

Intergovernmental Oceanographic Commission

Russian State Hydrometeorological University

Baltic Floating University Facility

Contract SC-298.052.8

REPORT

International Training through Research & Children Cruise

International Year of the Ocean, 1998

(July 22 - August 27, 1998)



**St.-Petersburg
1998**

International Training through Research & Children Cruise aboard Russian hydrographical research vessel "Sibiryakov" was held on July-August, 1998. It is considered as a contribution to the 1998 International Year of the Ocean (IYO'98). This Cruise was held within the framework of UNESCO/IOC Programme TEMA (Training, Education and Mutual Assistance), UNESCO-IOC-HELCOM Project "Baltic Floating University", UNESCO Project "People and Ocean: Global Initiative», international science programme "Baltic Experiment" and EC programme "Investigation of monitoring systems for estimation of the risk of sea algae moving in European water by the vessels" (MAS3-CT97-0111), as well as research programmes of the Ministry of Science and Technologies of the Russian Federation, Ministry of Common and Professional Education of the Russian Federation.

The main research tasks of fieldwork investigations were:

- data collection and analysis procedure;
- investigation of the ecosystem state of the Baltic Sea and the Gulf of Finland in particular, as well as its changeability due to hydrophysical, hydrochemical and anthropogenic factors;
- estimation of the primary production;
- study of the water masses distribution;
- study of the vertical stratification formed both the thermodynamic processes in the sea and sea water-atmosphere interaction;
- the estimation of oil pollution of the surface layer in the different Baltic Sea regions;
- the experimental estimation of the qualitative and quantitative plankton modification in the ballast water since the sailing in the different weather and climatic conditions.

The education goals of the Cruise were considered as following:

- practical realisation of the principle "training through research" with the objective to improve the educational process for the students from different European Universities participated at the expedition by means of involving the trainers into field work investigations, providing during the cruise mutual discussions, lectures and seminars;
- holding of the teaching and training studies for the schoolchildren of different European countries which took part on the Cruise by the IOC/UNESCO support at frame of the IYO'98.

The programme of the Summer BFU'98 cruise included also the following activities:

- the participation in the different actions in frame of the IYO'98;

- the organising aboard HRV «Sibiryakov» of the exhibition concerning BFU activities including Training through research & Children Cruise devoted to IYO'98.

The interdisciplinary expedition have been carry out in the Gulf of Finland, Baltic Sea and East-North Atlantic from July 22 to August 27, 1998 aboard HRV "Sibiryakov". Scheme of the Cruise is shown on Fig. 1. The calling to Helsinki (July 23-24), Boulogne-sur-Mer (August 3-4), Lisbon (August 9-11) and Boulogne-sur-Mer (August 15-16) were took place. The Cruise was organised by Russian State Hydrometeorological University (St.-Petersburg) in co-operation with the Head Department of Navigation and Oceanography of the Ministry of Defence of Russian Federation with support of the Intergovernmental Oceanographic Commission UNESCO.

The call to port of Helsinki (July 23-24) has been organised with support of SULA.

The calls to port of Boulogne-sur-Mer (August 3-4 and 15-16) have been organised with kind assistance and financial support of the City Administration and National Sea Centre - NAUSICAA. The cultural programme including visit to Aquarium, field trip, excursions etc. have been realised by NAUSICAA for the participants of the expedition and the crew.

The scientific teem (28 persons) consisted of the teachers, scientists and students of RSHU (17 persons, including 8 students, one of which is WMO student from Cameroon), teachers and students from Klaipeda University (Lithuania) and Cadiz University (Spain) (3 persons correspondingly), students from Newcastle University (UK) - 2 persons, Berlin Humboldt University (Germany) and Helsinki University (Finland) - 1 persons correspondingly.

The hydrochemical observations were provided by chemical-ecological laboratory of LENMORNIIPROEKT.

Participation of schoolchildren 17-19 years from different European countries is the main feature of this Cruise dedicated to IYO'98. UNESCO/IOC Project of the First International "Children" Cruise was realised in framework of the BFU Facilities and has no any analogues. 25 schoolchildren from: France (5 persons), Russia (4 persons), Portugal (3 persons), Finland (2 persons), Germany (2 persons), UK (2 persons), the Netherlands (2 persons), Greece (2 persons), Lithuania (1 person), Georgia (1 persons) and Turkey (1 person) - took part in the Cruise.

The scheme of BFU'98 TTR & Children Cruise (HRV "Sibiryakov")

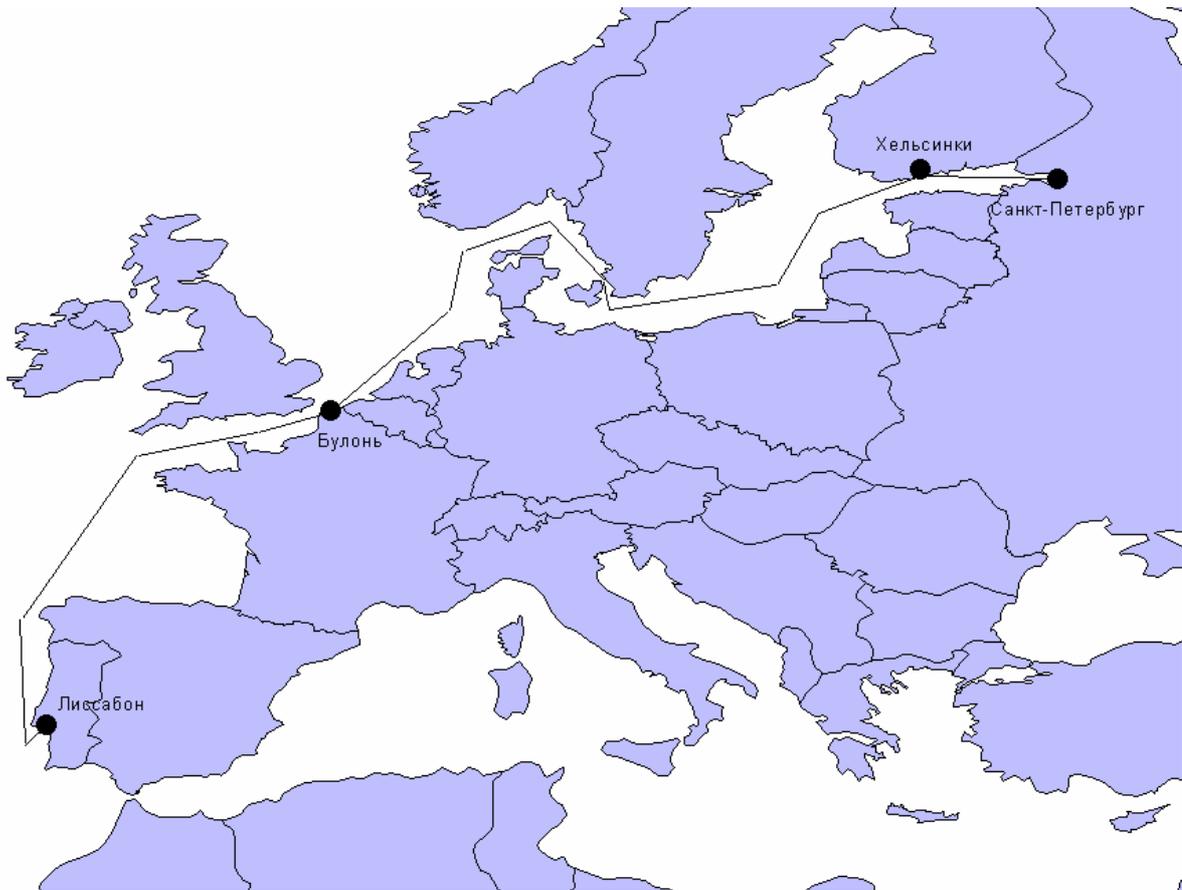


Fig. 1

In common, representatives of the 13 Countries have participated at the Baltic Floating University 1998 Cruise. This created a unique opportunity for a healthy exchange of ideas and approaches between the youth of the different nations.

The schemes of hydrological stations at the Baltic Sea show on Fig. 2 (first part, July 24-30,1998) and Fig. 3 (second part, August 19-26, 1998).

The main preliminary scientific results are:

- the distinctive feature of the Baltic Sea thermal regime on 1998 was the small heat of upper layer on account of cool summer. The surface temperature was near 15-15.5 °C at boundary of Gulf of Finland and Baltic Sea increasing to 16 °C at South Baltic. Using the data obtained the estimation of the specific heat absorbing of the 0-50 m layer was executed. The value of the heat absorbing changes from 0.99 MJ/m³ in the North Baltic to 1.02 MJ/m³ in the South Baltic. The average value 1998 (1.01 MJ/m³) is less that on 1997 (1.36 MJ/m³).

Scheme of hydrological station of the first part BFU Cruise
July 24-30, 1998

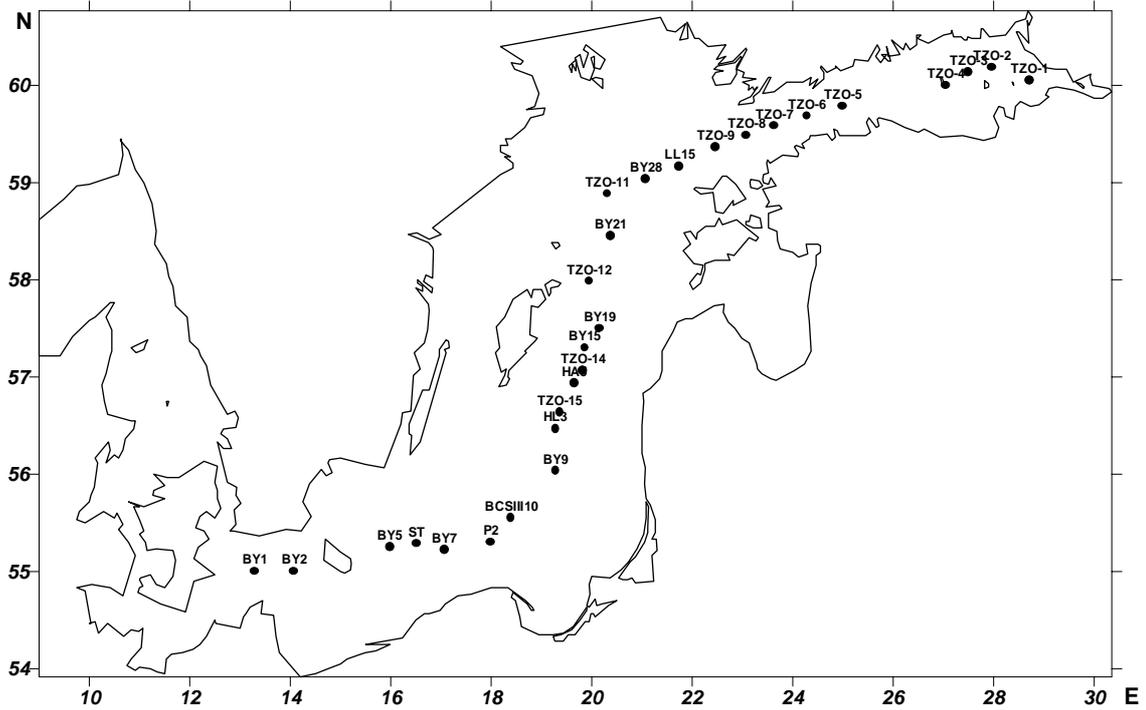


Fig. 2

Scheme of hydrological station of the second part BFU Cruise
August 19-26, 1998

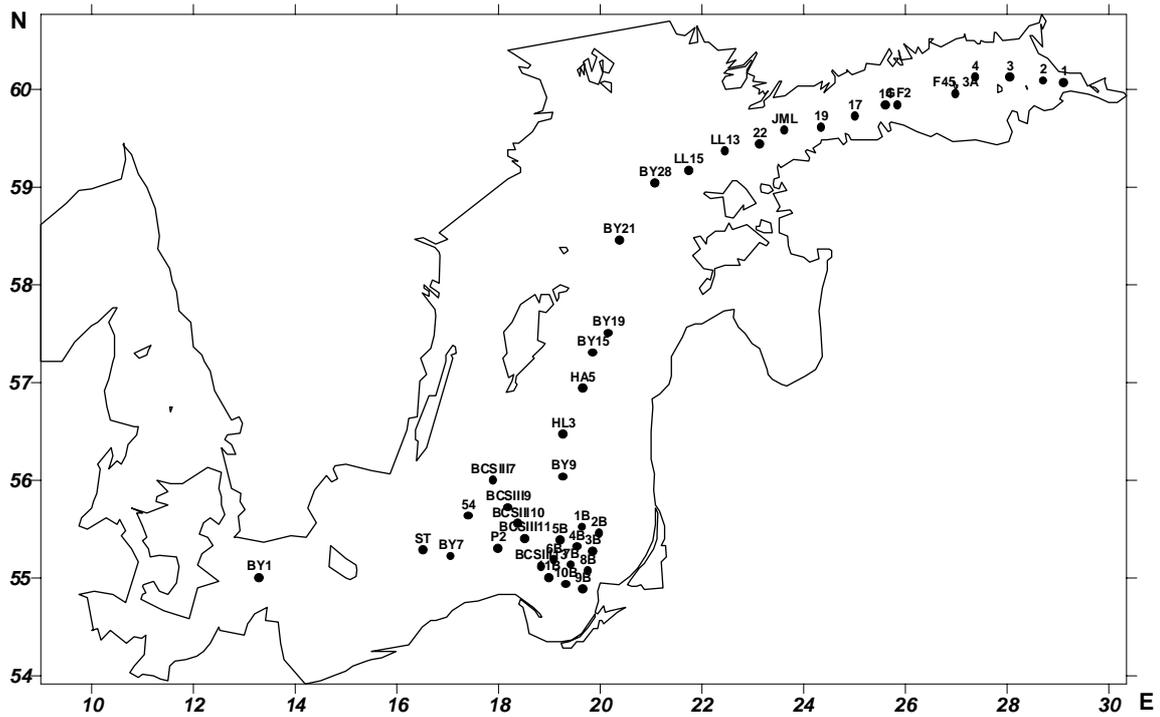


Fig. 3

- the water vertical structure is determined by the interaction of the water masses of the Baltic Sea and the North Sea. This directs to gradual change from two-layer structure (north) to three-layer (south). The near-bottom North Sea water have not only higher salinity but higher temperature which lead to formation of the inversion layer (at the depth more 60-80 m) were temperature increased from 3.5-4.0 °C (60-80 m) to 6.0 °C (near bottom).
- the hydrogen sulphide indication is showed at the near-bottom layers of the Baltic Sea deeps. The oxygen concentration is near analytical zero.
- the hydrochemical investigation showed that the tendency to oxygen concentration and pH value decrease with depth was took place. The upper layers are oversaturated by the oxygen. The nitrite changeability is not large; maximum observed at the Baltic Proper is near 2.5 mg/l. The concentration of nitrates and phosphates at upper layer and photic layer is small and increase with depth.
- 16 water samples was collected at surface layer in different areas of the Baltic Sea and the Gulf of Finland and 4 soil samples was collected at Gulf of Finland to estimate oil pollution.
- for spatial distribution of phytoplankton and his species the biological samples was collected on 26 hydrobiological stations.
- on the long-time stations the investigations of daily phytoplankton changes and his vertical distribution were took place.
- the 5 samples of the primary production were collected at different part of the Baltic Sea.
- during the Cruise the unique data of ballast water structure changes has collected. In common the 90 samples of phyto- and zooplankton from ballast containers (11 tons volume) with chemical parameter determinations (oxygen, biogen elements) was implemented. The ballast (outboard) water was changed 4 times (Eastern Gulf of Finland, North Baltic Sea, Pa-de-Kale Strait and Zund Strait).

The Cruise time schedule was as follow.

The BFU Cruise 1998 was began July 22 from port Lomonosov (St.-Petersburg, Russia). July 23 HRV “Sibiryakov” has calling at Helsinki (Finland) and the first partial schoolchildren exchange was made. The second exchange was made in Boulogne-sur-Mer (France) on August 3-4. The exhibition concerning of BFU activities and First Children Cruise have been held with participation students and schoolchildren at EXPO’98 (Lisbon, 9-11, August). August 15-16 in Boulogne-sur-Mer the First International Children Cruise have been over. The scheme of embarking/disembarking of the cruise participants is shown in Appendix 1.

During the Cruise there were everyday lessons and lectures with students and schoolchildren by special programme (Appendix 2). These lessons were realised on English with video moving and CD-media. Dr. T. Eremina (Russia) and Dr. S. Olenin (Lithuania) provided two lecture cycles on the hydrological regime and ecological state of the Baltic Sea. The lessons on sea themes (history of Russian navigation, practical lesson on bends making, rules of safety on vessel and at sea and others), lectures about RSHU and BFU activities, lectures and discussions about history and culture of St.-Petersburg (with CD-media using) were also presented. To provide a practical experience the field work lessons on meteorology, oceanography, chemistry and hydrobiology were realised.

All students took part in fieldwork according their individual plans (working in hydrological, chemical or hydrobiological scientific group). Foreign students have received WMO-RSHU Official Transcripts (example of one see Appendix 3) with indication of the volume and kinds of lectures and practical lessons and works that could be presented by students at their University.

The lessons on Russian language for foreign students and schoolchildren were organised. These lessons (as teachers were schoolchildren Ana Olenina (Lithuania) and Gleb Eremin (Russia)) had a very large success.

For Cruise participants different culture actions were realised (for example, intellectual game between 4 teams on sea themes, finalising music concert and others).

In consequence a large international importance and interest to organising and realising of the First International Children Cruise in frame of the IYO'98, during the Cruise the activities leading to dissemination and propaganda of the ideas of the International Year of the Ocean as well as possibilities of the international collaboration on environmental process were conducted, including:

- making and demonstration a computer-media moving (35 min) about RSHU and BFU activities in the Baltic Sea, White and Barents seas;
- making and demonstration of the exhibition, that was prepared under participation of schoolchildren, about BFU activities, including the information concerning current international interdisciplinary TTR & Children cruise devoted to IYO'98;
- dissemination of materials concerning cruise's sponsors, BFU, RSHU and the foreign universities which took part in Cruise, St.-Petersburg and others.

This exhibition was demonstrated at St.-Petersburg, Helsinki, Boulogne-sur-Mer and EXPO'98 (Lisbon, Portugal).

The Cruise has a large coverage at St.-Petersburg mass media, including different radio and TV-programmes. Exhibition was open for specialists at Helsinki, at Boulogne-sur-Mer by support of the National Sea Centre - NAUSICAA and on EXPO'98 by support of Administration of Nautical Exhibition at EXPO'98.

During the calling, Deputy of the Executive Secretary of IOC and international co-ordinator of IYO'98, persons from local administrations of Helsinki, Boulogne-sur-Mer and EXPO'98, representatives of Russian Embassies in the Finland, France and Portugal have visited HRV «Sibiryakov». Chief scientist and Captain of HRV «Sibiryakov» had the audience in City Administration of Boulogne-sur-Mer. The materials about Cruise were demonstrated on Russian and France TV, published in mass media of the Russia, Finland, France and Portugal (Appendix 4).

On August 10 the exhibition was open for visitors on EXPO'98. The exhibition included also materials concerning the first part of the Cruise, which were prepared by not only scientific team, but students and schoolchildren participated. Also the scientific equipment and laboratories were demonstrated.

In common by opinions of Russian and foreign participants of Cruise, this one was very interesting and useful. All of them marked the friendly atmosphere of this international Cruise that showed in their Impressions about Cruise.

On farewell parties each of leaving Cruise participants received the Official Certificate of BFU'98 and First International Children Cruise Participant signed by Cruise Chief and Captain and some of special souvenirs about BFU and this Cruise (Appendix 3).

APPENDIX 1

LIST
of BFU'98 and First International Children Cruise Participants
22.07.98 - 27.08.98

№	Name	22- 24.07	24.07- 04.08	04- 11.08	11- 16.08	16- 27.08
<i>Scientific and teacher team</i>						
1	Plink Nikolay (Russia)	+	+	+	+	+
2	Gogoberidze George (Russia)	+	+	+	+	+
3	Scherbakov Yuri (Russia)	+	+	+	+	+
4	Vilenkin Sergei (Russia)	+	+	+	+	+
5	Isaev Alexey (Russia)	+	+	+	+	+
6	Ryabov Yevgeny (Russia)	+	+	+	+	+
7	Eremina Tatiana (Russia)	+	+	+	+	+
8	Gustoev Dmitry (Russia)	+	+	+	+	+
9	Lahov Tagir (Russia)	+	+	+	+	+
10	Shilov Igor (Russia)	+	+	+	+	+
11	Reshetov Dmitry (Russia)	+	+	+	+	+
12	Olenin Sergej (Lithuania)	+	+	+	+	+
13	Del Valls Casillas Tomas Angel (Spain)	+	-	-	-	-
<i>Students team</i>						
14	Efremov Savva (Russia)	+	+	+	+	+
15	Zinchenko Andrei (Russia)	+	+	+	+	+
16	Tyuryakov Svyatoslav (Russia)	+	+	+	+	+
17	Nikiforov Iliya (Russia)	+	+	+	+	+
18	Stepanov Oleg (Russia)	+	+	+	+	+
19	Kuprin Stanislav (Russia)	+	+	+	+	+
20	Temgoua Andre Guy Tranquille (Cameroon)	+	+	+	+	+
21	Rimkute Inga (Lithuania)	+	+	+	+	+
22	Ilginis Raimondas (Lithuania)	+	+	+	+	+
23	Thompson Coon Jon I. V. (Finland)	+	+	+	+	+
24	Maack Stefanie (Germany)	+	+	+	+	-
25	Tagliabue Alessandro (UK)	+	+	+	-	-
26	Newman Alexander Samuel	+	+	+	-	-

	(UK)					
27	Hampel Miriam (Spain)	+	+	+	-	-
28	Saez Ribas Monica (Spain)	+	+	+	-	-
<i>Schoolchildren team</i>						
29	Alexandra Ernestina Fernandes Barbosa (Portugal)	-	-	+	-	-
30	Ana Sofia Frias Figueiredo (Portugal)	-	-	+	-	-
31	Olenina Ana (Lithuania)	+	+	+	+	+
32	Taktakishvili David (Georgia)	-	-	+	+	+
33	Eremin Gleb (Russia)	+	+	+	+	+
34	Dateshidze Aglaya (Russia)	+	-	-	-	-
35	Lutov Nikolay (Russia)	+	-	-	-	-
36	Kislyuk Daniil (Russia)	+	-	-	-	-
37	Turksoy Sinan Doga (Turkey)	-	+	-	-	-
38	Lavonius Jaakko (Finland)	-	+	-	-	-
39	Kautonen Jonas (Finland)	-	+	-	-	-
40	Kondylis Nikolaos Michail (Greece)	-	+	-	-	-
41	Oikonomou Vasileios Athanasios (Greece)	-	+	-	-	-
42	Beats Graeme (UK)	-	+	-	-	-
43	Vera Kissig (Germany)	-	+	-	-	-
44	Oliounina Olga (Russia)	-	-	+	+	-
45	Swart Ingmar (the Netherlands)	-	-	+	+	-
46	Van Damme Steven (the Netherlands)	-	-	+	+	-
47	Woods Iain (UK)	-	-	+	+	-
48	Franke Oliver (Germany)	-	-	+	+	-
49	Remi Valette (France)	-	-	+	+	-
50	Vincent Marquis (France)	-	-	+	+	-
51	Henichart Jonathan (France)	-	-	+	+	-
52	Desgris Jose (France)	-	-	+	+	-
53	Laban Delphine (Portugal)	-	-	+	-	-

INTERNATIONAL YEAR OF THE OCEAN
Baltic floating university & children's cruise
aboard the research vessel "Sibiryakov"

Program for foreign participants
(all lectures take place at the common room - 3rd floor)

Saturday - 25th of July

a tour around the "Sibiryakov"	09:00 - 11:00
'Who's Who' a get-together for children	13:30 - 15:00
a lecture on Russian language	18:30 - 19:30
PARTYTIME - Russian friends included	20:00 - 23:00

Sunday - 26th of July

a lecture on the History of the Russian Navy by Dr. S. Mikavtadze (Naval academy, Russia)	09:00 - 11:00
a lecture on ecological problems of the Baltic Sea by Dr. S. Olenin (University of Klaipeda. Lithuania)	13:30 - 15:00
a lecture on Russian language	18:30 - 19:30



INTERNATIONAL YEAR OF THE OCEAN
Baltic floating university & children's cruise
aboard the research vessel "Sibiryakov"

Program for foreign participants
(all lectures take place at the common room - 3rd floor)

Monday - 27th of July

"Sibiryakov" will anchor outside Gotland for approx. ten hours while stationary, we will:

eat breakfast, lunch and dinner at variable hours
(08:00, 12:00, 17:00)

have an **excursion** to the **navigation** room *10:00 - 11:00*

survey the sea-bed with an underwater VCR *11:00 - 12:00*
(if weather permits)

take, prepare and analyse samples from the sea-bed *13:00 - 15:00*
(again, if weather permits)

continue on the lecture series of the Baltic Sea *15:00 - 16:30*
by Dr. S. Olenin & Dr. T. Eremina

continue with lectures on Russian language *18:30 - 19:30*

watch a document about the natural phenomenon *19:30 - 20:30*
"Isajake" (a mystery of an aquatic hedgehog)
in the Japan Sea

note: all times are liable to change, do not trust this particular schedule



INTERNATIONAL YEAR OF THE OCEAN
Baltic floating university & children's cruise
aboard the research vessel "Sibiryakov"

Program for foreign participants
(all lectures take place at the common room - 3rd floor)

Tuesday, 28th of July

observation of weather *11:00 - 11:30*

lunch

continue the lecture of Dr. S. Olenin *13:00 - 14:00*

Commander Mayewski will study us
how to make sea knots *14:30 - 15:30*

lecture on hydrological and *15:30 - 16:30*
hydrochemical regime of the Baltic Sea

dinner

Russian lecture by Gleb and Ana *18:30 - 19:30*

PARTYTIME ***open end***

note: all times are liable to change, do not trust this particular schedule



INTERNATIONAL YEAR OF THE OCEAN
Baltic floating university & children's cruise
aboard the research vessel "Sibiryakov"

Program for foreign participants
(all lectures take place at the common room - 3rd floor)

Wednesday, 29th of July

Multimedia shows about the ocean world in the common room - ***4th deck*** 09:30 - 11:30

lunch

Dr. S. Olenin continues his popular lecture-series on the Baltic Sea 13:00 - 14:30

lecture on hydrochemical regime of the Baltic Sea by Dr. T. Eremina 15:30 - 16:30
all students are required to be in the common room by at least by the end of the lecture

dinner

lecture on Russian by Gleb and Anna 18:30 - 19:30

note: all times are liable to change, do not trust this particular schedule - *at all*



INTERNATIONAL YEAR OF THE OCEAN
Baltic floating university & children's cruise
aboard the research vessel "Sibiryakov"

Program for foreign participants
(no lectures but Russian for today)

Thursday, 30th of July

Multimedia shows about St. Petersburg 10:00 - 11:00
in the common room - ***4th deck***

lunch

you will prepare the presentations for 14:30 - 15:30
the World EXPO and write down some
words of impression on the cruise

dinner

lecture on Russian by Gleb and Anna 18:30 - 19:30

N.B.: all times are liable to change, do not trust this particular schedule - at all



INTERNATIONAL YEAR OF THE OCEAN
Baltic floating university & children's cruise
aboard the research vessel "Sibiryakov"

Program for foreign participants
(no lectures but Russian for today)

Friday, 31st of July

we enter the Danish straight Zoond - at last - at about and around 0800 hours. Be there and enjoy. FINALLY! CAN YOU BELIEVE IT?
The Zoond straight will fail at around lunchtime

lunch

A Quiz. Teams compete with each other to see who is the Best of all.
Subject is watery

dinner

lecture on Russian by Gleb and Anna 18:30 - 19:30

N.B.: all times are liable to change, do not trust this particular schedule - at all



INTERNATIONAL YEAR OF THE OCEAN
Baltic floating university & children's cruise
aboard the research vessel "Sibiryakov"

Program for foreign participants
(no lectures but Russian for today)

Saturday, 1st of August

lunch

a lecture on meteorology *13:00 - 14:00*
by Aleksey Isaev

a documentary video about the *14:30 - 15:30*
Museum of Oceanology in Monaco

preliminary inquiries on the possibility *16:00 - until driven away from the mess*
of producing a chess tournament
onboard the Sibiryakov

dinner

lecture on Russian by Gleb and Anna *18:30 - 19:30*

N.B.: all times are liable to change, do not trust this particular schedule - at all



INTERNATIONAL YEAR OF THE OCEAN
Baltic floating university & children's cruise
aboard the research vessel "Sibiryakov"

Program for foreign participants
(no lectures but Russian for today)

Saturday, 2nd of August

lunch

a multimedia presentation about the BFU including some information about this Cruise *13:00 - 14:00*

lecture on Russian by Gleb and Anna Museum of Oceanology in Monaco *14:30 - 15:30*

dinner

ATTENTION: *18:00 -*
A farewell-party thrown in the honour of the participants who must part with the cruise in Boulogne-sur-Mer

Party continues *- 04:00*

N.B.: all times are liable to change, do not trust this particular schedule - at all





WORLD METEOROLOGICAL ORGANIZATION
REGIONAL METEOROLOGICAL TRAINING CENTRE
STATE HYDROMETEOROLOGICAL
UNIVERSITY OF RUSSIAN FEDERATION



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OFFICIAL TRANSCRIPT

Name of student:	Miriam Hampel				
Place of birth:	Reutlingen, GERMANY		Date:	25.08.1970	
Citizenship:	Germany	Nationality:	Germany	Sex:	Female

PROGRAMME OF STUDY				
Period of study	Beginning:	22.07.1998	Finishing:	07.08.1998
Subject	Hours Given	Hours Attended	Grade	Lecturer
Oceanography			Зачтено	<i>Ass. Prof., Dr. Eremina T.R. (RSHI, RUSSIA)</i>
Lectures	28	28		
Practical	24	24		
Off-class assignments (including reading of literature concerning the Course)		20		
Biology and General Ecology			Зачтено	<i>Ass. Prof., Dr. Olenin Sergej (Klaipeda University, Lithuania)</i>
Lectures	16	16		
Practical	12	12		
Off-class assignments (including reading of literature concerning the Course)		10		
Hydrochemistry			Зачтено	<i>Head of Hydrochemistry Laboratory, Dr. Ryabov E.M. (LENMORNII PROEKT, RUSSIA)</i>
Lectures	24	24		
Practical	32	32		
Off-class assignments (including reading of literature concerning the Course)		20		
Total:	132	182		

Vice-Rector for International Relations	Anatoly I. BOGUSH <i>Ass. Prof. PhD (Geography)</i>	Signature:	Date: 07.08.1998
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Registration	Dated: 07.08.1998	No 19-98
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Scale of the Russian Grades: Отлично = Excellent; Хорошо = Average; Удовлетворительно = Sufficient; Зачтено = Passed

1998 INTERNATIONAL YEAR OF THE OCEAN

UNESCO Baltic Floating University Facility & Children's Cruise

**Training through Research cruise aboard the research vessel
"SIBIRYAKOV"**

CERTIFICATE OF PARTICIPATION

presented to
Graeme Beats
representative from UK

This certificate is given out to you, a participant of the International Children Cruise during the 1998 summer expedition aboard the research vessel "SIBIRYAKOV", organised by Intergovernmental Oceanographic Commission UNESCO and the Russian State Hydrometeorological University.

This interdisciplinary expedition was carried out in the Gulf of Finland, the Baltic Sea and the North Sea with the objective of providing education and training in the fields of oceanography & ecology through lectures, data collection, data analysis & interpretation. This cruise created a unique opportunity for a healthy exchange of ideas between the youth of different nations. We like to think that this cruise has been a considerable contribution to the 1998 International Year of the Ocean.

We hope that you have enjoyed this cruise and that you have found new friends among the participants and that you will keep the memory of this cruise fresh in your heart and mind for many years to come.

On behalf of the project organisers and managers, the crew of the R/V "SIBIRYAKOV", the scientific team and all cruise participants, we thank you for your interest and kind assistance in making this cruise a great success.

Captain of the "SIBIRYAKOV"

N. PYSHKIN

**Chief Scientist of Expedition
Dean, Faculty of Oceanology RSHU**

N. PLINK

North Sea, 2nd of August 1998



Diploma

Olga Oliounina

took part in the International Children Cruise during the 1998 summer expedition aboard the research vessel «SIBIRYAKOV», organised by Intergovernmental Oceanographic Commission UNESCO and the Russian State Hydrometeorological University.

This document confirm that in spite of difficulties she outstay sea examinations successfully.

She is a very good sailor!



Memory as a conduct main rules onboard vessel

All participants of cruise must to direct observe and implement these rules

Onboard prohibitions:

1. Don't go down (up) but the special gangway.
2. It is not permitted to enter: Navigation Bridge, Radio Room, Engine Room.
3. Don't stop on ladders and in any passages.
4. Don't turn on or off any units expect it is not Your duties.
5. Don't throw out the rubbish out board.
6. Don't walk on the out gangways and occupy on any boats.
7. Don't up at the masts.
8. Don't open illuminators during dark time.
9. To smoke only in cabins, deck on the stern.
10. Don't use any off-vessel electric-heat units.
11. During night (23.00 - 11.00) keep silence.

In emergency (fire, smoke, water leak) report to the crew members.



Participants of the Baltic floating university & Children's Cruise aboard the research vessel "SIBIRYAKOV" before starting a Helsinki – Boulogne-sur-Mer part of the Cruise



Participants of the Baltic floating university & Children's Cruise aboard the research vessel "SIBIRYAKOV" before starting a Boulogne-sur-Mer – Lisbon – Bulogne-sur-Mer part of the Cruise



Lecture on ecological state of the Baltic Sea
by Dr. Sergej Olenin (Klaipeda University)

(left to right: Monika Ribas (Spain), Miriam Hampel (Spain), Vera Kissig (Germany), Graeme Beats (UK), Nikolaos Kondylis (Greece), Vasileios Oikonomou (Greece), Dr. Sergej Olenin (Lithuania), Raimondas Ilginis (Lithuania))

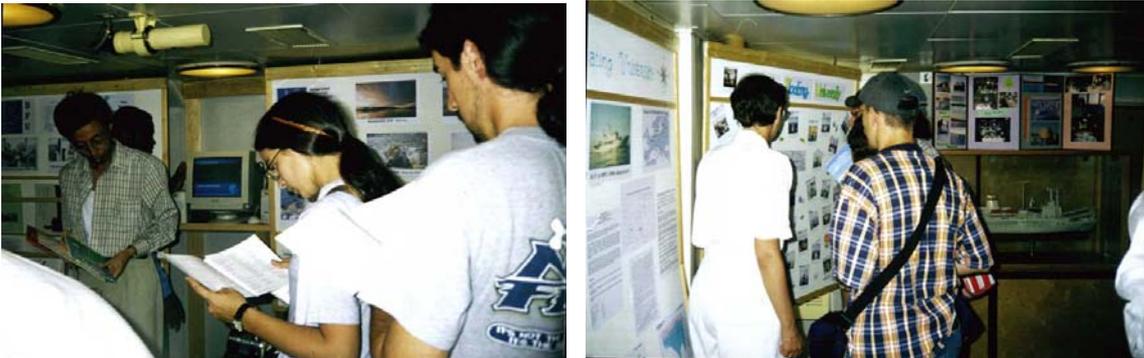


The practical training aboard "SIBIRYAKOV" for schoolchildren and students. Survey the sea-bed with an underwater VCR

(left to right: Inga Rimkute (Lithuania), Raimondas Ilginis (Lithuania), Gleb Eremin (Russia), Jon Thompson Coon (Finland), Vera Kissig (Germany), Nikolaos Kondylis (Greece), Dr. Sergej Olenin (Lithuania), Alexander Samuel Newman (UK), Andre Temgoua Guy Tranquille (Cameroon), Vasileios Oikonomou (Greece), Jonas Kautonen (Finland))



HRV "SIBIRYAKOV" at EXPO'98 (August 10 1998)



Visitors of BFU Exhibition aboard HRV "SIBIRYAKOV" at EXPO'98