20050707190551	102	07.07.2005	18:05	18:26
163	GS140-05_163j_20050707192616	49	07.07.2005	18:26	18:36
FLADEN GROUND					
164	GS140-05_164a_20050707194737	102	07.07.2005/188	18:47	19:08
164	GS140-05_164b_20050707200803	102	07.07.2005	19:08	19:28
164	GS140-05_164c_20050707202828	102	07.07.2005	19:28	19:48
164	GS140-05_164d_20050707204853	102	07.07.2005	19:48	20:09
164	GS140-05_164e_20050707210918	102	07.07.2005	20:09	20:29
164	GS140-05_164f_20050707212945	102	07.07.2005	20:29	20:59
164	GS140-05_164g_20050707215921	102	07.07.2005	20:59	21:23
164	GS140-05_164h_20050707222321	102	07.07.2005	21:23	21:46
164	GS140-05_164i_20050707224653	95	07.07.2005	21:46	22:08
165	GS104-05_165a_20050707232402	102	07.07.2005	22:24	22:47
165	GS140-05_165b_20050707234736	102	08.07.2005/189	22:47	23:11
165	GS140-05_165c_20050708241108	102	08.07.2005	23:11	23:34
165	GS140-05_165d_20050708243440	102	08.07.2005	23:34	23:42
165	GS140-05_165e_20050708245814	102	08.07.2005	23:58	00:21
165	GS140-05_165f_20050708012148	102	08.07.2005	00:21	00:45
165	GS140-05_165g_20050708014520	102	08.07.2005	00:45	01:08
165	GS140-05_165h_20050708020853	102	08.07.2005	01:08	01:32
165	GS140-05_165i_20050708023225	102	08.07.2005	01:32	01:56
165	GS140-05_165j_20050708025639	88	08.07.2005	01:56	02:18
166	GS140-05_166a_20050708032230	102	08.07.2005	02:22	02:48
166	GS140-05_166b_20050708034758	102	08.07.2005	02:47	03:13
166	GS140-05_166c_20050708041327	102	08.07.2005	03:13	03:38
166	GS140-05_166d_20050708043856	102	08.07.2005	03:38	04:04
166	GS140-05_166e_20050708050425	102	08.07.2005	04:04	04:29
166	GS140-05_166f_20050708052954	102	08.07.2005	04:29	04:55
166	GS140-05_166g_20050708055522	102	08.07.2005	04:55	05:20
166	GS140-05_166h_20050708062052	102	08.07.2005	05:20	05:46
166	GS140-05_166i_20050708064621	102	08.07.2005	05:46	06:11
166	GS140-05_166j_20050708071150	74	08.07.2005	06:11	06:30
167	GS140-05_167a_20050708073229	102	08.07.2005	06:32	06:58
167	GS140-05_167b_20050708075758	102	08.07.2005	06:57	07:23
167	GS140-05_167c_20050708082328	102	08.07.2005	07:23	07:48
167	GS140-05_167d_20050708084857	102	08.07.2005	07:48	08:14

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Topas Data Files

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Line No.	File name	RAW file			
		size, Mb	Date/JulianDay	Start (UTC)	End (UTC)
FLADEN GROUND cont					
167	GS140-05_167e_20050708091426	102	08.07.2005/189	08:14	08:39
167	GS140-05_167f_20050708093955	102	08.07.2005	08:39	09:05
167	GS140-05_167g_20050708100524	102	08.07.2005	09:05	09:30
167	GS140-05_167h_20050708103052	102	08.07.2005	09:30	09:56
167	GS140-05_167i_20050708105622	102	08.07.2005	09:56	10:21
167	GS140-05_167j_20050708112150	68	08.07.2005	10:21	10:38
168	GS140-05_168a_20050708121504	102	08.07.2005	11:15	11:40
168	GS140-05_168b_20050708124032	102	08.07.2005	11:40	12:06
168	GS140-05_168c_20050708130601	102	08.07.2005	12:06	12:31
168	GS140-05_168d_20050708133130	6	08.07.2005	12:31	12:33
169	GS140-05_169a_20050708133610	102	08.07.2005	12:36	13:01
169	GS140-05_169b_20050708140140	102	08.07.2005	13:01	13:27
169	GS140-05_169c_20050708142749	102	08.07.2005	13:27	13:55
169	GS140-05_169d_20050708145536	10	08.07.2005	13:55	13:58
170	GS140-05_170a_20050708145829	102	08.07.2005	13:58	14:26
170	GS140-05_170b_20050708152615	102	08.07.2005	14:26	14:54
170	GS140-05_170c_20050708155402	87	08.07.2005	14:54	15:17
171	GS140-05_171a_20050708162309	102	08.07.2005	15:23	15:50
171	GS140-05_171b_20050708165055	102	08.07.2005	15:50	16:18
171	GS140-05_171c_20050708171840	93	08.07.2005	16:18	16:43
172	GS140-05_172a_20050708180721	102	08.07.2005	17:07	17:35
172	GS140-05_172b_20050708183508	102	08.07.2005	17:35	18:02
172	GS140-05-172c_20050708190254	102	08.07.2005	18:02	18:30
172	GS140-05_172d_20050708193040	3	08.07.2005	18:30	18:31
173	GS140-05_173a_20050708193344	102	08.07.2005	18:33	19:01
173	GS140-05_173b_20050708200130	102	08.07.2005	19:01	19:29
173	GS140-05_173c_20050708202916	98	08.07.2005	19:29	19:55
174	GS140-05_174a_20050708205856	102	08.07.2005	19:58	20:26
174	GS140-05_174b_20050708212642	102	08.07.2005	20:26	20:54
174	GS140-05_174c_20050708215429	101	08.07.2005	20:54	21:21
175	GS140-05_175a_20050708222246	102	08.07.2005	21:22	21:50
175	GS140-05_175b_20050708225032	102	08.07.2005	21:50	22:18
175	GS140-05_175c_20050708231818	102	08.07.2005	22:18	22:46
175	GS140-05_175d_20050708234604	102	09.07.2005/190	22:46	23:13
175	GS140-05_175e_20050709241351	89	09.07.2005	23:13	23:38
176	GS140-05_176a_20050709245613	102	09.07.2005	23:56	00:24
176	GS140-05_176b_2005070901240	102	09.07.2005	00:26	00:51
176	GS140-05_176c_20050709015146	102	09.07.2005	00:51	01:19
176	GS140-05_176d_20050709021932	102	09.07.2005	01:19	01:47
176	GS140-05_176e_20050709024718	102	09.07.2005	01:47	02:15
176	GS140-05_176f_20050709031504	102	09.07.2005	02:15	02:42
176	GS140-05_176g_20050709034250	102	09.07.2005	02:42	03:10
176	GS140-05_176h_20050709041036	102	09.07.2005	03:10	03:38
176	GS140-05_176i_20050709043823	102	09.07.2005	03:38	04:06

Table IV

Topas Data Files

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Line No.	File name	RAW file			
		size, Mb	Date/JulianDay	Start (UTC)	End (UTC)
FLADEN GROUND cont					
176	GS140-05_176j_20050709050609	102	09.07.2005/190	04:06	04:33
176	GS140-05_176k_20050709053356	20	09.07.2005	04:33	04:39
177	GS140-05_177a_20050709055629	102	09.07.2005	04:56	05:24
177	GS140-05_177b_20050709062415	102	09.07.2005	05:24	05:52
177	GS140-05_177c_20050709065201	102	09.07.2005	05:52	06:19
177	GS140-05_177d_20050709071947	102	09.07.2005	06:19	06:47
177	GS140-05_177e_20050709074733	102	09.07.2005	06:47	07:15
177	GS140-05_177f_20050709081519	34	09.07.2005	07:15	07:24
178	GS140-05_178a_20050709082522	102	09.07.2005	07:25	07:53
178	GS140-05_178b_20050709085309	102	09.07.2005	07:53	08:20
178	GS140-05_178c_20050709092055	102	09.07.2005	08:20	08:48
178	GS140-05_178d_20050709094842	102	09.07.2005	08:48	09:16
178	GS140-05_178e_20050709101627	102	09.07.2005	09:16	09:44
178	GS140-05_178f_20050709104413	102	09.07.2005	09:44	10:12
178	GS140-05_178g_20050709111200	66	09.07.2005	10:12	10:35
178	GS140-05_178h_20050709113543	0.5	09.07.2005	10:35	10:41
179	GS140-05_179a_20050709114146	102	09.07.2005	10:41	11:09
179	GS140-05_179b_20050709120932	102	09.07.2005	11:09	11:37
179	GS140-05_179c_20050709123719	102	09.07.2005	11:37	12:05
179	GS140-05_179d_20050709130505	102	09.07.2005	12:05	12:32
179	GS140-05_179e_20050709133252	102	09.07.2005	12:32	13:00
179	GS140-05_179f_20050709140038	102	09.07.2005	13:00	13:28
179	GS140-05_179g_20050709142824	21	09.07.2005	13:28	13:34
180	GS140-05_180a_20050709143408	102	09.07.2005	13:34	14:01
180	GS140-05_180b_20050709150155	51	09.07.2005	14:01	14:15
181	GS140-05_181a_20050709151655	102	09.07.2005	14:16	14:44
181	GS140-05_181b_20050709154442	102	09.07.2005	14:44	15:12
181	GS140-05_181c_20050709161228	102	09.07.2005	15:12	15:40
181	GS140-05_181d_20050709164014	102	09.07.2005	15:40	16:08
181	GS140_05_181e_20050709170800	102	09.07.2005	16:08	16:35
181	GS140_05_181f_20050709173548	102	09.07.2005	16:35	17:03
181	GS140-05_181g_20050709180334	4	09.07.2005	17:03	17:04
182	GS140-05_182_20050709180554	30	09.07.2005	17:05	17:14
183	GS140-05_183_20050709185607	13	09.07.2005	17:56	17:59
184	GS140-05_184a_20050709190147	102	09.07.2005	18:01	18:29
184	GS140-05_184b_20050709192933	59	09.07.2005	18:29	18:45
185	GS140-05_185a_20050709194545	102	09.07.2005	18:45	19:13
185	GS140-05_185b_20050709201332	55	09.07.2005	19:13	19:28
186	GS140-05_186a_20050709202941	102	09.07.2005	19:29	19:47
186	GS140-05_186b_20050709205729	102	09.07.2005	19:57	20:25
186	GS140-05_186c_20050709212515	102	09.07.2005	20:25	20:53
186	GS140-05_186d_20050709215301	102	09.07.2005	20:53	21:20
186	GS140-05_186e_20050709222047	102	09.07.2005	21:20	21:48
186	GS140-05_186f_20050709224833	102	09.07.2005	21:48	22:16

Table IV

Topas Data Files

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Line No.	File name	RAW file			
		size, Mb	Date/JulianDay	Start (UTC)	End (UTC)
FLADEN GROUND cont					
186	GS140-05_186g_20050709231619	102	09.07.2005/190	22:16	22:44
186	GS140-05_186h_20050709234405	102	10.07.2005/191	22:44	23:11
186	GS140-05_186i_20050710241151	102	10.07.2005	23:11	23:39
186	GS140-05_186j_20050710243938	102	10.07.2005	23:39	00:07
186	GS140-05_186k_20050710010724	102	10.07.2005	00:07	00:35
186	GS140-05_186l_20050710013511	102	10.07.2005	00:35	01:03
186	GS140-05_186m_20050710020257	20.7	10.07.2005	01:02	01:08
187	GS140-05_187a_20050710020837	101.9	10.07.2005	01:08	01:36
188	GS140-05_188a_20050710023618	102	10.07.2005	01:36	02:04
188	GS140-05_188b_20050710030405	91.6	10.07.2005	02:04	02:28
189	GS140-05_189a_20050710032939	102	10.07.2005	02:29	02:57
189	GS140-05_189b_20050710035726	102	10.07.2005	02:57	03:25
189	GS140-05_189c_20050710042512	8	10.07.2005	03:25	03:27
190	GS140-05_190a_20050710042838	102	10.07.2005	03:28	03:56
190	GS140-05_190b_20050710045624	68	10.07.2005	03:56	04:14
191	GS140-05_191a_20050710051619	102	10.07.2005	04:16	04:44
191	GS140-05_191b_20050710054405	7	10.07.2005	04:44	04:45
192	GS140-05_192a_20050710054706	102	10.07.2005	04:47	05:14
192	GS140-05_192b_20050710061452	102	10.07.2005	05:14	05:42
192	GS140-05_192c_20050710064238	85	10.07.2005	05:42	06:05
193	GS140-05_193a_20050710070651	102	10.07.2005	06:06	06:34
193	GS140-05_193b_20050710073438	102	10.07.2005	06:34	07:02
193	GS140-05_193c_20050710080224	24	10.07.2005	07:02	07:09
194	GS140-05_194a_20050710080902	102	10.07.2005	07:09	07:36
194	GS140-05_194b_20050710083647	102	10.07.2005	07:36	08:04
194	GS140-05_194c_20050710090433	102	10.07.2005	08:04	08:32
194	GS140-05_194d_20050710093219	97	10.07.2005	08:32	08:58
195	GS140-05_195a_20050710100119	102	10.07.2005	09:01	09:28
195	GS140-05_195b_20050710102833	90	10.07.2005	09:28	09:46
196	GS140-05_196a_20050710104724	102	10.07.2005	09:47	10:07
196	GS140-05_196b_20050710110750	56	10.07.2005	10:07	10:19
197	GS140-05_197_20050710112004	76	10.07.2005	10:20	10:35
198	GS140-05_198a_20050710113602	102	10.07.2005	10:36	10:56
198	GS140-05_198b_20050710115629	49	10.07.2005	10:56	11:06
199	GS140-04_199_20050710120634	79	10.07.2005	11:06	11:22
200	GS140-05_200a_20050710122249	102	10.07.2005	11:22	11:43
200	GS140-05_200b_20050710124315	102	10.07.2005	11:43	12:03
200	GS140-05_200c_20050710130340	102	10.07.2005	12:03	12:24
200	GS140-05_200d_20050710132406	102	10.07.2005	12:24	12:44
200	GS140-05_200e_20050710134433	27	10.07.2005	12:44	14:49
201	GS140-05_201a_20050710135034	86	10.07.2005	12:50	13:11
202	GS140-05_201b_20050710141100	102	10.07.2005	13:11	13:28
202	GS140-05_202a_20050710142846	102	10.07.2005	13:28	13:49
202	GS140-05_202b_20050710144912	102	10.07.2005	13:49	14:09

Table IV

Topas Data Files

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Line No.	File name	RAW file			
		size, Mb	Date/JulianDay	Start (UTC)	End (UTC)
FLADEN GROUND cont					
202	GS140-05_202c_20050710150936	102	10.07.2005/191	14:09	14:30
202	GS140-05_202d_20050710153003	39	10.07.2005	14:30	14:37
203	GS140-05_203a_20050710153940	102	10.07.2005	14:39	15:00
203	GS140-05_203b_20050710160006	7	10.07.2005	15:00	15:01
204	GS140-05_204a_20050710160218	43	10.07.2005	15:02	15:11
205	GS140-05_205a_20050710180901	102	10.07.2005	17:09	17:29
205	GS140-05_205b_20050710182927	102	10.07.2005	17:29	17:49
205	GS140-05_205c_20050710184953	6.9	10.07.2005	17:49	17:52
206	GS140-05_206a_20050710185216	102	10.07.2005	17:52	18:12
206	GS140-05_206b_20050710191241	59.4	10.07.2005	18:12	18:26
207	GS140-05_207a_20050710192608	102	10.07.2005	18:26	18:46
207	GS140-05_207b_20050710194633	77.9	10.07.2005	18:46	19:02
208	GS140-05_208a_20050710200250	102	10.07.2005	19:02	19:23
208	GS140-05_208b_20050710202317	102	10.07.2005	19:23	19:43
208	GS140-05_208c_20050710204343	102	10.07.2005	19:43	20:04
208	GS140-05_208d_20050710210409	102	10.07.2005	20:04	20:24
208	GS140-05_208e_20050710212435	102	10.07.2005	20:24	20:45
208	GS140-05_208f_20050710214500	102	10.07.2005	20:45	21:10
208	GS140-05_208g_20050710221038	102	10.07.2005	21:10	21:41
208	GS140-05_208h_20050710224108	30.1	10.07.2005	21:41	21:51
209	GS140-05_209a_20050710225146	102	10.07.2005	21:51	22:22
209	GS140-05_209b_20050710232216	102	10.07.2005	22:22	22:52
209	GS140-05_209c_20050710235246	70.4	10.07.2005	22:52	23:14
210	GS140-05_210a_20050711241427	99.8	11.07.2005/192	23:14	23:44
211	GS140-05_211a_20050711244423	102	11.07.2005	23:44	00:14
211	GS140-05_211b_20050711011453	102	11.07.2005	00:14	00:45
211	GS140-05_211c_20050711014523	102	11.07.2005	00:45	01:15
211	GS140-05_211d_20050711021554	102	11.07.2005	01:15	01:46
211	GS140-05_211e_20050711024625	102	11.07.2005	01:46	02:16
211	GS140-05_211f_20050711031655	102	11.07.2005	02:16	02:47
211	GS140-05_211g_20050711034726	102	11.07.2005	02:47	03:17
211	GS140-05_211h_20050711041756	21.7	11.07.2005	03:17	03:24
212	GS140-05_212a_20050711042509	102	11.07.2005	03:25	03:55
212	GS140-05_212b_20050711045539	102	11.07.2005	03:55	04:26
212	GS140-05_212c_20050711052609	64	11.07.2005	04:26	04:45
213	GS140-05_213a_20050711054529	102	11.07.2005	04:45	05:16
213	GS140-05_213b_20050711061559	56	11.07.2005	05:15	05:32
214	GS140-05_214a_20050711063236	102	11.07.2005	05:32	06:03
214	GS140-05_214b_20050711070306	102	11.07.2005	06:03	06:33
214	GS140-05_214c_20050711073336	102	11.07.2005	06:33	07:04
214	GS140-05_214d_20050711080407	102	11.07.2005	07:04	07:34
214	GS140-05_214e_20050711083437	102	11.07.2005	07:34	08:05
214	GS140-05_214f_20050711090507	102	11.07.2005	08:05	08:35
214	GS140-05_214g_20050711093537	102	11.07.2005	08:35	09:06

Table IV

Topas Data Files

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Line No.	File name	RAW file			
		size, Mb	Date/JulianDay	Start (UTC)	End (UTC)
FLADEN GROUND cont					
214	GS140-05_214h_20050711100607	102	11.07.2005/192	09:06	09:36
214	GS140-05_214i_20050711103639	102	11.07.2005	09:36	10:08
214	GS140-05_214j_20050711110840	102	11.07.2005	10:08	11:09
214	GS140-05_214k_20050711120940	102	11.07.2005	11:09	12:10
214	GS140-05_214l_20050711131039	102	11.07.2005	12:10	13:11
214	GS140-05_214m_20050711141137	49	11.07.2005	13:11	13:40
215	GS140-05_215a_20050711144103	102	11.07.2005	13:41	14:42
215	GS140-05_215b_20050711154205	102	11.07.2005	14:42	15:43
215	GS140-05_215c_20050711164304	95	11.07.2005	15:43	14:39
216	GS140-05_216a_20050711173935	60	11.07.2005	16:39	17:15
TEST	GS140-05_TEST_20050711181746	59	11.07.2005	17:17	17:36
217	GS140-05_217a_20050711183614	73	11.07.2005	17:36	17:57
217	GS140-05_217b__20050711185756	56	11.07.2005	17:57	17:58
218	GS140-05_218a_20050711190155	102	11.07.2005	18:01	18:28
218	GS140-05_218b_20050711192827	102	11.07.2005	18:28	18:52
218	GS140-05_218c_20050711195251	71	11.07.2005	18:52	19:09
NORWEGIAN CHANNEL					
219	GS140-05_219a_20050711201053	102	11.07.2005/192	19:10	19:35
219	GS140-05_219b_20050711203517	102	11.07.2005	19:35	19:59
219	GS140-05_219c_20050711205942	102	11.07.2005	19:59	20:22
219	GS140-05_219d_20050711212240	102	11.07.2005	20:22	20:47
219	GS140-05_219e_20050711214704	102	11.07.2005	20:47	21:11
219	GS140-05_219f_20050711221128	102	11.07.2005	21:11	21:35
219	GS140-05_219g_20050711223552	102	11.07.2005	21:35	22:00
219	GS140-05_219h_20050711230016	102	11.07.2005	22:00	22:24
219	GS140-05_219i_20050711232440	102	11.07.2005	22:24	22:51
219	GS140-05_219j_20050711235113	102	11.07.2005	22:51	23:21
219	GS140-05_219k_20050712242143	102	11.07.2005	23:21	23:44
219	GS140-05_219l_20050712244456	102	12.07.2005/193	23:44	00:05
219	GS140-05_219m_20050712010523	102	12.07.2005	00:05	00:25
219	GS140-05_219n_20050712012549	102	12.07.2005	00:25	00:54
219	GS140-05_219o_20050712015455	102	12.07.2005	00:54	01:25
219	GS140-05_219p_20050712022533	102	12.07.2005	01:25	01:56
219	GS140-05_219q_20050712025603	102	12.07.2005	01:56	02:26
219	GS140-05_219r_20050712032633	102	12.07.2005	02:26	02:57
219	GS140-05_219s_20050712035703	102	12.07.2005	02:57	03;27
219	GS140-05_219t_20050712042733	102	12.07.2005	03:27	03:55
219	GS140-05_219u_20050712045532	102	12.07.2005	03:55	04:10
219	GS140-05_219v_20050712051008	76	12.07.2005	04:10	04:24
219	GS140-05_219w_20050712052415	102	12.07.2005	04:24	04:46
219	GS140-05_219x_20050712054650	102	12.07.2005	04:46	05:08
219	GS140-05_219y_20050712060837	2	12.07.2005	05:08	05:09
HARDANGERFJORDEN					
220	GS140-05_220a_20050712060908	102	12.07.2005/193	05:09	05:30

Table IV

Topas Data Files

UoB Cruise No. GS140-05 (IMR Cruise No. 2005109)

Line No.	File name	RAW file			
		size, Mb	Date/JulianDay	Start (UTC)	End (UTC)
HARDANGERFJORDEN cont.					
220	GS140-05_220b_20050712063053	102	12.07.2005/193	05:30	05:52
220	GS140-05_220c_20050712065238	102	12.07.2005	05:52	06:14
220	GS140-05_220d_20050712071423	23	12.07.2005	06:14	06:19
221	GS140-05_221a_20050712085228	102	12.07.2005	07:52	08:22
221	GS140-05_221b_20050712092238	66	12.07.2005	08:22	08:49
222	GS140-05_222a_20050712095031	69	12.07.2005	08:50	09:11
223	GS140-05_223a_20050713243217	102	13.07.2005/194	23:32	00:00
223	GS140-05_223b_20050713010030	102	13.07.2005	00:00	00:28
223	GS140-05_223c_20050713012841	102	13.07.2005	00:28	00:56
223	GS!40-05_223d_20050713015648	102	13.07.2005	00:56	01:24
223	GS140-05_223e_20050713022453	102	13.07.2005	01:24	01:53
223	GS140-05_223f_20050713025300	102	13.07.2005	01:53	02:21
223	GS140-05_223g_20050713032105	102	13.07.2005	02:21	01:21
223	GS140-05_223h_20050713035533	102	13.07.2005	02:55	04:19
224	GS140-05_224a_20050713085457	102	13.07.2005	07:54	08:25
224	GS140-05_224b_20050713092545	102	13.07.2005	08:25	08:56
224	GS140-05_224c_20050713095641	38	13.07.2005	08:56	09:08
225	GS140-05_225a_20050713100955	102	13.07.2005	09:09	09:40
225	GS140-05_225b_20050713104053	102	13.07.2005	09:40	10:14
225	GS140-05_225c_20050713111441	102	13.07.2005	10:14	10:51
225	GS140-05_225d_20050713115115	102	13.07.2005	10:51	11:27
225	GS140-05_225e_20050713122734	102	13.07.2005	11:27	12:03
225	GS140-05_225f_20050713130352	25	13.07.2005	12:03	12:12

Note that time in "File name"-column is PC clock, thus + 1 hour compared to UTC time.

Table V	**Multibeam Files** **UoB Cruise No. GS140-05 (IMR Cruise No. 2009109)**		
RAW File name File name	**Size** Kb	**Instrument** system	**Remarks**
Project FRØYSJØEN			
0001_20050701_044636_raw.all	56148444	EM1002	
0002_20050701_063409_raw.all	72791840	EM1002	
0003_20050701_074945_raw.all	2533182	EM1002	
0004_20050701_075240_raw.all	10683312	EM1002	
0005_20050701_081000_raw.all	13762408	EM1002	
0006_20050701_083037_raw.all	41774828	EM1002	
0007_20050701_100332_raw.all	64816166	EM1002	
0008_20050701_125216_raw.all	119925608	EM1002	
Project NORDFJORD			
0001_20050701_173725_raw.all	61113514	EM1002	
0002_20050701_192659_raw.all	28276982	EM1002	
0003_20050701_200953_raw.all	30999890	EM1002	
0004_20050701_210538_raw.all	26003732	EM1002	
0005_20050702_014529_raw.all	13626644	EM1002	
0007_20050702_021358_raw.all	1487738	EM1002	
0008_20050702_021743_raw.all	43162334	EM1002	
0009_20050702_034718_raw.all	7630614	EM1002	
0010_20050702_040809_raw.all	39013308	EM1002	
0011_20050702_050858_raw.all	28276524	EM1002	
0012_20050702_054744_raw.all	47411168	EM1002	
0013_20050702_093908_raw.all	45000202	EM1002	
0014_20050702_103359_raw.all	50812822	EM1002	
0016_20050702_145704_raw.all	40567654	EM1002	
0017_20050702_162030_raw.all	28399086	EM1002	
0018_20050702_165831_raw.all	30027636	EM1002	
0019_20050703_013755_raw.all	60148980	EM1002	
0020_20050703_025738_raw.all	38598826	EM1002	
0021_20050703_035231_raw.all	424580	EM1002	
0022_20050703_035305_raw.all	8689010	EM1002	
Project STAD			
0001_20050703_042104_raw.all	83719166	EM1002	
0002_20050703_061908_raw.all	54508090	EM1002	
0003_20050703_073641_raw.all	34699538	EM1002	
0004_20050703_082508_raw.all	80127054	EM1002	
0005_20050703_100855_raw.all	3820028	EM1002	
0006_20050703_101403_raw.all	33703754	EM1002	
0007_20050703_120743_raw.all	9800238	EM1002	
0008_20050703_122056_raw.all	106809356	EM1002	
0009_20050703_162031_raw.all	58167642	EM1002	
0010_20050703_174428_raw.all	116417460	EM1002	
0011_20050703_202417_raw.all	68024736	EM1002	

Table V	**Multibeam Files** **UoB Cruise No. GS140-05 (IMR Cruise No. 2009109)**		
RAW File name File name	**Size** Kb	**Instrument** system	**Remarks**
Project STAD cont			
0012_20050703_221749_raw.all	10391192	EM1002	
0013_20050703_224030_raw.all	34702820	EM1002	
0014_20050703_233027_raw.all	36353732	EM1002	
0015_20050704_002351_raw.all	172283990	EM1002	
0016_20050704_042226_raw.all	83117676	EM1002	
0017_20050704_071540_raw.all	87377712	EM1002	
0018_20050704_100352_raw.all	35135314	EM1002	
0019_20050704_110647_raw.all	87562112	EM1002	
0020_20050704_130307_raw.all	81574466	EM1002	
0021_20050704_152444_raw.all	95771402	EM1002	
0022_20050704_193049_raw.all	72275646	EM1002	
0023_20050704_212450_raw.all	44656876	EM1002	
0024_20050704_230532_raw.all	30705564	EM1002	
0025_20050705_001843_raw.all	29726616	EM1002	
0026_20050705_033333_raw.all	20430554	EM1002	
Project NORDSJOFIVTA			
0001_20050705_042729_raw.all	9 455 406	EM300	
0002_20050705_055945_raw.all	14 441 028	EM300	
0003_20050705_070317_raw.all	15 081 254	EM300	
0004_20050705_080010_raw.all	58 009 392	EM300	
0005_20050705_120555_raw.all	35 061 192	EM300	
0006_20050705_144544_raw.all	42 334 328	EM300	
0007_20050705_174442_raw.all	83 340	EM300	
0008_20050705_174507_raw.all	77 752 962	EM300	
0009_20050706_094530_raw.all	4 983 904	EM300	
0010_20050706_100820_raw.all	25 564 784	EM300	
0011_20050706_115814_raw.all	12 625 944	EM300	
0012_20050706_125519_raw.all	11 028 794	EM300	
0013_20050706_133525_raw.all	21 253 574	EM300	
0014_20050706_144829_raw.all	16 310	EM300	
0015_20050706_144843_raw.all	11 274 092	EM300	
0016_20050706_152427_raw.all	22 955 210	EM300	
0017_20050706_163921_raw.all	71 442	EM1002	
0018_20050706_163932_raw.all	132 050	EM1002	
Project NORDSJOEN			
0001_20050706_175935_raw.all	303 460 186	EM1002	
0002_20050707_020822_raw.all	10 190 916	EM1002	
0003_20050707_022419_raw.all	298 802	EM1002	
0004_20050707_022549_raw.all	2 187 832	EM1002	
0005_20050707_022914_raw.all	303 900 112	EM1002	
0006_20050707_085741_raw.all	9 157 232	EM1002	

Table V	**Multibeam Files** **UoB Cruise No. GS140-05 (IMR Cruise No. 2009109)**		
RAW File name File name	**Size** Kb	**Instrument** system	**Remarks**
Project NORDSJOEN cont.			
0007_20050707_091000_raw.all	149 114 368	EM1002	
0008_20050707_121046_raw.all	132 543 306	EM1002	
0009_20050707_145130_raw.all	185 103 114	EM1002	
0010_20050707_184729_raw.all	164 849 466	EM1002	
0011_20050707_222318_raw.all	15 264	EM1002	
0012_20050707_222433_raw.all	190 884 666	EM1002	
0013_20050708_021941_raw.all	852 928	EM1002	
0014_20050708_022128_raw.all	202 360 148	EM1002	
0015_20050708_063223_raw.all	201 335 568	EM1002	
0016_20050708_110435_raw.all	49 162	EM1002	
0017_20050708_111416_raw.all	65 797 820	EM1002	
0018_20050708_123424_raw.all	69 245 270	EM1002	
0017_20050708_111416_raw.all	65 797 820	EM1002	
0018_20050708_123424_raw.all	69 245 270	EM1002	
0019_20050708_140056_raw.all	63 923 542	EM1002	
0020_20050708_152307_raw.all	67 182 602	EM1002	
0021_20050708_170659_raw.all	70 420 010	EM1002	
0022_20050708_183329_raw.all	68 911 458	EM1002	
0023_20050708_195850_raw.all	69 417 180	EM1002	
0024_20050708_212249_raw.all	78 804 138	EM1002	
0025_20050708_230046_raw.all	5 374 096	EM1002	
0026_20050708_230730_raw.all	24 727 698	EM1002	
0027_20050708_235511_raw.all	735 596	EM1002	
0028_20050708_235624_raw.all	237 604 042	EM1002	
0029_20050709_045621_raw.all	136 158 534	EM1002	
0030_20050709_072530_raw.all	171 917 934	EM1002	
0031_20050709_103556_raw.all	147 550 706	EM1002	
0032_20050709_133413_raw.all	33 803 358	EM1002	
0033_20050709_141659_raw.all	136 744 936	EM1002	
0034_20050709_170552_raw.all	6 684 944	EM1002	
0035_20050709_175603_raw.all	2 790 260	EM1002	
0036_20050709_180130_raw.all	20 415 440	EM1002	
0037_20050709_182526_raw.all	52 613 052	EM1002	
0038_20050709_192937_raw.all	278 215 314	EM1002	
0039_20050710_010823_raw.all	21 427 256	EM1002	
0040_20050710_013605_raw.all	42 662 514	EM1002	
0041_20050710_023020_raw.all	46 051 944	EM1002	
0042_20050710_032836_raw.all	37 962 650	EM1002	
0043_20050710_041614_raw.all	24 446 544	EM1002	
0044_20050710_044703_raw.all	65 474 674	EM1002	
0045_20050710_060642_raw.all	139 026 632	EM1002	
0046_20050710_090117_raw.all	36 167 698	EM1002	
0047_20050710_094718_raw.all	25 601 700	EM1002	
0048_20050710_102220_raw.all	10 502 948	EM1002	
0049_20050710_103517_raw.all	26 130 768	EM1002	

Table V	**Multibeam Files** **UoB Cruise No. GS140-05 (IMR Cruise No. 2009109)**		
RAW File name File name	**Size** Kb	**Instrument** system	**Remarks**
Project NORDSJOEN cont.			
0050_20050710_110622_raw.all	13 403 278	EM1002	
0051_20050710_112207_raw.all	71 567 672	EM1002	
0052_20050710_124934_raw.all	30 753 344	EM1002	
0053_20050710_132759_raw.all	28 598 868	EM1002	
0001_20050710_143243_raw.all	4 230 692	EM1002	
0002_20050710_143739_raw.all	19 964 096	EM1002	
0003_20050710_150257_raw.all	6 544 526	EM1002	
0004_20050710_170857_raw.all	35 449 294	EM1002	
0005_20050710_175211_raw.all	26 790 710	EM1002	
0006_20050710_182532_raw.all	29 749 522	EM1002	
0007_20050710_190247_raw.all	76 503 252	EM1002	
0008_20050710_203802_raw.all	342 052	EM1002	
0009_20050710_203846_raw.all	739 860	EM1002	
0010_20050710_204106_raw.all	55 525 562	EM1002	
0011_20050710_215142_raw.all	65 856 288	EM1002	
0012_20050710_231610_raw.all	22 686 244	EM1002	
0013_20050710_234427_raw.all	176 620 368	EM1002	
0014_20050711_032415_raw.all	66 219 760	EM1002	
0015_20050711_044538_raw.all	447 956 336	EM1002	
0016_20050711_134011_raw.all	5 848 418	EM1002	
0017_20050711_140456_raw.all	133 018 390	EM1002	
0018_20050711_164025_raw.all	30 192 480	EM1002	
0019_20050711_171734_raw.all	16 167 374	EM1002	
0020_20050711_173650_raw.all	18 191 788	EM1002	
0021_20050711_180232_raw.all	58 534 292	EM1002	
0022_20050711_191039_raw.all	481 705 732	EM1002	
0023_20050712_065705_raw.all	20 283 432	EM1002	
0024_20050712_075103_raw.all	4 256 028	EM1002	
0001_20050712_075525_raw.all	22 734 964	EM1002	
0002_20050712_085028_raw.all	8 461 358	EM1002	

Table VI **Air-gun Survey Log**
UoB Cruise No GS140-05 (IMR Cruise No. 2005109)

Date	Time (UTC)	Latitude	Longitude	Comments	Filename
11.07.2005	07:16			Streamer in water	
11.07.2005	07:32	58 32.405' N	01 07.378' E	Set pressure on air-gun	
11.07.2005	07:34	58 32.516' N	01 07.427' E	Pressure on	
11.07.2005	07:40	58 32.720' N	01 07.520' E	Air-gun in water	
11.07.2005	07:43	58 32.855' N	01 07.578' E	Start shooting every 12 meters	
11.07.2005	07:45	58 32.934' N	01 07.666' E	No sensor	
11.07.2005	07:54	58 33.290' N	01 07.789' E	Shooting	
11.07.2005	07:57	58 33.406' N	01 07.803' E	Restarting program	
11.07.2005	08:00			Lost in-signal	
11.07.2005	08:02	58 33.684' N	01 08.000' E	In-signal OK	
11.07.2005	08:08	58 34.186' N	01 08.246' E	30 meters off survey line	
11.07.2005	08:13	58 34.545' N	01 08.402' E	Noise on Ch. 2 (mechanical problem occurred after streamer went into sea)	
11.07.2005	08:15	58 34.625' N	01 08.454' E	Increased pressure on air-gun to 12.7 mA (ca. 138 Bar)	
11.07.2005	08:15	58 34.708' N	01 08.468' E	10 meters off survey line - still decreasing	
11.07.2005	08:19	58 34.914' N	01 08.560' E	6-7 meters off line	
11.07.2005	08:20	58 35.045' N	01 08.619' E	On survey line again	
11.07.2005	08:24	58 35.444' N	01 08.795' E	Shut down power to GEODE/data gap/air gun on.	
11.07.2005	08:30	58 35.880' N	01 08.999' E	Trying to fix channel 2	
11.07.2005	08:31	58 35.987' N	01 09.046' E	Geode online again	
11.07.2005	08:32	58 36.105' N	01 09.101' E	Restarting program	
11.07.2005	08:32	58 36.226' N	01 09.159' E	Still problem with Ch. 2 (defect cable ?)	
11.07.2005	08:38	58 36.614' N	01 09.345' E	Shut down Ch. 2	
11.07.2005	08:45	58 37.190' N	01 09.626' E	Log off system - not recording air-gun. Trying to cut off some cm of the cable	
11.07.2005	08:57	58 38.260'N	01 10.111' E	Cutting cable- but still problem Ch. 2	
11.07.2005	08:58	58 38.260'N	01 10.111' E	Shut down system again - not logging air-gun data	
11.07.2005	09:01	58 38.619' N	01 10.274' E	Start air-gun again - recording only Ch. 1	
11.07.2005	09:30	58 41.119' N	01 11.436' E	Ch. 2 ok, shut off/on gain (to narrow filter)	
11.07.2005	09:38	58 41.755' N	01 11.743' E	Playing around w/ the gain setting on Ch. 2	
11.07.2005	11:05			After a lot of noise problems on Ch. 2, analogue low/high cut filter settings of 90-120	
11.07.2005	11:12	58 49.195' N	01 15.210' E	Streamer cable disconnected to test a new connection box from deck. Aim to reduce the 60 Hz on Ch. 2	
11.07.2005	11:20	58 49.840' N	01 15.600' E	Streamer cable connected on new connection box; no improvement of signal on Ch. 2	
11.07.2005	11:30			Streamer cable switched back to previous connection	2216.sgy
11.07.2005	13:20			Air-gun too near surface. Effect on signal	
11.07.2005	13:42	59 00.900' N	01 19,33' E	EOL 2	2216.sgy
11.07.2005	14:08	59 00.680' N	01 18,55' E	SOL 3-5.1 ktn – air-gun deeper in the water	3844.sgy
11.07.2005	17:04	59 04.870'N	01 42.62' E	SOL 3	3844.sgy

APPENDIX I

Core Station Log Sheets

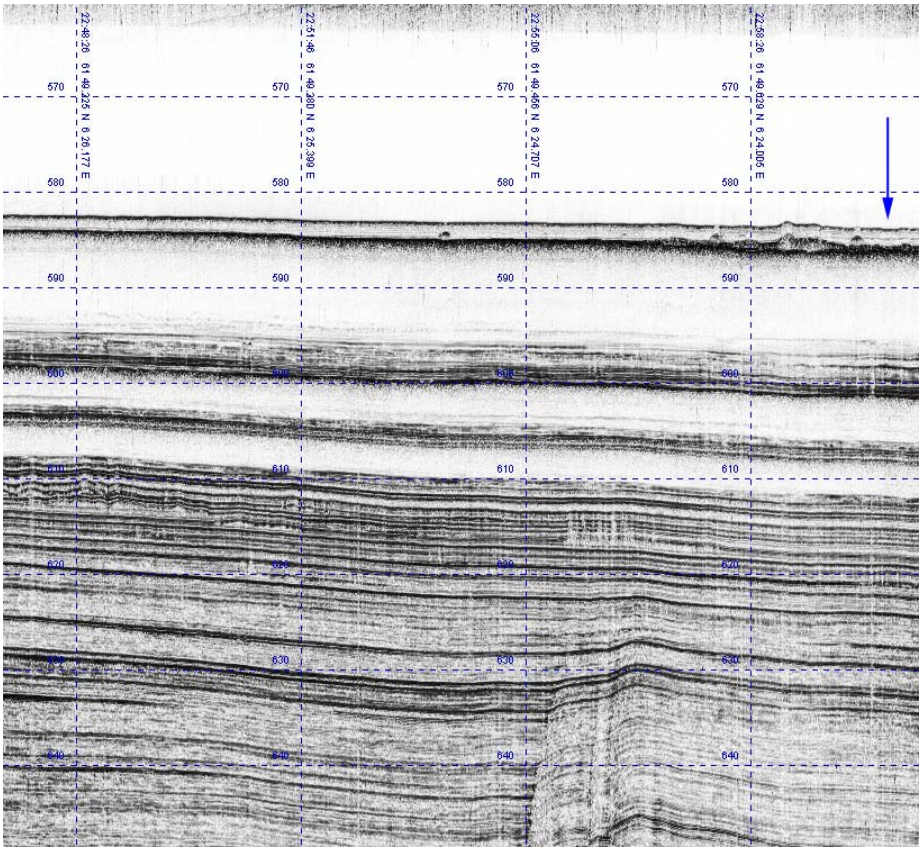
STATION	**01a_GC**	Cruise GS140-05

Date:	01.07.2005	UTC time:	22:53:00
Latitude:	61 49.757N	Longitude:	06 23.496E
Water depth:	438.2 m	Location:	Innvikfjorden

Core number:	GS140-05-01aGC	Corer length:	3 m
		Apparent penetration:	
		Core length:	2,4m

Observations
Weather report :
Flat sea
Core condition:
Sediment not well consolidate

Summary of sedimentological and physical observations
Top rubbish ; bottom seems OK over penetration



Core station 01a - GS140-05-01a-GC. 3m

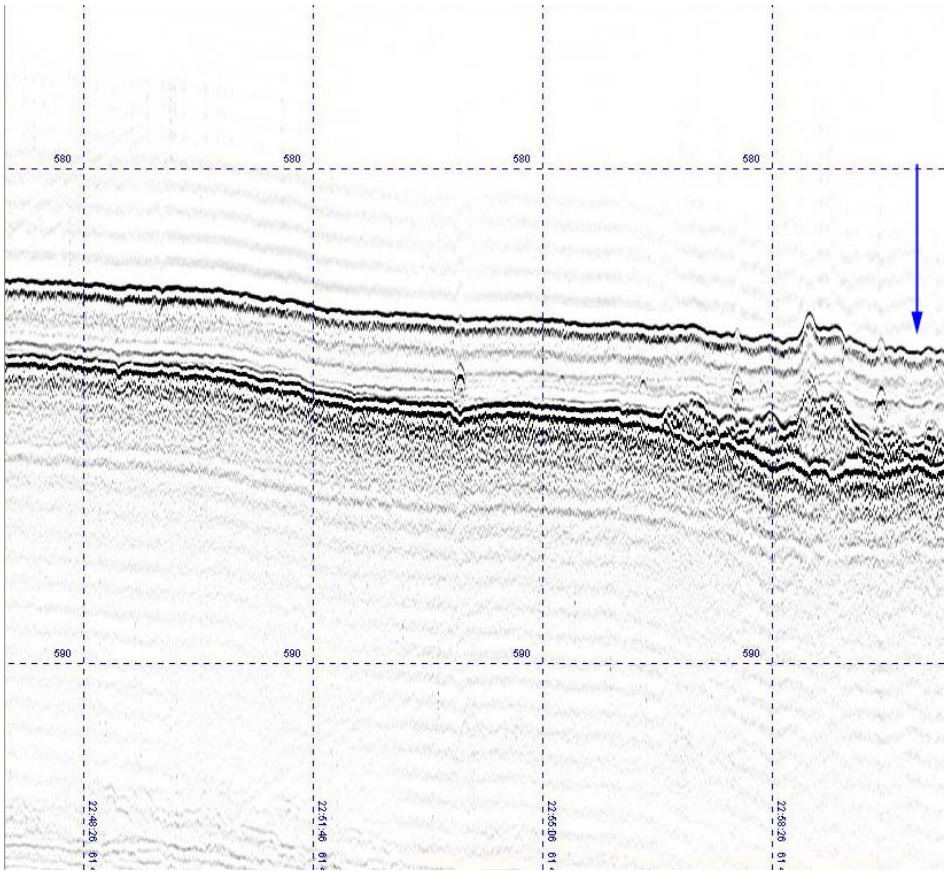
STATION	**01b_GC**	Cruise GS140-05

Date:	01.07.2005	UTC time:	22:53:00
Latitude:	61 49.757N	Longitude:	06 23.496E
Water depth:	438.2 m	Location:	Innvikfjorden

Core number:	GS140-05-01bGC	Corer length:	
		Apparent penetration:	
		Core length:	

Observations
Weather report :
Flat sea
Core condition:
Sediment not well consolidate ; highly disturbed

Summary of sedimentological and physical observations
Rubbish ; through it away



Core station 01b - Core GS140-05-01b-GC. 3m (expanded)

STATION	**01c_GC**	Cruise GS140-05

Date:	01.07.2005	UTC time:	22:53:00
Latitude:	61 49.757N	Longitude:	06 23.496E
Water depth:	438.2 m	Location:	Innvikfjorden

Core number:	GS140-05-01cGC	Corer length:	3 m
		Apparent penetration:	
		Core length:	1,5 m

Observations
Weather report :
Flat sea
Core condition:
Sediment not well consolidate

Done on the boat with the core
GC:
BC:
MGC:
CTD:

Summary of sedimentological and physical observations
Half meter is rubbish

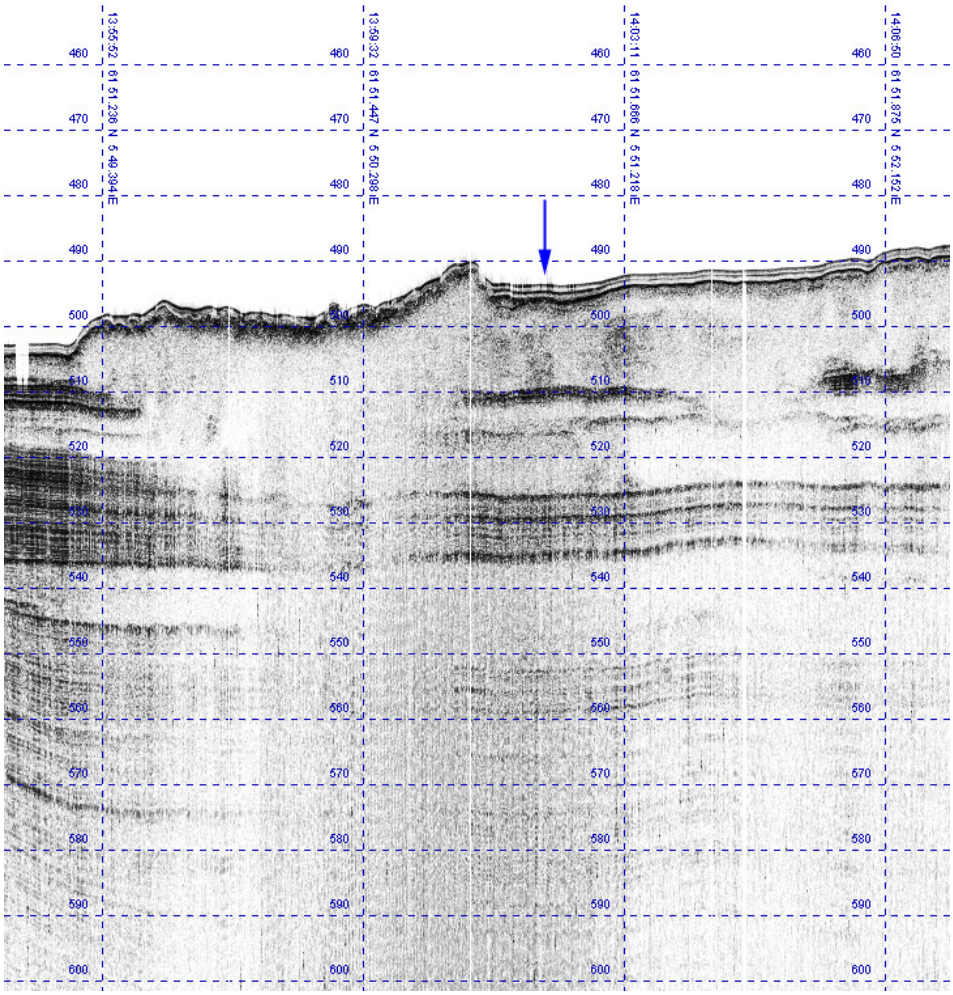
STATION	**02_GC**	GS140-05

Date:	01.07.2005	UTC time:	22:53:00
Latitude:	61 49.757N	Longitude:	06 23.496E
Water depth:	438.2 m	Location:	Alfotfjorden

Core number:	GS140-05-02C	Corer length:	3 m
		Apparent penetration:	
		Core length:	2,13m

Observations
Weather report :
Flat sea
Core condition:

Summary of sedimentological and physical observations



Core station 02 - GS140-05-02GC.

STATION	**03_GC**	Cruise GS140-05

Date:	02.07.2005	UTC time:	19:20
Latitude:	61 54.900N	Longitude:	05 32.500E
Water depth:	582 m	Location:	Davik

Core number:	GS140-05-03C	Corer length:	3.5 m
		Apparent penetration:	3.5 m
		Core length:	3.5 m

Observations
Weather report :
Wind speed 8 kt, sunny, nearly flat sea,15.8 degrees
Core condition:

Done on the boat with the core
GC:
BC:
MGC:
CTD:

Summary of sedimentological and physical observations

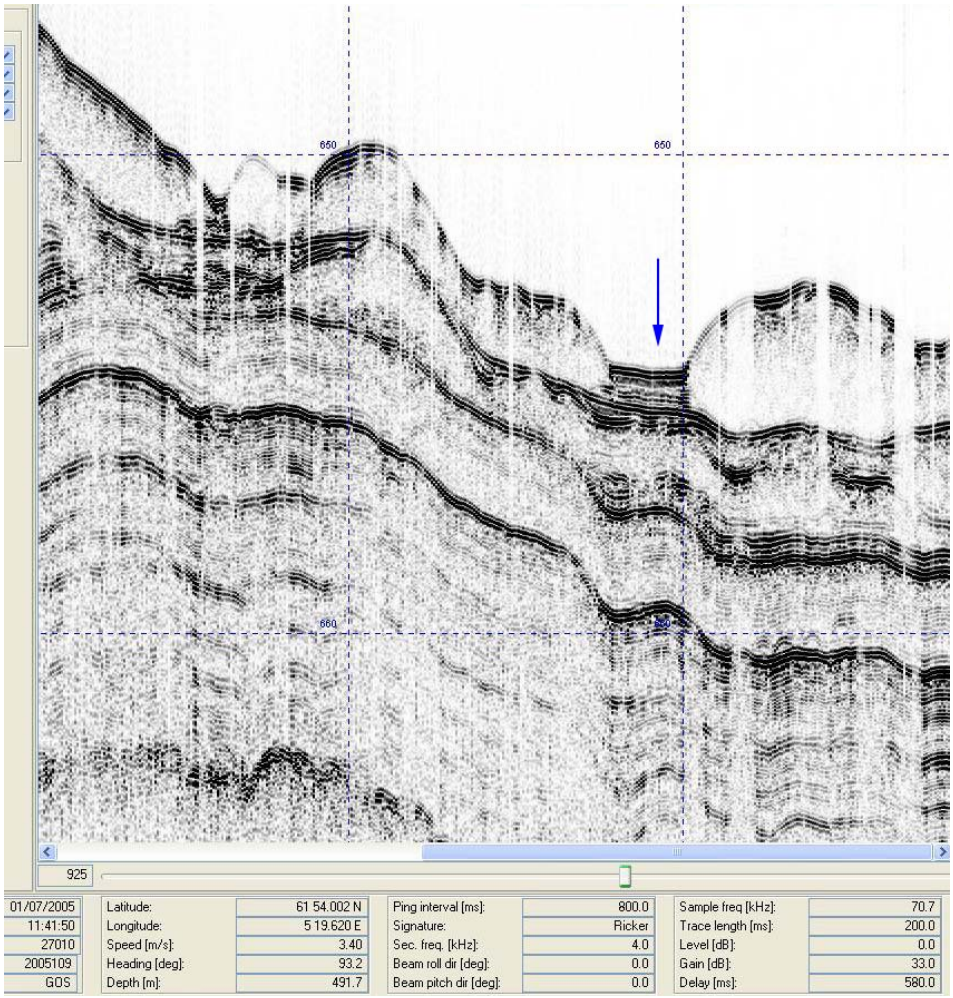
STATION	**04_GC**	Cruise GS140-05

Date:	02.07.2005	UTC time:	21:42
Latitude:	61 54.032N	Longitude:	05 19.195E
Water depth:	492 m	Location:	Rugsundøy

Core number:	GS140-05-04GC	Corer length:	1.5 m
		Apparent penetration:	
		Core length:	0,45m

Observations
Weather report :
Flat sea,15.5 degrees
Core condition:

Summary of sedimentological and physical observations



Core station 04 - GS140-05-04GC.

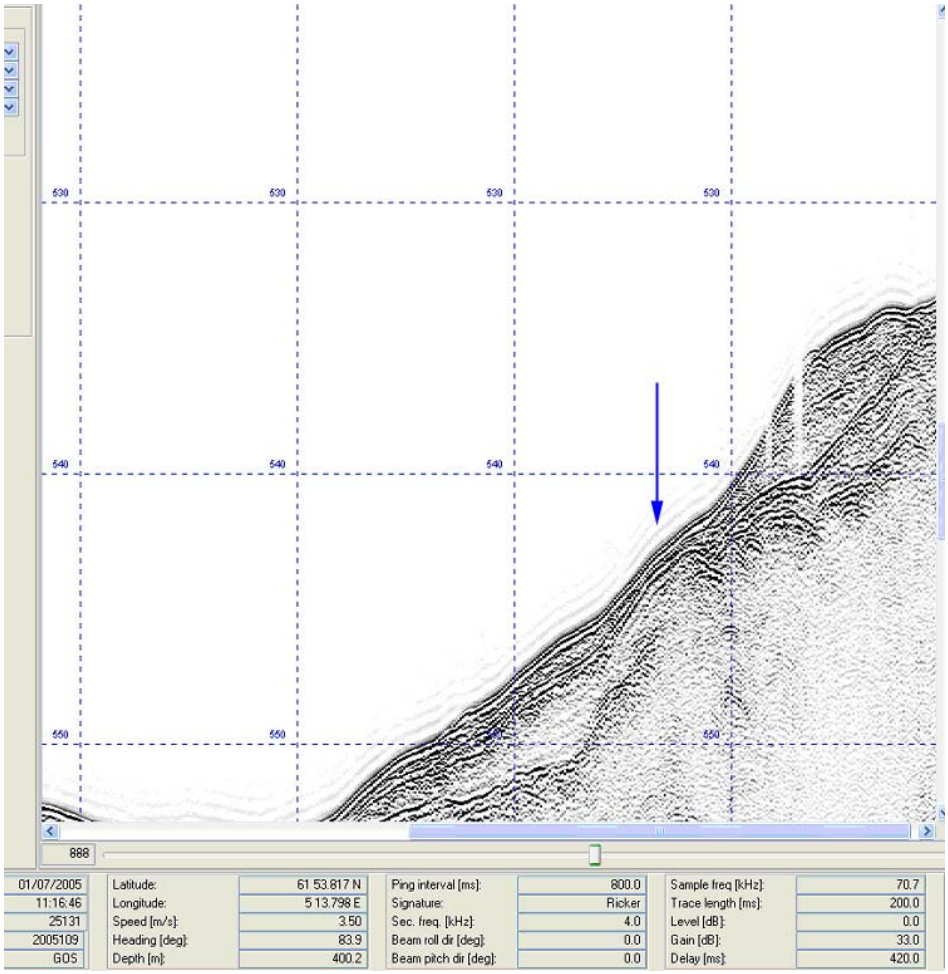
STATION	**05_GC**	Cruise GS140-05

Date:	02.07.2005	UTC time:	22:51
Latitude:	61°53,806' N	Longitude:	05°13,423' W
Water depth:	408 m	Location:	Rugsund

Core number:	GS140-05-05GC	Corer length:	1,5 m
		Apparent penetration:	
Number of section	1	Core length:	1,5 m

Observations
Weather report :
clean
Core condition:
One section

Summary of sedimentological and physical observations



Core station 05 - Core GS140-05-05GC.

STATION	**06_GC**	Cruise GS140-05

Date:	03,07,2005	UTC time:	01:13
Latitude:	61°55,343' N	Longitude:	04°57,362' W
Water depth:	180 m	Location:	Fåfjorden

Core number:	GS140-05-06GC	Corer length:	1,5 m
		Apparent penetration:	
		Core length:	1,5 m

Observations
Weather report :
Core condition:

Done on the boat with the core
GC:
BC:
MGC:
CTD:

Summary of sedimentological and physical observations

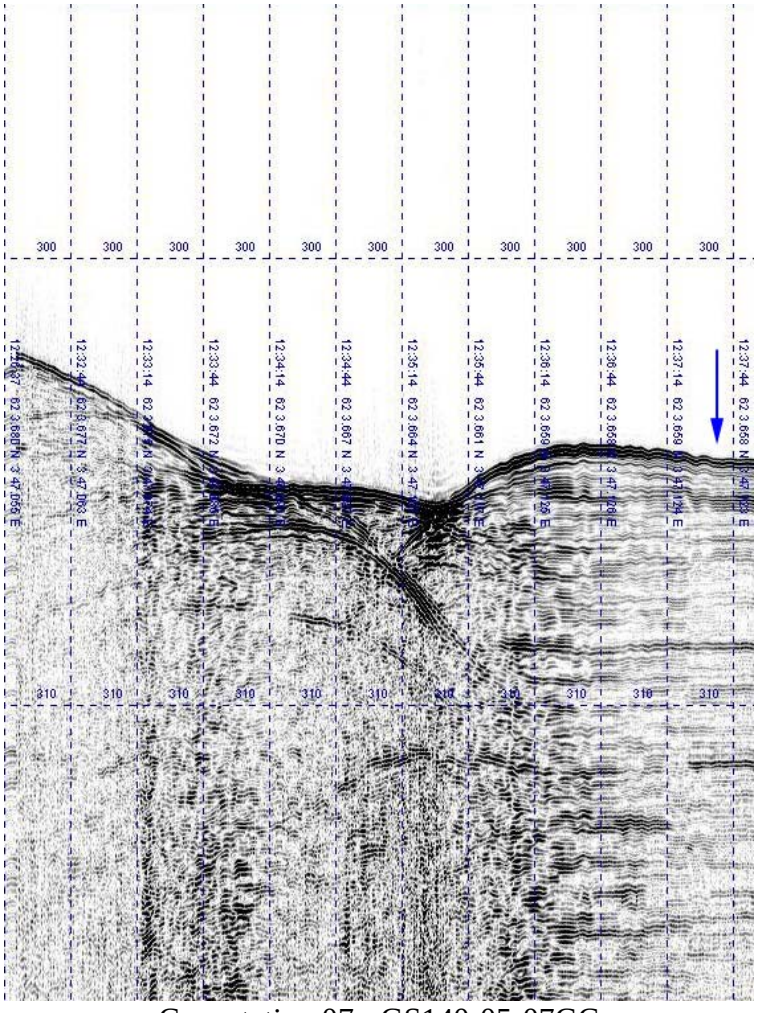
STATION	**07_GC**	Cruise GS140-05

Date:	03.07.2005	UTC time:	11:40
Latitude:	62°03,660' N	Longitude:	03°47,126' E
Water depth:	231 m	Location:	Måløy Plateau

Core number:	GS140-05-07GC	Corer length:	1,5m
		Apparent penetration:	1,6m
		Core length:	1,5 m

Observations
Core Information:
Other information : 10-15cm over penetration
Weather report: 0,5m waves, a bit cloudy

Summary of sedimentological and physical observations



Core station 07 - GS140-05-07GC

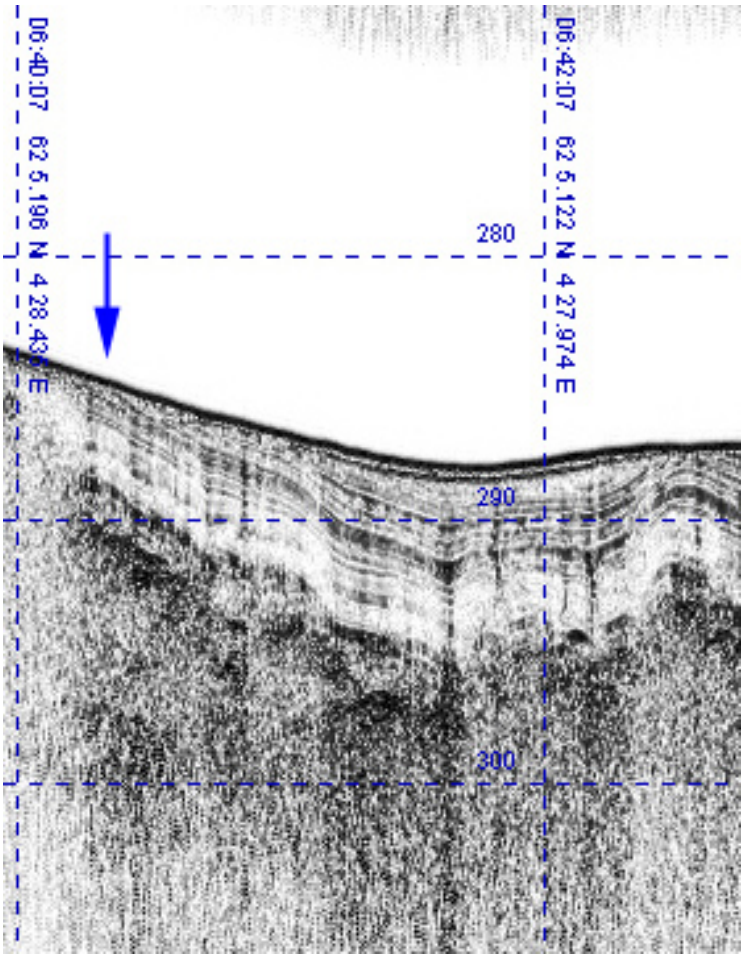
STATION	**08_GC**	Cruise GS140-05

Date:	03.07.2005	UTC time:	15:02
Latitude:	62°05,193' N	Longitude:	04°28,341' E
Water depth:	216 m	Location:	Måløy Plateau

Core number:	GS140-05-08GC	Corer length:	2,20 m
		Apparent penetration:	Excellent
		Core length:	2,08 m

Observations		
Core Information:		
Total No of section: 2		
Section No: 1	Labelling: GS140-8 PART 1	Length: 1,04 m
Section No: 2	Labelling: GS140-8 PART 2	Length: 1,04 m
Other information :		
Weather report: 0,5m waves, a bit cloudy and raining		

Summary of sedimentological and physical observations



Core station 08 - GS140-05-08GC

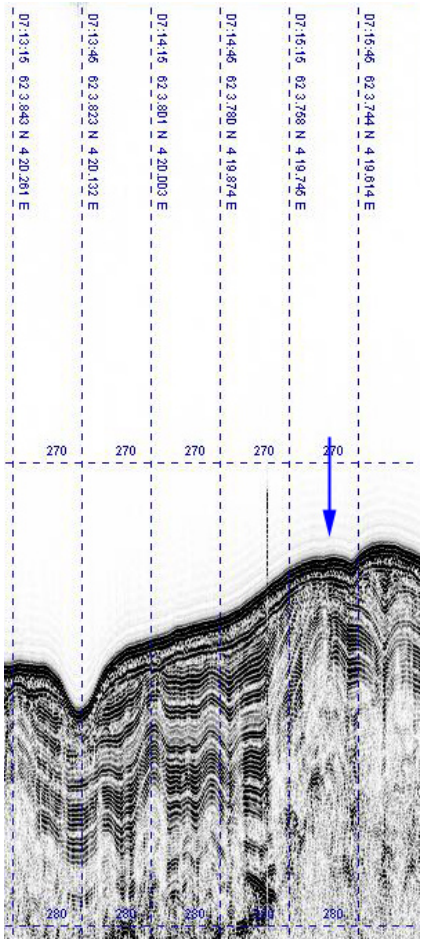
STATION	**09_GC**	GS140-05

Date:	03.07.2005	UTC time:	16:16
Latitude:	62°03,784' N	Longitude:	04°19,688' E
Water depth:	207 m	Location:	Måløy Plateau

Core number:	GS140-05-09GC	Corer length:	2,30 m
		Apparent penetration:	Excellent
		Core length:	2,15 m

Observations		
Core Information:		
Total No of section: 2		
Section No: PART 1	Labelling:	Length: 1,075 m
Section No: PART 2	Labelling:	Length: 1,075 m
Other information:		
Weather report: 1 m waves, a bit cloudy and raining		

Summary of sedimentological and physical observations



Core station 09 - GS140-05-09GC

STATION	**10_GC**	Cruise GS140-05

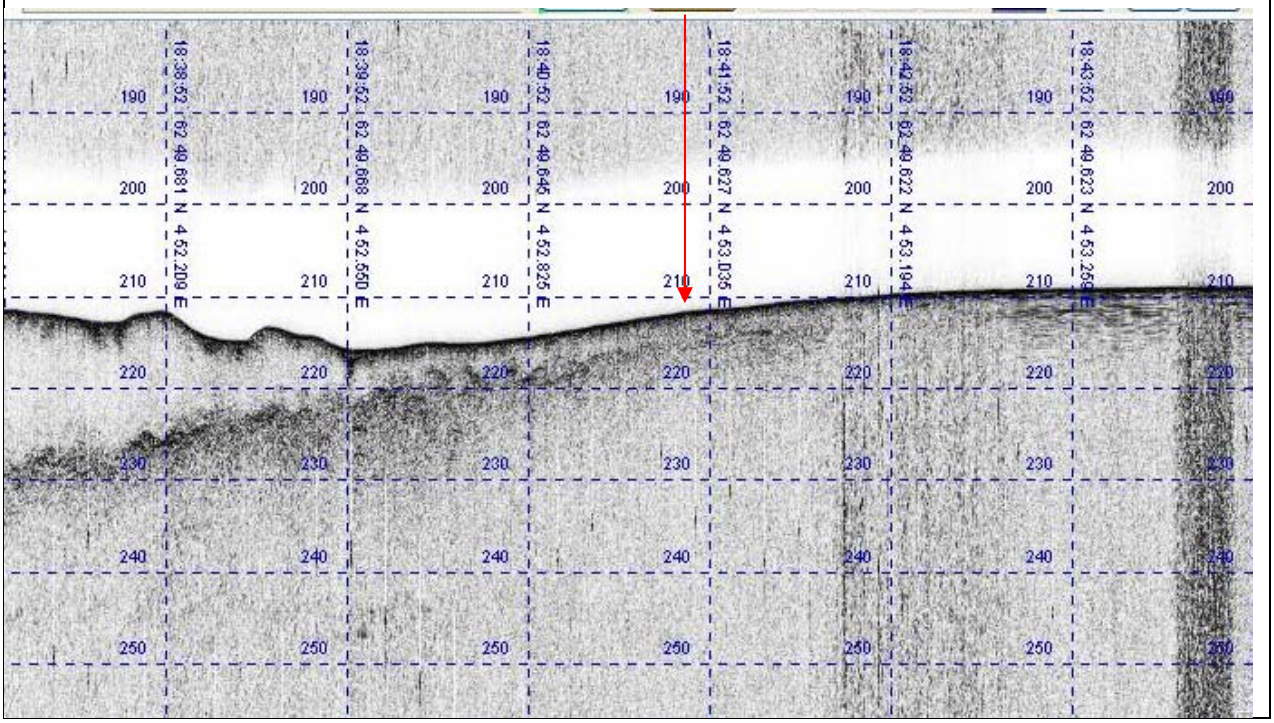
Date:	04.07.2005	UTC time:	18:25
Latitude:	62°49,627' N	Longitude:	04°53,035' E
Water depth:	161 m	Location:	Storneset;Storegga

Core number:		Corer length:	2.0 m
		Apparent penetration:	No recovery
		Core length:	

Observations		
Core Information: sandy gravel sediments in core catcher – most wached out		
Total No of section:		
Section No:	Labelling:	Length:
Other information:		
Weather report: cloudy, calm, windspeed 1.7kt		

Done on the boat with the core
GC:

Summary of sedimentological and physical observations



Core station 10 - GS140-05-010GC

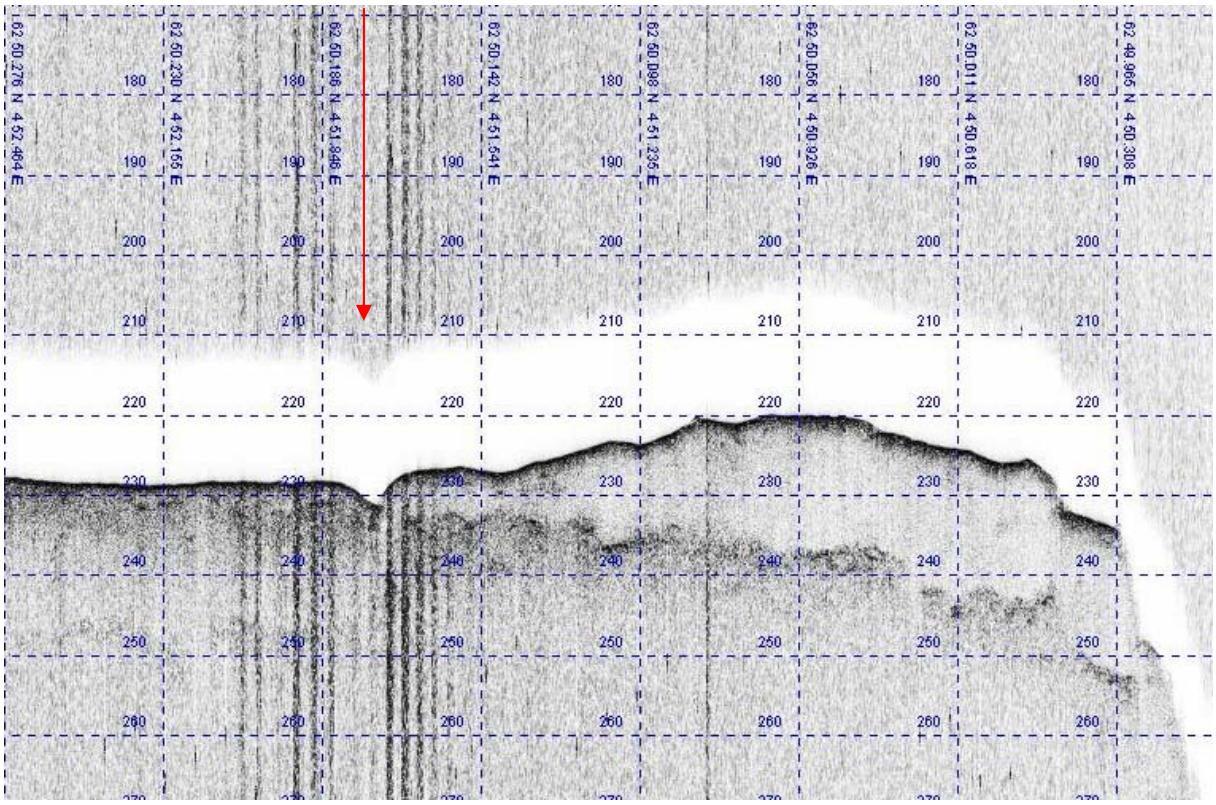
STATION	**11_GC**	GS140-05

Date:	04.07.2005	UTC time:	19:15
Latitude:	62°50,179' N	Longitude:	04°51,759' E
Water depth:	176 m	Location:	Storneset;Storegga

Core number:		Corer length:	2.0 m
		Apparent penetration:	No recovery
		Core length:	

Observations
Core Information: shelly gravely sand – a few cm in core catcher
Total No of section:
Other information:
Weather report: cloudy, calm, windspeed 3.7kt

Summary of sedimentological and physical observations



Core station 11 - GS140-05-11GC

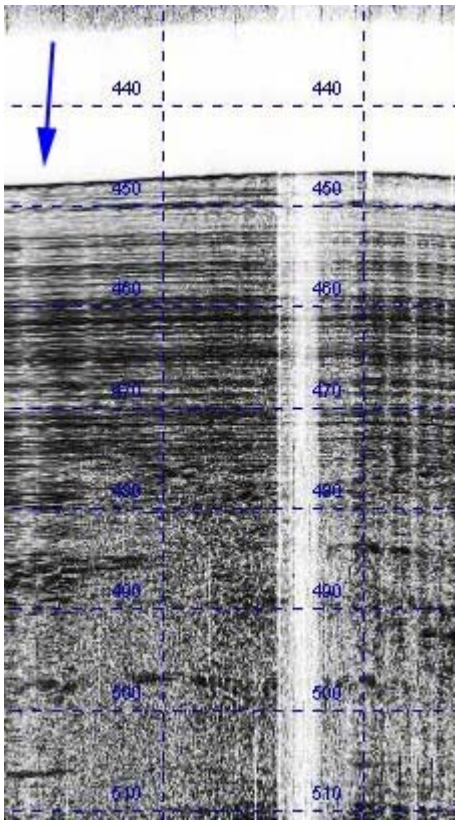
STATION	**12_GC**	Cruise GS140-05

Date:	05.07.2005	UTC time:	03:09
Latitude:	62°59,285' N	Longitude:	04°54,687' E
Water depth:	338 m	Location:	Storneset;Storegga

Core number:	GS140-05-12GC	Corer length:	2,0 m
		Apparent penetration:	0,34 m
		Core length:	1,965 m

Observations		
Core Information: core labelling is GS140-05-10GC		
Total No of section: 1		
Section No: 1	Labelling: Part 1	Length: 0, 9775 m
Section No: 2	Labelling: Part 2	Length: 0, 975 m
Other information:		
Weather report: cloudy, calm, windspeed 13.7kt		

Summary of sedimentological and physical observations



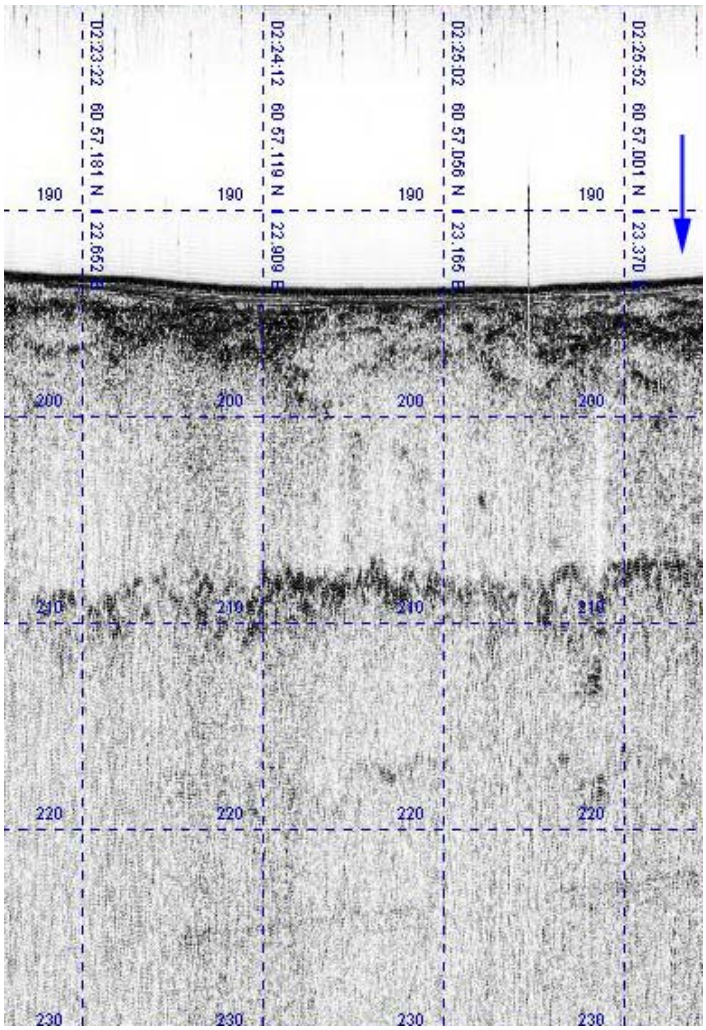
Core station 11 - GS140-05-12GC

STATION	**13_GC**	Cruise GS140-05

Date:	07.07.2005	UTC time:	01:38
Latitude:	60°56,888 N	Longitude:	01°23,462' E
Water depth:	148 m	Location:	North Sea

Core number:	GS140-05-13GC	Corer length:	1,5 m
		Apparent penetration:	0
		Core length:	0,5 m

Observations
Core Information: Core barrel broke
Total No of section:
Other information:
Weather report: cloudy, calm, wind speed 1.7kt



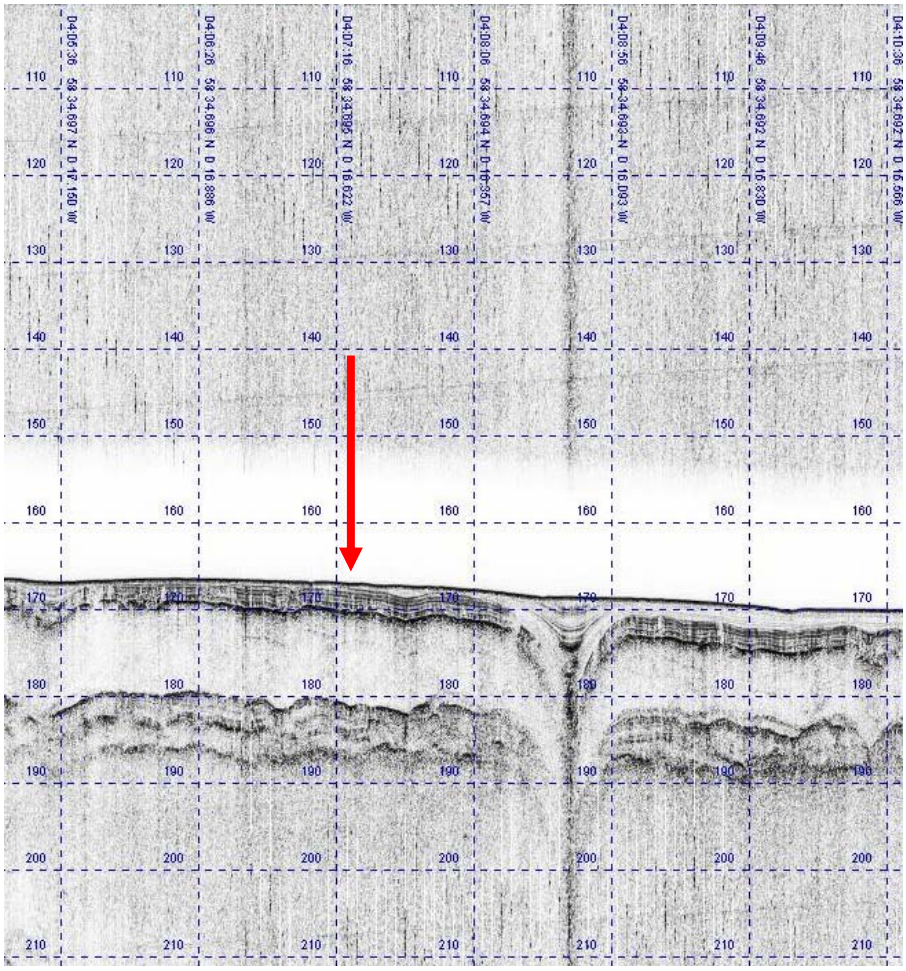
Core station13 - GS140-05-13GC

STATION	**14_GC**	Cruise GS140-05

Date:	09.07.2005	UTC time:	17:38
Latitude:	58 34.679'N	Longitude:	0 16.579' W
Water depth:	129 m	Location:	Fladen

Core number:	GS140-05-14GC	Corer length:	2.8 m
		Apparent penetration:	2.71 m
		Core length:	

Observations		
Core Information: Perfect condition		
Total No of section: 2		
Section No: 1	Labelling: PART 1	Length: 1,355 m
Section No: 2	Labelling: PART 2	Length: 1,355 m
Other information: Winch speed 1.0 m/s		
Weather report: calm, windspeed 13 kt,		



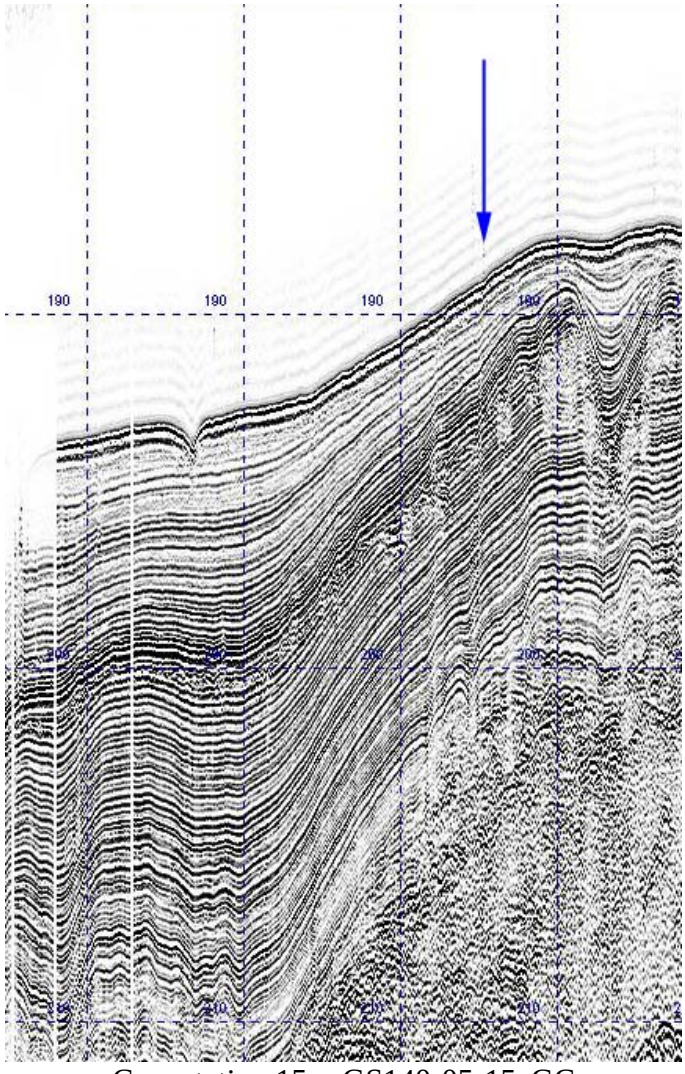
Core station 14 - GS140-05-14GC

STATION	**15a_GC**	Cruise GS140-05

Date:	10.07.2005	UTC time:	Core off deck: 15:33 Core on deck: 15:43
Latitude:	58 50,335'N	Longitude:	00 47.073' E
Water depth:	146 m	Location:	Fladen

Core number:	GS140-05-15aGC	Corer length:	3,50 m
		Apparent penetration:	1,445 m
		Core length:	

Observations
Core Information: Core barrel bended/ broke
Total No of section: 1
Other information: Winch speed 1.0 m/s
Weather report: calm, windspeed 13 kt,



Core station 15 - GS140-05-15aGC

STATION	**15b_GC**	Cruise GS140-05

Date:	10.07.2005	UTC time:	Off deck: 16:53 On deck : 17:01
Latitude:	58 50,335'N	Longitude:	00 47.073' E
Water depth:	146 m	Location:	Fladen

Core number:	GS140-05-15bGC	Corer length:	2.50 m
		Apparent penetration:	1,465 m
		Core length:	

Observations		
Core Information:		
Total No of section: 1		
Section No:	Labelling: PART	Length: cm
Section No:	Labelling: PART	Length: cm
Section No:	Labelling:	Length:
Other information: Winch speed 1.0 m/s		
Weather report: calm, windspeed 11 kt,		

Done on the boat with the core
GC:

Summary of sedimentological and physical observations

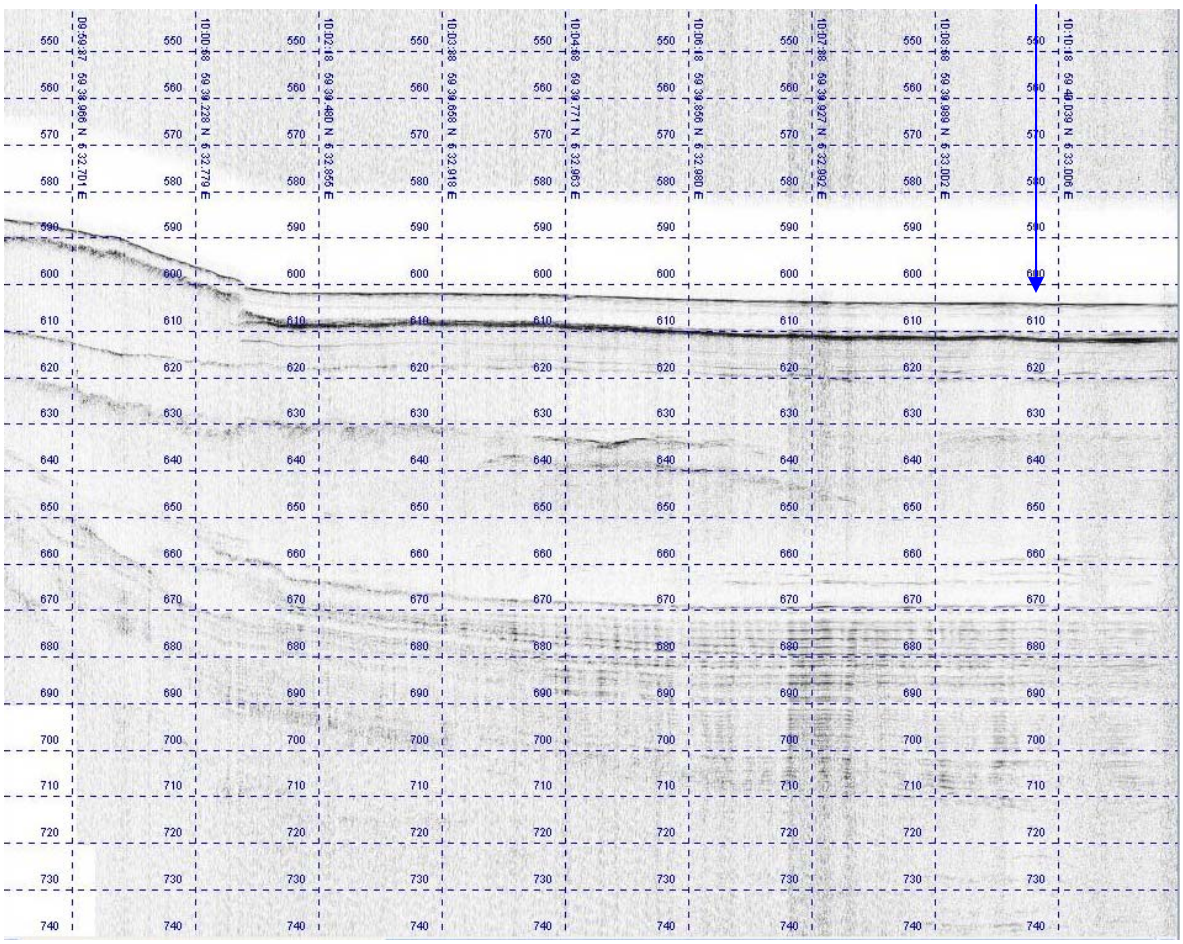
STATION	**16_CC**	Cruise GS140-05

Date:	12.07.2005	UTC time:	Off deck: 19:00 On deck : 21:28
Latitude:	59 40.077'N	Longitude:	05 33.002' E
Water depth:	455 m	Location:	Hardangerfjorden

Core number:	GS140-05-16_CC	Corer length:	21 m
		Apparent penetration:	
		Core length:	

Observations		
Core Information: Sections are numbered from bottom of core upwards. Problem between section S3 and S4, core could not be extracted from barrel. Join glue not enough powerful		
Total No of section:		
Section No: 1	Labelling: S1	Length: 150 cm
Section No: 2	Labelling: S2	Length: 150 cm
Section No: 3	Labelling: S3	Length: 78 cm
Section No: 4	Labelling: S4	Length: 150cm
Section No: 5	Labelling: S5	Length: 150cm
Section No: 6	Labelling: S6	Length: 150cm
Section No: 7	Labelling: S7	Length: 137cm
Section No: 8	Labelling: S8	Length: 150cm
Section No: 9	Labelling: S9	Length: 150cm
Section No: 10	Labelling: S10	Length: 150cm
Section No: 11	Labelling: S11	Length: 138cm
Section No: 12	Labelling: S12	Length: 150cm
Section No: 13	Labelling: S13	Length: 150cm
Section No: 14	Labelling: S14 (not full and reworked sediment)	Length: 150cm
Section No:	Labelling: (upper core, sediment)	Length: 145cm
Section No:	Labelling:	Length: cm
Section No:	Labelling:	Length: cm
Section No:	Labelling:	Length:
Section No:	Labelling:	Length:
Other information: Winch speed m/s		
Weather report: calm, wind speed 7.0 kt		

Summary of sedimentological and physical observations:
Section 14 mixed with water, everything is mixed



Core station 16 - GS140-05-16CC