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Marine Environmental Data Service Report for 1985/86

by

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Introduction

This year has brought some incidents of note with respect to MEDS acting as the archive of data for NAFO. The first, is a substantial increase in the total number of stations of data collected and received at MEDS. Increases have been recorded in traditional data, data received via the GTS, and in the numbers of drifting buoys reporting from the NAFO area. The second incident, has been a reduction of staff at MEDS, reflecting the present government's philosophy towards reducing the size of government in Canada. This reduction required a shifting of duties and training of staff to handle other duties. As a result, time was lost in processing incoming data. The direct consequence is that many of the data reported as received by MEDS have yet to reach the master archives; that is, they have yet to undergo MEDS routine quality control procedures. For this reason, the usual displays of ship track charts and oceanographic sections are missing from the report. Also missing, is MEDS analysis of data to produce maps of temperature and salinity anomalies at selected depths. Instead, the anomalies reported by the United States publication, Oceanographic Monthly Summary, have been included.

One other item of note to NAFO, is that MEDS has been accredited as a Regional National Oceanographic Data Centre (RNODC) for drifting buoy data for the world. As a result, MEDS will be receiving regularily the data from many of the drifting buoys deployed in the oceans of the world. For this reason, a new section has been included in this report, documenting the drifting buoy data received at MEDS in 1985. The table in next year's report should show a more complete summary of data collected in this fashion.

Finally, there has been a reduction in the amount of historical data received at MEDS in the past year. This is a consequence of a lapse in data exchange between MEDS and its U.S. counterpart, NODC, and the WDC-A in Washington. MEDS has been in contact with NODC to remedy this situation. As begun a short time ago, a copy of this NAFO report will be sent to WDC-A to try to acquire the data listed as outstanding from MEDS files.

1985 Data Not Yet Received by MEDS

Table 1. lists the data which have been collected in the NAFO area in 1985 but which as yet have not reached MEDS. This table has been compiled using ROSCOP forms, NAFO inventory forms, NAFO documents and MEDS own data collection inventory system. The sources are listed in one column of the table. There are about as many stations represented this year as last. The main difference seems to be that whereas

last year a substantial fraction of the table was represented by Canadian cruises, this year that is not the case.

1985 Data Received and Processed

Table 2. lists the data from the NAFO region, collected in 1985 and received by MEDS to date. There are over 6500 stations this year compared to about 3000 last year. While the major portion of the data are from Canadian sources, there is, as usual, a significant amount of data collected by the Soviet Union.

At the same time as the increase in data received, MEDS has experienced a reduction in staff due to changing government policies. For this reason, nearly all of these data have not been processed to a final state. As a consequence, no track charts have been prepared, and few of the data displays characterizing MEDS reports of past years. These data will be processed in the coming year and it is hoped that next year the situation will return to more normal conditions.

Table 3. lists data received at MEDS through the Global Telecommunications System (GTS). There are at least 2 items of note. The first is an increase of abut 50% in messages received compared to last year, and the second is that the number of TESAC messages received has increased from about 25% to 46% of total messages. While there is some possible duplication of data received in this fashion to data received by more usual routes, this is not a large fraction. Three figures of NAFO standard sections have been prepared from these data and are shown in figures A1-A3.

Drifting Buoy data received via the GTS

Table 4. is an addition to this year's report. It lists the messages received from drifting buoys during 1985 and in the NAFO region. There are about 354 buoy days represented in the table. All of these have been received over the GTS. Undoubtedly there were more buoys deployed, but the data were not placed on the GTS. In the past year MEDS has been accredited an RNODC for drifting buoy data. As a result, MEDS will be receiving on a regular basis more drifting buoy data including that which may not be on the GTS. As a result, the report of next year should show a more complete listing of buoys deployed in the region of interest to NAFO.

Historical Data Acquisitions

Table 5. lists the data received in 1985 and to date in 1986 from cruises which took place in the NAFO region but prior to 1985. There are about one half as many as documented in last year's report. Part of this is a consequence of not having received regular updates from NODC and WDC-A in the United States. MEDS is in contact with these organizations now to arrange for these updates to begin again. As well each year, a copy of MEDS NAFO report is sent to WDC-A to ask for data identified in table 1 (and any other for that matter) to be sent. While last year this mechanism was not so successful, this procedure of asking for specific information would seem to be a useful way to acquire historical data.

Review of Environmental Conditions

For reasons indicated above, it is not possible to present a review of environmental conditions in the NAFO region in 1985 based on data received at MEDS. However, a review of the information which appears in the United States publication "Oceanographic Monthly Summary" has been made and is presented here.

Figures B1-B12 show the sea surface temperature anomalies by month for the NAFO area of interest. Contour line intervals are 0.5 degrees C. The stippled areas indicate where the analysis was fixed by in situ data. Contours are not shown in areas without monthly or climatological data.

NAFO areas 1 and 2 show common features throughout the year. In January, there is little data to treat, but from February through April these two regions are characterized by colder than normal temperatures at the surface. In May, there is some indication of warming to above average temperatures in area 1 and the northern parts of area 2. By August, a relatively strong positive anomaly dominates nearly all of area 2 and the northern parts of area 1. These conditions persist to the end of 1985.

NAFO area 3 shows cold anomalies throughout the year. In January, a cold centre is situated a little south of Flemish Cap. As the year progresses, this centre shifts to the east. At its strongest, in May, temperatures are 3 degrees colder than normal.

NAFO area 4 starts the year with warmer than normal temperatures. By April, temperatures have cooled to below normal values. These conditions persist into July. In July, parts of areas 4R, S and T return to warmer conditions and this lasts until November. In November, cold conditions dominate all but the southern parts of area 4.

NAFO areas 5 and 6 start the year with slightly cooler than normal conditions in the westernmost parts. The eastern parts of area 6 tend to be warmer than normal and this is true for much of the year. Colder conditions affect the western parts in May to September and again in November and December. The eastern parts of 6 also experience colder than normal conditions starting in September and persisting to the end of the year.

Table 1: Data collected in the NAFO area in 1985 but not received at MEDS.
Total = 3364 stations

Ship Name	Cruise Period	NAFO Subarea	Standard Section	Number	Reference
		Canada			
Dawson	22 Mar- 6 May	3LNO		24	ROSCOP
Dawson	2-18 Apr	4WVs,6EF		114	ROSCOP
Baffin	8-14 Apr	4X		70	ROSCOP
E.E. Prince	15-22 Apr	4VnVsW		27	C86141I01
Dawson	23-29 May	4W		58	ROSCOP
Dawson	19 Jun- 5 Jul	4Vs		65	ROSCOP
Dawson	29 Jul-12 Aug	4RST		37	ROSCOP
L. Hammond	6-30 Aug	4RST		190	C86121I01
Dawson	13-28 Aug	3L		42	ROSCOP
L. Hammond	30 Sep-11 Oct	4X,5YZe		179	C86140I01
Baffin	1-19 Oct	1,2		65	ROSCOP
E.E. Prince	7-15 Oct	4VnVsW		30	C86140I02
Tava	18 Oct-28 Nov	4WX		179	C86104I01
Dawson	12-19 Nov	4RST		35	ROSCOP
Dawson	14-28 Nov	4X		59	ROSCOP
Dawson	9-15 Dec	4X		86	ROSCOP
		Denmark			
A. Jensen	12-22 Apr	1DEF		20	ROSCOP
A. Jensen	26 Jun-10 Jul	1BCD		41	ROSCOP
		Fed. Rep. Germany			
W. Herwig	25 Sep- 4 Nov	1,2		201	ROSCOP
A. Dohrn	15 Oct-23 Nov	3LNO		200	ROSCOP
W. Herwig	14 Nov-18 Dec	1,2	Fylla	133	ROSCOP
		France			
Cryos	Jan-Mar	3Ps,4R		86	NAFO
		Poland			
Wieczno	4-23 Oct	5YZeZw,6ABCD		?	C86098I02
Wieczno	8-20 Nov	5Ze		11	C86133I01
		USA			
Delaware 2	7 Jan- 8 Feb	5YZeZw,6ABCD		132	C85109I01
Albatross 4	13-22 Feb	5YZeZw,6ABCD		121	C85133I08
Albatross 4	25 Feb-15 Mar	5YZeZw,6ABCD		177	C85134I01
Albatross 4	18-29 Mar	5YZeZw,6ABCD		99	C85134I02
Albatross 4	8-26 May	5YZeZw,6ABC		148	C85253I01
Albatross 4	28 May- 6 Jun	5YZeZw,6ABC		41	C85253I01
Albatross 4	10-28 Jun	5YZeZw,6ABC		138	C85254I01
Albatross 4	3-18 Jul	5Ze		24	C85254I02
Delaware 2	9-25 Jul	5Ze		27	C85268I01
Albatross 4	22 Jul- 7 Aug	5ZeZw,6ABC		83	C85267I01
Albatross 4	19-31 Aug	5Ze		43	C85268I02
Albatross 4	9 Sep-16 Nov	6BC		58	C86134I01
Delaware 2	30 Sep-26 Oct	5ZeZw,6ABC		78	C86134I02
Delaware 2	5 Nov-12 Dec	4X,5YZeZw,6ABC		182	C86135I01
Albatross 4	18-26 Nov	5YZeZw,6A		?	C86098I03
Albatross 4	5-20 Dec	5YZeZw,6ABC		31	C86119I01
		USSR			
Kokshaisk	Jan-Mar	3		30	NAFO

CODES: ROSCOP = Information has been extracted from ROSCOP forms.
NAFO = Information has been extracted from NAFO inventory forms.
C.... = Information has been extracted from CAMDI at MEDS.

Table 2. Data collected in the NAFO area in 1985 and received by MEDS.
Total = 6732 stations

Ship Name	Cruise Period	NAFO Subarea	Data Type Bot	Data Type Bt	Cruise Number
		Canada			
Alf. Needler	6-22 Jan	6C		162	183185001
W. Templeman	10-21 Jan	3L	35	83	183185001
Fraser	14 Jan-11 Mar	4WX,5YZeZw,6ABCDE		74	181885007
Annapolis	14 Jan-13 Feb	4WX,5YZe,6DE		18	181885013
Iroquois	16 Jan-12 Apr	3LMN,6H		90	181885001
Athabaskan	21 Jan-28 Mar	4WX,5YZeZw,6ABCDE		51	181885008
Nipigon	23 Jan-17 Feb	?		55	181885012
W. Templeman	24 Jan-4 Feb	3L	2	82	NAFC
Algonquin	24 Jan-15 Mar	4WX,5YZe,6DE		21	181885006
G. Atlantica	31 Jan-17 Feb	3LPs	47	170	NAFC
W. Templeman	7-19 Feb	3L	39	2	NAFC
Ottawa	11 Feb-15 Mar	4WX,5YZe,6DE		39	181885009
Margaree	11 Feb-20 Mar	4WX,5YZe,6DE		33	181885011
Saguenay	12-17 Feb	4WX,5Ze,6DE		9	181885003
G. Atlantica	20 Feb-13 Mar	3LOPsPn,4VnVs	7	274	NAFC
Saguenay	26 Feb-13 Mar	3NO,4WVs		12	181885004
Alf. Needler	1- 8 Mar	4WX	11	13	180385001
W. Templeman	4- 5 Mar	3L	1	2	NAFC
W. Templeman	8-26 Mar	3OPs,4Vs	1	118	NAFC
G. Atlantica	15 Mar- 1 Apr	3LMNO	16	76	NAFC
Skeena	27 Mar-21 Jun	?		76	181885027
G. Atlantica	4-16 Apr	3LOPs	2	6	NAFC
Alf. Needler	11-26 Apr	3LNO	16	147	NAFC
Ottawa	15-19 Apr	4WX		8	181885002
W. Templeman	17-29 Apr	3LNO	4	90	NAFC
Nipigon	29 Apr-22 May	4X,5Ze,6DE		25	181885010
W. Templeman	1-13 May	3LMNO	10	83	NAFC
Ottawa	9-16 May	4WX		16	181885005
Margaree	9 May-19 Jun	?		82	181885015
G. Atlantica	10-28 May	3L	20	31	NAFC
Annapolis	13-31 May	?		60	181885014
W. Templeman	15-27 May	3L	2	94	NAFC
Protecteur	22 May-14 Jun	?		29	181885016
W. Templeman	30 May-17 Jun	3LNOPs	2	132	NAFC
G. Atlantica	31 May-17 Jun	3L	2	152	NAFC
E.E. Prince	31 May-14 Jun	3L		62	NAFC
Algonquin	3-14 Jun	4X,5YZe,6DE		38	181885017
Fraser	3-14 Jun	4X,5YZe,6DE		44	181885018
Athabaskan	3-20 Jun	4X,5YZe,6DE		44	181885019
Skeena	5- 6 Jun	?		2	181885031
Shamook	12-15 Jun	3L		14	NAFC
G. Atlantica	19 Jun- 8 Jul	3LNO	2	47	NAFC
?	20 Jun-23 Jul	?		27	183485003
Skeena	2-21 Jul	?		27	181885030
Ottawa	2 Jul- 9 Sep	4ST		6	181885020
A. Needler	4-11 Jul	4WX	76	42	180385003
G. Atlantica	11-28 Jul	3LPnPs	1	39	NAFC
Shamook	11 Jul- 6 Aug	2J,3K	4	94	NAFC
A. Needler	16-25 Jul	4VnVsW	77	11	180385004
?	18 Jul- 1 Aug	?		10	183485004
W. Templeman	26-27 Jul	3L	1	11	NAFC
W. Templeman	31 Jul-12 Aug	3LNO	4	84	NAFC
G. Atlantica	1-21 Aug	2J,3KL	1	186	NAFC
C. Elizabeth	1-18 Aug	2J	8	8	NAFC
Alf. Needler	2 Aug-10 Sep	2J,3KL	131	31	NAFC
Marinus	7-17 Aug	3L	4	22	NAFC
W. Templeman	17-26 Aug	3L	1	70	NAFC

Table 2 continued

Nipigon	25 Aug-21 Nov	?		92	181885021
Algonquin	29 Aug- 5 Oct	?		54	181885023
Ottawa	29 Aug- 8 Oct	?		47	181885028
Iroquois	29 Aug-10 Oct	?		47	181885033
Fraser	29 Aug-10 Oct	?		71	181885026
Athabaskan	29 Aug-11 Oct	?		20	181885022
W. Templeman	30 Aug-16 Sep	3LNO	1	80	NAFC
?	4-26 Sep	?		83	183485001
?	6-25 Sep	?		140	183485002
A. Needler	9-17 Sep	4VsWX,5YZe,6DEF	22	66	183185002
G. Atlantica	12-27 Sep	3L	2	5	NAFC
G. Atlantica	24 Sep-20 Oct	2J,3KL	2	32	NAFC
W. Templeman	2- 7 Oct	3L	1	16	NAFC
Marinus	6-16 Oct	4R	2	38	NAFC
A. Needler	8-16 Oct	4VsWX	92	92	180385005
W. Templeman	9-21 Oct	3L	11	88	NAFC
Huron	14-25 Oct	?		41	181885025
E.E. Prince	22 Oct-11 Nov	4X	220	23	180385006
G. Atlantica	23 Oct- 4 Nov	2J,3K		105	NAFC
W. Templeman	23 Oct- 3 Nov	3L	8	85	NAFC
Huron	31 Oct	?		1	181885032
G. Atlantica	5-17 Nov	3KL	2	123	NAFC
Shamook	6-14 Nov	3L	1	22	NAFC
W. Templeman	9-11 Nov	3LNO	2	64	NAFC
G. Atlantica	20 Nov- 3 Dec	3KL	5	104	NAFC
W. Templeman	21 Nov- 2 Dec	3LO	1	6	NAFC
Ottawa	25 Nov-12 Dec	?		35	181885024
Skeena	25 Nov-12 Dec	?		32	181885029
		USSR			

Genichesk	31 Mar-15 Jul	3KLMNO	317	56	
Boguslav	13 Apr- 7 Jun	3KLMNO,4Vs,6G	192	17	90 85001
Kononov	28 Sep-28 Jan'86	0,1,2,3	198		
Poisk	22 Oct-9 Dec	3KLMNO	82	25	

NAFC = cruise catalogs derived from tapes. Data have yet to be extracted.

Table 3. IGOSS Data Received During 1985.
Total = 2575

Ship Name	Country	Call Sign	Cruise Period	Msg Type BATHY	Msg Type TESAC	NAFO Subarea
Hudson	Canada	CGDG	3-11 Jul	12		2J,3K
Hudson	Canada	CGDG	14 Sep	2		2G
A. Needler	Canada	CG2683	6- 8 Jan	23		6AB
Oliveira	Port.	CSDQ	15-22 Jun	11		6CDEFGH
A. Dohrn	FRG	DBFR	23 Oct-14 Nov	56		2JH,3KLM
Hannover	FRG	DFPU	29-31 Dec	20		1F,2HJ
Monsoon	USSR	EREA	29-31 Mar	8	4	3MNO
		EREA	4-19 Apr	65	50	3MNO,4Vs,6GH
VOLNA	USSR	EREB	13 Jul- 3 Aug	74	66	3NO,4Vs,6FGH
		EREB	9-27 Aug	47	41	3MN
		EREB	1- 2 Sep	4	4	2J,3K
		EREB	19 Nov-30 Dec	84	87	3MN,6H
V. Bugaen	USSR	ERES	18-21 Jan	4	2	3M
		ERES	26 Jan-12 Feb	2	47	3NO,4Vs,6GH
		ERES	17-18 Apr	6	4	3KM
		ERES	21 Apr-11 May	55	44	3KLMNO,6GH
		ERES	9-30 Aug	66	57	3MN,6GH
		ERES	2-8 Sep	17	11	3M
G. Ushakov	USSR	ERET	25 Jan-13 Feb	40	16	3MNO,4Vs,6GH
		ERET	24 Oct-21 Nov	78	75	3MN,6H
Poisk	USSR	EWEL	20 Oct-15 Nov		41	2J,3KLO
Cryos	France	FNBA	25 Jan-1 Feb	34		4R
		FNBA	11-14 Feb	30		3OPnPs
		FNBA	1-10 Mar	8	1	3Ps
Thalassa	France	FNIB	23 Apr- 3 May	9		3LM
Marshfield	USA	NIZX	27-30 Aug	6		6DEFGH
		NIZX	10-14 Sep	7		3MO,4VsW,6CD
Haliburton	USA	NOTH	2- 8 Mar	10		5Zw,6ABC
Northwind	USA	NRFJ	7-22 Aug	12	1	2J,3KLPs,4Vs
?	USA	NRLC	7- 8 Jun	6		6C
Polar Sea	USA	NRUO	26 Jun- 2 Aug	25		1DEF,2GHJ,3KO, 4WVs,6E
?	USA	NSVN	21-22 Apr	3		4W
		NSVN	27 Oct-7 Nov	40		2J,4RVsVnWX,5Ze
Oleander	Neth.	PYJG	6- 7 Jun	22		6AB
		PYJG	21 Jun	7		6AB
		PYJG	12 Jul	15		6AB
		PYJG	9-15 Aug	40		6AB
		PYJG	5-6 Sep	18		6ABD
		PYJG	11-12 Sep	15		6AB
		PYJG	20 Sep	5		6AB
		PYJG	15-17 Oct	12		6ABD
		PYJG	8- 9 Nov	21		6ABD
		PYJG	14 Nov	8		6B
		PYJG	6- 8 Dec	3		6AB
Genichesk	USSR	UFIM	31 Mar-16 Apr		54	3M
		UFIM	22-23 Apr		5	3L
		UFIM	29 Apr- 7 May		25	3MNO
		UFIM	11-14 May		12	3N
		UFIM	20-25 Jun		26	3K
Boguslav	USSR	UFLR	15 Apr-23 May		145	3KLNO,4Vs,6G
		UFLR	31 May- 7 Jun		38	3M
N. Kononov	USSR	USOP	27-31 Oct		4	2J,3K
Passat	USSR	UZGH	23 Feb-25 Mar	76	46	4Vs,6GH
		UZGH	9-27 Nov	41	35	3M
L. Hammond	Canada	VC9616	5-21 Feb		77	4X
		VC9616	14-27 Mar		44	4X
		VC9616	3-17 Apr		73	4X
		VC9616	7-14 May		48	4X
		VC9616	4-29 Jun	63	11	4X
		VC9616	5-10 Dec	9		4WX,5ZeZw

Table 3. IGOSS Data Received During 1985.
Total = 2575

Ship Name	Country	Call Sign	Cruise Period	Msg Type BATHY	Msg Type TESAC	NAFO Subarea
Aircraft	USA	VXN	26-28 Jun	3		1A
Aircraft	USA	VXN-8	6 Jun	9		6BC
		VXN-8	5-15 Dec	36		6DEFGH
Albatross 4	USA	WMVF	24 Mar-12 Apr	39		5YZe
		WMVF	9-16 May	7		5Ze
		WMVF	23-30 Jul	20		6ABC
		WMVF	25-29 Aug	7		5Ze
		WMVF	3- 7 Nov	12		5Ze
Mt. Mitchell	USA	WTEG	26-31 Jul	5		5Ze
Pierce	USA	WTEQ	13-20 Apr	5		5ZeZw,6D
P. Anderson	USA	WXQ73	15-29 Aug	6		6C
		WXQ73	17-20 Oct	3		5YZe,6A
		WXQ73	8-23 Nov	4		6B
Westward	USA	WZL81	14-18 Oct	6		5Ze,6D

Table 4. Data received from drifting buoys in 1985.
Total = 354 Buoy days

Buoy Number	Period	NAFO Subarea	Parameters Observed SST	AT	AP	WS	WD	TC	D
04266	6 Jun	1F		x	x	x	x		
	4 Sep	1F		x	x	x	x		
04285	6 Jun	1F		x	x	x	x		
	4 Sep	1F		x	x	x	x		
04390	6 Jun	1F		x	x	x	x		
	28 Jul	1F		x	x	x	x		
	4 Sep	1F		x	x	x	x		
	18 Nov	1F		x	x	x	x		
15804	21 May	4Vs	x		x				
41502	23 Oct	4Vs	x	x	x	x			
44501	17-25 Sep	3K	x						
44502	17 Sep-28 Oct	2J,3K	x						
44504	17 Sep-28 Oct	3LM	x						
	1-30 Nov	3M	x						
44611	2-26 Oct	1F	x		x				
	1-31 Dec	1F	x		x				
48542	25-29 Nov	3M	x						
54810	22 Oct	3M	x						
56808	22 Oct	2J,3K	x						
65512	5 May-10 Jun	1F	x		x				
	10-29 Sep	1F,2GH	x		x				
	8-18 Oct	2J	x		x				
	1 Nov-30 Dec	2J,3K	x		x				
65516	1-31 Dec	1F	x	x	x	x	x		

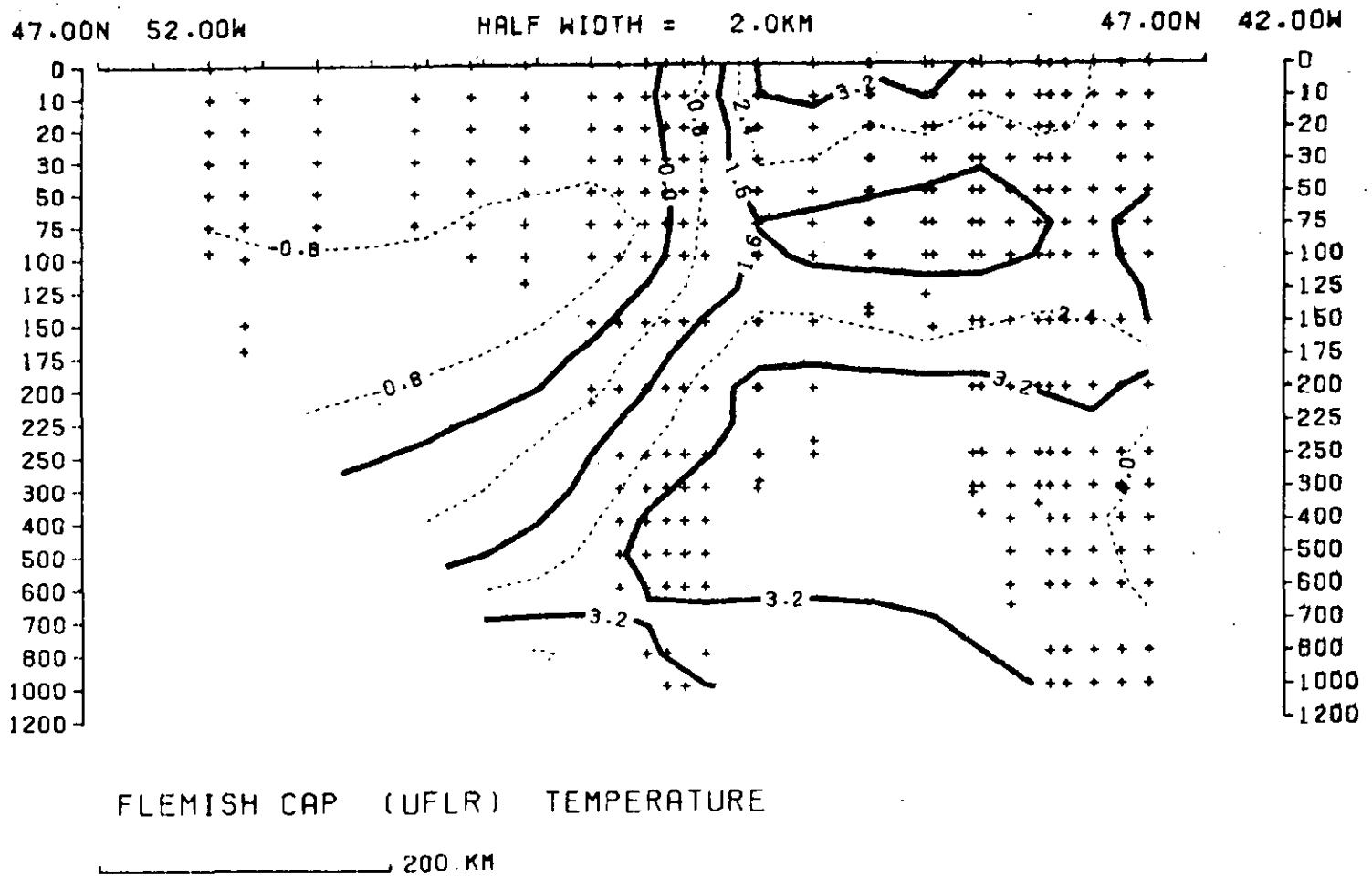
CODES: SST = Sea surface temperature
AT = Air temperature
AP = Air pressure
WS = Wind speed
WD = Wind direction
TC = Thermistor chain
D = Drogued

Table 5. Historical data received in MEDS in 1985.
Total = 1874 stations

Ship Name	Cruise Period	NAFO Subarea	Number	Reference
	Canada			
181078031	11 Oct- 8 Nov/'78		589	A8530103
181078034	17-22 Nov/'78		38	A8530103
181079007	2- 5 May/'79		43	A8530103
181081035	5- 6 Aug/'81		14	A8530103
181082005	25-26 Mar/'82		16	A8530103
181082007	11-14 Apr/'82		45	A8530103
181082008	16-20 Apr/'82		24	A8530103
E.E. Prince	20-27 Apr/'82	4WVs	19	A8510508
181082032	8-13 Sep/'82		135	A8530103
181082033	22 Sep- 6 Oct'/82		12	A8530103
181082035	27 Oct- 1 Nov/'82		57	A8530103
181082038	4-22 Nov/'82		38	A8530103
181082042	10-17 Nov/'82		39	A8530103
E.E. Prince	18 Nov/'82	4W	5	A8510508
E.E. Prince	20-23 Nov/'83	4WVs	5	A8510508
Iroquois	22 Jan-28 Feb/'84		32	A8602102
Huron	17-20 Feb/'84		27	A8602102
Margaree	15 Apr-18 May/'84	4WX,5YZe	4	A8504301
E.E. Prince	5-11 May/'84	4WVs	15	A8510508
Skeena	16-18 May/'84	4WX,6E	9	A8504301
Ottawa	27 Jul-10 Sep/'84	2,3,4	45	A8504301
Eric 2	7-13 Sep/'84	4X	8	A8502102
180384007	9-18 Sep/'84		70	A8501402
E.E. Prince	10-15 Oct/'84	4X,5Y	49	A8502102
E.E. Prince	20-26 Oct/'84	4VsW	23	A8502102
Athabaskan	22 Oct- 8 Nov/'84		43	A8602205
180384008	23 Oct- 1 Nov/'84		98	A8501402
Margaree	29-30 Oct/'84		5	A8602205
E.E. Prince	2-13 Nov/'84	4X,5YZe	48	A8502103
Saguenay	26 Nov-13 Dec/'84		53	A8602102
Annapolis	26 Nov-13 Dec/'84		45	A8602205
Protecteur	7-15 Dec/'84		37	A8602205
Fraser	10-16 Dec/'84	4WX	30	A8504301
Skeena	10-17 Dec/'84		23	A8602205
	Fed. Rep of Germany			
06NH79078	10 Apr-23 May/'79		43	A8522705
069980001	28 Aug-27 Oct/'80		16	A8522705
069983001	7 Sep- 2 Oct/'83		5	A8522705
A. Dohrn	12 Oct-21 Nov/'83		60	A8522705

Note: Where ship name is not known at present, a MEDS cruise number has been inserted.

Figure A1.


47.00N 52.00W
HALF WIDTH = 2.0KM
47.00N 42.00W
0
10
20
30
50
75
100
125
150
175
200
225
250
300
400
500
600
700
800
1000
1200
-0.8
0.0
1.6
2.4
3.2
FLEMISH CAP (UFLR) TEMPERATURE
200 KM

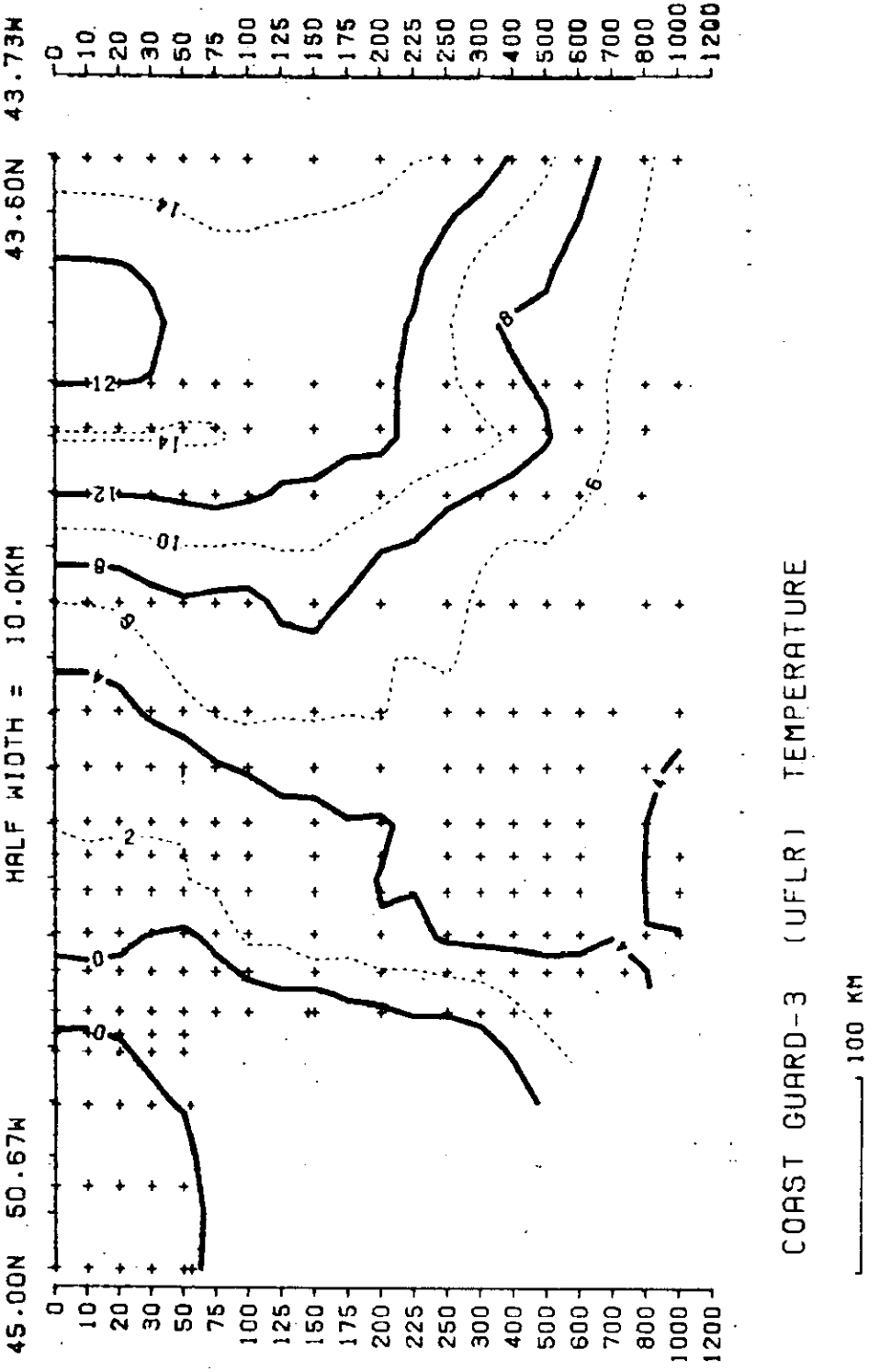

45.00N 50.67W
HALF WIDTH = 10.0KM
43.60N 43.73W
0 10 20 30 50 75 100 125 150 175 200 225 250 300 400 500 600 700 800 1000 1200
0 10 20 30 50 75 100 125 150 175 200 225 250 300 400 500 600 700 800 1000 1200
COAST GUARD-3 (UFLR) TEMPERATURE
100 KM

Figure A2.

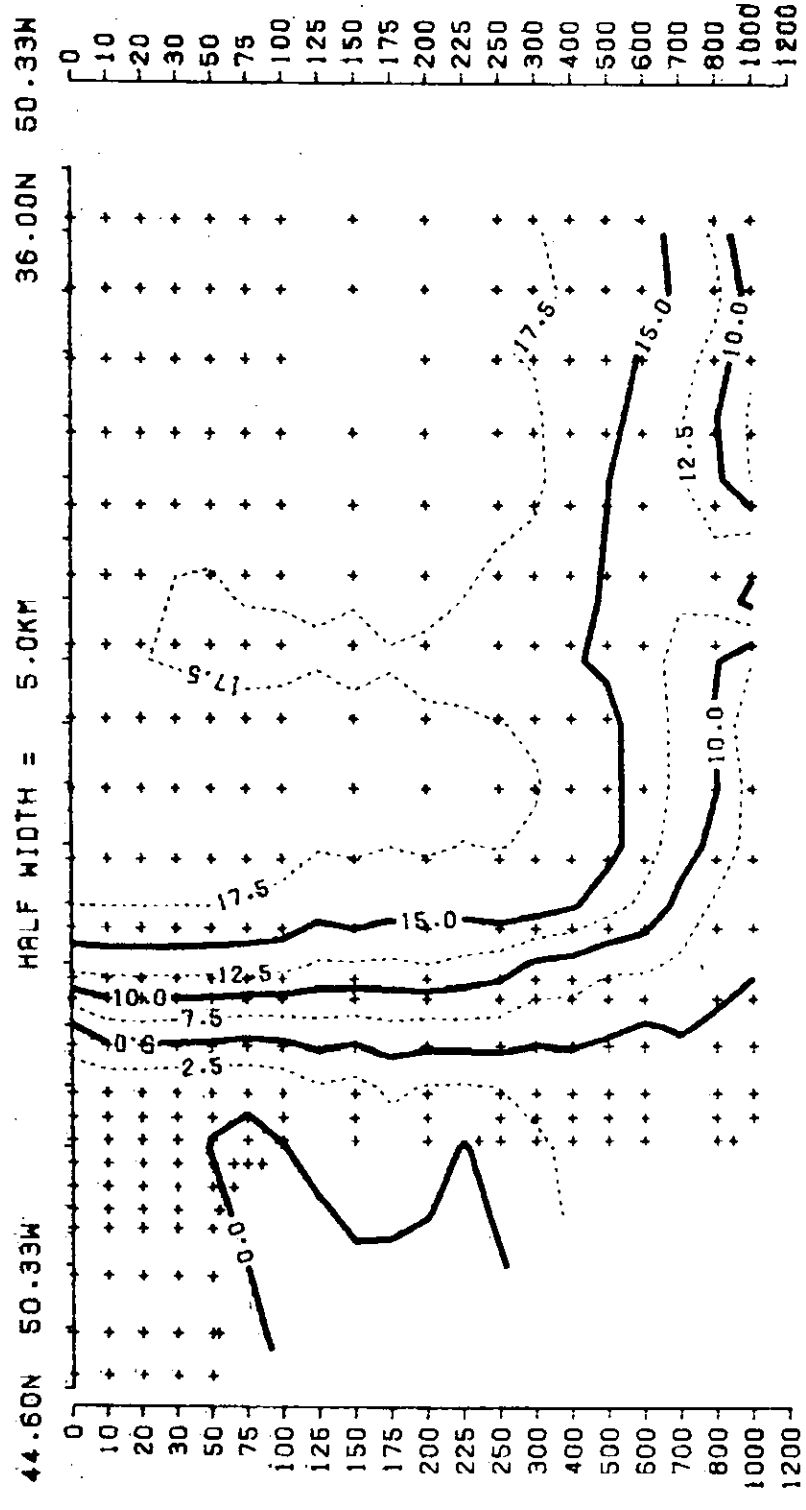
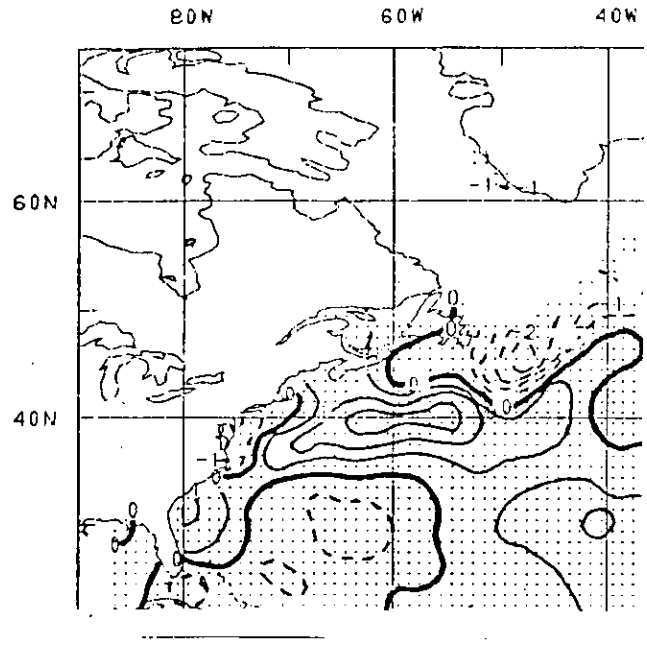
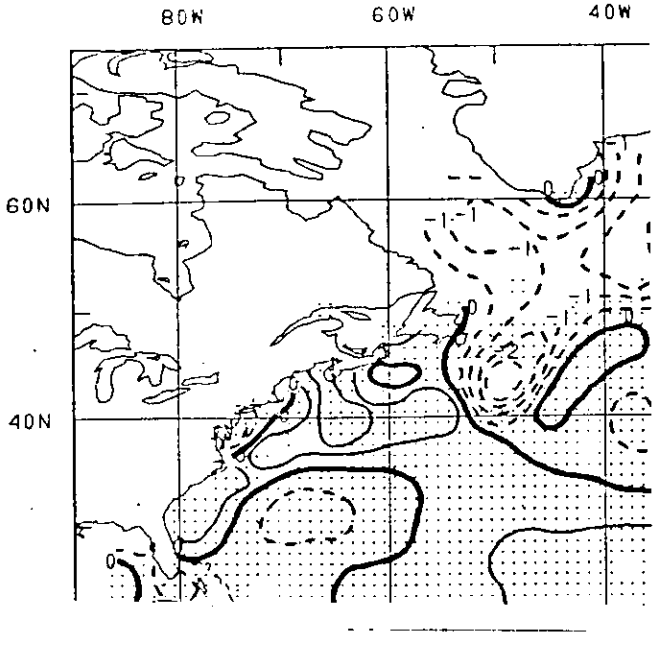

44.60N 50.33W
HALF WIDTH = 5.0KM
36.00N 50.33W
0 10 20 30 50 75 100 125 150 175 200 225 250 300 400 500 600 700 800 1000 1200
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
COAST GUARD-4 (UFLR) TEMPERATURE
200 KM

Figure A3.

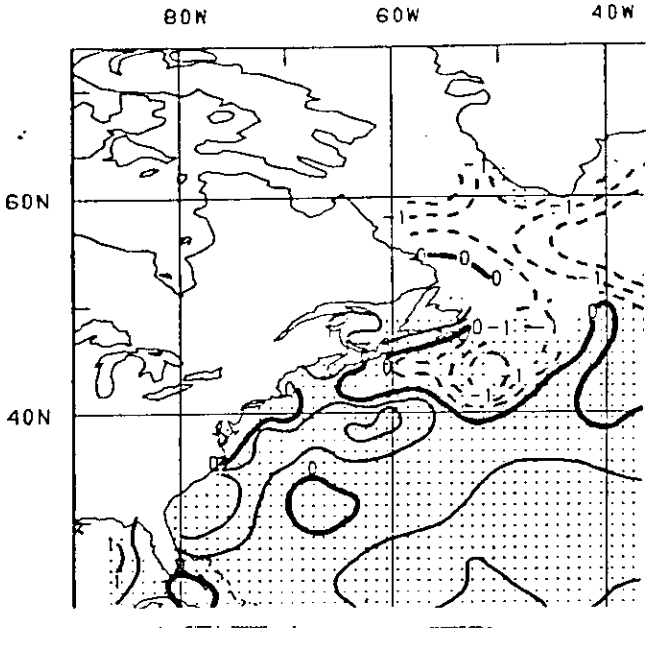
Figures B1-B4.



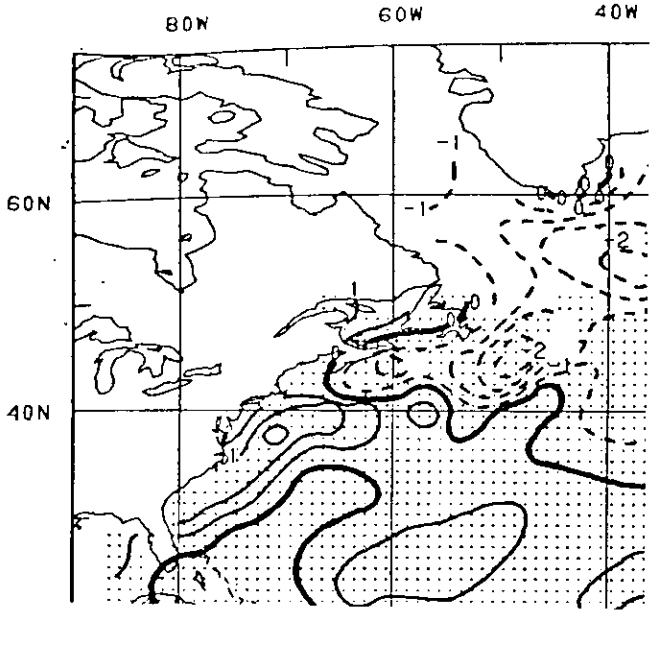
SST Anomalies, January, 1985



SST Anomalies, February, 1985

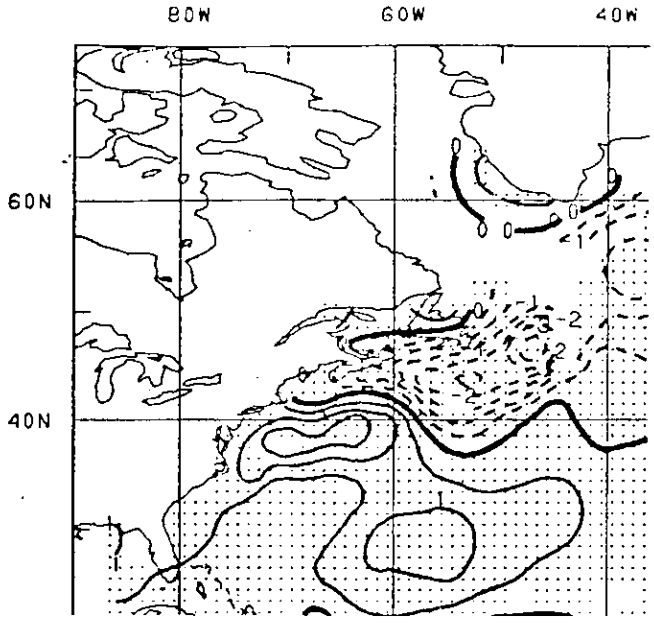


SST Anomalies, March, 1985

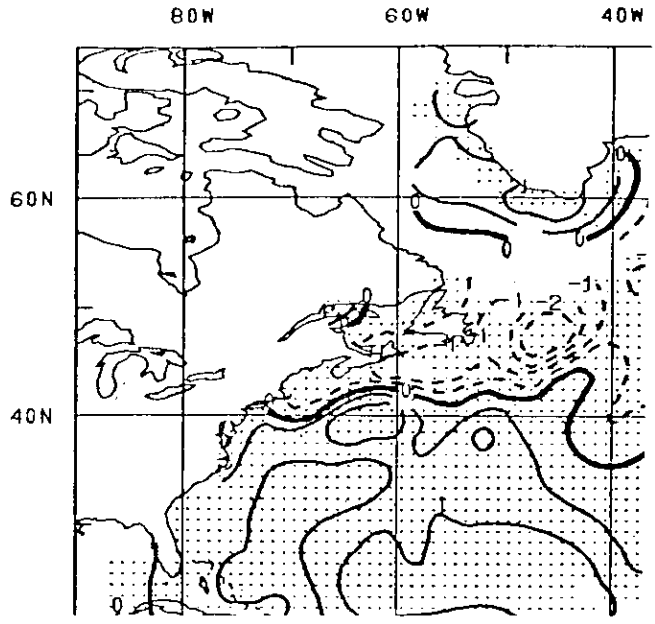


SST Anomalies, April, 1985

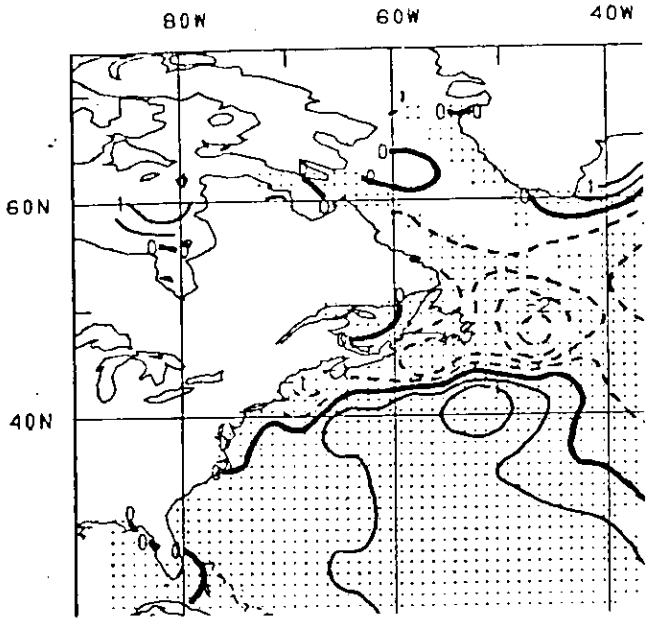
Figures B5-B8



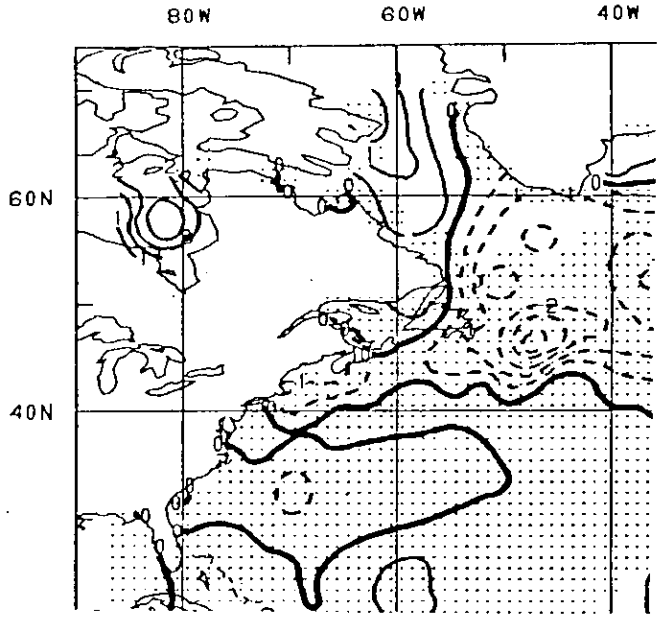
SST Anomalies, May, 1985



SST Anomalies, June, 1985

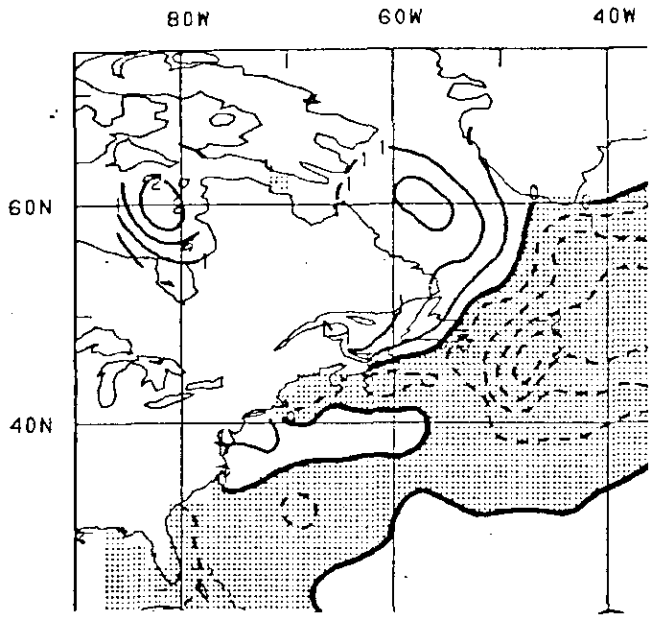


SST Anomalies, July, 1985

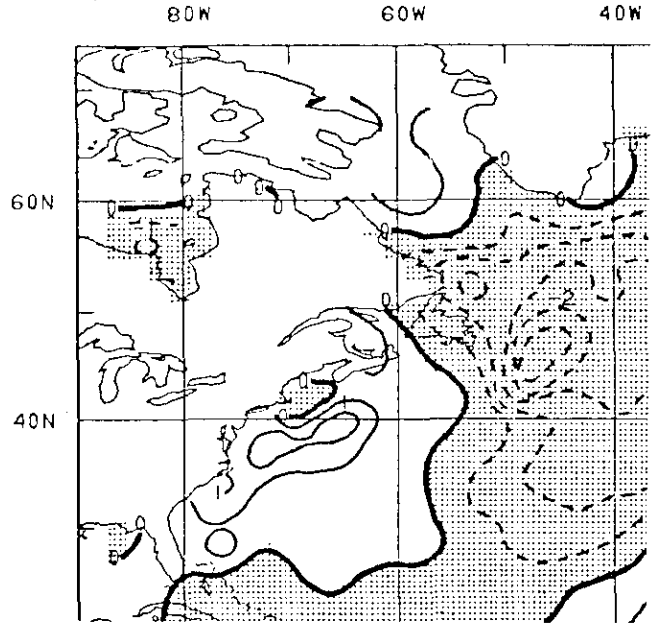


SST Anomalies, August, 1985

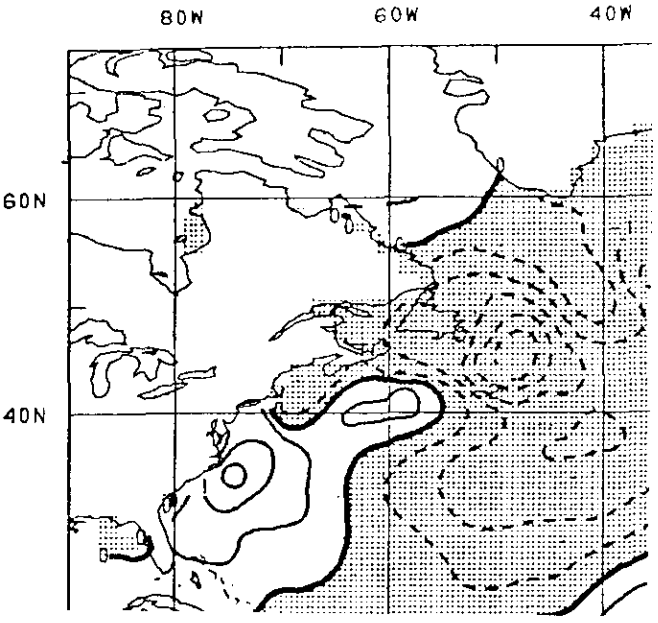
Figures B9-B12



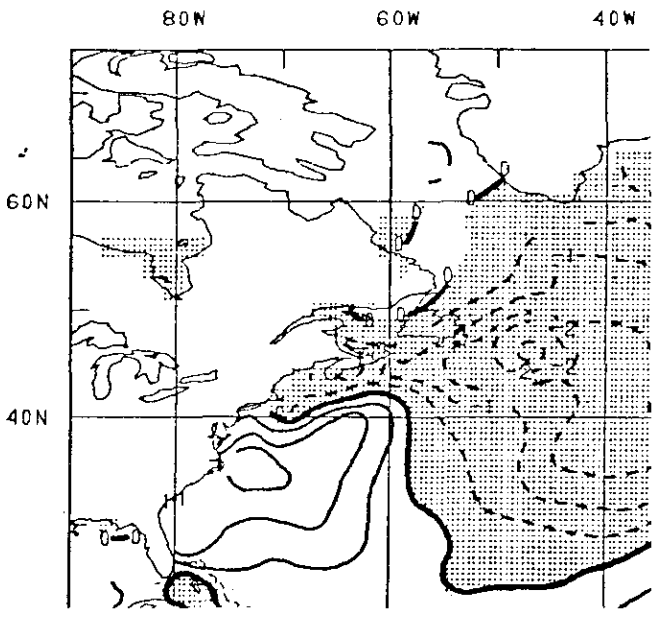
SST Anomalies, September, 1985



SST Anomalies, October, 1985



SST Anomalies, November, 1985



SST Anomalies, December, 1985