Report on Exploratory Crab Fishing

Swift Current

Placentia

Burin Island

Placentia Bay

Cape St Mary's

1970

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St. John's, Newfoundland

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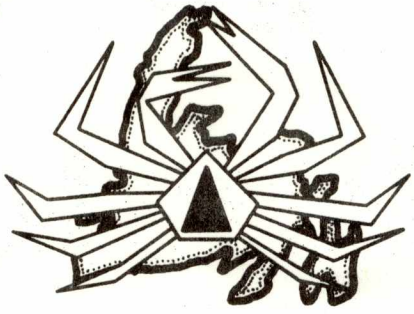

Placentia Bay 1970

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St. John's, Newfoundland

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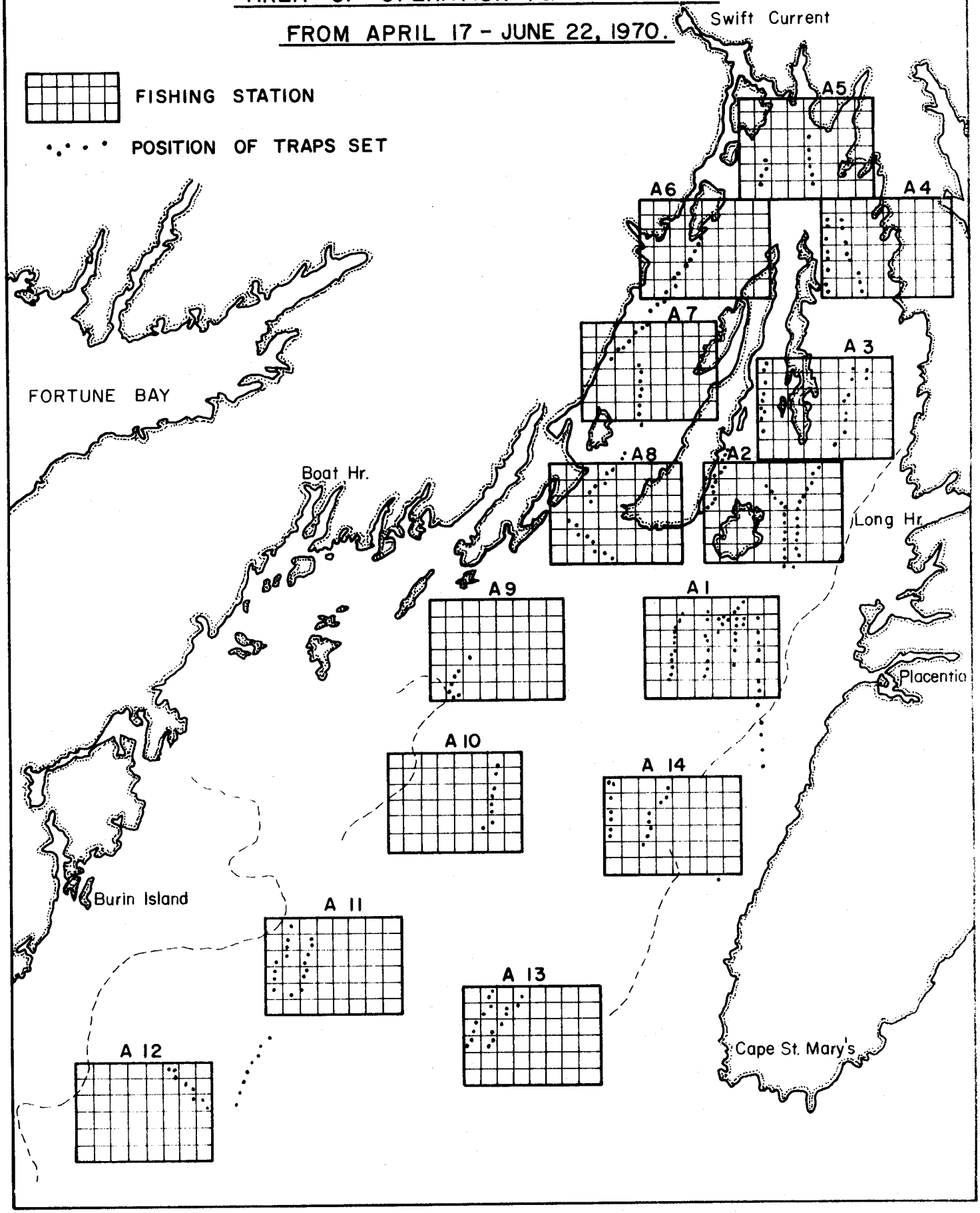
PROJECT 103-70 EXPLORATORY CRAB FISHING

AREA OF OPERATION PLACENTIA BAY

FROM APRIL 17 - JUNE 22, 1970.



Exploratory Crab Fishing Vessel "DONNA MCKENZIE"

(65 ft. Labrador schooner)

Aims and Plan of Exploration

The motor vessel, DONNA MCKENZIE, a traditional Labrador schooner, was chartered by the Industrial Development Service of the Department of Fisheries of Canada and the Newfoundland Fisheries Development Authority to explore Placentia Bay and to study the possibility of developing a crab fishery there.

The project was initiated by Mr. R.A. Prince, Regional Representativ for the Industrial Development Service. The two main goals of the exploration were (a) Alternative employment for workers laid off from the Naval Base (b) a supply of green crabs for the ever increasing market.

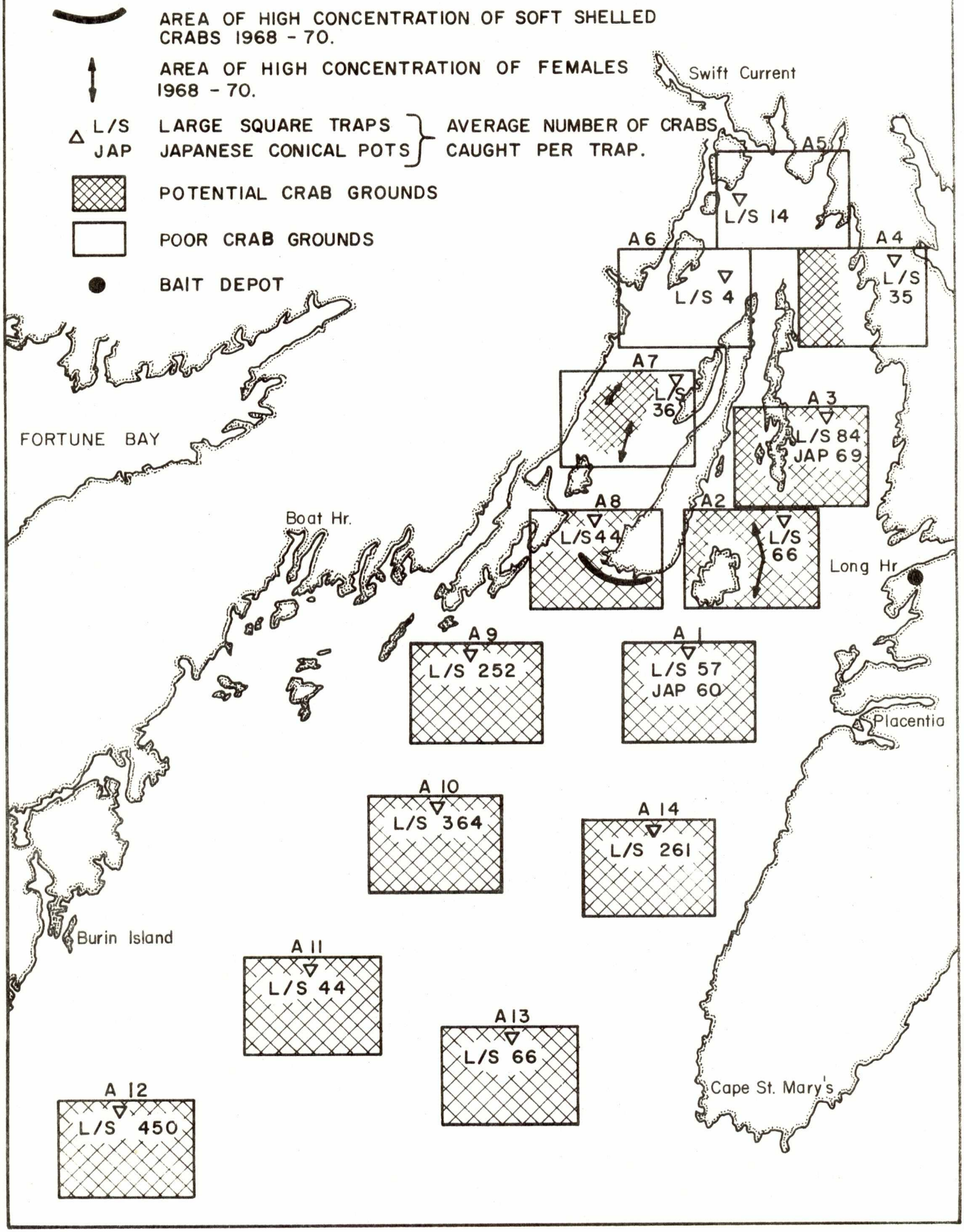
Explorations began on April 17 and ended on June 22, 1970. During the fall of 1968 the before mentioned agency had had the vessel, CHILCO LAKE, chartered for similar exploration. In the summer of 1969 the M/V IVERSEN carried out explorations in the bay, but due to the pollution problem, her area of exploration was restricted to south of a line drawn from Marticot Island to Argentia (see page 17.). With the opening of the bay, the vessel, DONNA MCKENZIE, was commissioned with a detail plan of explorations for 1970 (see page 1).

Placentia Bay possesses an approximate 900 square miles of possible crab grounds. From this, 672 square miles were selected to represent 14 fishing stations, wherein 246 large square traps and 75 Japanese conical pots were set. In so doing, an approximate 3 square miles were given to each large square trap fished.

The vessel spent 200 hours in actual fishing time harvesting 26,591 queen crabs. The overall average number of crabs per large square trap was 169, and 24 per Japanese conical pot.

Of the 69 days of charter, 43 days the vessel was alongside the wharf due the following: (a) 32 days bad weather (b) 11 days due to mechanical failures. Twenty-six days represents the total number of days that the vessel was engaged in actual fishing operations.

CRAB FISHING IN PLACENTIA BAY



Summary of Activities of Chartered Vessel in Placentia Bay

No. of Stations Fished	Type & No. of Traps Set	Total Catch	Duration of Exploration	No. of Days at Sea	No. engaged in Fishing Operation
14	Large square traps 246 Japanese conical 75	26,591	69 days	26	3

In all, approximately 2,637 miles were traversed by the vessel. Daily fishing operations lasted on the average, 12 hours, during which 16 large square traps were hauled and reset.

Exploratory vessel, DONNA MCKENZIE

This vessel was designed for the Labrador salt cod fishery. Her wheel house is positioned aft and her deck layout offers abundant facilities for operating crab gear.

L.O.A. 65'

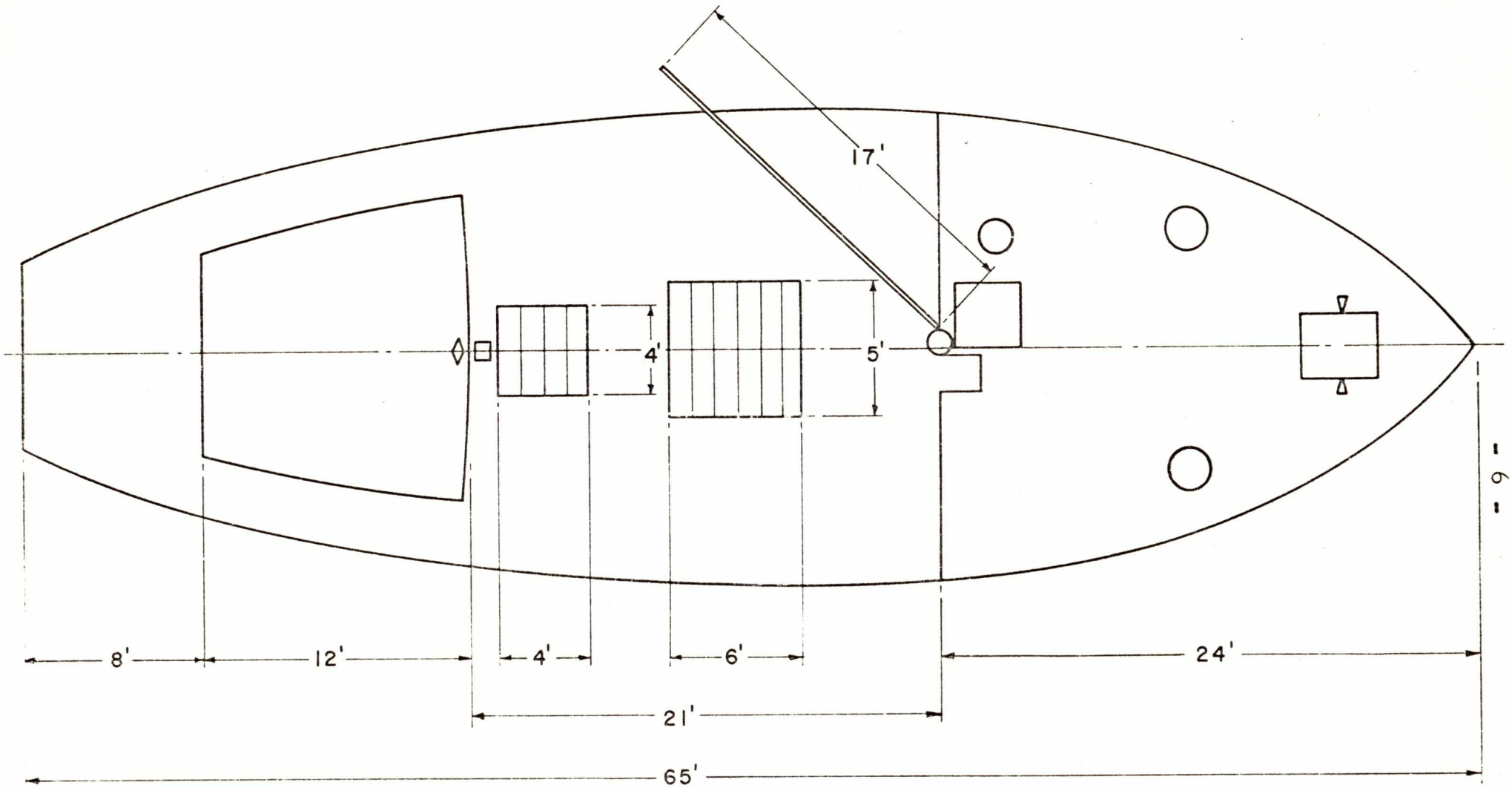
B mld 20'

D mld 7'

Gross tonnage 64.

The vessel is powered by a 220 h.p. diesel engine. At 1600 r.p.m. she has a cruising speed of eleven knots. Fuel, fresh water and supplies can be taken on to afford her continuous operations for fourteen days. Accommodations for one officer and four others are situated on the main deck and lower forecastle.

The vessel's fish hold has a storage capacity of 45 tons. Within this area it is estimated that 140 fish cans can be stowed holding an estimated 7,000 lbs. of green crabs.



MAIN PARTICULARS

L.O.A. 65' , B.mld 20' , D.mld 7',

GROSS TONNAGE 64 , MAIN ENGINE 225 H.P.

DECK ARRANGEMENT OF EXPLORATORY CRAB FISHING VESSEL "DONNA McKENZIE"

The DONNA MCKENZIE (page 2) is fitted with a hydraulic crab block, and power boom, and is capable of taking in two hundred fathoms of moorings along with a large square trap in seven minutes. (See page 30 for power block.) Since the block is attached to the forward mast, it can be made to take in gear from either side.

Other equipment includes:

(1) Simrad three hundred twenty fathom sounder

(2) Radar

(3) R/T Set.

Personnel of DONNA MCKENZIE

(1) Skipper

(2) One deckhand

(3) Cook

(4) Industrial Development Service's Observer

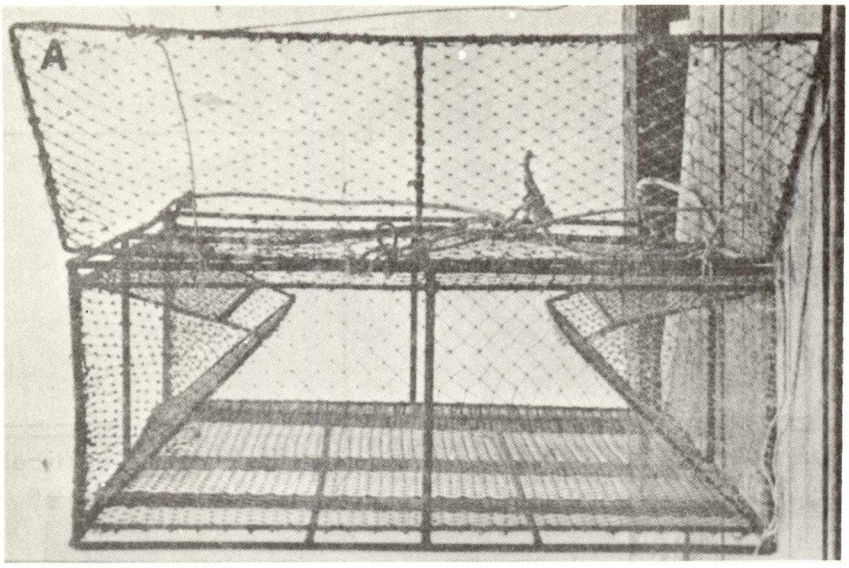
(5) Fisheries Research Board's Observer.

Gear Used

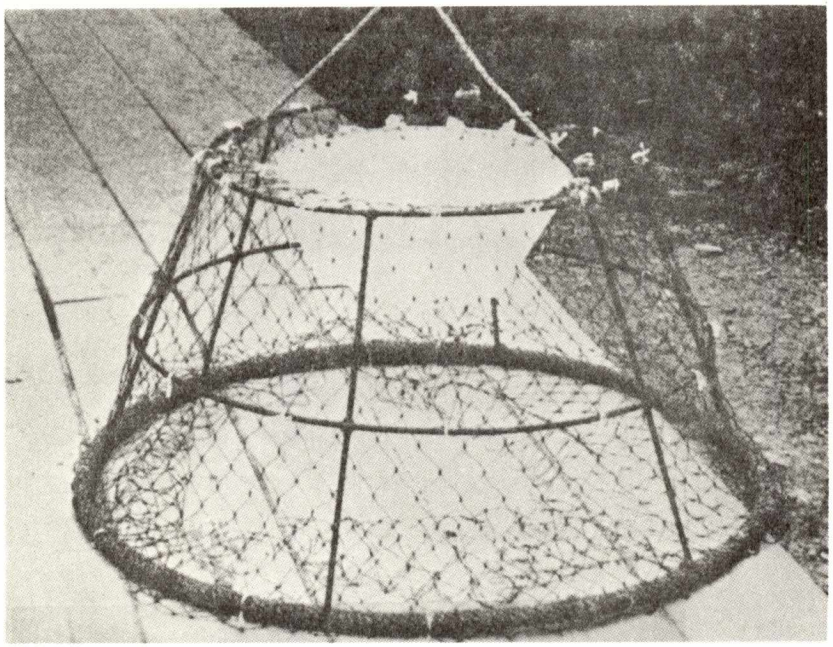
The large square trap introduced by technical advisors of the Industrial Development Service, Japanese conical pots, and the large square collapsible traps were the three units of gear used throughout the exploration. The two large square traps have entrances on opposite sides and a door on another side. The mesh on the bottom of the trap is protected by an iron grid which also helps to anchor the trap on the ocean bottom.

Courlene netting 4½" to 5" mesh, hung 67% is used on the top, bottom, and sides of the trap, while the tunnel approaches are covered with 1¼". The weight of the trap is about one hundred thirty-five pounds.

Japanese conical pots were 46" in diameter at the bottom and 27" at the top. Its height is 25" and it is covered with 4" webbing



Canadian Large Square Trap



Japanese Conical Pot

throughout. Each pot weights approximately twenty pounds.

Mooring and fishing lines were 3/8" to 5/8" diameter polythene rope. Swivels were placed between buoys and mooring lines to take out any turns that may have developed. (See page 8 for gear used.)

Position of gear was marked by radar reflector buoys or two marker buoys which were attached to the mooring line of traps.

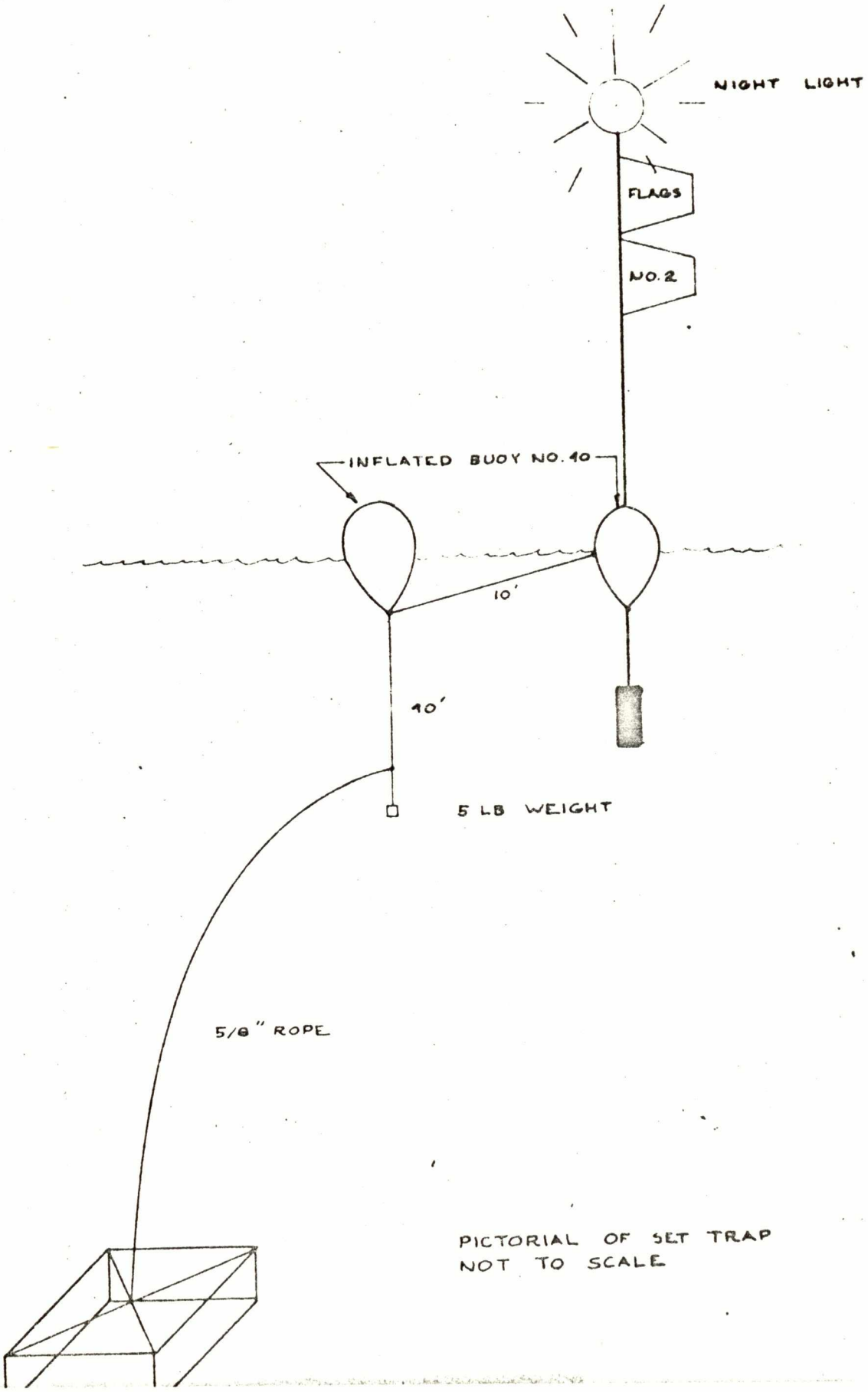
Method of Setting Large square traps and Japanese Conical Pots.

Japanese conical pots were fished similar to that of longline fishing. For exploratory purposes fifteen (15) pots made up a fleet. Marker buoys were attached to both ends of the mooring lines, and an excess of twenty to thirty fathoms was allowed to the fishing line in an attempt to combat hydrographic influences. The pots were positioned thirty fathoms apart on the fishing line. (Pages 10 and 11)

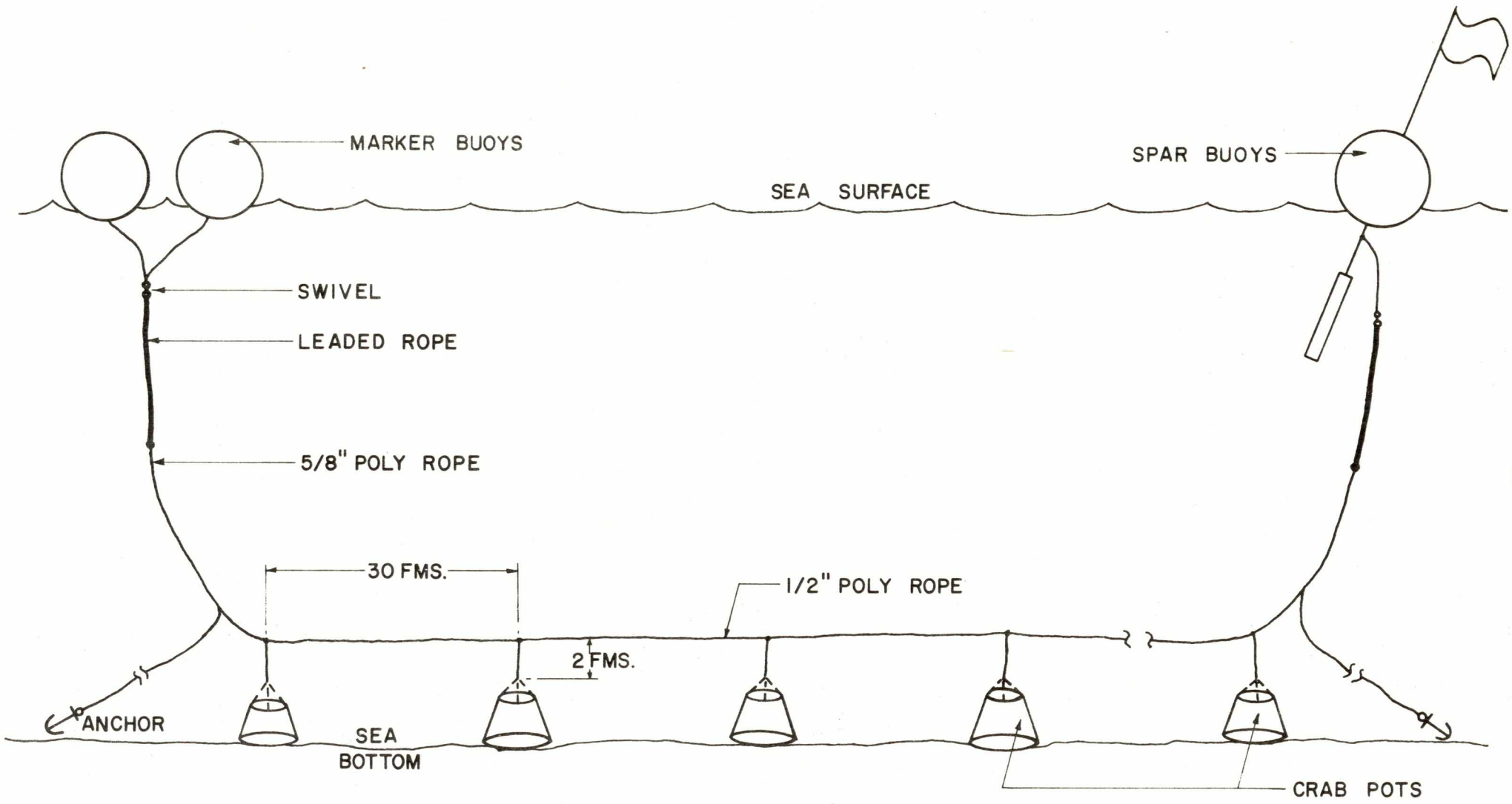
Large square traps were fished independantly. In addition to excess moorings given, leaded rope was reeved into the upper end of the mooring rope in order to submerge the excess. The traps were usually positioned one mile apart with radar reflector buoys at both ends of set or as thought necessary by the skipper. The use of reflectors on the gear set is of help in relocating traps during foggy weather and it helps to protect gear from vessels engaged in other trade.

Before setting large square traps, the vessel steamed over the intended grounds taking soundings, provided that soundings were within the limits of assembled moorings, the trap was put over the side by hand.

In setting Japanese conical pots, the market buoy and one end of the fleet's mooring line was put out as the vessel steamed on a predetermined course. When the mooring line was out, the first pot of the fleet and its fishing line were then put out. This process continued until the total number of pots were out. The other end of the



PICTORIAL OF SET TRAP
NOT TO SCALE



METHOD OF SETTING JAPANESE CONICAL POTS

mooring line was then put out to which was attached two marker buoys or a spar buoy (see page 11).

Bait and Method of Baiting Gear

Bait used throughout the explorations in Placentia Bay was fresh or frozen round cod and herring.

Large square traps were baited by attaching fresh or frozen bait unto an insulated wire which was positioned from one end of the trap to the other.

Japanese pots were baited by attaching four pieces of bait to four hooks that were arranged around the inside of the tunnel.

There is no refrigerator or holding compartment whereby large quantities of bait may be stowed on the DONNA MCKENZIE. Frozen bait held good for seven days while fresh bait, three days.

Summary of Activities Relating to Bait Used.

Total Amount of Bait Purchased	Total Traps Set	Est. Amt. of Bait Used	No. of Days Vessel at Sea	No. of Traps Set per Day	Type of Bait Used
3,500 lbs .	321	10 lbs.	26	16	Cod and herring.

Sampling Method

To ensure regular sampling in different areas, fishing stations with the following characteristics were developed:

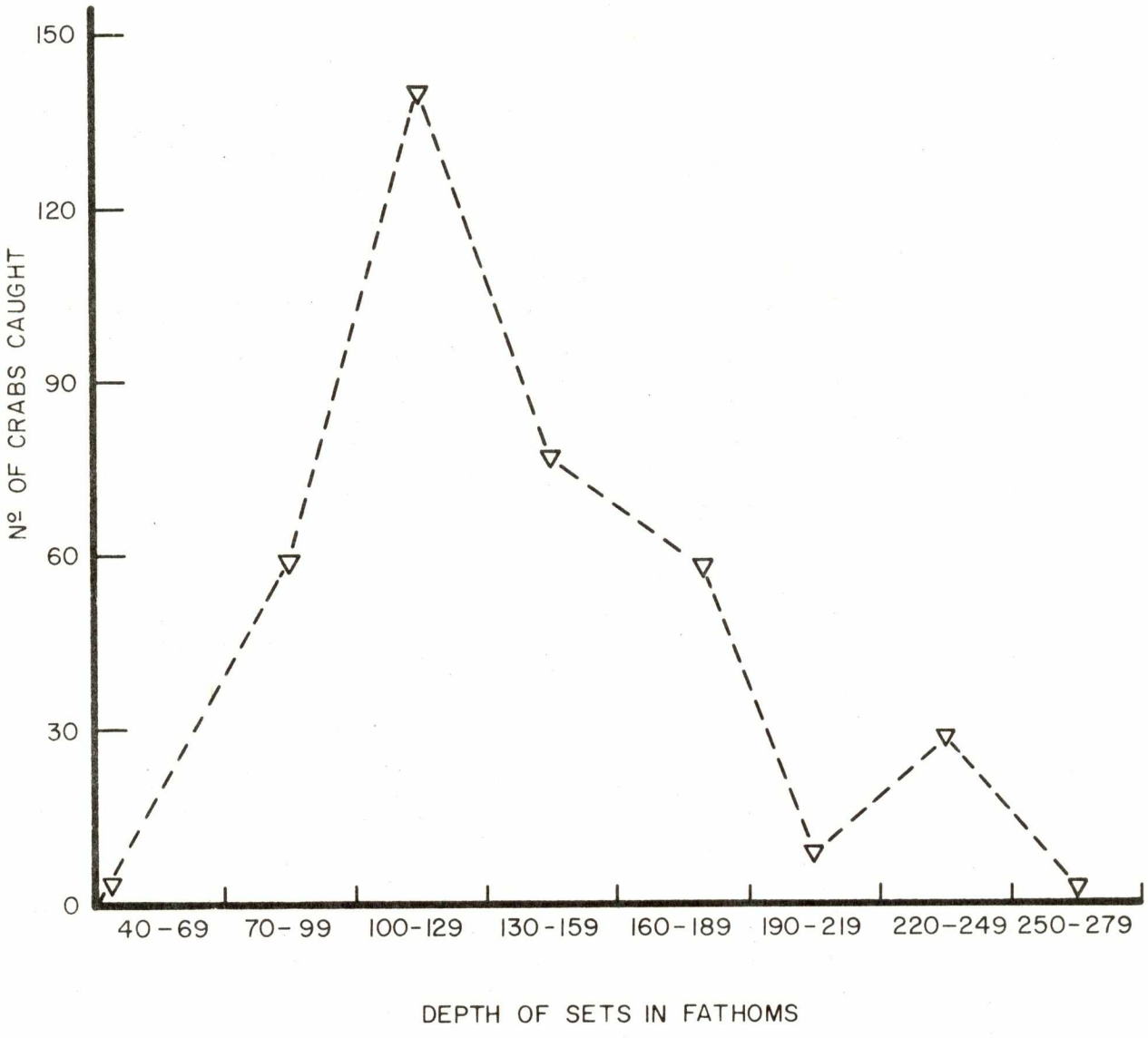
(a) Area of station 48 square miles

(b) Range of depths 40 to over 200 fathoms

(c) Bottom topography (1) level, (2) incline, (3) submerged ridges or gullies

(d) Bottom conditions - mud, mud and sand, rock and gravel.

OVERALL AVERAGE OF CRABS CAUGHT WITH LARGE SQUARE TRAPS AT DIFFERENT DEPTHS



A minimum of sixteen large square traps were set on each station. Japanese conical pots were fished for demonstration purposes, and to check their efficiency alongside large square traps. By fishing a minimum of sixteen large square traps per station, an area of attraction of approximately three square miles was afforded each trap set of the total area that comprised fishing stations.

Effects of Weather on Fishing and Catch.

During stormy weather (winds Beaufort scale (6)) the vessel found it difficult to haul and set gear.

Such weather within the bay did not have any appreciable effect upon gear already set. The average number of crabs caught per large square trap for a set period of 14 days was 300, as against 40 per trap for an average duration of a set for three days under favourable weather conditions (see page 19).

Movement of Gear Set.

Movement of gear set was not experienced during operations within the bay. This was indeed surprising for there was a marked tidal range and prolonged periods of high winds.

Summary of Fishing Activities in Placentia Bay.

Depth of Set	No. of Traps Set	Average Bottom Conditions	Total Crabs Caught
40 - 69	2	Rock, rock and gravel	4
70 - 99	32	Rock and gravel, mud and sand	1,726
100 - 129	151	Mud, mud and sand	21,173
130 - 159	35	Mud	2,696

Depth of Set	No. of Traps Set	Average Bottom Conditions	Total Crabs Caught
160 - 189	17	Mud	956
190 - 219	1	Mud	8
220 - 249	8	Mud	28
	246		26,591

Twelve residents of Placentia, interested in crab fishing, were taken out during fishing operations and shown the method of fishing for crabs.

Summary of Explorations 1968, 1969, 1970.

From September 20 to October 6, 1968, the vessel CHILCO LAKE carried out exploratory operations within stations 1, 2, 7, 8, and 14 of the 1970 area of exploration. During the 91 hours that the vessel was at sea 5,331 lbs. of commercially acceptable crabs were caught, giving an overall average of one hundred twelve pounds of crabs per trap. Fishing off the Merasheen Islands, on an area covered by station 8 of the 1970 program, a large amount of soft shelled crabs were trapped. Berried females were also found in quantities fishing in station 2. It was observed that as sets were made towards the mouth of the bay the catches were drastically reduced. At the time of explorations crabs were caught in commercial quantities and the bay showed possibilities of supporting a commercial fishing operation.

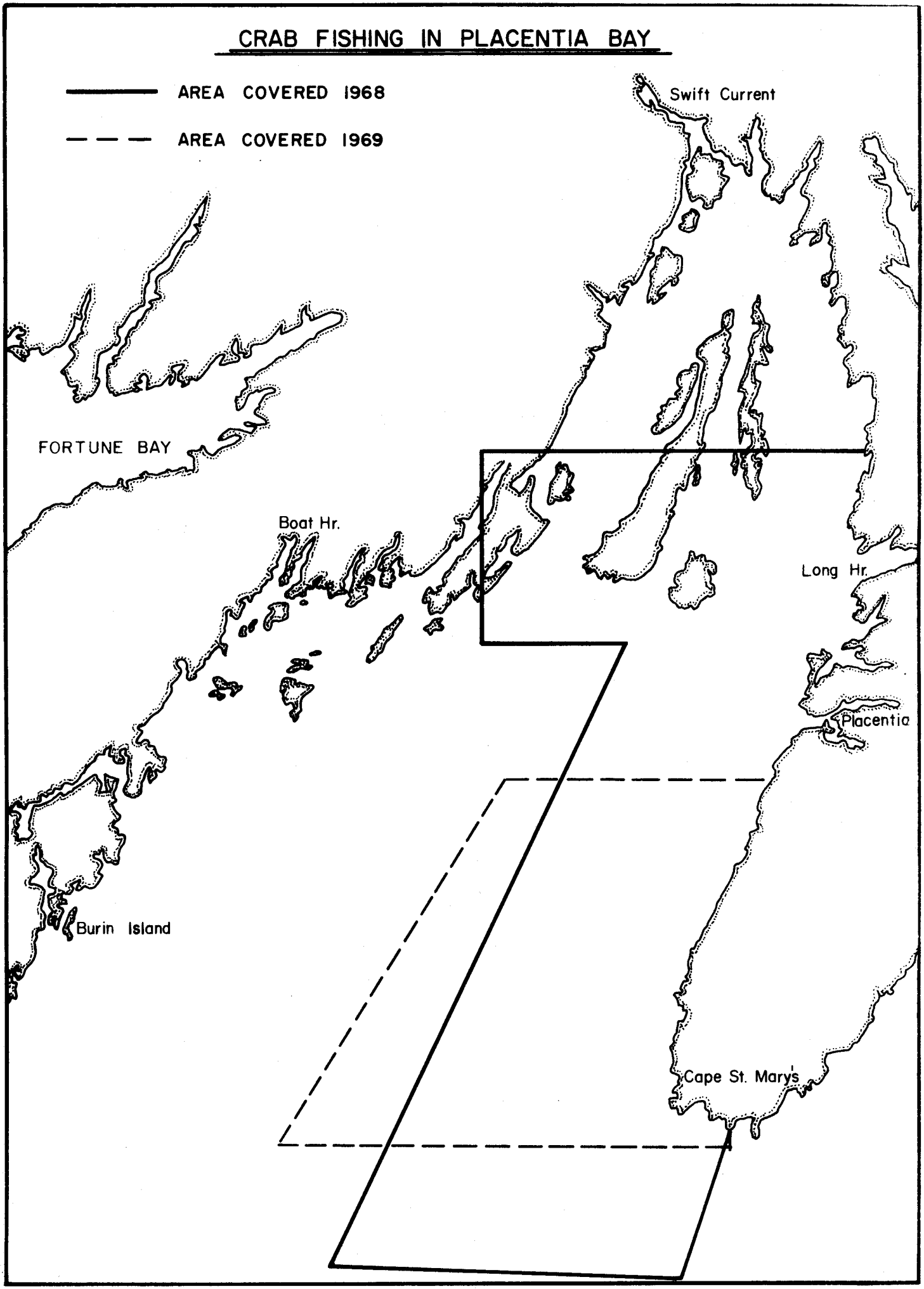
During 1969 from August 2 to September 1, the vessel IVERSEN spent thirty days carrying out exploratory operations and fishing in an area covered by stations 1, 14, 13, 12, 11, 10 and 9 of the 1970 program. 4,952 queen crabs were trapped and the overall average per large square trap was 50 crabs.

Exploratory Crab Fishing Vessel WALTER LYNN

(50' long liner)

Exploratory Crab Fishing Vessel CHILCO LAKE

(92 ft. seiner)


CRAB FISHING IN PLACENTIA BAY
AREA COVERED 1968
AREA COVERED 1969
Swift Current
FORTUNE BAY
Boat Hr.
Long Hr.
Placentia
Burin Island
Cape St. Mary's

From April 17 to June 22, 1970, the vessel DONNA MCKENZIE was at sea for 26 days. 341 traps were set at depths ranging between 40 and 249 fathoms. The area explored is shown on page 1 .

Of the 26 days that the vessel was at sea, 164 hours were related to actual fishing operations wherein an estimated 15,960 lbs. of marketable crabs were landed. This production represents 153 lbs. of crabs per fishing hour and 80 lbs. per hour for total time away from port. Of the total catch, 5% amounted to trash in trap.

Catch in Relation to Traps (Large Square and Japanese Conical).

The overall average number of crabs caught per large square trap was 252. While with Japanese conical pots the yield was 49. The composition of the total catch was 31.9 % commercial size, 17.6% soft shelled, 48.09% undersize, 1.52% females and 0.89% other species.

In deciding which unit of gear is most suitable, the following points must be taken into consideration:

(a) Cost of fishing each unit of gear

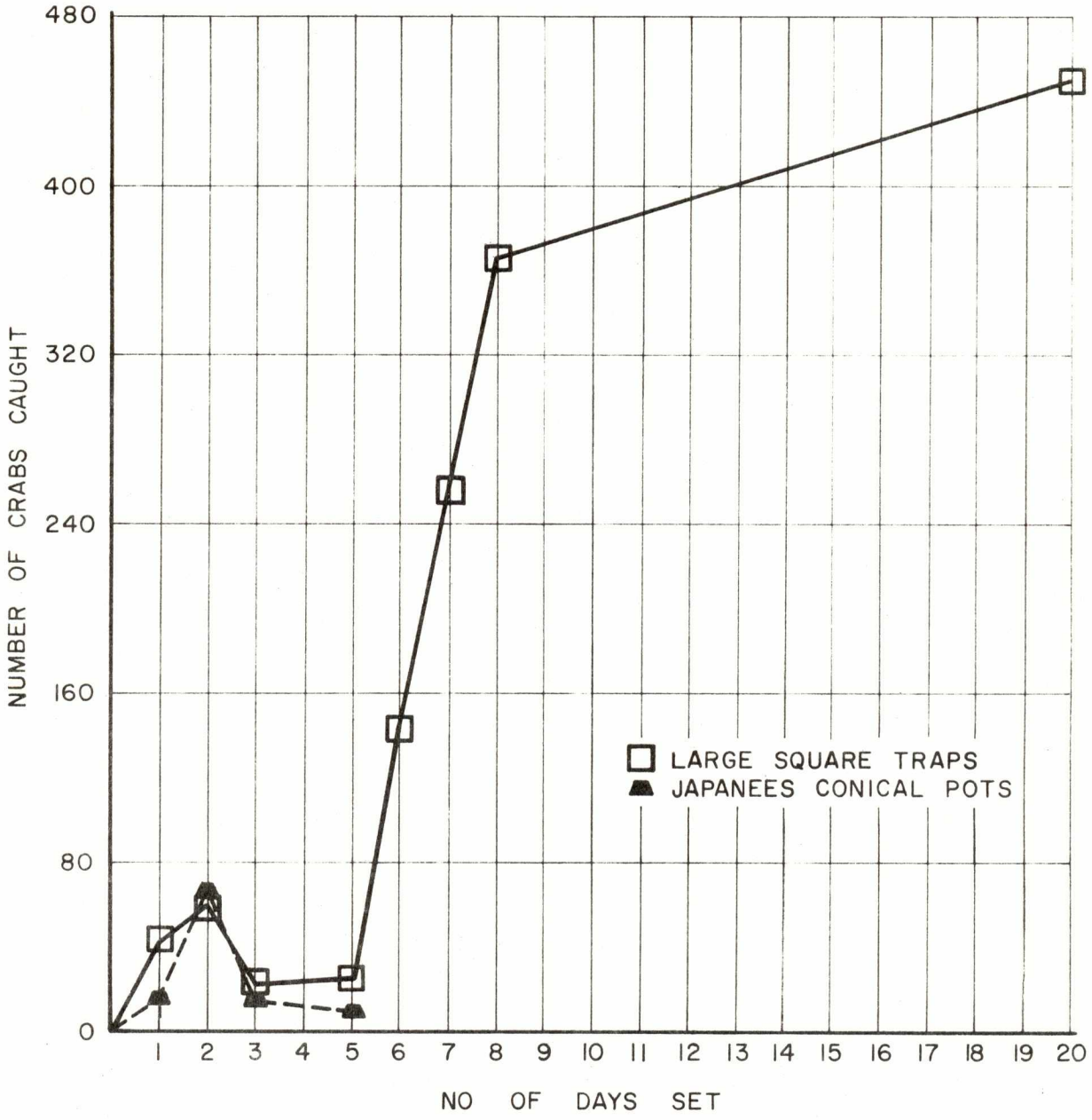
(b) Holding potential of each unit of gear

(c) Transporting of gear to new fishing grounds.

The productivity of traps fished are shown on page 19 . It must be borne in mind that these results were obtained while fishing on virgin grounds and stations were only sampled once.

During inclement weather in Placentia Bay the large square trap was more effective in holding the catch than the Japanese conical pot. Summary of catch in relation to duration of set for both units of gear appears on page 19 . (Here again Japanese conical pots were not fished with anchors at both ends of set.)

The estimated cost of fishing a Japanese conical pot is approximately thirty-four dollars, operating a fleet of eighty and fishing at a depth between 100 and 249 fathoms. The estimated cost of fishing a



OVERALL AVERAGE OF CRABS CAUGHT WITH LARGE SQUARE TRAPS AND JAPANEES CONICAL POTS

AVERAGE PER TRAP OF FLEET OF 8 FOR DIFFERENT NUMBER OF DAYS SET

large square trap at the same depth is about one hundred fifty dollars.

The DONNA MCKENZIE operating with large square traps and using the hydraulic hauling unit, found that with the exception of shifting traps to stow, one deck hand can carry out deck operations. During hauling of gear periods of rest are available. The Japanese conical pots on the other hand, require two hands during setting and hauling of gear and free time is impossible during either operation.

Labour Requirements on an Average Crab Vessel.

The vessel DONNA MCKENZIE is manned by a skipper, one deckhand and a cook. Under commercial fishing conditions the vessel could be considered sufficiently staffed providing that classification of cook is changed to cook/deckhand.

During exploratory fishing operations large square traps were not reset on the same area from which they had been hauled. As a result of this, moorings had to be coiled and stowed once the trap was on deck. During commercial operations and provided that the grounds are productive, traps would be set on the said area and coiling and stowage of gear would be eliminated.

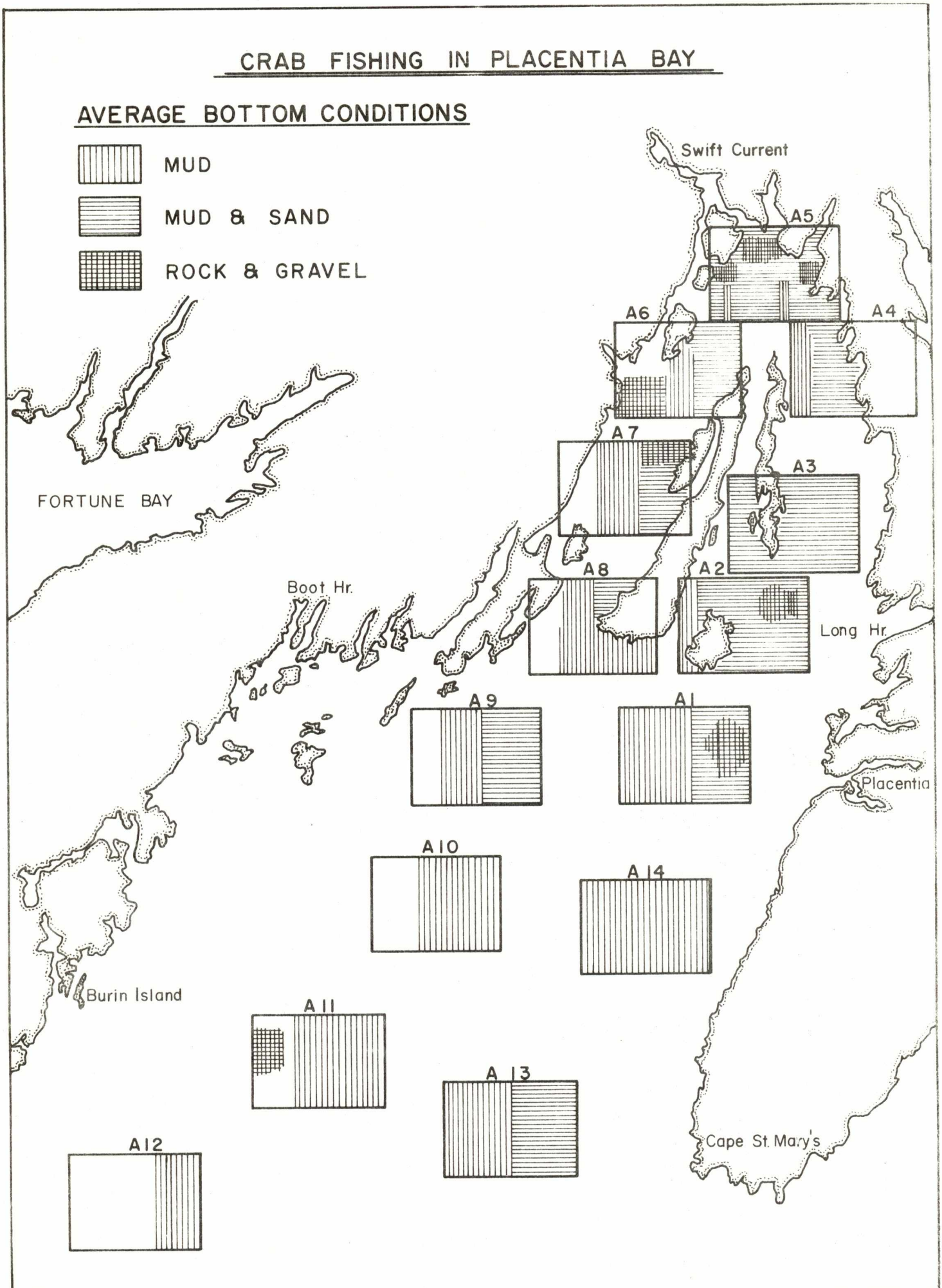
Assistance on deck would be required in emptying traps of its catch, setting and shooting of gear, and stowage of catch. When the boat is alongisde, all hands would be expected to assist in unloading of catch.

Boat and Plant Operations.

In order to land catch in a healthy condition, and also to permit the processing of the animal in an economic manner, vessels would be expected to return to plants handling crabs before the close of the normal working day. In so doing, the time required to carry out total fishing operations is estimated to be twelve hours.

CRAB FISHING IN PLACENTIA BAY

AVERAGE BOTTOM CONDITIONS



Comments on Stations Fished.

Among the fourteen stations fished during the 1970 explorations, five had been covered by previous surveys. From points of good catches during 1968 - 69 to points of good catches during 1970, a distance of forty-five miles exists. Catches between these two points averaged two hundred pounds of crab per large square trap and suggests a good potential for the overall area.

Fishing results from stations 1, 2, 3, and 4 averaged 90 lbs. of crab per trap. These stations were between Placentia and Southern Harbour. Depths and bottom conditions are ideal for the animal and population suggests good crab grounds. Stations 5 and 6, which were fished from Arnold's Cove, were not productive. The average depth of set was 88 fathoms, the bottom was hard and irregular and the opinion was it was a very poor crab area. (See pages 49/51 for position of gear on ocean bottom.)

Stations 7, 8 and 2 are the most interesting of all stations fished. In addition to large catches, there was an overall average of 48 crabs per large square trap. On stations 7 and 2 for the second time, large amounts of berried females were trapped. On station 8, 16.54% of the catch was soft shelled commercial size crabs. During 1968 soft shelled crabs amounted to 48.6% of the catch. Berried females were trapped on the said station.

Stations 9, 10, 11, 12, 13, 14 are ideal crab grounds. The overall average number of crabs per trap fished was 289. The average depths of set was 109.7 fathoms and the total area of potential crab grounds covered by these stations is 864 square miles. Trash among catch was mainly toad crabs, turbot, flounder, and skete. Toad crabs were trapped on stations with an average depth of less than 90 fathoms and close to land. Turbot, etc., were trapped on offshore stations

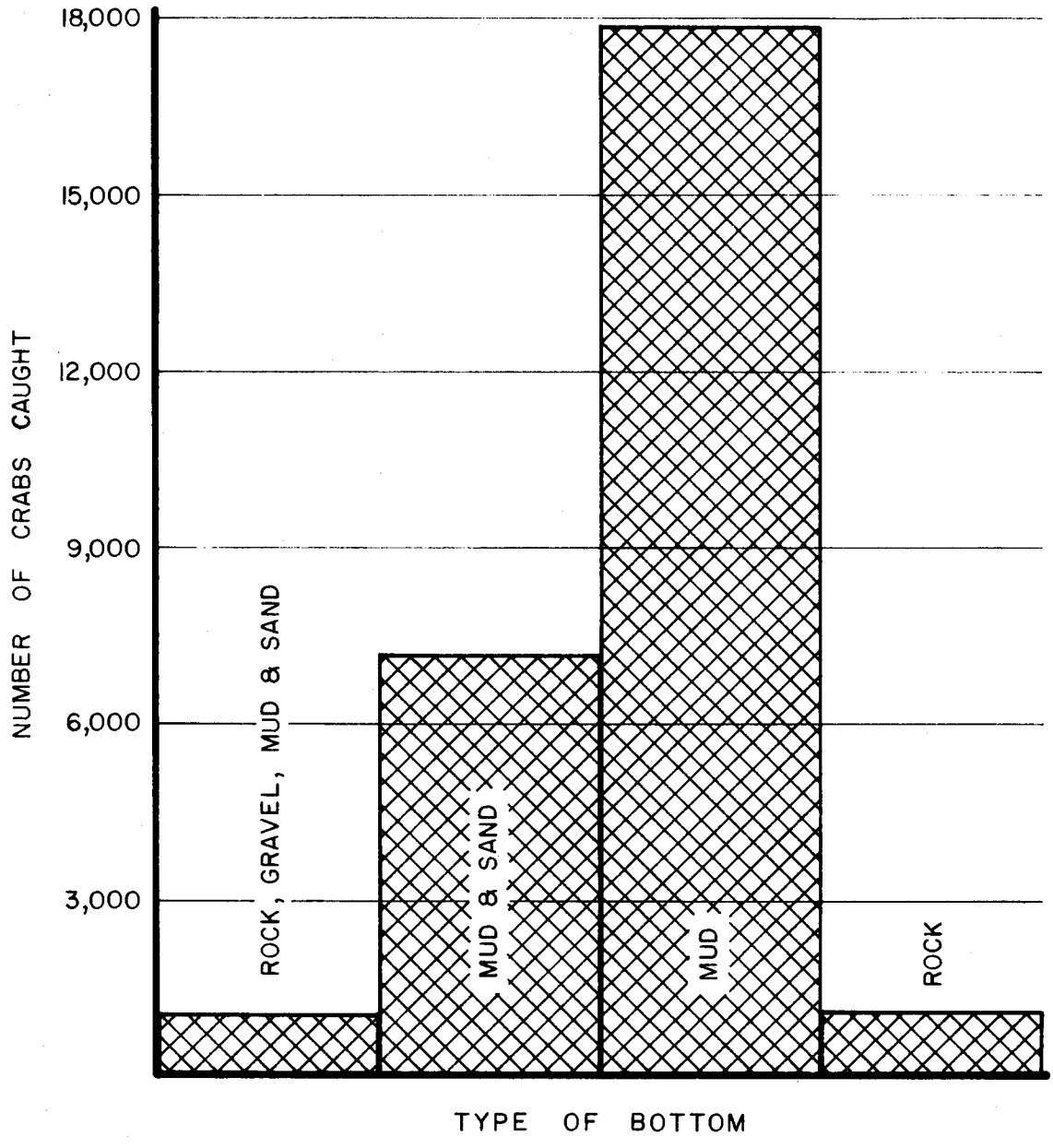
which were consistent with this animal's habitat.

Shrimp

During explorations, shrimp was not fished for. However, since the topic is of current interest, mention is made here. With the exception of two traps that were covered with 2" webbing, all other traps and pots were covered with 4" webbing. From this it is evident that shrimp of the size caught in Newfoundland could not be expected to be caught. On a few occasions however shrimp was brought up to the surface by traps and as high as thirty were found within. The catch was mainly between 90 - 160 fathoms and over a mud and mud and sand bottom.

Comment on Bottom Condition in Relation to Crab Catch.

On map diagram page 21 the different types of bottom namely, mud, mud and sand, rock, rock and gravel, are shown. No pure rock bottom was encountered. Mud - a black silty matter, was observed. Over this bottom the largest catches were made. The figures appearing upon stations on map on page 4 gives total averages per trap per station. From this and that of bottom conditions that appear on page 27 an understanding of the habitant and location of the aminal can be obtained.



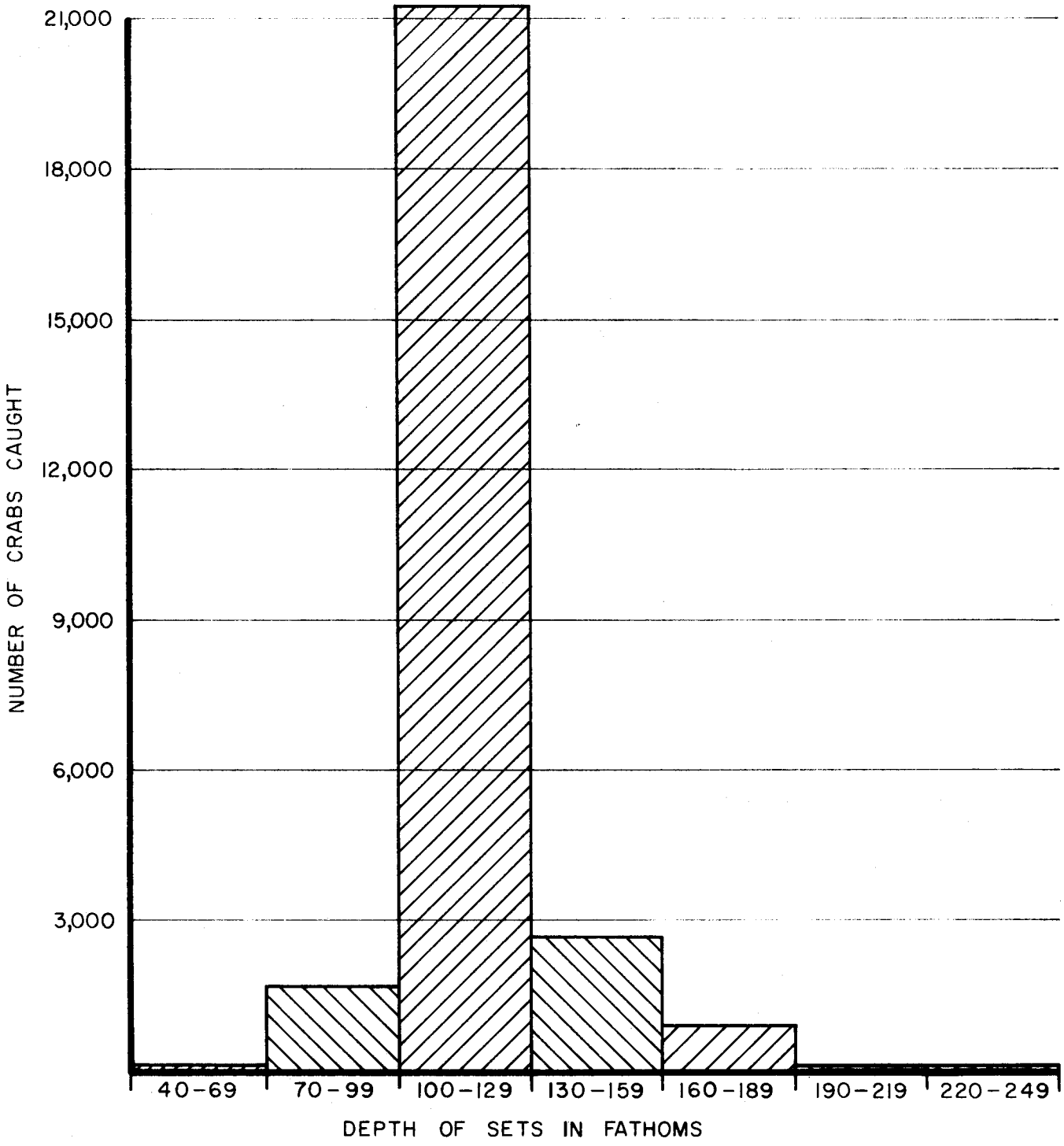
TOTAL CRAB CATCH OVER DIFFERENT TYPES OF BOTTOM

Summary of Catch in Relation to Stations Fished.

Station No.	Catch	Overall Average Per Large Square Trap	Overall Average Per Japanese Conical Pots	Bottom
1	2,056	57	60	Rock, gravel & Mud
2	3,098	84	66	Rock, gravel and mud
3	2,242	84	59	Mud
4	568	35	-	Mud
5	137	14	-	Rock and gravel
6	48	4	-	Rock, gravel and mud
7	580	36	-	Rock, gravel and mud
8	707	44	-	Rock, gravel and mud
9	2,019	252	-	Mud
10.	2,917	364	-	Mud
11	705	44	-	Rock, gravel and Mud
12	7,200	450	-	Mud
13	1,050	66	-	Mud
14	4,170	261	-	Mud

Comments on trap Averages.

Though the overall average for trap may not suggest commercial potential, it must be remembered that the average is affected by fishing on unproductive grounds in the course of explorations. When good grounds became known, e.g. stations 1, 9, 10, higher average per trap was had than areas at present commercially exploited.



TOTAL CRAB CATCH AT DIFFERENT DEPTHS

Summary of Conclusions.

Over the twenty-six days that the vessel was in Placentia Bay, the average catch per fishing hour was 166 crabs. Assuming that 40% was of commercial value, with current buying price this would represent $9.30 per fishing hour. Fishing thirty large square traps or 80 Japanese conical pots should bring a gross return of $111.66 per fishing day. Operating cost, would of course, have to be deducted.

Catches at different depths per trap over the whole area explored ranged from 252 crabs at 130 - 169 fathoms to 14 between 100 - 129 fathoms. From the summary on page 25 and graph on page 24 it would appear that the depths between 100 and 160 fathoms with a mud bottom is most suitable for the animal.

Depending on the size and hauling gear of a vessel, either large square traps or Japanese conical pots can be used to carry out crab fishing operations.

It has been established that small longliners, 45 ft. or over, can carry out economically crab fishing operations fishing daily 80 Japanese conical pots or 30 large square traps.

The good fishing grounds in Placentia Bay were characterized by a soft black mud and a mud and sand bottom. Queen crabs were not caught close to the shoreline regardless of depth. The minimum distance that they were trapped was approximately four miles from any point of land.

The explorations again showed that off the Merasheen Islands within the deep submerged trench, is the habitat within which queen crabs moult. Though it was one of the most productive areas fished, it would be illogical to concentrate commercial fishing activities on this area. For over 48% of the catch is soft shelled animals and of no commercial value.

Stations #2 and #7 were areas where large numbers of berried females were caught during 1968 and 70 explorations. Since the trapping of females occurred at two distinct periods, it might be advisable to avoid these areas in an effort to allow the laying of eggs and to protect females.

From the table on page 14 it can be concluded that the depth distribution common to crabs in Placentia Bay covers a larger area than any other bay in which crab fishing is being carried out in Newfoundland. I am of the opinion that this bay can support a limited year-round fishery.

Recommendations

(1) From observations carried out as to efficiency of the chartered vessel in relation to crab fishing, below is a suggestion and approximate specifications for a vessel that may carry out crab fishing operations in Placentia Bay.

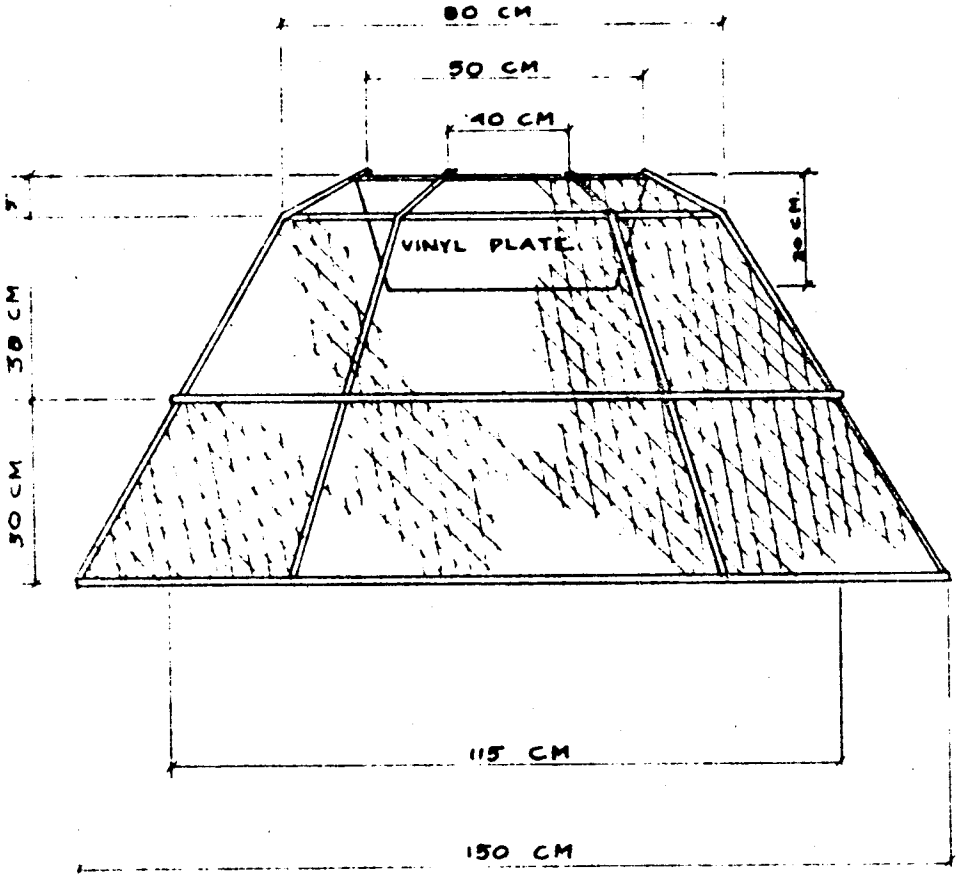
(a) L.O.A. 45 ft. or over
(b) Beam 16 ft.
(c) Draft 6 ft.
(d) Diesel engine 220 h.p.
(e) Wooden built
(f) Deck Layout
(g) Power block or gill net gurdy
(h) Metal swinging davit
(i) Echo sounder 320 fts.
(j) R/T set
(k) Radar
(l) Accomodations for 3 persons forward.

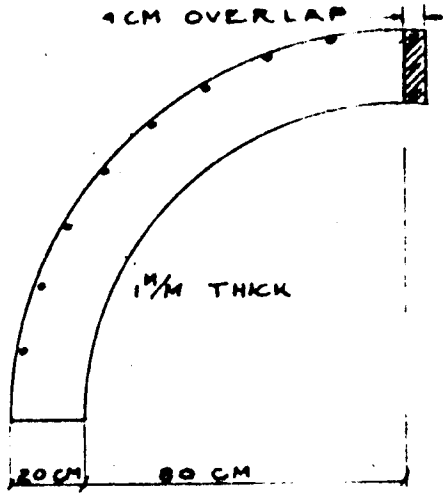
(2) Gear to be fished per fishing day:

30 large square traps or 80 Japanese conical pots.

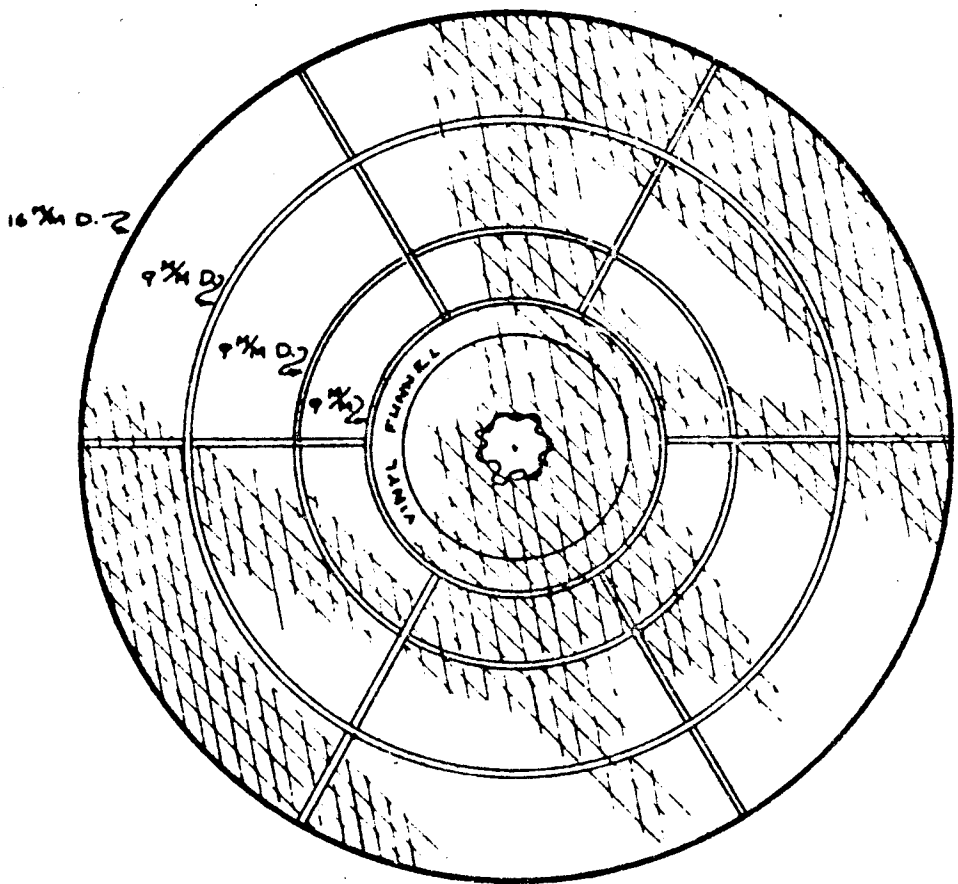
Duration of set - one day.

JAPANESE CONICAL CRAB POT



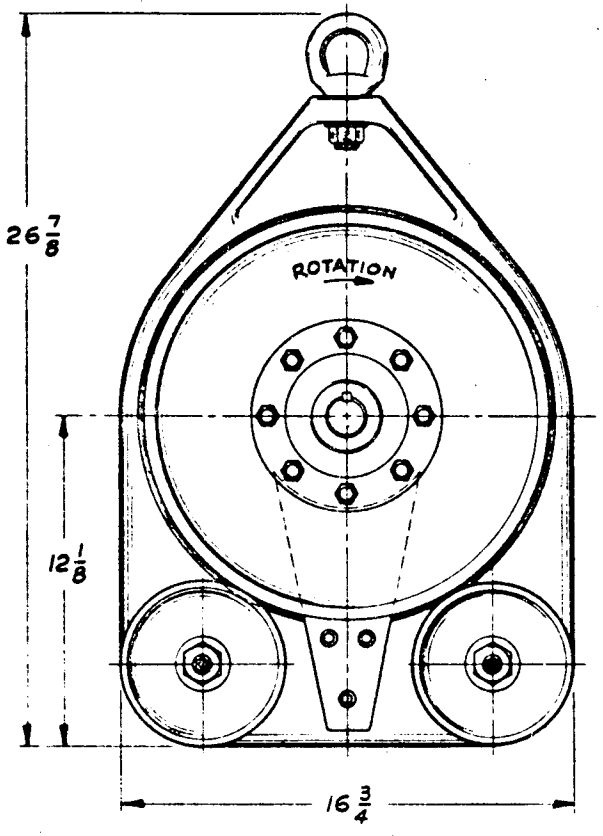


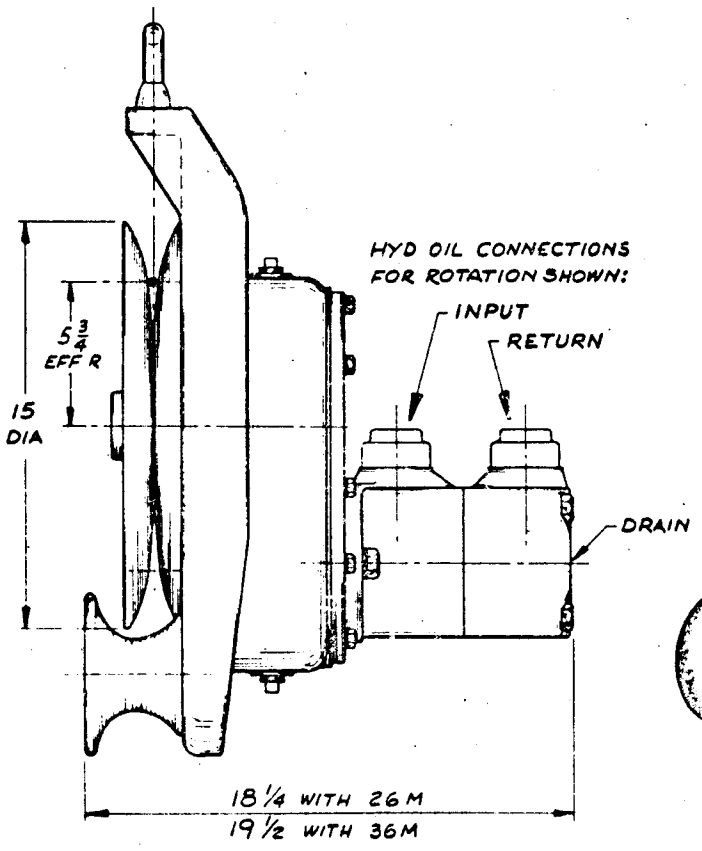
VINYL PLATE

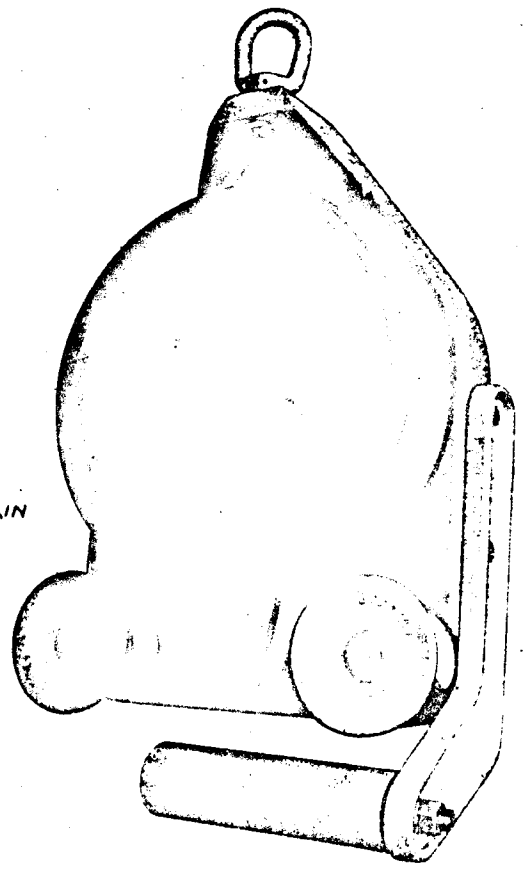


BILL OF MATERIALS

BOTTOM IRON RING - 16 M/M
METAL FRAME - 9 M/M
ENTRANCE FUNNEL - 1 M/M VINYL
150 M/M MESH AROUND FUNNEL
125 MESHES FROM FUNNEL
TO BOTTOM HOLE







SPECIFICATIONS:

– FOR A LINE SPEED OF 325 FPM

HYDRAULIC MOTOR:	26M65		36M80		36M115	
GEAR REDUCER:	G2300 3.68:1		G1106 7.5:1		G1106 7.5:1	
HYD OIL FLOW:	8½ GPM		18½ GPM		28 GPM	
HYD OIL PRESSURE:	1000 PSI	1500 PSI	1000 PSI	1500 PSI	1000 PSI	1500 PSI
LINE PULL:	357 LB	536 LB	900 LB	1350 LB	1300 LB	1970 LB
HYD OIL INLET & OUTLET PORTS:	1¼ NPTF IN SAE 4-BOLT FLANGE		1½ NPTF IN SAE 4-BOLT FLANGE		1½ NPTF IN SAE 4-BOLT FLANGE	
DRAIN PORT:	¼ NPT		⅜ NPT		⅜ NPT	
WEIGHT, APPROX:	110 LB		175 LB		175 LB	
POT WARP, MAX:	⅝" DIA		⅝" DIA		⅝" DIA	

CONSTRUCTION:

MAIN BASE, GEAR CASE AND IDLER SHEAVES: CAST ALUMINUM

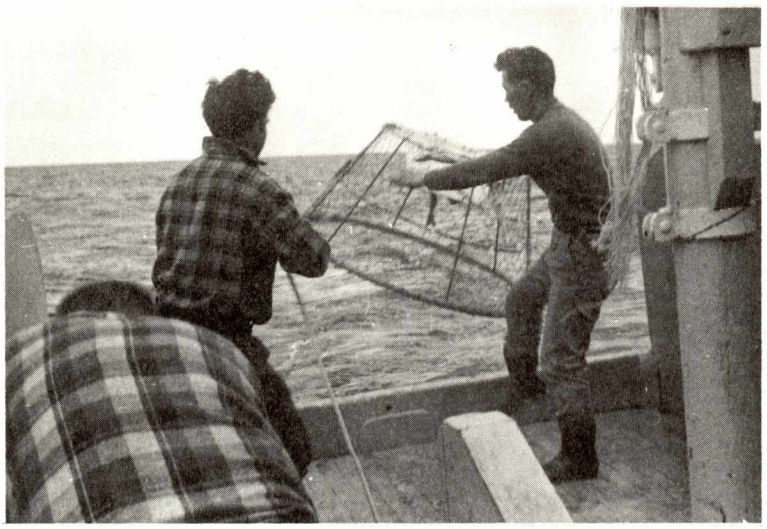
MAIN SHEAVE AND SPLITTER: CAST BRONZE

GEAR & PINION: HARDENED STEEL

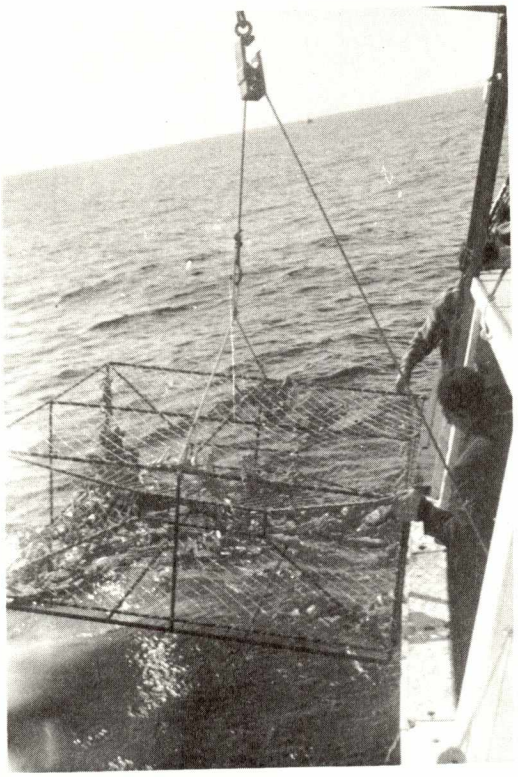
OUTPUT SHAFT: CHROME PLATED STL

BEARINGS: BALL & ROLLER BRGS

CRAB BLOCK



Setting Japanese Conical Pot from WALTER LYNN"



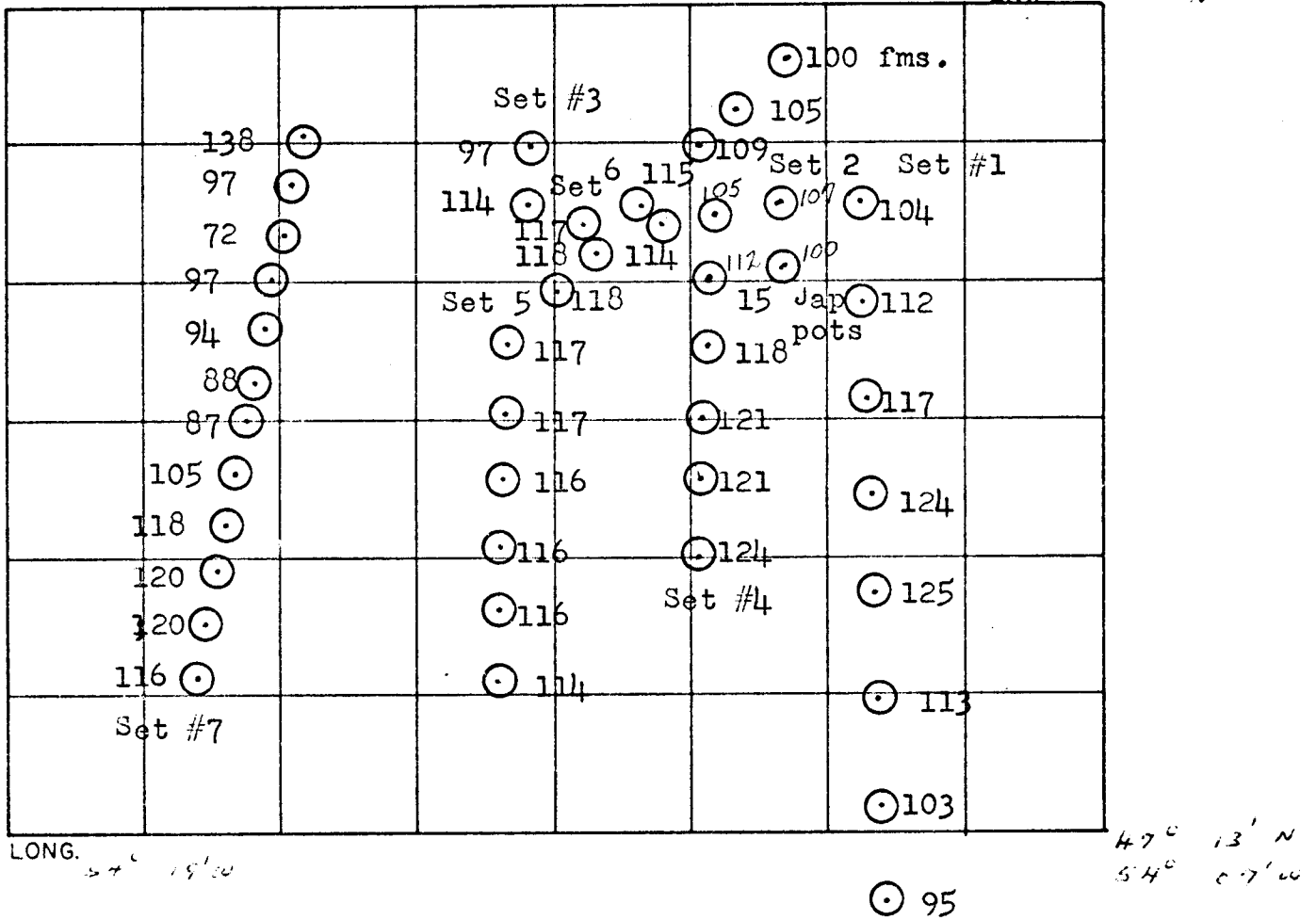
Taking Aboard Large Square Trap on WALTER LYNN"

EXPERIMENTAL CRAB FISHING REPORT 2A

STATION NO. A1 — INDUSTRIAL DEVELOPMENT BRANCH

ST. JOHN'S

LAT 47° 19'

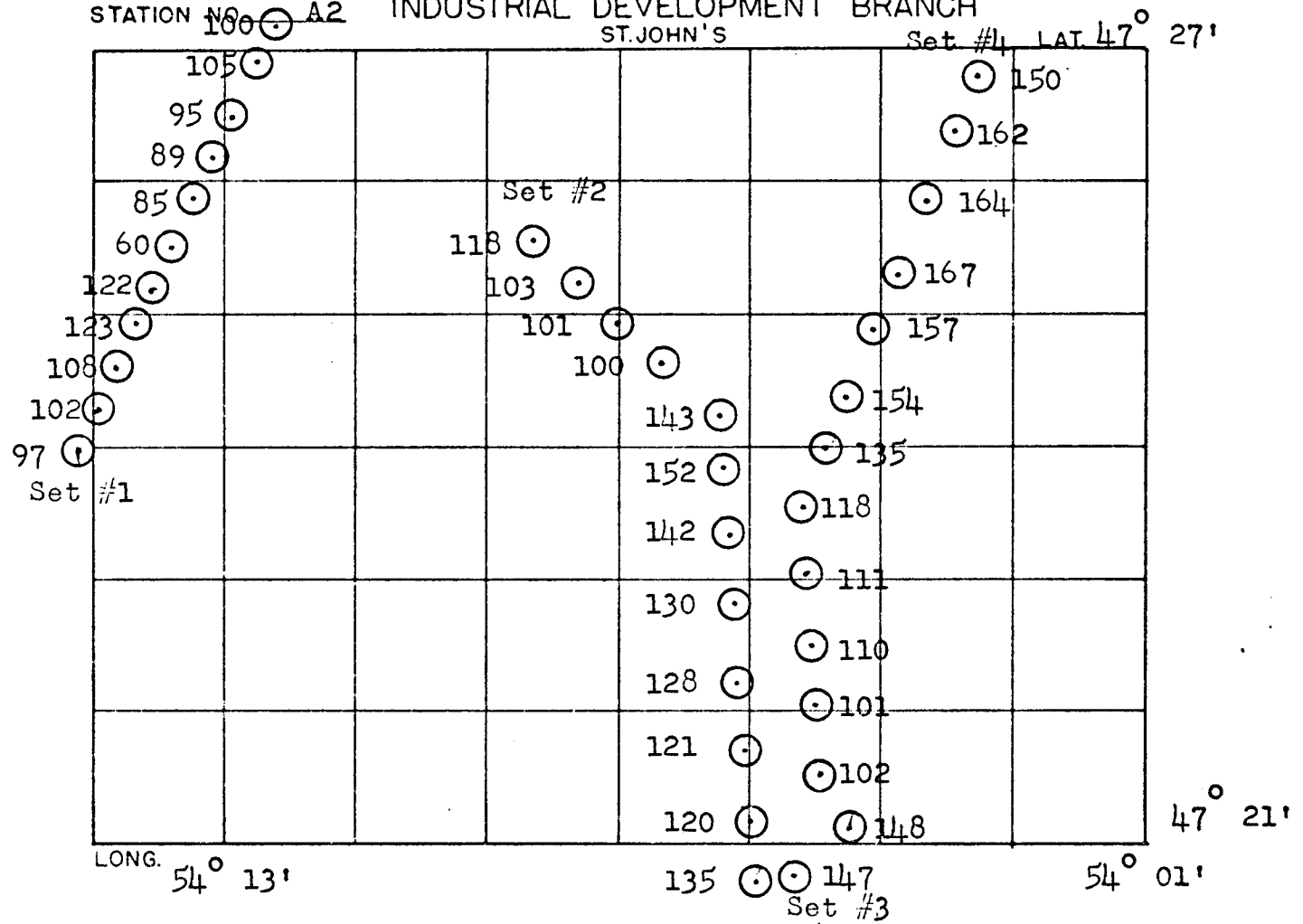


DATE	CATCH	COMMERCIAL SIZE	NO. OF TRAPS	AVE. WEIGHT	BOTTOM	REMARKS		
April 20	173	15	6	½ lb.	Hard	Set #1	75	Half the set hauled only
April 20	167	15	15 Jap.	½ lb.	Hard	Set #2		
April 22			6		Hard	Set #1		Remaining 6 pots hauled
April 22	122	20	15 Jap.	½ lb.	Hard	Set #3	77	
April 22	155	22	6	½ lb.	Hard & Mud	Set #4		
April 23	449	153	12		Mud	Set #5	71	
April 23	218	61	15 Jap.		Mud	Set #6		
April 24	623	257	12	3/4 lb.	Mud	Set #7	63	

73 EXPERIMENTAL CRAB FISHING REPORT 2A

STATION NO. A2 INDUSTRIAL DEVELOPMENT BRANCH

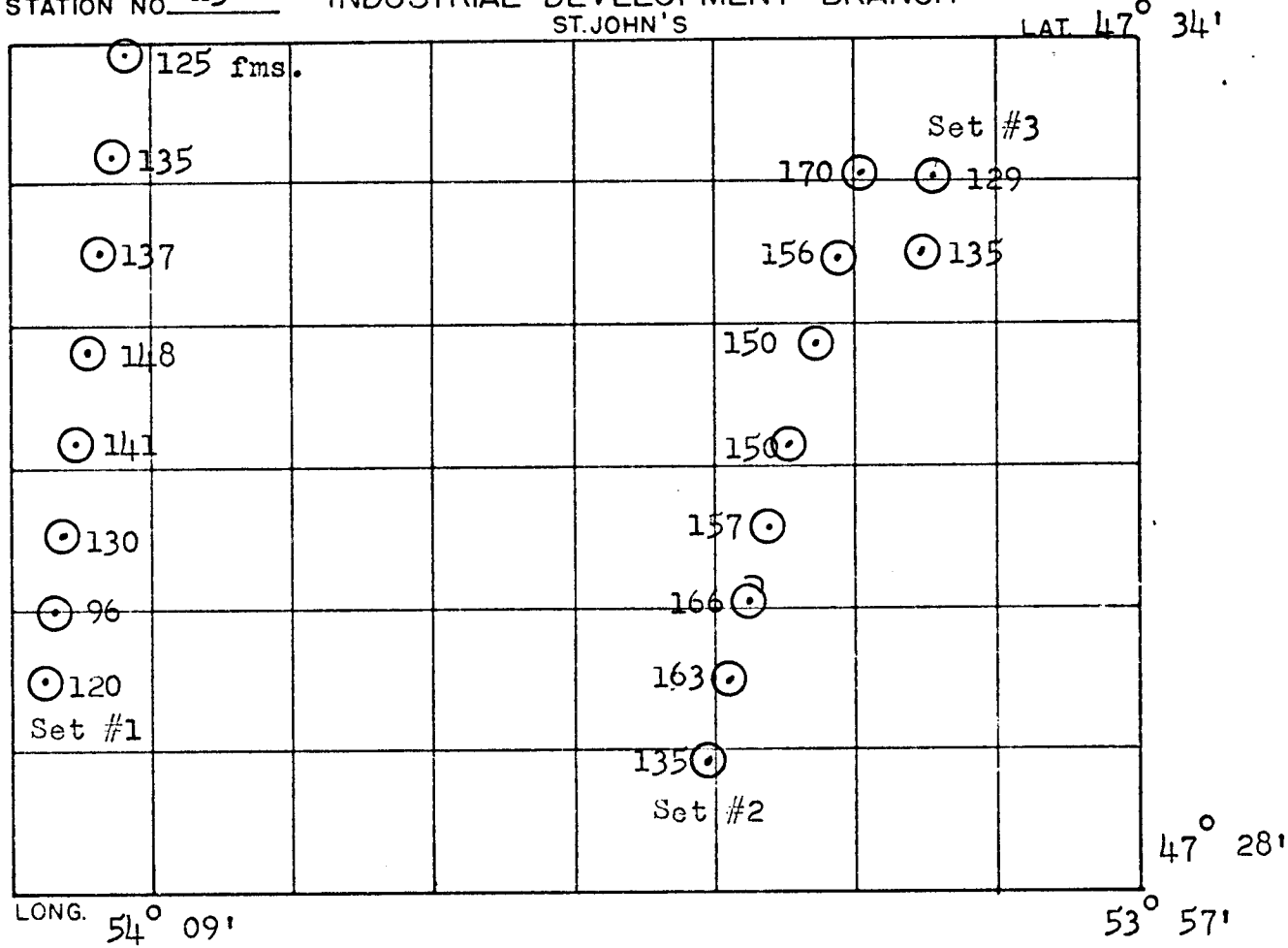
ST. JOHN'S



DATE	CATCH	COMMERCIAL SIZE	NO. OF TRAPS	AVE. WEIGHT	BOTTOM	REMARKS
April 25	381	68	12	½lb.	Mud	Set #1
April 27	928	176	11	½ lb.	Mud & Rock	Set #2 (59 females)
April 28	837	308	12 Jap.	½ lb.	Mud	Set #3
April 29	946	289	12	½ lb.	Rock & Mud	Set #4

EXPERIMENTAL CRAB FISHING REPORT 2A

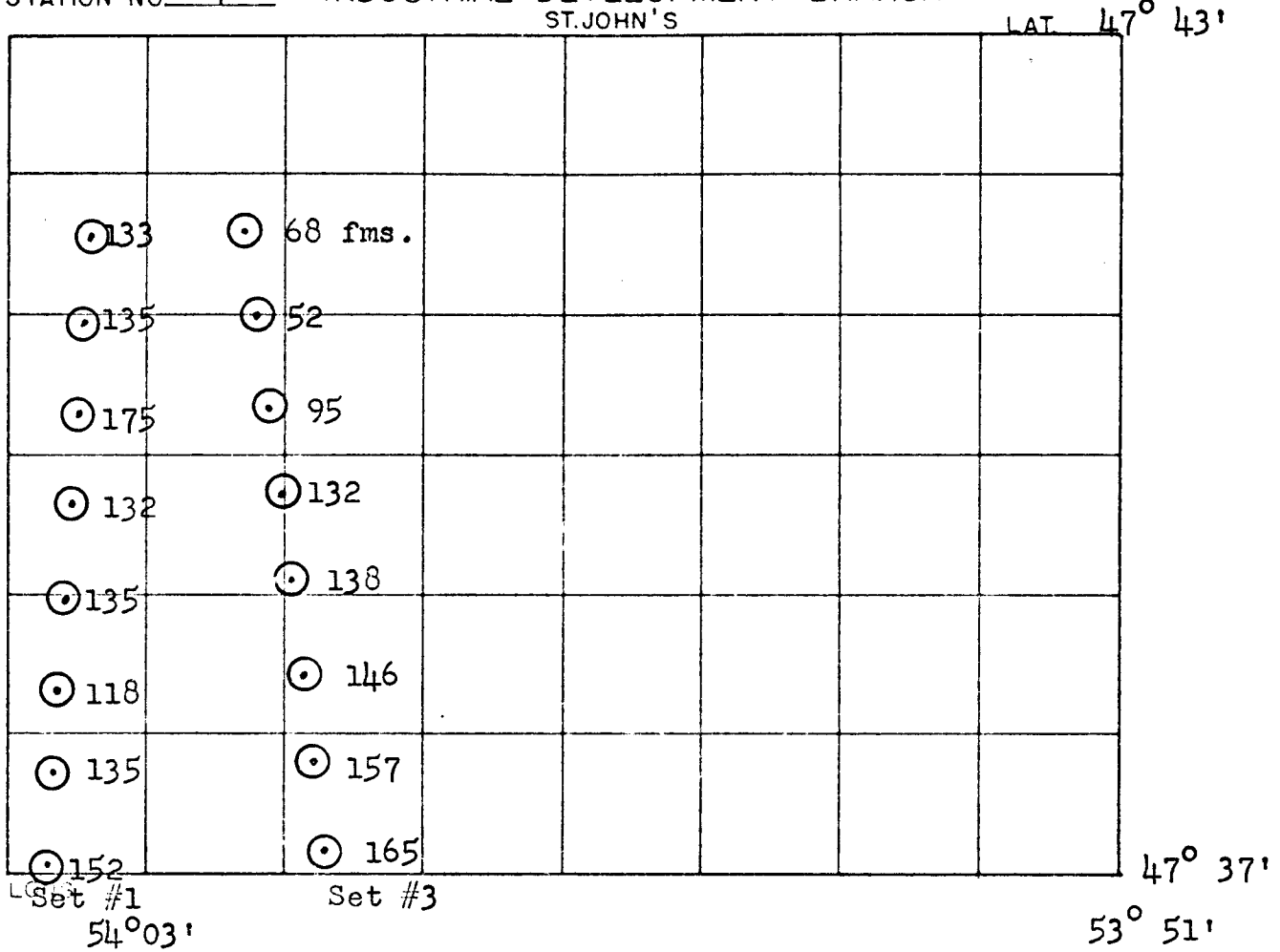
STATION NO. A3 — INDUSTRIAL DEVELOPMENT BRANCH



DATE	CATCH	COMMERCIAL SIZE	NO. OF TRAPS	AVE. WEIGHT	BOTTOM	REMARKS
April 30	411	135	8	½ lb.	Mud	Set #1
April 30	892	391	8	3/4 lb.	Mud	Set #2
May 1	890	456	14 Jap.	3/4 lb.	Mud	Set #3

EXPERIMENTAL CRAB FISHING REPORT 2A

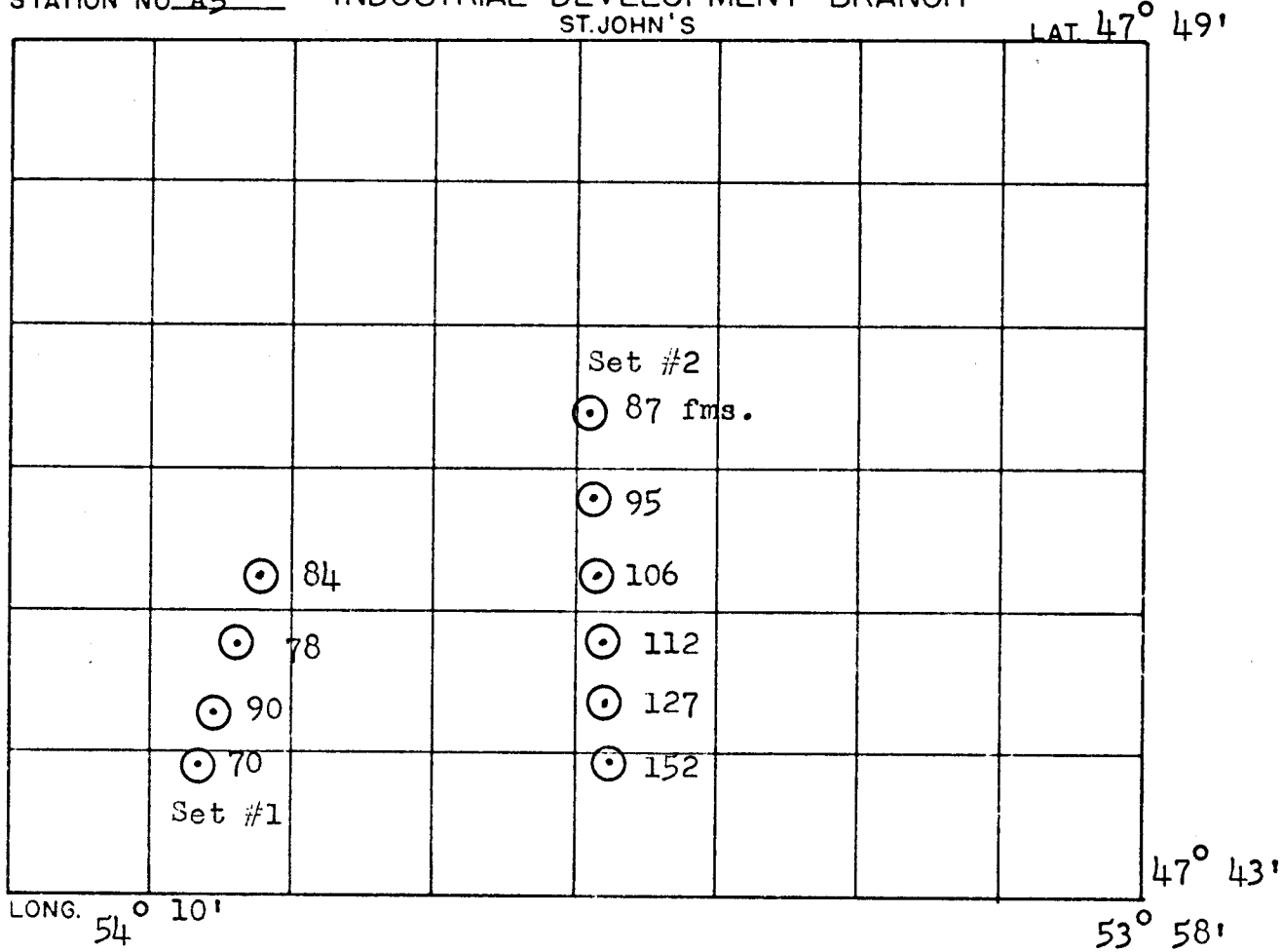
STATION NO. A4 — INDUSTRIAL DEVELOPMENT BRANCH



DATE	CATCH	COMMERCIAL SIZE	NO. OF TRAPS	AVE. WEIGHT	BOTTOM	REMARKS
May 1	149	54	8	½ lb.	Mud	Set #2
May 1	429	131	8	½ lb.	Mud	Set #1

EXPERIMENTAL CRAB FISHING REPORT 2A

STATION NO. A5 — INDUSTRIAL DEVELOPMENT BRANCH

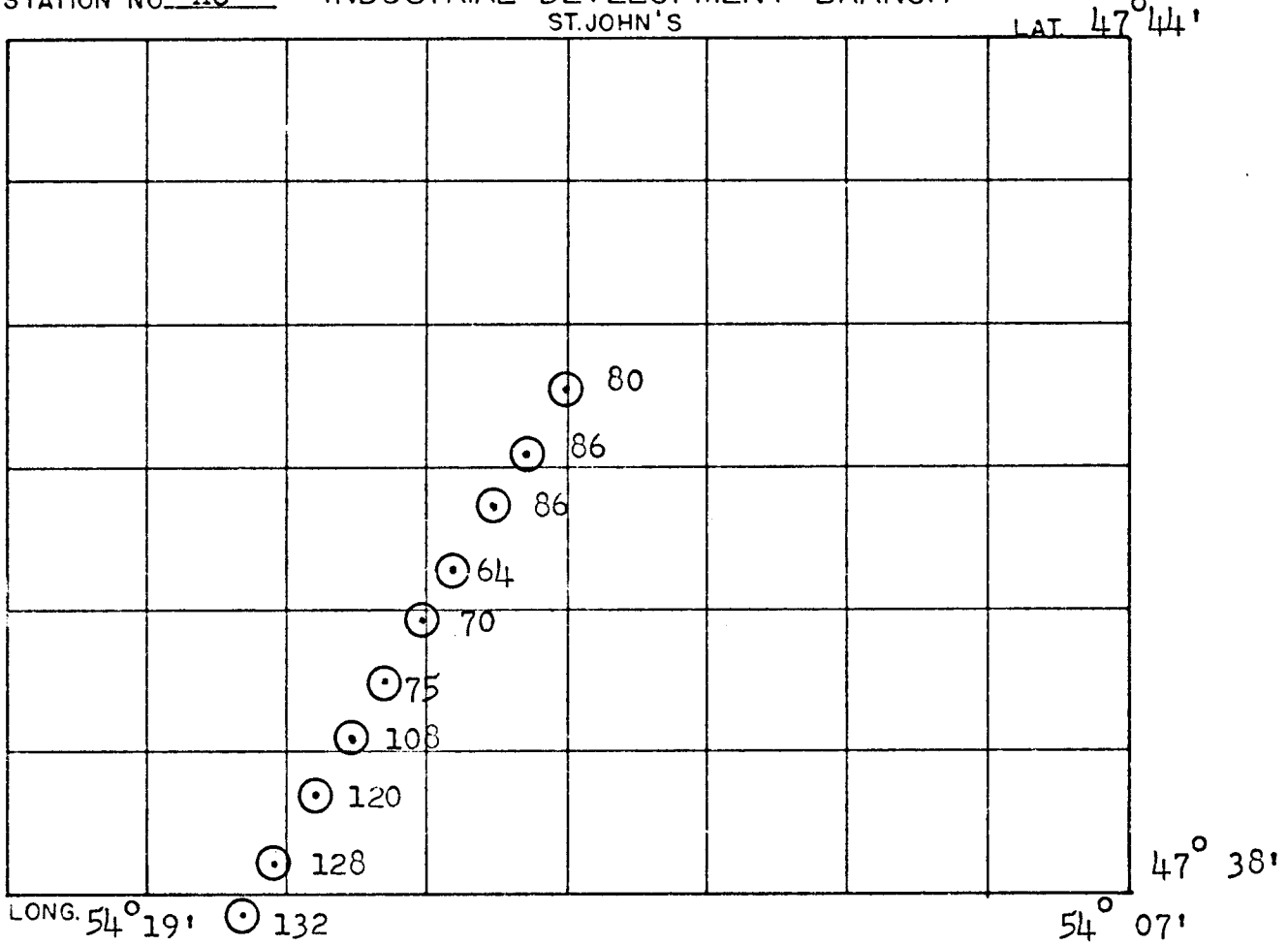


DATE	CATCH	COMMERCIAL SIZE	NO. OF TRAPS	AVE. WEIGHT	BOTTOM	REMARKS
May 4	16	0	4	¼ lb.	Mud & Rock	Set #1
May 4	121	5	6	¼ lb.	Mud	Set #2

EXPERIMENTAL CRAB FISHING REPORT 2A

STATION NO. A6 — INDUSTRIAL DEVELOPMENT BRANCH

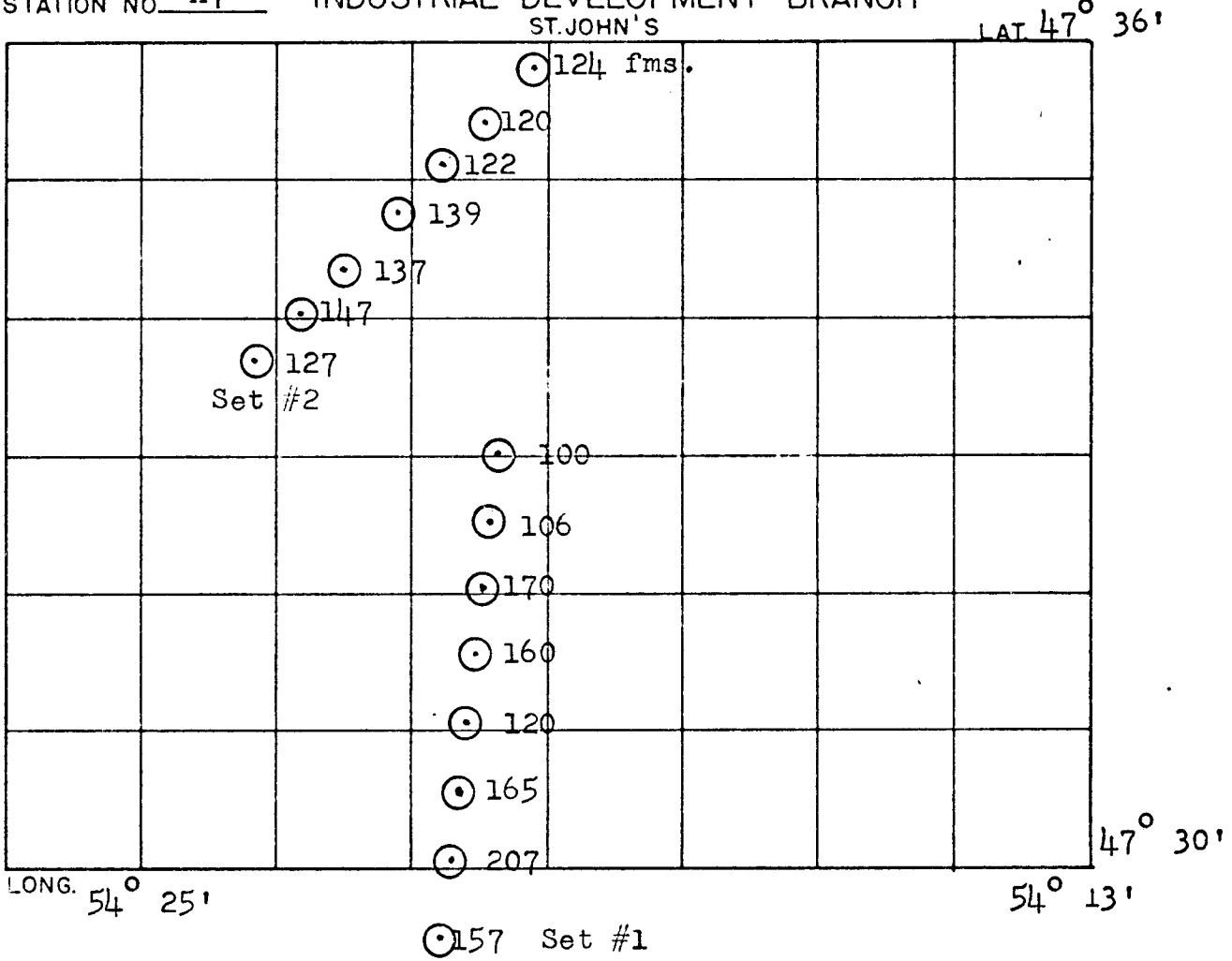
ST. JOHN'S



DATE	CATCH	COMMERCIAL SIZE	NO. OF TRAPS	AVE. WEIGHT	BOTTOM	REMARKS
May 14	48	2	12	¼ lb.	Rock and Mud	Set #1 4 females

EXPERIMENTAL CRAB FISHING REPORT 2A

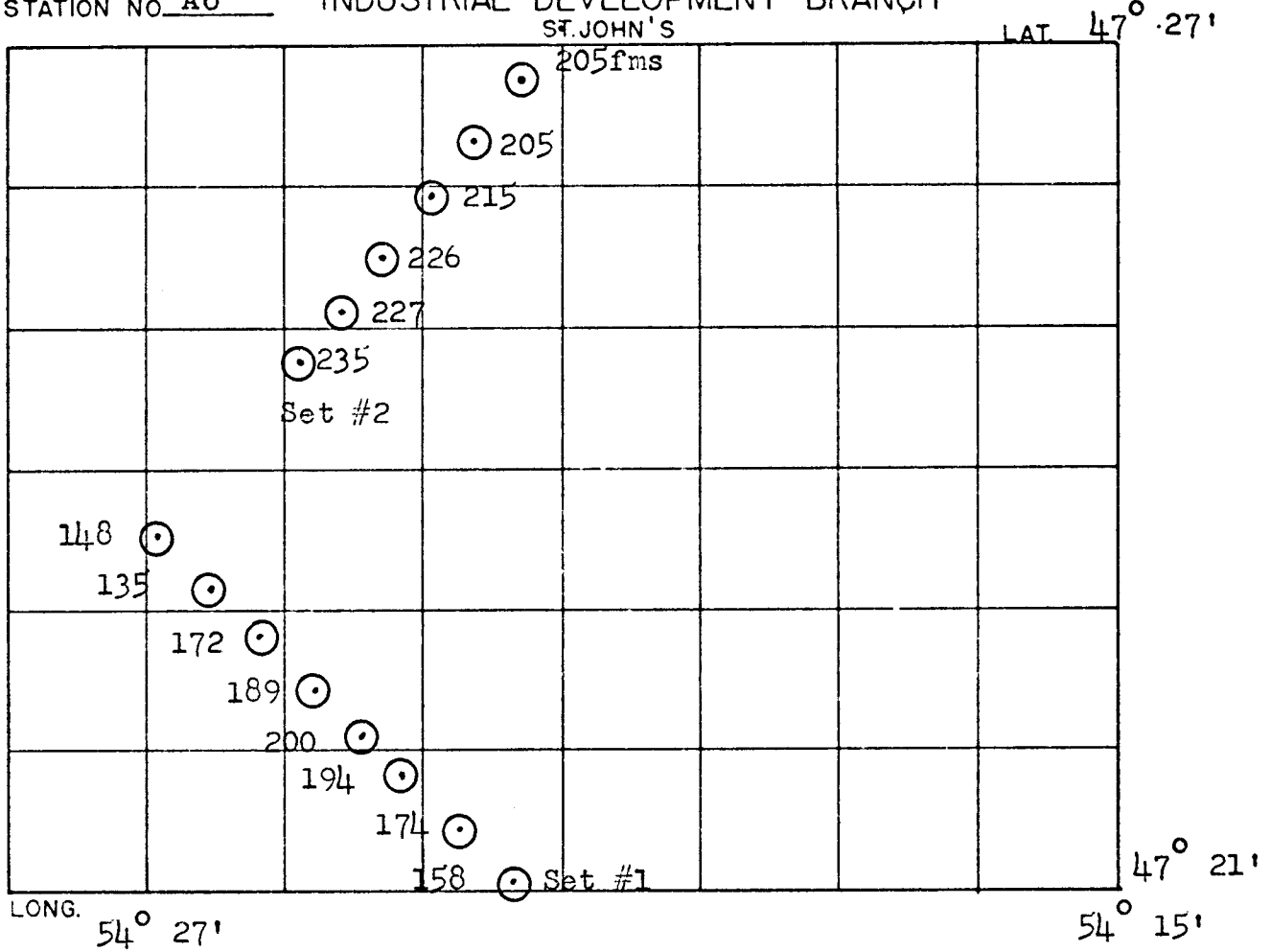
STATION NO. A7 — INDUSTRIAL DEVELOPMENT BRANCH



DATE	CATCH	COMMERCIAL SIZE	NO. OF TRAPS	AVE. WEIGHT	BOTTOM	REMARKS
May 7	387	66	8	½ lb.	Mud & Rock	Set #1 183 females
May 13	193	74	8	½ lb.		Set #2 22 females

EXPERIMENTAL CRAB FISHING REPORT 2A

STATION NO A8 — INDUSTRIAL DEVELOPMENT BRANCH

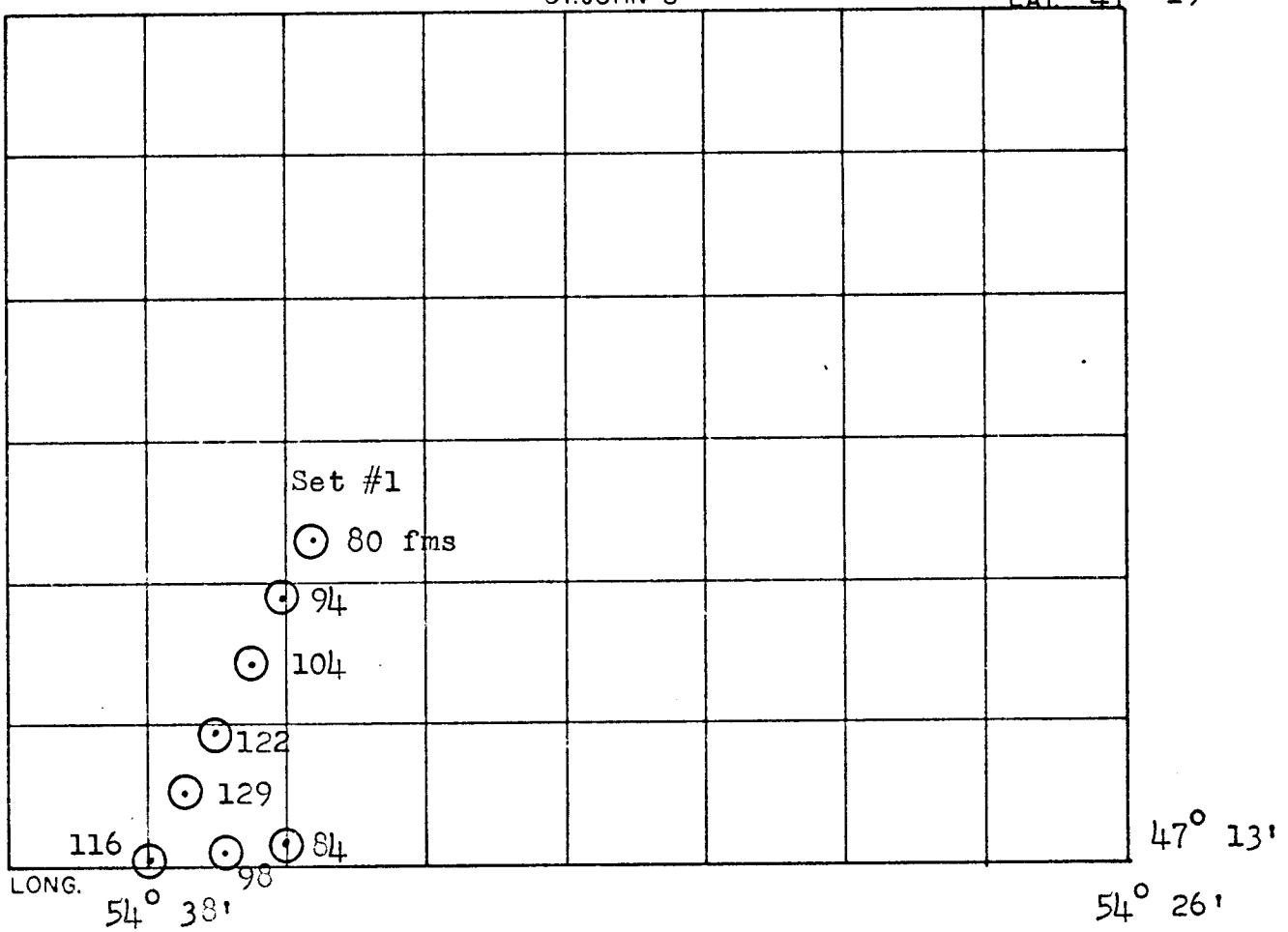


DATE	CATCH	COMMERCIAL SIZE	NO. OF TRAPS	AVE. WEIGHT	BOTTOM	REMARKS
May 5	225	86	8	½ lb.	Rock & Mud	Set #2
May 6	482	264	8	½ lb.	Mud	Set #1

EXPERIMENTAL CRAB FISHING REPORT 2A

STATION NO. A9 — INDUSTRIAL DEVELOPMENT BRANCH

ST. JOHN'S

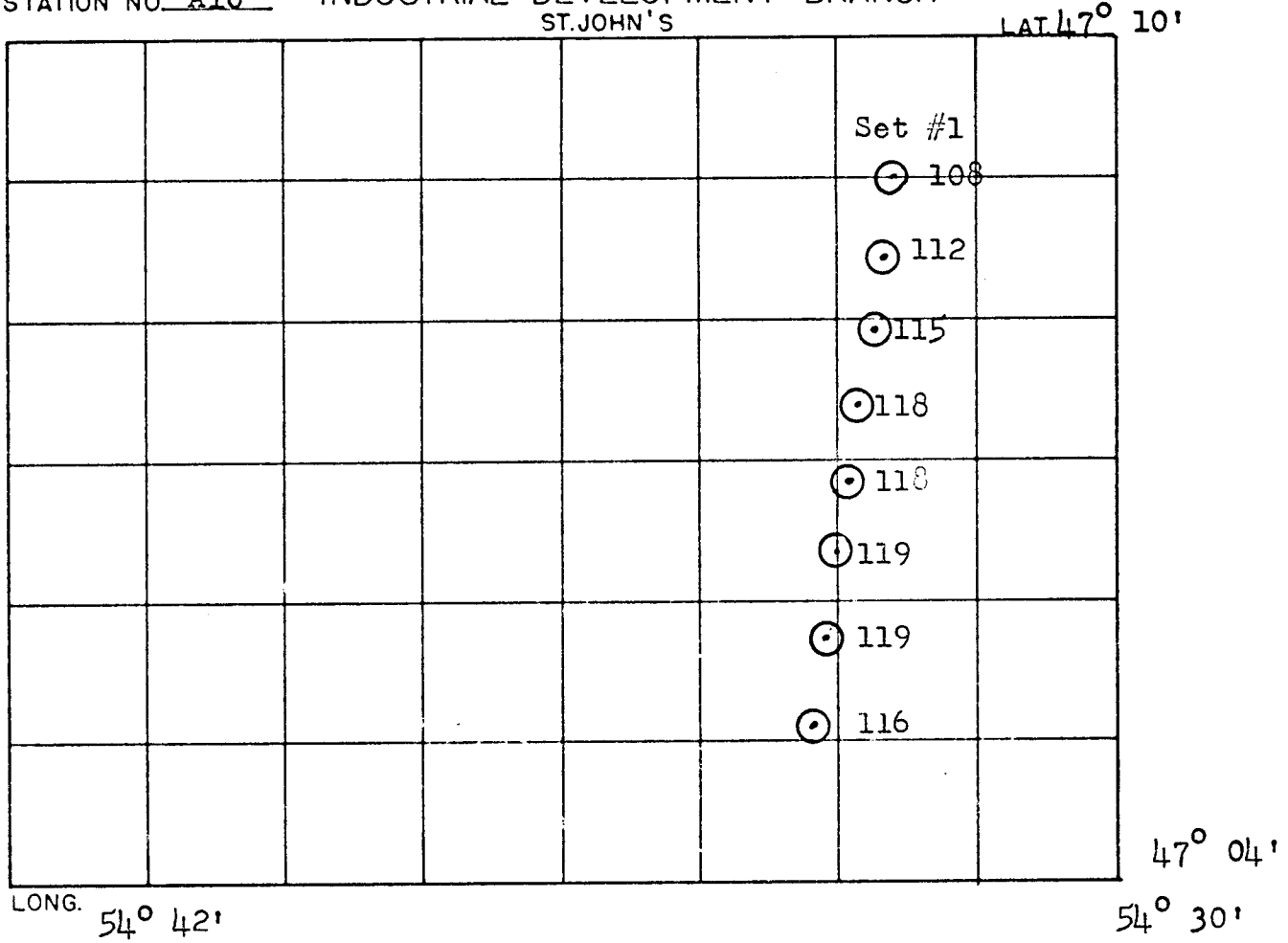


DATE	CATCH	COMMERCIAL SIZE	NO. OF TRAPS	AVE. WEIGHT	BOTTOM	REMARKS
May 12	2019	276	8	¼ lb.	Mud	1 pot at 104 fms. held 706 crabs

EXPERIMENTAL CRAB FISHING REPORT 2A

STATION NO. A10 — INDUSTRIAL DEVELOPMENT BRANCH

ST. JOHN'S



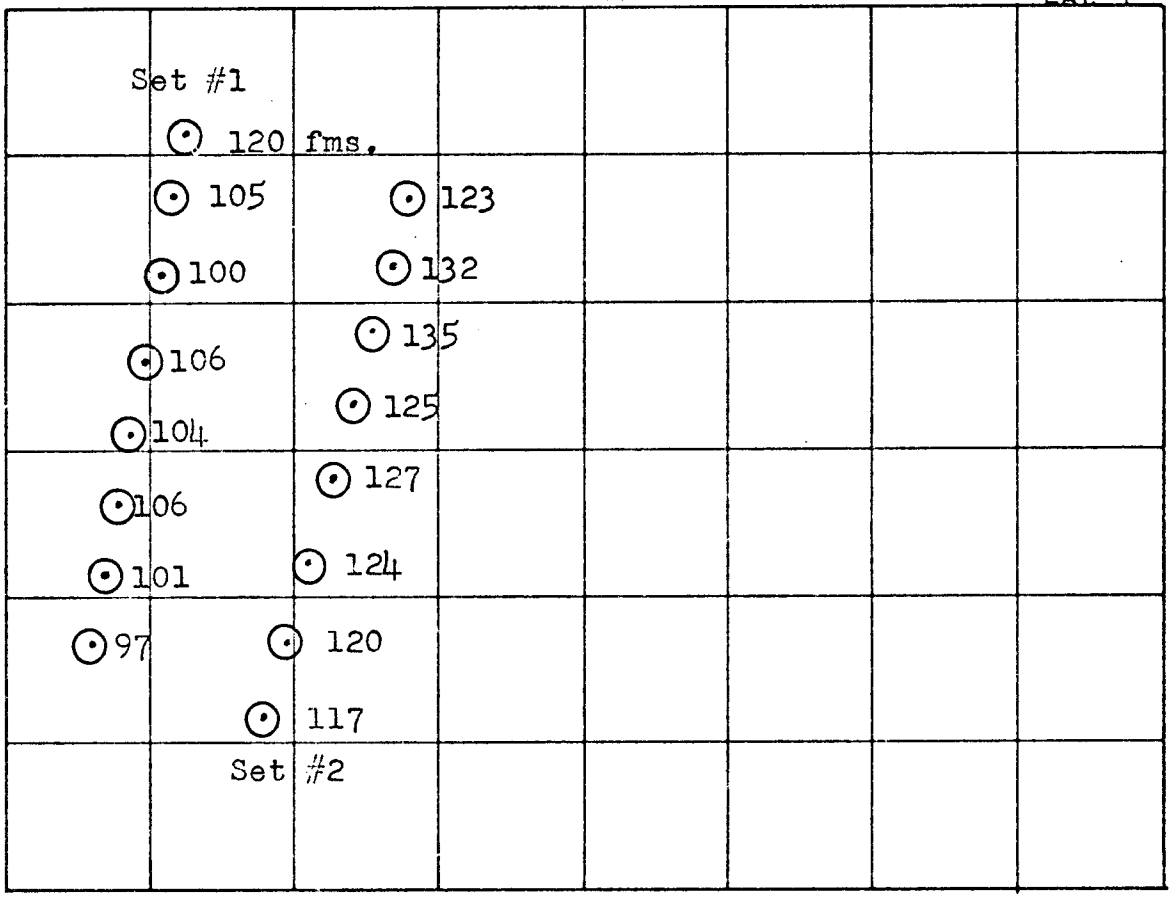
DATE	CATCH	COMMERCIAL SIZE	NO. OF TRAPS	AVE. WEIGHT	BOTTOM	REMARKS
May 30	2916	539	8		Mud	

EXPERIMENTAL CRAB FISHING REPORT 2A

STATION NO. A11 — INDUSTRIAL DEVELOPMENT BRANCH

ST. JOHN'S

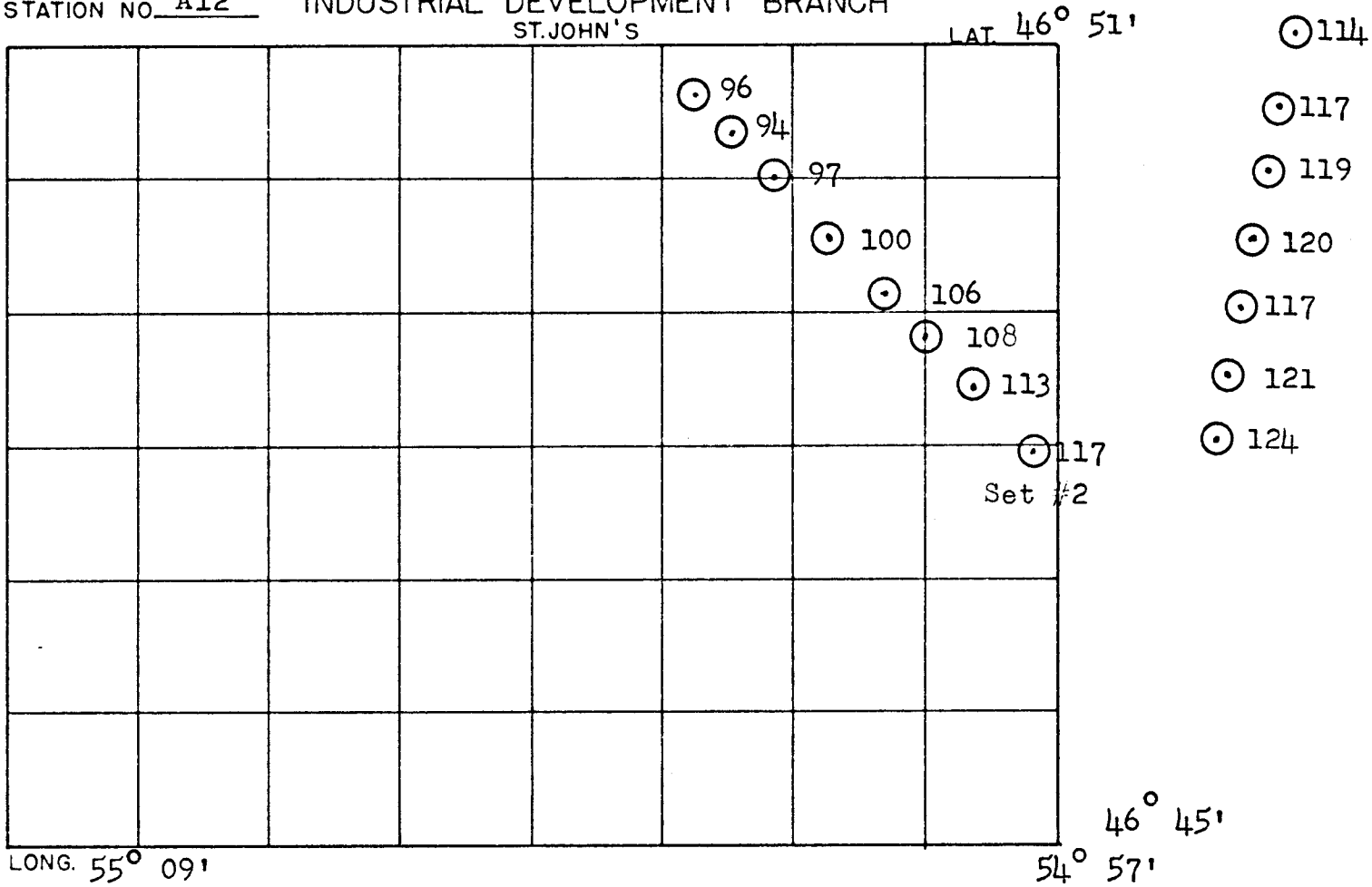
LAT. 46° 59'



DATE	CATCH	COMMERCIAL SIZE	NO. OF TRAPS	AVE. WEIGHT	BOTTOM	REMARKS
June 1	287	5	8		Rock	Set #1
June 1	245	13	5		Rock	First 5 pots of set #2
June 2	173	8	3		Mud	Last 3 pots of set #2

EXPERIMENTAL CRAB FISHING REPORT 2A

STATION NO. A12 INDUSTRIAL DEVELOPMENT BRANCH



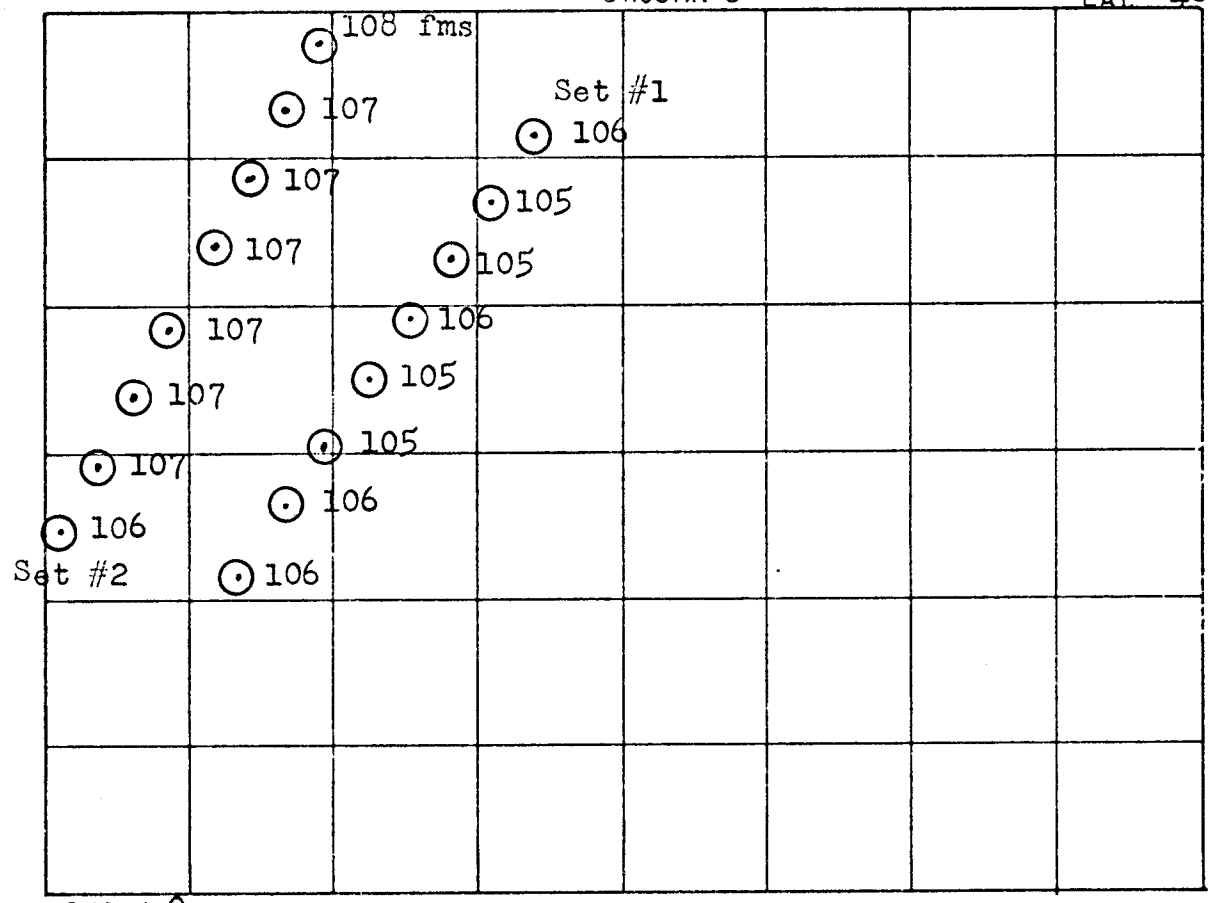
DATE	CATCH	COMMERCIAL SIZE	NO. OF TRAPS	AVE. WEIGHT	BOTTOM	REMARKS
June 22	-	-	8		Mud	Set #1 about 10% commercial
June 22	-	-	8		Mud	Set #2

EXPERIMENTAL CRAB FISHING REPORT 2A

STATION NO. A13 — INDUSTRIAL DEVELOPMENT BRANCH

ST. JOHN'S

LAT. 46° 55'



46° 49'

LONG. 54° 34'

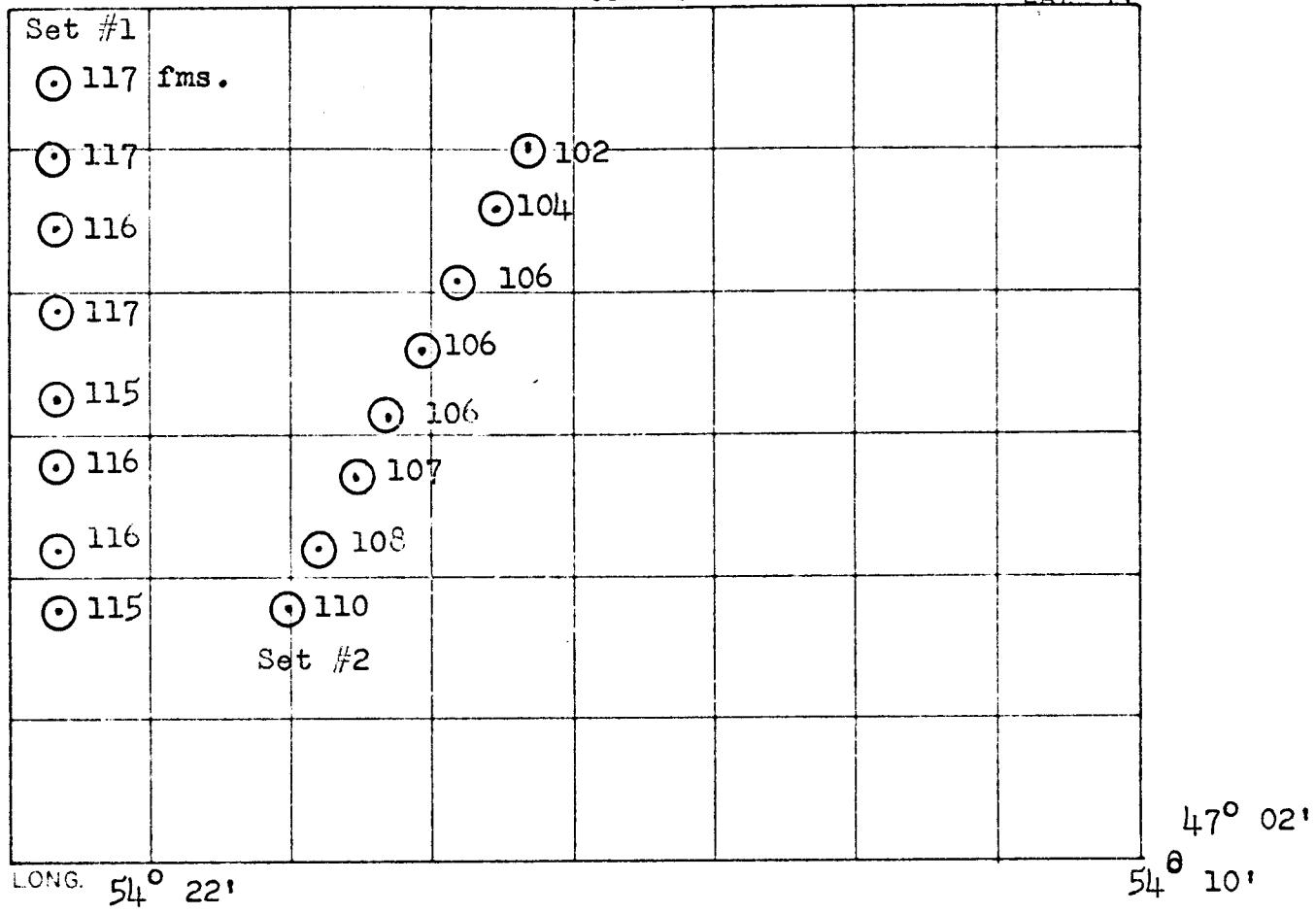
54° 22'

DATE	CATCH	COMMERCIAL SIZE	NO. OF TRAPS	AVE. WEIGHT	BOTTOM	REMARKS
May 22	547	108	8		Mud	Set #1
May 22	500	99	8		Mud	Set #2

EXPERIMENTAL CRAB FISHING REPORT 2A

STATION NO. A14 — INDUSTRIAL DEVELOPMENT BRANCH

ST. JOHN'S

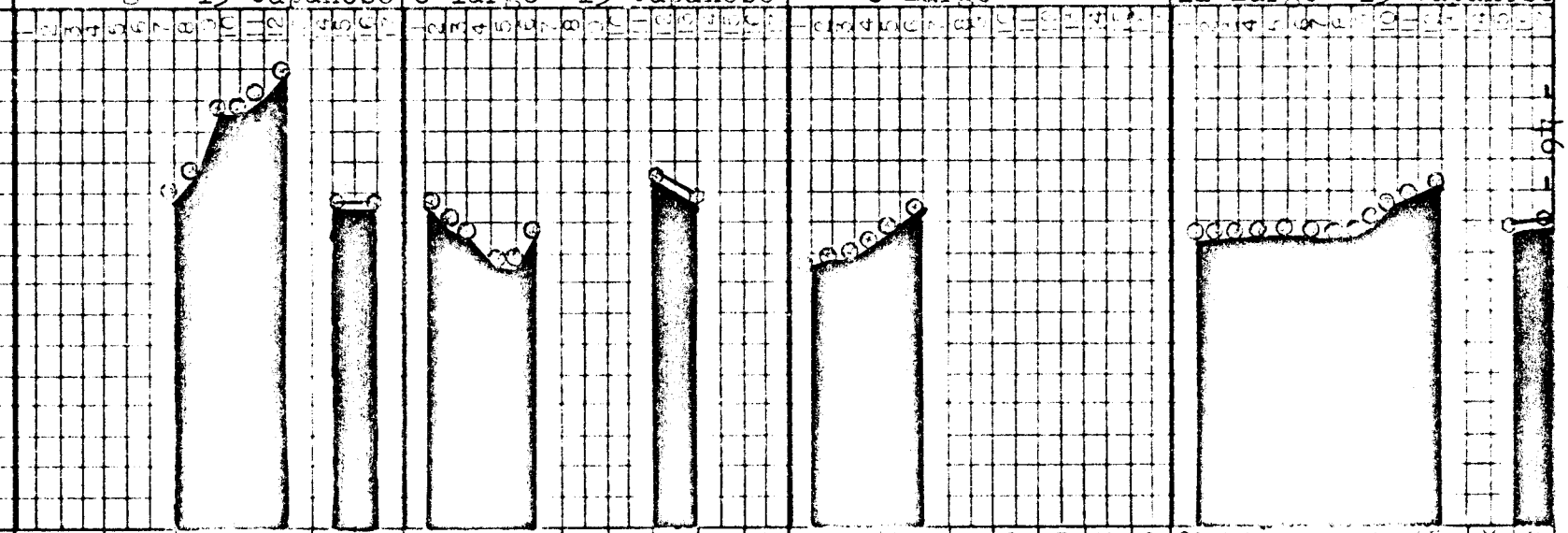


DATE	CATCH	COMMERCIAL SIZE	NO. OF TRAPS	AVE. WEIGHT	BOTTOM	REMARKS
May 20	2397	1342	8		Mud	Set #1
May 20	1782	709	8		Mud	Set #2

EXPERIMENTAL CRAB TRAP FISHING REPORT ONE
INDUSTRIAL DEVELOPMENT BRANCH

DATE 1970	April 20	April 22	April 22	April 23
AIR TEMPERATURE	39°F.	40° F.	40° F.	39° F.
VISIBILITY	7	8	8	8
TIME OF DEPARTURE	12:30 p.m.	7:15 a.m.	7:15 a.m.	5:50 a.m.
TRIP NUMBER	3	4	4	5
SET NUMBER	1 & 2	1 & 3	4	5 & 6
AREA	Placentia Bay	Placentia Bay	Placentia Bay	Placentia Bay
STATION NUMBER	A1	A1	A1	A1
DECCA FIX S.				
DECCA FIX E				
TIDE				
WIND S.W. DIRECTION	2 N	3 NE	3 NE	4 NE
SURFACE TEMPERATURE	2.5° C	2.2° C.	2.2° C	2.2° C
TYPE OF GEAR	Large Square & Jap.	Lar. square & Jap.	Large Square & Jap.	Large square & Jap.
BAIT	Cod Offals	Cod Offals	Cod Offals	Cod Offals
NUMBER OF POTS	6 Large 15 Japanese	6 large 15 Japanese	6 Large	12 Large 15 Japanese

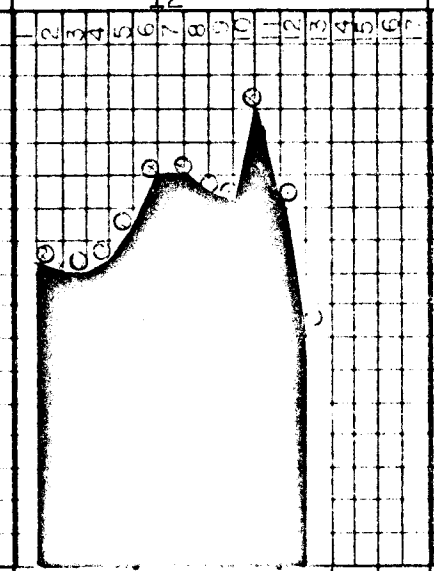
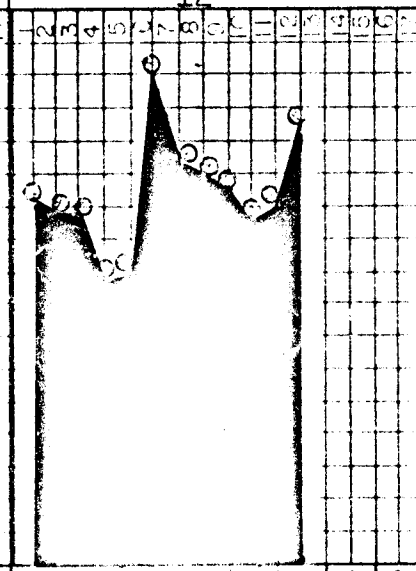
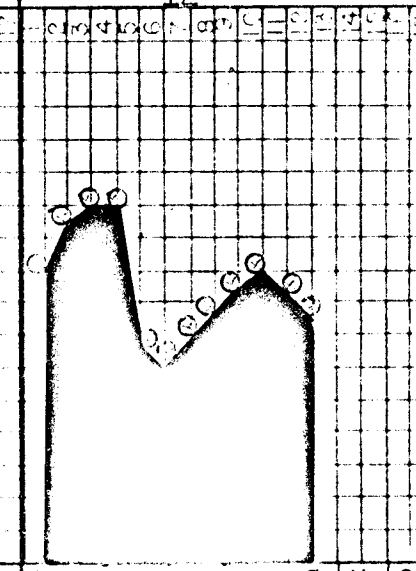
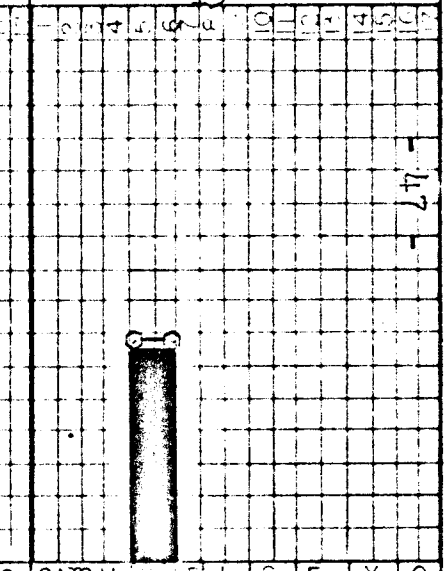
DEPTH OF THE SET



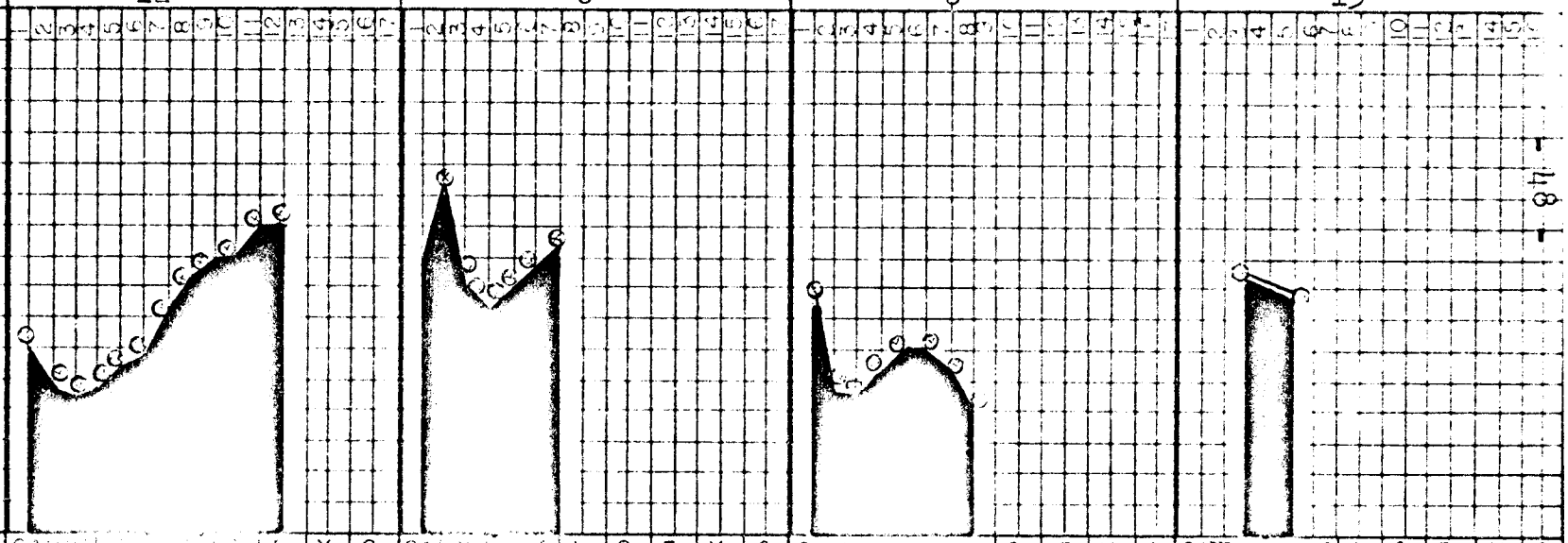
	CATCH	SOLD	L	S	F	Y	O
April 20	340		30	0	0	310	26
April 22	312		20	0	0	102	32
April 22	160		22	2	0	136	3
April 23	667		212	16	1	438	1

BOTTOM	Rock	Rock	Rock and Mud	Mud
NUMBER OF DAYS SET	3	5	2	1
NOON MET OBS	o	c	c	b
TYPE FISHING IN AREA	Trawls	Trawls	Trawls	-
NUMBER OF HANDS				
GEAR LOST	Nil	Nil	Nil	Nil
TIME LOST, MECH. FAILURE	Nil	Nil	Nil	Nil
ARRIVAL TIME	7:00 p.m.	4:15 p.m.	4:15 p.m.	1:30 p.m.
TEMP OF CRAB STORAGE				

EXPERIMENTAL CRAB TRAP FISHING REPORT ONE
INDUSTRIAL DEVELOPMENT BRANCH

DATE 1970	April 24	April 25	April 27	April 28
AIR TEMPERATURE	39° F.	42° F.	-	-
VISIBILITY	7	8	7	7
TIME OF DEPARTURE	6:00 a.m.	5:30 a.m.	7:00 a.m.	7:00 a.m.
TRIP NUMBER	6	7	8	9
SET NUMBER	7	1	2	3
AREA	Placentia Bay	Red Island, P.B.	Red Island, P.B.	Red Island, P.B.
STATION NUMBER	A1	A2	A2	A2
DECCA FIX S.				
DECCA FIX E.				
TIDE				
WIND S.W. DIRECTION	2 NE	1 SE	3 SW	6 SW
SURFACE TEMPERATURE	2.3° C.	3° C	-	-
TYPE OF GEAR	Large Square	Large Square	Large Square	Japanese Pots
BAIT	Cod Offals	Cod Offals	Cod Offals	Cod Offals
NUMBER OF POTS	12	12	12	15
DEPTH OF THE SET	OVER 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200			
				
CATCH	577	381	928	840
SOLD	256		176	308
L	10	68	3	0
S	5	2	5	5
F	306	5	59	52
Y	107	306	692	4
O		22	8	0
BOTTOM	Mud and Rock	Mud	Mud and Rock	Mud
NUMBER OF DAYS SET	1	1	2	3
NOON MET OBS	b	b	b	b
TYPE FISHING IN AREA	Trawls	Lobster Pots	Gill Nets	Gill Nets
NUMBER OF HANDS				
GEAR LOST	Nil	Nil	1 Large Pot	2 Japanese Pots
TIME LOST, MECH. FAILURE	Nil	Nil	Nil	Nil
ARRIVAL TIME	3:30 p.m.	2:30 p.m.	2:00 p.m.	10:30 a.m.
TEMP OF CRAB STORAGE				

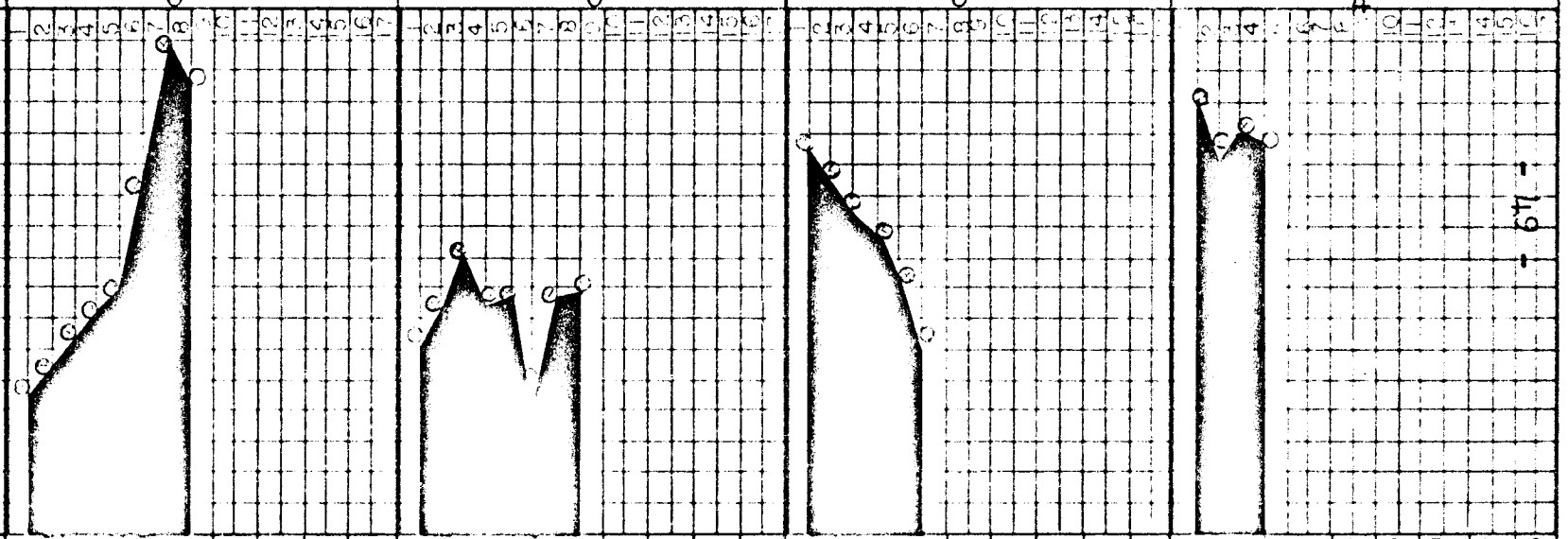
EXPERIMENTAL CRAB TRAP FISHING REPORT ONE
INDUSTRIAL DEVELOPMENT BRANCH

DATE 1970	April 29	April 30	April 30	May 1
AIR TEMPERATURE	42° F.	-	-	41° F.
VISIBILITY	7	8	8	6
TIME OF DEPARTURE	6:30 a.m.	6:15 a.m.	6:15 a.m.	6:45 a.m.
TRIP NUMBER	10	11	11	12
SET NUMBER	4	1	2	3
AREA	Red Island, P.B.	Long Island, P.B.	Long Island, P.B.	Long Island, P.B.
STATION NUMBER	A2	A3	A3	A3
DECCA FIX S.				
DECCA FIX E.				
TIDE				
WIND S.W. DIRECTION	2	2 NE	2 NE	2 SW
SURFACE TEMPERATURE	3.2° C.	-	-	3° C.
TYPE OF GEAR	Large square	Large square	Large square	Japanese Pots
BAIT	Herring	Herring	Herring	Herring
NUMBER OF POTS	12	8	8	15
DEPTH OF THE SET				
CATCH	949	411	941	890
SOLD				
L	292	132	367	415
S	6	47	64	62
F	28	0	49	4
Y	623	232	461	409
O	16	5	0	0
BOTTOM	Rock and Mud	Mud	Mud	Mud
NUMBER OF DAYS SET	2	1	1	2
NOON MET OBS	b	b	b	o
TYPE FISHING IN AREA	-			Gill Nets
NUMBER OF HANDS				
GEAR LOST	Nil	Nil	Nil	Nil
TIME LOST, MECH. FAILURE	Nil	Nil	Nil	Nil
ARRIVAL TIME	7:30 p.m.	8:30 p.m.	8:30 p.m.	4:30 p.m.
TEMP OF CRAB STORAGE				

EXPERIMENTAL CRAB TRAP FISHING REPORT ONE
INDUSTRIAL DEVELOPMENT BRANCH

DATE 1970	May 1	May 1	May 4	May 4
AIR TEMPERATURE	41° F.	41° F.	44° F.	44° F.
VISIBILITY	6	6	8	8
TIME OF DEPARTURE	6:45 a.m.	6:45 a.m.	6:00 a.m.	6:00 a.m.
TRIP NUMBER	12	12	13	13
SET NUMBER	2	1	2	1
AREA	Placentia Bay	Placentia Bay	Arnold's Cove, P.B.	Arnold's Cove, P.B.
STATION NUMBER	A4	A4	A5	A5
DECCA FIX S.				
DECCA FIX E.				
TIDE				
WIND S.W. DIRECTION	2 SW	2 SW	4 NW	4 NW
SURFACE TEMPERATURE	3° C.	3° C.	4° C.	4° C.
TYPE OF GEAR	Large Square	Large Square	Large Square	Large Square
BAIT	Herring	Herring	Herring	Herring
NUMBER OF POTS	8	8	6	4

DEPTH OF THE SET (OVER 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200)



	CAUGHT	SOLD	L	S	F	Y	O
May 1	159	48	26	0	85	2	
May 1	409	104	107	0	198	0	
May 4	121	5	22	1	93	0	
May 4	16	0	0	0	16	0	

BOTTOM			Mud	Rock and Mud
NUMBER OF DAYS SET	1	1	3	3
NOON MET OBS	0	0	b	b
TYPE FISHING IN AREA	Gill Nets	Gill Nets	Gill Nets & LobsterPots	Gill nets & lobster pot
NUMBER OF HANDS				
GEAR LOST	Nil	Nil	Nil	Nil
TIME LOST, MECH. FAILURE	Nil	Nil	Nil	Nil
ARRIVAL TIME	4:30 p.m.	4:30 p.m.	9:30 p.m.	9:30 p.m.
TEMP OF CRAB STORAGE				

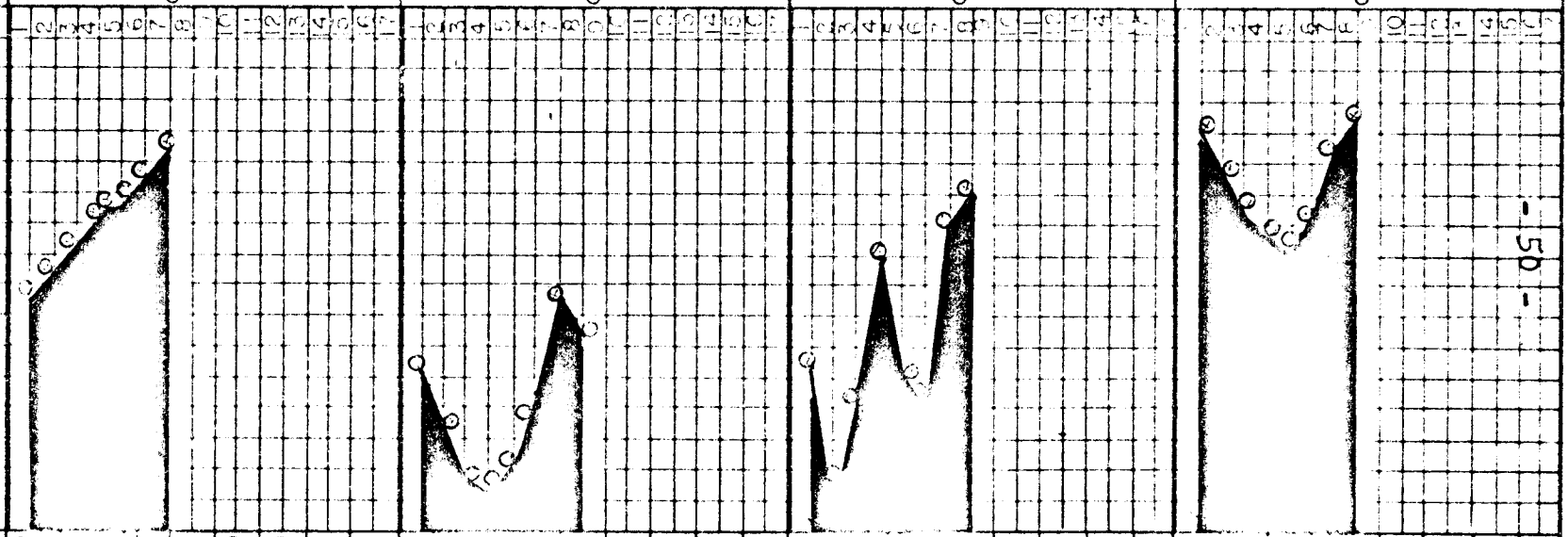
EXPERIMENTAL CRAB TRAP FISHING REPORT ONE
INDUSTRIAL DEVELOPMENT BRANCH

DATE 1970	May 5	May 6	May 7	May 12
AIR TEMPERATURE	41° F.	-	39° F.	-
VISIBILITY	7	7	2	7
TIME OF DEPARTURE	6:15 a.m.	6:15 a.m.	7:00 a.m.	6:15 a.m.
TRIP NUMBER	14	15	16	18
SET NUMBER	2	1	1	1
AREA	Merasheen Island. P.B.	Merasheen Island	Placentia Bay	Placentia Bay
STATION NUMBER	A8	A8	A7	A9
DECCA FIX S.				
DECCA FIX E.				
TIDE				
WIND S.W. DIRECTION	1 E	3 NE	5 NE	2 NE
SURFACE TEMPERATURE	3.6° C.	-	3.5° C.	3.5° C.
TYPE OF GEAR	Large square	Large square	Large square	Large square
BAIT	Herring	Herring	Herring	Herring
NUMBER OF POTS	8	8	8	8

May 5 only

DEPTH OF THE SET

	OVER
150	50
160	60
170	70
180	80
190	90
200	100
210	110
220	120
230	130
240	140
250	150
260	160
270	170
280	180
290	190
300	200



	CATCH	L	S	F	Y	O
May 5	225	54	91	0	80	2
May 6	482	255	26	0	201	0
May 7	387	65	101	83	129	7
May 12	2019	275	3	22	171	92

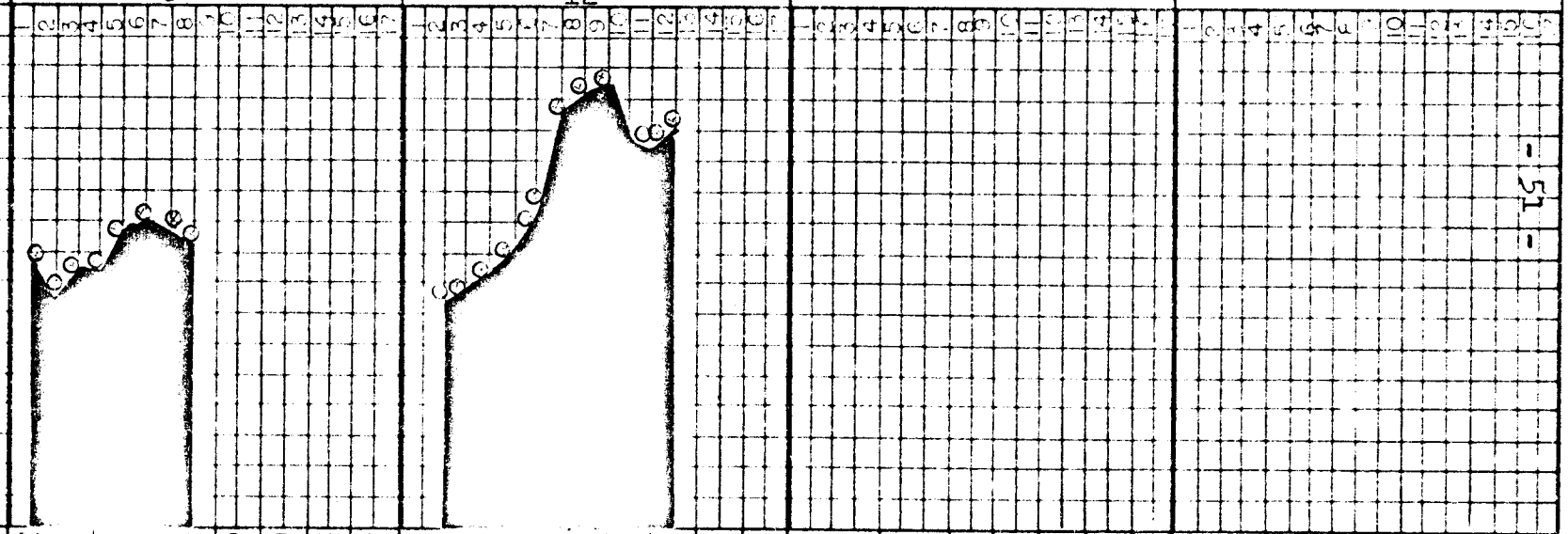
	May 5	May 6	May 7	May 12
BOTTOM	Rock	Mud	Rock and Mud	Mud
NUMBER OF DAYS SET	1	2	1	7
NOON MET OBS	r	b	f r	b
TYPE FISHING IN AREA	Gill nets	Gill nets	-	-
NUMBER OF HANDS				
GEAR LOST	Nil	Nil	Nil	Nil
TIME LOST, MECH. FAILURE	Nil	Nil	Nil	Nil
ARRIVAL TIME	5:00 p.m.	3:00 p.m.	2:00 p.m.	4:00 p.m.
TEMP OF CRAB STORAGE				

EXPERIMENTAL CRAB TRAP FISHING REPORT ONE
INDUSTRIAL DEVELOPMENT BRANCH

DATE 1970	May 13	May 14		
AIR TEMPERATURE	43°F.	44° F.		
VISIBILITY	8	6		
TIME OF DEPARTURE	6:15 a.m.	6:00 a.m.		
TRIP NUMBER	19	20		
SET NUMBER	2	1		
AREA	Placentia Bay	Placentia Bay		
STATION NUMBER	A7	A6		
DECCA FIX S.				
DECCA FIX E.				
TIDE				
WIND S.W. DIRECTION	2 NE	0		
SURFACE TEMPERATURE	5.5° C.	6.1° C.		
TYPE OF GEAR	Large square	Large square		
BAIT	Herring	Herring		
NUMBER OF POTS	8	12		

DEPTH OF THE SET

OVER 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200



	CATCH	SOLD	L	S	F	Y	O
	193		72	5	22	94	10
	48		2	0	4	42	0

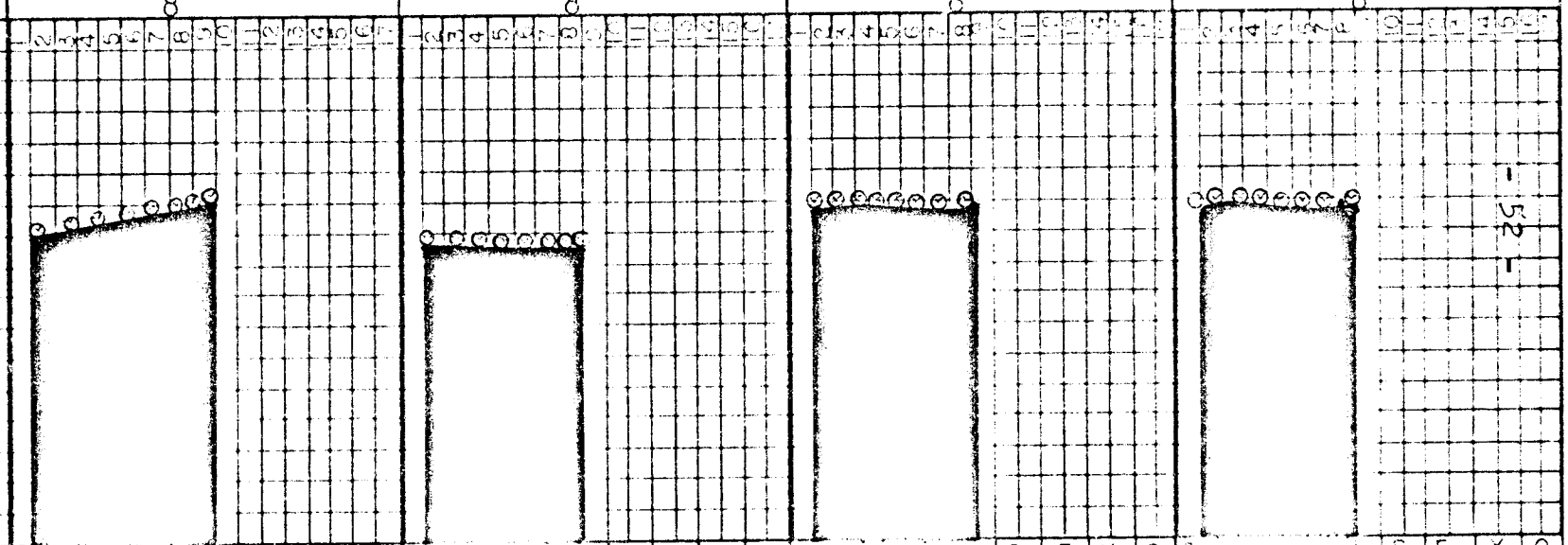
BOTTOM	Mud	Mud	
NUMBER OF DAYS SET	6	1	
NOON MET OBS	0	b fs	
TYPE FISHING IN AREA	Gill nets, lobster pots	gill nets, lobster pots	
NUMBER OF HANDS			
GEAR LOST	Nil	Nil	
TIME LOST, MECH. FAILURE	Nil	Nil	
ARRIVAL TIME	4:00 p.m.	6:30 p.m.	
TEMP OF CRAB STORAGE			

EXPERIMENTAL CRAB TRAP FISHING REPORT ONE
INDUSTRIAL DEVELOPMENT BRANCH

DATE 1970	May 20	May 20, 1970	May 22	May 22
AIR TEMPERATURE	47.5° F.	47.5° F.	43° F.	43° F.
VISIBILITY				
TIME OF DEPARTURE	6:45 a.m.	6:45 a.m.	6:30 a.m.	6:30 a.m.
TRIP NUMBER	22	22	23	23
SET NUMBER	2	1	1	2
AREA	Placentia Bay	Placentia Bay	Placentia Bay	Placentia Bay
STATION NUMBER	A14	A14	A13	A13
DECCA FIX S.				
DECCA FIX E.				
TIDE				
WIND S.W. DIRECTION				
SURFACE TEMPERATURE	5.9° C.	5.9° C.	5.8° C.	5.8° C.
TYPE OF GEAR	Large square	Large square	Large square	Large square
BAIT	Herring	Herring=	Herring	Herring
NUMBER OF POTS	8	8	8	8

DEPTH OF THE SET

OVER 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200



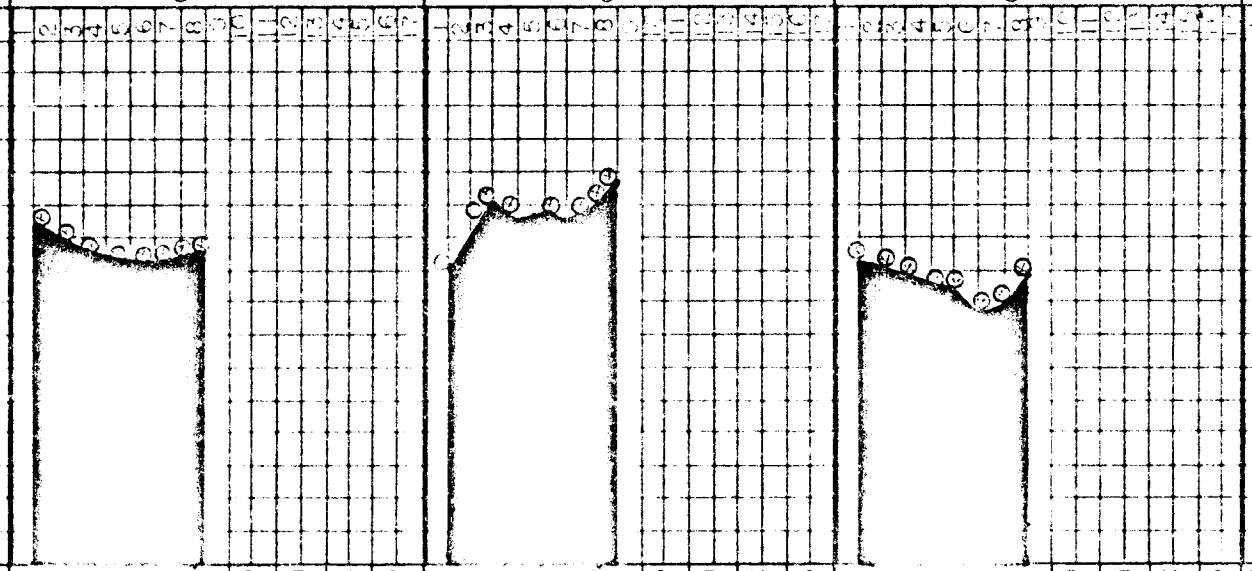
CATCH		L	S	F	Y	O
1782	709	2	9	1062	2	0
2397	1342	0	0	1055	5	0
547	108	0	1	438	0	
503	102	0	8	393	2	

BOTTOM	Mud	Mud	Mud	Mud
NUMBER OF DAYS SET	6	6	2	2
NOON MET OBS	b	b	c	c
TYPE FISHING IN AREA				
NUMBER OF HANDS				
GEAR LOST	Nil	Nil	Nil	Nil
TIME LOST, MECH. FAILURE	Nil	Nil	Nil	Nil
ARRIVAL TIME	9:00 p.m.	9:00 p.m	7:00 p.m.	7:00 p.m.
TEMP OF CRAB STORAGE				

EXPERIMENTAL CRAB TRAP FISHING REPORT ONE
INDUSTRIAL DEVELOPMENT BRANCH

DATE 1970	May 30	June 1	June 1	
AIR TEMPERATURE	-	46° F.	46° F.	
VISIBILITY				
TIME OF DEPARTURE	6:30 a.m.	6:15 a.m.	6:15 a.m.	
TRIP NUMBER	25	26	26	
SET NUMBER	1	1	2	
AREA	Placentia Bay	Placentia Bay	Placentia Bay	
STATION NUMBER	A10	A11	A11	
DECCA FIX S.				
DECCA FIX E				
TIDE				
WIND S.W. DIRECTION				
SURFACE TEMPERATURE	-	4.4° C.	4.4° C.	
TYPE OF GEAR	Large Square	Large Square	Large Square	
BAIT	Herring	Herring	Herring	
NUMBER OF POTS	8	8	8	

DEPTH OF THE SET



	CATCH	SOLD	L	S	F	Y	O
	2917		534	9	12	2362	0
	287		5	0	0	282	0
	418		21	2	0	395	0
	CATCH	SOLD	L	S	F	Y	O

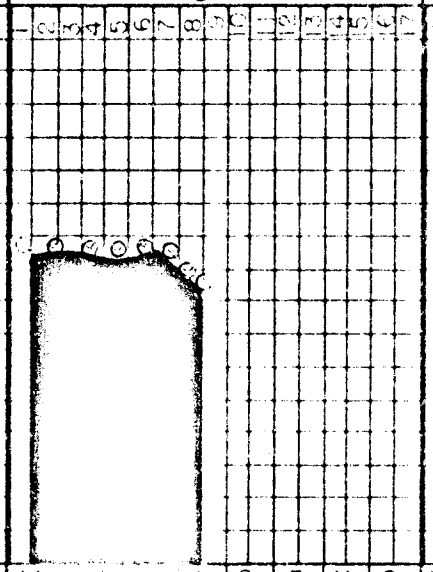
BOTTOM	Mud	Rock	Rock	
NUMBER OF DAYS SET	8	2	2	
NOON MET OBS	b	b	b	
TYPE FISHING IN AREA				
NUMBER OF HANDS				
GEAR LOST	Nil	Nil	Nil	
TIME LOST, MECH. FAILURE	Nil	Nil	Nil	
ARRIVAL TIME	5:00 p.m.	2:20 p.m.	2:20 p.m.	
TEMP OF CRAB STORAGE				

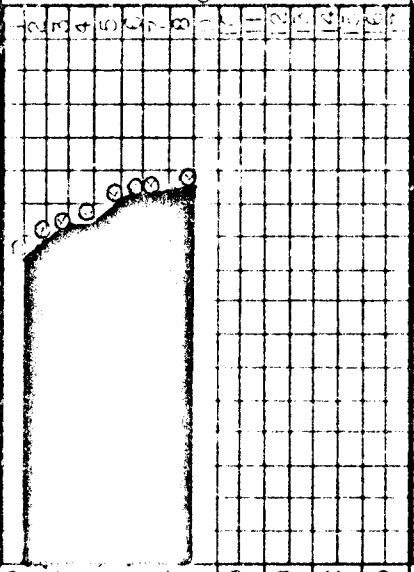
EXPERIMENTAL CRAB TRAP FISHING REPORT ONE
INDUSTRIAL DEVELOPMENT BRANCH

DATE 1970	June 22	June 22		
AIR TEMPERATURE	60° F.	60° F.		
VISIBILITY	1	1		
TIME OF DEPARTURE	6:00 a.m.	6:00 a.m.		
TRIP NUMBER	30	30		
SET NUMBER	1	2		
AREA	St. Lawrence, P.B.	St. Lawrence, P.B.		
STATION NUMBER	A12	A12		
DECCA FIX S.				
DECCA FIX E.				
TIDE				
WIND S.W. DIRECTION	2 SW	2 SW		
SURFACE TEMPERATURE	-	-		
TYPE OF GEAR	Large square	Large square		
BAIT	Herring	Herring		
NUMBER OF POTS	8	8		

DEPTH OF THE SET

OVER 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200





	CATCH	SOLD	L	S	F	Y	O
	3600	1140	2160				
	3600	1140	2160				

BOTTOM	Mud	Mud	
NUMBER OF DAYS SET	20	20	
NOON MET OBS	b f	b f	
TYPE FISHING IN AREA	Nil	Nil	
NUMBER OF HANDS			
GEAR LOST	Nil	Nil	
TIME LOST, MECH. FAILURE	Nil	Nil	
ARRIVAL TIME	4:00 p.m.	4:00 p.m.	
TEMP OF CRAB STORAGE			

Plan for Exploratory Fishing for Queen Crabs (Chionoecetos opilio) by M.V. Donna McKenzie from 7th April to in Placentia Bay, West and Northeast Coasts of Newfoundland

Submitted by Lennox Hinds
Technical Advisor

Industrial Development Branch
Department of Fisheries of Canada
St. John's, Newfoundland
April, 1970

CONTENTS

Purpose of Exploration

The purpose is to locate areas where Queen Crabs (Chionoecetes opilio) are present in commercial quantities and to study the possibility of developing a crab fishery.

A well planned pattern of sampling stations will be employed (see page). However, the unwritten law of fishing, that of, fish continuously as long as fishing is good will also be applied when conditions dictate.

Operational Plan

1. The vessel will fish her full complement of traps per day. That is to say, she will set, haul and reset traps.

2. Traps will be positioned in patterns as follows:

   (a) On an incline

   (b) Upon banks

   (c) Within submerged ridges or gulleys.

3. Traps will be fished independently and/or in a fleet. Distance between traps will be as per sampling methods A and B (see page).

4. Bait and method of baiting traps. It is suggested that round cod or herring, fresh or frozen, be used as bait. However, in the event of supplies running out, bait available in an area of operation should be used. Large square traps will be baited by attaching fresh or frozen bait onto the insulated wire, which runs from one end of the trap to the other. An average of ten pounds of bait is suggested per trap. Japanese conical pots will be baited by attaching bait unto the hooks inside the tunnel.

5. Traps will be hauled and catch examined upon deck. All information required from catch should be recorded before the next trap is taken out of the water.

6. Chart and echo soundings must be noted before gear is put over the side. Echo graph paper must be saved and scale of soundings, along with station numbers, etc., attached to work sheets.

7. Position of gear must be accurately recorded.

8. The duration of set will be no less than twelve hours.

9. Upon completion of charter, all gear and equipment property of the charterer must be returned along with a statement signed by the master and charterer's representative.

Records and Reports

Reports should be written as soon as possible while details are still fresh in the memory. It is of utmost importance that care be taken in keeping records of operations. It is scarcely possible to give too much emphasis to the importance of recording each event and its results as the operations progresses.

Fishing Stations

A fishing station is a geographically identifiable area at which exploratory fishing operations are carried out. The chartered vessel will only fish stations of Class A. Size of station A - 48 square miles; No. of traps to be fished - 16.

Selection of Station

This is based on:

(a) Depth

(b) Type of bottom

(c) Other factors, such as distance from shore line.

Exploration Requirements of Master

(a) Responsible for administration of vessel.

(b) In conjunction with charterer's representative and in accordance with proposed operational plan, carry out exploratory crab fishing operations.

(c) Supply to charterer's representatives all information required relating to purpose of exploration.

(d) Submit fortnightly a completed signed copy of master's report form.

Exploration Requirements of Observer and/or Search Master

(a) Accompany vessel on fishing trips and record information required.

(b) Transfer information from work sheets to reporting forms, complete daily project report, and forward on a weekly basis to headquarters.

(c) Report immediately to office, by telephone and in writing, any situation that may restrict the progress of work.

(d) Take photographs for later inclusion in report.

(e) Carry out experiments as required.

(f) Compile report on completion of contract.

Exploration Requirements of Crew

(a) Rig and maintain gear

(b) Assist charterer's representative in whatever way possible.

Itinerary to be Followed During Fishing Operations.

1. Setting of Gear.

(a) Prepare daily set pattern before hand (see page 16).

(b) Fill in appropriate column of work sheet No. 1 and reporting form No. 1 (ashore and/or at sea).

(c) Check moorings and method of baiting gear.

(d) Check chart and echo sounding before trap is put over the side.

(e) Check and record number on marker or spar buoy before trap is put over the side.

(f) Check and note compass course of set.

(g) Observe other fishing activities taking place in area of exploratory operations.

2. Taking in of Gear

(a) Record number on marker or spar buoy on work sheet No. 2.

(b) Assort catch and record data required.

(c) Return catch to sea.

(d) Observe traps for sample or indication of type of bottom.

(e) Stow or reset traps.

Working of a Station

(a) Record station number.

(b) Observe characteristics (bottom, depth, etc.).

(c) Complete reporting form No. 2A.

Sampling Methods to be Applied

(a) Conical Japanese pots will be set on a long line with pots approximately 30 fathoms apart. Within stations in Placentia Bay at least one set must be made alongside large square traps. A fleet of Japanese pots will consist of no less than fifteen units of gear.

(b) Patterns of eight large traps with each trap set five minutes apart (vessel running full speed). Throughout the exploration a pattern of eight traps will be used to carry out an observation. These traps will be set at the following time intervals (vessel running full speed):

(a) two minutes
(b) three minutes
(c) eight minutes
(d) eleven minutes.

Experiments and Observations

Experiments and observations are necessary in order to gather information to support further development.

Note: the size of catch in the crab trap may depend upon the following:

(a) Distance from trap to trap.

(b) Duration of set.

(c) The mesh size of the trap.

In order to gather information relating to (a) and (c), experiments A and B have been designed (see below).

Relationship Between Catch and Duration of Set (b)

Generally, the traps are lifted daily, under fine weather conditions, and moved to new areas. Whenever the situation occurs that prevents the above movement of gear, careful observation of catch should be made. If time permits, additional sets under fine weather on the said station should be made.

When gear is being taken up and it has been established that the trap is off the bottom, observations should be made and recorded, as to the r.p.m. of the main engine, pressure in hydraulic system as shown on dial in wheel house. This observation can be noted in remarks column on work sheet No. 2 (taking in of gear) alongside appropriate trap.

Experiment A - Spacing of Traps

Throughout the exploration variations should be made in relation to distances traps are set apart. This experiment is necessary in order to determine the maximum and minimum distances at which traps should be set. The distance apart would be derived from sampling method suggested on page 4.

Experiment B - Mesh Size Selectivity

Four traps will be used of different mesh sizes. Two are being fished by the FRB and the remaining by the IDB. These traps should be positioned among regular meshed traps when fishing. The sets in which these traps are used to carry out the mesh size selectivity observation, should never be apart of the spacing experiment set. When the above experiments are carried out, special attention should be paid to composition of catch, i.e. species of crabs, shell condition, etc., and noted on the form designed for these experiments (reporting form No. 5).

Gear Required to Fish seventeen Large Square Traps and One Fleet of Fifteen Japanese Conical Pots and Issued to Vessel.

Moorings 5/8" and 1/2" polythene rope	5,200 fms.
Swivels	17
Complete radar reflector buoys	17
Marker buoys (30" and 50" diameter)	100
Paint	1 quart
Paint brush	1 (1/2")
Insulated wire	500 ft.
Mending twine	5 lbs.
Mending needles	6
Hand pump	1 only

Schedule of Charter of Vessel Donna McKenzie

From 7th April to

Total estimated area of exploration	6,713 sq. miles
Total estimated area of stations	2,736 sq. miles
Total number of traps to be set	1,000
Total estimated amount of bait required	18,000 lbs.

Expedition No. 1 - Placentia Bay		
Estimated No. of Fishing days required	18	
Estimated No. of days for supplies	4	22
Expedition No. 2 - West Coast		
Estimated No. of fishing days required	8	
Estimated No. of days for supplies	2	10
Expedition No. 3 - West Coast		
Estimated No. of fishing days required	12	
Estimated no. of days for supplies	3	15
Expedition No. 4 - Bell Isle Straits		
Estimated No. of fishing days required	14	
Estimated No. of days for supplies	3	17
Expedition No. 5 - Off Belle Isle		
Estimated No. of fishing days required	5	
Estimated No. of days for supplies	2	7
Expedition No. 6 - Off Belle Isle		
Estimated No. of fishing days required	8	
Estimated No. of days for supplies	2	10
Expedition No. 7 - Northeast Coast		
Estimated No. of fishing days required	8	
Estimated No. of days for supplies	2	10
Expedition No. 8 - Northeast Coast, Hare Bay		
Estimated No. of fishing days required	10	
Estimated No. of days for supplies	3	13
Expedition No. 9 - Northeast Coast, Cook's Hr.		
Estimated No. of fishing days required	10	
Estimated No. of days for supplies	3	13

Expedition No. 10 - Northeast Coast, Off Gray Island		
Estimated No. of fishing days required	10	
Estimated No. of days for supplies	3	13
Expedition No. 11 - Northeast Coast off Canada Bay		
Estimated No. of fishing days required	5	
Estimated No. of days for supplies	2	7
Expedition No. 12 - Northeast Coast off Funk Islands		
Estimated No. of fishing days required	8	
Estimates No. of days for supplies	2	10
	Total No. of days	47

Expedition No. 1 - Placentia Bay

Estimated duration of cruise - 22 days

Station No.	Approximate Position By Admiralty Chart 2326
A 1	From Lat. 47° 13' N. to Lat. 47° 19' N From Long. 54° 07' W. to Long. 54° 19' W
2	From Lat. 47° 21' N. to Lat. 47° 27' N. From Long. 54° 01' W. to Long. 54° 13' W
3	From Lat. 47° 28' N. to Lat. 47° 34' N. From Long. 53° 57' W. to Long. 54° 09' W.
4	From Lat. 47° 37' N. to Lat. 47° 43' N. From Long. 53° 51' W. to Long. 54° 03' W.
5	From Lat. 47° 43' N. to Lat. 47° 49' N. From Long. 53° 50' W. to Long. 54° 10' W.
6	From Lat. 47° 38' N. to Lat. 47° 44' N. From Long. 54° 07' W. to Long. 54° 19' W.
7	From Lat. 47° 30' N. to Lat. 47° 36' N. From Long. 54° 13' W. to Long. 54° 25' W.
8	From Lat. 47° 21' N. to Lat. 47° 27' N. From Long. 54° 15' W. to Long. 54° 27' W.
9	From Lat. 47° 13' N. to Lat. 47° 19' N. From Long. 54° 26' W. to Long. 54° 38' W.

Expedition No. 2 - West Coast of Newfoundland

Estimated duration of cruise - 10 days

Station No.	Approximate Position Br Admiralty Chart No. 232b
A 10	From Lat. 50° 38' N. to Lat. 50° 44' N. From Long. 57° 32' W. to Long. 57° 45' W.
11	From Lat. 50° 46' N. to Lat. 50° 52' N. From Long. 57° 27' W. to Long. 57° 40' W.
13	From Lat. 50° 54' N. to Lat. 51° 00' N. From Long. 57° 30' W. to Long. 57° 51' W.
16	From Lat. 51° 05' N. to Lat. 51° 11' N. From Long. 57° 44' W. to Long. 57° 57' W.

Expedition No. 3 - West Coast of Newfoundland

Estimated Duration of cruise - 15 days

Station No.	Approximate Position Br. Admiralty Chart No. 232 b
A 12	From Lat. 50° 56' N. to Lat. 51° 02' N. From Long. 57° 09' W. to Long. 57° 22' W.
15	From Lat. 51° 02' N. to Lat. 51° 08' N. From Long. 57° 25' W. to Long. 57° 36' W.
14	From Lat. 51° 06' N. to Lat. 51° 12' N. From Long. 57° 05' W. to Long. 57° 18' W.
18	From Lat. 51° 11' N. to Lat. 51° 17' N. From Long. 57° 26' W. to Long. 57° 39' W.
19	From Lat. 51° 19' N. to Lat. 51° 25' N. From Long. 57° 17' W. to Long. 57° 30' W.
17	From Lat. 51° 14' N. to Lat. 51° 20' N. From Long. 57° 01' W. to Long. 57° 14' W.

Expedition No. 4 - Belle Isle Straits

Estimated duration of cruise - 17 days

Station No.	Approximate Position Br. Admiralty Chart No. 232 b
A 20	From Lat. 51° 20' N. to Lat. 51° 26' N. From Long. 56° 42' W. to Long. 56° 55' W.
21	From Lat. 51° 19' N. to Lat. 51° 25' N. From Long. 56° 32' W. to Long. 56° 45' W.
22	From Lat. 51° 32' N. to Lat. 51° 38' N. From Long. 56° 23' W. to Long. 56° 36' W.
23	From Lat. 51° 33' N. to Lat. 51° 39' N. From Long. 56° 06' W. to Long. 56° 19' W.
24	From Lat. 51° 39' N. to Lat. 51° 45' N. From Long. 56° 11' W. to Long. 56° 24' W.
25	From Lat. 51° 43' N. to Lat. 51° 49' N. From Long. 55° 56' W. to Long. 56° 09' W.
26	From Lat. 51° 48' N. to Lat. 51° 54' N. From Long. 55° 41' W. to Long. 55° 54' W.

Expedition No. 5 - Off Belle Isle

Estimated duration of cruise - 7 days

Station No.	Approximate Position Br. Admiralty Chart No. 232b
A 27	From Lat. 52° 00' N. to Lat. 52° 06' N. From Long. 55° 29' W. to Long. 55° 42' W.
30	From Lat. 52° 02' N. to Lat. 52° 08' N. From Long. 55° 14' W. to Long. 55° 27' W.
31	From Lat. 52° 02' N. to Lat. 52° 08' N. From Long. 54° 53' W. to Long. 55° 06' W.

Expedition No. 6 - Off Belle Isle

Estimated duration of cruise - 10 days

Station No.	Approximate Position Br.Admiralty Chart No. 232b
A 32	From Lat. 51° 52' N. to Lat. 51° 58' N. From Long. 54° 53' W. to Long. 55° 06' W.
33	From Lat. 51° 45' N. to Lat. 51° 51' N. From Long. 55° 07' W. to Long. 55° 20' W.
29	From Lat. 51° 44' N. to Lat. 51° 50' N. From Long. 55° 24' W. to Long. 55° 37' W.
28	From Lat. 51° 33' N. to Lat. 51° 39' N. From Long. 55° 40' W. to Long. 55° 53' W.

Expedition No. 7 - Northeast Coast of Newfoundland

Estimated duration of cruise - 10 days

Station No.	Approximate Position Br. Admiralty Chart No. 232b
A 37	From Lat. 51° 31' N. to Lat. 51° 37' N. From Long. 55° 13' W. to Long. 55° 26' W.
35	From Lat. 51° 39' N. to Lat. 51° 45' N. From Long. 55° 02' W. to Long. 55° 15' W.
34	From Lat. 51° 42' N. to Lat. 51° 48' N. From Long. 54° 47' W. to Long. 55° 00' W.
36	From Lat. 51° 32' N. to Lat. 51° 38' N. From Long. 54° 51' W. to Long. 55° 04' W.

Expedition No. 8 - Northeast Coast, Hare Bay

Estimated duration of cruise - 13 days

Station No.	Approximate Position Br. Admiralty Chart No. 232b
A 39	From Lat. 51° 20' N. to Lat. 51° 26' N. From Long. 55° 13' W. to Long. 55° 26' W.
38	From Lat. 51° 23' N. to Lat. 51° 29' N. From Long. 54° 54' W. to Long. 55° 07' W.
40	From Lat. 51° 15' N. to Lat. 51° 21' N. From Long. 54° 58' W. to Long. 55° 11' W.
41	From Lat. 51° 13' N. to Lat. 51° 19' N. From Long. 55° 29' W. to Long. 55° 42' W.
42	From Lat. 51° 14' N. to Lat. 51° 20' N. From Long. 55° 47' W. to Long. 56° 00' W.

Expedition No. 9 - Northeast Coast, Cook's Harbour

Estimated Duration of cruise - 13 days.

Station No.		Approximate Position Br. Admiralty Chart No. 232b
A 44	✓	From Lat. 51° 08' N. to Lat. 51° 10' N. From Long. 55° 21' W. to Long. 55° 34' W.
43	✓	From Lat. 51° 05' N. to Lat. 51° 11' N. From Long. 55° 03' W. to Long. 55° 16' W.
45	✓	From Lat. 50° 56' N. to Lat. 51° 02' N. From Long. 55° 10' W. to Long. 55° 23' W.
47	✓	From Lat. 50° 49' N. to Lat. 50° 55' N. From Long. 54° 46' W. to Long. 54° 59' W.
46	✓	From Lat. 50° 57' N. to Lat. 51° 03' N. From Long. 55° 30' W. to Long. 55° 51' W.

Expedition No. 10 - Northeast Coast, Gray Islands

Estimated duration of cruise - 13 days

Station No.		Approximate Position Br. Admiralty Chart No. 232b
A 51	✓	From Lat. 50° 43' to Lat. 50° 49' N. From Long. 55° 30' W. to Long. 55° 51' W.
48	✓	From Lat. 50° 40' N. to Lat. 50° 54' N. From Long. 55° 35' W. to Long. 55° 40' W.
50	✓	From Lat. 50° 41' N. to Lat. 50° 47' N. From Long. 55° 10' W. to Long. 55° 23' W.
49	✓	From Lat. 50° 35' N. to Lat. 50° 41' N. From Long. 54° 52' W. to Long. 55° 05' W.
53	✓	From Lat. 50° 25' N. to Lat. 50° 31' N. From Long. 54° 50' W. to Long. 55° 03' W.

Expedition No. 11 - Northeast Coast off Canada Bay

Estimated duration of cruise - 7 days

Station No.	Approximate Position Br. Admiralty Chart No. 2362b
A 52	From Lat. 50° 35' N. to Lat. 50° 41' N. From Long. 55° 52' W. to Long. 56° 05' W.
54	From Lat. 50° 29' N. to Lat. 50° 35' N. From Long. 55° 37' W. to Long. 55° 50' W.
55	From Lat. 50° 22' N. to Lat. 50° 28' N. From Long. 55° 52' W. to Long. 56° 03' W.

Expedition No. 12 - Northeast Coast off Funk Islands

Estimated duration of cruise - 10 days.

Station No.	Approximate Position Br. Admiralty Chart No. 2362b
A 56	From Lat. 49° 54' N. to Lat. 50° 00' N. From Long. 53° 23' W. to Long. 53° 36' W.
57	From Lat. 49° 50' N. to Lat. 49° 56' N. From Long. 52° 56' W. to Long. 53° 09' W.
58	From Lat. 49° 41' N. to Lat. 49° 47' N. From Long. 52° 51' W. to Long. 53° 04' W.
59	From Lat. 49° 34' N. to Lat. 49° 40' N. From Long. 53° 00' W. to Long. 53° 13' W.

WORK SHEET NO 1 (SETTING OF GEAR) VESSEL

DATE | TRIP NO | STATION | GEAR

SET NO	NO ON BUOY	DEPTH	POSITION, DECCA OR LORAN	AREA	BAIT	DATE HAULED	REMARKS

TIME OF DEPARTURE
WIND, SPEED DIRECTION
VISIBILITY
NOON MET OBS.
TYPE OF GEAR IN AREA
TIME LOST, MECH FAIL ETC.

AT/A TEMP.
STATION SURFACE TEMP.
STATION BOTTOM TEMP.
SURFACE TEMP SHORE.
TYPE OF BOTTOM
TIME OF ARRIVAL

WORK SHEET NO 2 (TAKING UP GEAR) [illegible] 15

DATE | TRIP NO | AREA | STATION NO

NO OF BUOY	CATCH	SHELL CONDITION	% BAIT REMAINING	BOTTOM	REMARKS

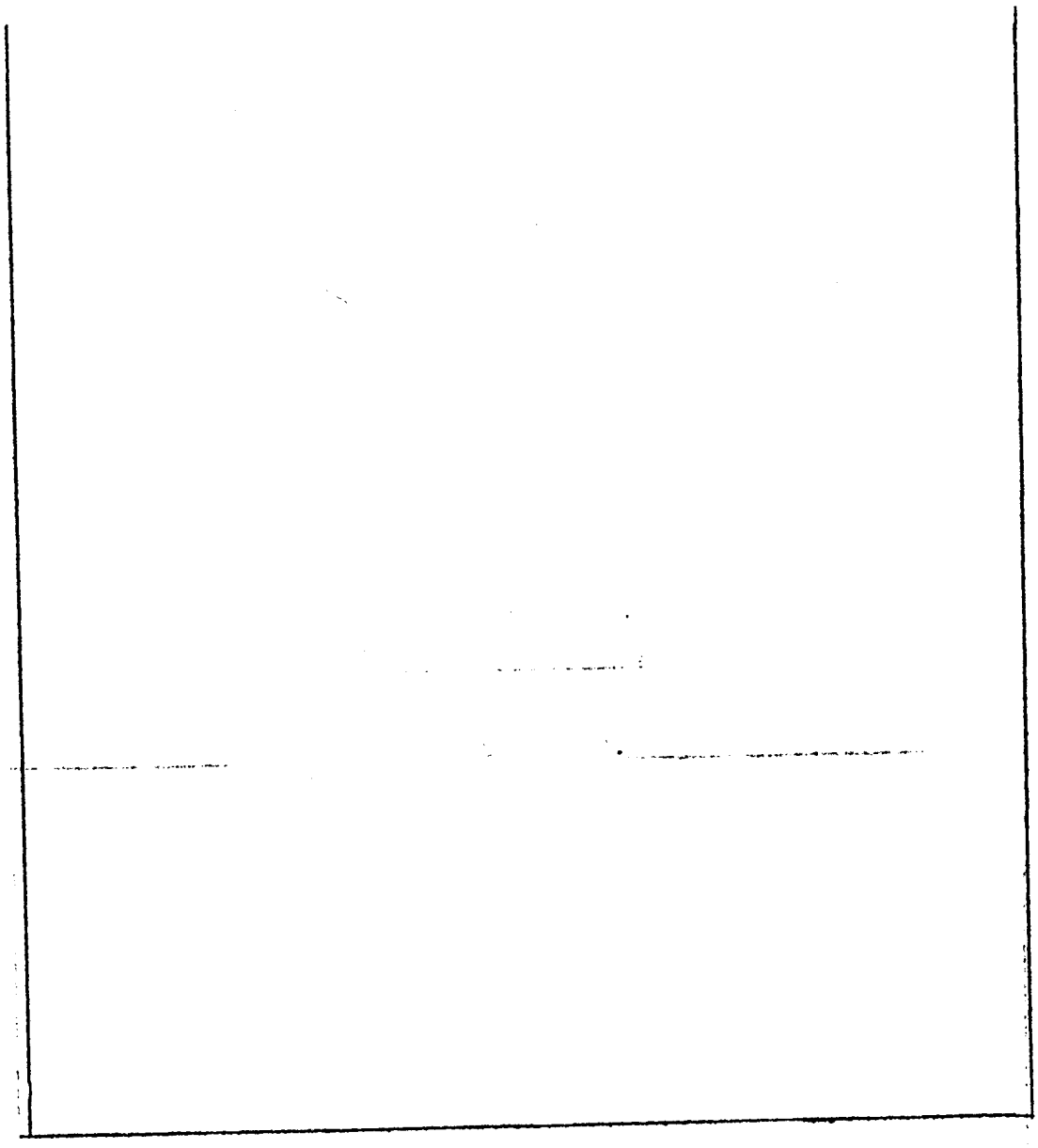
TIME OF DEPARTURE
WIND SPEED & DIREC
VISIBILITY
[illegible] NET [illegible]
TYPE GEAR IN AREA
GEAR LOST
TIME LOST (MECH FAIL)

AIR TEMP
STATION SURFACE TEMP
STATION BOTTOM TEMP
TYPE BOTTOM
TIME OF ARRIVAL

M.P. ST JOHN'S NFLD.

WORK SHEET NO. 3

DATE_____ STATION NO._____



BAIT

METHOD OF BAITING

O Ships Course
Estimated depth of set
Moorings required

Method	Fathoms	Amount
A		
B		

EXPEDITION LOG

EXPEDITION NO._____AREAS OF OPERATION_____

ESTIMATED DURATION OF EXPEDITION_____

DATE EXPEDITION STARTED_____DATE ENDED_____

NAME OF VESSEL_____

NUMBER ENGAGED IN FISHING OPERATIONS_____

POT CAPACITY OF VESSEL_____NO. OF POTS ON VESSEL_____

TYPE OF POTS_____

EQUIPMENT ON VESSEL

SPECIFICATIONS OF VESSEL

MODIFICATIONS TO PERMIT CRAB FISHING

ESTIMATED COST OF VESSEL?

REMARKS

EXPERIMENTAL CRAB TRAP FISHING REPORT ONE
INDUSTRIAL DEVELOPMENT BRANCH

DATE				
AIR TEMPERATURE				
VISIBILITY				
TIME OF DEPARTURE				
TRIP NUMBER				
SET NUMBER				
AREA				
STATION NUMBER				
DECCA FIX S.				
DECCA FIX E.				
TIDE				
WIND S.W. DIRECTION				
SURFACE TEMPERATURE				
TYPE OF GEAR				
BAIT				
NUMBER OF POTS				

DEPTH OF THE SET

OVER
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200

	CATCH	SOLD	L	S	F	Y	O	CATCH	SOLD	L	S	F	Y	O	CATCH	SOLD	L	S	F	Y	O	CATCH	SOLD	L	S	F	Y	O

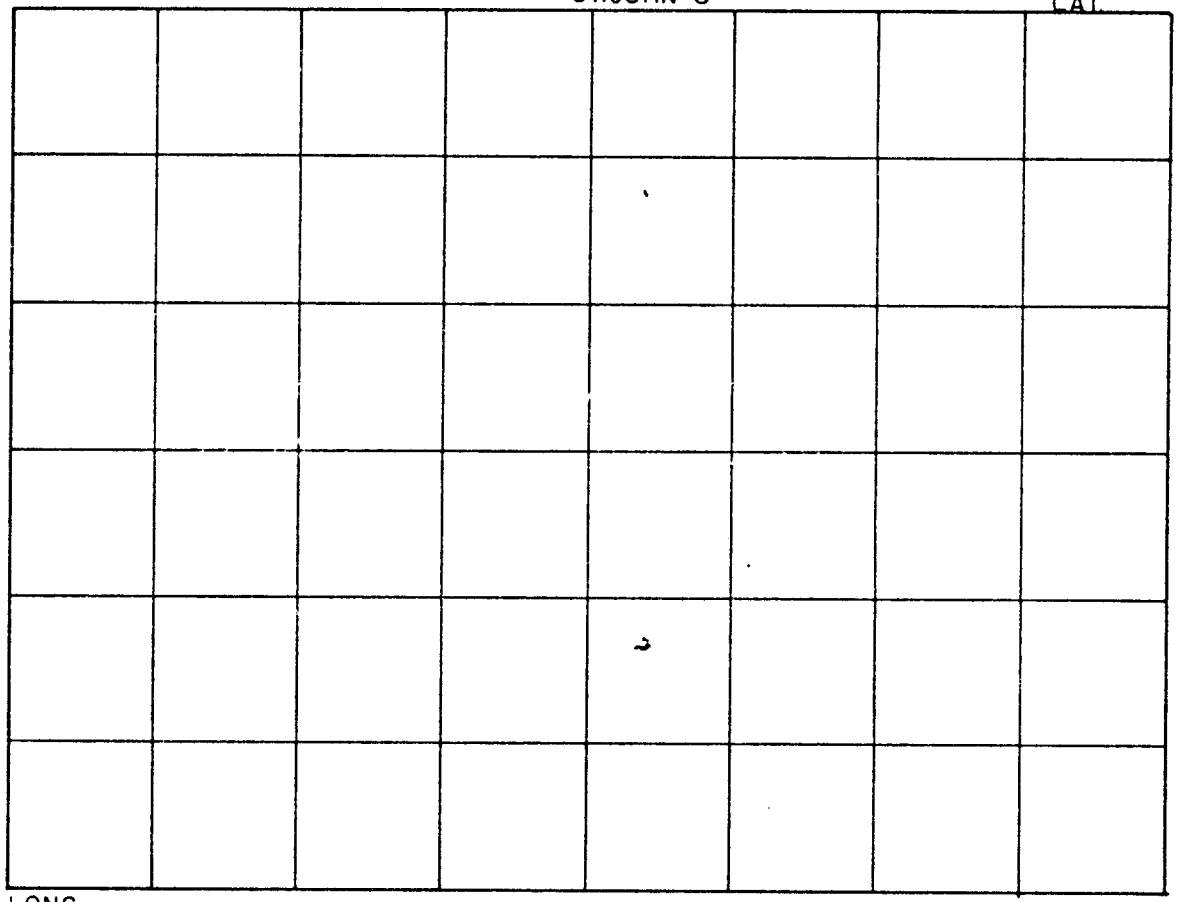
BOTTOM				
NUMBER OF DAYS SET				
NOON MET OBS				
TYPE FISHING IN AREA				
NUMBER OF HANDS				
GEAR LOST				
TIME LOST, MECH. FAILURE				
ARRIVAL TIME				
TEMP OF CRAB STORAGE				

EXPERIMENTAL CRAB FISHING REPORT 2A
INDUSTRIAL DEVELOPMENT BRANCH

STATION NO._____

ST.JOHN'S

LAT.



LONG.

DATE	CATCH	COMMERCIAL SIZE	NO. OF TRAPS	AVE. WEIGHT	BOTTOM	REMARKS

MASTERS REPORT FORM NO. 3 IDB ST JOHN'S, NFLD. . 20

DATE	NAME OF PORT DEPARTURE	EST. DISTANCE TO THE FISHING GROUNDS	CHARTED POSITION	NO POTS SET	NO POTS CLEARED	HOURS AT SEA	NAME OF PORT ARRIVAL	REMARKS

REPORTING FORM NO 5 IDB ST JOHN'S, NFLD

DATE	
AREA	
STATION NO	
TRIP NO	
SET NO	
TOTAL NO OF TRAPS USED	
TYPE OF TRAP	
NO OF TRAP	
DEPTH OF SET	
SURFACE TRAP	
BOTTOM TRAP	
TYPE BOTTOM	
DURATION OF SET	
TYPE BAIT USED	
DISTANCE OF TRAWLED TRAWL	
MESH SIZE ON TRAP	

REMARKS

CARAPACE WIDTH (M/M)	NO OF CRABS IN TRAP
40 – 44	
45 – 49	
50 – 54	
55 – 59	
60 – 64	
65 – 69	
70 – 74	
75 – 79	
80 – 84	
85 – 89	
90 – 94	
95 – 99	
100 – 104	
105 – 109	
110 – 114	
115 – 119	
120 – 124	
125 – 129	
130 – 134	
135 – 139	
140 – 144	
145 – 149	
150 – 154	
155 – 159	
160 – 164	
165 – 169	
170 – 174	
175 – 179	
180 – 184	

DEPARTMENT OF FISHERIES OF CANADA

INDUSTRIAL DEVELOPMENT SERVICE

DAILY PROJECT REPORT

Project_____ Number_____

Province_____ Author_____

Location_____ Date_____

Activities for the Day:

General Comments:

EXPLORATORY DRILLING PROGRAM 1970 - AREA OF OPERATIONS OF EXPLORATION VESSEL "DONNA [illegible]