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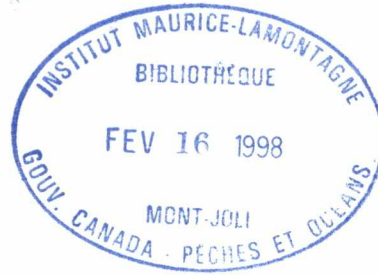
ICEBREAKING OPERATIONS

ARCTIC REPORT

SUMMER 1995

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1995

Icebreaking Program



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ARCTIC REPORT

Summer 1995

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CCG Headquarters
Icebreaking Program
Ottawa
November 1996

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INTRODUCTION

This report is complementary to the Winter report of 1994/95. It provides an overview of the icebreaking services provided in the Arctic Region between June 21 and December 6, 1995. Statistics presented in this report were compiled from the Icebreaking Operations Data Information System (IODIS) version 5.1, and the Fleet Activity Information System (FAIS) with the cooperation of the Ships' Officers aboard CCG Icebreakers and Ice Officers in Iqaluit Ice Centre. The report demonstrates the workload in the Arctic Region by icebreakers and the services provided to clients.

From mid-June to November each year since 1930, Canadian Coast Guard icebreakers have conducted annual operations in the high Arctic and Hudson Bay. Icebreakers are pre-positioned throughout the Arctic to provide services, such as route assistance to commercial vessels. Other services include the transportation and landing of general and heavy cargoes at northern settlements and military sites, marine navigation aids maintenance, refueling at sea, search and rescue, hydrographic and oceanographic work, Canadian presence in the Arctic (sovereignty) and maritime environmental emergency response. Our Officers are often complimented by the clients on their excellent effort and well organized operations. A description of services is provided in Annex B.

Your comments and/or suggestions are appreciated and can be addressed to the Director of Icebreaking Program (613) 993-1849, FAX number: (613) 990-5541.

Table 1 - Dates of Icebreaking Operations

Icebreaker	Type	Start Date	End Date
LOUIS S. ST. LAURENT	1300	1-Aug-95	22-Nov-95
DES GROSEILLIERS	1200	28-Jun-95	27-Sep-95
PIERRE RADISSON	1200	10-Aug-95	6-Dec-95
SIR JOHN FRANKLIN	1200	10-Jul-95	29-Sep-95
HENRY LARSEN	1200	11-Jul-95	6-Oct-95
TERRY FOX	-	21-Jun-95	12-Oct-95
ARCTIC IVIK	-	6-Jul-95	27-Sep-95

Table 2 - Workload Indicators per Mission Statement

Transit hours to/from the Arctic (source FAIS)	2096.00
--	----------------

ROUTE ASSISTANCE

Total Number of requests	received	40
	delivered	40
Single escort	number	36
	miles	15,544.00
	hours	3,159.29
Channel maintenance	number	4
	hours	32.00
Total hours		3,191.29
Hours of standby to provide Icebreaking services		2,906.48
Total hours of Route Assistance services		6,097.77

ICE RECONNAISSANCE

Number of requests	received	42
	delivered	42
Total hours of services		90.95

Note: - Miles & Hours of services include transit miles & hours.

Table 2 - Workload Indicators per Mission Statement (Cont'd)

HARBOUR BREAKOUT

Number of requests	received	5
	delivered	5
Total miles of services		16.00
Total hours of services		18.48

EASTERN ARCTIC SEALIFT

Number of requests	received	6
	delivered	6
Total miles of services		2,888.00
Total hours of services		470.50

**SUPPORT TO OTHER
GOVERNMENT
DEPARTMENTS &
AGENCIES & R&D**

Number of requests	received	104
	delivered	104
Total hours of services		1,834.77

**OTHER PROGRAMS/ACTIVITIES
(Rescue & Environment
Response (RER), M.N.S. and
Other activities)**

Number of requests	received	74
	delivered	74
Total hours of services		3,336.58

Note: All hours and miles of service include transit hours.

For details on other programs/activities see page 12

Arctic Average Response Time

In the Arctic Region, the average response time for providing route assistance services during summer 1995 was 12.85 hrs. (according to IODIS data). The average response time for the peak month (August) was 14.02 hrs. This figure is slightly higher when compared with the LOS target (10 hrs.).

Arctic Peak Month

According to IODIS data, the peak month (greatest amount of services) based on the number/hours of services provided was the month of August, during which 115 requests were handled; 12 of them were Ice Reconnaissance services, 53 R&D services, 9 Escorts, 5 Eastern Arctic Sealift and 36 Other Services (RSER, MNS & other activities). The number of hours to provide these services was 2026 hours.

Month	Number of services	Number of hours
July	37	1723.08
August	115	2026.09
September	53	901.22
October	6	660.82
November	5	305.18

Table 3 - Arctic Peak Area of Service

Based on IODIS data, the peak area (busiest area of service) in the Arctic for summer 1995, was the block commitment area of Parry Channel West, where 68 requests for assistance were handled. 15 of the requests were single escorts, 16 were ice reconnaissance services to support shipping, 13 were R&D services, 5 services of harbour breakout and 19 other services.

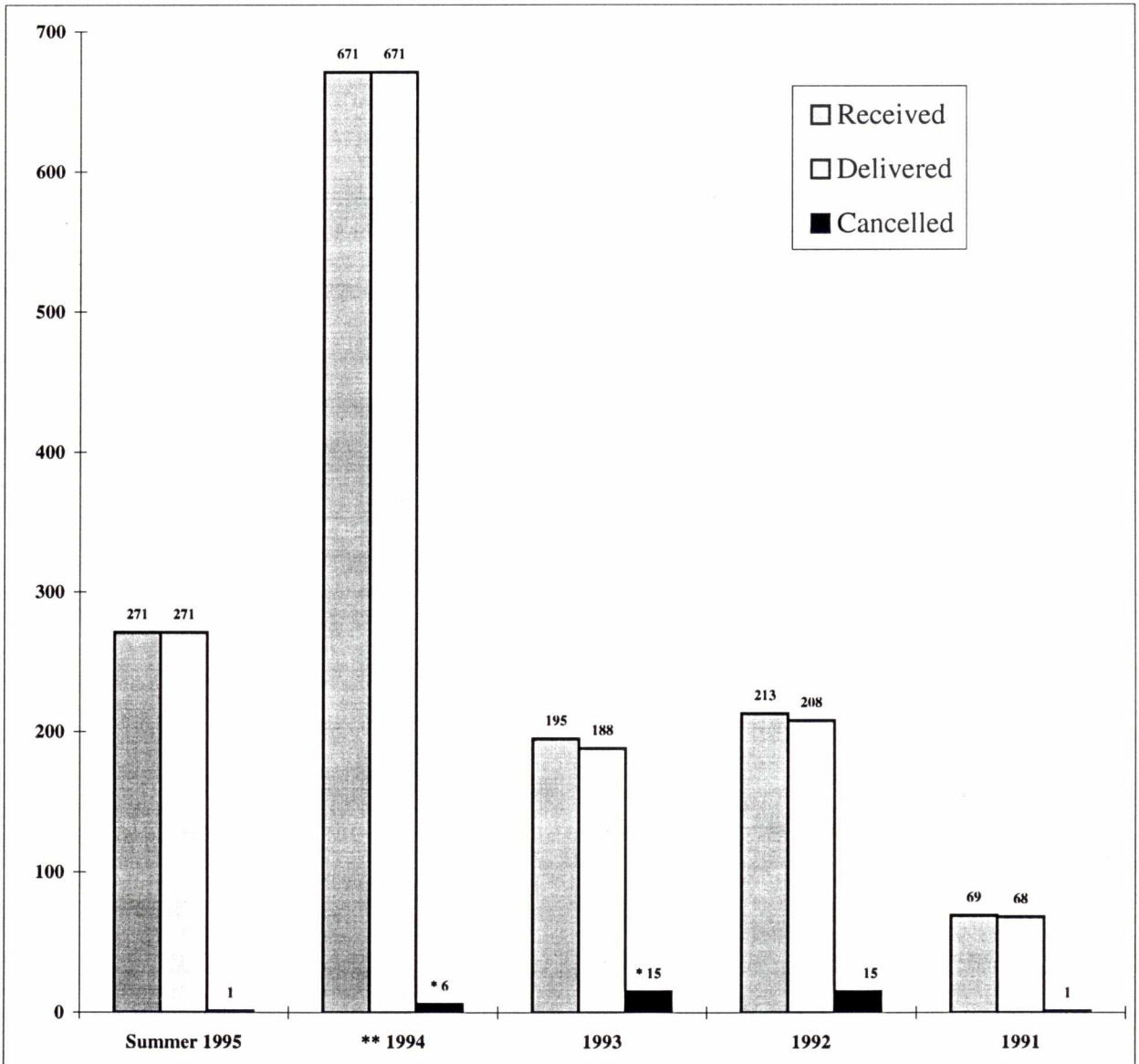
Block Commitment Area	Number of service
A01 - Hudson Bay	4
A02 - Foxe Bay	2
A03 - Hudson Strait	14
A04 - East Baffin	4
A05 - Parry Channel East	58
A06 - Parry Channel West	68
A07 - Pelly	1
A08 - Ellesmere	27
A09 - Victoria	4
A10 - Beaufort	30
A11 - Barrow	2
A14 - West Greenland	17
Total	231

See Annex A for maps of service areas

Chart 1 -Arctic Workload

The number of services received and delivered during summer 1995 was 271. Only one service was cancelled. Some of these numbers were obtained from the FAIS system since IODIS only captures the Icebreaking services.

	Number of requests		
	Received	Delivered	Cancelled
Summer 1995	271	271	1
** 1994	671	671	* 6
1993	195	188	* 15
1992	213	208	* 15
1991	69	68	1



* includes services that have been already started before cancellation

** includes all FAIS services that were not reported in IODIS

Note: Standby reports are not included

Chart 2 - Workload by mission statement (source FAIS, IODIS)

Among Icebreaking services, the demand for services supporting other government departments & agencies including research & development services was the highest in the Arctic with a total number of 104 services. The number of requests for escort services (route assistance) was 40 services. 42 Ice reconnaissance services were provided, 6 Eastern Arctic Sealift services and 74 other services/activities including RSER, M.N.S. and other activities.

Services delivered	Number of requests
Route Assistance (RA)	40
Ice Reconnaissance	42
Eastern Arctic Sealift	6
Support to Other Gov't depts.	104
Other Programs/ activities	* 74

* includes 5 harbour breakout services.

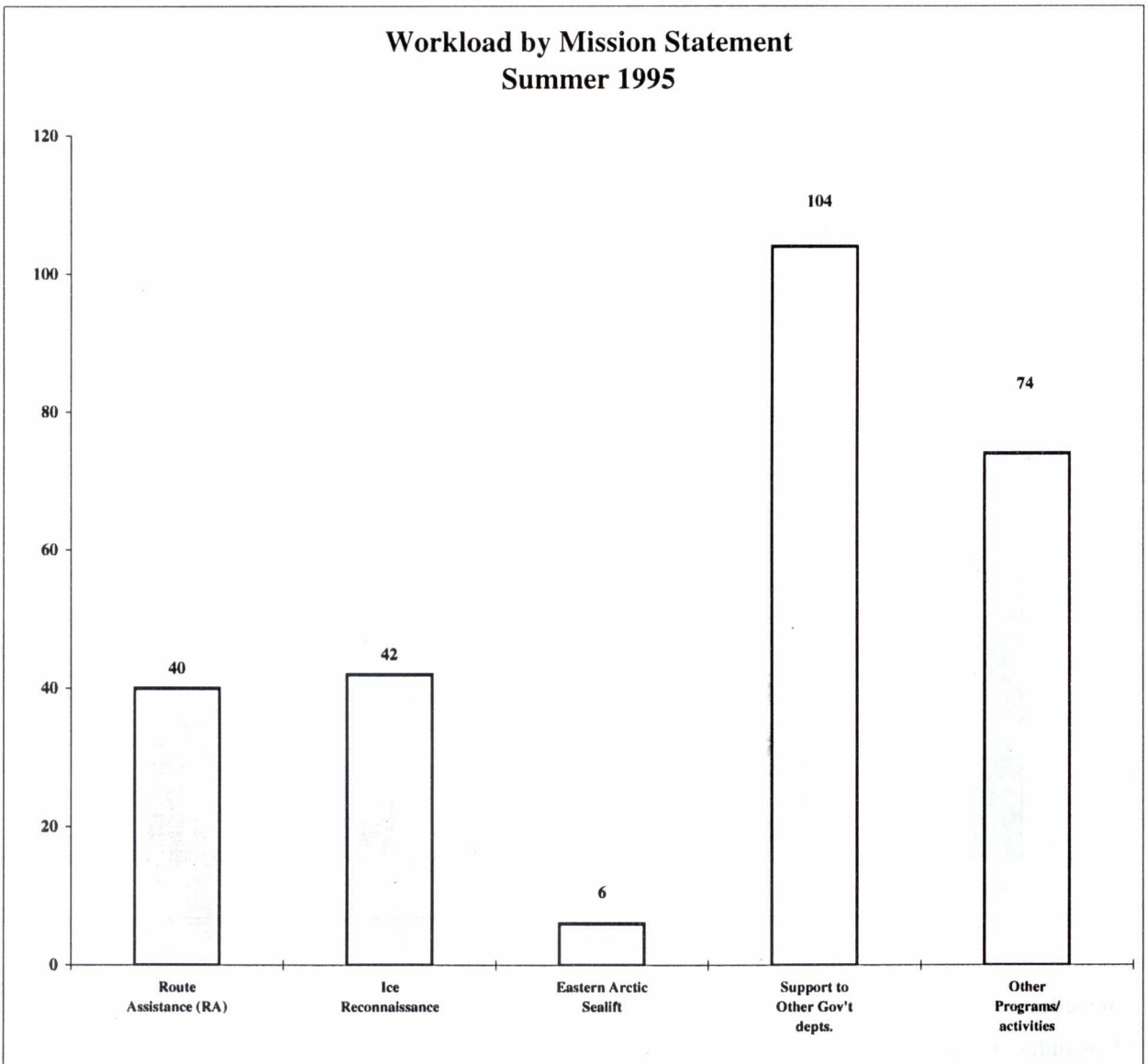


Chart 3 - Hours of Icebreaking Services Provided

The hours of services provided by our icebreakers during Summer 1995, consisted of 15% Transit to/from the Arctic, 22.91% Route Assistance, 20.86% Standby to provide Route Assistance services, 3.38% Eastern Arctic Sealift services, 0.65% Ice Reconnaissance, 13.17% Support to Other Government Departments & Agencies, and 23.99% represent Other Services/Activities (including RSER, support to MNS and other activities).

Services delivered	Number of Hours
Transit to/from Arctic	2096.00
Route Assistance (RA)	3,191.29
Standby for RA	2,906.48
Eastern Arctic Sealift	470.50
Ice Reconnaissance	90.95
Support to other gov't depart.	1,834.77
Other Services/Programs	*3355.06

* includes 18.48 hours of harbour breakout services

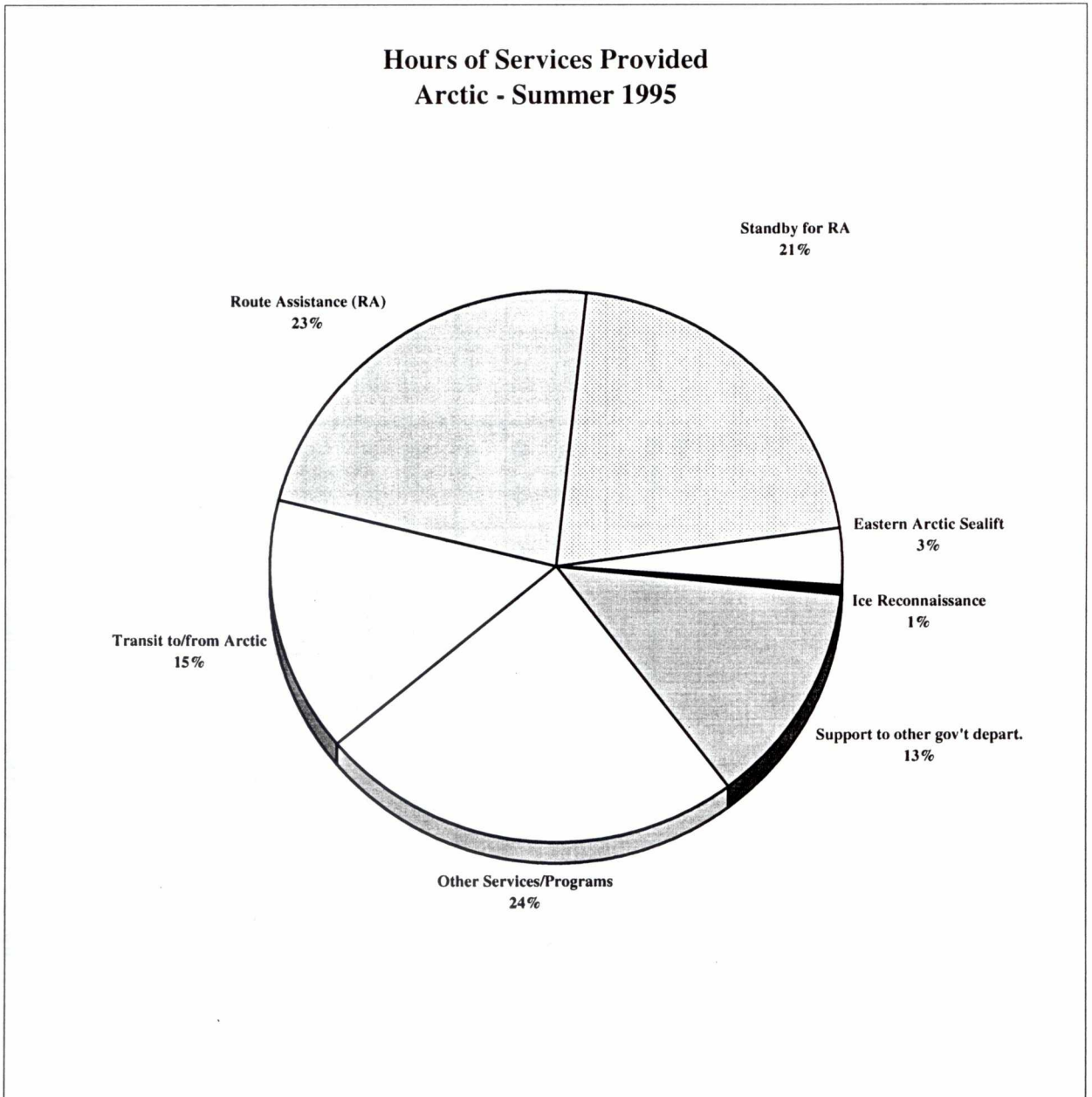


Table 4 below shows the workload by icebreaker during summer 1995. The icebreakers spent 15.03% of service hours transiting from their base Region to the Arctic and from the Arctic Region to their base Region, 22.88% providing Route Assistance services, 20.84% standing by to provide icebreaking services, 13.16% Support to Other Government Departments & Agencies, 3.37% on Eastern Arctic Sealift, 0.65% performing Ice Reconnaissance services, 24.06% on other services (mostly supporting Marine Navigation Services (MNS), a small percentage of service hours were spent on Rescue, Safety & Environmental Response (RSER) and other activities).

Table 4

OPERATIONAL OUTPUT BY VESSEL
Hours of Service by Mission Statement
Arctic Region, Summer 1995

Icebreaker	Type	Deployment dates (FAIS)		Transit to/from Arctic	Route Assistance	Standby	Ice Reconnaissance	Support to Other Gov't Depts.	Eastern Arctic Sealift	Other Activities **	Total Hours	Distance Run (NM)
LOUIS S. ST-LAURENT	1300	1-Aug-95	22-Nov-95	314.00	949.39	120.76	2.8	889.39	0	106.26	2382.60	12479
DES GROSEILLIERS	1200	28-Jun-95	27-Sep-95	445.00	104.33	58.00	0.55	439.00	95.08	726.90	1868.86	10082
PIERRE RADISSON	1200	10-Aug-95	6-Dec-95	201.00	546.00	822.72	35	120.58	133.42	248.17	2106.89	8134
SIR JOHN FRANKLIN	1200	10-Jul-95	29-Sep-95	154.00	477.48	942.00	15.6	119.00	0	113.58	1821.66	8638
HENRY LARSEN	1200	11-Jul-95	6-Oct-95	280.00	596.84	668.00	37	146.80	0	382.16*	2110.80	9534
TERRY FOX	—	21-Jun-95	12-Oct-95	193.00	413.25	295.00	0	0.00	242	39.00	1182.25	11662
ARCTIC IVIK	—	6-Jul-95	27-Sep-95	509.00	104.00	0.00	0	120.00	0	1739.00	2472.00	11913
TOTAL:				2,096.00	3,191.29	2,906.48	90.95	1,834.77	470.50	3,355.07	13945.06	72,442

* Includes 18.48 hours of Commercial Harbour Breakout and 147.00 hrs of support to foreign vessels making Arctic voyage

** Mostly Support to MNS services. Also includes SAR, RSER and other activities

Chart 4 - Workload by Icebreaker

Hours of Service by Icebreaker

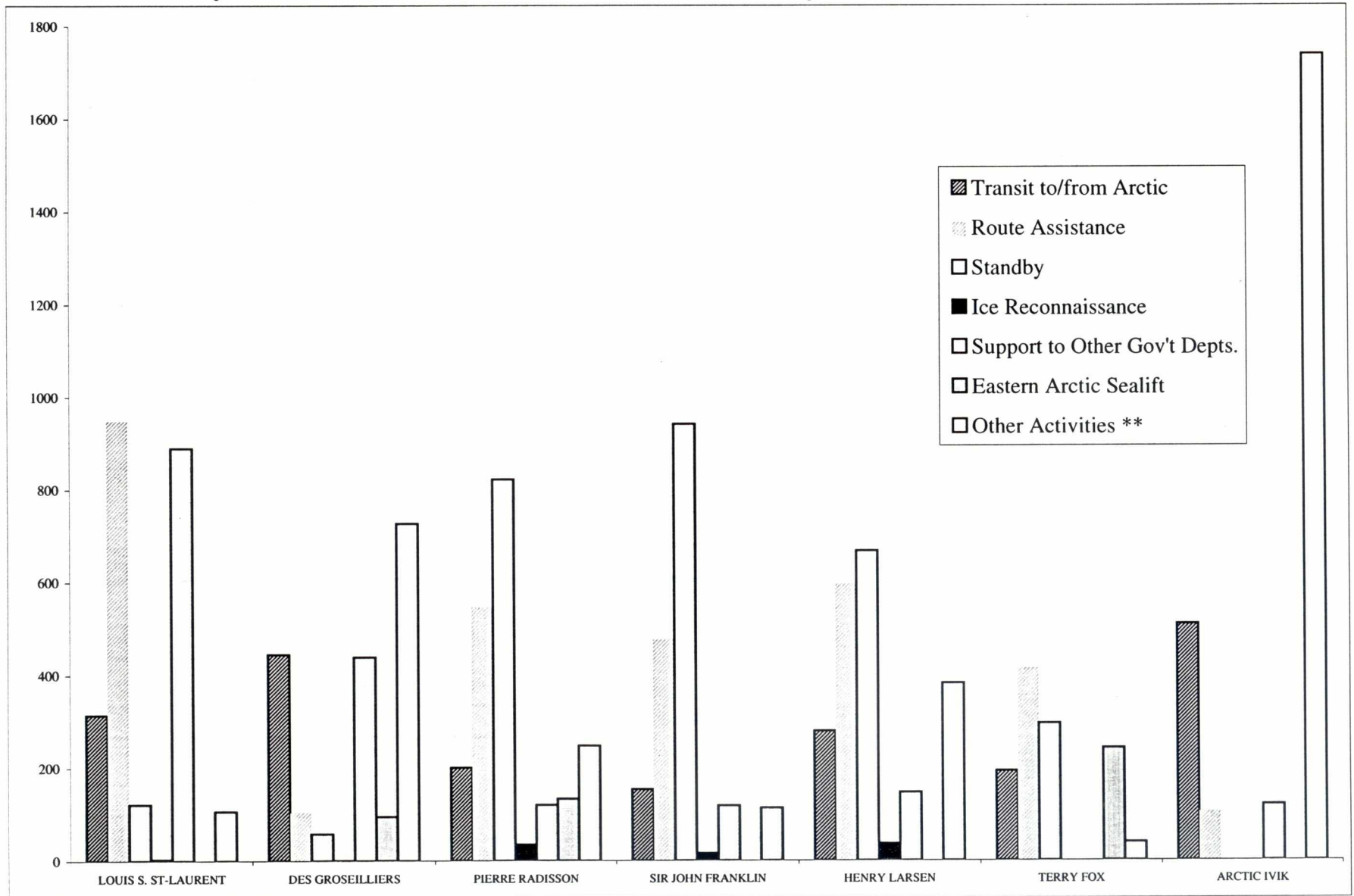


Chart 5 - Comparison of Vessel Escorts

During summer 1995, in the Arctic, most client vessels did not require assistance. Only 36 vessels were actually escorted; much lower than previous summers. This was attributable to an occasional moderate ice conditions, during which the client vessels took the opportunity to transit not needing assistance. Compared to other years, summer 1992 marked the highest number of vessel escorts in the Arctic Region with a total of 90 escorts, and 1988 had marked the lowest number with a total of 21 escorts.

Year	Number of escorts
1995	36
1994	56
1993	43
1992	90
1991	68
1990	59
1989	66
1988	21
1987	74
1986	50
1985	32

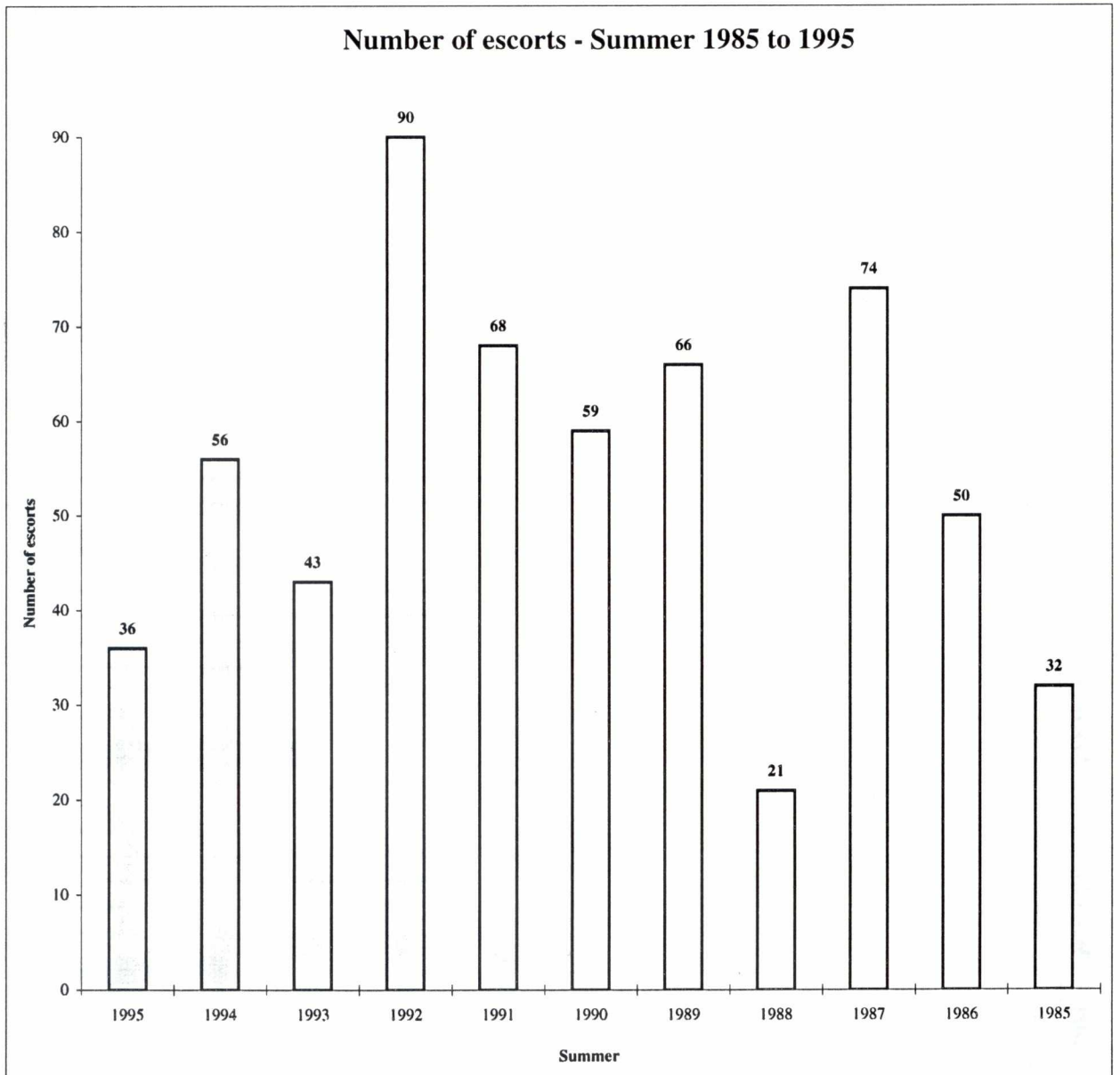
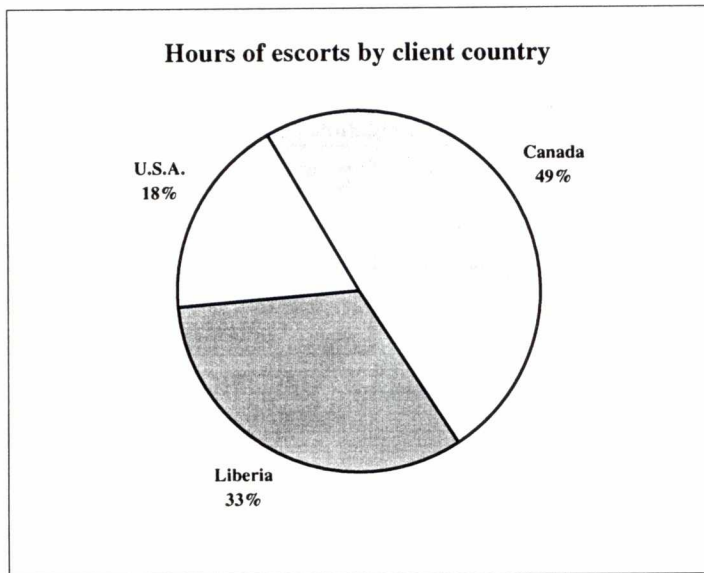


Chart 6 - Clients by Country of Registry



Based on Numbers/Hours of vessel escort, Canada is as usual, our biggest client.

Country of Registry	Times Assisted	Hours of Escorts
Canada	15	1311.99
Liberia	15	874.07
U.S.A.	4	477.48
Sweden	1	12.03

Table 7 - VESSELS ASSISTED - SUMMER 1995

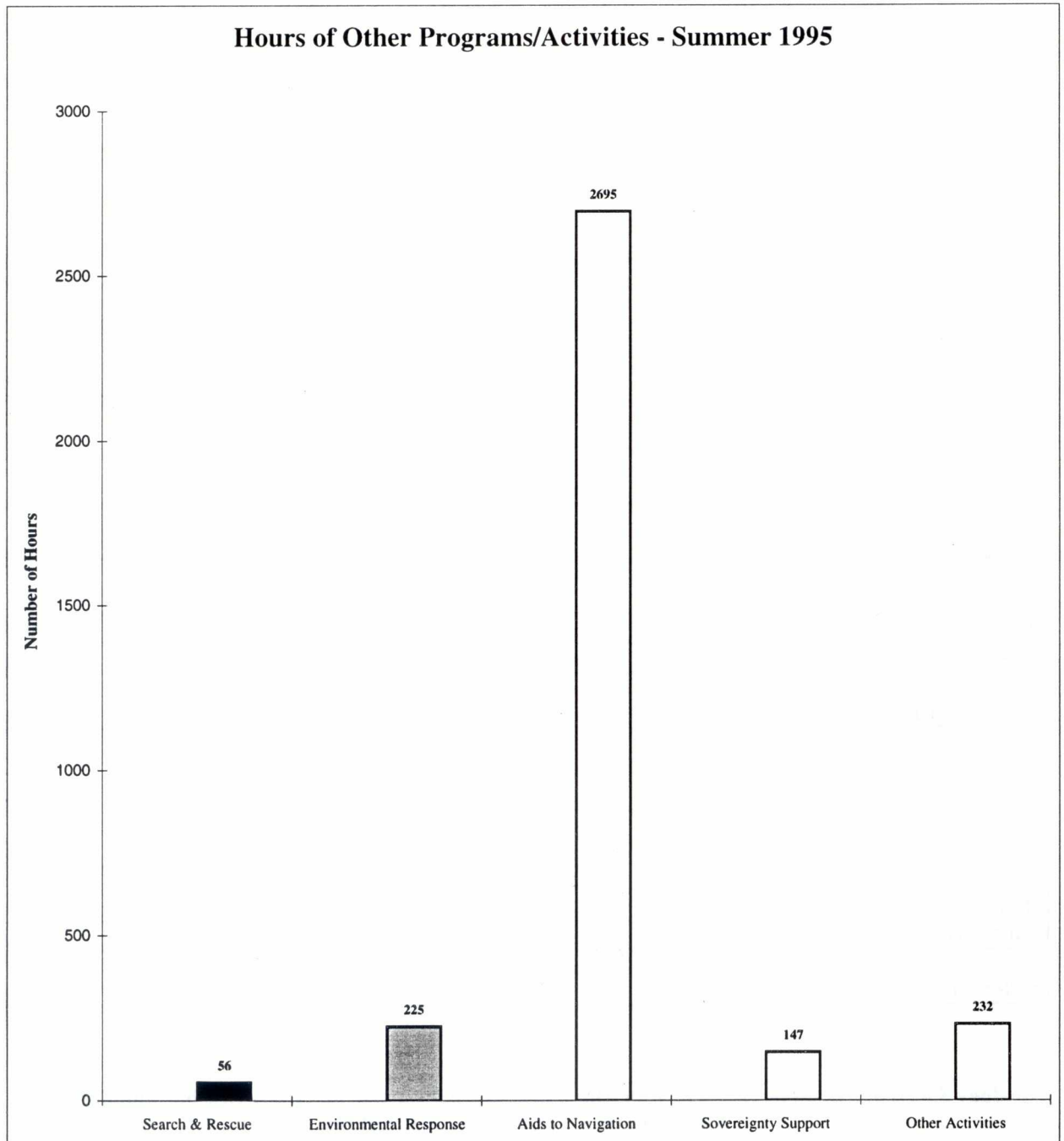
Name (type)	Owner	Flag	Times Assisted	Hours
ARCTIC KIGGIAK (barge)	Arctic Transportation Ltd.	Canada	2	276.82
ARCTIC VIKING (general cargo)	C & A Crosbie Shipping Ltd.	Canada	5	403.06
LADY FRANKLIN (general cargo)	C & A Crosbie Shipping Ltd.	Canada	3	184.31
ARCTIC (ore/bulk/oil)	Canarctic Shipping Company Ltd.	Canada	2	303.60
GREEN RIDGE (general cargo)	Central Gulf Lines Inc.	U.S.A.	2	296.55
FEDERAL BAFFIN (bulk carrier)	Fednav S.A.	Liberia	4	149.73
FEDERAL FRANKLIN (bulk carrier)	Fednav S.A.	Liberia	10	683.89
FEDERAL FUJI (bulk carrier)	Laker Ship Holdings S.A.	Liberia	1	40.45
ARCTIC SUN (tug)	Northern Transportation Company Ltd.	Canada	1	63.83
CATHERINE DESGAGNES (bulk carrier)	Transport Desgagnés Inc.	Canada	1	58.42
CECILIA DESGAGNES (general cargo)	Transport Desgagnés Inc.	Canada	1	21.95
UNITED POLARIS (tanker)	United Tankers	Sweden	1	12.03
RICHARD G. MATTHIESEN (tanker)	Wilmington Trust Co.	U.S.A.	2	180.93
Total			35	2675.57

Fednav S.A. is our first biggest client with a total hours of 833.62 hrs., and C&A Crosbie Shipping Ltd. is the second with a total hours of 587.37 hrs..

Chart 7 - Other Programs/Activities

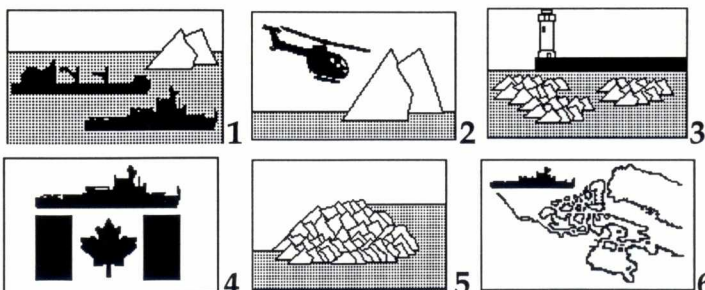
During summer 1995, the hours Support to MNS was the highest (80.33%) provided by the CCGS ARCTIC IVIK. The other activities included 1.67% Search & Rescue services, 6.71% of Rescue & Environmental Response, 4.38% of Sovereignty Support, and 6.90% of other activities.

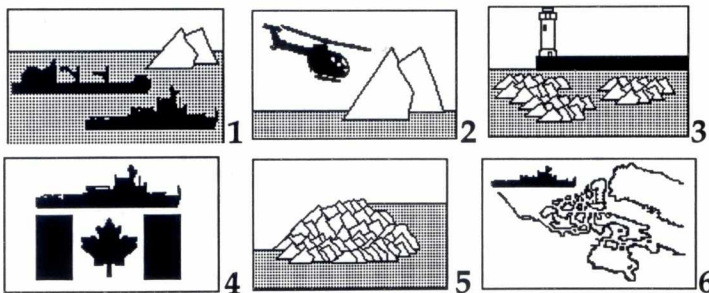
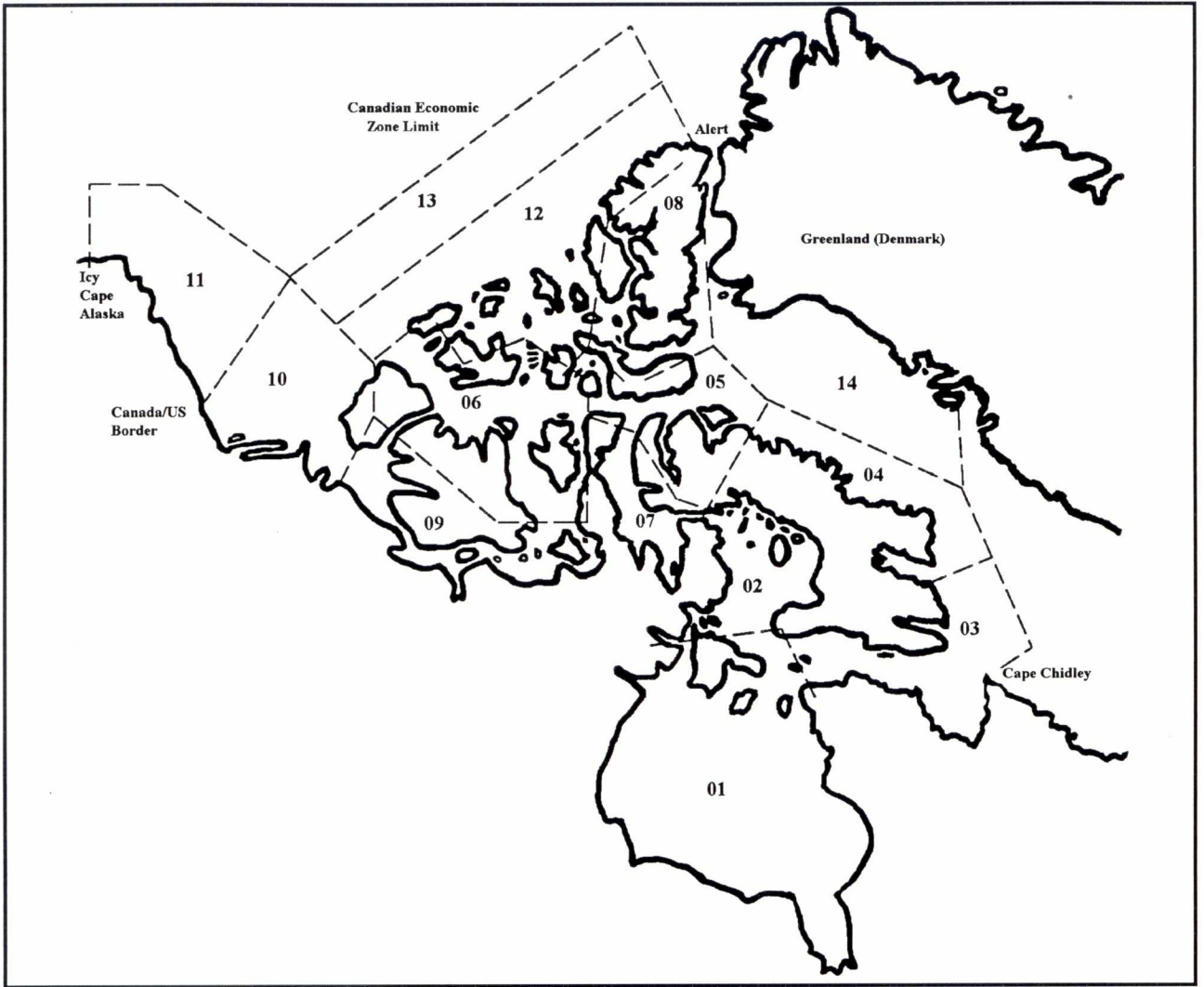
Service/Activity	Number of Hours
Search & Rescue	56.17
Environmental Response	225.16
Aids to Navigation	2695.07
Sovereignty Support	146.98
Other Activities	231.69
Total	3355.07

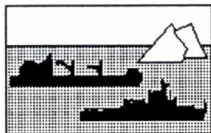


Canadian Arctic Block Commitments

#	Area Name	Description of Area	Period dd/mm	Service	Icebreaker Type	Service Hours (Average)	Service Hours (Severe)
A01	Hudson Bay	Hudson Bay and CASPR Zones 16 & 14	03/07 - 24/10	1,2,3,4,6	1200	216	576
A02	Foxe Basin	CASPR Zone 8 exc. Fury & Hecla Strait	20/08 - 15/09	1,2,3,4,6	1200	768	912
A03	Hudson Strait	CASPR Zone 15 inc Ungava Bay	03/07 - 21/10	1,2,3,4,6	1200	2,400	3,600
A04	East Baffin	CASPR Zones 10 & 9	14/08 - 18/09	1,2,3,4,6	1200	864	1,032
A05	Parry Channel East	CASPR Zone 13 & Wellington Channel to Penny Strait	10/05 - 10/11	1,2,3,4,6	1200	2,616	3,864
A06	Parry Channel West	CASPR Zone 2, Peel Sound, Franklin Strait, Byam Martin Channel north to Cameron Is. and all of M'Clure Strait	10/08 - 15/10	1,2,3,4,6	1300	912	1,032
A07	Pelly	CASPR Zone 5, Gulf of Boothia, Prince Regent Inlet, inc. Fury & Hecla Strait & Bellot Strait	12/08 - 13/10	1,2,3,4,6	1300	336	0
A08	Ellesmere	CASPR Zone 3, Jones Sound, the Lincoln Sea & approaches to Alert	24/08 - 05/09	1,2,3,4,6	1300	336	480
A09	Victoria	CASPR Zones 7 & 11	12/08 - 13/10	1,2,3,4,6	1200	1,584	1,824
A10	Beaufort	CASPR Zones 12 & 4 west to Canada/U.S. border	10/07 - 06/10	1,2,3,4,6	1200	1,464	1,896
A11	Barrow	Canada/U.S. border west to Icy Cape, Alaska	10/07 - 06/10	1,2,3,4,6	1300	288	1,344
A12	Sverdrup	CASPR Zone 1 N of M'Clure Strait, excluding Alert	10/08 - 20/09	1,2,3,4,6	1300+	0	0
A13	Arctic	The Cdn. Economic Zone N & W of the Queen Elizabeth Is.'s	15/08 - 15/09	1,2,3,4,6	1300+	0	0
A14	West Greenland	East Baffin Bay, Disko Is. to Arctic Circle at CASPR Zone 10 limits	05/07 - 15/08	1,2,3,4,6	1200	200	250



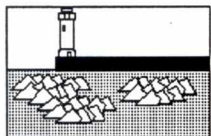


ICEBREAKING OPERATIONS:**Route Assistance**

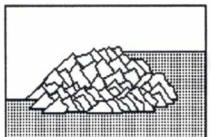
- escorting ships and organizing convoys to travel through ice-covered waters
- freeing beset vessels to allow them to proceed
- maintaining shipping channels and tracks
- standing by in areas where requests for route assistance are likely

Ice Routing and Information Services

- providing ice information to interested parties,
- undertaking ice reconnaissance activities to survey and forecast ice conditions
- providing ice information broadcasts and ice routing advice to ships requiring such information via Marine Communication and Traffic Services (MCTS) centres

Harbour Breakouts

- breaking out approaches and clearing ice from wharf faces of port terminals and facilities in commercial and fishing harbours
- assisting shipping within ports and at marine facilities by keeping ice clear of barge operations and the ship at anchor, and by streaming petroleum off-loading hoses
- helping fishing vessels gain access to and from their harbours
- breaking out harbours to facilitate ice clearance at the end of the ice season

Ice Management

- monitoring ice conditions and water levels in anticipation of flood risks
- preventing formation of ice jams and excessive build-up of ice in areas threatened by flooding where the federal government has traditionally accepted responsibility
- providing icebreaker services to facilitate ice flow during spring break-up
- standing by in areas prone to excessive ice build-up
- constructing and positioning ice booms and artificial ice islands to encourage the formation of an ice cover outside the main shipping channel in winter

Eastern Arctic Sealift

- coordinating the movement of cargo for the annual resupply of Northern settlements and military sites using contracted commercial carriers
- employing Coast Guard ships when this activity is not commercially viable for private carriers
- providing lightering services at Iqaluit, N.W.T.

Support To Other Government Departments and Agencies

- support a Canadian presence in the Arctic, to respond to specific sovereignty challenges identified by the Canadian Government
- aiding marine-related research and development
- supporting hydrographic and oceanographic survey in ice-covered waters
- providing assistance to other government departments and agencies

