CRUISE REPORT

NOAA Ship: SURVEYOR
Cruise No: SU95-03 Leg II
Area: Eastern Bering Sea Shelf
Itinerary: September 9 Depart Dutch Harbor, AK
September 20 Arrive Dutch Harbor, AK

Participating Organizations: NOAA Pacific Marine Environmental Laboratory (PMEL)
NOAA Alaska Fisheries Science Center (AFSC)
NOAA Southwest Fisheries Science Center (SFSC)
NOAA National Marine Mammal Laboratory (NMML)
University of California Irvine

Cruise Description and Objectives

Fisheries Oceanography Coordinated Investigations (FOCI) is a joint effort by scientists at PMEL and AFSC to understand the biological and physical processes which cause variability of recruitment to commercially valuable fish and shellfish stocks in Alaskan waters. The Bering Sea FOCI program is presently studying the effects of the biotic and abiotic environment on the early life stages of walleye pollock spawned in the Eastern Bering Sea. There are two aspects to the study: the acquisition and analysis of time-series data, and specific research topics to be covered on a cruise-by-cruise basis.

The objectives of this cruise were to:

(1) continue acquisition of long-term biological and physical time series;
(2) conduct an acoustic and trawl survey of juvenile walleye pollock for examining horizontal distributions in relation to hydrographic fronts;
(3) collect samples of juvenile pollock for studies on growth, feeding and condition;
(4) examine vertical distribution of juvenile pollock and zooplankton using the hull mounted acoustic sensor;
(5) examine the impact of midwater and demersal predators upon juvenile pollock;
(6) examine distribution and feeding of seabird and marine mammal predators in the vicinity of the Pribilof and Bogoslof Islands;
(7) deploy 7 Aanderaa current meter moorings for the EPA to monitor pollution transport around St. Paul Island.

1.0. PERSONNEL

1.1. Chief Scientist: Dr. Jim Overland, PMEL

1.2. Participating Scientists

Jim Overland (chief scientist)	M/USA	NOAA/PMEL
Leslie Lawrence	F/USA	NOAA/PMEL
Dan Dougherty	M/USA	NOAA/PMEL
Bill Rugen	M/USA	NOAA/AFSC
Steve Porter	M/USA	NOAA/AFSC
Roger Hewitt	M/USA	NOAA/SFSC
Rebecca Green	M/USA	NOAA/SFSC
Janice Waite	F/USA	NOAA/NMML
Jennifer Jolly	F/USA	NOAA/NMML
Libby Logerwell	F/USA	UCI
Keniss Haugen	F/USA	US NAVY
Cynthia French	F/USA	US NAVY

2.0. OPERATIONS

Number of ChlAM casts: 100
Number of chlorophyll casts: 53
Number of chlorophyll samples: 293
Number of CTD casts (with and without bottles): 100 CTDs (up to ST. 106)
Number of dedicated EK500 transect beginnings: 13 (up to ST. 106)
Number of dedicated EK500 transect endings: 13 +1 (ST. 107)
Number of Nutrient casts: 38
Number of Nutrient samples: 231
Number of nets preserved as QTOWF: 32
Number of sample jars used for formalin preservation: 36
Number of mooring deployments: 7
Number of dedicated TSG transect beginnings: 13 +1 = 14 total
Number of dedicated TSG transect endings: 3
Number of tows where Tuck1 was used: 16 (+1 failure)

During Leg II of this cruise, we coordinated many of our sampling activities with the R/V MILLER FREEMAN which rendezvoused with the SURVEYOR on 11 September in the vicinity of the Pribilof Islands. At this time, we began joint surveys of the areas around the Middle Shelf of the Bering Sea, the Pribilof Islands and Pribilof Canyon. During the 9 days of joint operations, both ships were in regular contact with each other throughout the day.

a) Seven Aanderaa current moorings were deployed near St. Paul Island at locations in Table 1. Mooring positions are diagramed in Fig. 1.

b) The SURVEYOR conducted CTD transects across the fronts, sampled acoustic scatterers with a Methot trawl, and collected sea bird specimens. MILLER FREEMAN collected larger scatterers using a MOCNESS and an anchovy trawl, and deployed the ROV.

The acoustic survey involves simultaneous hydroacoustic transects. The SURVEYOR proceeded first along the transect to conduct 120 and 200 kHz survey. The MILLER FREEMAN followed with 38 and 120 kHz survey.

The SURVEYOR retraced the trackline performing CTDs. The CTD transect stations were approximately 9 km apart, but closer spacing was needed in the area of the front. Locations are given in Table 2, followed by temperature and salinity cross-section plots.

c) Marine mammal and bird scientists made observations from the flying bridge. A bird collection station was taken south of St. George Island near Station 97.

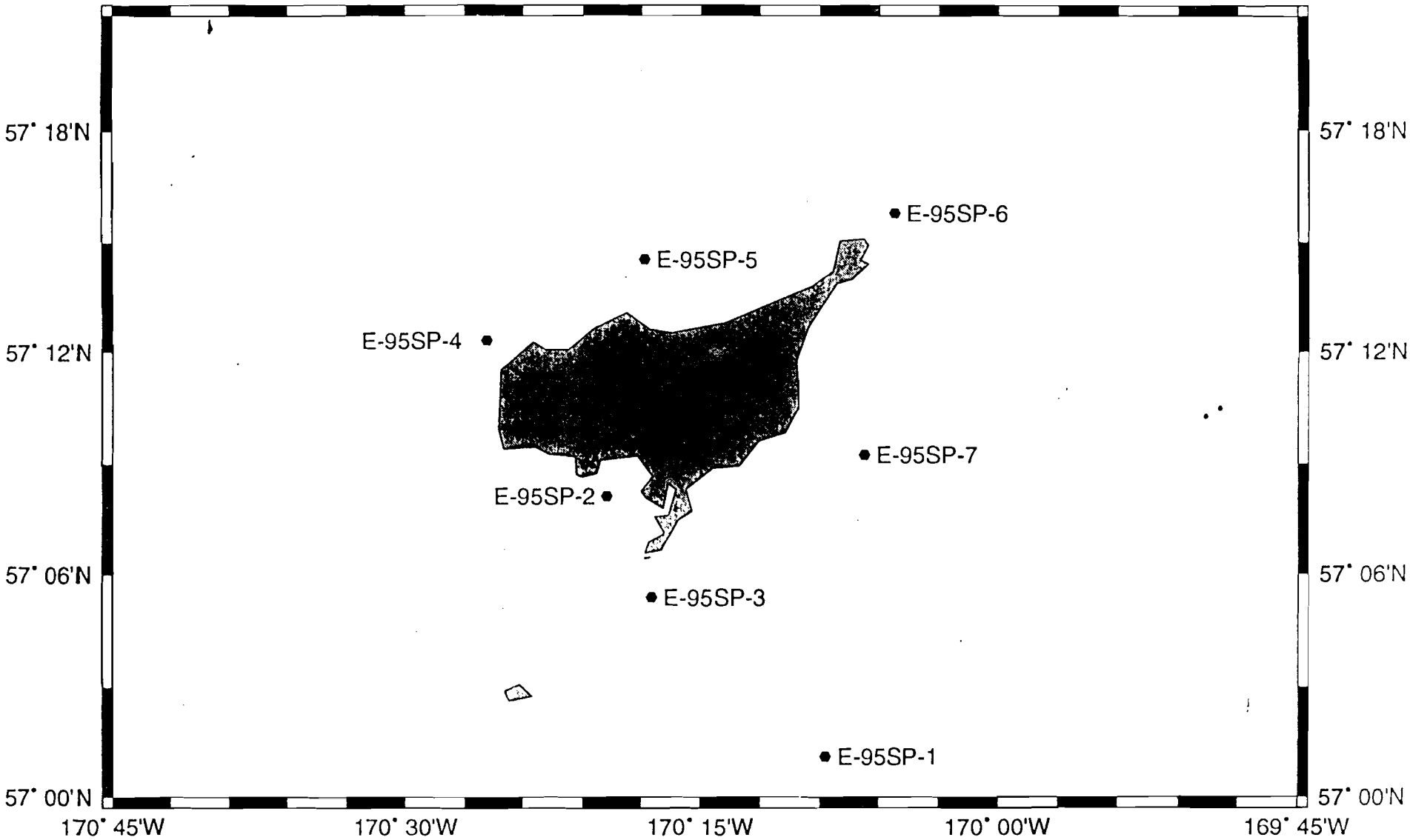
I would like to express my thanks to Captain McCallister and the crew of the NOAA Ship SURVEYOR on its (hopefully not) last NOAA cruise. The cruise was highly successful, enjoyable, and I was very impressed by the positive attitude and cooperativeness of everyone.

Current Meter Mooring Deployment

Mooring	Lat/Long	Time
1	57 01.11N 170 08.71W	256/0003
2	57 08.12N 170 19.80W	255/2136
3	57 05.36N 170 17.49W	255/2235
4	57 09.06N 170 25.88W	255/2044
5	57 14.52N 170 17.86W	256/0521
6	57 15.75N 170 05.22W	256/0314
7	57 09.22N 170 06.76W	256/0129

EPA Mooring Deployment Locations

September 12, 1995



CUT Sep 15 1995 11:50 Scale 1:281818 at 57°10.5'

Station Operations: SU95-03, Leg II

GMT Date	Time	Latitude (North)	Longitude (West)	Station	Event	Alternate Station	Operation
10Sep95	19:36	57° 16.40'	170° 12.10'	1	1	CTD001	CTD, Chlorophyll Samples
10Sep95	20:09	57° 18.40'	170° 10.00'	2	1	CTD002	CTD, Chlorophyll Samples
10Sep95	20:50	57° 20.80'	170° 08.70'	3	1	CTD003	CTD, Chlorophyll Samples
10Sep95	21:32	57° 23.10'	170° 06.50'	4	1	CTD004	CTD, Chlorophyll Samples
10Sep95	22:22	57° 25.90'	170° 03.20'	5	1	CTD005	CTD, Chlorophyll Samples
10Sep95	23:16	57° 29.20'	170° 01.10'	6	1	CTD006	CTD, Chlorophyll Samples
254 11Sep95	00:24	57° 34.40'	169° 57.10'	7	1	CTD007	CTD, Chlorophyll Samples
11Sep95	02:46	57° 16.00'	170° 12.00'	8	1	-	Start Acoustic Transect (Light)
11Sep95	06:06	57° 40.70'	169° 51.80'	8	2	-	End Acoustic Transect (Light)
11Sep95	06:41	57° 40.90'	169° 51.50'	9	1	CTD008	CTD, Chlorophyll Samples
11Sep95	07:35	57° 41.80'	169° 51.90'	9	2	-	Tucker Trawl
11Sep95	08:39	57° 37.70'	169° 54.20'	10	1	CTD009	CTD, Chlorophyll Samples
11Sep95	09:42	57° 32.30'	169° 58.50'	11	1	CTD010	CTD, Chlorophyll Samples
11Sep95	10:36	57° 27.50'	170° 01.80'	12	1	CTD011	CTD, Chlorophyll Samples
11Sep95	12:30	57° 16.30'	170° 12.10'	13	1	-	Start Acoustic Transect (Dark)
11Sep95	16:00	57° 41.00'	169° 51.60'	13	2	-	End Acoustic Transect (Dark)
11Sep95	18:44	57° 47.00'	170° 43.70'	14	1	CTD012	CTD, Chlorophyll/Nutrient Samples
11Sep95	20:03	57° 43.30'	170° 58.00'	15	1	CTD013	CTD, Chlorophyll/Nutrient Samples
11Sep95	22:30	57° 46.90'	170° 43.20'	16	1	-	Start Acoustic Transect (Light)
12Sep95	03:00	57° 32.30'	171° 45.80'	16	2	-	End Acoustic Transect (Light)
12Sep95	04:33	57° 25.90'	172° 11.50'	17	1	CTD014	CTD, Chlorophyll/Nutrient Samples
12Sep95	05:59	57° 30.00'	171° 56.80'	18	1	CTD015	CTD, Chlorophyll/Nutrient Samples
12Sep95	07:14	57° 33.20'	171° 41.50'	19	1	CTD016	CTD, Chlorophyll/Nutrient Samples
12Sep95	08:06	57° 33.00'	171° 42.30'	19	2	-	Tucker Trawl
12Sep95	09:31	57° 35.30'	171° 34.90'	20	1	CTD017	CTD, Chlorophyll/Nutrient Samples
12Sep95	10:35	57° 37.00'	171° 29.40'	21	1	CTD018	CTD, Chlorophyll/Nutrient Samples
12Sep95	11:03	57° 36.90'	171° 28.70'	22	1	-	Start Acoustic Transect (Dark)
12Sep95	14:12	57° 46.90'	170° 43.00'	22	2	-	End Acoustic Transect (Dark)
12Sep95	15:51	57° 40.20'	171° 13.50'	23	1	CTD019	CTD, Chlorophyll/Nutrient Samples
12Sep95	17:00	57° 40.10'	171° 12.60'	23	2	-	Tucker Trawl
12Sep95	20:45	57° 09.00'	170° 25.80'	24	1	E-95SP-4	Mooring Deployment
12Sep95	20:59	57° 08.40'	170° 25.60'	24	2	CTD020	CTD
12Sep95	21:35	57° 08.10'	170° 19.80'	25	1	E-95SP-2	Mooring Deployment
12Sep95	21:51	57° 07.80'	170° 19.90'	25	2	CTD021	CTD
12Sep95	22:36	57° 05.30'	170° 17.50'	26	1	E-95SP-3	Mooring Deployment
12Sep95	22:45	57° 05.30'	170° 17.50'	26	2	CTD022	CTD
13Sep95	00:11	57° 01.11'	170° 08.71'	27	1	E-95SP-1	Mooring Deployment
13Sep95	00:25	57° 00.90'	170° 08.60'	27	2	CTD023	CTD
13Sep95	01:29	57° 09.20'	170° 06.70'	28	1	E-95SP-7	Mooring Deployment
13Sep95	01:41	57° 09.30'	170° 06.70'	28	2	CTD024	CTD
13Sep95	03:15	57° 15.70'	170° 05.20'	29	1	E-95SP-6	Mooring Deployment
13Sep95	03:30	57° 13.60'	170° 04.70'	29	2	CTD025	CTD
13Sep95	04:02	57° 15.90'	170° 05.80'	29	3	CTD026	CTD
13Sep95	05:22	57° 14.52'	170° 17.86'	30	1	E-95SP-5	Mooring Deployment
13Sep95	05:38	57° 14.80'	170° 17.60'	30	2	CTD027	CTD
13Sep95	07:03	57° 16.20'	170° 11.90'	31	1	-	Start Acoustic Transect (Dark)
13Sep95	10:23	57° 40.90'	169° 51.70'	31	2	-	End Acoustic Transect (Dark)
13Sep95	10:49	57° 40.70'	169° 51.50'	32	1	CTD028	CTD, Chlorophyll/Nutrient Samples
13Sep95	11:56	57° 37.60'	169° 54.10'	33	1	CTD029	CTD, Chlorophyll/Nutrient Samples

Station Operations: SU95-03, Leg II

GMT Date	Time	Latitude (North)	Longitude (West)	Station	Event	Alternate Station	Operation
13Sep95	12:49	57° 34.40'	169° 56.50'	34	1	CTD030	CTD, Chlorophyll/Nutrient Samples
13Sep95	13:27	57° 33.70'	169° 54.60'	34	2	-	Tucker Trawl
13Sep95	14:34	57° 29.40'	170° 01.00'	35	1	CTD031	CTD, Chlorophyll/Nutrient Samples
13Sep95	15:34	57° 26.00'	170° 02.90'	36	1	CTD032	CTD, Chlorophyll/Nutrient Samples
13Sep95	16:33	57° 23.50'	170° 05.90'	37	1	CTD033	CTD, Chlorophyll/Nutrient Samples
13Sep95	17:07	57° 23.40'	170° 06.00'	37	2	-	Tucker Trawl
13Sep95	17:52	57° 20.90'	170° 08.10'	38	1	CTD034	CTD, Chlorophyll/Nutrient Samples
13Sep95	18:36	57° 18.30'	170° 09.50'	39	1	CTD035	CTD, Chlorophyll/Nutrient Samples
13Sep95	19:19	57° 18.50'	170° 10.10'	39	2	-	Tucker Trawl
13Sep95	20:24	57° 19.50'	170° 08.60'	40	1	CTD036	CTD, Chlorophyll/Nutrient Samples
13Sep95	21:08	57° 17.30'	170° 10.30'	41	1	CTD037	CTD, Chlorophyll/Nutrient Samples
13Sep95	21:41	57° 16.00'	170° 11.50'	42	1	CTD038	CTD, Chlorophyll/Nutrient Samples
13Sep95	22:21	57° 14.60'	170° 13.00'	43	1	CTD039	CTD, Chlorophyll/Nutrient Samples
13Sep95	23:28	57° 16.30'	170° 11.80'	44	1	-	Start Acoustic Transect (Light)
14Sep95	02:58	57° 41.50'	169° 51.40'	44	2	-	End Acoustic Transect (Light)
14Sep95	03:51	57° 48.50'	169° 44.90'	45	1	CTD040	CTD
14Sep95	04:56	57° 56.00'	169° 39.00'	46	1	CTD041	CTD
14Sep95	05:54	58° 03.10'	169° 33.20'	47	1	CTD042	CTD
14Sep95	07:07	58° 12.50'	169° 25.10'	48	1	CTD043	CTD
14Sep95	08:23	58° 21.40'	169° 12.20'	49	1	CTD044	CTD
14Sep95	17:08	57° 05.00'	170° 13.30'	50	1	-	Start Acoustic Transect (Light)
14Sep95	20:23	56° 41.70'	170° 36.80'	50	2	-	End Acoustic Transect (Light)
14Sep95	20:47	56° 41.60'	170° 37.00'	51	1	CTD045	CTD, Chlorophyll/Nutrient Samples
14Sep95	21:57	56° 47.20'	170° 31.20'	52	1	CTD046	CTD, Chlorophyll/Nutrient Samples
14Sep95	22:32	56° 47.50'	170° 30.90'	52	2	-	Tucker Trawl
15Sep95	00:10	56° 53.00'	170° 26.60'	53	1	CTD047	CTD, Chlorophyll/Nutrient Samples
15Sep95	00:55	56° 54.80'	170° 23.80'	54	1	CTD048	CTD, Chlorophyll/Nutrient Samples
15Sep95	01:45	56° 54.90'	170° 21.70'	54	2	-	Tucker Trawl
15Sep95	02:54	56° 56.80'	170° 21.60'	55	1	CTD049	CTD, Chlorophyll/Nutrient Samples
15Sep95	03:52	57° 00.00'	170° 18.70'	56	1	CTD050	CTD, Chlorophyll/Nutrient Samples
15Sep95	04:36	57° 00.10'	170° 18.20'	56	2	-	Tucker Trawl
15Sep95	05:28	57° 02.70'	170° 16.60'	57	1	CTD051	CTD, Chlorophyll/Nutrient Samples
15Sep95	06:19	57° 03.20'	170° 16.30'	57	2	-	Tucker Trawl
15Sep95	07:20	57° 05.70'	170° 13.30'	58	1	CTD052	CTD, Chlorophyll/Nutrient Samples
15Sep95	08:00	57° 04.10'	170° 15.20'	59	1	CTD053	CTD
15Sep95	08:44	57° 01.50'	170° 17.50'	60	1	CTD054	CTD
15Sep95	10:30	57° 05.30'	170° 13.90'	61	1	-	Start Acoustic Transect (Dark)
15Sep95	13:54	56° 41.70'	170° 36.90'	61	2	-	End Acoustic Transect (Dark)
15Sep95	23:23	57° 09.30'	169° 44.60'	62	1	CTD055	CTD, Chlorophyll Samples
16Sep95	00:30	57° 03.50'	169° 42.70'	63	1	-	Start Acoustic Transect (Light)
16Sep95	03:35	56° 37.20'	169° 35.10'	63	2	-	End Acoustic Transect (Light)
16Sep95	03:56	56° 37.20'	169° 35.10'	64	1	CTD056	CTD, Chlorophyll/Nutrient Samples
16Sep95	04:35	56° 38.40'	169° 34.70'	65	1	CTD057	CTD, Chlorophyll Samples
16Sep95	05:02	56° 38.50'	169° 34.80'	65	2	-	Tucker Trawl
16Sep95	06:35	56° 39.70'	169° 34.40'	66	1	CTD058	CTD, Chlorophyll/Nutrient Samples
16Sep95	07:47	56° 45.70'	169° 35.60'	67	1	CTD059	CTD, Chlorophyll/Nutrient Samples
16Sep95	08:52	56° 51.80'	169° 38.30'	68	1	CTD060	CTD, Chlorophyll/Nutrient Samples
16Sep95	11:34	56° 37.30'	169° 35.40'	69	1	-	Start Acoustic Transect (Dark)
16Sep95	15:00	57° 03.50'	169° 41.80'	69	2	-	End Acoustic Transect (Dark)

Station Operations: SU95-03, Leg II

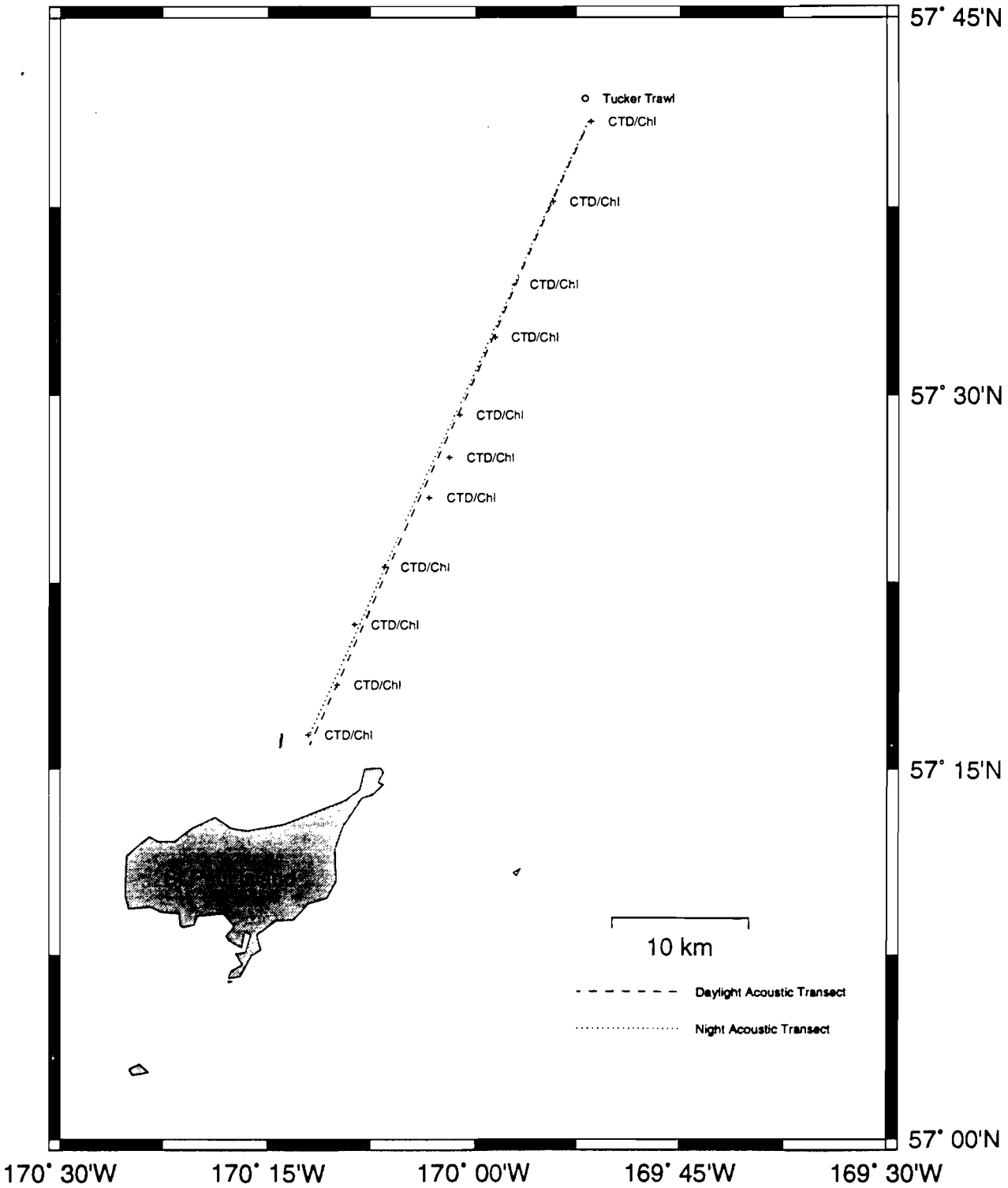
GMT Date	Time	Latitude (North)	Longitude (West)	Station	Event	Alternate Station	Operation
16Sep95	15:42	57° 08.30'	169° 45.10'	70	1	CTD061	CTD, Chlorophyll Samples
16Sep95	16:23	57° 12.10'	169° 45.30'	71	1	CTD062	CTD
16Sep95	17:19	57° 06.60'	169° 44.40'	72	1	CTD063	CTD
16Sep95	18:04	57° 03.60'	169° 43.00'	73	1	CTD064	CTD
16Sep95	18:45	57° 00.80'	169° 42.00'	74	1	CTD065	CTD
16Sep95	19:43	56° 57.40'	169° 40.80'	75	1	CTD066	CTD
16Sep95	20:24	56° 54.70'	169° 39.90'	76	1	CTD067	CTD
16Sep95	21:26	56° 48.40'	169° 37.40'	77	1	CTD068	CTD
16Sep95	22:21	56° 42.90'	169° 34.00'	78	1	CTD069	CTD
17Sep95	00:47	56° 32.80'	169° 29.90'	79	1	-	Start Acoustic Transect (Light)
17Sep95	02:52	56° 17.00'	169° 26.50'	79	2	-	End Acoustic Transect (Light)
17Sep95	03:17	56° 16.70'	169° 26.70'	80	1	CTD070	CTD, Chlorophyll/Nutrient Samples
17Sep95	04:20	56° 21.10'	169° 27.60'	81	1	CTD071	CTD, Chlorophyll/Nutrient Samples
17Sep95	05:11	56° 24.00'	169° 27.50'	82	1	CTD072	CTD, Chlorophyll/Nutrient Samples
17Sep95	05:57	56° 27.60'	169° 28.00'	83	1	CTD073	CTD, Chlorophyll/Nutrient Samples
17Sep95	06:40	56° 29.90'	169° 28.40'	84	1	CTD074	CTD, Chlorophyll/Nutrient Samples
17Sep95	07:26	56° 32.40'	169° 29.10'	85	1	CTD075	CTD, Chlorophyll/Nutrient Samples
17Sep95	07:55	56° 33.40'	169° 29.60'	86	1	CTD076	CTD, Chlorophyll/Nutrient Samples
17Sep95	09:03	56° 28.00'	169° 28.10'	87	1	-	Tucker Trawl
17Sep95	10:11	56° 21.10'	169° 27.00'	88	1	-	Tucker Trawl
17Sep95	10:53	56° 18.90'	169° 26.70'	89	1	CTD077	CTD
17Sep95	13:04	56° 17.00'	169° 26.50'	90	1	-	Start Acoustic Transect (Dark)
17Sep95	15:19	56° 33.20'	169° 29.90'	90	2	-	End Acoustic Transect (Dark)
17Sep95	15:48	56° 32.70'	169° 29.70'	91	1	CTD078	CTD
17Sep95	16:48	56° 28.60'	169° 29.10'	92	1	CTD079	CTD
17Sep95	17:36	56° 28.60'	169° 28.70'	93	1	CTD080	CTD
17Sep95	18:25	56° 26.00'	169° 28.00'	94	1	CTD081	CTD
17Sep95	19:16	56° 22.70'	169° 27.40'	95	1	CTD082	CTD
17Sep95	20:27	56° 15.20'	169° 26.70'	96	1	CTD083	CTD
18Sep95	00:40	56° 28.30'	169° 28.80'	97	1	-	Tucker Trawl
18Sep95	07:00	57° 16.20'	170° 12.20'	98	1	-	Start Acoustic Transect (Dark)
18Sep95	10:29	57° 41.00'	169° 51.50'	98	2	-	End Acoustic Transect (Dark)
18Sep95	10:51	57° 40.90'	169° 51.40'	99	1	CTD084	CTD
18Sep95	11:53	57° 34.30'	169° 56.70'	100	1	CTD085	CTD
18Sep95	12:16	57° 34.00'	169° 57.60'	100	2	-	Tucker Trawl
18Sep95	13:32	57° 29.40'	170° 01.20'	101	1	CTD086	CTD
18Sep95	14:55	57° 24.90'	170° 06.90'	102	1	-	Tucker Trawl
18Sep95	16:00	57° 25.80'	170° 03.60'	102	2	CTD087	CTD
18Sep95	17:21	57° 23.00'	170° 06.10'	103	1	CTD088	CTD
18Sep95	18:08	57° 20.70'	170° 09.60'	104	1	CTD089	CTD
18Sep95	18:43	57° 20.50'	170° 08.50'	104	2	-	Tucker Trawl
18Sep95	19:46	57° 18.10'	170° 10.90'	105	1	CTD090	CTD
18Sep95	20:30	57° 16.00'	170° 12.10'	106	1	CTD091	CTD
18Sep95	23:57	57° 16.20'	170° 12.00'	107	1	-	Start Acoustic Transect (Light)
19Sep95	03:30	57° 41.00'	169° 51.70'	107	2	-	End Acoustic Transect (Light)
19Sep95	04:35	57° 45.10'	169° 34.70'	108	1	CTD092	CTD
19Sep95	05:55	57° 49.20'	169° 17.50'	109	1	CTD093	CTD
19Sep95	07:21	57° 53.00'	169° 00.50'	110	1	CTD094	CTD
19Sep95	08:35	57° 57.50'	168° 43.50'	111	1	CTD095	CTD

Station Operations: SU95-03, Leg II

GMT Date	Time	Latitude (North)	Longitude (West)	Station	Event	Alternate Station	Operation
19Sep95	09:49	58° 01.70'	168° 26.30'	112	1	CTD096	CTD
19Sep95	11:12	58° 05.50'	168° 08.90'	113	1	CTD097	CTD
19Sep95	12:28	58° 09.60'	167° 51.60'	114	1	CTD098	CTD
19Sep95	13:41	58° 13.80'	167° 34.70'	115	1	CTD099	CTD
19Sep95	14:58	58° 18.10'	167° 17.60'	116	1	CTD100	CTD

Line A Stations

September 10-11, 1995



Nov 20 1995 08:57:08
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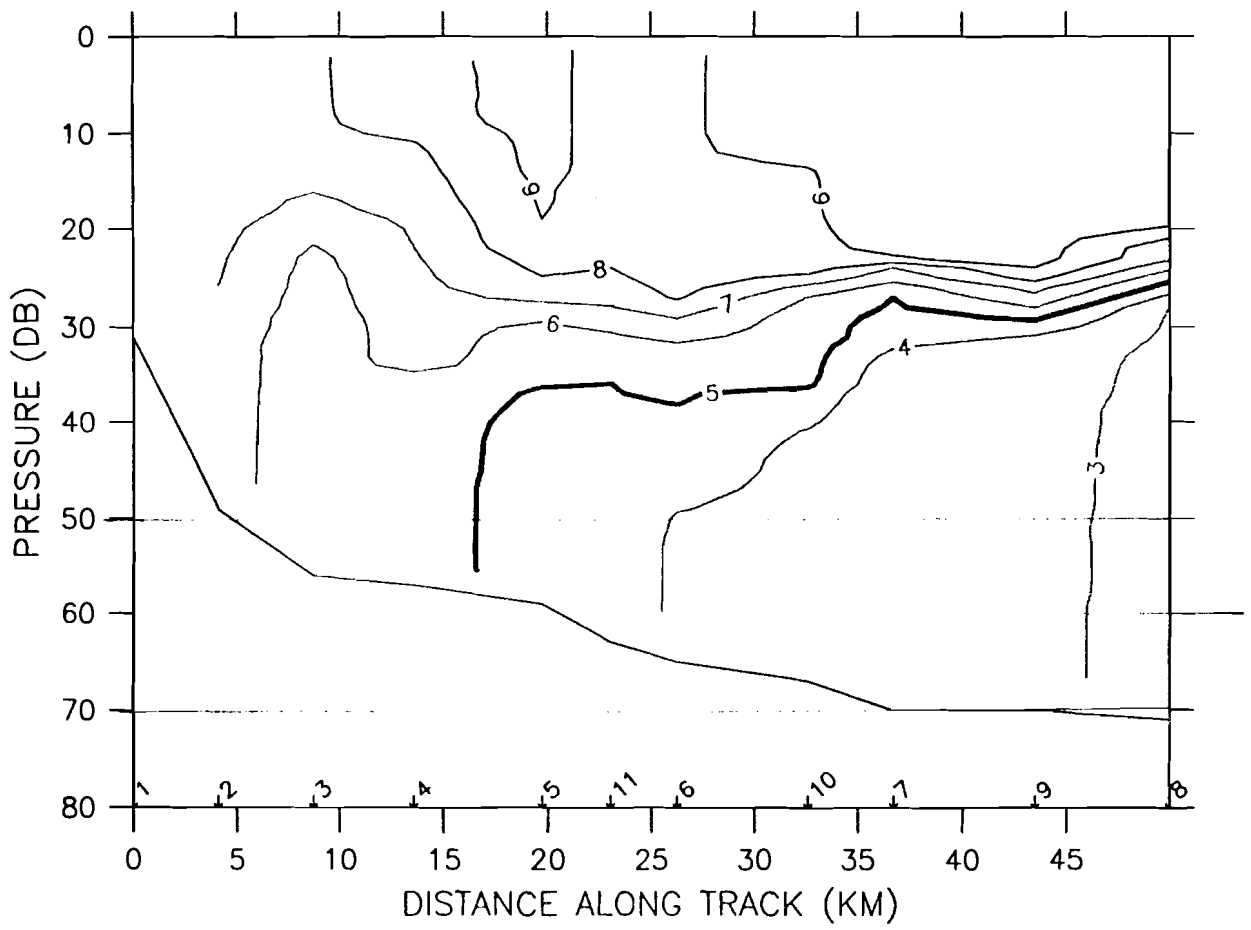
57.5°N 170.0°W TEMPERATURE (C)

10 – 11 Sep 95



57.3°N 170.2°W to 57.7°N 169.9°W

Nov 20 1995 08:57:07
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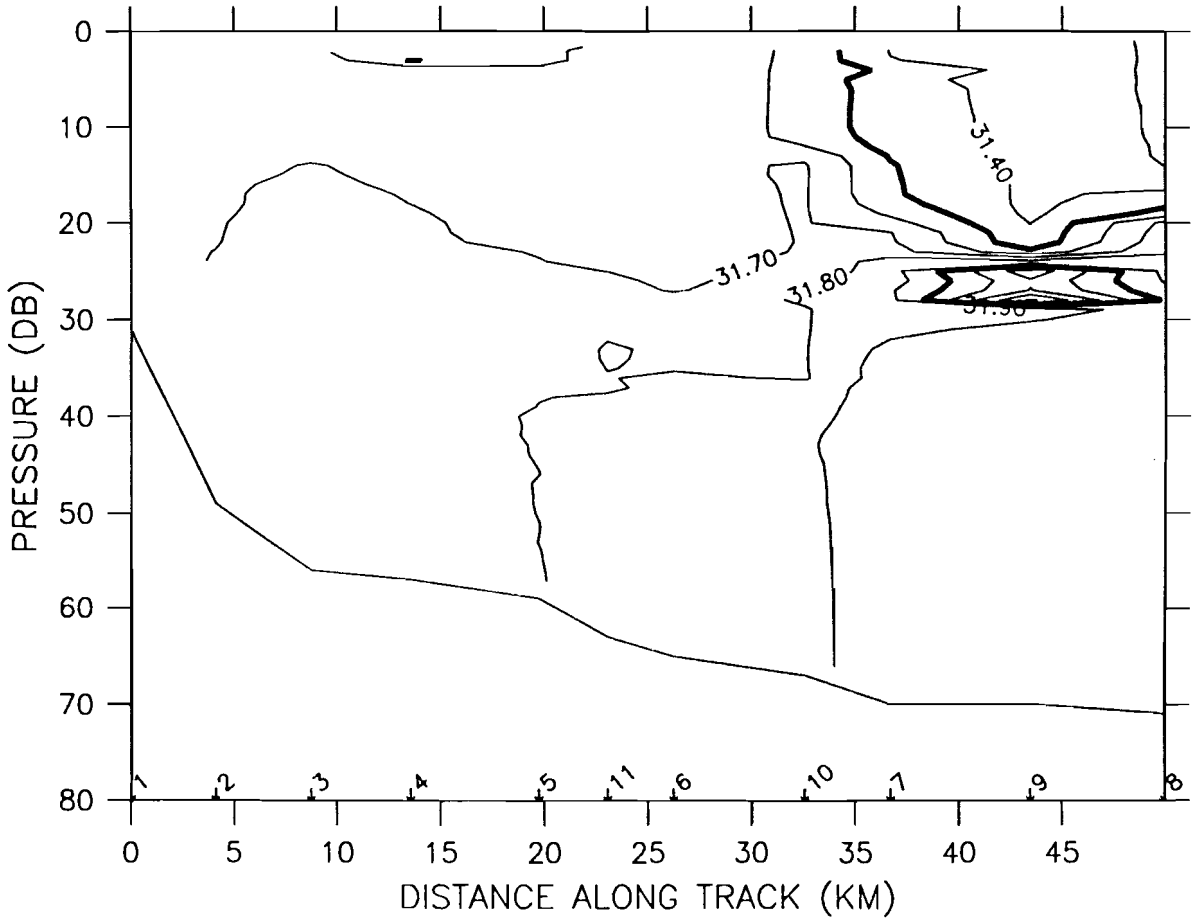
57.5°N 170.0°W SALINITY (PSU)

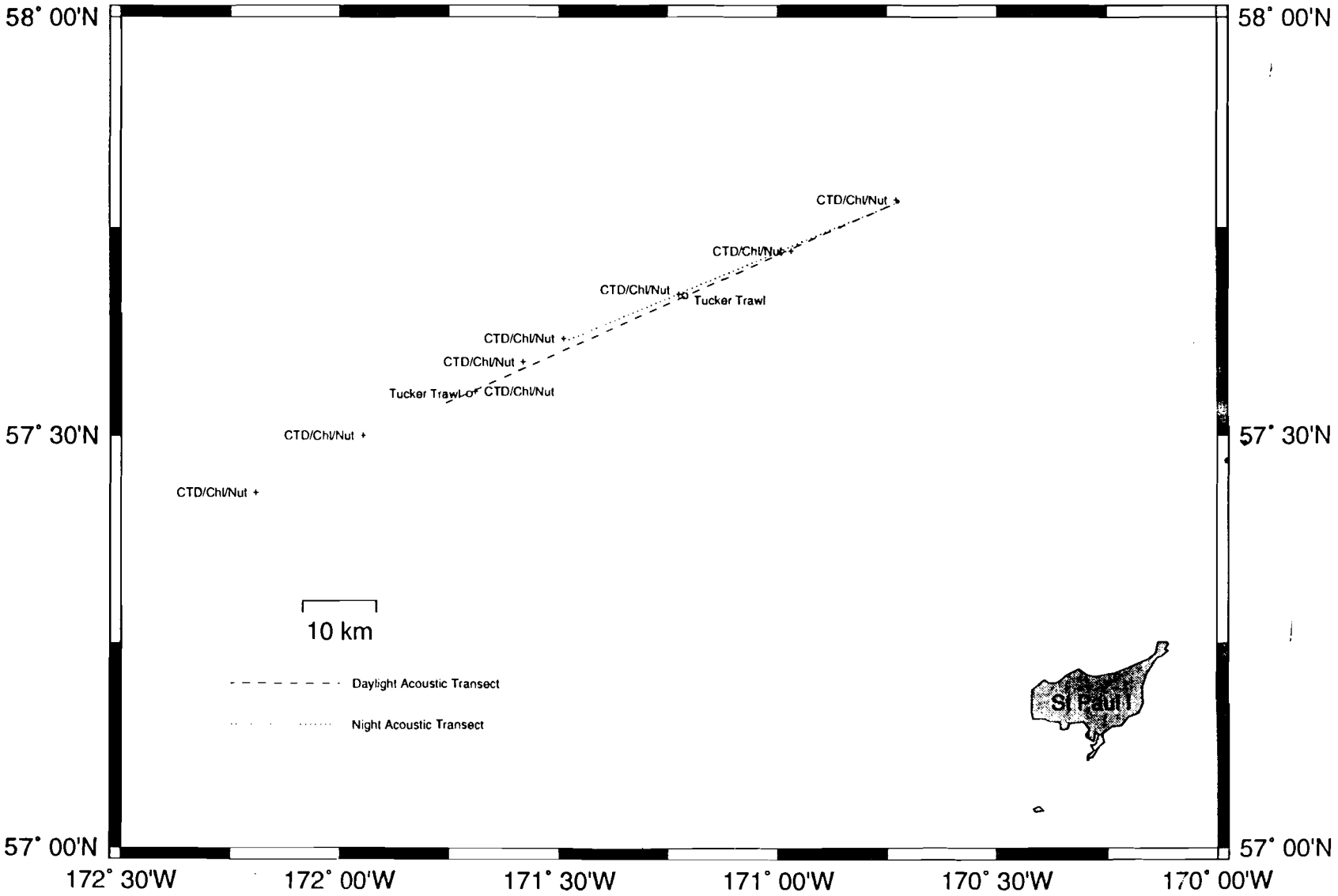
10 – 11 Sep 95



57.3°N 170.2°W to 57.7°N 169.9°W

Line L Stations

September 11-12, 1995

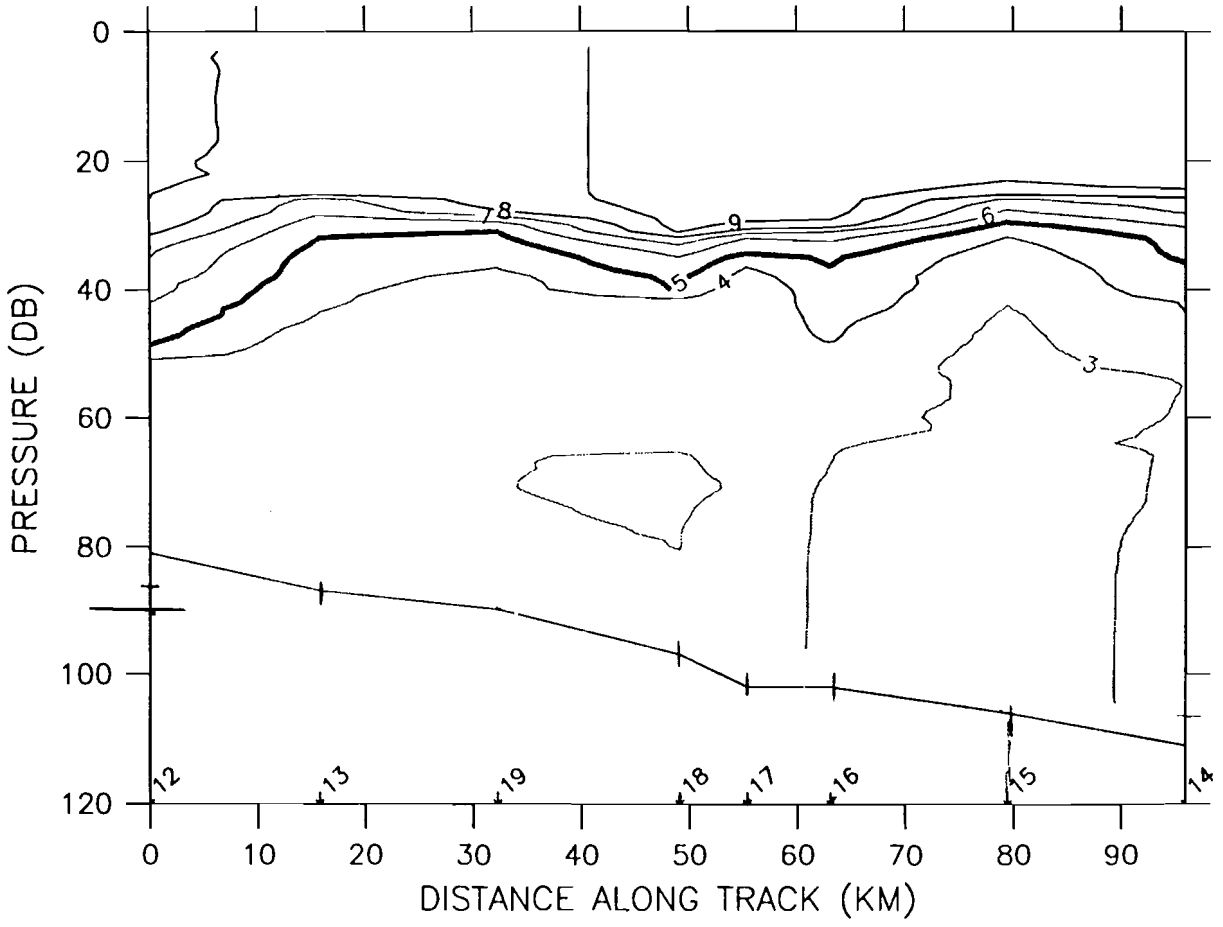


Nov 20 1995 08:58:45
EPIC: line_I.cdf

57.6°N 171.5°W TEMPERATURE (C)

11 – 12 Sep 95

60

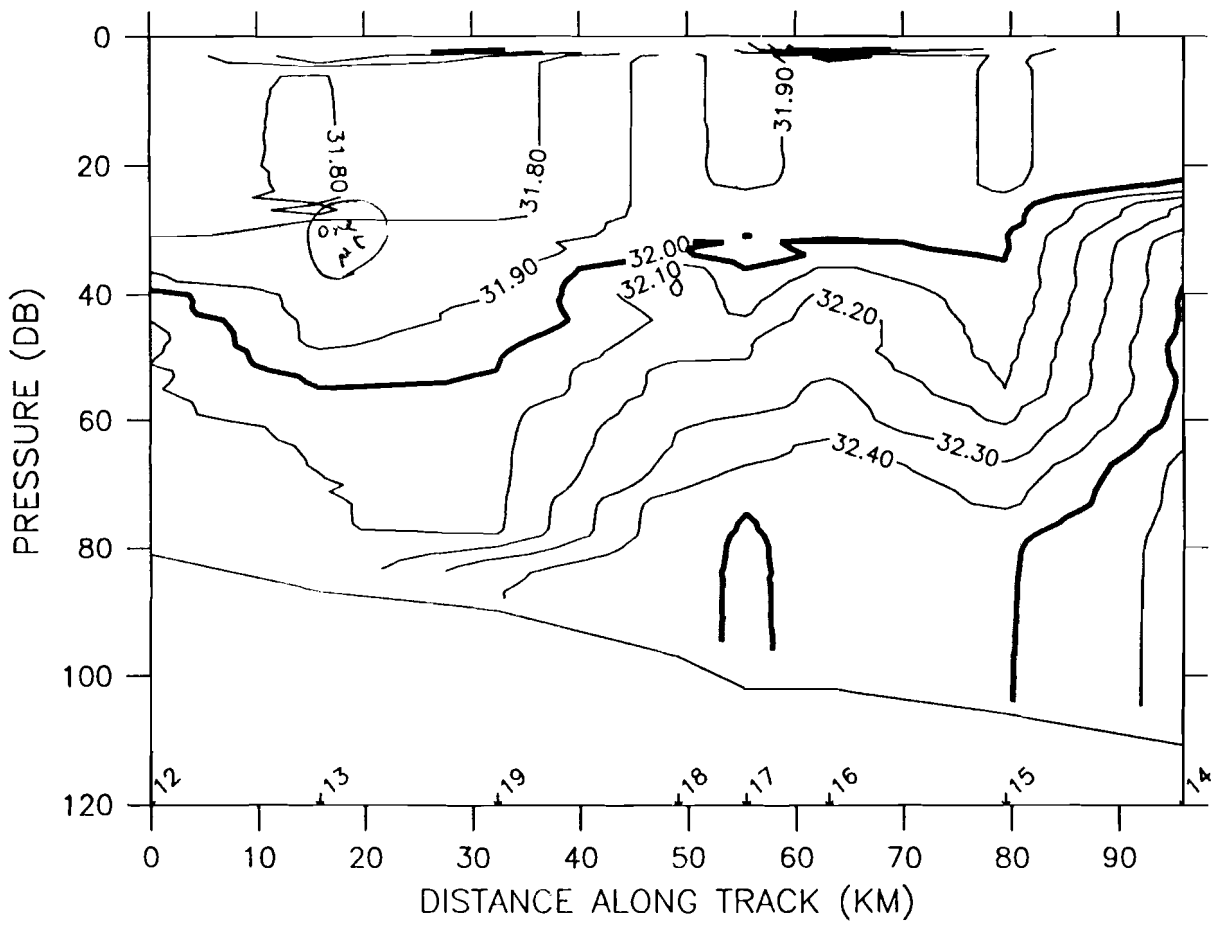


57.8°N 170.7°W to 57.4°N 172.2°W

Nov 20 1995 08:58:45
EPIC: line_l.cdf

57.6°N 171.5°W SALINITY (PSU)

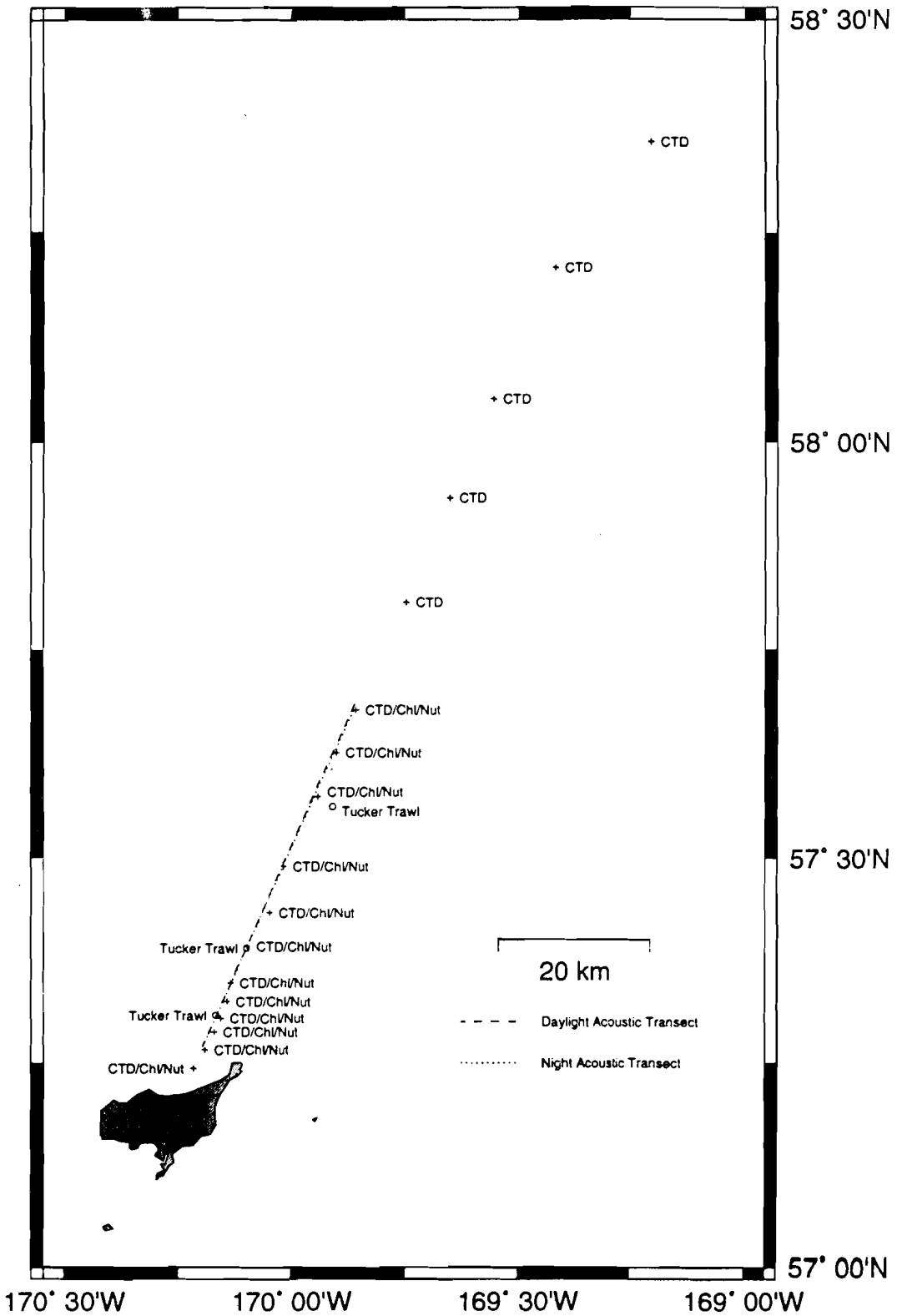
11 – 12 Sep 95



57.8°N 170.7°W to 57.4°N 172.2°W

Line A Stations

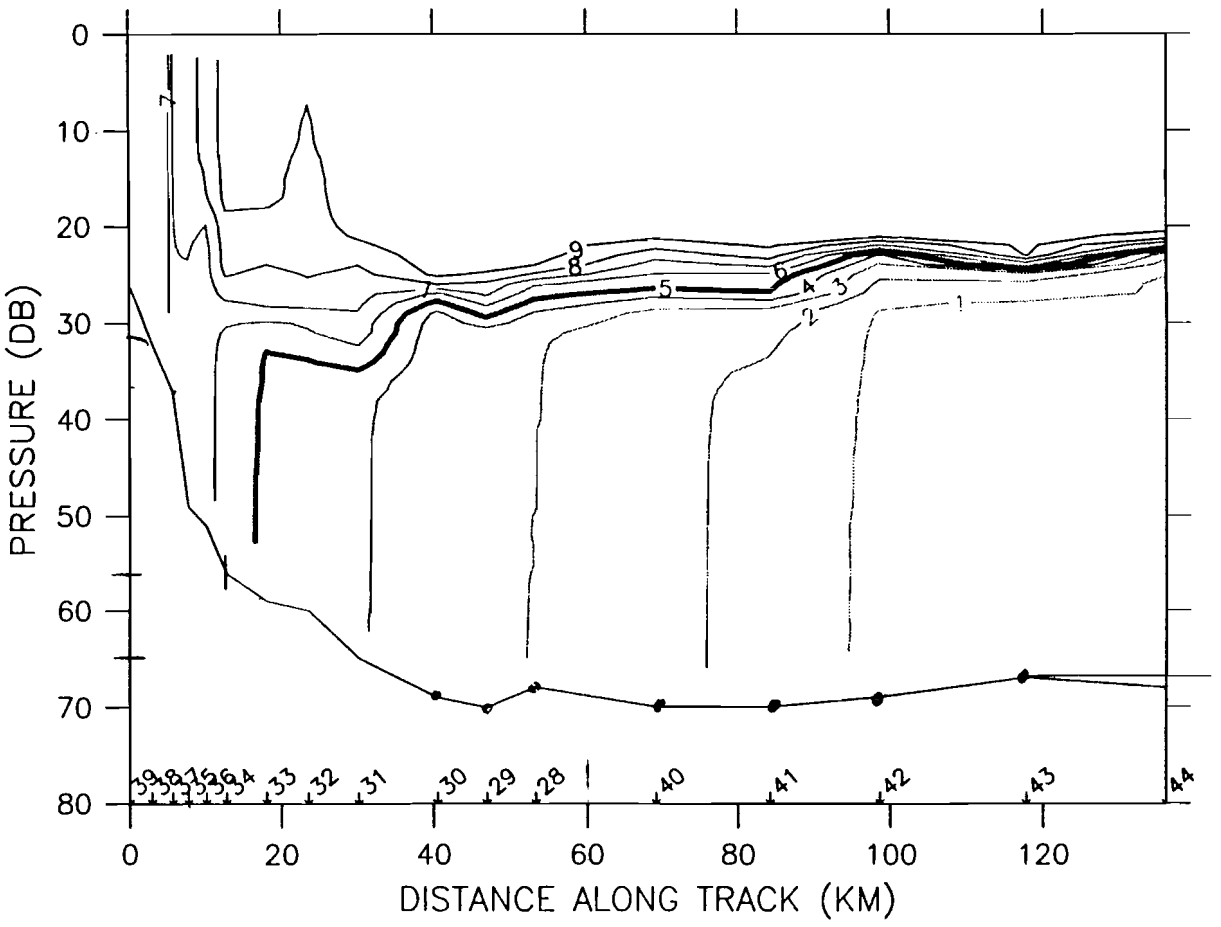
September 13-14, 1995



Nov 20 1995 08:57:23
EPIC: line_a2.cdf

57.6°N 169.9°W TEMPERATURE (C)

13 – 14 Sep 95

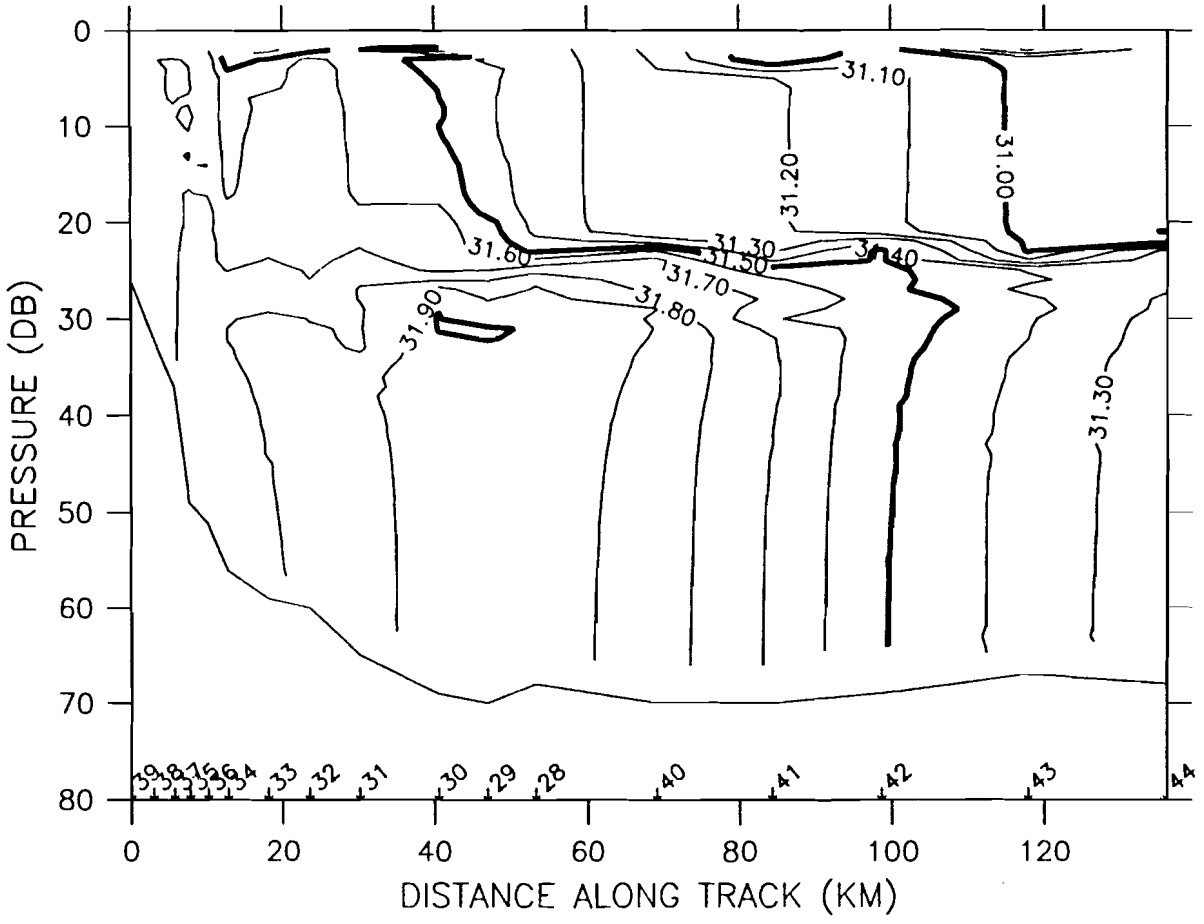


57.2°N 170.2°W to 58.4°N 169.3°W

Nov 20 1995 08:57:22
EPIC: line_a2.cdf

57.6°N 169.9°W SALINITY (PSU)

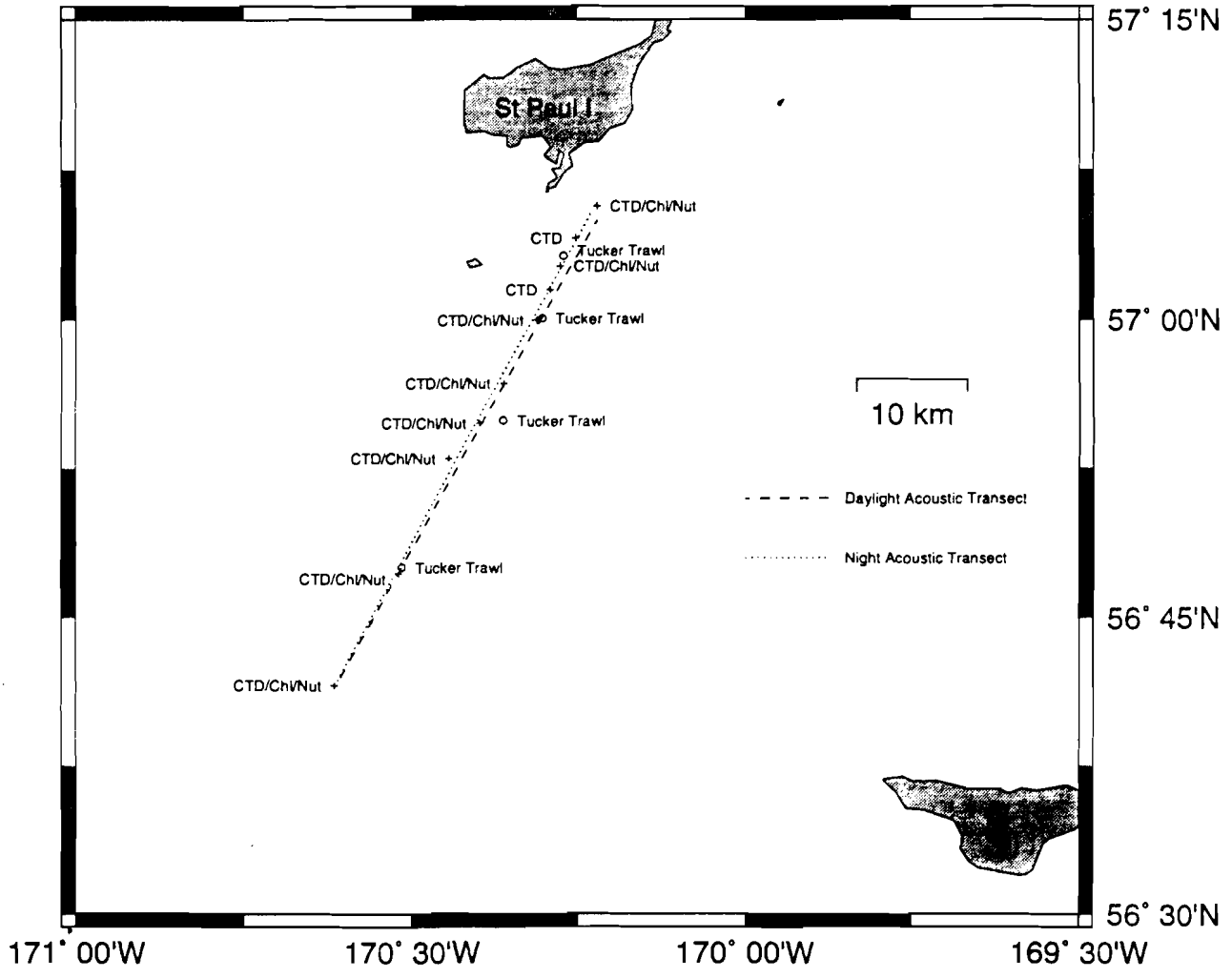
13 – 14 Sep 95



57.2°N 170.2°W to 58.4°N 169.3°W

Line B Stations

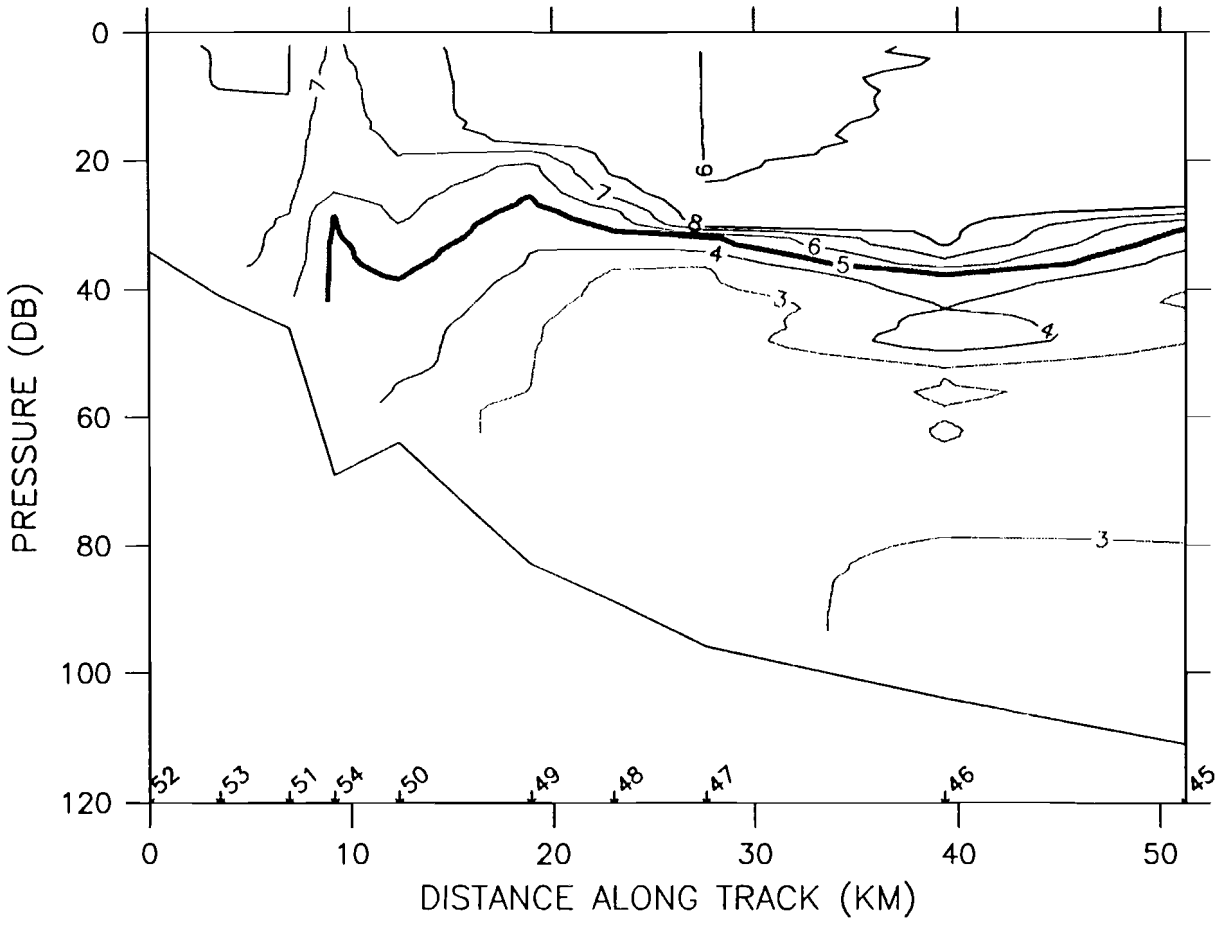
September 14-15, 1995



Nov 20 1995 08:57:59
EPIC: line_b.cdf

56.9°N 170.4°W TEMPERATURE (C)

14 – 15 Sep 95

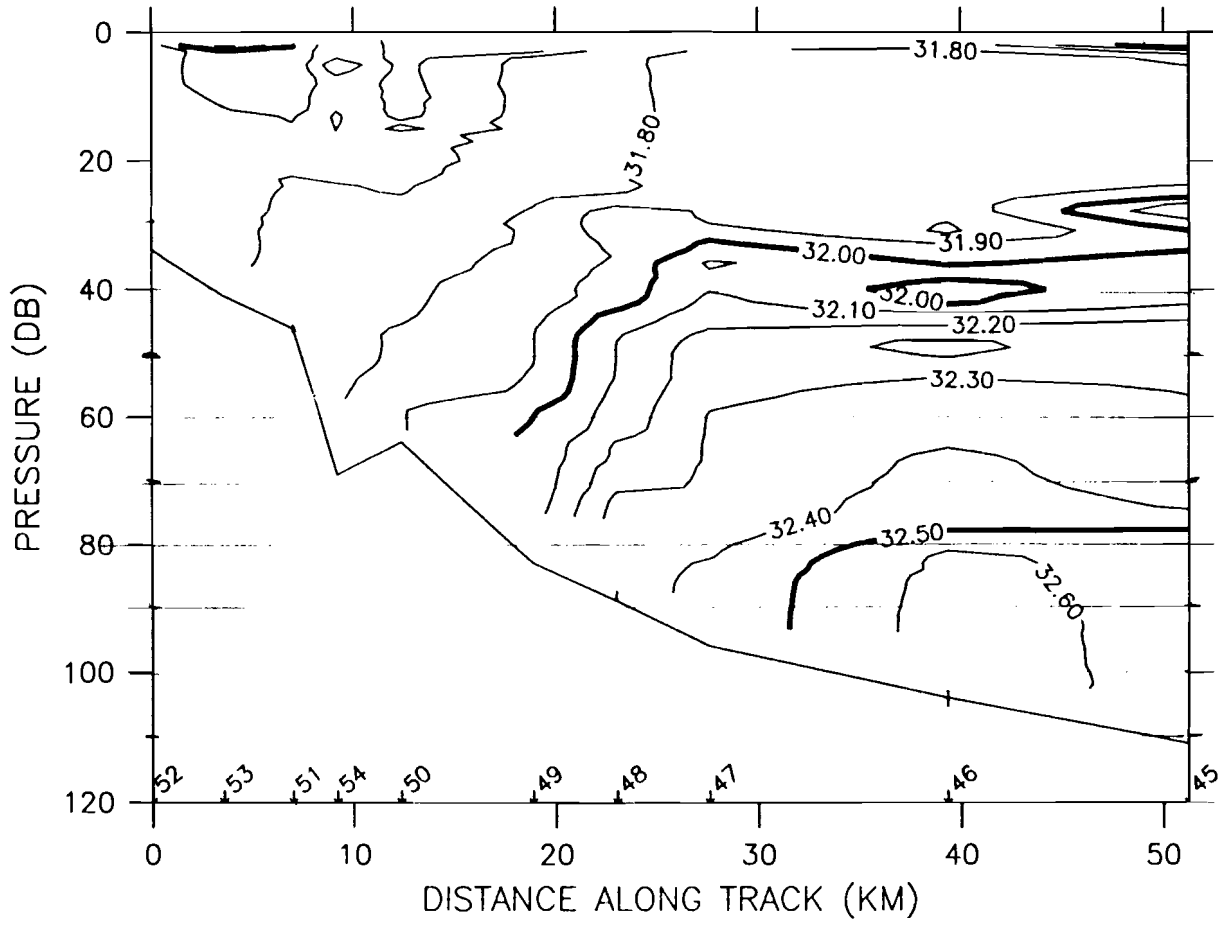


57.1°N 170.2°W to 56.7°N 170.6°W

Nov 20 1995 08:57:59
EPIC: line_b.cdf

56.9°N 170.4°W SALINITY (PSU)

14 – 15 Sep 95



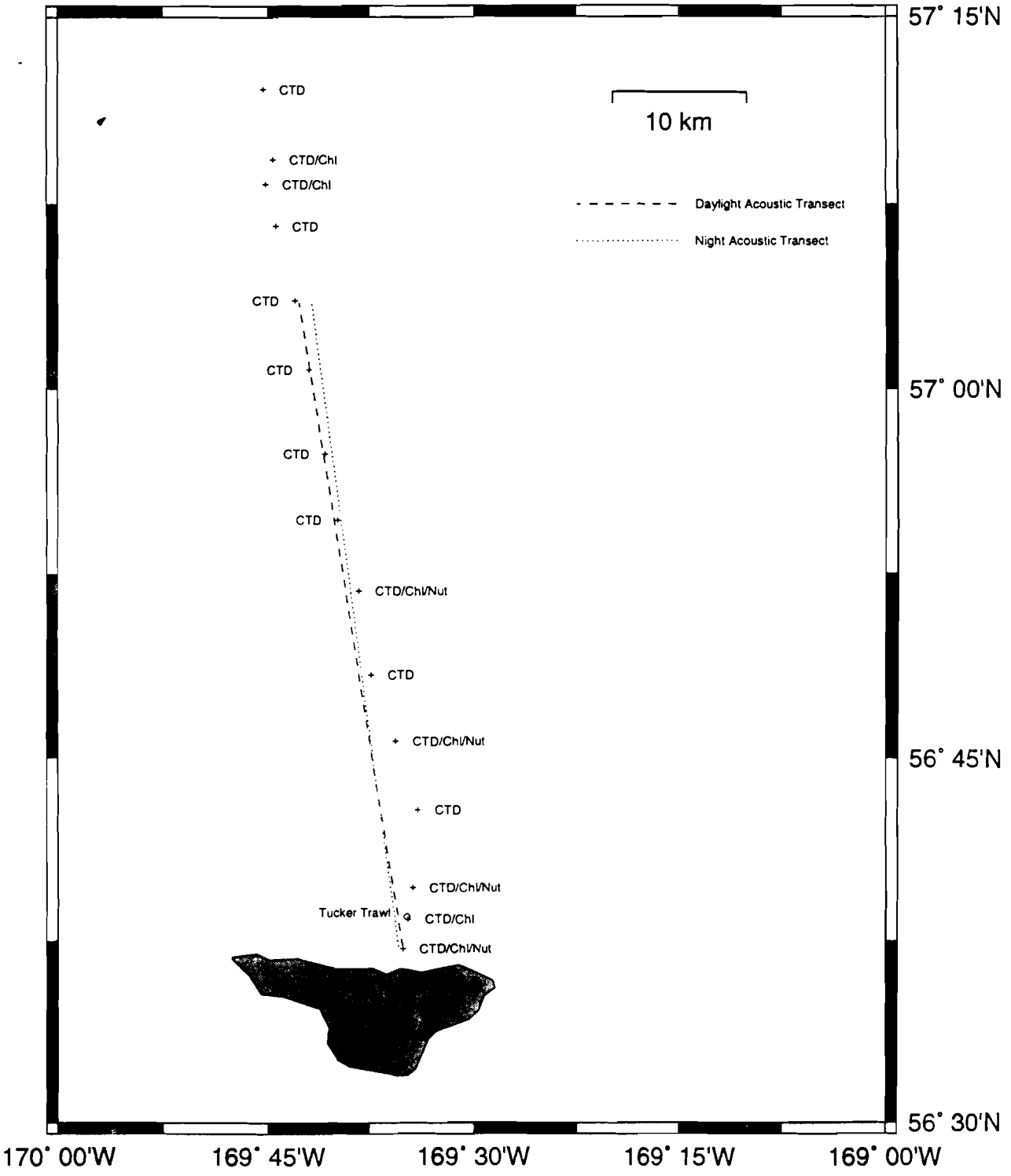
1st line
45
48
49

1st

57.1°N 170.2°W to 56.7°N 170.6°W

Line D Stations

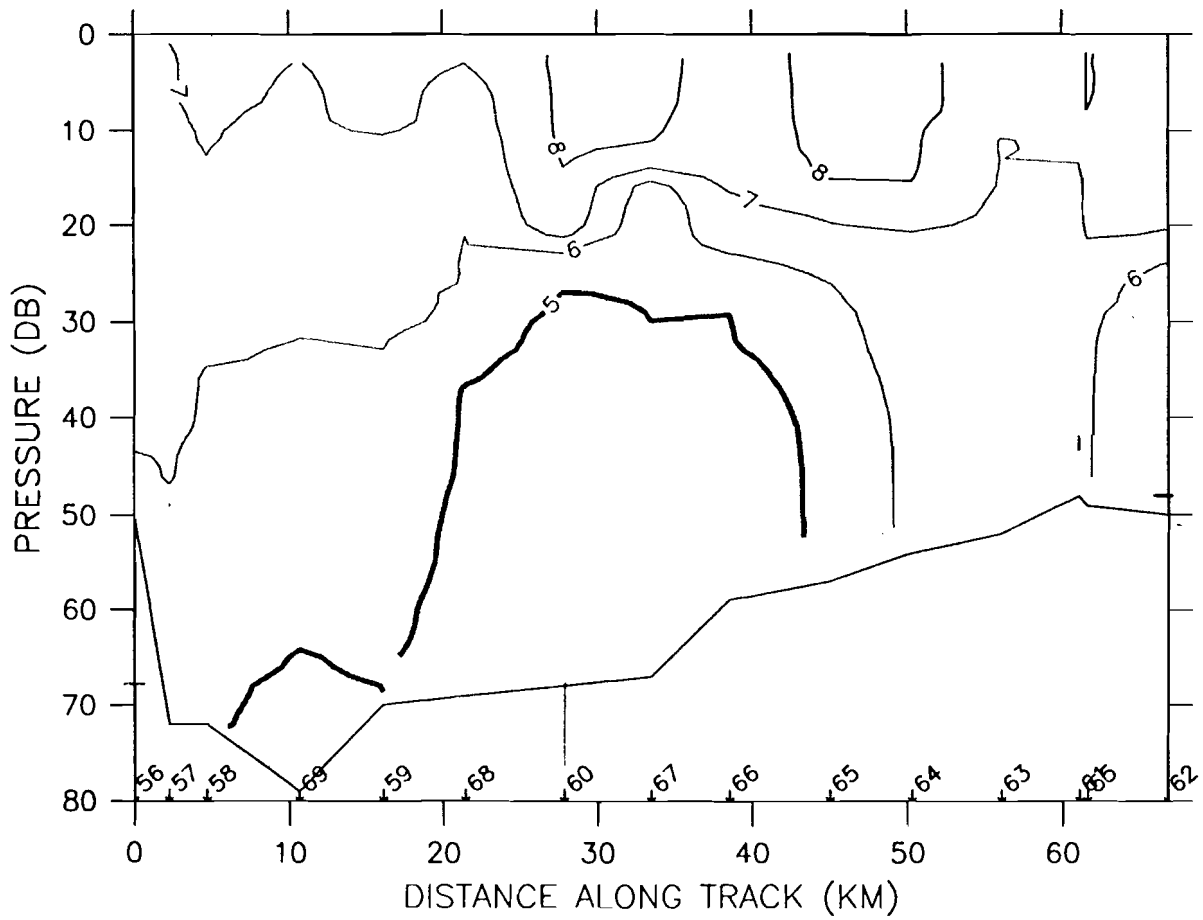
September 15-16, 1995



Nov 20 1995 08:58:28
EPIC: line_d.cdf

56.9°N 169.7°W TEMPERATURE (C)

15 – 16 Sep 95

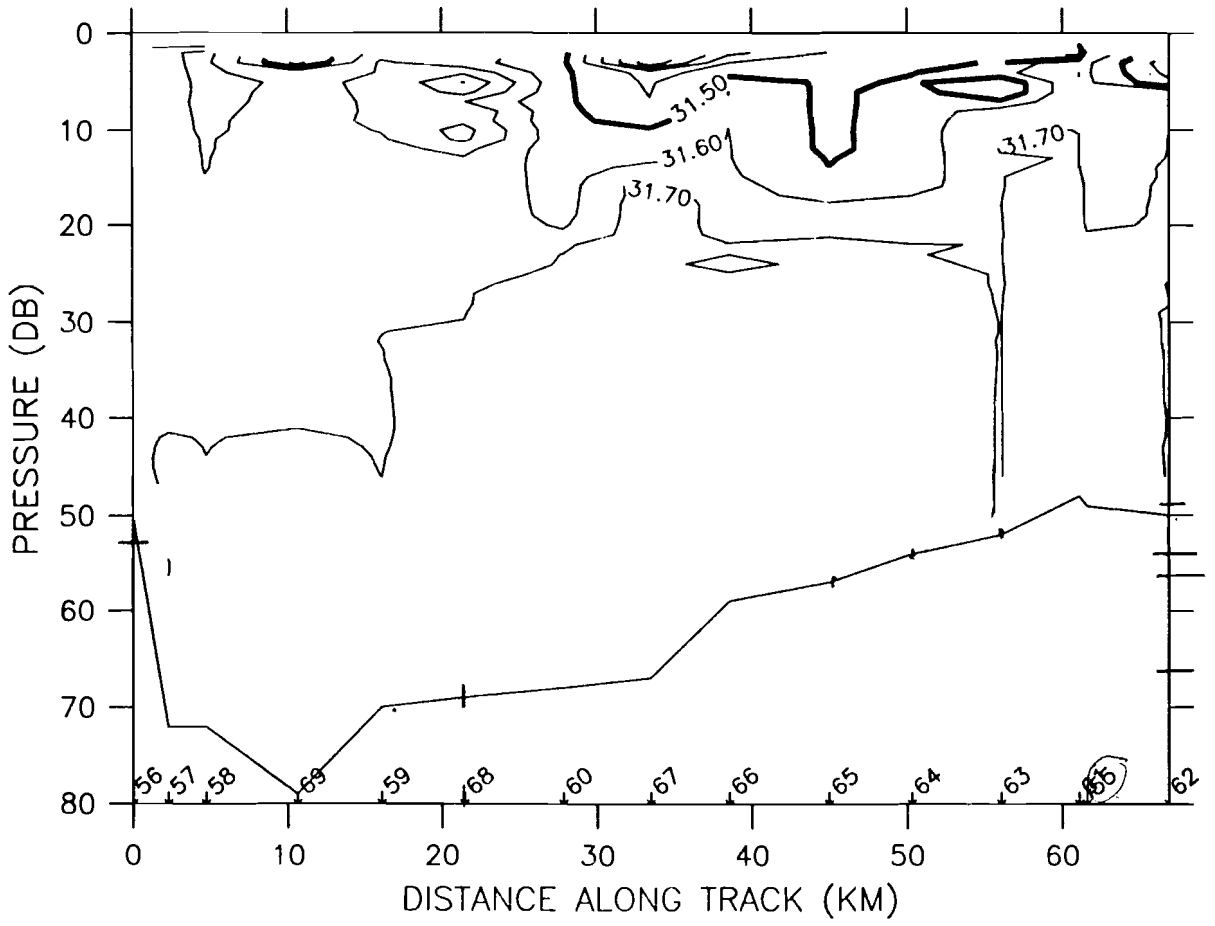


56.6°N 169.6°W to 57.2°N 169.8°W

Nov 20 1995 08:58:28
EPIC: line_d.cdf

56.9°N 169.7°W SALINITY (PSU)

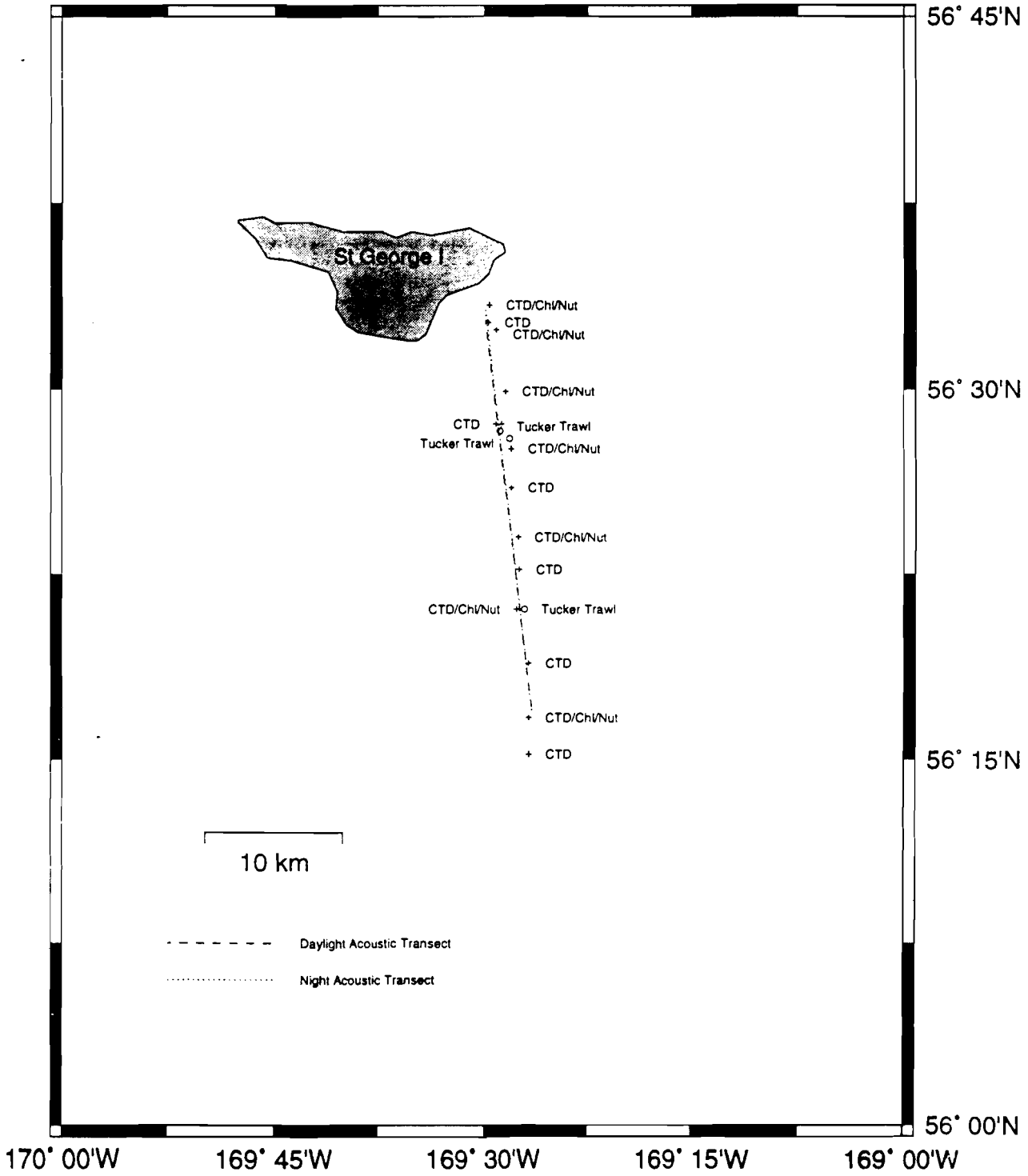
15 – 16 Sep 95



56.6°N 169.6°W to 57.2°N 169.8°W

Line C Stations

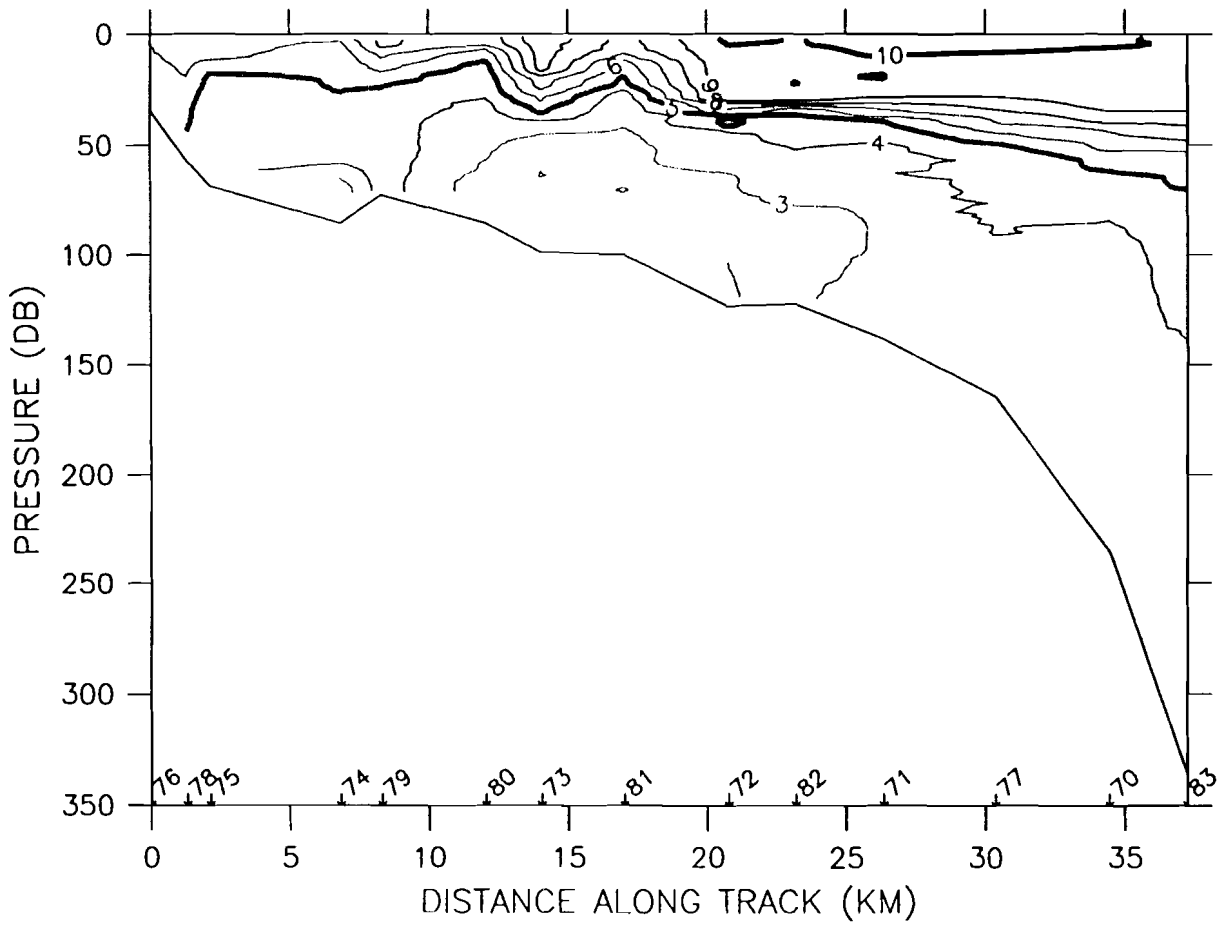
September 17-18, 1995



Nov 20 1995 08:58:12
EPIC: line_c.cdf

56.4°N 169.5°W TEMPERATURE (C)

17 Sep 95

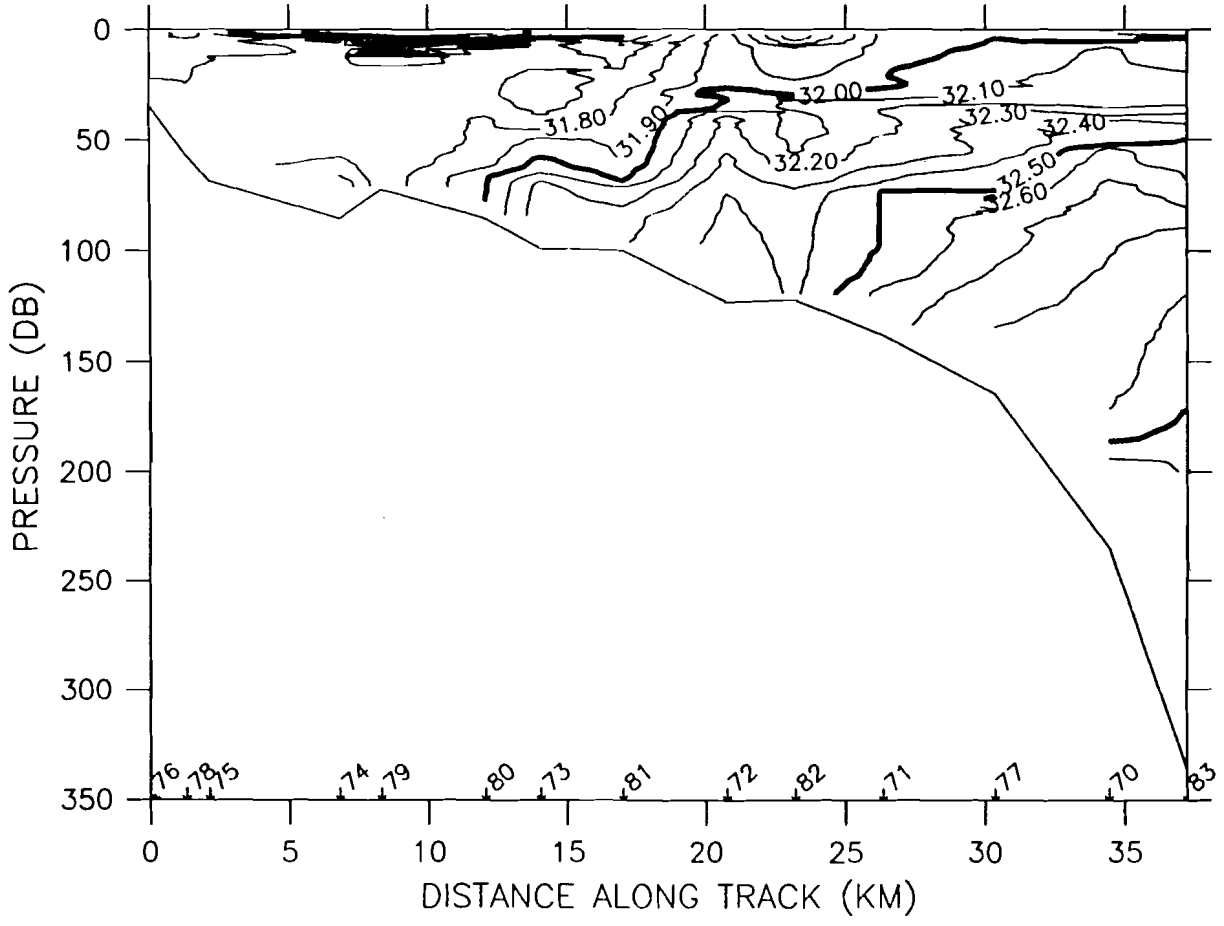


56.6°N 169.5°W to 56.3°N 169.4°W

Nov 20 1995 08:58:11
EPIC: line_c.cdf

56.4°N 169.5°W SALINITY (PSU)

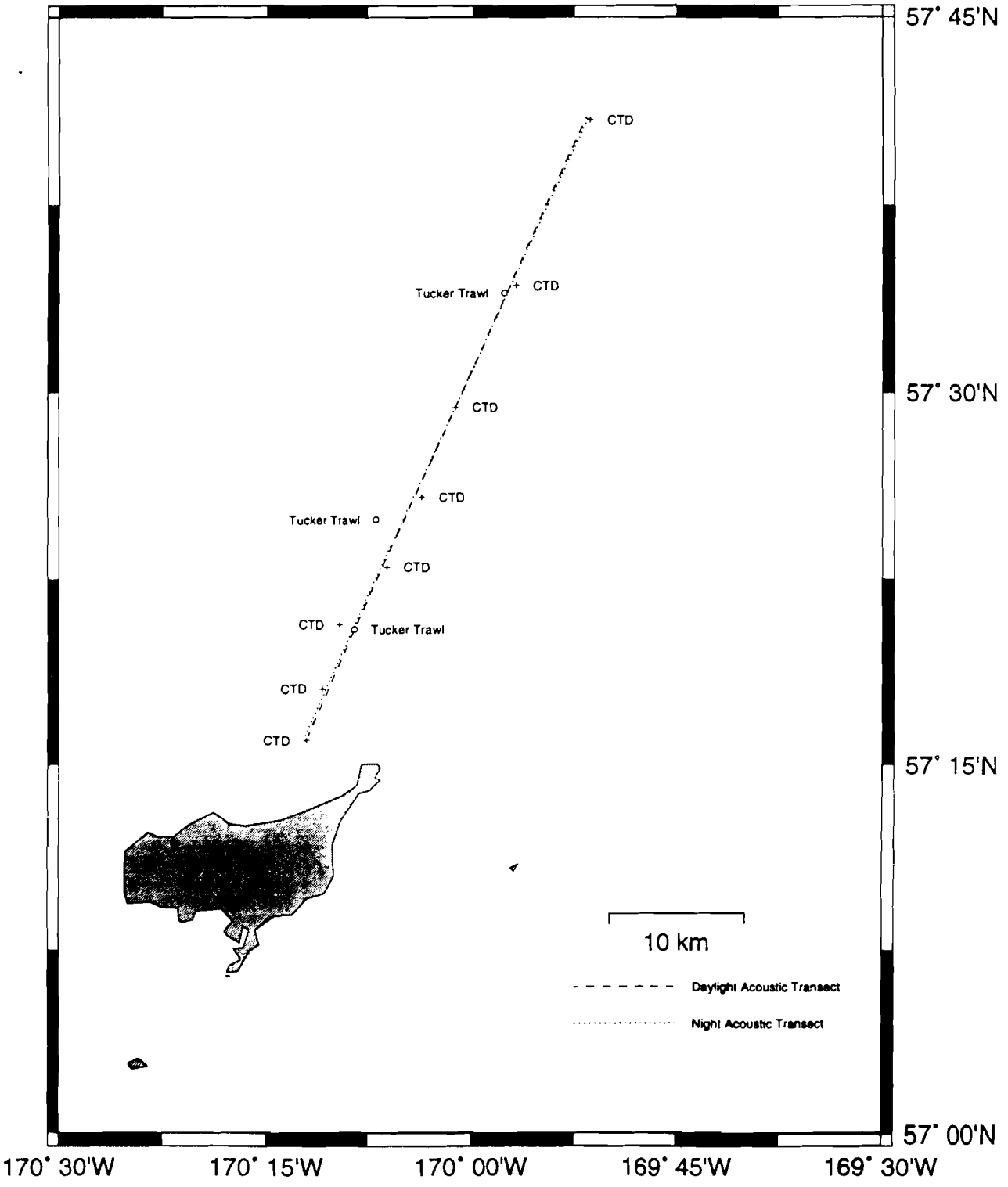
17 Sep 95



56.6°N 169.5°W to 56.3°N 169.4°W

Line A Stations

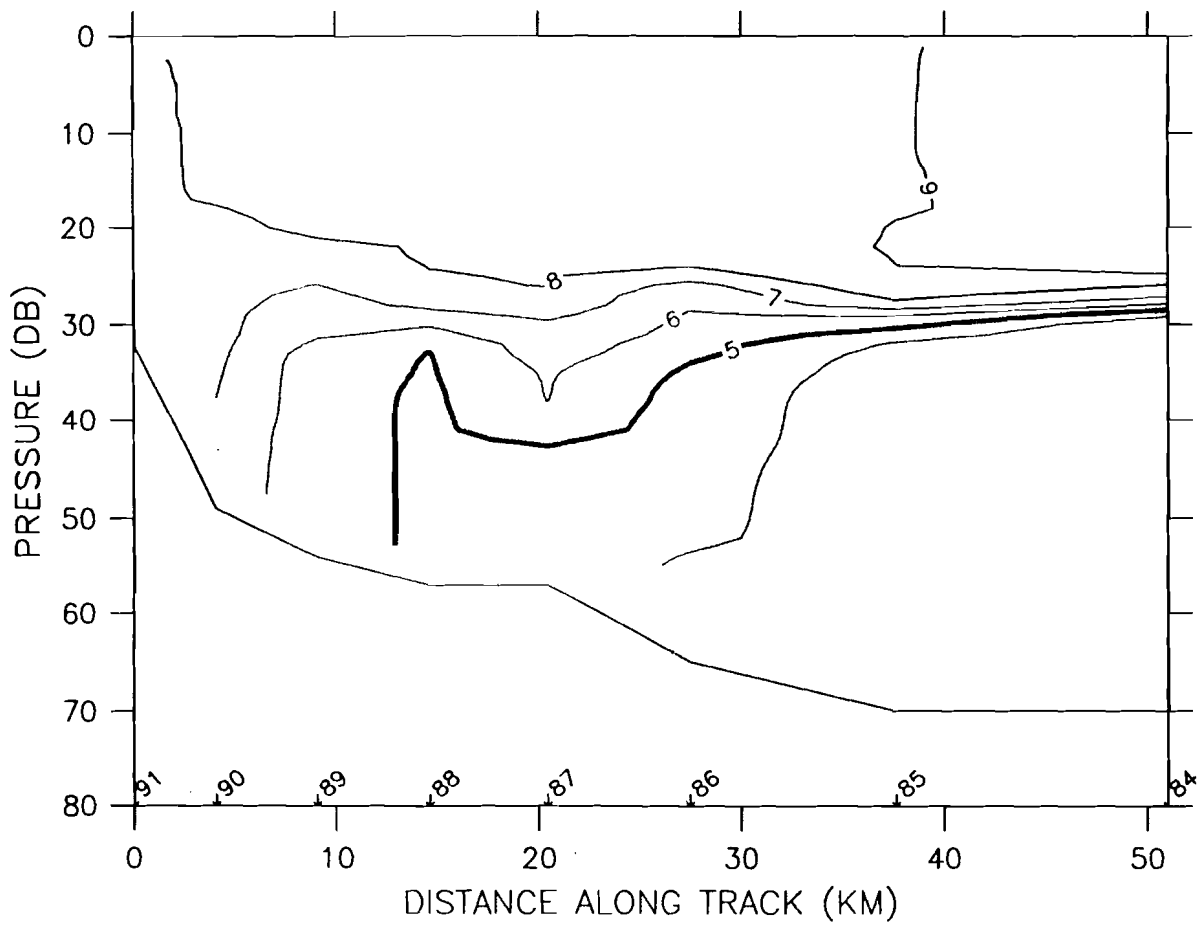
September 18-19, 1995



Nov 20 1995 08:57:46
EPIC: line_a3.cdf

57.4°N 170.1°W TEMPERATURE (C)

18 Sep 95

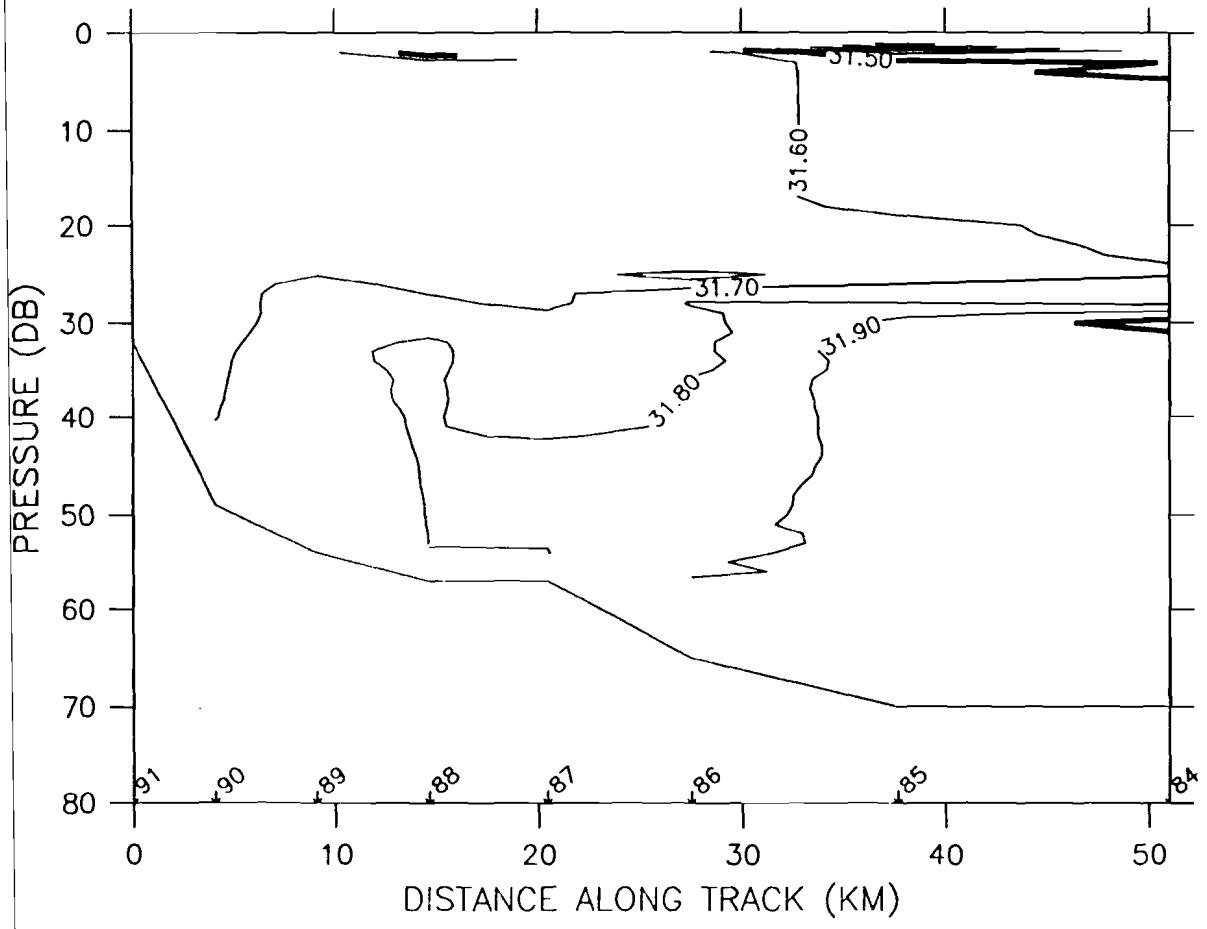


57.3°N 170.2°W to 57.7°N 169.9°W

Nov 20 1995 08:57:46
EPIC: line_a3.cdf

57.4°N 170.1°W SALINITY (PSU)

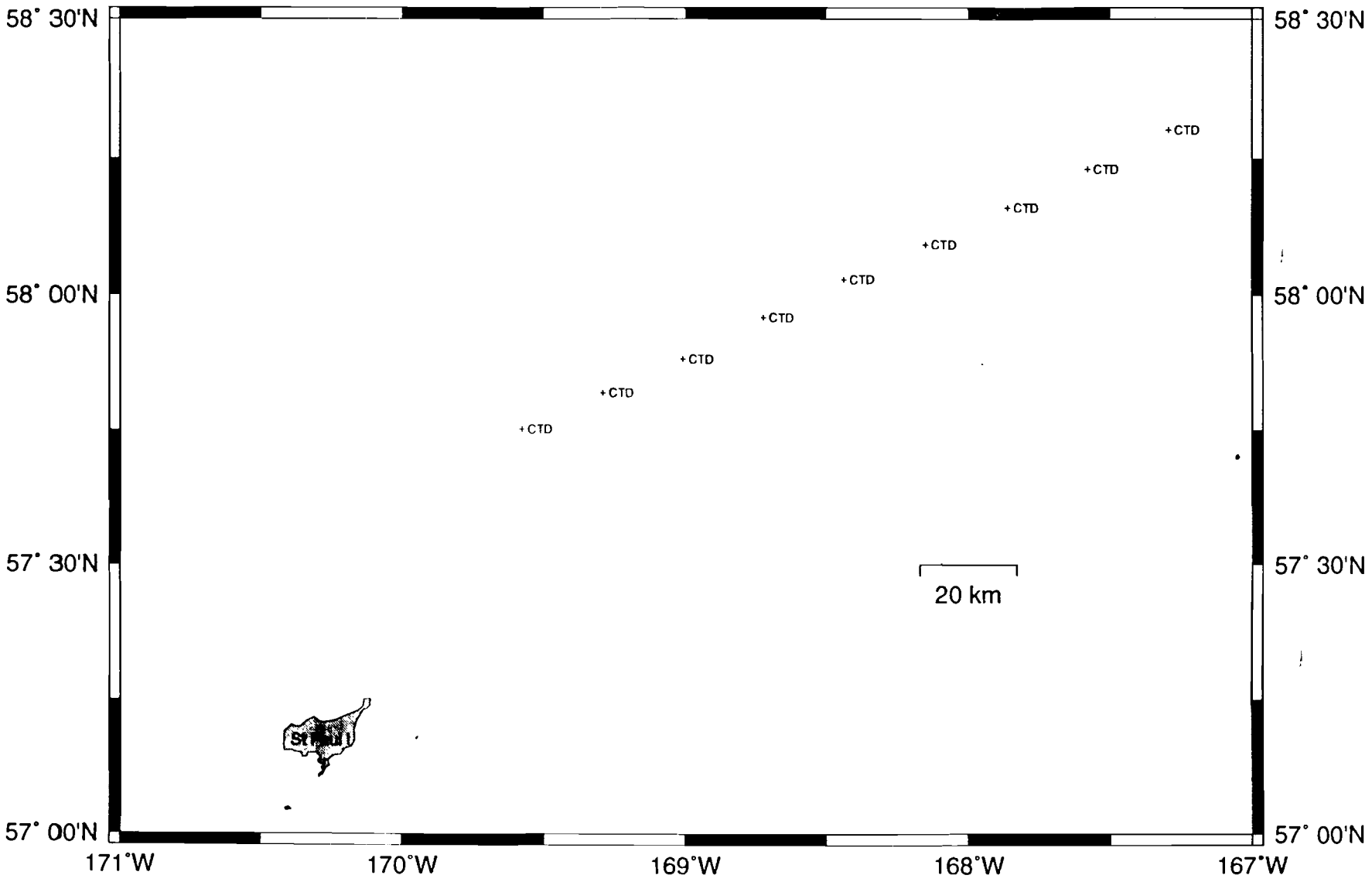
18 Sep 95



57.3°N 170.2°W to 57.7°N 169.9°W

Line J Stations

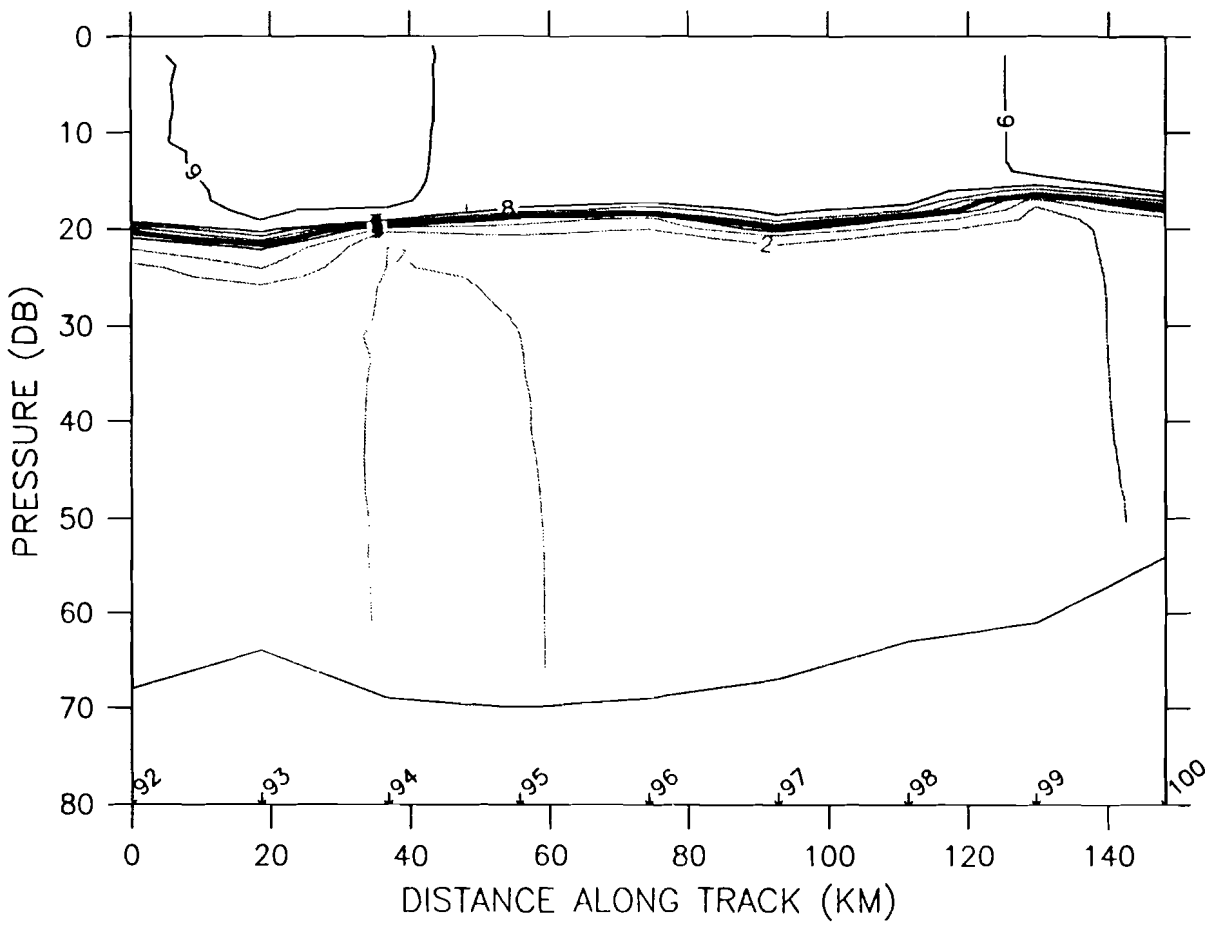
September 19, 1995



Nov 20 1995 08:58:57
EPIC: line_j.cdf

58.0°N 168.4°W TEMPERATURE (C)

19 Sep 95

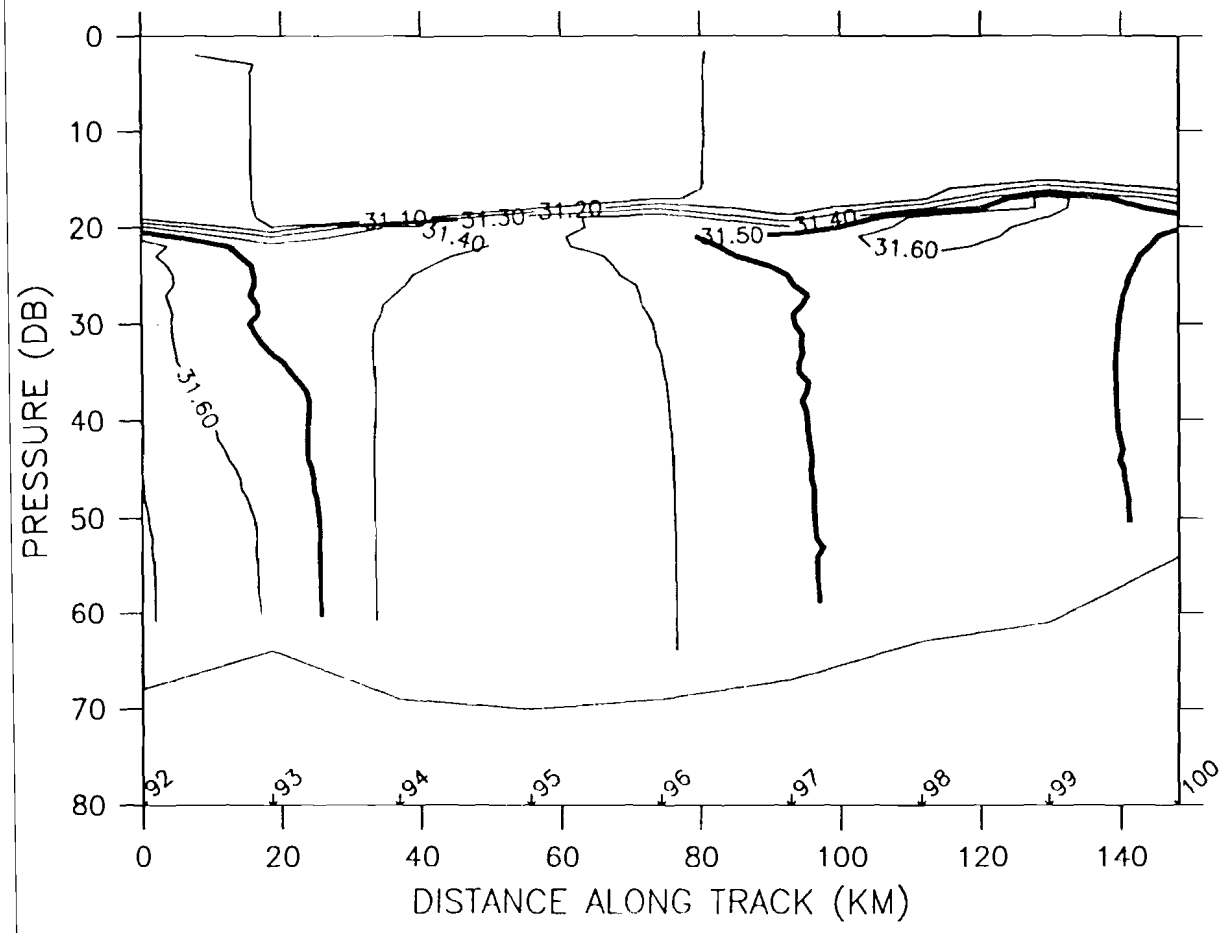


57.8°N 169.6°W to 58.3°N 167.3°W

Nov 20 1995 08:58:57
EPIC: line_j.cdf

58.0°N 168.4°W SALINITY (PSU)

19 Sep 95



57.8°N 169.6°W to 58.3°N 167.3°W