

International Commission for



the Northwest Atlantic Fisheries

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(Revised)

ANNUAL MEETING - JUNE 1979

Draft Report of Meeting of Flemish Cap Working Group

April 2 and 3, 1979  
St. John's, Newfoundland

CHAIRMAN: R. Wells

RAPPORTEURS: S. A. Akenhead  
J. Anderson

Time was available during the Assessments Subcommittee meeting at St. John's for meetings of the Working Group on the mornings of April 2 and 3. Participants from the Soviet Union and Canada were able to attend these sessions. The list of participants comprises Appendix 1.

The following agenda was adopted:

1. field activities since the Bonn meeting
2. findings and analyses to date
3. rapid transmission of oceanographic data into IGOSS and use of these data.

Field activities and preliminary results

Catches during a research cruise by A.T. Cameron in November, 1978 dealing with diurnal variability of cod and redfish on the Flemish Cap indicated that the 1977 year-class of cod as 1-year-olds was relatively strong.

A random-stratified survey of the Flemish Cap in January-February, 1979 by *Gadus Atlantica* confirmed that the 1977 year-class of cod was strongly represented in the research catches. Results from this cruise are contained in Res. Doc. 79/IV/63.

Suloy has completed to date part of its scheduled Flemish Cap survey and preliminary results indicate the 1977 year-class of cod to be strong and the biomass of the very strong 1973 year-class to be reduced in 1979. The catch per hour of redfish showed a substantial increase over 1978.

Both Canadian and Soviet surveys in 1979 showed large numbers of redfish of about 8 cm.

It was noted that the status of the cod, redfish and American plaice stocks on the Flemish Cap was being considered by the Assessments Subcommittee.

Two Canadian ichthyoplankton cruises have been completed since the October 1977 cruise in which no cod or redfish larvae were taken. In July 1978, no cod larvae were caught but there were many redfish larvae. In March 1979, large numbers of cod and redfish were taken. The presence of a small number of larger cod larvae might indicate some spawning somewhat earlier than the main spawning period. During these ichthyoplankton cruises a large number of oceanographic observations were made, including observations at the plankton grid stations and on the lines of stations outlined at the Bonn meeting.

It is anticipated that the distribution, abundance, growth and mortality of larvae will be analyzed and relationships between these parameters and oceanographic parameters investigated during 1979.

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A further ichthyoplankton cruise is planned for Gadus Atlantica for the period April 18-May 13 1979.

Observations at the standard oceanographic sections and at a large number of stations over the Flemish Cap were made by Soviet research vessels in 1978. The standard sections were 7A, U.S. Coast Guard, Section 3, and the north-south section at 45° longitude on the Cap. In addition the section on the south coast slope of the Grand Bank was occupied. Ichthyoplankton and oceanographic stations were occupied during two surveys in February 1978 by Protsion and during two additional surveys in May and June-July 1978 also by Portson. Observations included temperature, salinity, oxygen and phosphate at standard depths from surface to 2,000 meters.

Ichthyoplankton sampling by the Soviet vessels included :

- a. 10 minute horizontal tows with the standard 80 cm ring net at the surface and at 25-50 meters at low speed.
- b. A vertical tow with a series of 80 cm ring nets at 500 meter intervals up to 1500 meters, with the vessel stationery.

The mesh used in these tows contained netting of 38 meshes per square millimeter.

The quantitative ichthyoplankton tows by Canadian vessels were made as double oblique tows by the Bongo net. The two mesh sizes used were 230 and 500 microns, and the nets were hauled from 125 meters to surface. The nets were equipped with temperature, depth and salinity meters and with flowmeters.

It was noted that a bilateral agreement between Canada and the Soviet Union had been made to place Canadian observers on the Gemma for a period of 1 or 2 days to do comparative ichthyoplankton work with the standard ring nets and Bongo nets. This work would be done in an area near St. John's in 1979.

In addition, it was agreed in principle at this meeting that the Gemma and Gadus Atlantica do comparative ichthyoplankton tows for a short period on the Flemish Cap.

The problem of translation during co-operative work on the Gemma was addressed. Canadians would attempt to provide an interpreter, although radio communication with the interpreter on the Suloy might prove satisfactory.

In January 1979, Hudson occupied standard sections 7A, and the Northwest to Southeast line. In addition a number of additional sections were occupied. No consistent current was detected on the northern part of the Flemish Cap. Because of a medical emergency, the standard 47°N line was not occupied. Temperature and salinity data were transmitted during the cruise into the IGOSS system. Four current meter moorings were displayed, the position and instrumentation of each is contained in Appendix 2. Several satellite tracked drogued buoys were released. The tracks of these buoys are computed by Service Argos in Toulouse, France. (See Appendix 2).

The problem of the rapid transfer of these data into the Moscow data bank and thence to Pinro was addressed.

An analysis of oceanographic cruises by Protrion in 1977 and 1978, together with oceanographic observations made by Persey III in the course of a groundfish survey in 1978 is contained in Res. Doc. 79/VI/52. A quasi-stationary system of the main elements of circulation including the anticyclonic gyne was observed.

#### Rapid transmission of oceanographic data

IGOSS data received at MEDS in real time for three Canadian cruises were summarized as follows:

CSS Hudson	19-28 January/79	133 TESAC messages
Gadus Atlantica	4-19 February/79	74 BATHY messages
Gadus Atlantica	16-31 March/79	9 TESAC messages as of March 30, 1979

Data products presented from these data were as follows:

- Hudson: 1 track chart, 2TS diagrams, 4 machine contoured surface and bottom temperature and salinity plots, 42 machine-contoured temperature, salinity and sigma-t vertical section plots.
- Gadus: 3 machine contoured temperature plots (0M, 50M and bottom)
- Gadus: 1 track chart, 3 vertical section plots  
Discussion centered around both data communications routes for IGOSS as well as the data products presented.

1. During the Flemish Cap experiment, radio messages of oceanographic data should be transmitted to coast guard radio station VON in St. John's who will assure their onward transmission to the Global Telecommunications System via Halifax.
2. All messages should be addressed for WHF, Attention METOC.
3. Bottom sounding can be transmitted in one of two ways. Either as a four character number in meters or as a five-character series of five zeroes which indicate that the previous observed depth was at the bottom. Comments about the data products presented were as follows: Because the data was machine-contoured, the interpretation of the results must be treated with caution in areas of sparse data coverage. Some erroneous interpretations of contour lines as well as rather sharp features were noted. It was noted that these contouring routines were presently being improved and would probably be ready for the next Flemish Cap cruise. The group all agreed that the intended purpose of these data products as quick-look preliminary results of oceanographic conditions as well as international data exchange fulfillment had been met and encouraged continued participation of IGOSS data transmissions in real-time.

Recent Soviet oceanographic observations over the Flemish Cap Bank were as follows:

Table 1.

SHIP	CRUISE #	TOTAL (per-cruise) STATIONS	DATES OVER FLEMISH CAP
PROTSION	16	292	3 to 12 Feb./78 & 20 to 27 Feb./78
PROTSION	17	377	24/5/78 to 1/6/78 and 19-29/07/78
PERSEI III	20	297	26/07/78 to 01/08/78
GEMMA	15	40	20/03/79 to 26/03/79

Upcoming cruises over Flemish Cap during 1979.

Canada:

Gadus Atlantica	18 April to 5 May/79	biology and oceanography
CSS Dawson	July/79	oceanography as in Hudson cruise

USSR:

Suloy from April 3 to June 2, 1979 will spend 10 days to investigate the Flemish Cap Bank as part of its demersal fish survey.

Gemma will conduct simultaneous oceanographic observations similar in plan to the 1978 spring Protsion cruise. It will attempt to make monthly surveys on the Flemish Cap if time permits.

Both the "Suloy" and "Gemma" will run Autumn-Winter surveys to study both the oceanography and deep water fisheries of the Grand Banks areas as opposed to the eggs and larvae spring surveys. The Gemma hopes to occupy the Flemish Cap as often as possible from August through November.

Differences in oceanographic sampling over the Flemish Cap Bank by the USSR were noted as follows:

1. The Suloy will take observations on the Cap at their standard grid set of stations with positions as in previous ICNAF papers reporting demersal fish samplings.

2. The Gemma will occupy 42 stations of the grid as defined at the Murmansk Symposium. The southernmost and easternmost sections of the grid have been eliminated (Res. Doc. 79/VI/52)

3. The three sections: Flemish Cap ( $47^{\circ}$  lat), 7A and the diagonal NW to SE section have been replaced by 4 sections defined as Flemish Cap ( $47^{\circ}$  lat), and 7A as before, and a section running N-S along  $45^{\circ}$ W longitude as well as section Coast Guard T.

#### Data exchange

The USSR confirmed their participation in real-time data transmissions via the IGOSS (Integrated Global Ocean Station System) during the Suloy and Gemma cruises over the Flemish Cap, the Gemma will also attempt to transmit all its temperature data via the IGOSS for its entire cruise over the Grand Banks area, including the ICNAF standard sections. Both the Suloy and Gemma salinity and chemical data is to be processed ashore at PINRO and these data for the spring cruises will be sent directly to MEDS before the end of 1979. MEDS indicated that it would fulfil its International commitment of forwarding copies of these data to the World Data Centers as well as to participants of the working group. The USSR requested that Canadian data collected during and after summer of 1978 be forwarded to PINRO as soon as these are available. The USSR delegates also indicated that, in addition to the data indicated in Table 1, Cruises number 17, 18, 19 and 21 of the Persey III have been forwarded to St. John's recently. In future oceanographic data is to be forwarded directly to MEDS which will make these data available both nationally and internationally. Data products produced by MEDS from IGOSS data were to be made available to the members of the working group with a copy sent by mail to Pinro. As well copies will be placed on file in St. John's at the end of each cruise.

#### Oceanography of Flemish Cap

Res. Doc. 79/VI/52 was reviewed. The implications of the main elements of circulation on the Flemish Cap, including the anticyclonic gyne, for the retention of larvae and distribution of food for larvae were noted. Because of prior commitments, Canadian oceanographers were unable to participate at this April 3 meeting. A fuller discussion is anticipated at or about the time of the meeting of the Environmental Subcommittee during the Annual Meeting of ICNAF in May, 1979.

### APPENDIX I.

#### List of Participants

##### April 2, 1979

S. Akenhead  
J. Anderson  
V. Burmakin  
J. Carscadden  
V. Chekova  
J. Gagnon  
W.D. McKone  
S. Melnikov  
C. Ross  
A. Seliverstov  
R. Wells

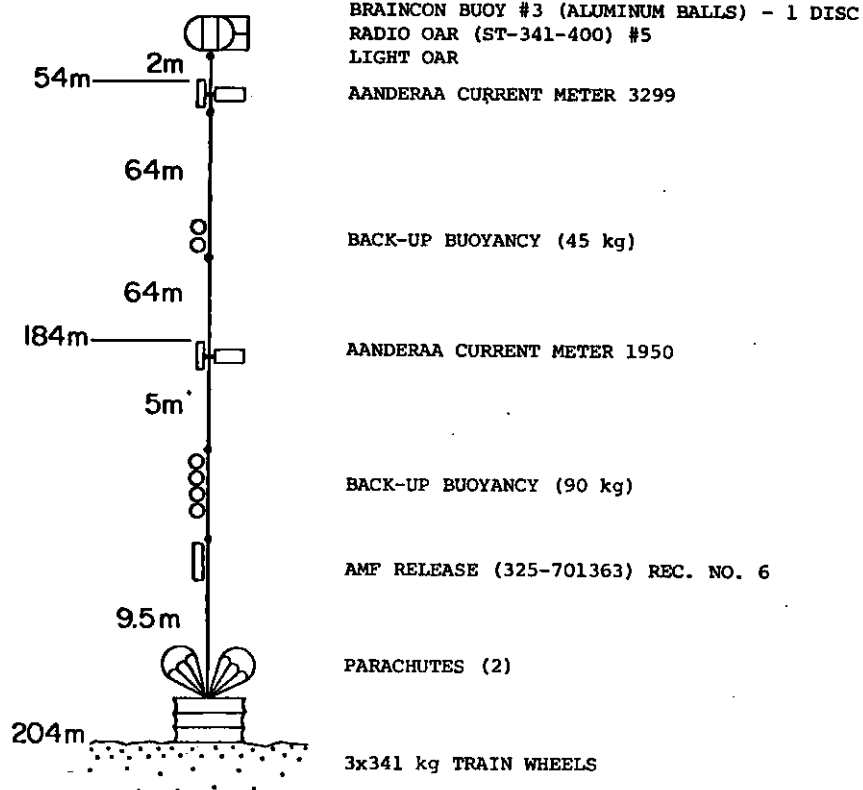
##### April 3, 1979

V. Borovkov  
V. Burmakin  
V. Chekova  
J. Gagnon  
S. Melnikov  
V. Petrov

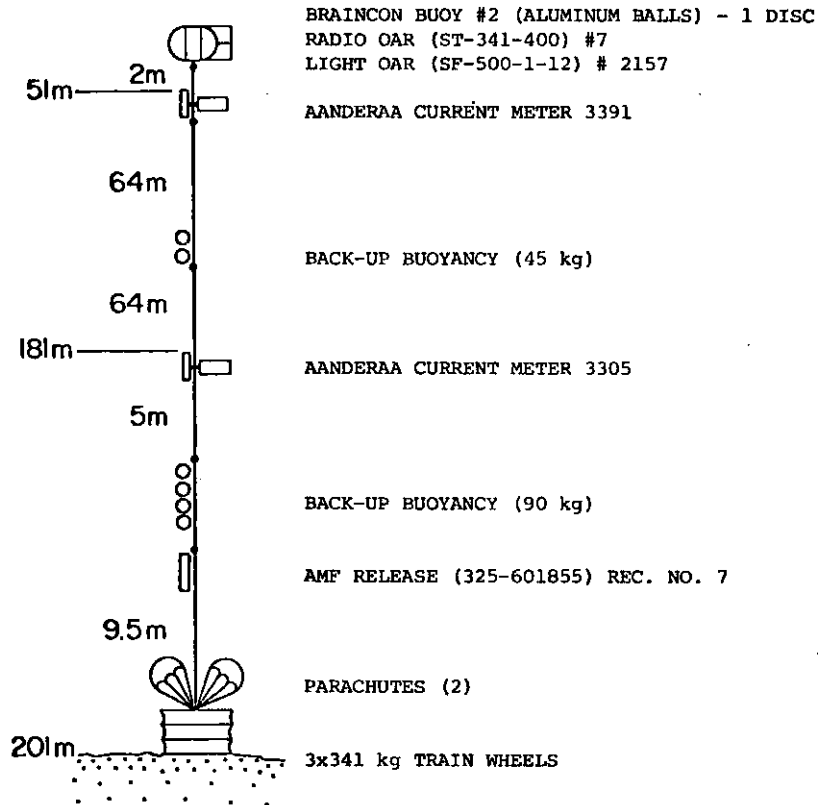
APPENDIX II

Mooring Number	Latitude	Longitude	Water Depth (metres)	Deployment Time	Instrument Type	Instrument Depth (metres)	Sensors	Sampling Interval (minutes)
322	47° 20.26N	45° 08.53W	204	1901Z/11/1/79	Aa 3299	54	VTPC	30
					Aa 1950	184	VTC	30
323	47° 02.84N	44° 21.09W	201	1250Z/14/1/79	Aa 3391	51	VTPC	30
					Aa 3305	181	VTC	30
324	46° 41.04N	45° 09.98W	205	1556Z/13/1/79	VACM 0499	25	VT	15
					AaT 328	26/54	T	60
					Aa 3582	55	VTPC	30
					Aa 3392	185	VTC	30
325	46° 30.30N	45° 53.34W	400	1734Z/12/1/79	Aa 1974	50	VTPC	40
					Aa 3580	180	VTPC	30
					AaT 327	281/379	T	60
					Aa 3578	380	VTC	30

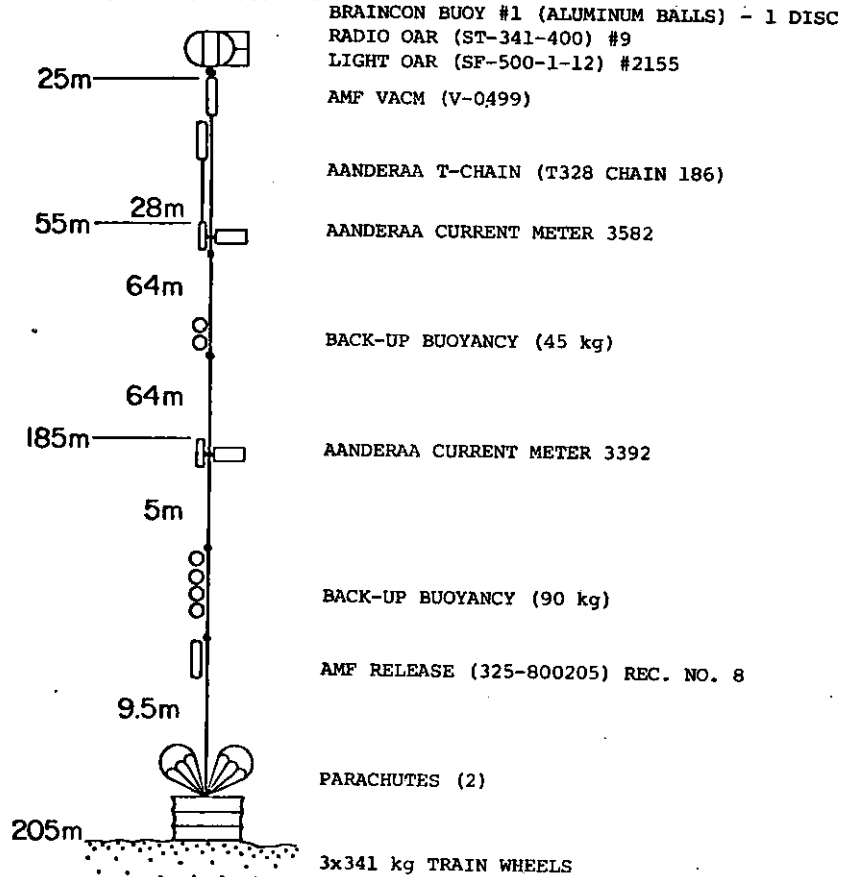
MOORING No. 322



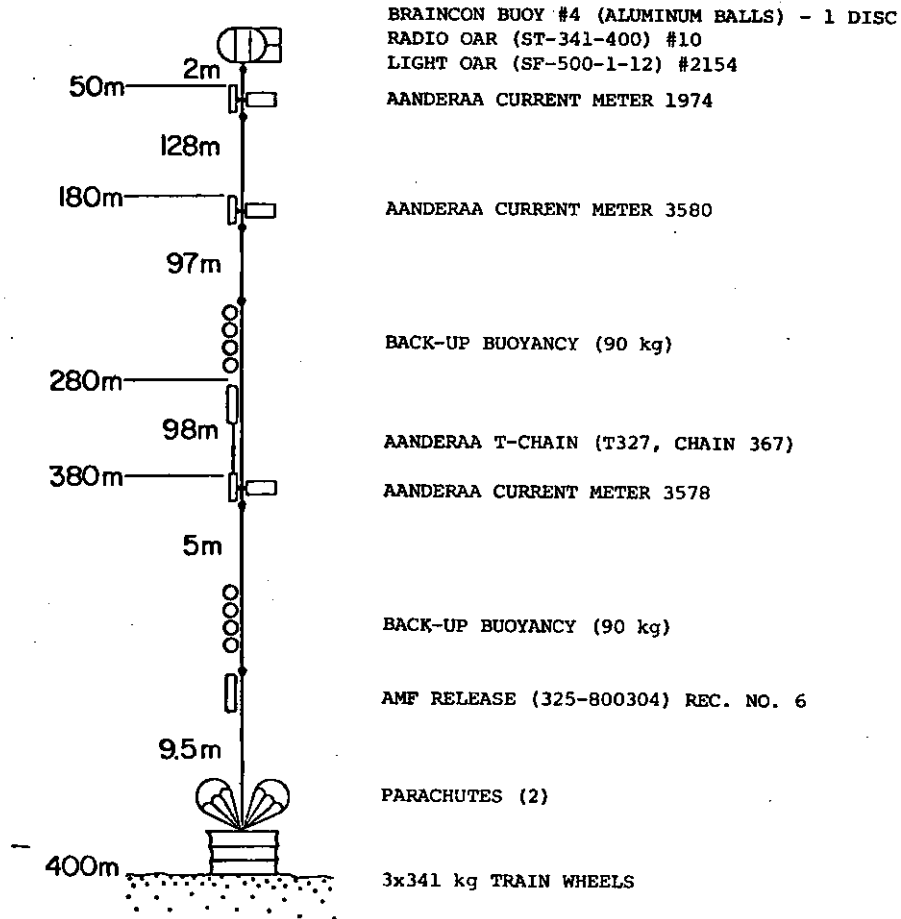
### MOORING No. 323



### MOORING No. 324



# MOORING No. 325

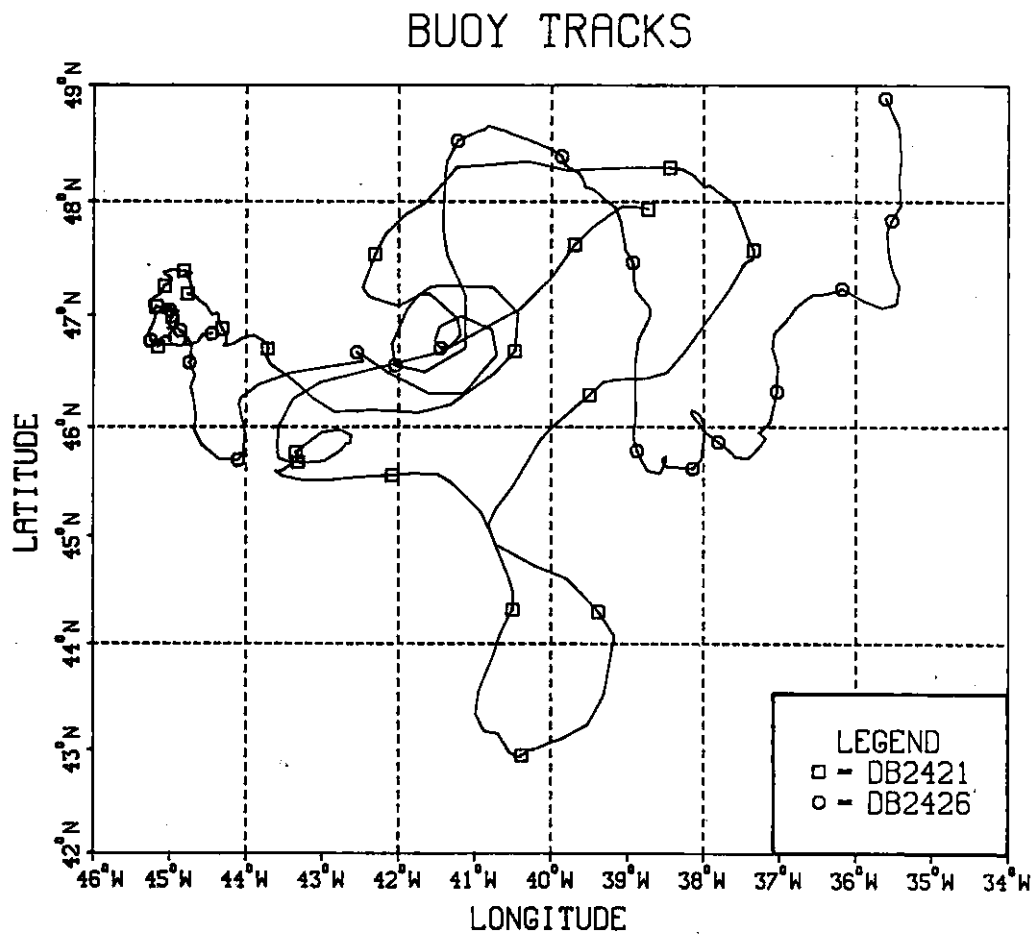


BUOY TRACKS

Symbols every 5 days.

LAUNCHING INFO.

DB 2421	14 Jan '79	46°72'N, 45°17'W
DB 2426	25 Jan '79	47°06'N, 44°37'W
DB 2425	29 Mar '79	47°32'N, 44°84'W
DB2422	18 Mar '79	47°00'N, 44°51'W





# BUOY TRACKS

