

UC San Diego

SIO Reference

Title

Current-Following Drifters in Code

Permalink

<https://escholarship.org/uc/item/0t6994vk>

Author

Davis, R. E.

Publication Date

1983-04-01

SCRIPPS INSTITUTION OF OCEANOGRAPHY
UNIVERSITY OF SAN DIEGO, CALIFORNIA
LA JOLLA, CALIFORNIA

CURRENT-FOLLOWING DRIFTERS IN CODE

by

R. E. DAVIS

*Prepared for the National Science Foundation under Grant No.
OCE80-14942.*

*Reproduction in whole or in part is permitted for any purpose
of the United States Government.*

April 1983

SIO Reference No. 83-4
CODE Technical Report No. 10

CURRENT-FOLLOWING DRIFTERS IN CODE

R. Davis

ABSTRACT

The Coastal Dynamics Experiment (CODE) was a two year multi-institutional examination of the spring and summer coastal oceanography along the coast of California north of San Francisco between Point Reyes and Point Arena. As a part of CODE, 133 inexpensive current-following drifters were deployed during the months of May and July in both 1981 and 1982. The primary objectives of this study were to explore spatial variability of currents in the upper 30m and to describe mean and dispersive fluid transport processes in the Lagrangian frame. This report presents the data from the study.

CONTENTS

	Pg
Method	1
Tabular Data	4
1981	6
1982	19
Plotted Data	43

METHOD

The design, construction, field testing, and method of tracking the drifters is described in the SIO Reference Series report 82-28, "Two Inexpensive Current-Following Drifters" by Davis, Dufour, Parks and Perkins. In short, one type of drifter follows currents at approximately 1 m depth while the other can be drogued to various levels. Drogued drifters were used only during 1982 and were always drogued to the 30 m level. Both types of drifters are tracked by VHF radio direction finding, either from mobile land stations or from a light aircraft.

The observations from which buoy positions were determined are bearings from specified locations taken over a span of time. Typically, 3 or 4 aircraft bearings for any particular buoy were taken over a fraction of an hour from ranges of 2 to 15 miles. Shore observations were usually taken during 3 to 8 hour tracking sessions while the mobile moved along the coast, sometimes covering 80 miles in one session. Some effort was made to take readings during both halves of a roundtrip. Typically 3 to 6 land station bearings were taken over a period of 2 to 4 hours. Buoys could be positioned from land to distances of 40 miles offshore. More bearings, taken over longer time spans, were used to position buoys far from shore.

Each bearing was accompanied by an estimate of its precision, determined from a combination of reproducibility and the presence of signal reflection as indicated by signal quality. Radio beacons on various current meter moorings were used to monitor the accuracy of radio bearings. In general, aircraft bearing quality is limited by the aircraft compass, a gyroscopic heading indicator slaved to a magnetic

compass; typical errors are 2° for strong or moderate strength signals. Land bearings are precise to 1° and typically accurate to 1° to 3° ; the major error comes from signal reflection which is most pronounced for signal paths at grazing angles to the coast.

Land station locations were determined from 7.5 minute topographic charts. In 1981 aircraft position was determined from a combination of aircraft VOR and DME (bearing and range) radio navigation aids. The errors in this type of navigation approach 2 miles when far offshore and, during 1981, constituted the major uncertainty in aircraft buoy positioning. In 1982 aircraft location was determined by airborne Loran-C which was completely reliable and accurate to a precision beyond our ability to verify (less than 0.2 mile).

The procedure for determining buoy location from aircraft bearings was straightforward because the observations were usually of uniformly high quality and taken from short ranges over a short time. Bearings were simply plotted, the most likely position determined by eye, and a estimate of error determined as the envelope of bearings surrounding the fix.

Processing of land bearings was accomplished using an algorithm which solved for position under the assumption that the buoy moved at a uniform rate during the tracking period. The analyst specified a buoy velocity and the most likely position was determined by minimizing the mean square bearing error with each bearing error weighted by the associated accuracy estimate. The buoy velocity was then specified as the mean between the previous and subsequent fix and the position error was determined as the root mean square of that computed from bearing

consistency (1 standard deviation) and the change in position associated with a 50% change in buoy velocity.

Approximately 1% of the positions computed by the above procedure were discarded because their accuracy was less than that estimated for interpolation between neighboring fixes. Approximately 30 positions taken from land and aircraft could be compared and indicate that the estimated errors of position are reasonable estimates of the standard deviation of these fixes.

TABULAR DATA

This section contains a tabular report of the deployment position and subsequent fixes of each of the CODE buoys in approximately chronological order by deployment.

The table for each buoy begins with a heading containing (1) the deployment date, (2) a letter used to denote the buoy on the associated plot of drifters deployed on that date, (3) the depth of the drifter drag element (1m or 30m), and (4) the buoy serial number. Thus the first table begins

02MAY 81 BUOY A. DEPTH 1 M. SERIAL NUMBER 16

indicating surface drifter serial number 16 was deployed on 2 May 1981 and appears in the 2 May deployment buoy plot as drifter A. The letter labels are reassigned for each new plot. Some serial numbers were reassigned for 1982.

After the heading are entries indicating (1) time in calendar days and decimal fractions in Pacific Standard Time, (2) latitude, (3) longitude, (4) latitude error in kilometers, (5) longitude error in kilometers, (6) mean onshore velocity, U, and (7) mean upcoast velocity, V. Position errors are approximately expected standard deviations. Mean velocities are over the interval since the last positioning and are reported in cm/s. U is the component directed toward 47° True and V is the component directed toward 317° True. This is the convention adopted for CODE current meter data reports. Thus the entry

122.70 38 54.0 123 48.0 1 1 -71.3 -21.2

indicates that on day 122 (2 May) at 0.70x24 hours past midnight the buoy was positioned at $38^{\circ} 54.0'$ N, $123^{\circ} 48.0'$ W (to within 1 kilometer in each) and had moved with average velocity 71 cm/s offshore (to the northwest) and 21 cm/s downcoast (to the southwest) since the last position.

02MAY 81 BUOY A. DEPTH 1 M. SERIAL NUMBER 16
 122.62 38 56.4 123 46.2 0 0
 122.70 38 54.0 123 48.0 1 1 -71.3 -21.2
 123.45 38 40.2 123 37.2 1 1 -9.2 -45.2
 124.45 38 27.6 123 25.8 1 1 -4.4 -32.7
 125.47 37 57.6 123 21.6 2 2 -37.9 -50.7

02MAY 81 BUOY B. DEPTH 1 M. SERIAL NUMBER 20
 122.64 38 55.8 123 49.2 0 0
 122.72 38 53.4 123 51.6 1 1 -80.5 -12.7
 123.47 38 38.4 123 40.8 2 2 -11.6 -47.7
 124.43 38 30.0 123 36.9 1 1 -7.8 -18.3
 125.47 38 6.6 123 22.2 1 1 -15.5 -51.3

02MAY 81 BUOY C. DEPTH 1 M. SERIAL NUMBER 10
 122.67 38 54.6 123 52.8 0 0
 122.74 38 53.4 123 55.8 1 1 -77.5 22.1
 123.50 38 35.4 123 48.6 2 2 -23.0 -47.9
 124.46 38 28.2 123 37.8 1 4 2.8 -24.6
 125.47 38 10.2 123 22.8 2 2 -7.8 -44.8

02MAY 81 BUOY D. DEPTH 1 M. SERIAL NUMBER 11
 122.70 38 54.0 123 55.8 0 0
 122.79 38 52.9 123 59.4 1 3 -66.8 26.6
 123.46 38 37.2 123 57.6 2 2 -30.9 -39.7
 124.58 38 31.2 124 6.0 2 2 -17.0 0.2
 125.49 38 21.6 123 57.6 2 2 -4.1 -27.0

02MAY 81 BUOY E. DEPTH 1 M. SERIAL NUMBER 23
 122.75 38 52.8 123 59.4 0 0
 123.59 38 43.0 124 19.8 3 8 -46.8 9.5
 124.49 38 34.8 124 52.2 2 4 -57.4 26.9
 125.50 38 36.0 124 39.0 3 3 17.7 -13.1

05MAY 81 BUOY A. DEPTH 1 M. SERIAL NUMBER 14
 125.77 38 57.0 123 46.2 0 0
 126.50 38 49.8 123 46.8 2 2 -15.4 -14.5
 127.59 38 51.0 123 48.6 1 1 -0.4 3.6
 128.50 38 48.0 123 43.8 1 1 1.6 -11.2
 129.47 38 49.8 123 48.6 1 1 -3.3 8.6
 130.49 38 45.6 123 49.2 1 1 -6.7 -5.8
 131.46 38 34.8 123 31.2 1 1 6.5 -38.6

05MAY 81 BUOY B. DEPTH 1 M. SERIAL NUMBER 2
 125.75 38 55.8 123 49.8 0 0
 126.49 38 46.2 123 39.6 2 2 -2.1 -36.0
 127.55 38 23.4 123 22.2 2 2 -11.3 -52.4
 128.48 38 4.8 123 10.8 2 2 -14.2 -45.3
 129.48 37 51.6 123 10.2 1 1 -18.5 -21.3

05MAY 81 BUOY C. DEPTH 1 M. SERIAL NUMBER 25
 125.73 38 54.6 123 52.8 0 0
 126.50 38 39.6 123 47.4 2 2 -19.8 -38.5
 127.58 38 35.4 123 43.8 3 3 -1.6 -9.9
 128.48 38 25.8 123 28.2 2 2 5.7 -36.5
 129.51 38 4.8 123 13.2 1 1 -11.9 -48.5

05MAY 81 BUOY D. DEPTH 1 M. SERIAL NUMBER 6
 125.71 38 52.8 123 55.8 0 0
 127.55 38 26.4 123 43.2 1 1 -12.6 -30.3
 128.49 38 15.0 123 45.0 2 2 -20.0 -16.8
 129.53 38 13.2 123 45.0 1 1 -2.5 -2.7

05MAY 81 BUOY E. DEPTH 1 M. SERIAL NUMBER 29
 125.58 38 49.8 123 40.2 0 0
 126.66 38 28.2 123 18.0 2 2 -4.0 -54.8
 127.47 38 15.0 123 12.0 1 1 -14.7 -34.0
 128.47 38 1.8 123 9.0 2 2 -15.6 -24.1
 129.47 37 52.8 123 9.0 1 1 -13.1 -14.1

05MAY 81 BUOY F. DEPTH 1 M. SERIAL NUMBER 18
 125.59 38 49.2 123 41.4 0 0
 126.59 38 34.2 123 25.2 1 1 -2.1 -42.0
 127.47 38 16.2 123 13.2 2 2 -13.2 -47.6
 128.47 37 59.4 123 7.8 1 3 -17.9 -32.4
 129.47 37 55.2 123 8.4 1 1 -6.9 -5.9

05MAY 81 BUOY G. DEPTH 1 M. SERIAL NUMBER 27
 125.60 38 48.0 123 43.2 0 0
 126.60 38 33.6 123 26.4 2 2 -0.5 -41.7
 127.50 38 15.0 123 13.2 1 1 -12.2 -49.1
 128.48 37 59.4 123 9.6 4 4 -18.7 -29.1
 129.48 37 52.2 123 9.6 1 1 -10.5 -11.3

05MAY 81 BUOY H. DEPTH 1 M. SERIAL NUMBER 58
 125.62 38 46.2 123 45.6 0 0
 126.61 38 26.4 123 25.2 2 2 -4.0 -54.8
 127.51 38 6.6 123 21.0 1 1 -26.4 -39.7
 128.48 37 49.2 123 20.4 2 2 -25.4 -28.8
 129.49 37 40.8 123 0.6 1 1 11.9 -35.4

05MAY 81 BUOY I. DEPTH 1 M. SERIAL NUMBER 19
 125.64 38 44.4 123 48.0 0 0
 126.58 38 30.6 123 37.2 2 2 -7.4 -36.1
 127.51 38 15.0 123 28.8 3 3 -13.4 -36.6
 128.47 37 54.0 123 31.2 2 2 -35.0 -31.4
 129.50 37 43.2 123 39.6 2 3 -25.3 -7.1

13MAY 81 BUOY A. DEPTH 1 M. SERIAL NUMBER 54
 133.35 39 0.0 123 43.8 0 0
 133.66 38 58.8 123 45.0 1 1 -10.4 -1.6
 134.16 38 58.8 123 42.5 0 0 6.1 -5.7

13MAY 81 BUOY B. DEPTH 1 M. SERIAL NUMBER 55
 133.35 39 0.0 123 45.6 0 0
 133.63 38 59.4 123 44.4 1 1 2.1 -8.2
 134.16 38 58.2 123 43.0 0 0 -0.1 -6.6

13MAY 81 BUOY C. DEPTH 1 M. SERIAL NUMBER 44
 133.37 39 0.6 123 47.4 0 0
 133.62 39 1.8 123 45.6 1 1 15.8 -0.7
 134.16 38 57.7 123 43.6 0 0 -6.5 -16.1

13MAY 81	BUOY D.	DEPTH	1 M.	SERIAL NUMBER	39
133.38	39	1.2	123 50.4	0 0	
133.60	39	1.8	123 54.6	1 1	-19.4 26.1
134.16	39	4.8	123 48.0	1 1	22.2 -5.1
134.46	39	3.6	123 46.2	1 1	1.5 -13.1

13MAY 81	BUOY E.	DEPTH	1 M.	SERIAL NUMBER	41
133.29	38	52.8	123 42.6	0 0	
133.51	38	48.6	123 36.6	1 1	5.5 -61.0
134.09	38	46.2	123 35.4	2 2	-3.5 -8.8
134.45	38	43.8	123 34.2	1 1	-5.6 -14.2
134.93	38	39.6	123 34.2	1 1	-12.8 -13.7
135.51	38	24.6	123 24.6	1 1	-17.5 -59.4
136.44	38	21.0	123 25.2	1 1	-6.4 -5.3
136.92	38	15.0	123 19.8	1 1	-4.5 -32.4
137.47	38	14.4	123 15.6	1 1	7.8 -10.4
137.84	38	12.6	123 13.2	1 1	0.8 -15.0
138.47	38	13.2	123 12.6	1 1	2.6 0.4
139.63	38	10.2	123 13.8	1 1	-5.0 -2.9
140.44	37	59.4	123 13.2	2 2	-18.6 -21.7

13MAY 81	BUOY F.	DEPTH	1 M.	SERIAL NUMBER	40
133.28	38	52.8	123 44.4	0 0	
133.46	38	48.0	123 39.6	1 1	-6.3 -72.2
134.09	38	34.8	123 32.4	1 1	-16.6 -45.8
134.43	38	28.8	123 31.2	1 1	-21.4 -31.6
134.92	38	23.4	123 25.2	1 1	-1.1 -31.2
135.47	38	25.2	123 24.6	1 1	6.1 3.9
136.42	38	22.8	123 25.8	1 1	-5.2 -2.5
136.89	38	19.8	123 21.0	1 1	3.2 -21.6
137.48	38	20.5	123 15.1	1 1	14.0 -9.6
137.84	38	18.6	123 10.2	1 1	9.0 -23.8
138.47	38	16.2	123 7.8	1 1	-9.9 -10.3
139.64	38	9.6	123 1.2	2 2	-1.3 -15.3
140.43	38	9.6	123 0.6	1 1	0.9 -0.9

13MAY 81	BUOY G.	DEPTH	1 M.	SERIAL NUMBER	57
133.27	38	52.2	123 46.2	0 0	
133.46	38	48.0	123 41.4	1 1	-1.3 -63.4
134.05	38	36.1	123 33.7	1 1	-13.5 -46.5
134.44	38	31.2	123 31.2	1 1	-10.5 -27.0
134.91	38	22.8	123 27.0	1 1	-15.1 -38.2
135.48	38	24.0	123 24.6	1 1	8.2 -1.5
136.44	38	24.0	123 27.0	1 1	-3.1 2.9
136.89	38	20.4	123 22.8	1 1	-0.2 -23.2
137.48	38	21.0	123 15.0	1 1	17.7 -13.5
137.84	38	19.8	123 10.8	1 1	9.4 -18.5
138.47	38	18.0	123 7.8	2 2	1.7 -9.9
139.62	38	16.2	123 5.4	1 1	0.3 -4.8
140.43	38	18.0	123 9.6	1 1	-3.1 9.4

13MAY 81	BUOY H.	DEPTH	1 M.	SERIAL NUMBER	49
133.25	38 51.6	123 49.8	0 0		
133.45	38 50.4	123 46.2	1 1	13.3	-29.9
134.09	38 46.8	123 40.8	2 2	2.1	-18.4
134.45	38 35.6	123 34.8	1 1	-21.0	-63.4
134.93	38 29.4	123 30.0	1 1	-9.7	-34.9
135.49	38 24.6	123 25.8	1 1	-3.3	-22.0
136.43	38 23.4	123 22.8	1 1	2.0	-5.6
136.89	38 22.8	123 19.2	1 1	7.7	-11.0
137.48	38 22.8	123 13.8	1 1	11.2	-10.5
137.84	38 21.0	123 10.2	1 1	4.9	-19.2
138.47	38 19.8	123 6.0	2 2	5.4	-10.6
139.63	38 16.8	123 4.2	1 1	-1.9	-5.8
140.42	38 18.6	123 4.8	1 1	2.4	4.4

24MAY 81	BUOY A.	DEPTH	1 M.	SERIAL NUMBER	42
144.18	38 56.4	123 46.2	0 0		
144.37	38 50.4	123 44.4	1 1	-34.5	-60.2
144.72	38 45.6	123 35.4	1 1	11.5	-50.8

24MAY 81	BUOY B.	DEPTH	1 M.	SERIAL NUMBER	5
144.22	38 55.8	123 49.2	0 0		
144.37	38 51.6	123 46.8	1 1	-21.3	-62.1
144.68	38 43.8	123 37.2	1 1	-12.9	-89.9
145.04	38 29.9	123 46.3	1 1	-75.1	-18.5
145.50	38 24.3	123 50.4	1 1	-28.7	-8.9
146.48	38 28.8	123 37.8	1 1	22.4	-7.5
147.55	38 26.1	123 30.3	1 1	4.9	-12.0

24MAY 81	BUOY C.	DEPTH	1 M.	SERIAL NUMBER	13
144.25	38 54.6	123 52.8	0 0		
144.37	38 52.8	123 50.4	1 1	2.6	-46.3
144.69	38 45.6	123 44.4	2 2	-9.9	-56.6
145.02	38 32.4	123 46.2	1 1	-65.1	-56.3
145.59	38 18.0	123 55.2	1 1	-56.2	-21.5
146.57	38 9.0	123 46.8	2 2	-2.9	-24.2
147.62	37 39.0	123 52.8	1 1	-48.7	-38.2

24MAY 81	BUOY D.	DEPTH	1 M.	SERIAL NUMBER	17
144.28	38 53.4	123 55.8	0 0		
144.71	38 51.6	123 51.0	1 1	7.6	-19.3
145.07	38 41.4	123 49.9	1 1	-37.6	-47.8
145.52	38 34.2	123 54.0	2 2	-34.5	-14.6
146.59	38 13.2	123 57.0	1 1	-32.1	-27.5
147.62	37 55.8	123 57.0	2 2	-24.7	-26.4

24MAY 81	BUOY E.	DEPTH	1 M.	SERIAL NUMBER	35
144.31	38 53.4	123 58.8	0 0		
144.71	38 52.2	123 53.4	1 1	12.1	-28.1
145.07	38 46.2	123 51.0	2 2	-16.2	-33.7
145.57	38 37.8	123 49.8	2 2	-21.6	-29.0
146.59	38 21.6	124 1.2	1 1	-36.9	-12.1
147.62	38 7.8	123 59.4	1 1	-17.4	-23.0

24MAY 81	BUOY F.	DEPTH	1 M.	SERIAL NUMBER	7
144.09	38 47.4	123 42.6	0	0	
144.39	38 37.8	123 39.6	1	1	-34.5 -61.5
144.69	38 29.4	123 45.6	2	2	-65.4 -21.0
145.15	38 21.0	123 49.8	1	1	-37.2 -18.1
145.53	38 23.4	123 43.2	1	1	30.5 -10.0
146.49	38 25.5	123 31.2	1	1	18.5 -10.9
147.55	38 9.9	123 28.8	2	2	-18.7 -25.6
149.78	38 23.4	123 30.6	3	3	7.8 10.4
150.59	37 56.4	123 47.4	1	1	-74.0 -28.5
151.55	37 45.0	123 49.8	2	2	-20.4 -15.7

24MAY 81	BUOY G.	DEPTH	1 M.	SERIAL NUMBER	15
144.07	38 45.2	123 45.0	0	0	
144.44	38 36.0	123 45.6	2	2	-42.2 -41.3
145.61	38 12.0	123 53.4	2	2	-38.1 -24.5
146.59	37 57.5	123 50.4	3	3	-17.7 -26.5

24MAY 81	BUOY H.	DEPTH	1 M.	SERIAL NUMBER	33
144.04	38 42.6	123 50.4	0	0	
144.40	38 38.4	123 50.4	1	1	-17.0 -18.2
144.69	38 33.0	123 51.0	2	2	-29.7 -26.8
145.53	38 19.8	124 3.6	1	1	-41.3 -7.5
146.51	38 13.2	124 1.8	2	2	-7.6 -12.6
147.62	37 50.4	123 56.4	1	1	-24.0 -37.7

28MAY 81	BUOY A.	DEPTH	1 M.	SERIAL NUMBER	12
148.08	38 56.4	123 46.2	0	0	
148.28	38 52.8	123 45.0	1	1	-18.9 -35.0
148.57	38 51.0	123 46.8	1	1	-16.7 -2.6
149.33	38 44.4	123 33.0	1	1	9.6 -34.3
149.73	38 37.8	123 28.8	1	1	-11.2 -37.8
150.53	38 28.2	123 28.2	2	2	-16.6 -19.6
151.53	38 9.6	123 19.2	1	1	-16.1 -39.4

28MAY 81	BUOY B.	DEPTH	1 M.	SERIAL NUMBER	37
148.10	38 55.8	123 49.2	0	0	
148.28	38 50.4	123 49.2	1	1	-43.8 -46.9
148.58	38 48.0	123 54.0	2	2	-31.3 5.8
149.35	38 42.0	124 8.4	1	3	-34.3 9.2
149.74	38 30.6	124 18.6	4	4	-74.7 -15.9
150.63	38 35.4	124 1.8	1	1	31.0 -13.1
151.58	38 43.2	124 9.0	1	1	2.7 21.5

28MAY 81	BUOY C.	DEPTH	1 M.	SERIAL NUMBER	4
148.11	38 54.6	123 52.8	0	0	
148.28	38 49.8	123 51.0	2	2	-28.2 -56.3
149.71	38 37.2	123 43.2	2	2	-6.2 -20.0
150.65	38 22.2	123 36.0	1	1	-13.9 -33.7
151.57	38 11.4	123 44.4	1	1	-28.3 -7.9

28MAY 81		BUOY D.	DEPTH	1 M.	SERIAL NUMBER		36	
148.13	38	53.4	123	55.8	0	0		
148.28	38	50.4	123	54.0	1	1	-14.5	-45.0
148.55	38	37.8	124	14.4	4	7	-160.6	13.3
149.76	38	28.8	124	12.6	2	2	-13.5	-19.9
149.75	38	29.4	123	55.8	3	3	55.0	-46.8
150.64	38	20.4	123	55.2	1	1	-13.9	-16.6
151.57	38	9.0	124	2.4	1	1	-27.4	-10.3

28MAY 81		BUOY E.	DEPTH	1 M.	SERIAL NUMBER		8	
148.03	38	49.8	123	40.2	0	0		
148.30	38	47.4	123	36.0	1	1	6.1	-31.7
148.62	38	43.2	123	31.8	1	1	-3.1	-35.5
149.32	38	33.6	123	30.0	1	1	-16.9	-24.4
149.72	38	28.2	123	27.0	1	1	-10.5	-29.7
150.51	38	22.2	123	21.6	1	1	-2.7	-19.7
151.53	38	8.4	123	15.6	1	1	-12.5	-27.9

28MAY 81		BUOY F.	DEPTH	1 M.	SERIAL NUMBER		38	
148.02	38	48.0	123	42.6	0	0		
148.29	38	46.2	123	42.6	1	1	-9.7	-10.4
148.60	38	44.4	123	41.4	2	2	-3.7	-13.5
149.33	38	38.4	123	37.2	1	1	-5.0	-19.4
149.72	38	30.0	123	29.4	1	1	-7.0	-56.5
150.46	38	16.8	123	21.0	1	1	-12.1	-40.9
151.52	38	4.8	123	15.0	1	1	-9.6	-24.2

28MAY 81		BUOY G.	DEPTH	1 M.	SERIAL NUMBER		34	
148.00	38	46.2	123	45.6	0	0		
148.28	38	46.2	123	45.6	1	1	0.0	0.0
148.55	38	44.4	123	50.0	2	2	-29.7	8.2
150.64	38	33.0	124	11.4	1	1	-20.5	3.2

28MAY 81		BUOY H.	DEPTH	1 M.	SERIAL NUMBER		26	
147.97	38	44.4	123	48.6	0	0		
148.30	38	46.2	123	48.6	2	2	8.0	8.5
148.58	38	44.4	123	54.6	1	1	-35.6	14.4
149.38	38	40.2	124	9.0	2	3	-29.7	12.3
149.69	38	32.4	124	10.8	1	1	-43.8	-32.7
150.58	38	37.2	124	1.8	1	1	20.2	-3.1
151.58	38	43.2	124	3.0	1	1	7.3	10.8

04JULY81		BUOY A.	DEPTH	1 M.	SERIAL NUMBER		72	
185.13	39	7.2	123	48.0	0	0		
185.42	39	6.6	123	49.2	1	1	-8.1	1.5
186.00	39	6.0	123	51.0	1	1	-5.3	1.9
186.43	39	5.4	123	49.2	1	1	3.1	-7.0
186.95	39	1.8	123	48.6	1	1	-8.7	-12.1
187.61	38	58.8	123	48.6	1	1	-7.8	-8.4
187.96	38	52.2	123	46.2	3	3	-14.9	-29.0
188.64	38	38.4	123	36.6	1	1	-12.3	-47.9
189.61	38	27.6	123	25.8	1	1	-2.6	-30.1

04JULY81	BUOY B.	DEPTH	1 M.	SERIAL NUMBER	67
185.15	39	7.2	123	55.2	0 0
185.42	39	10.2	123	58.8	3 3 -0.1 32.6
186.00	39	13.2	123	58.8	3 3 7.5 8.1
186.41	39	16.8	124	0.6	3 3 7.4 18.8
187.67	39	18.0	124	9.6	1 1 -7.4 9.6
188.48	39	10.8	124	12.0	3 3 -16.6 -10.5
189.57	38	54.6	124	4.8	5 5 -13.6 -30.8

04JULY81	BUOY C.	DEPTH	1 M.	SERIAL NUMBER	75
185.20	39	0.0	123	58.8	0 0
185.44	39	1.8	124	1.8	3 3 -4.4 26.0
185.87	39	5.4	123	56.4	1 1 27.6 -1.2
186.42	39	10.2	123	56.4	3 3 12.7 13.7
186.93	39	14.4	123	56.4	2 2 12.0 12.9
187.40	39	16.8	124	3.0	1 1 -9.7 24.0
187.67	39	16.2	123	58.8	1 1 15.8 -21.2
187.90	39	15.0	123	56.4	3 3 5.2 -20.1
188.49	39	13.8	124	0.0	3 3 -10.4 3.8
189.53	39	11.4	124	3.0	1 1 -6.9 -0.3

04JULY81	BUOY D.	DEPTH	1 M.	SERIAL NUMBER	65
185.30	38	57.0	123	46.2	0 0
186.49	38	55.2	123	45.0	1 1 -1.0 -3.5
187.58	38	48.0	123	38.4	1 1 -2.2 -17.2
188.03	38	40.8	123	36.6	1 1 -18.5 -29.6
188.63	38	33.2	123	32.0	1 1 -9.1 -28.6
189.61	38	19.2	123	20.2	1 1 -6.1 -36.1

04JULY81	BUOY E.	DEPTH	1 M.	SERIAL NUMBER	98
185.28	38	55.8	123	49.2	0 0
185.91	38	49.8	123	43.8	2 2 -3.4 -24.7
186.46	38	47.4	123	40.2	1 1 1.6 -14.3
186.96	38	43.8	123	38.4	1 1 -6.1 -15.4
187.49	38	36.0	123	33.0	3 3 -9.0 -34.7
187.99	38	25.2	123	26.4	1 1 -15.4 -48.9
188.61	38	14.4	123	19.2	1 1 -11.2 -40.5
189.56	37	58.8	123	20.4	1 1 -25.5 -24.2

04JULY81	BUOY F.	DEPTH	1 M.	SERIAL NUMBER	93
185.22	38	54.6	123	52.8	0 0
185.41	38	57.0	123	52.2	2 2 22.3 16.2
185.77	38	58.2	123	51.0	1 1 8.9 1.4
185.98	38	57.0	123	47.4	2 2 12.6 -28.5

04JULY81	BUOY G.	DEPTH	1 M.	SERIAL NUMBER	66
185.23	38	52.8	123	58.8	0 0
185.74	38	58.2	123	58.2	1 1 16.9 15.2
185.98	38	58.8	124	3.6	1 1 -23.9 29.6
186.44	39	4.8	123	57.0	3 3 36.6 4.0
186.95	39	7.8	123	56.4	3 3 10.0 7.9
187.43	39	12.6	123	58.2	2 2 10.0 19.9

04JULY81	BUOY H.	DEPTH	1	M.	SERIAL NUMBER	84
185.30	38 48.0	123 54.6	0	0		
185.76	38 54.6	123 55.0	1	1	19.9	23.4
185.98	38 54.6	124 1.2	2	2	-34.5	32.2
186.48	38 52.8	124 4.8	3	3	-14.1	2.6
186.94	38 48.8	123 55.4	3	3	12.3	-36.9
187.69	38 31.8	123 49.8	1	1	-23.9	-44.0
188.00	38 24.0	123 44.4	3	3	-15.4	-59.2
188.60	38 9.6	123 47.4	1	1	-41.1	-31.8
189.59	37 52.2	124 6.6	2	2	-49.4	-5.3

04JULY81	BUOY I.	DEPTH	1	M.	SERIAL NUMBER	82
185.34	38 49.8	123 40.2	0	0		
185.58	38 50.4	123 41.4	1	1	-2.5	9.6
185.96	38 48.0	123 38.4	1	1	0.4	-18.9
186.47	38 48.6	123 37.2	1	1	4.6	-0.8
186.94	38 45.4	123 32.6	1	3	2.0	-21.8
187.66	38 42.6	123 33.6	1	1	-7.4	-4.5
188.02	38 37.2	123 32.4	2	2	-17.8	-27.3
188.62	38 29.4	123 27.6	1	1	-9.2	-29.5
189.61	38 12.6	123 14.4	1	1	-8.4	-41.8

04JULY81	BUOY J.	DEPTH	1	M.	SERIAL NUMBER	100
185.36	38 48.0	123 42.6	0	0		
185.73	38 43.2	123 37.8	1	1	-3.1	-35.1
185.99	38 40.4	123 35.0	1	1	-2.5	-29.1
186.42	38 36.6	123 31.8	1	1	-3.8	-22.3
186.96	38 30.6	123 28.8	1	1	-9.4	-23.7
187.47	38 21.0	123 23.4	1	1	-14.5	-41.5
187.95	38 10.8	123 20.4	2	2	-23.4	-40.4
188.59	37 58.2	123 20.4	1	1	-28.7	-30.8
189.56	37 51.0	123 26.4	1	1	-18.4	-4.5

04JULY81	BUOY K.	DEPTH	1	M.	SERIAL NUMBER	61
185.37	38 46.2	123 45.0	0	0		
185.73	38 43.2	123 40.8	3	3	2.1	-26.4
186.41	38 30.0	123 28.2	3	3	-5.6	-51.5
186.93	38 21.0	123 19.8	4	4	-5.5	-45.5
187.47	38 15.6	123 19.2	1	1	-13.2	-16.9
187.93	38 7.8	123 18.6	1	1	-23.2	-28.0
188.58	37 55.4	123 22.2	1	1	-32.4	-21.1
189.55	37 50.4	123 25.8	1	1	-13.6	-5.4

04JULY81	BUOY L.	DEPTH	1	M.	SERIAL NUMBER	62
185.39	38 44.4	123 48.0	0	0		
185.76	38 42.9	123 42.0	1	1	13.9	-24.9
186.00	38 37.8	123 37.8	1	1	-9.6	-53.2
186.41	38 31.2	123 34.2	2	2	-12.7	-35.2
186.98	38 19.2	123 25.2	2	2	-11.4	-51.0
187.62	38 0.0	123 28.2	1	1	-49.5	-41.6
188.57	37 48.0	123 41.4	1	1	-35.4	-3.9
189.58	37 36.0	123 58.2	1	1	-37.7	0.4

09JULY81		BUOY A.		DEPTH 1 M.		SERIAL NUMBER 55	
189.98	39	7.2	123	48.0	0	0	
190.39	39	6.6	123	44.4	1	1	8.6 -12.3
190.88	39	1.2	123	43.2	1	1	-13.1 -20.0
191.31	38	58.2	123	42.6	1	1	-8.5 -12.5

09JULY81		BUOY B.		DEPTH 1 M.		SERIAL NUMBER 89	
189.95	39	7.2	123	51.6	0	0	
190.35	39	5.4	123	50.4	1	1	-2.9 -10.5
190.88	39	3.0	123	49.2	1	1	-3.8 -9.7
191.33	38	58.8	123	49.2	1	1	-13.6 -14.6
191.90	38	51.6	123	47.4	2	2	-14.6 -23.4
192.50	38	39.9	123	35.3	1	1	-3.8 -53.5
193.60	38	25.2	123	22.2	1	1	-4.9 -34.5

09JULY81		BUOY C.		DEPTH 1 M.		SERIAL NUMBER 109	
189.94	39	7.2	123	55.2	0	0	
190.39	39	6.0	123	54.0	1	1	-0.6 -7.2
190.88	39	4.8	123	54.6	1	1	-5.1 -2.4
191.37	39	1.2	123	55.2	1	1	-12.2 -10.1
191.83	39	0.6	123	52.8	1	1	4.5 -8.0
192.60	38	52.8	123	50.4	1	1	-11.0 -19.4
193.59	38	43.2	123	40.2	1	1	-1.5 -26.9
194.66	38	27.0	123	43.2	2	2	-25.5 -20.5

09JULY81		BUOY D.		DEPTH 1 M.		SERIAL NUMBER 69	
190.05	39	0.0	123	58.8	0	0	
190.41	38	58.2	123	56.4	1	1	0.9 -15.4
190.93	38	57.6	123	54.0	1	1	4.0 -7.1
191.42	38	54.6	123	55.8	2	2	-13.4 -5.4
191.86	38	52.8	123	54.0	2	2	-1.0 -11.1
192.53	38	46.4	123	51.0	1	1	-8.5 -20.1
193.58	38	32.4	123	48.0	2	2	-16.0 -24.1
194.65	38	9.6	123	36.0	1	1	-17.4 -46.1

09JULY81		BUOY E.		DEPTH 1 M.		SERIAL NUMBER 106	
190.32	38	56.4	123	46.2	0	0	
191.03	38	46.2	123	35.4	1	1	-2.3 -39.8
191.56	38	38.4	123	29.4	1	1	-7.6 -36.0
192.03	38	34.2	123	27.0	1	1	-6.8 -19.8
192.59	38	30.6	123	24.6	1	1	-4.1 -15.0
193.49	38	19.2	123	15.6	1	1	-6.2 -31.2
194.59	38	9.6	123	13.2	1	1	-10.1 -16.1

09JULY81		BUOY F.		DEPTH 1 M.		SERIAL NUMBER 70	
190.31	38	55.8	123	49.2	0	0	
191.05	38	46.8	123	37.8	1	1	1.1 -36.6
191.56	38	37.2	123	33.0	2	2	-16.0 -40.2
192.03	38	31.2	123	29.4	1	1	-9.3 -28.7
192.61	38	25.2	123	19.8	1	1	5.2 -35.1
193.49	38	12.6	123	15.3	1	1	-14.6 -28.2
194.60	38	8.4	123	10.8	1	1	-0.6 -10.5

09JULY81	BUOY G.	DEPTH	1 M.	SERIAL NUMBER	45
190.29	38 55.2	123 52.8	0	0	
190.94	38 51.0	123 51.0	1	1	-6.0 -13.3
191.42	38 45.0	123 45.6	2	2	-4.5 -32.4
191.98	38 32.4	123 42.0	1	1	-25.0 -42.5
192.53	38 27.9	123 45.4	1	1	-19.5 -5.7
193.56	38 13.8	123 35.4	2	2	-8.1 -32.5
194.64	37 57.6	123 40.8	1	1	-28.0 -17.8

09JULY81	BUOY H.	DEPTH	1 M.	SERIAL NUMBER	73
190.27	38 54.0	123 55.8	0	0	
190.94	38 51.9	123 54.1	1	1	-1.5 -7.8
191.42	38 48.0	123 52.2	2	2	-7.0 -17.2
191.94	38 42.0	123 48.6	1	1	-8.4 -26.0
192.55	38 27.6	123 47.7	1	1	-32.6 -38.6
193.56	38 12.0	123 34.8	2	2	-6.9 -38.7
194.64	37 59.4	123 47.4	2	2	-31.3 -4.9

09JULY81	BUOY I.	DEPTH	1 M.	SERIAL NUMBER	95
190.24	38 52.8	123 58.8	0	0	
190.93	38 50.4	123 56.4	2	2	-0.8 -9.4
191.44	38 46.2	123 57.0	1	1	-13.5 -11.5
191.90	38 44.4	123 52.2	2	2	7.1 -18.0
192.59	38 39.6	123 51.0	1	1	-8.0 -12.9
193.58	38 18.0	123 48.0	1	1	-28.1 -37.6
194.65	38 1.8	123 40.2	1	1	-13.2 -32.0

09JULY81	BUOY J.	DEPTH	1 M.	SERIAL NUMBER	108
190.46	38 48.0	123 54.6	0	0	
190.99	38 43.2	123 49.8	1	1	-2.1 -24.5
191.99	38 20.4	123 52.8	3	3	-36.9 -32.2
192.62	38 13.8	123 41.4	1	1	6.9 -37.1
193.54	38 5.4	123 39.0	1	1	-10.1 -17.3
194.62	37 55.2	123 53.4	1	1	-30.1 0.5

09JULY81	BUOY K.	DEPTH	1 M.	SERIAL NUMBER	87
190.38	38 49.8	123 40.2	0	0	
190.56	38 46.8	123 36.6	1	1	0.2 -48.9
191.03	38 39.6	123 31.2	1	1	-8.3 -37.1
191.54	38 35.4	123 28.8	1	1	-6.3 -18.3
192.05	38 31.2	123 25.2	1	1	-3.4 -20.9
192.62	38 25.8	123 19.2	1	1	-0.9 -26.8
193.49	38 12.6	123 15.6	1	1	-17.1 -28.5
194.60	38 8.4	123 11.4	1	1	-0.9 -10.2

09JULY81	BUOY L.	DEPTH	1 M.	SERIAL NUMBER	99
190.40	38 48.0	123 42.6	0	0	
191.03	38 33.0	123 40.2	2	2	-30.1 -41.6
191.52	38 29.4	123 32.4	1	1	8.8 -29.7
192.03	38 24.6	123 22.2	2	2	10.7 -37.6
192.62	38 4.2	123 19.8	3	1	-45.5 -58.7
193.53	37 58.2	123 19.2	1	1	-8.8 -11.1
194.61	37 48.6	123 22.8	1	1	-17.1 -10.1

09JULY81	BUOY M.	DEPTH	1 M.	SERIAL NUMBER	47
190.41	38 46.2	123 45.0	0 0		
191.03	38 37.2	123 41.4	1 1	-14.1	-29.3
191.47	38 27.6	123 49.2	3 3	-53.5	-13.9
192.01	38 15.6	123 44.4	1 1	-21.6	-44.9
192.59	38 11.4	123 41.4	2 2	-4.2	-17.2
193.54	38 3.0	123 47.4	1 1	-20.6	-6.6
194.62	37 57.0	123 57.6	1 1	-19.7	2.1

09JULY81	BUOY N.	DEPTH	1 M.	SERIAL NUMBER	85
190.42	38 44.4	123 48.0	0 0		
191.03	38 37.2	123 43.2	2 2	-7.6	-27.5
191.47	38 19.9	123 51.0	3 3	-79.1	-41.3
191.99	38 17.9	123 44.3	4 4	10.2	-20.7
192.57	38 13.2	123 40.2	1 1	-3.2	-20.8
193.54	38 7.2	123 34.8	1 1	-2.2	-16.0
194.63	37 57.0	123 51.6	2 2	-32.5	3.0

13JULY81	BUOY A.	DEPTH	1 M.	SERIAL NUMBER	22
194.75	39 7.2	123 48.0	0 0		
195.29	39 1.2	123 46.8	1 1	-13.5	-19.9
195.87	38 54.0	123 42.6	1 1	-9.3	-27.7
196.40	38 48.6	123 39.0	1 1	-6.6	-23.7
196.93	38 45.0	123 40.2	1 1	-12.7	-8.0
197.61	38 43.8	123 42.0	1 1	-5.8	0.3
198.26	38 44.4	123 43.8	1 1	-2.0	4.6
198.66	38 45.0	123 42.0	1 1	7.7	-2.8
199.69	38 42.6	123 42.6	1 1	-4.1	-3.0
200.51	38 43.8	123 43.8	1 1	0.3	4.0
201.46	38 43.8	123 38.4	1 1	7.0	-6.5
202.63	38 32.4	123 31.2	5 5	-6.7	-22.3

13JULY81	BUOY B.	DEPTH	1 M.	SERIAL NUMBER	63
194.77	39 7.2	123 51.6	0 0		
195.27	39 4.8	123 51.6	1 1	-7.0	-7.5
195.84	39 1.2	123 50.4	1 1	-6.6	-12.3
196.29	38 57.0	123 46.8	1 1	-3.8	-23.7
196.88	38 53.4	123 42.0	2 2	1.1	-18.8

13JULY81	BUOY C.	DEPTH	1 M.	SERIAL NUMBER	59
194.78	39 7.2	123 55.2	0 0		
195.32	39 1.8	123 54.6	1 1	-13.2	-16.9
195.84	39 0.0	123 50.4	1 1	4.8	-14.6
196.32	38 50.4	123 46.8	1 1	-20.0	-39.9
196.95	38 33.6	123 49.2	4 4	-43.6	-37.4
197.59	38 23.4	123 49.8	1 1	-24.4	-23.9
198.62	38 12.0	123 33.0	1 1	3.8	-35.9
199.60	37 55.8	123 39.0	1 1	-31.6	-18.9
200.65	37 59.4	123 40.2	2 2	3.6	6.7

13JULY81	BUOY D.	DEPTH	1 M.	SERIAL NUMBER	50		
194.82	39	0.0	123	58.8	0	0	
195.32	38	57.6	123	55.8	1	1	0.3 -14.4
195.86	38	56.4	123	56.4	2	2	-4.6 -2.2
196.30	38	55.8	123	57.6	1	1	-5.3 1.0
196.54	38	54.6	123	56.4	1	1	-1.2 -13.5
196.91	38	55.2	123	53.4	2	2	12.3 -6.7
197.45	38	52.8	123	53.4	2	2	-6.5 -7.0
197.61	38	51.6	123	54.6	1	1	-20.1 -3.2
198.26	38	40.8	123	49.8	1	1	-15.2 -34.4
198.64	38	28.8	123	46.2	1	1	-34.5 -60.2
199.60	38	4.2	123	40.8	1	1	-30.5 -46.5

13JULY81	BUOY E.	DEPTH	1 M.	SERIAL NUMBER	90		
194.93	38	57.0	123	46.2	0	0	
195.46	38	51.0	123	39.3	1	1	-0.6 -32.6
195.98	38	46.2	123	33.6	1	1	-0.1 -27.0
196.71	38	43.8	123	34.2	1	1	-5.8 -4.2
196.98	38	41.4	123	31.8	1	1	-2.1 -24.1
197.63	38	37.8	123	28.2	1	1	-1.3 -15.0
198.65	38	28.8	123	19.2	1	1	-2.1 -23.9
199.59	38	19.2	123	16.8	1	1	-11.8 -18.9
200.65	38	13.8	123	10.8	1	1	-0.5 -14.4

13JULY81	BUOY F.	DEPTH	1 M.	SERIAL NUMBER	64		
194.92	38	55.8	123	49.2	0	0	
195.32	38	49.2	123	47.4	1	1	-18.6 -30.9
195.96	38	36.6	123	48.0	1	1	-29.9 -29.7
196.52	38	17.4	123	48.6	1	1	-51.4 -52.4
197.56	38	6.6	123	43.8	1	1	-9.5 -21.5
198.61	38	4.8	124	0.0	1	1	-21.4 14.9
199.64	37	58.2	124	17.4	2	2	-30.0 9.3

13JULY81	BUOY G.	DEPTH	1 M.	SERIAL NUMBER	76		
194.90	38	54.6	123	52.8	0	0	
195.32	38	51.6	123	51.0	1	1	-5.2 -16.1
195.90	38	47.4	123	49.8	1	1	-8.0 -13.7
196.37	38	42.6	123	51.0	2	2	-18.0 -13.1
196.52	38	39.0	123	53.4	1	1	-54.6 -19.3
196.90	38	30.6	123	54.6	3	3	-36.1 -31.0
197.60	38	18.0	123	43.8	1	1	-7.4 -45.8
198.60	38	3.6	123	34.2	2	2	-9.3 -33.5
199.63	37	52.2	123	47.4	1	1	-31.8 -2.7

13JULY81	BUOY H.	DEPTH	1 M.	SERIAL NUMBER	81		
194.89	38	54.0	123	55.8	0	0	
195.32	38	54.6	123	54.0	1	1	7.2 -2.6
195.86	38	53.4	123	54.6	1	1	-4.6 -2.2
196.32	38	52.2	123	52.8	2	2	1.0 -8.6
196.54	38	50.4	123	53.4	1	1	-15.3 -9.7
196.91	38	49.2	123	52.2	2	2	-0.8 -8.8
197.60	38	36.0	123	53.4	1	1	-30.0 -27.9
198.63	38	13.2	123	37.8	1	1	-13.8 -51.9
199.61	37	57.6	123	43.2	2	2	-30.0 -18.6

13JULY81 BUOY I. DEPTH 1 M. SERIAL NUMBER 71

194.86	38	52.8	123	58.8	0	0		
195.32	38	53.4	123	58.8	1	1	1.9	2.0
195.87	38	54.0	124	2.4	2	2	-6.4	9.2
196.28	38	55.3	124	3.6	3	3	1.0	8.3
196.53	38	48.8	124	5.4	1	1	-46.8	-32.4
196.90	38	46.2	124	3.0	1	1	-2.3	-18.4
197.57	38	44.4	123	58.8	1	1	3.8	-11.4
198.25	38	33.6	123	55.2	1	1	-16.7	-30.9
198.64	38	25.8	123	50.4	1	1	-14.1	-45.3
199.65	38	7.8	123	49.2	1	1	-24.6	-29.2

13JULY81 BUOY J. DEPTH 1 M. SERIAL NUMBER 74

194.97	38	49.8	123	40.2	0	0		
195.45	38	43.8	123	36.0	1	1	-7.5	-29.5
195.98	38	40.8	123	35.4	1	1	-6.9	-10.1
196.52	38	39.0	123	34.2	2	2	-2.1	-7.8
197.03	38	34.2	123	28.8	1	1	-0.8	-26.8
197.64	38	30.0	123	26.4	1	1	-5.2	-15.3
198.60	38	19.8	123	17.4	1	1	-4.0	-27.3
199.59	38	10.8	123	13.2	1	1	-8.1	-19.1
200.65	38	10.2	123	10.8	1	1	1.9	-3.5

13JULY81 BUOY K. DEPTH 1 M. SERIAL NUMBER 48

195.00	38	48.0	123	42.6	0	0		
195.48	38	36.0	123	42.6	1	1	-36.5	-39.1
196.51	38	13.2	123	52.8	1	1	-44.4	-23.3
197.56	38	10.2	123	33.6	1	1	18.2	-25.4
198.61	37	58.2	123	52.8	1	1	-39.1	3.0
199.62	37	55.8	123	51.0	1	1	-1.3	-5.8

13JULY81 BUOY L. DEPTH 1 M. SERIAL NUMBER 107

195.02	38	46.2	123	45.0	0	0		
195.49	38	31.8	123	47.4	3	3	-51.0	-42.1
195.96	38	22.8	123	49.8	2	2	-34.2	-24.1
196.50	38	18.0	123	47.4	1	1	-7.5	-19.0
197.05	38	13.8	123	42.6	1	1	-0.5	-21.9
197.57	38	20.4	123	39.0	1	1	27.0	11.9
198.62	38	15.0	123	32.4	1	1	0.2	-15.2
199.59	38	4.8	123	27.6	1	1	-9.3	-22.1
200.65	37	58.2	123	28.2	3	3	-9.8	-9.1

13JULY81 BUOY M. DEPTH 1 M. SERIAL NUMBER 91

195.03	38	44.4	123	48.0	0	0		
195.48	38	35.4	123	49.8	3	3	-34.1	-26.7
196.50	38	16.2	123	47.4	1	1	-24.6	-32.1
197.57	38	19.8	123	40.2	1	1	13.1	-2.4
198.59	38	6.6	123	28.8	2	2	-5.2	-33.0
199.61	37	51.0	123	47.4	1	1	-44.6	-3.1

END 1981 DATA

21MAY 82	BUOY A.	DEPTH	1 M.	SERIAL NUMBER	50
141.82	39 13.3	123 52.2	0 0		
142.31	39 4.2	123 54.0	1 1	-31.6	-24.9
142.74	39 0.0	123 52.5	1 1	-10.0	-19.3
143.10	38 57.9	123 51.0	2 2	-3.4	-13.9
143.72	38 58.7	123 54.2	1 1	-4.4	7.9
144.35	38 40.0	123 34.4	2 2	-4.8	-82.3
144.74	38 34.6	123 30.9	0 0	-9.2	-31.9
145.26	38 31.9	123 28.7	1 1	-2.4	-13.0
145.69	38 33.1	123 31.0	0 0	-2.5	10.5
146.33	38 30.5	123 29.0	1 1	-2.1	-9.9
146.67	38 31.9	123 27.2	0 0	12.5	0.4
147.27	38 35.9	123 33.4	1 1	-2.9	22.2
147.67	38 35.2	123 33.5	1 1	-2.9	-2.5
148.41	38 37.2	123 35.2	2 2	1.1	6.9
149.54	38 36.1	123 34.5	1 1	-0.7	-2.2
150.46	38 37.9	123 35.0	1 1	2.2	3.7
152.21	38 27.2	123 33.8	2 2	-8.1	-10.3
152.58	38 25.9	123 34.9	1 1	-8.8	-2.1
153.02	38 23.2	123 28.4	3 3	9.1	-26.5

21MAY 82	BUOY B.	DEPTH	1 M.	SERIAL NUMBER	26
141.85	39 7.8	123 49.3	0 0		
142.75	38 57.7	123 48.0	1 1	-14.6	-19.2
143.06	38 53.2	123 48.5	2 2	-23.2	-20.9
143.70	38 43.2	123 35.2	1 1	2.6	-48.2
144.29	38 32.9	123 29.5	2 2	-13.7	-38.3
144.70	38 26.3	123 26.5	0 0	-14.5	-33.5
145.21	38 25.0	123 23.3	1 1	4.0	-11.2
145.69	38 29.1	123 24.3	1 1	9.9	15.7
146.33	38 31.3	123 30.4	1 1	-6.6	16.3
146.63	38 31.5	123 26.5	1 1	16.9	-13.8
147.29	38 34.7	123 29.0	2 2	2.4	11.9
147.66	38 38.7	123 30.7	1 1	10.2	22.2
148.40	38 44.3	123 41.5	2 2	-6.8	28.5
149.57	38 36.1	123 36.6	1 1	-5.1	-15.7
150.49	38 36.5	123 33.0	2 2	5.4	-3.8
152.08	38 28.8	123 35.6	2 2	-9.1	-5.7
152.58	38 27.2	123 34.9	1 1	-3.0	-6.6
153.04	38 22.3	123 30.2	2 2	-3.0	-28.3
153.62	38 17.6	123 27.5	1 1	-6.1	-18.0
154.59	38 1.7	123 25.0	2 2	-20.8	-28.6
155.56	37 55.7	123 21.5	0 0	-4.6	-13.8
156.63	37 47.6	123 23.1	1 1	-12.9	-10.1
157.42	37 40.1	123 24.1	1 1	-15.4	-13.4

21MAY 82	BUOY F.	DEPTH	1 M.	SERIAL NUMBER	40		
141.95	38 48.1	123 42.1	0	0			
142.42	38 37.4	123 39.7	2	2	-27.0	-41.4	
142.69	38 31.1	123 29.5	1	1	12.2	-79.6	
143.33	38 27.8	123 19.7	2	2	11.2	-25.6	
143.67	38 12.5	123 13.8	1	1	-44.4	-90.2	
144.21	38 14.8	123 10.1	2	2	14.6	-1.2	
144.68	38 16.0	123 10.2	1	1	3.5	4.2	
145.17	38 22.9	123 13.0	2	2	13.6	28.6	
145.68	38 29.5	123 17.4	1	1	8.3	30.1	
146.38	38 37.8	123 28.9	2	2	-2.8	37.3	
146.65	38 38.0	123 31.5	1	1	-10.7	12.2	
147.25	38 31.0	123 31.2	3	3	-16.4	-18.8	
147.66	38 29.1	123 29.1	0	0	-0.5	-13.1	
148.50	38 28.7	123 30.8	2	2	-3.2	1.6	
149.55	38 22.9	123 31.0	1	1	-8.3	-8.4	
150.38	38 24.0	123 28.8	2	2	5.2	-1.0	

21MAY 82	BUOY G.	DEPTH	1 M.	SERIAL NUMBER	47		
141.97	38 44.2	123 37.9	0	0			
142.68	38 23.2	123 21.0	1	1	-14.0	-73.5	
143.33	38 10.8	123 13.5	4	4	-13.7	-43.0	
143.67	38 5.0	123 13.8	1	1	-26.0	-25.7	
144.23	38 12.7	123 8.9	3	3	30.8	11.5	
144.66	38 14.8	123 7.9	1	1	10.0	5.0	
145.13	38 19.8	123 13.0	1	1	2.2	29.0	
145.65	38 24.4	123 10.2	1	1	19.5	7.7	
146.29	38 29.3	123 19.8	1	1	-7.2	29.1	
146.66	38 31.6	123 22.3	1	1	0.8	17.4	
147.29	38 37.0	123 27.3	1	1	2.8	22.5	
147.66	38 39.7	123 30.8	1	1	-0.9	22.2	
148.42	38 44.0	123 42.0	2	2	-9.8	25.7	
149.65	38 36.3	123 36.5	1	1	-3.7	-14.9	
150.44	38 39.0	123 34.8	3	3	7.6	2.9	

21MAY 82	BUOY H.	DEPTH	1 M.	SERIAL NUMBER	31		
141.99	38 40.2	123 33.3	0	0			
142.50	38 23.5	123 21.0	2	2	-18.3	-78.8	
142.68	38 22.5	123 19.5	1	1	2.1	-18.2	
143.33	38 8.5	123 11.5	4	2	-16.4	-47.8	
143.65	38 6.6	123 10.6	1	1	-5.2	-12.5	
144.19	38 13.1	123 6.8	3	1	26.2	10.8	
144.65	38 13.9	123 6.0	1	1	4.7	0.7	
145.13	38 17.3	123 6.3	1	1	9.6	11.8	
145.64	38 24.4	123 6.8	1	1	19.1	22.9	
146.21	38 28.0	123 13.3	1	1	-4.7	22.9	
146.66	38 30.5	123 19.4	2	2	-8.5	24.2	
147.27	38 36.3	123 26.7	2	2	-0.8	28.5	
147.67	38 39.0	123 30.5	1	1	-1.8	21.4	
148.44	38 43.9	123 42.0	2	2	-9.0	27.0	
149.57	38 36.5	123 36.0	1	1	-3.1	-16.3	
150.46	38 39.5	123 34.2	2	2	7.4	3.0	
152.15	38 35.9	123 35.7	3	3	-4.2	-2.3	

21MAY 82	BUOY C.	DEPTH	1 M.	SERIAL NUMBER	44
141.88	39 1.5	123 49.4	0	0	
142.29	38 56.0	123 49.3	1	1	-19.3 -21.3
142.72	38 52.5	123 43.5	1	1	4.6 -28.1
143.19	38 40.8	123 41.7	1	1	-31.6 -43.3
143.69	38 35.0	123 30.0	1	1	11.7 -44.9
144.27	38 30.0	123 29.0	2	2	-10.5 -15.5
144.70	38 23.1	123 23.9	1	1	-8.9 -38.6
145.23	38 24.3	123 21.2	1	1	9.5 -2.3
145.67	38 19.0	123 21.2	1	1	-17.6 -18.8
146.17	38 17.9	123 22.9	1	1	-7.4 0.4
146.64	38 18.1	123 22.5	1	1	1.7 -0.3
147.15	38 13.0	123 21.0	3	3	-11.0 -19.0
147.64	38 13.8	123 17.0	1	1	12.4 -6.8
148.56	38 22.1	123 18.0	2	2	11.8 15.4
149.52	38 25.3	123 24.2	1	1	-3.0 12.6
150.42	38 30.0	123 29.4	1	1	0.5 14.8
152.25	38 33.6	123 33.8	3	3	-0.1 5.8

21MAY 82	BUOY D.	DEPTH	1 M.	SERIAL NUMBER	1
141.91	38 55.9	123 49.1	0	0	
142.38	38 46.5	123 42.0	2	2	-10.7 -48.5
142.72	38 39.5	123 39.3	1	1	-20.3 -41.3
143.25	38 27.9	123 34.3	4	4	-20.4 -45.0
143.68	38 23.1	123 17.0	1	1	33.0 -63.4
144.27	38 20.3	123 16.0	1	1	-4.9 -9.4
144.68	38 18.0	123 16.3	1	1	-9.1 -7.9
145.17	38 19.1	123 16.0	3	3	4.0 2.8
145.67	38 24.0	123 16.6	1	1	12.8 16.7
146.29	38 28.8	123 22.8	2	2	-0.9 23.5
146.65	38 32.1	123 23.5	1	1	11.0 16.6
147.25	38 40.4	123 32.0	0	0	2.8 37.8
148.40	38 39.6	123 37.8	2	2	-7.2 4.7
149.56	38 35.1	123 34.0	1	1	-1.7 -9.8
150.44	38 40.8	123 36.7	2	2	5.7 13.6
152.15	38 44.1	123 40.5	2	2	0.1 5.6

21MAY 82	BUOY E.	DEPTH	1 M.	SERIAL NUMBER	42
141.93	38 51.9	123 46.9	0	0	
142.42	38 42.8	123 41.1	2	2	-12.6 -42.6
142.70	38 37.1	123 38.5	2	2	-18.3 -42.5
143.32	38 29.7	123 23.1	3	3	13.0 -47.0
143.68	38 20.6	123 16.2	1	1	-13.4 -61.4
144.19	38 16.5	123 15.1	3	3	-9.1 -15.0
144.68	38 12.6	123 17.0	1	1	-16.4 -8.0
145.16	38 12.2	123 16.0	2	2	1.3 -3.7
145.64	38 13.8	123 15.0	1	1	7.4 2.8
146.18	38 16.8	123 19.6	2	2	-2.3 18.4
146.63	38 21.9	123 17.7	1	1	21.7 12.9
147.11	38 25.2	123 18.5	2	2	8.0 12.7
147.65	38 27.5	123 23.4	1	1	-4.9 17.0
148.56	38 27.2	123 28.5	3	3	-7.3 5.9
149.53	38 22.9	123 30.3	1	1	-8.7 -4.8
150.38	38 22.3	123 39.2	3	3	-13.8 10.9
152.23	38 36.8	123 31.5	3	3	16.5 7.5

21MAY 82	BUOY I.	DEPTH	1 M.	SERIAL NUMBER	30		
142.01	38 35.1	123	28.8	0	0		
142.50	38 25.5	123	23.3	1	1	-17.8	-46.7
142.66	38 21.8	123	19.5	1	1	-4.7	-63.3
143.35	38 8.8	123	12.6	2	2	-15.3	-40.9
143.66	38 6.1	123	11.5	1	1	-8.4	-17.7
144.19	38 12.0	123	13.5	2	2	11.6	21.7
144.66	38 14.4	123	7.0	1	1	24.4	-7.8
145.13	38 18.6	123	6.0	1	1	15.6	11.5
145.64	38 23.8	123	7.5	1	1	11.3	19.3
146.17	38 28.5	123	14.0	1	1	-2.1	27.9
146.67	38 30.9	123	20.9	1	1	-9.9	23.3
147.29	38 37.7	123	28.3	2	2	1.4	30.8
147.67	38 40.1	123	32.0	1	1	-2.7	21.0
148.40	38 41.7	123	38.6	3	3	-7.9	13.8
149.56	38 32.8	123	34.0	1	1	-6.3	-16.5
150.35	38 22.8	123	34.7	1	1	-19.6	-18.8

21MAY 82	BUOY J.	DEPTH	30 M.	SERIAL NUMBER	37		
141.85	39 7.7	123	49.3	0	0		
142.30	39 5.3	123	48.0	1	1	-4.2	-11.6
142.73	39 4.7	123	48.1	1	1	-2.3	-1.9
143.06	39 3.6	123	46.4	1	1	1.4	-11.1
143.71	39 2.7	123	46.4	1	1	-2.0	-2.2
144.73	39 8.6	123	47.5	1	1	7.1	10.3
145.72	39 22.8	123	51.0	1	1	16.6	26.5

21MAY 82	BUOY K.	DEPTH	30 M.	SERIAL NUMBER	8		
141.88	39 1.2	123	49.4	0	0		
142.31	38 57.3	123	48.5	1	1	-10.7	-16.6
142.72	38 54.6	123	47.6	1	1	-6.9	-12.8
143.17	38 52.2	123	43.9	1	1	2.3	-17.7
143.70	38 46.0	123	38.0	2	2	-3.4	-31.0
144.37	38 41.0	123	38.6	1	1	-12.0	-10.7
144.74	38 41.9	123	37.2	0	0	8.2	-0.5
145.28	38 39.8	123	34.6	1	1	0.2	-11.6
145.70	38 40.5	123	34.5	1	1	2.7	2.3
146.37	38 39.3	123	37.2	2	2	-7.5	1.8
146.65	38 37.7	123	36.4	1	1	-4.8	-12.2
147.29	38 31.0	123	34.0	3	3	-10.7	-20.7
147.65	38 27.6	123	30.8	1	1	-2.9	-24.9
148.56	38 25.4	123	29.5	2	2	-1.8	-5.4
149.53	38 28.5	123	33.5	1	1	-0.4	9.7
150.38	38 28.0	123	30.1	2	2	4.0	-5.5
152.25	38 29.0	123	35.3	3	3	-2.6	4.0
153.02	38 26.9	123	34.8	3	3	-3.2	-5.0
153.63	38 26.4	123	29.2	1	1	10.0	-11.8
154.19	38 20.2	123	24.7	2	2	-6.3	-26.5
154.60	38 16.7	123	21.0	2	2	-1.4	-23.7
155.08	38 9.3	123	22.2	3	3	-25.6	-21.3
155.56	38 6.2	123	20.6	0	0	-5.3	-13.9
156.65	37 56.9	123	18.0	1	1	-9.5	-16.1
157.42	37 51.0	123	21.1	1	1	-16.1	-7.4

21MAY 82	BUOY L.	DEPTH 30 M.	SERIAL NUMBER	27
141.91	38 55.9	123 49.1	0 0	
142.58	38 47.3	123 41.3	1 1	-4.5 -33.4
142.76	38 42.1	123 39.1	1 1	-27.2 -59.2
143.33	38 36.4	123 38.8	3 3	-13.9 -16.2
143.69	38 31.7	123 35.8	1 1	-8.9 -29.9
144.25	38 22.2	123 24.0	3 3	1.0 -50.6
144.69	38 17.5	123 19.7	1 1	-3.6 -27.9
145.15	38 17.0	123 16.5	2 2	6.9 -9.6
145.65	38 13.7	123 16.4	1 1	-9.4 -10.6
146.17	38 13.9	123 16.0	2 2	1.5 -0.3
146.63	38 14.8	123 14.5	1 1	6.8 -0.7
147.17	38 19.2	123 15.0	2 2	10.8 13.8
147.64	38 21.5	123 17.5	1 1	0.6 13.7
148.42	38 39.0	123 25.0	2 2	21.0 46.1
149.57	38 34.3	123 34.8	1 1	-16.4 3.3

21MAY 82	BUOY M.	DEPTH 30 M.	SERIAL NUMBER	22
141.93	38 51.9	123 46.9	0 0	
142.39	38 45.2	123 41.4	1 1	-6.6 -36.4
142.70	38 40.2	123 40.1	1 1	-18.4 -30.0
143.19	38 35.9	123 40.7	2 2	-14.3 -12.3
143.68	38 31.7	123 35.8	2 2	-0.3 -24.8
144.29	38 21.9	123 24.2	2 2	-0.2 -46.9
144.69	38 16.8	123 19.6	1 1	-4.5 -33.1
145.17	38 14.9	123 17.1	1 1	0.6 -12.1
145.66	38 6.6	123 18.3	1 1	-27.7 -23.7
146.60	38 1.2	123 25.0	1 1	-17.1 -0.8
147.61	38 2.5	123 32.0	2 2	-6.6 9.9
149.52	38 11.7	123 41.3	3 3	1.1 13.1
150.42	38 14.0	123 50.5	4 4	-8.8 15.7
152.59	38 17.7	124 11.2	1 1	-9.2 13.6
153.65	38 15.2	124 17.0	1 1	-10.1 2.6
154.67	38 14.0	124 19.5	3 3	-4.7 1.0

21MAY 82	BUOY N.	DEPTH 30 M.	SERIAL NUMBER	10
141.95	38 48.2	123 42.2	0 0	
142.42	38 41.0	123 48.2	2 2	-38.0 -9.4
142.69	38 35.9	123 37.4	1 1	21.4 -75.2
143.33	38 21.5	123 29.5	3 3	-17.7 -49.3
143.67	38 22.3	123 18.5	1 1	43.0 -33.3
144.21	38 17.2	123 15.5	2 2	-7.0 -21.1
144.67	38 7.8	123 20.9	1 1	-44.2 -18.6
145.64	38 3.8	123 32.4	2 2	-20.5 7.1
146.61	37 56.5	123 50.9	3 3	-34.3 10.0
147.62	37 54.5	123 54.5	3 3	-7.3 1.0

21MAY 82	BUOY P.	DEPTH 30 M.	SERIAL NUMBER	3
141.99	38 40.2	123 33.3	0 0	
142.50	38 26.3	123 23.6	1 1	-16.5 -64.4
142.67	38 23.1	123 21.5	1 1	-12.4 -43.6
143.38	38 7.3	123 14.5	2 2	-20.4 -46.1
143.66	38 5.3	123 14.2	1 1	-9.1 -12.4
144.19	38 6.6	123 13.2	2 2	5.9 1.7
144.66	38 4.0	123 19.2	2 2	-23.7 5.9
145.64	38 3.8	123 32.4	2 2	-16.8 15.1
146.62	37 57.0	123 31.5	3 3	-9.0 -11.9
147.61	37 54.5	123 54.5	3 3	-32.1 22.6

31MAY 82	BUOY A.	DEPTH 1 M.	SERIAL NUMBER	35
151.38	38 54.8	123 52.0	0 0	
152.06	38 35.2	123 51.5	3 3	-41.2 -45.9
152.62	38 29.2	123 59.1	1 1	-32.2 -1.3
153.64	38 17.0	124 21.0	3 3	-43.7 5.8
154.65	38 6.0	124 29.5	3 3	-26.2 -7.4

31MAY 82	BUOY B.	DEPTH 1 M.	SERIAL NUMBER	36
151.40	38 51.8	123 47.0	0 0	
152.01	38 47.8	123 51.0	3 3	-17.6 -2.8
152.62	38 44.7	123 49.7	1 1	-4.8 -10.4
153.17	38 38.6	123 46.6	2 2	-9.3 -23.8
153.68	38 31.1	123 53.1	1 1	-37.1 -8.4
154.02	38 30.8	123 56.7	2 2	-14.2 10.7
154.65	38 28.4	124 6.5	1 1	-24.6 11.8
155.59	38 23.5	124 23.5	2 2	-29.7 12.5
156.62	38 19.7	124 30.8	3 3	-14.1 2.3

31MAY 82	BUOY C.	DEPTH 1 M.	SERIAL NUMBER	38
151.42	38 49.0	123 54.7	0 0	
152.06	38 32.8	123 51.3	3 3	-30.4 -45.7
152.70	38 27.7	123 58.8	2 2	-26.0 0.9
153.65	38 16.0	124 20.2	3 3	-45.5 6.5
154.65	38 11.1	124 21.0	3 3	-8.1 -6.8
155.59	38 7.0	124 20.0	3 3	-5.1 -8.0
156.62	38 3.5	124 21.3	3 3	-6.5 -3.9

31MAY 82	BUOY D.	DEPTH 1 M.	SERIAL NUMBER	6
151.45	38 46.7	123 44.3	0 0	
152.01	38 50.1	123 48.7	2 2	-0.8 18.5
152.64	38 46.5	123 51.0	1 1	-12.8 -4.8
153.27	38 38.9	123 46.7	3 3	-9.3 -26.7
153.67	38 31.6	123 53.3	0 0	-46.8 -9.7
154.65	38 27.5	124 8.0	2 2	-24.5 10.6
155.61	38 22.2	124 22.0	2 2	-25.9 8.0

31MAY 82	BUOY E.	DEPTH 1 M.	SERIAL NUMBER	41
151.47	38 44.1	123 37.8	0 0	
151.99	38 50.0	123 44.8	2 2	0.1 33.1
152.63	38 46.0	123 50.3	1 1	-19.6 0.0

31MAY 82	BUOY F.	DEPTH	1 M.	SERIAL NUMBER	46
151.50	38 40.5	123 42.8	0	0	
152.02	38 40.2	123 39.3	2	2	7.4 -8.6
152.67	38 35.1	123 43.5	1	1	-19.4 -4.9
153.08	38 30.7	123 42.3	3	3	-12.1 -20.1
153.66	38 26.2	123 44.0	0	0	-14.9 -8.8
154.11	38 26.6	123 40.2	5	5	11.6 -8.3
154.61	38 25.0	123 35.1	0	0	7.8 -16.7
155.04	38 18.8	123 30.7	3	3	-8.5 -34.2
155.58	38 9.1	123 22.5	0	0	-7.6 -45.4
156.66	37 55.2	123 19.5	1	1	-15.4 -23.3
157.40	37 47.0	123 18.1	1	1	-13.9 -19.5

31MAY 82	BUOY G.	DEPTH	1 M.	SERIAL NUMBER	48
151.52	38 38.3	123 35.6	0	0	
152.06	38 39.6	123 37.8	2	3	-1.5 8.4
152.62	38 36.9	123 43.3	1	1	-19.1 3.7
153.12	38 32.0	123 42.0	3	2	-11.1 -18.3
153.66	38 27.7	123 45.4	1	1	-19.3 -5.3
154.09	38 24.7	123 44.6	2	2	-7.9 -13.0
154.61	38 25.9	123 37.2	2	2	20.8 -12.6
155.03	38 23.6	123 29.9	2	2	13.3 -28.4
155.57	38 14.8	123 24.4	0	0	-11.3 -37.1
156.00	38 6.5	123 23.4	5	5	-25.3 -32.8
156.63	37 55.8	123 22.9	0	0	-23.8 -27.5
157.40	37 46.9	123 20.8	1	1	-13.5 -21.2

31MAY 82	BUOY H.	DEPTH	1 M.	SERIAL NUMBER	32
151.55	38 36.0	123 28.6	0	0	
152.09	38 36.8	123 34.4	2	4	-11.0 14.6
152.60	38 36.8	123 40.1	1	1	-13.7 12.8
153.12	38 32.9	123 38.1	2	2	-6.2 -16.1
153.66	38 27.5	123 42.3	1	1	-24.1 -6.8
154.13	38 23.5	123 40.7	2	2	-8.3 -17.2
154.61	38 24.4	123 32.2	0	0	24.4 -17.3
155.03	38 17.5	123 28.2	3	3	-12.3 -36.6
155.57	38 7.1	123 22.7	0	0	-15.6 -41.8
156.64	37 51.5	123 19.2	1	1	-17.3 -26.5
157.41	37 44.8	123 15.0	1	1	-6.0 -19.8

31MAY 82	BUOY I.	DEPTH	1 M.	SERIAL NUMBER	34
151.56	38 32.3	123 33.7	0	0	
152.61	38 35.0	123 37.0	1	1	-0.1 7.6
153.12	38 32.1	123 40.7	2	2	-17.2 -0.6
153.67	38 27.9	123 40.4	1	1	-10.5 -12.6
154.12	38 25.8	123 38.5	2	2	-1.6 -12.1
154.61	38 24.3	123 33.6	0	0	7.8 -16.2
155.01	38 18.7	123 29.9	3	3	-9.1 -32.5
155.59	38 8.4	123 23.8	1	1	-13.0 -39.8
156.62	37 52.2	123 21.2	1	1	-19.9 -27.5
157.40	37 47.2	123 19.6	1	1	-6.8 -12.4

31MAY 82 BUOY J. DEPTH 1 M. SERIAL NUMBER 43

151.59	38 30.1	123 26.5	0	0		
152.15	38 31.4	123 27.9	2	4	0.3	6.5
152.61	38 31.2	123 32.2	1	1	-12.1	10.0
153.07	38 28.3	123 34.5	2	2	-15.3	-4.1
153.70	38 21.8	123 30.6	1	1	-7.5	-23.2
154.60	38 7.5	123 27.0	1	1	-18.3	-29.4
155.56	37 59.4	123 27.9	1	1	-13.5	-12.1
156.64	37 49.8	123 30.3	1	1	-15.7	-11.4
157.41	37 41.2	123 31.7	2	2	-18.5	-15.4

31MAY 82 BUOY K. DEPTH 30 M. SERIAL NUMBER 21

151.37	38 54.8	123 52.0	0	0		
152.03	38 41.1	123 52.9	3	3	-32.0	-30.9
152.65	38 34.5	123 52.0	1	1	-13.8	-18.3
153.18	38 32.1	123 59.5	5	5	-23.9	9.1
153.65	38 30.6	124 12.2	2	2	-37.7	25.9
154.66	38 20.0	124 35.5	3	3	-43.6	9.9

31MAY 82 BUOY L. DEPTH 30 M. SERIAL NUMBER 55

151.39	38 51.8	123 47.0	0	0		
151.95	38 55.1	123 50.6	2	2	0.7	16.6
152.65	38 45.5	123 51.9	1	1	-22.3	-19.3
153.19	38 37.8	123 49.6	2	2	-15.6	-27.2
153.67	38 34.2	123 52.3	1	1	-17.8	-5.3
154.64	38 31.1	124 8.8	2	2	-25.5	14.4
155.60	38 28.0	124 35.0	3	3	-38.1	26.1

31MAY 82 BUOY M. DEPTH 30 M. SERIAL NUMBER 9

151.45	38 46.7	123 44.3	0	0		
152.01	38 49.4	123 48.0	2	2	-1.1	15.1
152.64	38 51.0	123 51.6	1	1	-3.3	10.5
153.27	38 42.0	123 49.0	2	2	-15.8	-27.1
153.68	38 36.1	123 52.9	1	1	-32.6	-11.7
154.02	38 33.2	123 54.0	2	2	-16.4	-9.6
154.63	38 30.9	124 5.0	2	2	-27.6	14.7
155.60	38 18.5	124 31.5	3	3	-52.1	11.2

31MAY 82 BUOY N. DEPTH 30 M. SERIAL NUMBER 12

151.48	38 44.1	123 37.8	0	0		
151.95	38 48.7	123 42.6	3	3	1.8	27.0
152.64	38 52.2	123 48.2	1	1	-2.5	17.2
153.33	38 49.4	123 48.1	1	1	-5.7	-6.5
153.69	38 47.5	123 48.8	0	0	-10.1	-6.0
154.00	38 44.0	123 49.2	2	2	-18.1	-16.2
154.64	38 39.4	123 49.5	1	1	-11.1	-10.7
155.61	38 33.5	123 53.0	2	2	-13.3	-5.4
156.60	38 31.5	124 1.0	0	0	-12.8	6.1

31MAY 82	BUOY P.	DEPTH 30 M.	SERIAL NUMBER	33
151.52	38 38.3	123 35.6	0 0	
152.02	38 41.6	123 39.4	2 2	0.3 19.0
152.70	38 44.9	123 43.3	1 1	0.1 14.1
153.21	38 44.8	123 42.9	2 2	0.7 -1.2
153.68	38 43.3	123 42.1	1 1	-2.6 -6.9
154.03	38 42.2	123 39.4	2 2	4.9 -13.7
154.63	38 40.6	123 36.8	2 2	1.4 -9.1
154.95	38 38.3	123 33.6	2 2	1.7 -22.7
155.61	38 36.0	123 27.3	1 1	6.6 -16.4
155.96	38 32.5	123 24.6	2 2	-5.2 -24.5
156.60	38 23.8	123 27.6	0 0	-25.6 -15.9
157.39	38 13.6	123 15.6	1 1	-0.3 -37.5

31MAY 82	BUOY Q.	DEPTH 30 M.	SERIAL NUMBER	16
151.55	38 36.0	123 28.6	0 0	
152.61	38 40.5	123 35.6	1 1	-1.9 14.2
153.21	38 40.5	123 34.4	2 2	2.4 -2.3
153.68	38 39.8	123 32.6	1 1	2.5 -6.7
154.05	38 35.9	123 30.0	2 2	-6.8 -24.5
154.63	38 32.7	123 25.0	0 0	2.5 -18.5
155.00	38 28.9	123 21.2	2 2	-2.4 -27.8
155.63	38 23.2	123 16.2	1 1	-3.5 -23.2
155.99	38 19.2	123 17.9	2 2	-22.0 -12.0
156.59	38 12.5	123 18.8	0 0	-18.1 -15.8
157.39	38 0.8	123 24.0	1 1	-29.3 -15.5

31MAY 82	BUOY R.	DEPTH 30 M.	SERIAL NUMBER	14
151.60	38 30.1	123 26.5	0 0	
152.15	38 33.8	123 27.9	2 3	6.7 13.4
152.60	38 33.9	123 30.0	1 1	-5.4 5.7
153.08	38 33.2	123 30.8	2 2	-4.2 -0.4
153.70	38 30.5	123 29.4	0 0	-3.6 -9.4
154.15	38 27.1	123 26.8	2 2	-4.0 -18.4
154.62	38 24.7	123 22.2	1 1	4.5 -19.2
155.02	38 20.8	123 22.5	2 3	-15.1 -14.4
155.58	38 13.6	123 23.3	1 1	-20.5 -18.5
156.00	38 6.5	123 25.2	4 4	-30.2 -21.3
156.63	37 59.7	123 27.3	1 1	-19.8 -13.1
157.39	37 52.5	123 28.3	2 2	-15.4 -13.3

09JULY82	BUOY A.	DEPTH 1 M.	SERIAL NUMBER	70
190.16	38 56.6	123 46.0	0 0	
190.31	38 53.9	123 45.5	1 1	-22.2 -32.0
190.93	38 42.2	123 33.0	1 1	-2.9 -52.5
191.43	38 37.3	123 26.6	1 1	1.4 -29.9
191.97	38 29.8	123 20.4	1 1	-6.2 -34.8
192.41	38 24.8	123 14.7	2 2	-0.7 -32.6
192.75	38 21.5	123 11.9	0 0	-4.1 -24.6
193.55	38 12.5	123 8.1	1 1	-10.6 -23.0
194.01	38 10.2	123 5.3	4 2	0.2 -14.8
194.50	38 0.0	123 4.5	1 1	-28.4 -34.4
195.41	37 50.8	123 1.6	1 1	-10.9 -19.5

09JULY82	BUOY B.	DEPTH	1 M.	SERIAL NUMBER	69
190.15	38 55.7	123 49.1	0	0	
190.31	38 53.1	123 48.2	1	1	-16.8 -31.8
190.94	38 42.9	123 38.5	1	1	-4.8 -42.9
191.43	38 33.7	123 34.0	1	1	-16.2 -39.9
192.00	38 22.1	123 37.2	2	2	-36.6 -25.4
192.75	38 13.4	123 33.8	1	1	-11.4 -23.3
193.59	38 1.0	123 26.2	1	1	-10.5 -33.4
194.52	37 38.7	123 28.6	1	1	-38.2 -34.6
195.44	37 33.0	123 25.1	2	2	-4.4 -14.0

09JULY82	BUOY C.	DEPTH	1 M.	SERIAL NUMBER	81
190.13	38 54.7	123 52.6	0	0	
190.31	38 52.1	123 52.4	2	2	-19.7 -23.9
190.94	38 42.9	123 39.2	2	2	4.3 -46.8
191.43	38 34.3	123 35.1	2	2	-15.4 -37.0
192.03	38 21.5	123 37.2	3	3	-35.4 -29.4
192.45	38 17.3	123 30.3	2	2	5.5 -34.4
192.71	38 13.0	123 33.0	1	1	-36.8 -14.0
193.59	38 0.0	123 25.2	1	1	-10.7 -33.2
194.01	37 59.8	123 19.6	4	2	15.6 -16.0
194.52	37 41.0	123 27.6	2	2	-73.0 -39.8
195.45	37 31.8	123 26.2	2	2	-12.6 -17.2

09JULY82	BUOY D.	DEPTH	1 M.	SERIAL NUMBER	28
190.09	38 52.5	123 58.7	0	0	
190.31	38 48.0	123 58.6	1	1	-29.3 -32.5
190.91	38 38.9	123 44.5	2	2	6.6 -50.6
191.43	38 31.2	123 40.9	2	2	-13.1 -31.1
192.04	38 17.3	123 43.4	2	2	-38.3 -31.0
192.71	38 10.1	123 46.5	1	1	-21.3 -11.5
193.62	38 6.5	123 40.5	1	1	2.3 -13.7
194.01	38 9.6	123 32.7	3	3	36.1 -10.4
194.53	37 57.0	123 34.0	1	1	-38.4 -35.0
195.46	37 49.7	123 43.8	2	2	-24.4 -0.2

09JULY82	BUOY E.	DEPTH	1 M.	SERIAL NUMBER	75
190.20	38 50.0	123 39.7	0	0	
190.36	38 47.9	123 36.5	1	1	5.3 -43.4
190.95	38 41.4	123 28.9	1	1	-0.3 -31.9
191.43	38 36.8	123 25.7	2	2	-5.8 -22.6
191.97	38 29.1	123 20.0	1	1	-7.9 -34.4
192.41	38 24.0	123 14.5	2	2	-1.6 -32.4
192.75	38 19.7	123 13.0	1	1	-13.1 -24.8
193.55	38 9.2	123 9.2	1	1	-13.3 -26.0
194.01	38 9.2	123 7.0	4	1	5.9 -5.5
194.50	37 58.0	123 6.5	2	2	-32.1 -36.9
195.41	37 48.3	123 2.9	1	1	-10.7 -21.2

09JULY82		BUOY F.	DEPTH	1 M.	SERIAL NUMBER		76
190.21	38	48.0	123	42.4	0	0	
190.37	38	44.3	123	40.2	2	2	-16.9 -51.9
190.90	38	34.5	123	33.5	1	1	-11.5 -43.4
191.41	38	28.4	123	28.8	2	2	-6.2 -29.2
191.93	38	19.9	123	23.4	2	2	-11.1 -37.4
192.41	38	17.0	123	16.3	1	1	9.3 -26.3
192.75	38	9.2	123	13.4	1	1	-23.0 -45.6
193.55	37	59.0	123	12.0	1	1	-16.5 -21.9
194.01	38	2.1	123	7.2	4	1	22.6 -1.4
194.50	37	46.0	123	8.9	1	1	-52.2 -47.4
195.44	37	37.0	123	2.9	1	1	-6.2 -22.3

09JULY82		BUOY G.	DEPTH	1 M.	SERIAL NUMBER		95
190.23	38	46.3	123	44.9	0	0	
190.37	38	41.6	123	43.9	2	2	-40.2 -60.7
190.91	38	31.3	123	39.9	1	1	-18.8 -38.3
191.40	38	24.2	123	37.4	1	1	-14.9 -28.5
191.99	38	15.6	123	38.3	2	2	-23.1 -21.1
192.71	38	11.6	123	39.0	1	1	-9.3 -7.6
193.60	37	59.8	123	27.8	1	1	-3.9 -35.1
194.53	37	45.7	123	37.0	1	1	-34.2 -12.4
195.44	37	41.9	123	39.1	2	2	-8.9 -3.9

09JULY82		BUOY H.	DEPTH	1 M.	SERIAL NUMBER		82
190.26	38	42.7	123	50.0	0	0	
190.37	38	40.1	123	49.2	1	1	-25.6 -45.3
190.91	38	33.3	123	45.8	2	2	-10.7 -26.9
191.40	38	27.0	123	36.1	1	1	5.5 -42.7
192.71	38	10.5	123	40.6	1	1	-22.6 -15.8
193.60	38	3.8	123	31.0	1	1	2.2 -24.1
194.53	37	47.7	123	35.8	1	1	-31.6 -21.2
195.44	37	44.5	123	40.0	1	1	-10.8 -0.2

09JULY82		BUOY I.	DEPTH	1 M.	SERIAL NUMBER		127
190.35	38	41.8	123	30.6	0	0	
190.43	38	40.0	123	30.3	1	1	-28.2 -39.5
190.86	38	34.4	123	25.2	1	1	-4.5 -33.9
191.41	38	30.5	123	22.3	1	1	-3.9 -17.1
191.93	38	22.0	123	17.2	1	1	-11.9 -36.8
192.41	38	19.1	123	12.4	1	1	3.4 -20.9
192.75	38	11.0	123	10.4	1	1	-27.6 -44.0
193.55	38	3.3	123	7.5	1	1	-9.6 -19.2
194.50	37	51.2	123	4.5	1	1	-14.7 -23.5
195.41	37	42.5	123	2.0	3	3	-10.6 -18.1

09JULY82		BUOY J.		DEPTH 1 M.		SERIAL NUMBER 65	
190.34	38	40.0	123	33.3	0	0	
190.42	38	38.2	123	31.6	2	2	-6.8 -59.5
190.86	38	31.3	123	28.2	1	1	-13.4 -33.4
191.40	38	29.0	123	23.7	2	2	4.0 -16.2
191.93	38	19.2	123	18.2	1	1	-14.3 -40.8
192.41	38	17.0	123	14.5	1	1	2.7 -16.0
192.79	38	8.8	123	13.0	1	1	-26.7 -38.3
193.55	37	59.4	123	12.0	1	1	-16.4 -20.8
194.50	37	46.4	123	9.3	1	1	-16.5 -24.7
195.41	37	38.4	123	4.8	2	2	-6.8 -19.4

09JULY82		BUOY K.		DEPTH 1 M.		SERIAL NUMBER 71	
190.33	38	38.3	123	35.6	0	0	
190.41	38	36.3	123	34.1	2	2	-13.5 -60.5
190.86	38	29.9	123	28.1	1	1	-4.4 -37.5
191.40	38	25.5	123	24.6	1	1	-4.0 -20.1
191.93	38	17.1	123	20.9	1	1	-14.6 -32.8
192.41	38	14.7	123	12.6	2	1	13.9 -27.6
192.79	38	2.8	123	13.5	1	1	-48.6 -46.3
193.59	37	53.5	123	9.6	3	3	-11.0 -23.8
194.50	37	44.0	123	7.9	1	1	-12.9 -18.5
195.41	37	31.0	123	4.8	1	1	-16.7 -26.2

09JULY82		BUOY L.		DEPTH 1 M.		SERIAL NUMBER 86	
190.30	38	34.7	123	40.7	0	0	
190.47	38	30.2	123	41.9	2	2	-47.3 -33.4
190.88	38	24.0	123	35.7	2	2	-3.6 -40.9
191.40	38	20.3	123	31.0	3	3	0.7 -21.5
192.70	38	8.0	123	23.5	3	3	-6.7 -21.4
193.62	37	50.5	123	22.9	1	1	-27.0 -30.5
194.52	37	40.0	123	21.0	3	3	-14.4 -20.7
195.44	37	35.4	123	15.9	2	2	-0.5 -14.2

09JULY82		BUOY M.		DEPTH 30 M.		SERIAL NUMBER 15	
190.15	38	55.7	123	49.1	0	0	
190.31	38	54.4	123	48.3	1	1	-5.7 -18.4
191.00	38	49.2	123	42.1	1	1	0.0 -22.1
191.49	38	43.7	123	34.8	1	1	1.9 -34.6
192.07	38	37.3	123	27.7	1	1	-1.1 -31.2
192.47	38	32.0	123	23.7	2	2	-7.1 -32.1
192.75	38	29.9	123	23.5	1	1	-10.1 -12.5
193.67	38	21.6	123	17.1	0	0	-4.7 -22.1
194.01	38	18.4	123	15.2	2	2	-6.9 -21.1
194.50	38	14.4	123	15.3	1	1	-12.2 -12.5
195.41	38	8.7	123	12.7	1	1	-5.6 -13.1

09JULY82	BUOY N.	DEPTH 30 M.	SERIAL NUMBER	24
190.21	38 48.0	123 42.4	0 0	
190.34	38 46.0	123 40.3	1 1	-2.7 -42.5
190.94	38 40.8	123 34.6	1 1	-1.0 -24.4
191.43	38 35.4	123 30.3	1 1	-2.4 -24.1
192.00	38 29.8	123 28.5	1 1	-13.0 -21.7
192.45	38 24.4	123 28.4	1 1	-17.2 -19.0
192.77	38 20.8	123 26.5	3 3	-9.2 -24.4
193.60	38 12.5	123 25.0	1 1	-12.4 -17.7
194.56	37 59.5	123 17.2	2 2	-9.8 -30.5
195.41	37 43.4	123 14.8	2 2	-24.2 -32.9

09JULY82	BUOY P.	DEPTH 30 M.	SERIAL NUMBER	25
190.26	38 42.6	123 50.1	0 0	
190.37	38 41.1	123 48.7	1 1	-4.3 -35.9
190.91	38 35.2	123 47.0	2 3	-9.4 -17.8
191.40	38 33.1	123 41.3	3 3	5.0 -23.2
192.04	38 27.3	123 46.4	2 2	-23.0 -5.1
192.71	38 22.5	123 49.0	2 2	-15.2 -6.8
193.62	38 16.1	123 59.0	2 2	-23.7 1.5
194.53	38 15.0	124 9.0	3 3	-15.2 10.7
195.47	38 19.5	124 21.0	3 4	-8.6 22.1

09JULY82	BUOY Q.	DEPTH 30 M.	SERIAL NUMBER	94
190.34	38 40.0	123 33.3	0 0	
190.43	38 39.6	123 32.1	1 1	9.8 -22.2
190.88	38 35.3	123 29.3	1 1	-6.3 -22.1
191.42	38 28.5	123 29.5	1 2	-18.8 -19.3
191.96	38 22.2	123 23.6	1 2	-3.7 -30.7
192.41	38 20.5	123 19.1	2 2	6.7 -17.3
192.75	38 26.4	123 28.4	1 1	-8.2 58.4
193.55	38 7.9	123 22.2	1 1	-24.3 -45.0
194.01	38 7.5	123 16.6	4 1	13.6 -15.3
194.52	37 55.0	123 20.3	2 2	-44.7 -30.1
195.41	37 43.0	123 32.6	3 3	-36.6 -5.3

09JULY82	BUOY R.	DEPTH 30 M.	SERIAL NUMBER	115
190.30	38 34.7	123 40.7	0 0	
190.39	38 33.3	123 39.0	2 2	0.4 -45.9
190.90	38 29.7	123 37.1	2 2	-5.7 -15.3
191.43	38 23.6	123 40.4	2 2	-24.4 -10.9
191.99	38 19.0	123 42.9	3 3	-17.5 -7.7
192.71	38 15.8	123 49.6	1 1	-17.9 3.7
193.62	38 12.4	123 57.3	2 2	-15.8 3.8
194.53	38 9.2	124 13.5	2 2	-26.9 14.8
195.46	38 2.0	124 21.5	3 3	-21.8 -2.3

15JULY82	BUOY A.	DEPTH 1 M.	SERIAL NUMBER	39
196.98	39 7.8	123 46.1	0 0	
197.97	39 7.0	123 45.9	1 1	-10.3 -16.4
197.37	39 6.8	123 45.9	1 1	-1.0 -1.0
197.67	39 7.5	123 44.9	1 1	7.5 -0.2
198.61	39 10.5	123 45.7	0 0	3.6 6.0
200.62	39 12.4	123 47.3	1 1	0.4 2.4

15 JULY 82		BUOY B.		DEPTH 1 M.		SERIAL NUMBER		4
196.92	39	6.8	123	52.6	0	0		
197.05	39	0.6	123	50.0	1	1	-45.1	-97.4
197.32	38	53.1	123	54.4	2	2	-60.5	-24.8
197.64	38	47.3	123	59.4	1	1	-45.6	-10.5
198.07	38	44.2	123	55.6	2	2	0.3	-21.4
198.61	38	43.3	123	58.5	2	2	-9.0	3.5
199.62	38	35.8	123	52.1	0	0	-3.1	-18.9
200.09	38	37.8	123	57.0	2	2	-6.6	18.6
200.68	38	43.5	123	53.9	0	0	20.5	9.1
201.12	38	44.6	123	57.9	1	1	-7.5	14.3
201.67	38	36.0	123	58.6	1	1	-24.4	-23.0
202.94	38	38.8	123	55.4	1	1	6.3	0.6
203.60	38	33.7	123	52.9	3	3	-6.6	-16.4
204.66	38	34.5	123	45.7	1	1	9.4	-6.6
205.65	38	30.2	123	51.0	1	1	-12.9	-0.7
206.62	38	44.9	124	0.6	1	1	10.0	35.0

15 JULY 82		BUOY C.		DEPTH 1 M.		SERIAL NUMBER		54
196.85	39	5.5	123	59.3	0	0		
197.10	38	57.4	123	57.3	1	1	-37.5	-59.8
197.64	38	36.7	124	9.2	1	1	-82.9	-34.8
198.59	38	30.0	123	53.0	2	2	10.6	-30.5
199.60	38	32.4	123	42.0	0	0	16.8	-8.7
200.67	38	40.1	123	42.0	1	1	10.5	11.3
201.24	38	42.1	123	40.5	1	1	8.3	2.5
201.63	38	46.8	123	44.1	1	1	6.3	29.4
202.12	38	44.8	123	44.3	2	2	-6.5	-5.9
202.96	38	49.8	123	53.6	2	2	-4.9	22.0
203.54	38	51.1	123	55.8	2	2	-1.4	7.8
204.67	38	46.5	124	8.1	0	0	-19.3	6.1
205.65	38	26.2	123	58.3	2	2	-18.0	-43.8
206.59	38	8.5	123	53.3	3	3	-21.0	-35.5
208.56	37	53.6	123	45.5	1	1	-6.2	-16.4
209.57	37	48.2	123	43.4	3	3	-5.3	-10.7

15 JULY 82		BUOY D.		DEPTH 1 M.		SERIAL NUMBER		60
196.77	39	4.5	124	6.1	0	0		
197.61	38	35.1	124	19.1	2	2	-70.0	-37.1
198.59	38	30.5	124	22.8	1	1	-11.5	-3.0
199.57	38	31.5	124	27.9	2	2	-4.9	7.5
201.04	38	38.9	124	42.5	5	5	-4.8	19.2

15JULY82	BUOY E.	DEPTH	1	M.	SERIAL NUMBER	72
196.39	38 56.8	123 46.1	0	0		
196.98	38 51.1	123 44.3	1	1	-10.4	-18.6
197.24	38 48.5	123 41.9	1	1	-3.3	-26.2
197.67	38 45.0	123 39.9	1	1	-6.2	-18.0
198.05	38 40.9	123 35.7	1	1	-2.2	-29.5
198.65	38 42.0	123 32.1	1	1	10.0	-4.8
199.02	38 39.3	123 25.6	1	1	10.9	-31.5
199.62	38 52.3	123 42.5	1	1	-2.9	66.1
200.61	39 2.0	123 46.9	1	1	8.9	20.4
201.02	39 3.6	123 47.7	1	1	3.3	8.3
201.69	39 6.3	123 53.4	0	0	-4.5	16.0
205.68	39 0.0	123 59.4	0	0	-4.1	-0.8
206.63	38 58.8	123 59.9	1	1	-2.5	-1.4
207.31	38 52.0	124 1.5	2	2	-17.5	-13.0
208.58	38 40.0	124 6.3	0	0	-18.4	-10.5
209.08	38 27.7	123 59.9	2	2	-20.2	-53.1
209.57	38 23.0	123 49.7	2	2	11.5	-38.8
210.50	38 5.5	123 44.1	2	2	-20.1	-36.3

15JULY82	BUOY F.	DEPTH	1	M.	SERIAL NUMBER	89
196.46	38 54.8	123 53.2	0	0		
196.95	38 47.1	123 53.3	2	2	-23.2	-24.4
197.25	38 43.2	123 55.6	1	1	-28.4	-11.6
197.61	38 42.5	123 55.7	1	1	-3.2	-2.7
198.12	38 42.6	123 51.5	2	2	10.4	-9.1
198.61	38 46.2	123 58.1	2	2	-5.8	26.9
199.62	38 37.6	123 58.0	0	0	-12.3	-13.4
200.12	38 44.2	124 0.8	2	2	12.4	27.0
200.67	38 39.3	123 52.1	1	1	6.4	-32.0
201.12	38 42.1	123 55.8	2	2	-1.0	19.1
201.63	38 39.1	123 57.7	1	1	-13.1	-4.9
202.10	38 33.3	123 55.2	2	2	-11.5	-25.4
202.94	38 34.7	123 52.6	3	3	6.2	-0.9
203.60	38 34.3	123 54.5	2	2	-4.4	2.3
204.67	38 36.9	123 47.8	1	1	11.2	-3.3

15JULY82	BUOY G.	DEPTH	1	M.	SERIAL NUMBER	83
196.54	38 52.8	123 59.4	0	0		
196.96	38 42.3	123 58.3	1	1	-33.3	-42.1
197.25	38 37.0	123 55.2	3	2	-13.6	-40.8
197.61	38 29.7	123 54.9	1	1	-28.6	-32.7
198.07	38 24.4	123 48.9	3	3	-0.8	-32.9
198.59	38 25.0	123 49.0	1	1	1.4	2.0
199.57	38 21.3	123 44.2	1	1	0.5	-11.5
200.04	38 26.0	123 40.5	3	3	24.2	6.7
200.68	38 28.1	123 52.3	0	0	-17.8	26.2
201.60	38 15.0	123 44.9	1	1	-10.9	-31.5
202.15	38 13.9	123 43.9	3	3	-0.7	-5.2
204.59	37 51.0	123 47.0	2	2	-15.3	-13.2
205.59	37 37.3	123 54.5	4	4	-29.2	-12.9

15JULY82		BUOY H.		DEPTH 30 M.		SERIAL NUMBER 120	
196.92	39	6.8	123	52.6	0	0	
197.05	39	1.6	123	51.4	2	2	-47.1 -73.1
197.32	38	56.2	123	54.6	2	2	-43.7 -17.8
197.64	38	49.1	123	59.7	1	1	-51.9 -16.5
198.07	38	40.1	123	59.5	2	2	-30.0 -33.3
198.61	38	33.7	123	56.3	2	2	-10.0 -25.3
199.60	38	25.7	123	43.8	1	1	5.1 -25.5
200.68	38	30.4	123	37.7	1	1	11.9 -1.1
201.21	38	33.3	123	33.6	2	2	17.5 -0.3
201.66	38	33.7	123	33.9	0	0	0.5 2.2
202.13	38	33.3	123	30.7	2	2	7.1 -9.1
202.91	38	28.8	123	26.3	1	4	-1.5 -15.5
203.95	38	14.1	123	24.4	2	2	-18.4 -24.2
204.59	38	10.2	123	21.9	1	1	-4.1 -14.0
205.59	38	13.0	123	23.3	1	1	2.4 6.0
206.55	38	16.6	123	22.7	1	1	6.2 5.2
208.53	38	12.6	123	19.4	2	2	-0.9 -5.1
209.24	38	9.3	123	15.2	2	2	0.5 -14.0
209.60	38	8.7	123	14.5	2	2	-0.1 -4.8
210.46	38	1.4	123	11.4	0	0	-8.0 -17.4

15JULY82		BUOY I.		DEPTH 30 M.		SERIAL NUMBER 121	
196.85	39	5.5	123	59.3	0	0	
197.07	38	58.3	123	58.5	3	3	-43.3 -55.3
197.32	38	52.2	123	59.1	2	2	-38.5 -35.4
197.64	38	42.9	124	12.6	1	1	-94.1 2.7
198.59	38	37.5	124	35.5	2	2	-37.8 18.6

15JULY82		BUOY J.		DEPTH 30 M.		SERIAL NUMBER 128	
196.77	39	4.3	124	6.1	0	0	
197.07	38	55.5	124	6.5	2	2	-44.4 -44.4
197.34	38	48.4	124	14.9	2	2	-76.5 -5.6
197.61	38	43.3	124	24.5	1	1	-71.1 11.1
198.59	38	39.0	124	52.5	2	4	-41.4 25.8

15JULY82		BUOY K.		DEPTH 30 M.		SERIAL NUMBER 19	
196.46	38	54.8	123	53.2	0	0	
196.98	38	51.1	123	53.8	1	1	-11.8 -9.8
197.25	38	47.1	123	59.2	2	2	-46.1 -0.3
197.64	38	45.3	123	59.7	2	2	-8.3 -5.8
198.07	38	43.6	123	57.6	2	2	0.2 -11.8
198.61	38	42.0	123	59.2	3	3	-8.0 -1.3
199.60	38	38.0	123	54.0	0	0	0.5 -12.3
200.09	38	39.5	123	55.8	2	2	0.0 9.0
200.67	38	31.9	123	59.4	1	1	-26.7 -13.4
201.60	38	36.2	123	54.6	1	1	13.1 1.3
202.12	38	39.0	123	50.5	1	1	17.5 -0.6
202.94	38	43.3	124	0.7	2	2	-7.6 22.4
203.60	38	38.5	124	5.9	3	3	-20.3 -2.4
204.67	38	38.3	123	52.0	0	0	15.6 -15.1

15 JULY 82		BUOY L.	DEPTH 30 M.	SERIAL NUMBER 114			
196.54	38	52.8	123 59.4	0	0		
197.24	38	38.9	124 5.2	3	3	-39.1	-21.6
197.61	38	33.8	124 0.4	1	1	-4.2	-36.4
198.06	38	31.5	123 51.2	3	3	17.6	-31.3
198.59	38	25.0	123 53.2	1	1	-22.5	-14.9
199.60	38	19.0	123 53.3	1	1	-8.8	-9.2
200.68	38	14.6	123 59.4	2	2	-12.9	6.1
201.60	38	15.1	124 8.9	2	2	-11.8	12.6

17 JULY 82		BUOY A.	DEPTH 1 M.	SERIAL NUMBER 80			
198.13	38	38.9	123 51.3	0	0		
199.09	38	49.5	123 57.2	1	3	8.6	24.3
199.28	38	52.1	123 55.7	2	3	29.6	12.4
199.62	38	54.8	123 57.4	1	1	5.5	18.1
200.00	38	53.1	123 54.0	2	1	4.4	-17.2
200.22	38	50.4	124 1.7	1	2	-60.8	20.8
200.63	38	43.5	124 4.0	1	1	-31.4	-19.9
201.15	38	24.6	124 4.0	4	4	-53.0	-56.9
201.63	38	37.7	123 47.3	0	0	82.4	3.0
202.14	38	36.1	123 41.2	2	2	10.1	-18.6
202.93	38	35.5	123 37.5	2	2	4.6	-6.5
203.63	38	32.3	123 37.2	3	3	-6.1	-7.6
204.63	38	26.0	123 28.0	2	2	2.1	-20.4
205.63	38	10.8	123 28.7	1	1	-23.0	-23.0
206.55	38	0.0	123 19.8	2	2	-5.3	-29.4
208.55	37	44.8	123 12.5	1	1	-6.6	-16.1

18 JULY 82		BUOY B.	DEPTH 1 M.	SERIAL NUMBER 73			
199.65	38	44.1	124 3.1	0	0		
199.67	38	43.0	124 3.0	0	0	-74.1	-91.8
199.78	38	39.1	124 0.6	0	0	-25.0	-80.4
199.97	38	34.7	123 52.6	2	2	17.7	-84.3
200.16	38	31.9	123 45.8	2	2	22.3	-63.9
200.65	38	26.3	123 42.4	1	1	-8.2	-25.8
201.18	38	23.4	123 37.6	3	3	3.1	-18.9
201.60	38	21.4	123 37.7	1	1	-7.2	-7.2
202.12	38	18.7	123 34.1	4	4	0.9	-16.0
203.95	37	55.8	123 35.9	5	3	-19.5	-18.5
204.62	38	0.3	123 33.1	1	1	14.9	5.7
205.59	37	53.0	123 32.8	1	1	-10.6	-12.1
206.55	37	55.0	123 26.4	1	1	11.2	-4.4
208.56	37	34.5	123 3.0	4	2	-0.6	-29.2

18JULY82	BUOY C.	DEPTH	1	M.	SERIAL NUMBER	88
199.61	38 39.4	123 59.5	0	0		
199.64	38 38.7	123 58.6	0	0	2.7	-70.8
199.78	38 38.1	123 57.8	0	0	0.7	-13.2
199.97	38 35.4	123 55.2	2	2	-4.0	-37.9
200.17	38 34.7	123 51.0	3	3	20.6	-29.5
200.64	38 34.6	123 48.7	0	0	5.7	-5.9
201.20	38 33.1	123 43.4	3	3	7.7	-15.0
201.63	38 38.0	123 40.0	0	0	26.3	8.8
202.14	38 38.7	123 39.3	2	2	3.7	0.6
202.93	38 37.2	123 36.4	2	2	1.7	-7.2
203.65	38 32.0	123 34.2	3	3	-6.8	-14.8
204.65	38 21.5	123 26.0	2	2	-5.3	-25.8
205.63	38 8.5	123 25.8	1	1	-19.1	-21.0
206.58	37 58.7	123 19.3	2	2	-6.7	-24.0
208.54	37 43.9	123 10.8	2	2	-5.7	-16.8

18JULY82	BUOY D.	DEPTH	1	M.	SERIAL NUMBER	64
199.54	38 34.6	123 47.1	0	0		
199.57	38 34.8	123 46.6	0	0	30.1	-8.6
199.65	38 34.3	123 46.3	0	0	-4.5	-14.1
199.78	38 35.0	123 47.0	0	0	1.3	14.6
199.97	38 36.7	123 44.9	2	2	26.6	1.4
200.16	38 37.4	123 46.4	2	2	-4.3	14.8
200.64	38 43.0	123 51.2	0	0	4.8	29.7
201.12	38 46.6	123 51.7	2	2	9.7	12.9
201.68	38 42.6	124 0.5	1	1	-29.7	6.8
202.94	38 23.6	123 44.6	4	4	-6.6	-38.0
203.66	38 17.4	123 44.0	3	3	-11.5	-14.4
204.62	38 15.5	123 43.0	0	0	-1.6	-4.3
205.59	38 8.7	123 45.9	1	1	-13.9	-7.6
206.58	37 57.0	123 41.0	3	3	-11.2	-24.1
208.55	37 54.1	123 28.0	2	2	5.9	-9.8
209.59	37 40.2	123 20.8	3	3	-11.0	-28.8

18JULY82	BUOY E.	DEPTH	1 M.	SERIAL NUMBER	62
199.52	38 32.7	123 43.5	0	0	
199.57	38 32.8	123 43.8	0	0	-4.4 10.0
199.63	38 32.6	123 43.2	1	1	7.4 -16.6
199.65	38 34.0	123 44.4	0	0	28.7 177.9
199.81	38 36.2	123 45.2	0	0	13.9 27.2
199.97	38 37.3	123 45.8	1	1	5.4 15.0
200.18	38 38.3	123 48.0	2	2	-5.9 19.4
200.67	38 45.9	123 54.7	1	1	5.9 39.9
201.12	38 40.5	124 0.9	3	3	-34.4 -3.0
201.65	38 36.2	123 57.2	1	1	-3.3 -20.7
202.10	38 36.3	123 51.2	2	2	16.6 -14.9
202.96	38 39.7	123 57.7	2	2	-3.5 14.8
203.60	38 32.9	123 54.9	3	3	-10.2 -21.6
204.66	38 34.5	123 47.0	2	2	11.3 -6.2
205.65	38 42.4	123 52.0	0	0	5.5 18.3
206.10	38 45.5	123 54.0	3	3	4.6 15.9
206.60	38 43.7	124 2.5	1	1	-26.1 13.8
207.38	38 32.9	123 56.8	3	3	-11.3 -30.0
208.57	38 11.5	123 46.0	1	1	-15.1 -38.5
209.19	38 1.7	123 45.0	4	4	-21.1 -26.6
209.57	37 55.8	123 51.7	2	2	-44.2 -4.2

18JULY82	BUOY F.	DEPTH	30 M.	SERIAL NUMBER	18
199.65	38 44.1	124 3.1	0	0	
199.67	38 43.0	124 3.0	0	0	-74.1 -91.8
199.78	38 40.0	124 2.3	0	0	-32.0 -49.9
199.97	38 37.7	123 55.8	2	2	24.2 -58.0
200.17	38 34.9	123 49.9	2	2	15.7 -55.6
200.64	38 29.8	123 45.1	0	0	-3.3 -28.6
201.21	38 35.0	123 40.9	1	1	22.3 5.9
201.60	38 39.1	123 42.9	1	1	9.1 22.3
202.12	38 44.2	123 44.4	2	2	10.8 18.6
202.96	38 51.5	123 51.5	2	2	2.3 23.2
203.54	38 54.1	123 52.6	2	2	4.2 9.2
204.67	39 1.4	123 54.8	2	2	7.0 12.3
205.68	39 7.0	123 51.9	1	1	11.6 5.4
206.64	39 14.9	123 51.9	2	2	12.0 12.9

18JULY82		BUOY G.		DEPTH 30 M.		SERIAL NUMBER 118	
199.61	38	39.4	123	59.5	0	0	
199.64	38	38.5	123	58.9	0	0	-19.3 -69.8
199.81	38	37.8	123	57.9	0	0	1.2 -13.2
199.97	38	36.3	123	55.2	2	2	7.0 -33.9
200.16	38	36.3	123	51.5	2	2	23.8 -22.2
200.64	38	36.3	123	50.5	0	0	2.5 -2.4
201.18	38	37.6	123	46.2	2	2	13.3 -5.3
201.63	38	41.3	123	49.0	1	1	4.4 20.0
202.09	38	44.8	123	51.8	2	2	3.7 18.9
202.96	38	44.2	123	59.3	3	3	-11.6 8.8
203.58	38	36.0	124	2.9	3	3	-26.4 -14.1
204.67	38	38.8	123	53.3	1	1	14.5 -6.0
205.67	38	45.5	124	1.1	0	0	0.2 19.4
206.10	38	41.1	124	0.6	4	4	-13.5 -17.3
206.61	38	36.0	123	59.3	1	1	-11.5 -18.6
207.39	38	34.2	123	52.6	2	2	7.1 -13.4
208.56	38	39.3	123	59.7	1	1	-1.1 13.7
209.08	38	33.2	123	58.6	3	3	-14.5 -20.8
209.55	38	31.3	123	51.9	1	1	11.5 -22.6
210.50	38	37.3	123	49.3	1	1	12.6 6.8

18JULY82		BUOY H.		DEPTH 30 M.		SERIAL NUMBER 104	
199.52	38	32.7	123	43.5	0	0	
199.57	38	32.8	123	43.7	0	0	-2.0 7.7
199.65	38	33.5	123	48.0	0	0	-53.0 75.0
199.78	38	34.3	123	43.0	0	0	56.1 -34.3
199.97	38	35.4	123	41.6	2	2	17.5 0.6
200.16	38	36.1	123	41.9	2	2	3.4 7.6
200.67	38	41.2	123	41.1	0	0	16.5 13.9
201.12	38	45.6	123	45.7	1	1	1.8 27.0
201.63	38	49.5	123	54.0	1	1	-8.8 30.6
202.07	38	49.1	123	56.9	2	3	-9.4 6.1
202.96	38	39.0	124	0.2	3	3	-21.1 -13.5
203.58	38	32.6	123	55.6	3	3	-6.0 -24.6
204.66	38	40.1	123	52.9	1	1	13.2 8.0
205.65	38	46.7	124	0.5	0	0	0.3 19.2
206.10	38	44.1	124	1.3	3	4	-10.6 -7.0
206.60	38	37.5	124	2.0	1	1	-21.0 -19.0
207.39	38	32.9	123	53.6	3	3	4.5 -21.3
208.56	38	37.5	123	54.0	1	1	5.3 6.5
209.08	38	39.4	123	53.6	2	2	6.3 4.8
209.55	38	40.1	123	58.0	1	1	-9.3 13.0
210.50	38	34.4	123	55.3	1	1	-5.3 -12.6

18JULY82		BUOY I.	DEPTH 30 M.	SERIAL NUMBER 105			
199.54	38	34.6	123 47.1	0	0		
199.58	38	34.8	123 46.4	0	0	28.7	-12.1
199.67	38	33.8	123 46.4	1	1	-16.2	-17.4
199.78	38	35.3	123 45.5	0	0	29.9	12.0
199.97	38	36.7	123 44.2	1	1	19.1	3.7
200.16	38	37.3	123 43.9	2	2	6.5	3.1
200.64	38	41.5	123 46.2	0	0	6.9	19.2
201.12	38	46.2	123 47.1	1	1	12.0	17.5
201.65	38	47.8	123 54.1	1	1	-11.8	19.8
202.07	38	47.9	123 53.7	2	2	1.5	-0.7
202.94	38	35.4	123 55.8	2	2	-23.9	-19.7
203.63	38	32.9	123 49.1	2	2	6.6	-16.8
204.66	38	49.5	123 50.5	1	1	21.9	26.8
205.65	38	49.0	124 0.0	0	0	-12.5	10.2
206.60	38	42.7	124 4.2	1	1	-15.1	-5.3
207.35	38	30.3	123 55.6	3	3	-10.1	-39.0
208.56	38	22.0	123 44.3	1	1	1.4	-21.4
209.57	38	17.1	123 41.5	2	2	-3.7	-10.8
210.48	38	9.2	123 38.3	1	1	-8.4	-17.6

22JULY82		BUOY A.	DEPTH 1 M.	SERIAL NUMBER 57			
203.53	38	37.9	123 26.1	0	0		
203.73	38	37.3	123 25.9	1	1	-3.1	-5.8
203.93	38	36.3	123 26.1	1	1	-8.5	-6.7
204.23	38	37.3	123 27.8	1	1	-2.1	11.7
204.64	38	40.4	123 29.3	0	0	6.6	16.0
204.99	38	40.5	123 29.9	1	1	-1.7	2.4
205.30	38	42.5	123 34.3	2	2	-8.0	26.3
205.65	38	46.8	123 38.4	0	0	3.6	32.6
206.15	38	46.4	123 41.0	1	1	-7.5	4.7
206.64	38	47.5	123 42.9	0	0	-1.5	7.9

22JULY82		BUOY B.	DEPTH 1 M.	SERIAL NUMBER 109			
203.52	38	36.2	123 28.7	0	0		
203.73	38	33.9	123 26.8	2	2	-4.9	-27.5
203.94	38	32.1	123 26.8	1	1	-12.5	-13.4
204.25	38	32.5	123 28.1	1	1	-3.2	6.8
204.63	38	34.9	123 26.6	1	1	14.0	5.4
205.00	38	32.5	123 26.1	2	2	-7.8	-11.7
205.32	38	33.4	123 26.6	1	1	2.2	6.2
205.63	38	33.9	123 28.3	1	1	-4.4	8.8
206.19	38	34.8	123 26.3	1	1	6.7	-1.6
206.65	38	33.4	123 26.9	0	0	-6.0	-3.3
207.49	38	24.9	123 24.4	1	1	-11.1	-19.2

26JULY	BUOY F.	DEPTH	1 M.	SERIAL NUMBER	87
207.56	38 33.8	123 21.5	0 0		
207.83	38 31.4	123 20.4	1 1	-8.0	-18.6
208.63	38 15.5	123 18.9	0 0	-26.7	-33.2
209.24	38 18.1	123 15.2	1 1	13.6	-6.3
209.60	38 16.9	123 15.1	1 1	-4.5	-5.5
210.46	38 8.2	123 11.1	0 0	-9.1	-21.1

26JULY	BUOY G.	DEPTH	1 M.	SERIAL NUMBER	68
207.55	38 32.0	123 24.1	0 0		
207.82	38 27.6	123 20.8	1 1	-8.8	-39.5
208.63	38 10.7	123 21.0	1 1	-30.8	-32.4
209.22	38 14.4	123 18.6	1 1	14.1	5.2
209.59	38 11.0	123 18.2	1 1	-12.1	-15.6
210.46	37 59.8	123 14.8	0 0	-14.0	-24.6

26JULY	BUOY H.	DEPTH	1 M.	SERIAL NUMBER	93
207.53	38 30.1	123 26.5	0 0		
207.82	38 25.4	123 23.1	1 1	-9.3	-38.7
208.61	38 18.6	123 24.6	1 1	-14.9	-11.3
209.22	38 12.4	123 23.7	2 2	-13.0	-17.6
209.60	38 7.9	123 21.2	2 2	-9.2	-26.0
210.46	37 55.9	123 18.7	1 1	-16.8	-25.1

26JULY	BUOY I.	DEPTH	30 M.	SERIAL NUMBER	113
207.43	38 41.9	123 30.9	0 0		
207.80	38 41.4	123 29.6	1 1	2.3	-6.1
207.91	38 41.2	123 29.1	1 1	2.9	-8.0
208.06	38 40.6	123 28.3	1 1	0.7	-12.3
208.30	38 40.3	123 28.1	1 1	-0.8	-2.9
208.59	38 41.1	123 31.1	1 1	-8.6	16.1
209.15	38 36.0	123 25.9	1 1	-1.9	-24.9
209.55	38 34.0	123 26.3	1 1	-8.5	-6.7
210.53	38 21.7	123 19.4	2 2	-9.7	-27.7

26JULY	BUOY J.	DEPTH	30 M.	SERIAL NUMBER	116
207.46	38 38.3	123 35.7	0 0		
207.80	38 36.2	123 32.5	1 1	2.5	-20.4
208.08	38 32.9	123 31.8	1 1	-14.1	-21.3
208.34	38 32.3	123 31.4	1 1	-1.5	-5.4
208.59	38 32.0	123 29.0	2 2	10.0	-12.8
209.16	38 23.5	123 29.9	2 2	-23.7	-21.5
209.55	38 22.2	123 34.9	1 1	-20.6	9.4
210.50	38 14.5	123 38.6	0 0	-16.6	-8.2

26JULY	BUOY K.	DEPTH	30 M.	SERIAL NUMBER	119
207.49	38 34.7	123 40.9	0 0		
207.80	38 36.1	123 39.6	1 1	11.7	2.3
208.05	38 37.0	123 39.3	1 1	6.7	4.3
208.32	38 38.9	123 39.6	1 1	8.9	12.3
208.59	38 40.3	123 41.8	1 1	-2.4	17.4
209.08	38 41.3	123 39.8	1 1	8.0	-1.5
209.55	38 42.0	123 40.6	1 1	0.1	4.3
210.51	38 38.9	123 36.9	2 2	0.0	-9.5

END 1982 DATA

22JULY82		BUOY C.	DEPTH	1 M.	SERIAL NUMBER 107	
203.50	38	34.3	123	31.1	0	0
203.73	38	29.7	123	27.5	2	2
203.95	38	25.5	123	26.2	2	2
204.28	38	20.3	123	26.9	2	2
204.59	38	18.7	123	25.3	1	1
205.09	38	14.0	123	25.5	2	2
205.38	38	10.7	123	26.9	2	2
205.61	38	11.5	123	27.4	1	1
206.22	38	6.2	123	19.6	3	2
206.55	38	0.5	123	20.0	1	1
208.54	37	44.0	123	13.0	1	1

22JULY82		BUOY D.	DEPTH	1 M.	SERIAL NUMBER 108	
203.47	38	32.4	123	33.7	0	0
203.70	38	27.9	123	29.1	2	2
204.00	38	22.1	123	26.9	2	2
204.29	38	15.4	123	30.0	2	2
204.59	38	13.4	123	29.0	0	0
205.09	38	5.8	123	29.2	3	3
205.40	38	6.8	123	21.6	4	4
205.59	38	5.0	123	24.2	1	1
206.55	37	55.3	123	19.6	2	2

22JULY82		BUOY E.	DEPTH	1 M.	SERIAL NUMBER 85	
203.46	38	30.6	123	36.4	0	0
203.76	38	28.5	123	30.6	2	2
203.95	38	22.1	123	30.4	1	1
204.26	38	14.9	123	32.6	2	2
204.63	38	13.9	123	32.8	1	1
205.09	38	8.5	123	32.8	2	2
205.39	38	5.7	123	37.0	2	2
205.62	38	9.8	123	35.0	1	1
206.22	38	5.9	123	31.1	4	2
206.58	38	5.0	123	28.3	3	3
208.54	37	43.0	123	22.0	2	2

22JULY82		BUOY F.	DEPTH	30 M.	SERIAL NUMBER 98	
203.52	38	35.2	123	28.7	0	0
203.74	38	35.9	123	27.2	2	2
203.93	38	35.7	123	27.5	2	2
204.23	38	36.9	123	28.4	2	2
204.63	38	38.9	123	30.0	0	0
204.99	38	39.2	123	29.7	1	1
205.30	38	40.5	123	31.6	1	1
205.63	38	42.8	123	34.4	0	0
206.15	38	44.0	123	34.5	1	1
206.65	38	47.2	123	37.3	0	0
207.38	38	48.7	123	37.2	1	1

26JULY	BUOY A.	DEPTH	1 M.	SERIAL NUMBER	29
207.43	38 41.9	123 30.9	0	0	
207.80	38 38.4	123 27.1	1	1	-1.2 -26.5
207.91	38 37.0	123 26.1	1	1	-7.5 -30.3
208.08	38 33.8	123 26.3	1	1	-28.9 -28.1
208.35	38 30.7	123 25.4	1	1	-12.7 -21.8
208.59	38 29.3	123 28.0	1	1	-21.8 3.2
209.22	38 21.3	123 21.4	2	2	-5.7 -31.8
209.60	38 20.1	123 18.1	0	0	6.0 -14.9
210.46	38 8.1	123 14.5	0	0	-15.2 -26.6

26JULY	BUOY B.	DEPTH	1 M.	SERIAL NUMBER	74
207.44	38 40.1	123 33.2	0	0	
207.80	38 34.0	123 27.3	2	2	-4.7 -45.2
207.91	38 32.0	123 26.3	2	1	-15.4 -38.8
208.08	38 28.5	123 25.8	1	1	-26.4 -35.6
208.35	38 25.0	123 26.8	2	2	-18.0 -10.3
208.59	38 23.9	123 25.0	0	0	-3.6 -22.2
209.22	38 16.4	123 24.8	2	2	-17.0 -19.0
209.60	38 14.3	123 23.6	0	0	-4.2 -12.3
210.48	38 0.5	123 18.3	1	1	-15.5 -31.4

26JULY	BUOY C.	DEPTH	1 M.	SERIAL NUMBER	91
207.46	38 38.3	123 35.7	0	0	
207.80	38 33.4	123 31.7	1	1	-6.6 -36.0
208.08	38 28.5	123 30.6	1	1	-20.7 -31.9
208.35	38 26.1	123 32.8	2	2	-22.9 -4.6
208.59	38 23.7	123 25.0	1	1	25.2 -52.8
209.17	38 17.7	123 35.3	3	3	-36.8 4.1
209.60	38 16.8	123 35.7	0	0	-4.2 -2.2
210.48	38 9.6	123 31.1	1	1	-5.5 -18.8

26JULY	BUOY D.	DEPTH	1 M.	SERIAL NUMBER	96
207.47	38 36.5	123 38.3	0	0	
207.81	38 34.0	123 32.7	1	1	9.4 -30.3
208.08	38 28.1	123 32.2	1	1	-29.6 -36.3
208.35	38 27.4	123 33.9	2	2	-11.5 3.1
208.61	38 26.1	123 32.6	1	1	-1.2 -13.5
209.13	38 19.8	123 34.5	3	3	-22.2 -14.8
209.60	38 17.0	123 35.8	0	0	-12.1 -6.2
210.48	38 9.3	123 31.0	1	1	-6.1 -19.9

26JULY	BUOY E.	DEPTH	1 M.	SERIAL NUMBER	63
207.49	38 34.7	123 40.9	0	0	
207.81	38 33.7	123 36.1	1	1	13.8 -22.0
208.08	38 29.2	123 36.6	1	1	-26.6 -24.0
208.34	38 29.5	123 35.8	1	1	5.4 -1.7
208.61	38 28.3	123 35.7	1	1	-6.0 -7.4
209.16	38 17.5	123 36.4	2	2	-30.2 -29.3
209.60	38 12.7	123 34.0	0	0	-9.2 -23.3
210.48	38 3.7	123 27.1	1	1	-5.3 -25.0

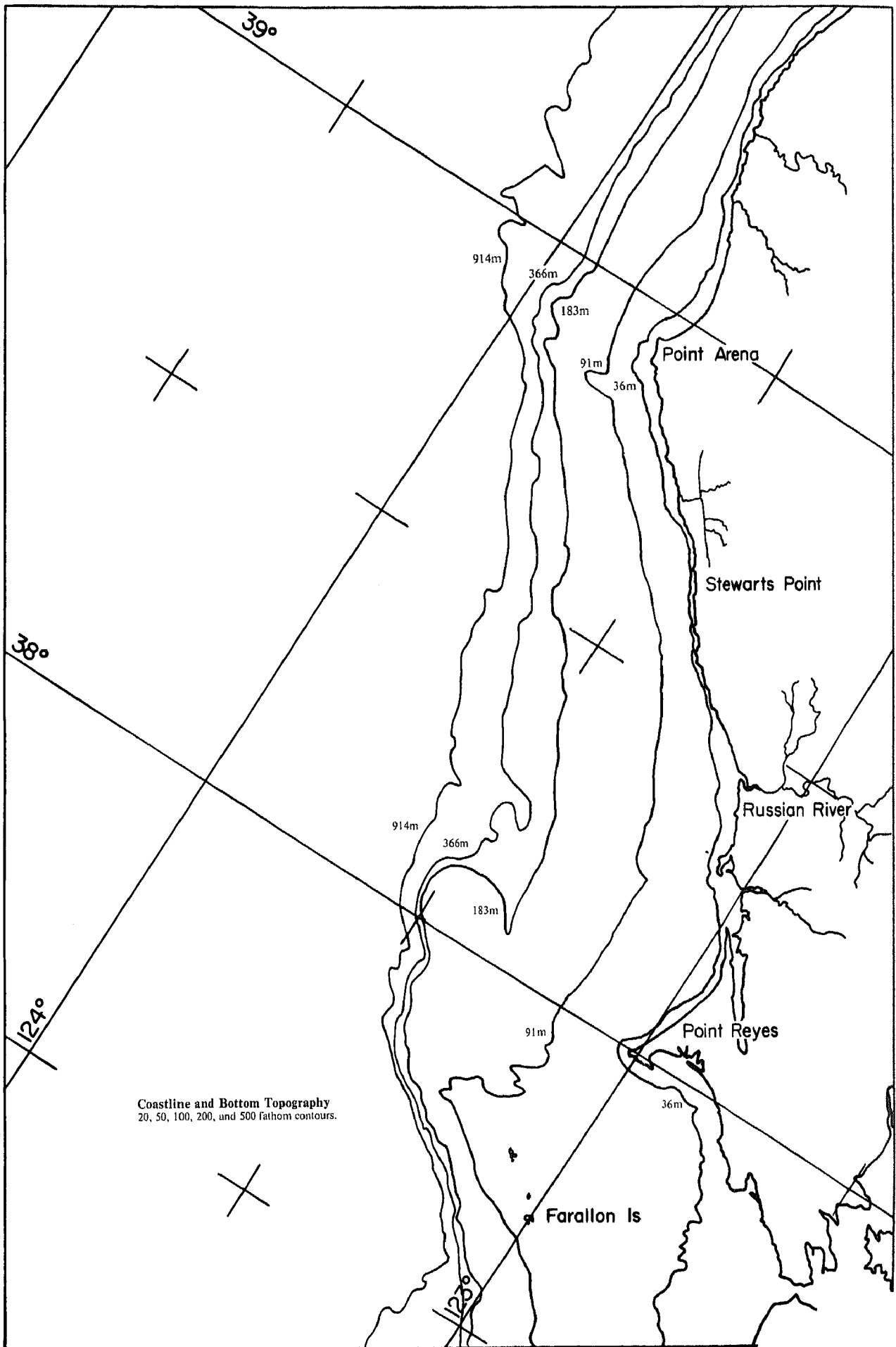
PLOTTED DATA

Perhaps the most surprising aspect of the CODE drifter observations are the degree to which individual deployments describe an apparently coherent and yet highly nonuniform flow field which is frequently completely altered by the time of the next deployment. This is shown in the following plots of tracks of buoys deployed in the same cluster. The different plots are on the same scale and on transparent paper so that they may easily be overlaid. The first plot is of the coastline and bottom topography.

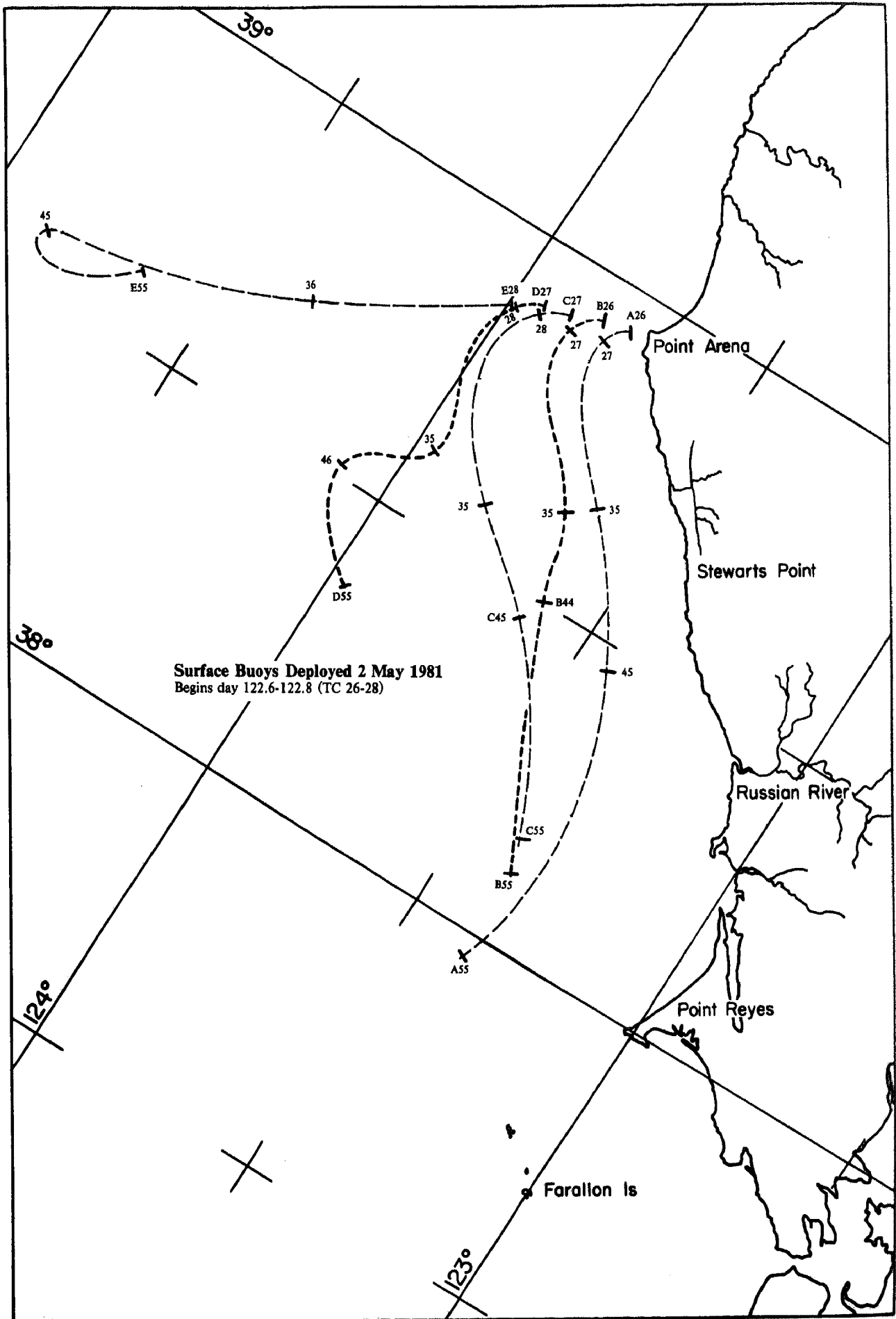
Each buoy plot consists of subjectively drawn buoy tracks along which buoy positions are denoted by tick marks labeled with a two digit Time Code and, occasionally, a single letter (0 is not used) identifying the buoy. The track lines are frequently contorted to enhance buoy identification and are to be regarded only as artistic visual aids. The Time Code is the "days" and "tenths-of-days" digits of the year day. The letter identifiers are the letters appearing in the headers of the tabular data and can be used to relate plots and listings. As an example, in the 21 May 1981 plot the nearshore buoy is labeled with an "A" which, from the tabular data, is seen to identify the buoy with serial number 16. The northern-most tick is the deployment position; from the figure caption or the tabular data it can be seen that the associated Time Code "26" indicates the time of this position to be day 122.6 (i.e. early afternoon of 2 May).

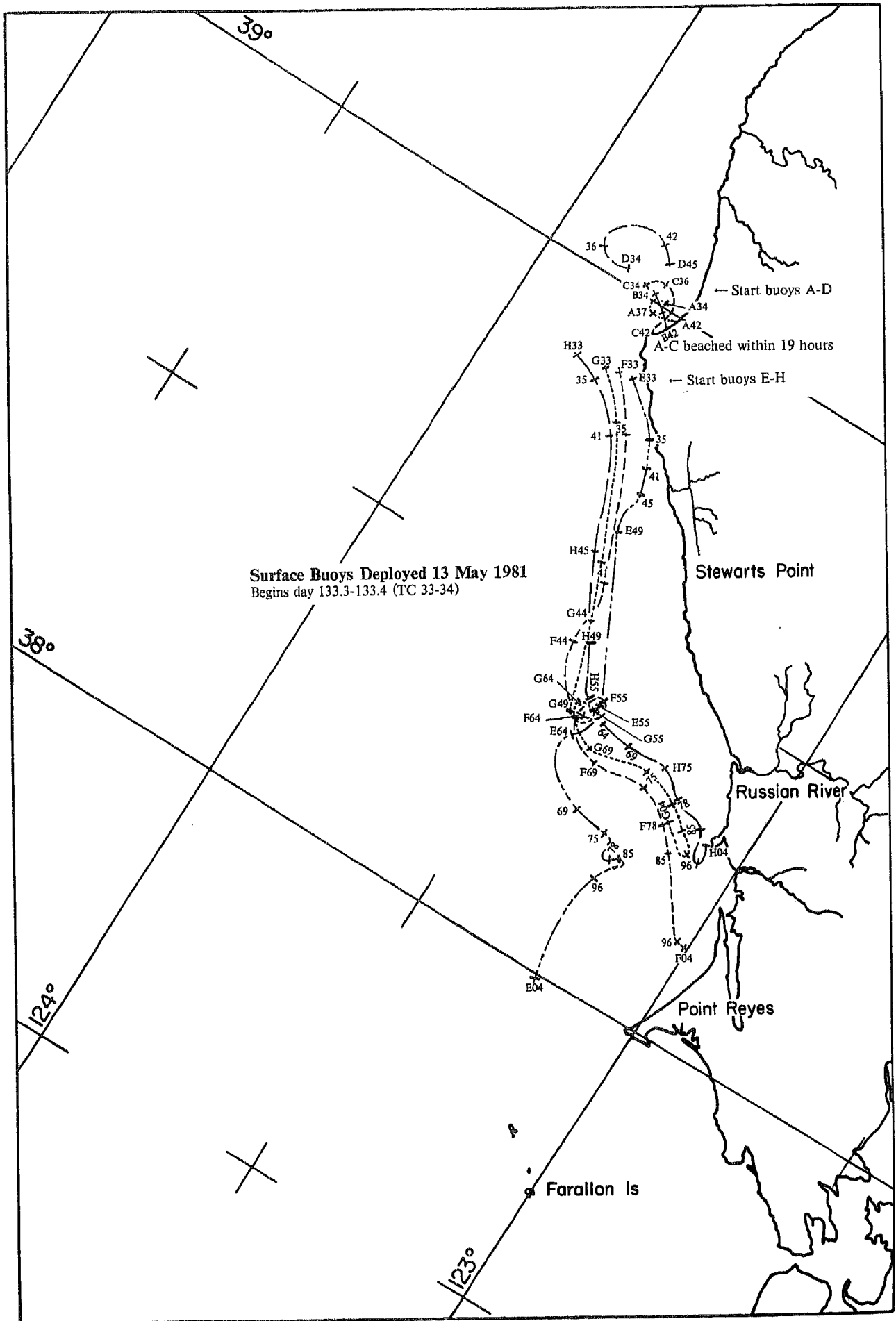
Most plots show buoys deployed at nearly the same time. Often more than one plot corresponds to a single deployment cluster. With one exception (18 July 1982) all plots are on the same scale to permit

superposition. For some 1982 deployments it was necessary to plot sequential portions of a cluster's development separately. The 17-18 July 1982 plot shows both buoy A set on 17 July (deployment was then halted for operational reasons) and the final segments of some of the buoys set on 18 July. This was the only cluster of buoys deployed in response to in situ observations. With the exception of this group set to explore an identified frontal feature, all deployments were intended to map mesoscale flow and were deployed on a predetermined grid at time set primarily by logistic requirements; thus they are reasonably "random" samples.



Coastline and Bottom Topography
20, 50, 100, 200, and 500 fathom contours.





Surface Buoys Deployed 13 May 1981
Begins day 133.3-133.4 (TC 33-34)

Stewarts Point

Russian River

Point Reyes

Farallon Is

Start buoys A-D

A-C beached within 19 hours

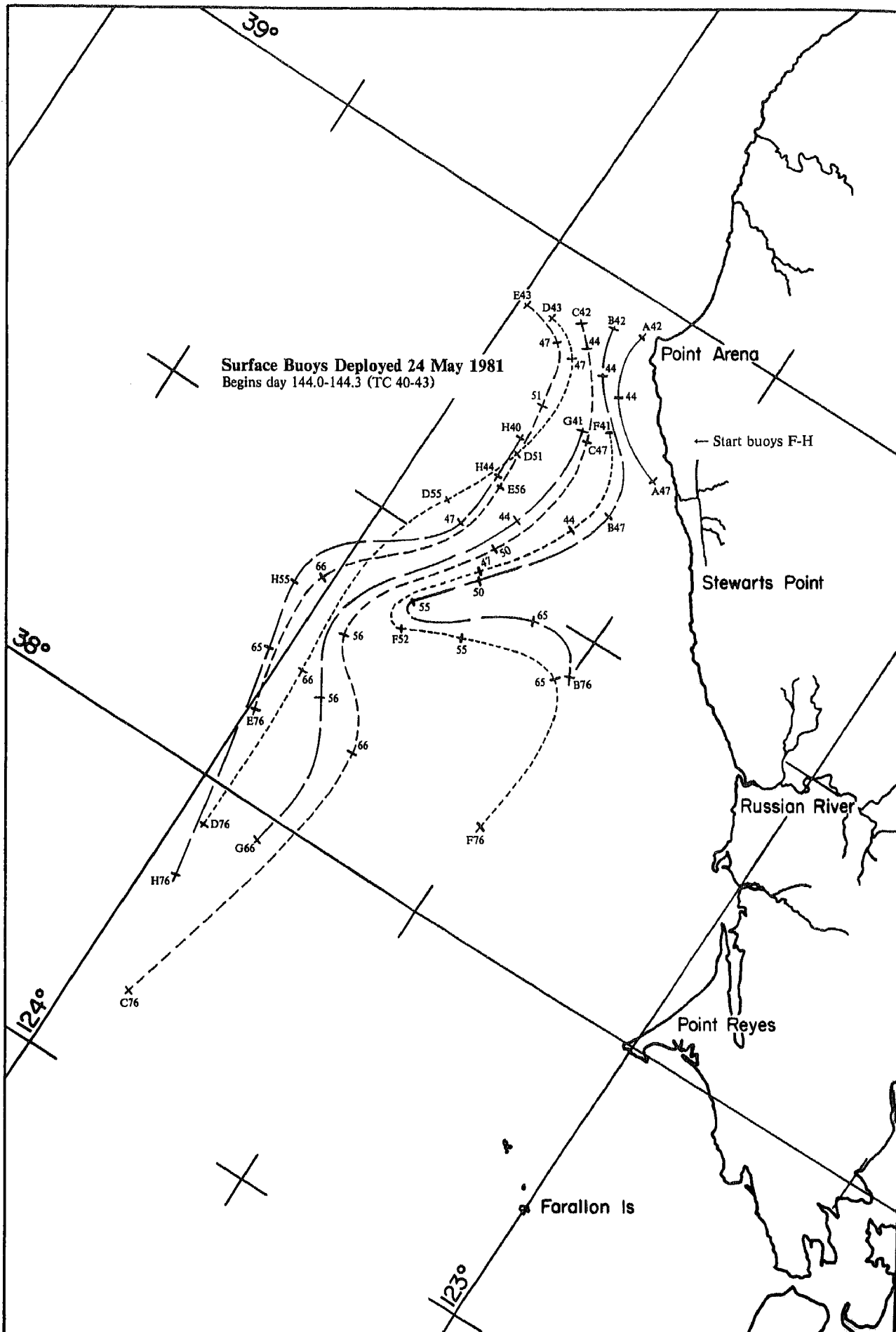
Start buoys E-H

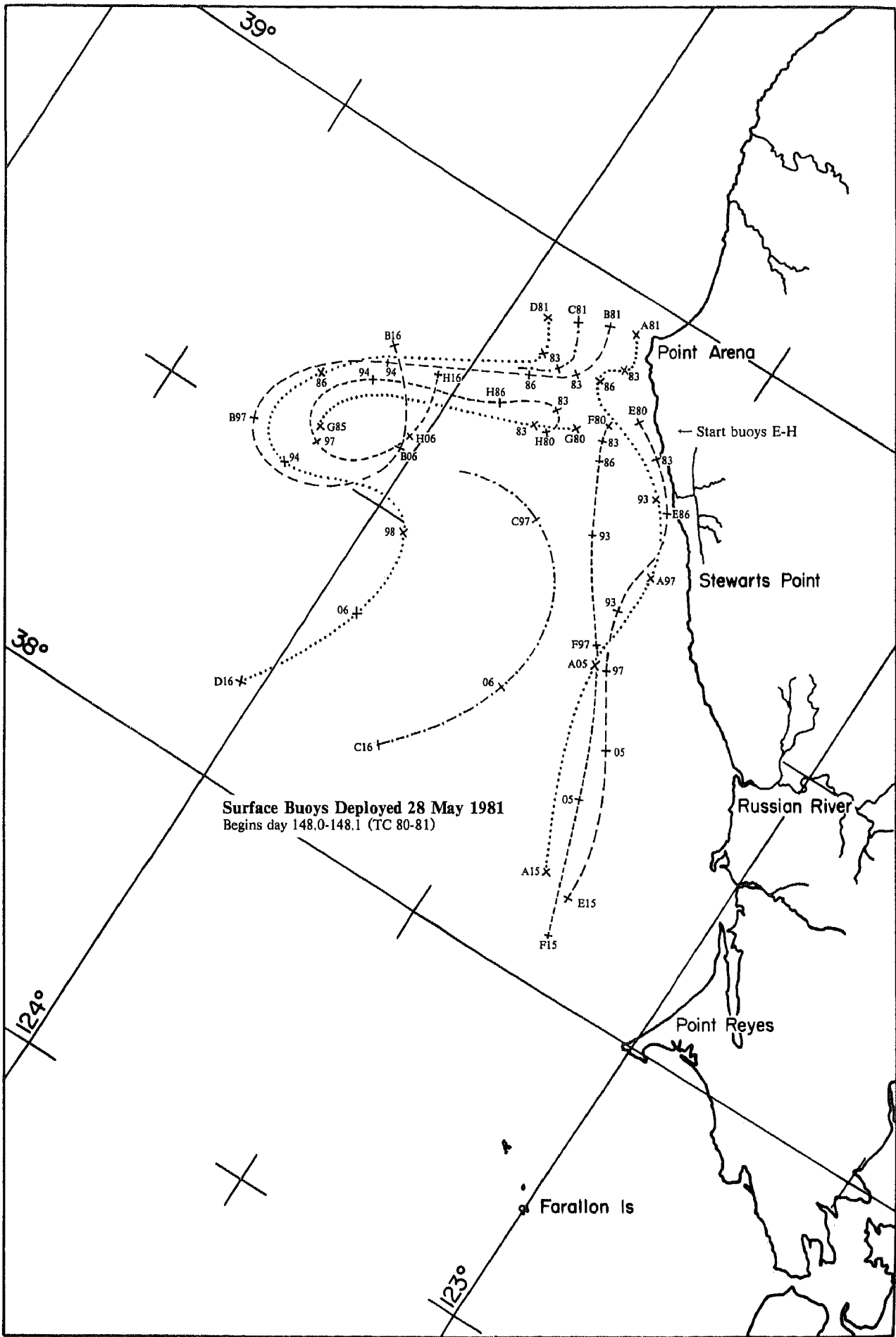
39°

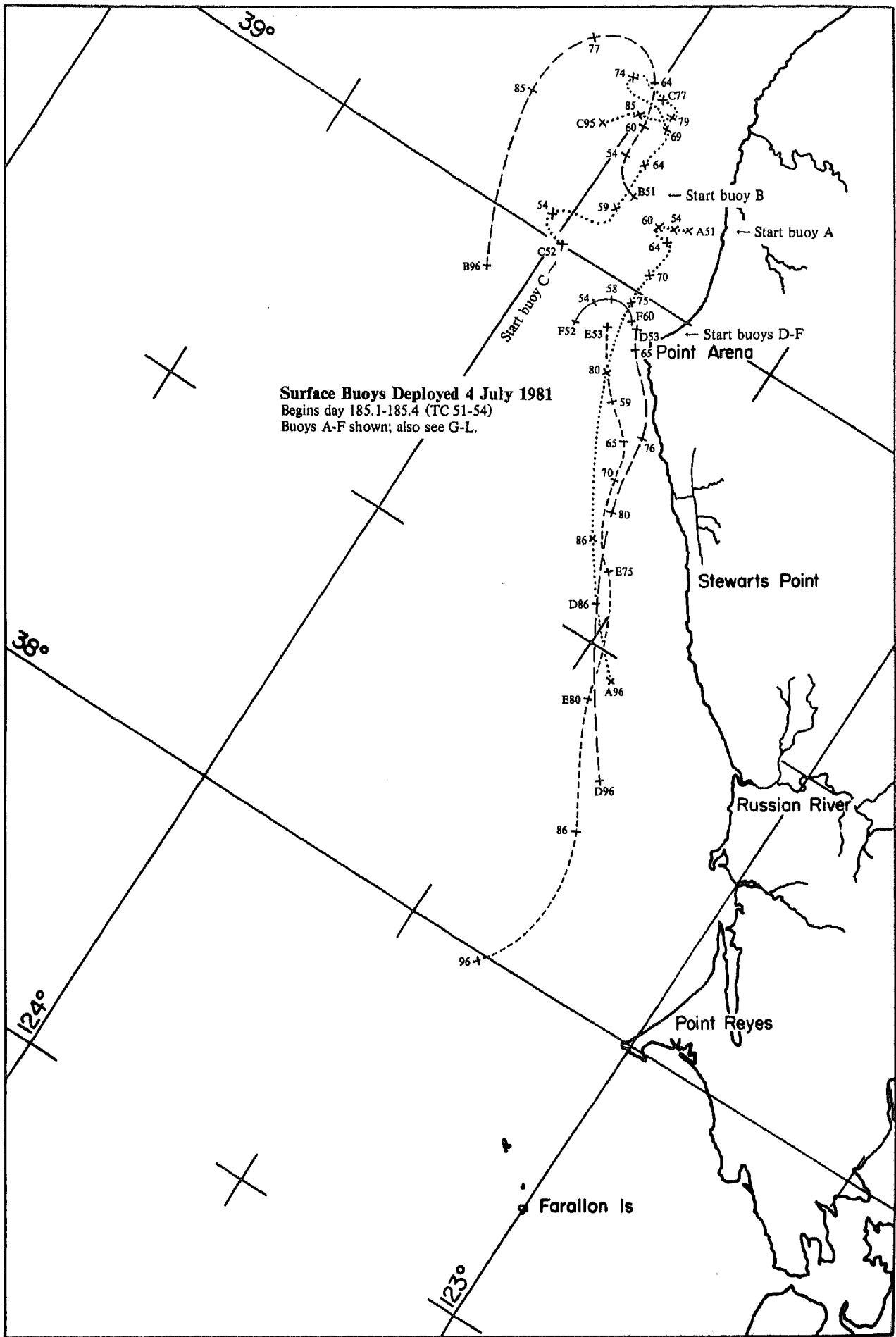
38°

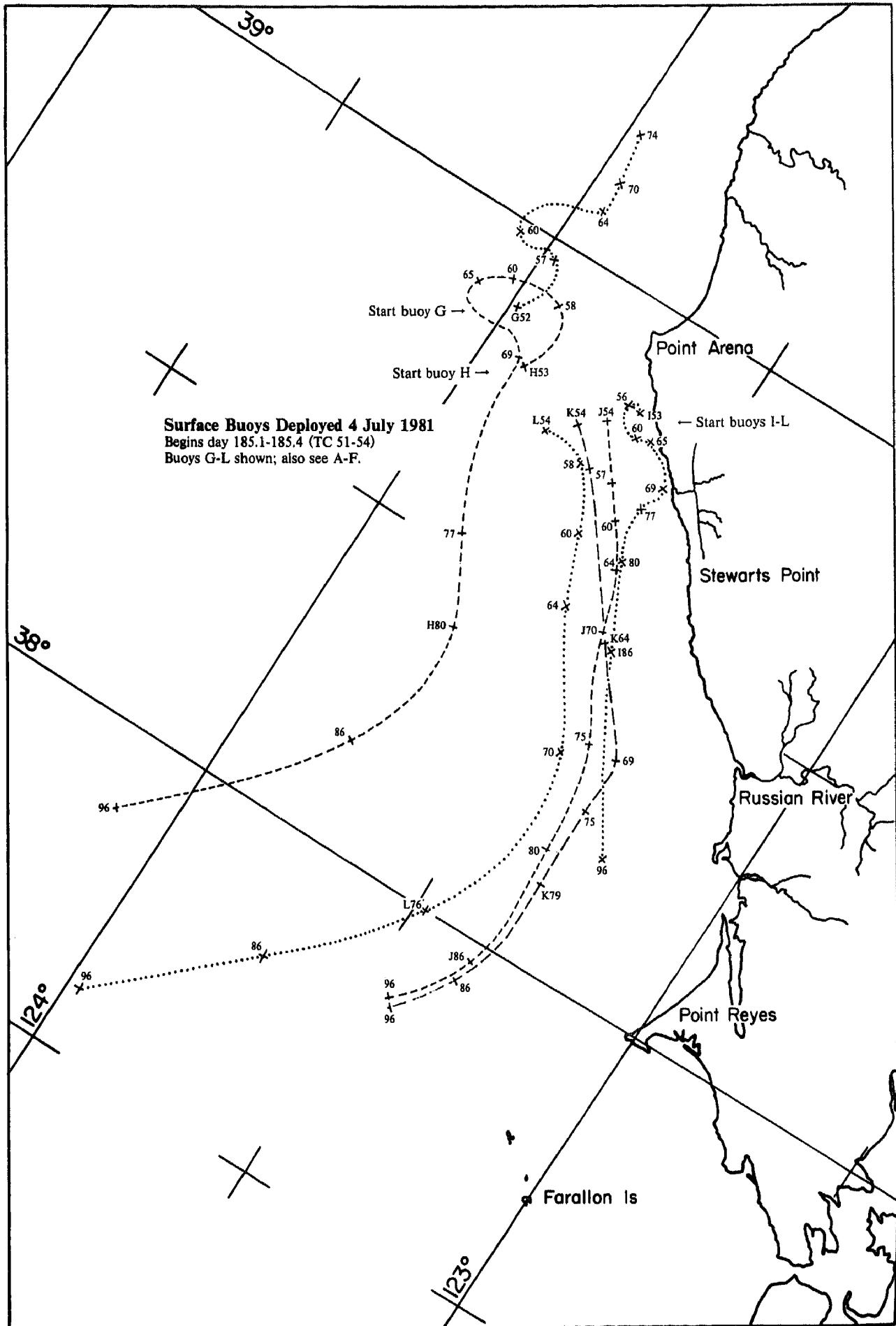
124°

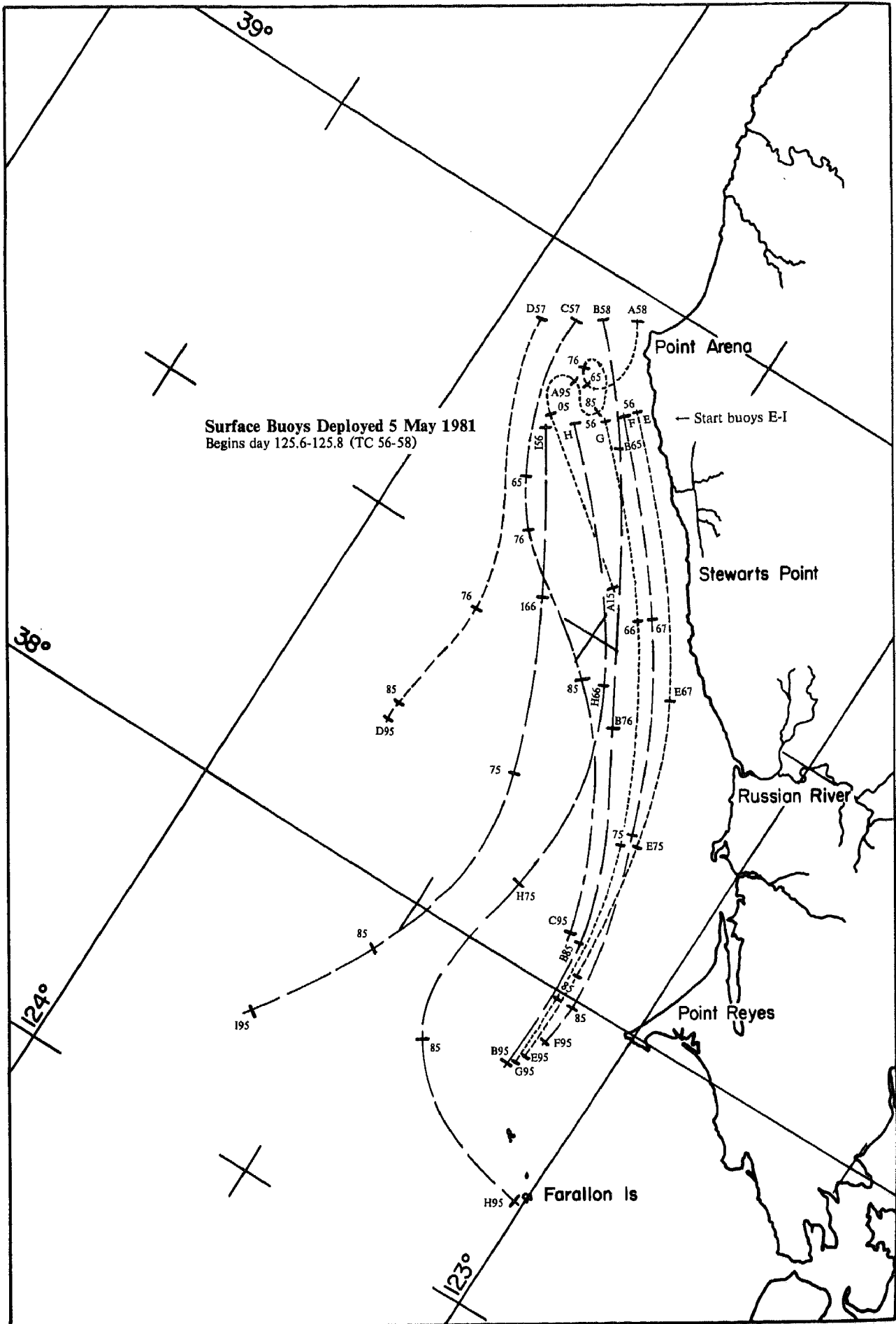
123°

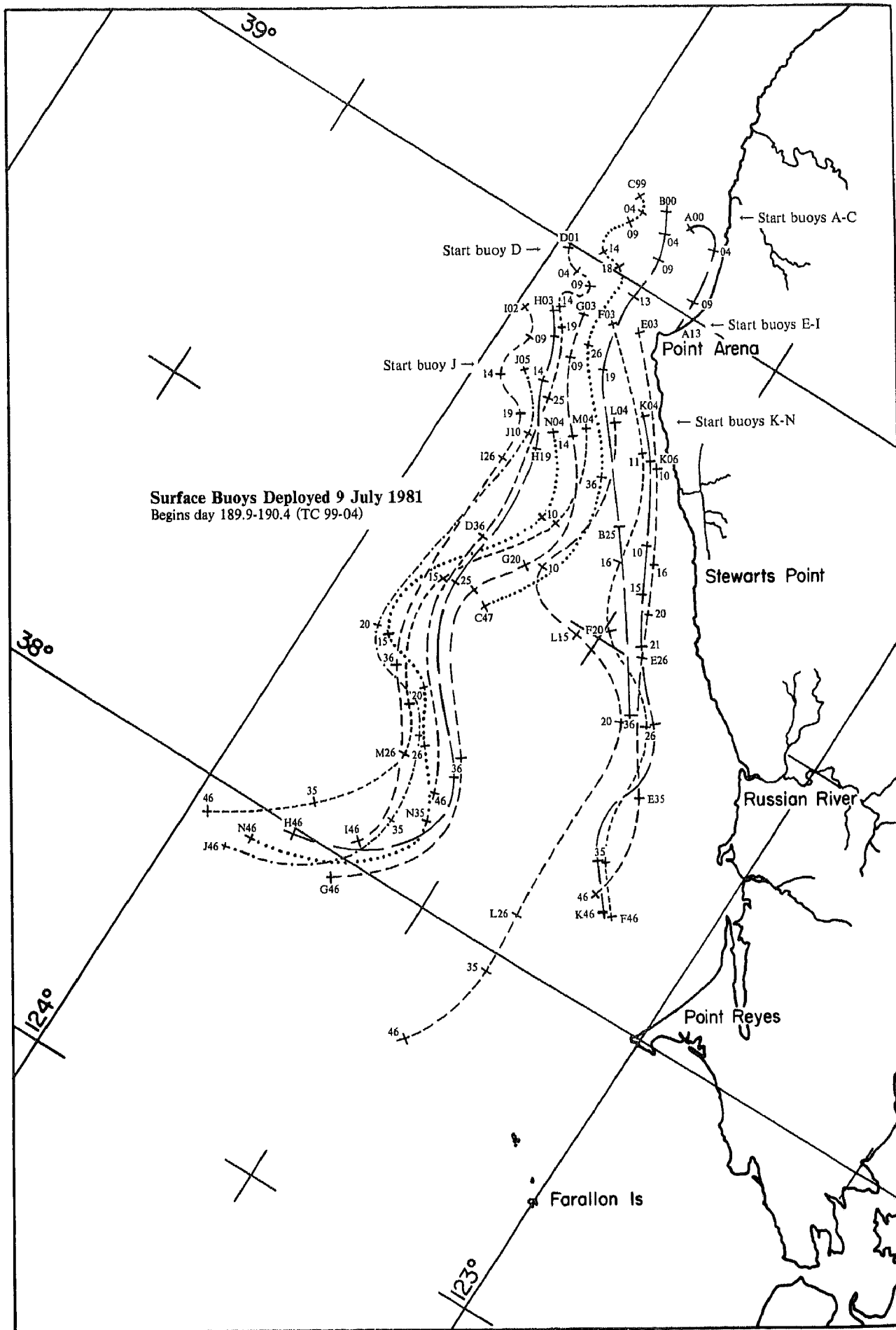


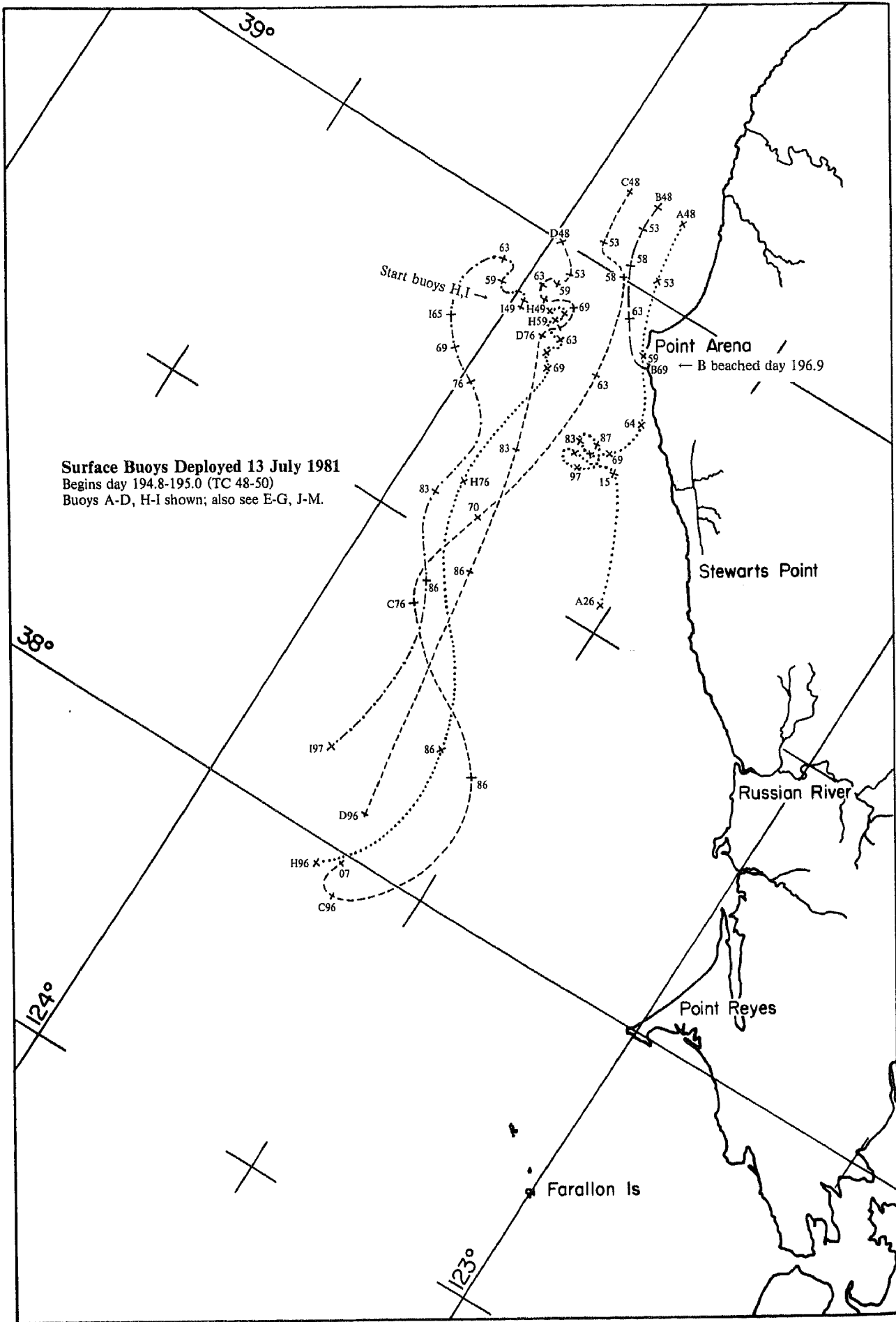












Surface Buoys Deployed 13 July 1981
Begins day 194.8-195.0 (TC 48-50)
Buoys A-D, H-I shown; also see E-G, J-M.

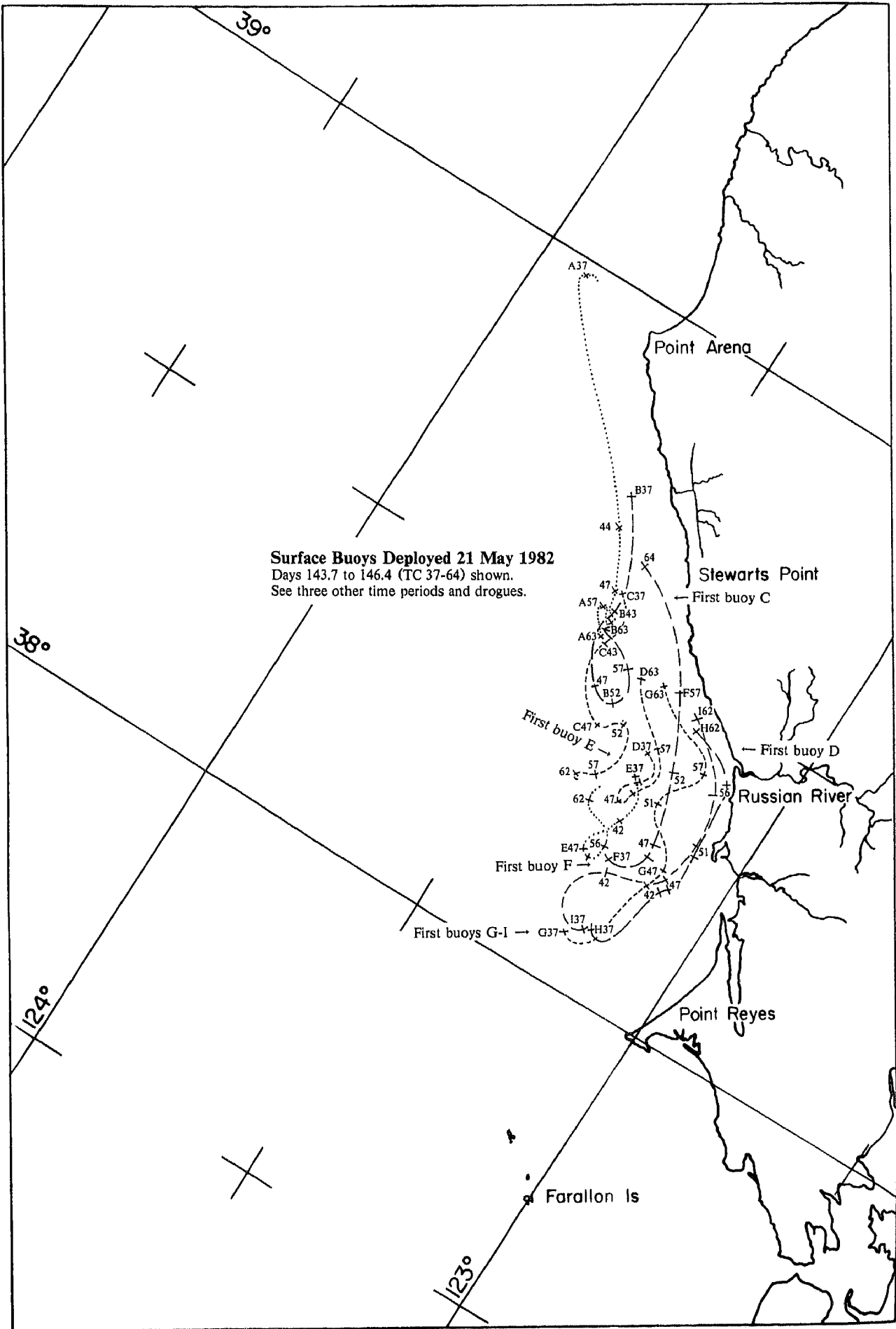
Point Arena
— B beached day 196.9

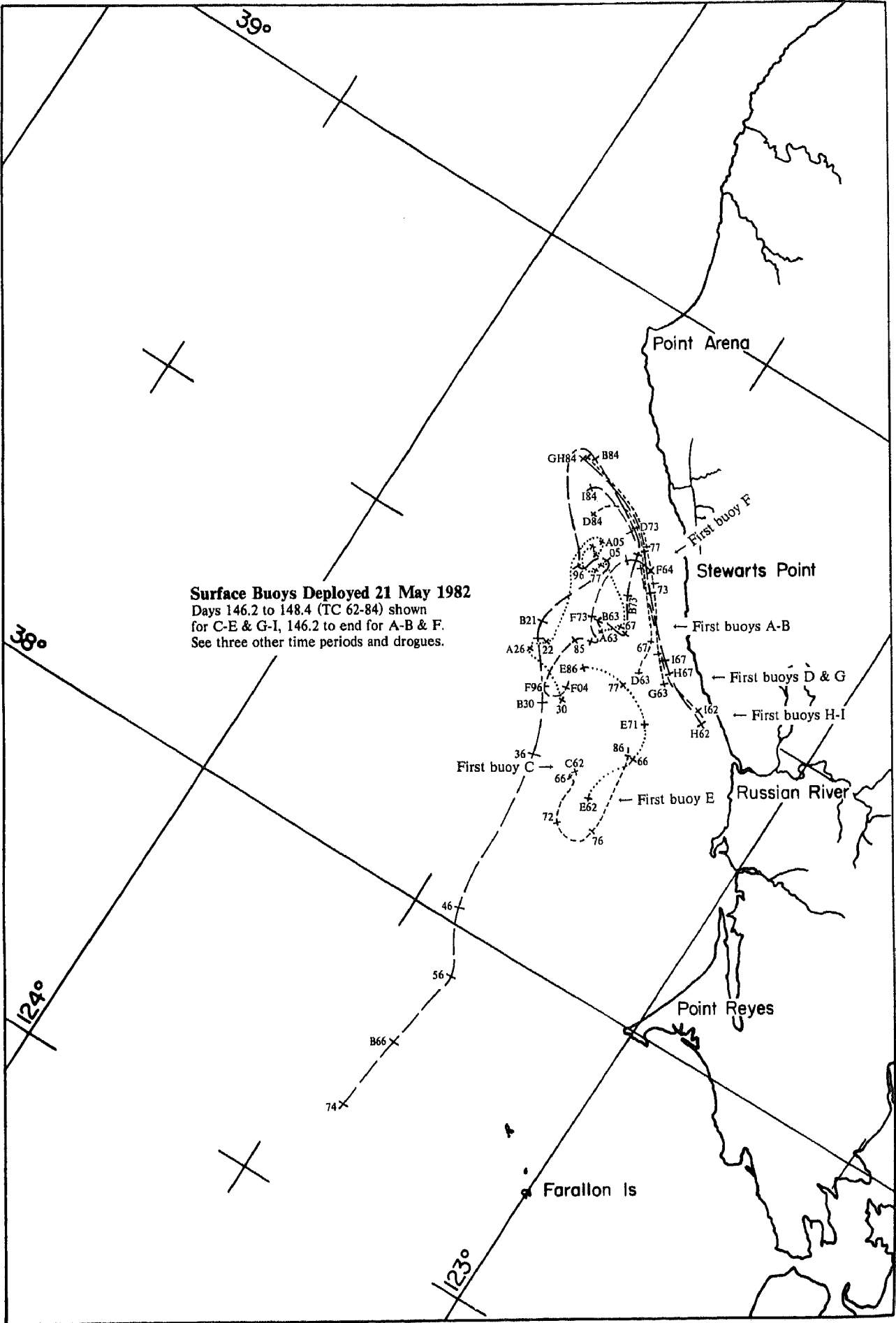
Stewart's Point

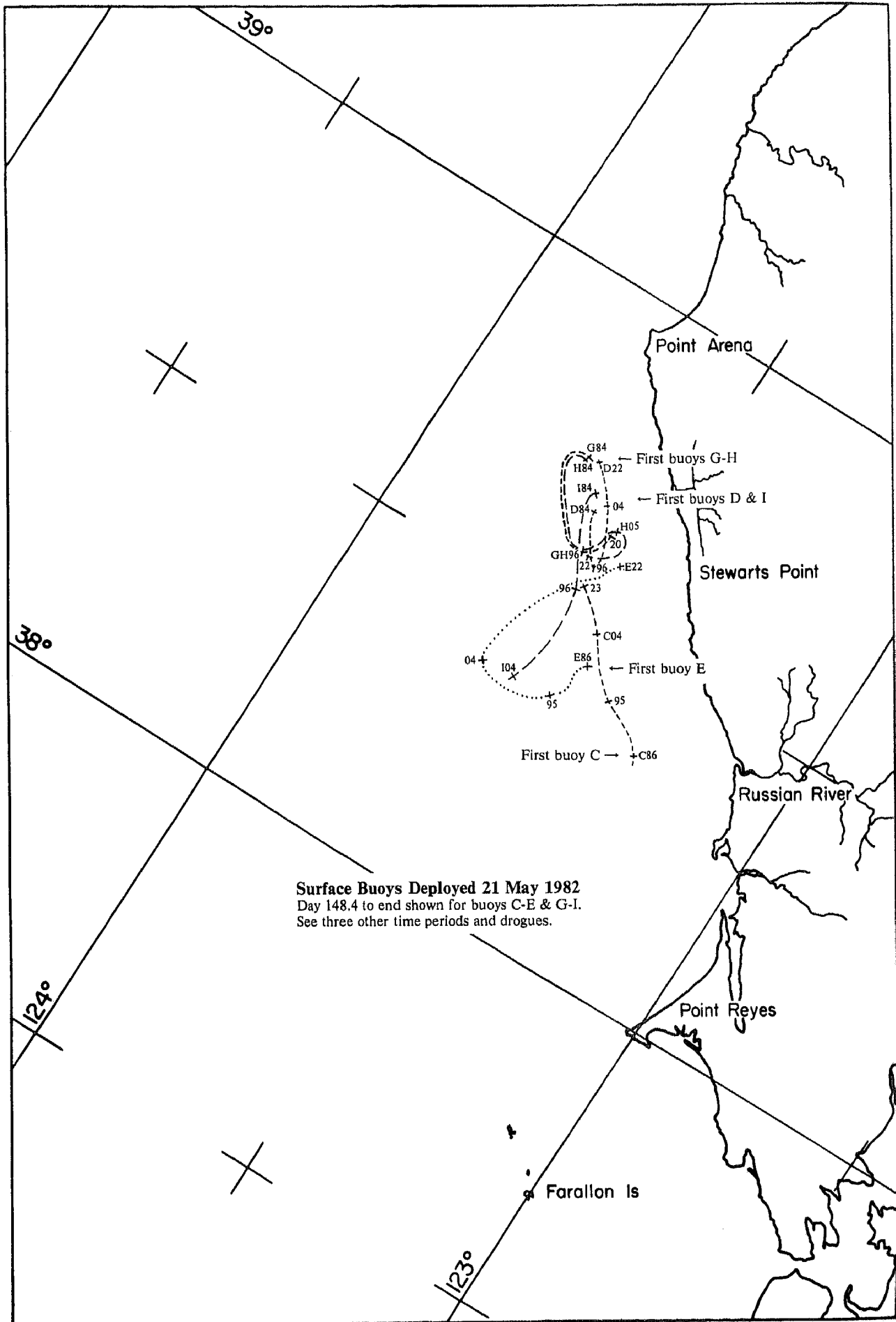
Russian River

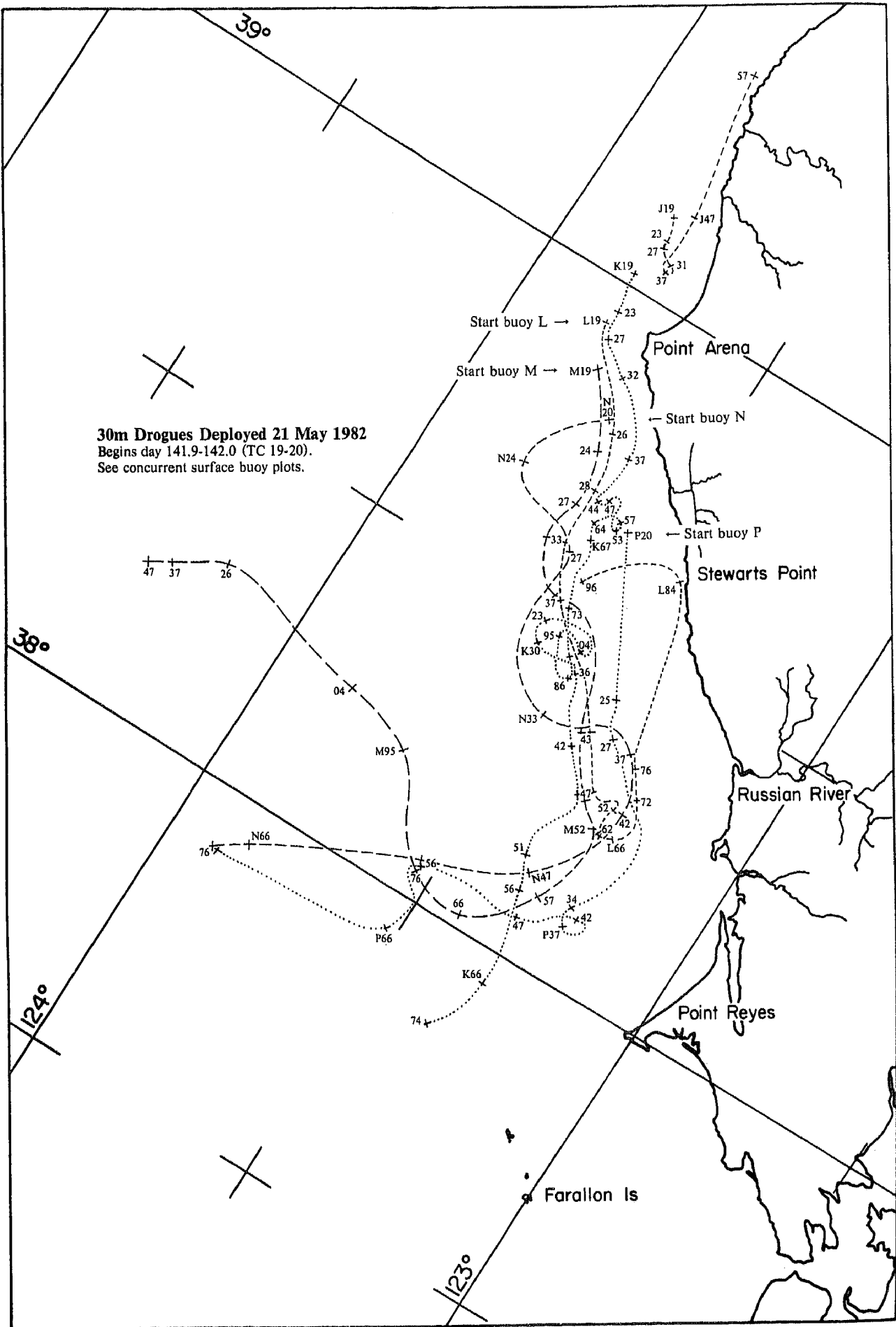
Point Reyes

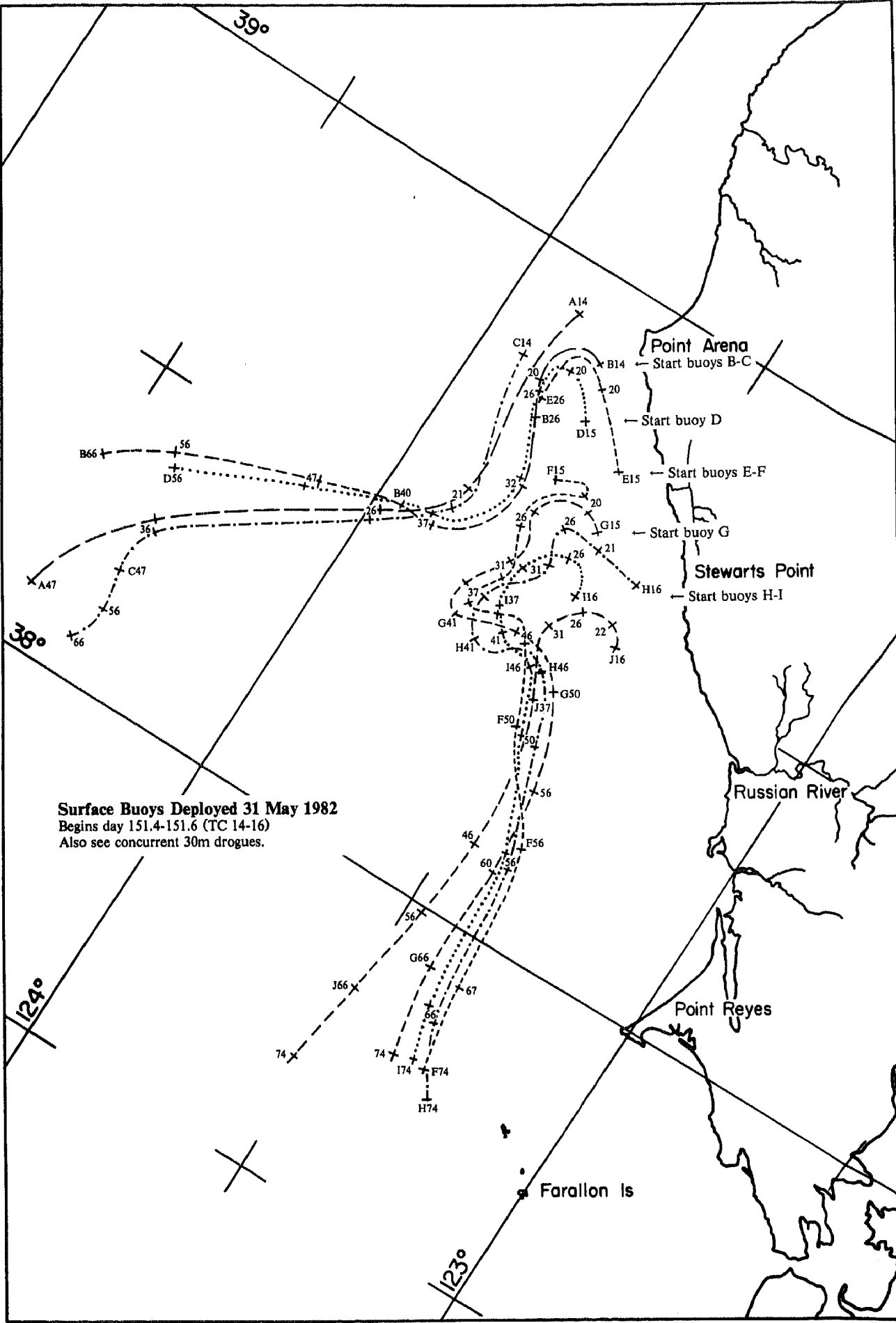
Farallon Is











Surface Buoys Deployed 31 May 1982
Begins day 151.4-151.6 (TC 14-16)
Also see concurrent 30m drogues.

Point Arena

Start buoys B-C

Start buoy D

Start buoys E-F

Start buoy G

Stewarts Point

Start buoys H-I

Russian River

Point Reyes

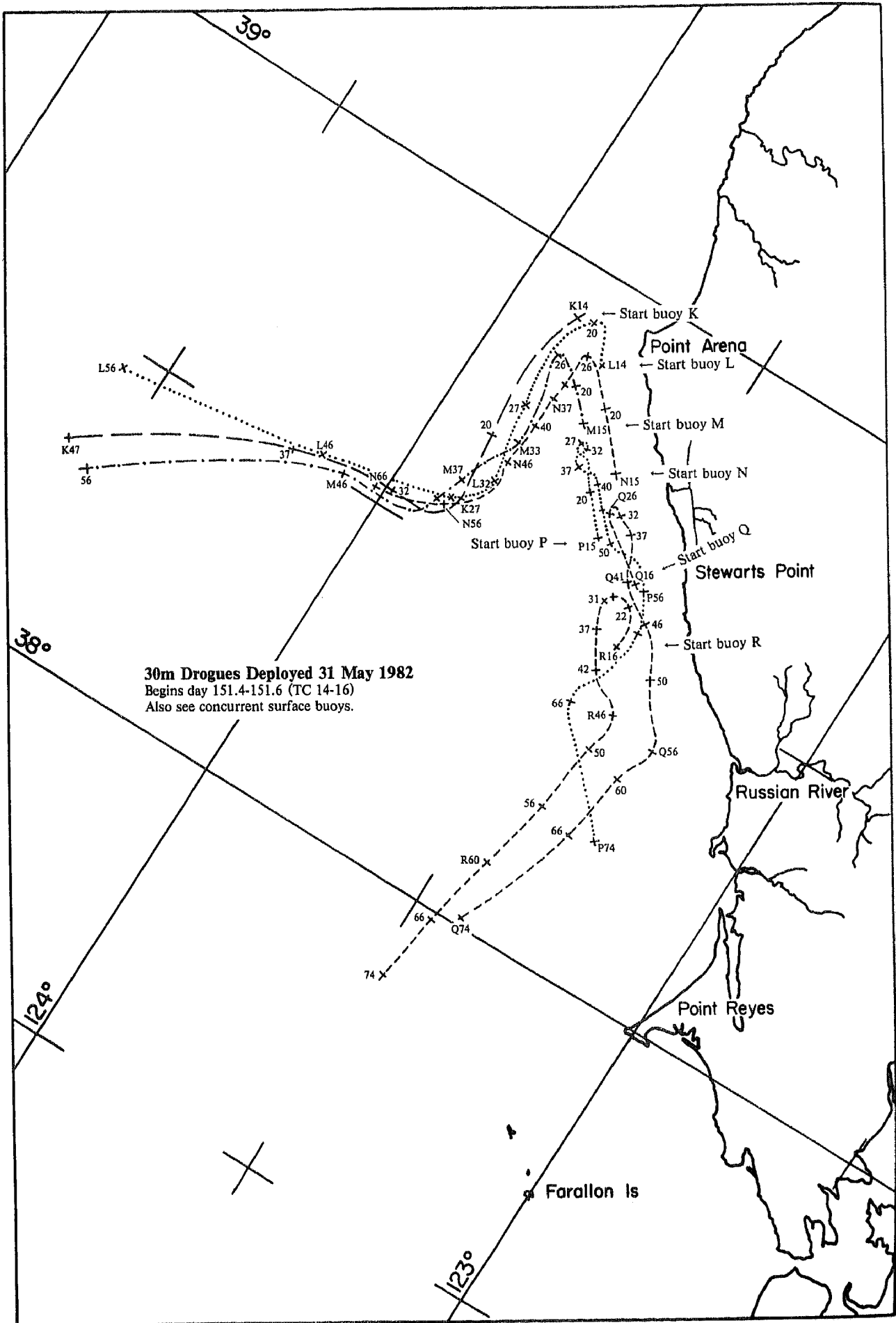
Farallon Is

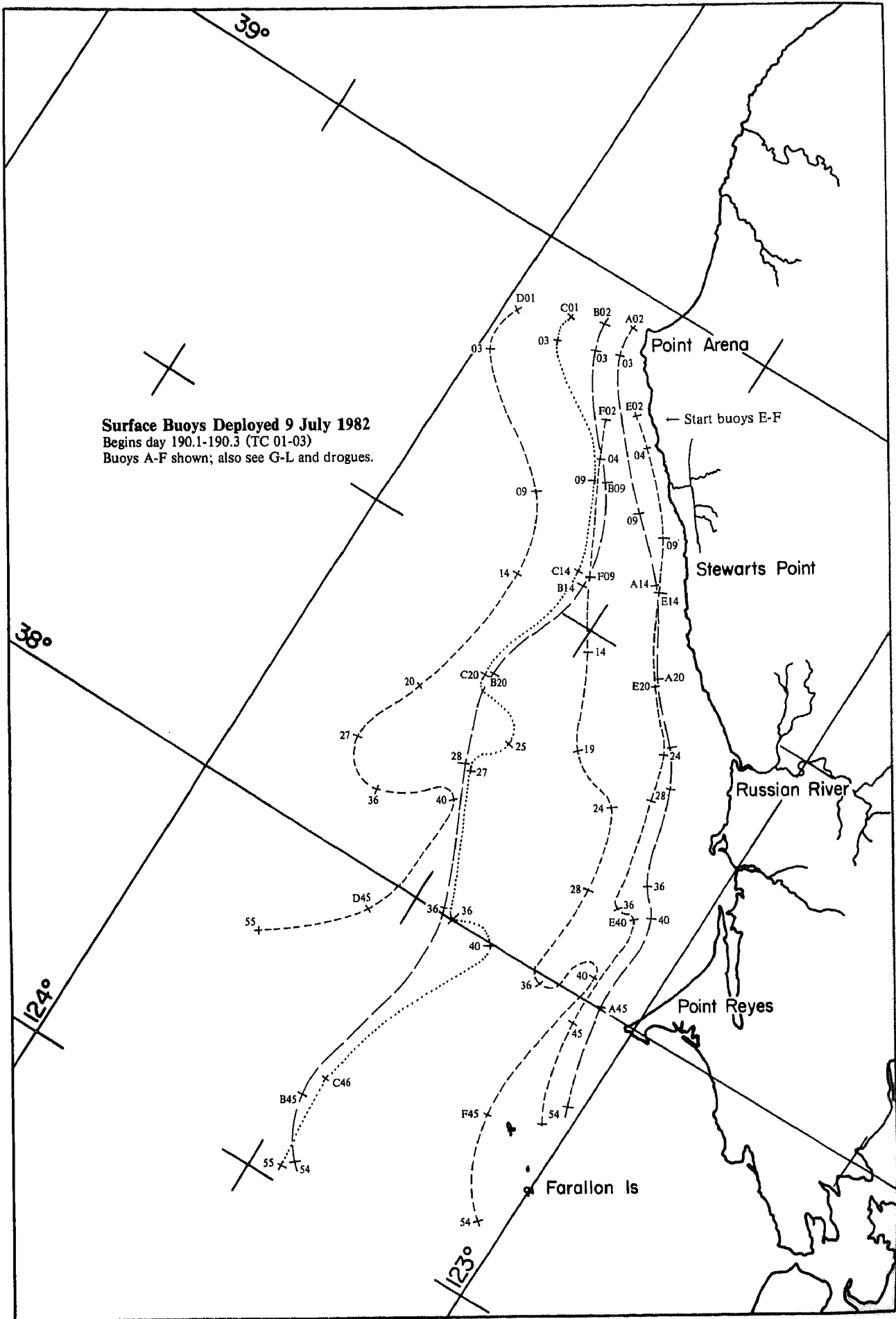
39°

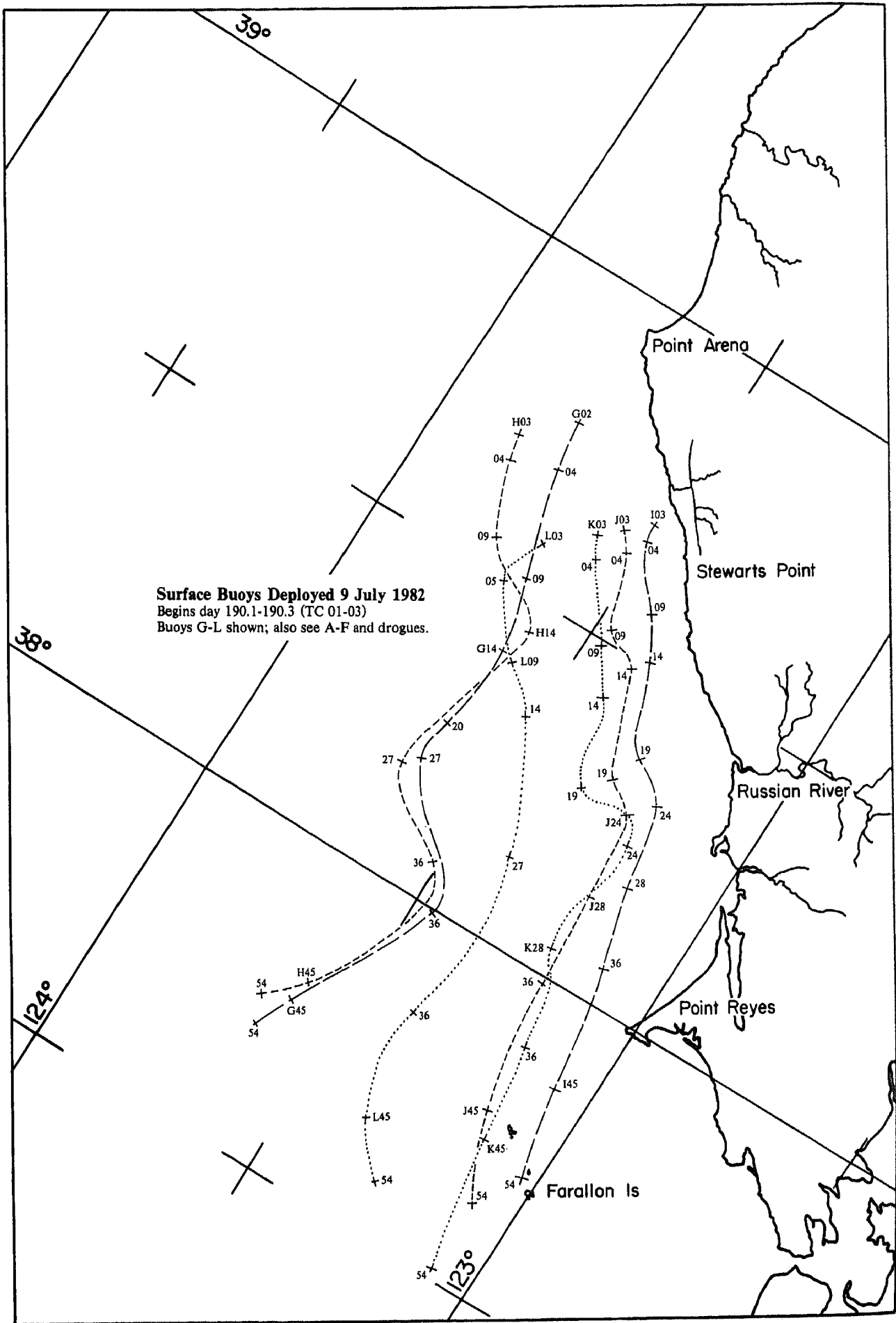
38°

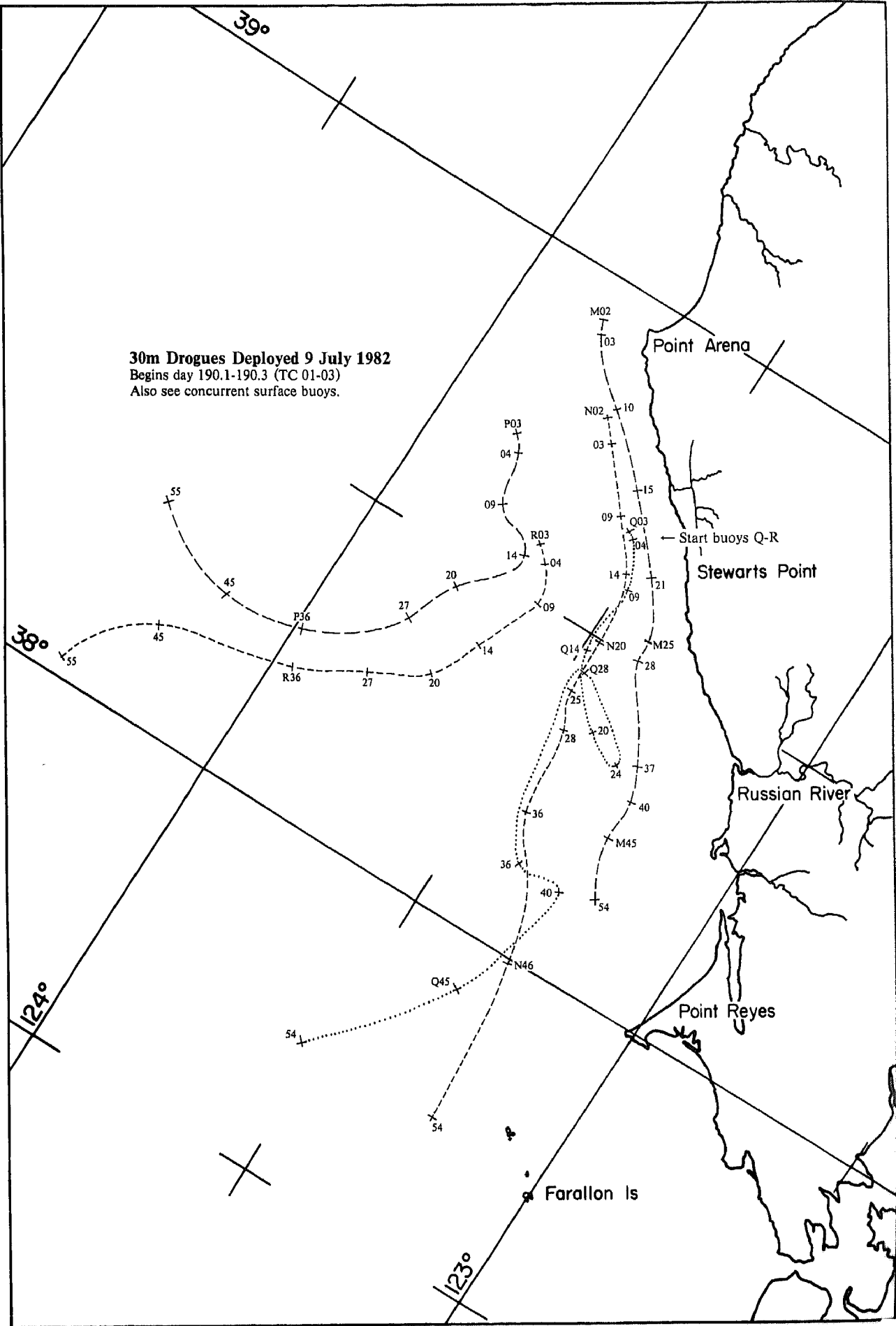
124°

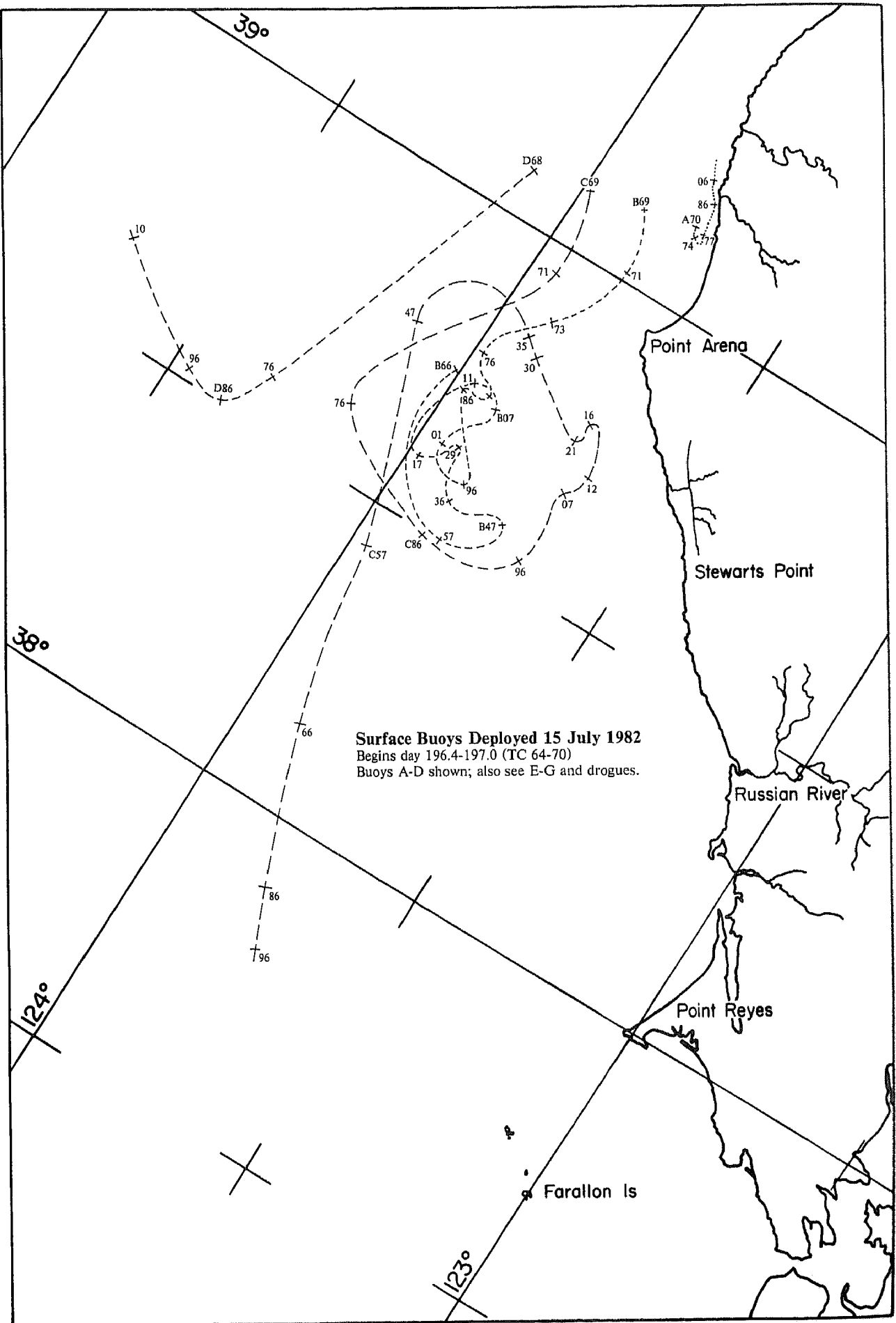
123°

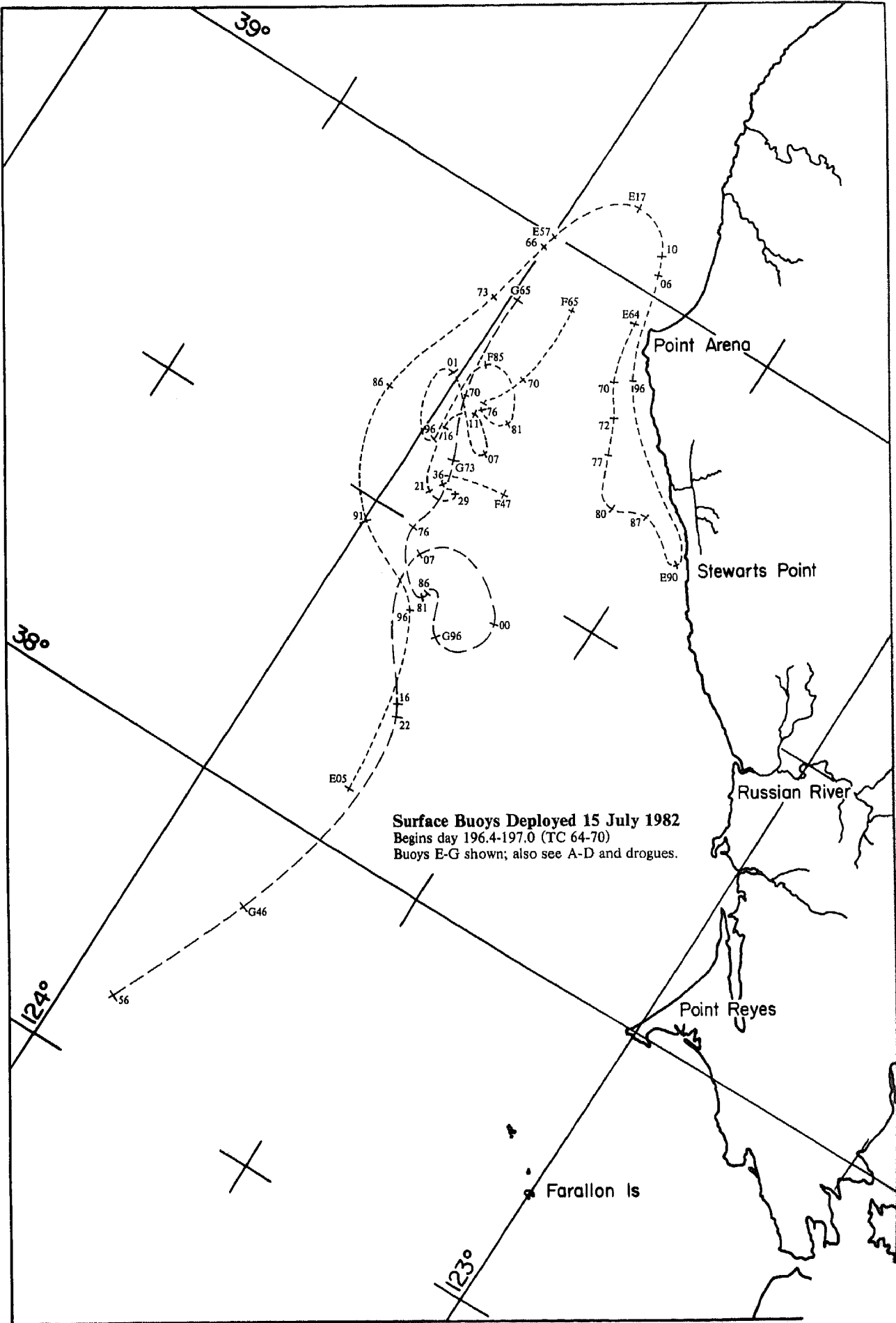


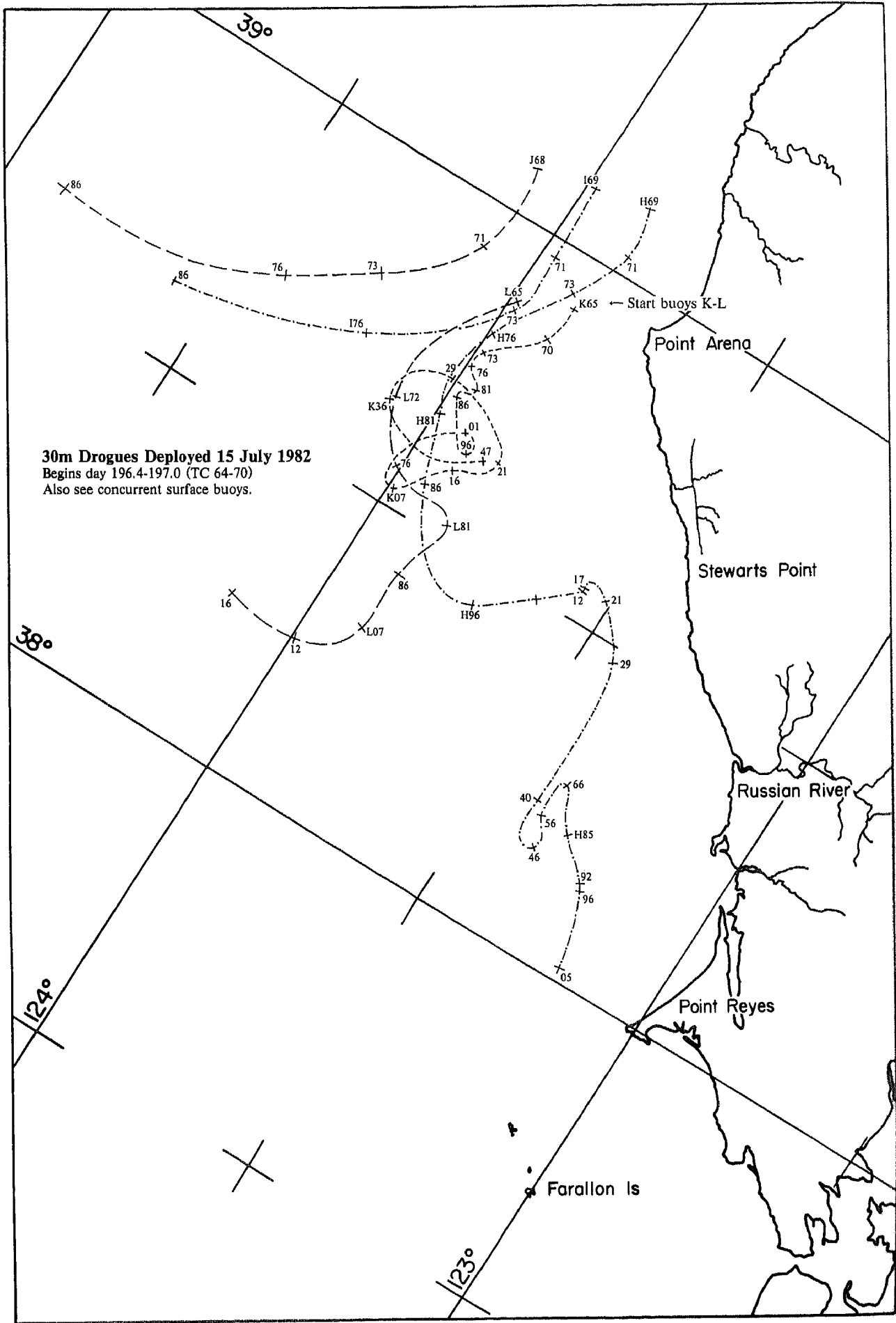










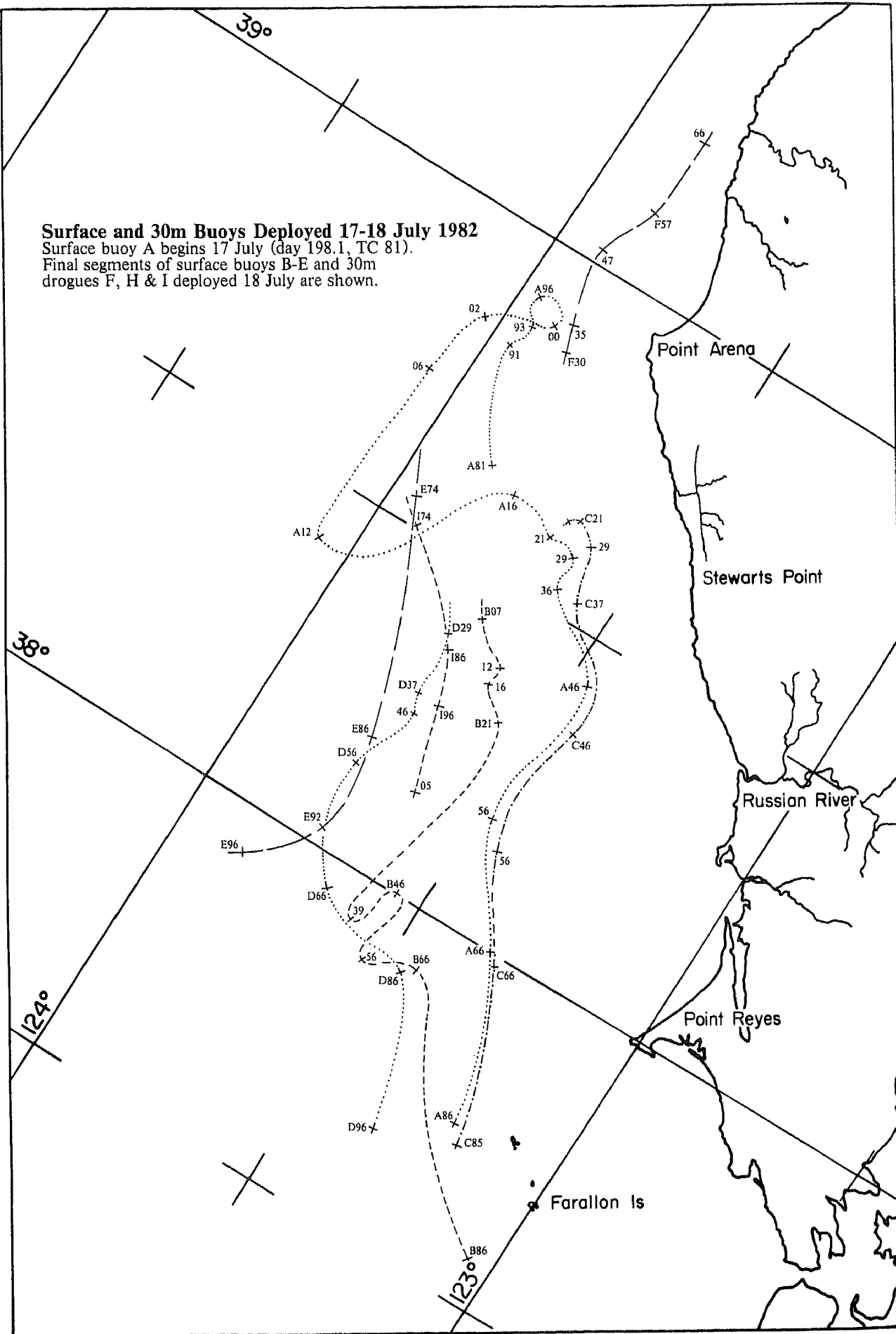


Surface and 30m Buoys Deployed 17-18 July 1982

Surface buoy A begins 17 July (day 198.1, TC 81).

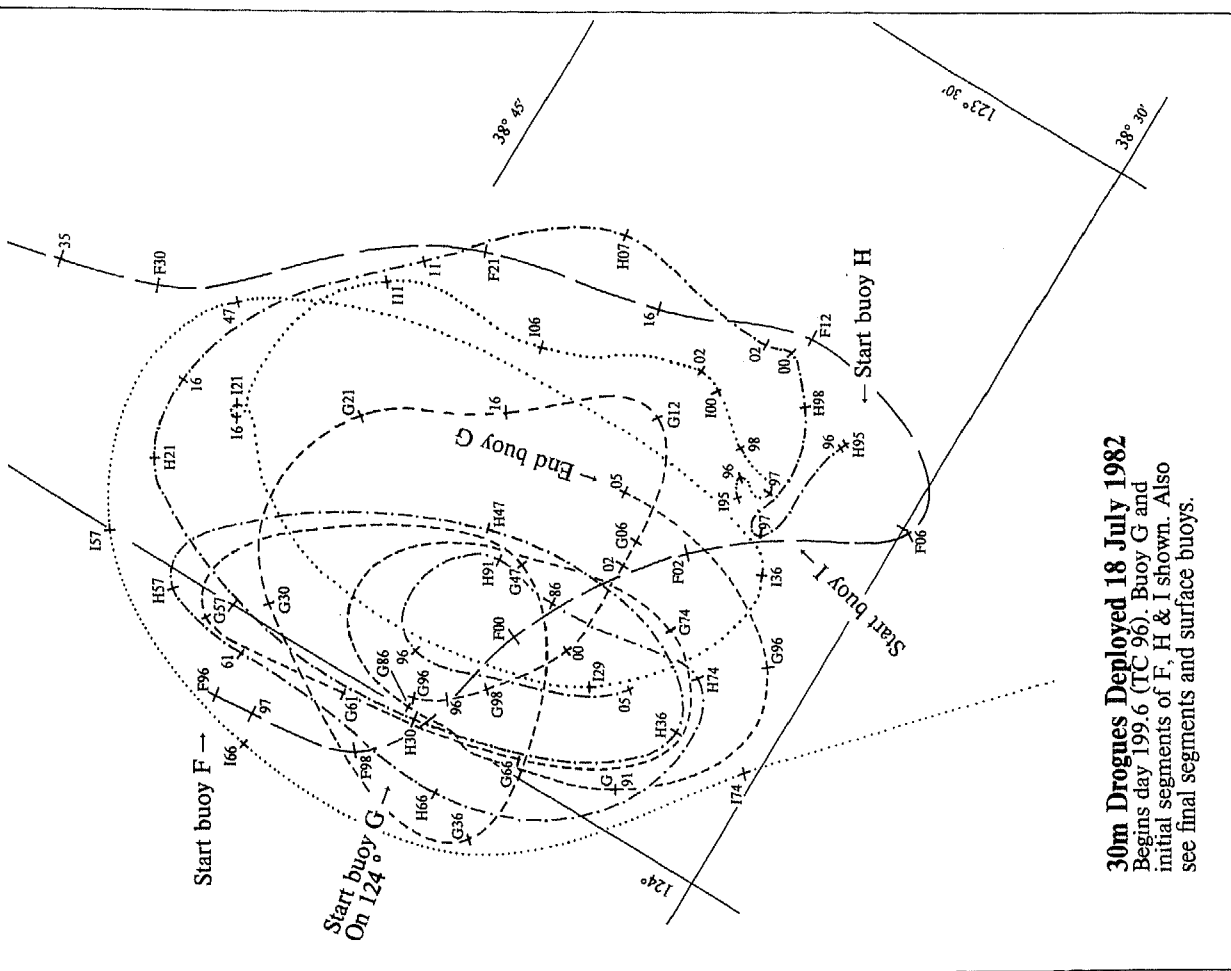
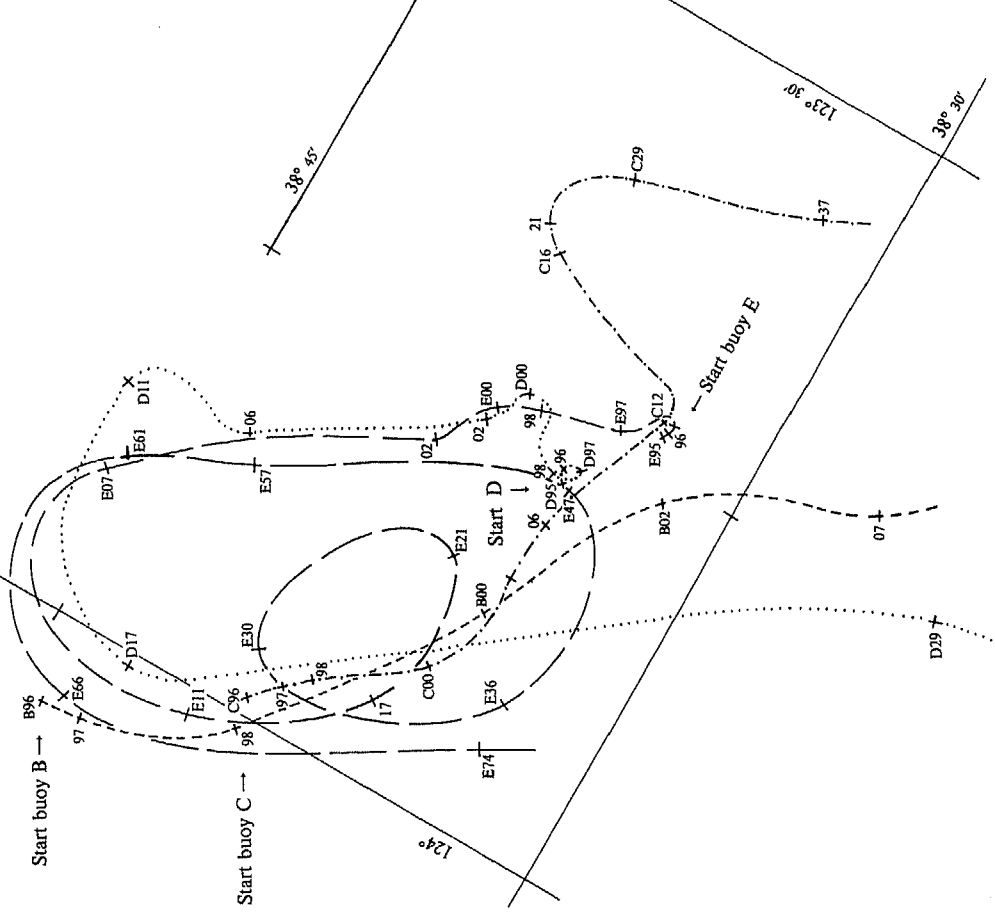
Final segments of surface buoys B-E and 30m

drogues F, H & I deployed 18 July are shown.



Surface Buoys Deployed 18 July 1982

Begins day 199.6 (TC 96). Initial segments of buoys B-E shown. Also see final segments and 30m drogues.



30m Drogues Deployed 18 July 1982
 Begins day 199.6 (TC 96). Buoy G and initial segments of F, H & I shown. Also see final segments and surface buoys.

