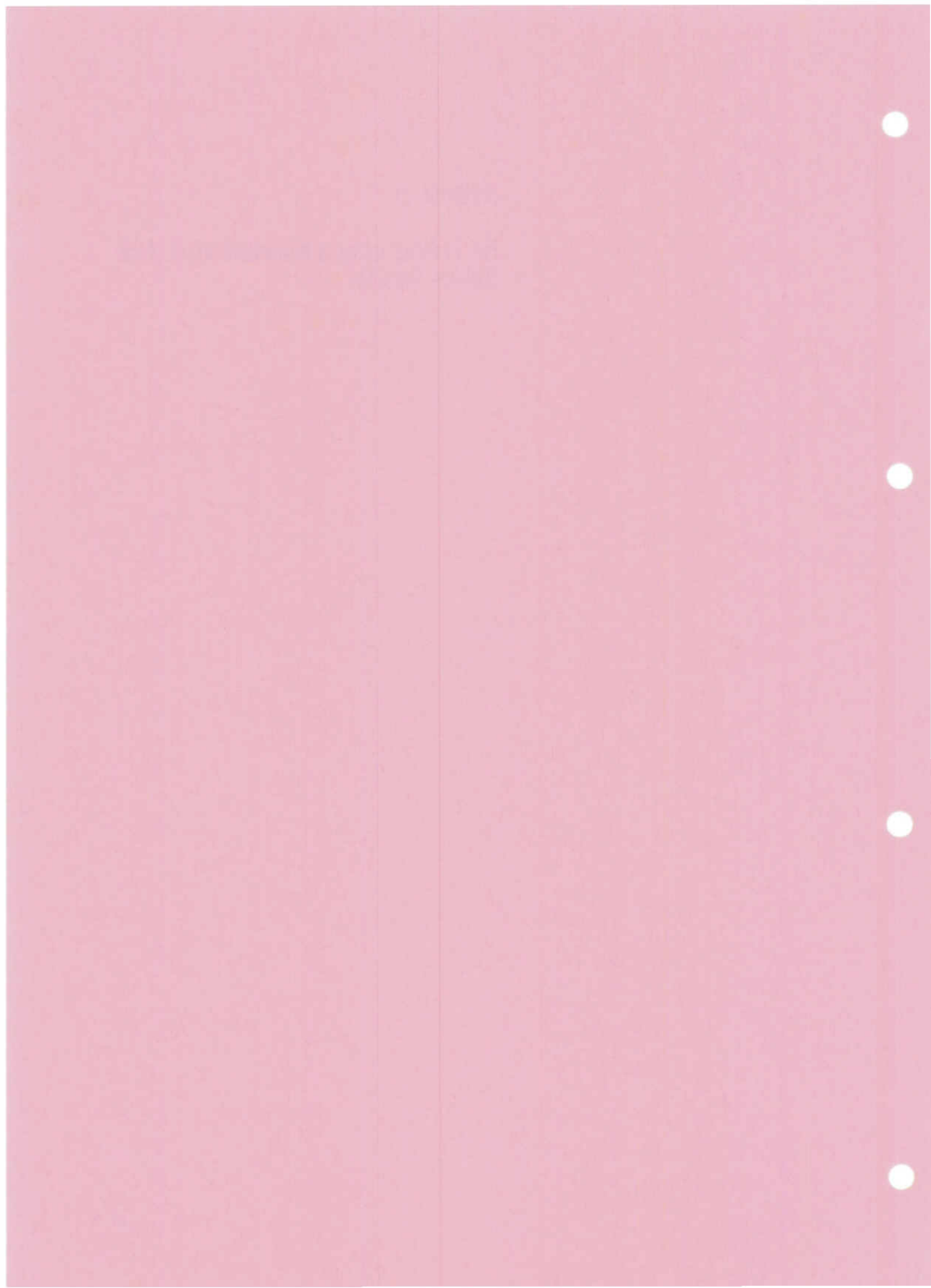


## APPENDIX 13

Pot Fishing using a Motorised Winch from  
Inshore Vessels.



TECHNICAL CO-OPERATION ATN/5F-2474-BA  
INSTITUTIONAL STRENGTHENING OF THE FISHERIES DIVISION  
OF THE MINISTRY OF AGRICULTURE, FOOD AND FISHERIES,  
BARBADOS

POT FISHING USING A MOTORISED  
WINCH FROM INSHORE VESSELS



## POT FISHING USING A MOTORISED WINCH FROM INSHORE VESSELS

### INTRODUCTION

Barbados has a limited continental shelf, this limits the area available for demersal fish stock production. Currently these stocks are heavily exploited within a depth range of "visibility" (where the fishermen can set his fish pot on the sea bed and yet still see it from his vessel) typically a maximum depth of 20 to 22 metres. A relatively few fishermen set their pots in deeper water in which case a "Pot Marker" is used in order to relocate the fish pots at a later date. Using "Pot Markers" for example, a surface buoy, unfortunately allows any passing vessel to observe the fish pots location. Fishermen prefer their particular fishing spot to be secret, additionally they maintain that their fish pots are emptied of fish, replaced out of position and sometimes stolen. Fishermen are therefore reluctant to fish with their pots marked. The consequence of this is that the deeper water banks (over a depth of 22 metres) are not as intensively fished as the shallower banks.

A further constraint to deep water fishing is the sheer physical effort required to haul a fish pot, by hand, from deep water. Sometimes two or three men are required.

The expert devised a workplan to address the two main problems facing the pot fishermen who wished to fish in deeper waters:-

- 1) To minimise interference by third parties
- 2) To reduce the physical effort required.

In addition to the above workplan the Division's marine biologist had planned a survey of the "Snapper" and "Grouper" stocks using fish pots.

This report is a brief introduction to the exercise since the Fisheries Division Marine Biologist is continuing with the work and will be reporting in detail in due course.



## ACTIVITIES

The implementation of the plans involved most of the Fisheries Division's staff of officers; the two master fisherman counterparts, the marine biologist and his associate, the fish processors counterpart and the marketing counterpart plus the Division's labourer/boatswain. The activities were overseen by the Chief First Officer and his deputy, Mr R Jones.

The expert fabricated a motorised winch and davit (Fig I and II) and fitted them to the Divisions vessel, "Diadema". Twelve fish pots of three designs:-

- i) rectangular, with one entrance
- ii) arrowhead, with one entrance
- iii) Zed, with two entrances (Fig III)

were made for the project. These fish pots were deployed in pre-selected locations in depths between 22 metres and 320 metres (Fig IV). Initially the pots were marked with surface buoys, bearing the legend "Fisheries Division" in order to ascertain the level of third party interference. During the first three months of the project five fish pots were stolen or removed, showing beyond doubt that interference is a major constraint. On numerous other occasions fish pots were illegally emptied of the catch (typical catch as in Fig V) after which the fishpots were replaced out of position.

To overcome these problems a device named a "pop-up" was evaluated (Fig VI Timed Float Release). These "pop-ups" proved to work well and it is planned to demonstrate the "pop-ups" at the next Oistins fish festival for maximum coverage.

The mechanical hauler (Fig I) enabled fish pots to be hauled, with little effort, from all depths up to the maximum tested, 320 metres.

The mechanical hauler has been demonstrated to a number of fishermen. Several fishermen are now in the process of obtaining fish pot haulers for their own vessels.





As an information guide to the industry preliminary results indicate a rich resource of larger fish and lobsters in the depth range (off the west coast) 50 to 120 metres. These catches are illustrated in the photographs in Fig V and Fig VII.

The fish pot design which proved to be most effective was the "Zed" design (Fig VIII), fitted with two entrances.

The exploratory pot-fishing in the depth range 220 to 320 metres produced relatively poor catches of fish, with a few small crabs, Conger eels, Moray eels and Brotulus fish.

In addition to the traditional fish pot, a second pot was worked tied 20 metres from the main pot. This second pot (Fig VIII) was a North American lobster pot, constructed of plastic and covered over with shrimp netting. Shrimp were caught, a count of twenty shrimp being a maximum for a three day soak. A large number of shells were also caught. These shells included valuable (to collectors) rare shells:- a very rare <sup>1</sup> Oocorys barbouri; the Slit Shell Perotrochus guoyanus; Lischkeia imperivalis; Murex beui; Murex cailletti; Xenophora caribare, Bursa and Polystira species were also among the collection.

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<sup>1</sup> Mr David Hunte, celebrated shell expert from Barbados, WI.  
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FIG 1

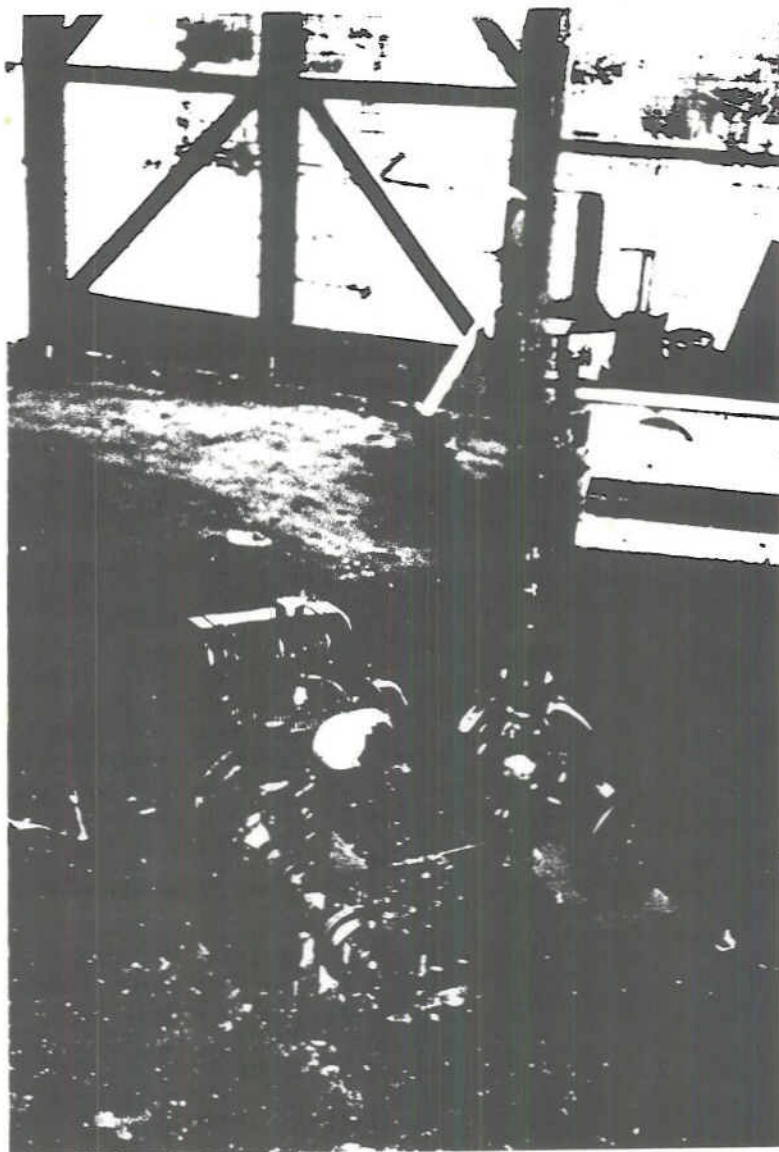


FIG II

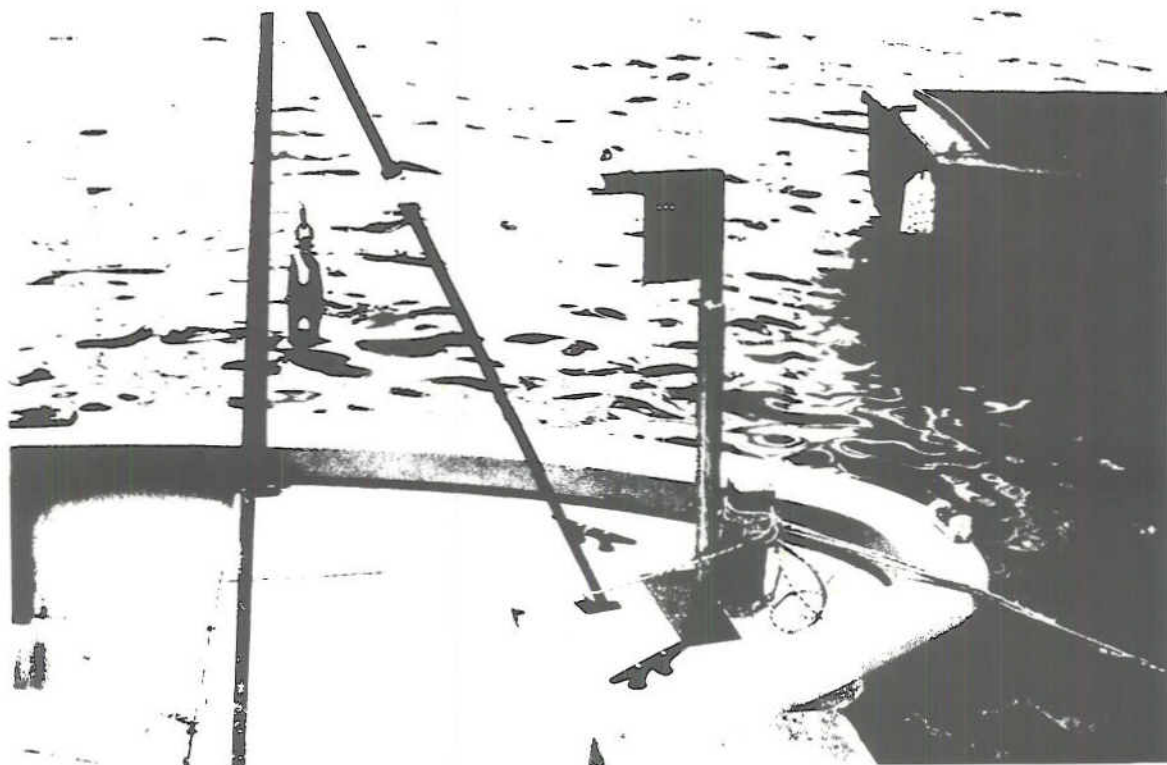




FIG III

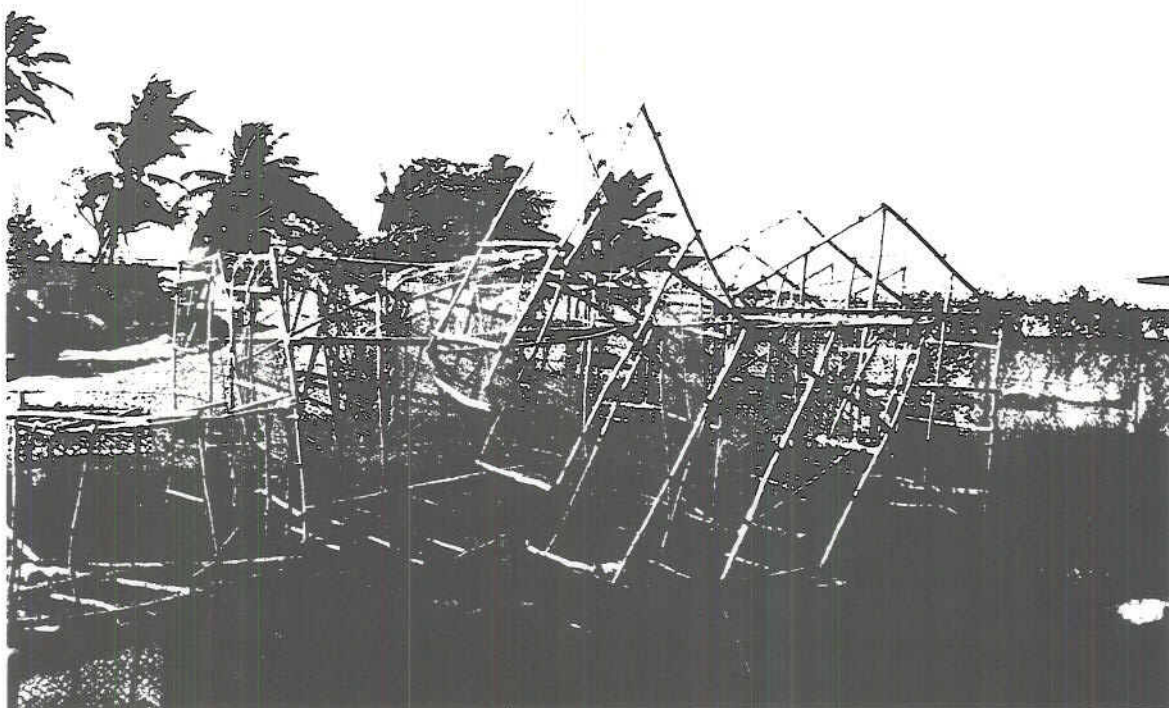
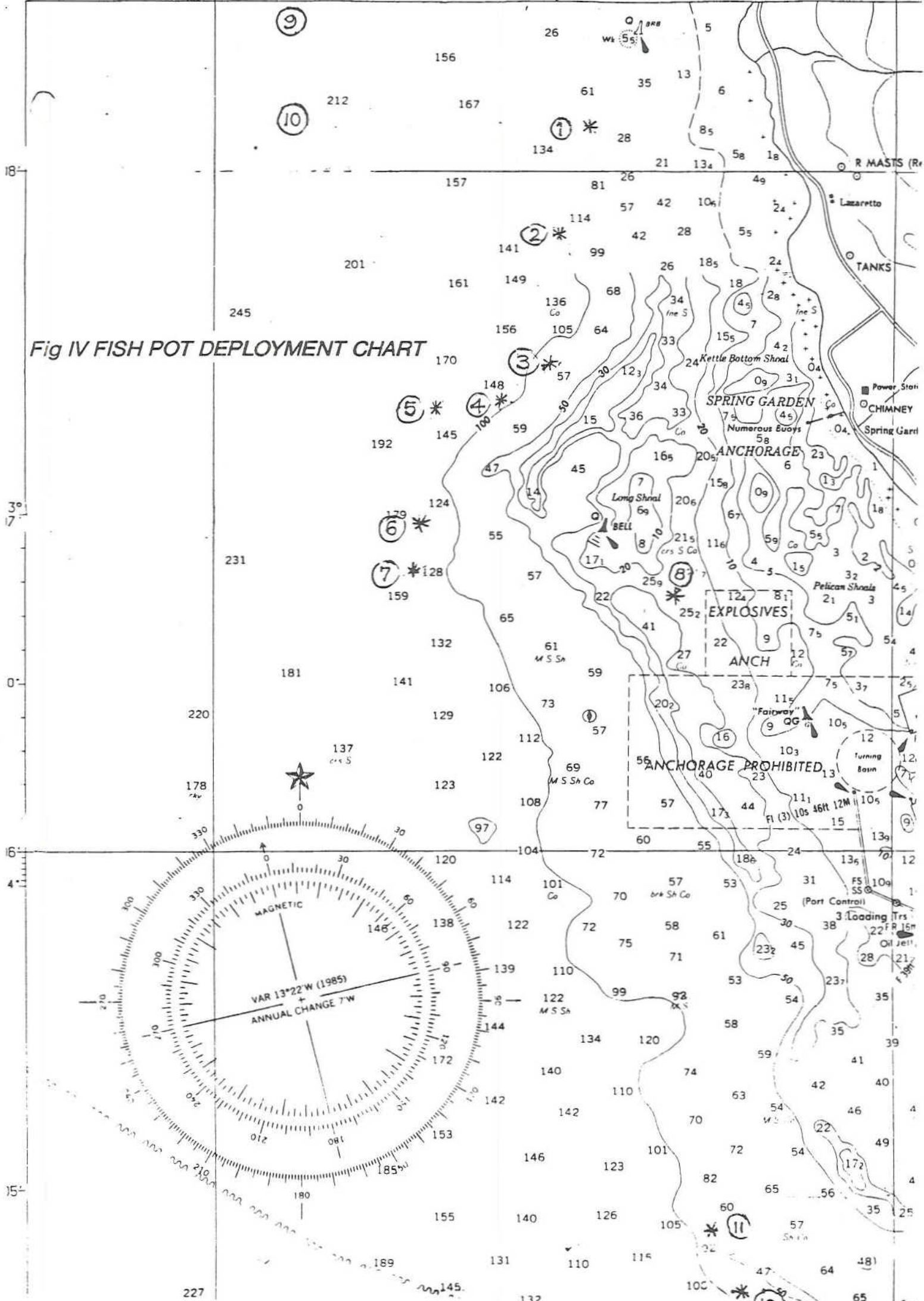






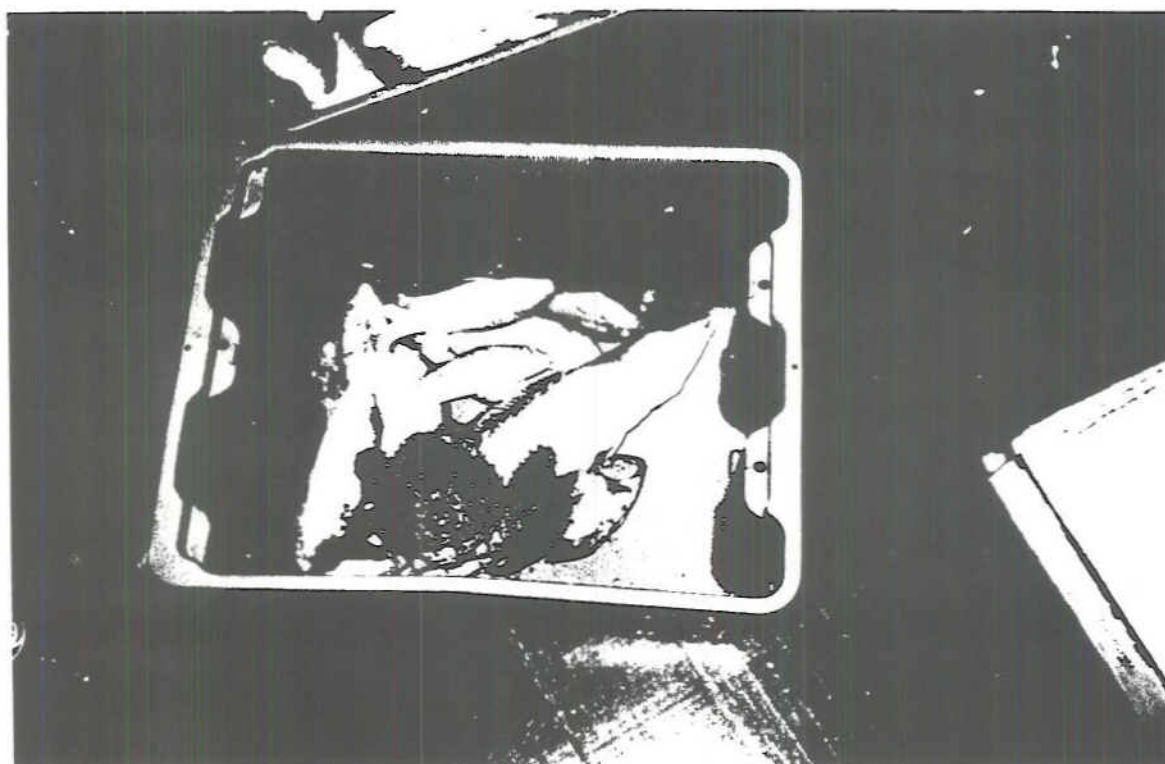
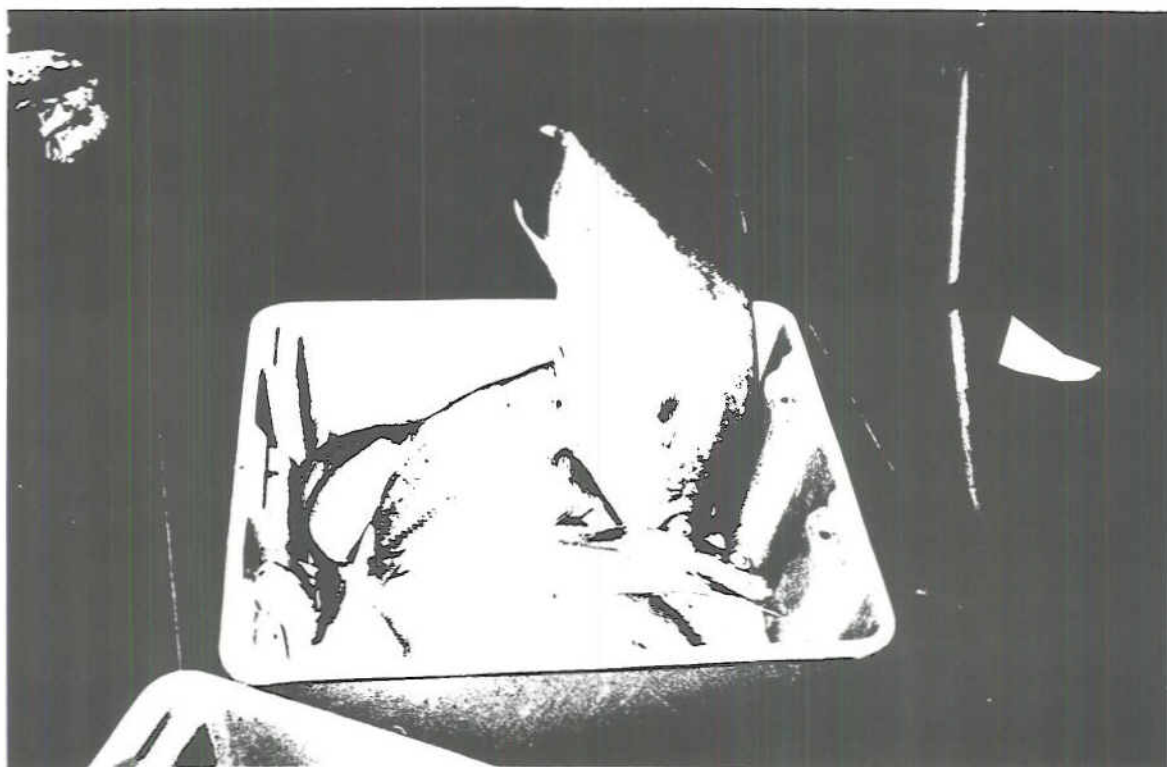
Fig IV FISH POT DEPLOYMENT CHART







FIG's V



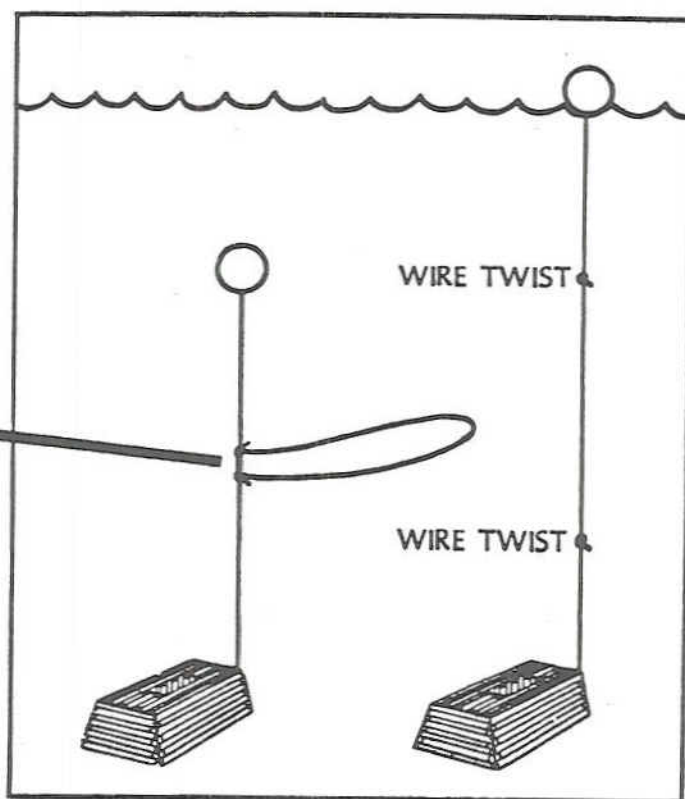
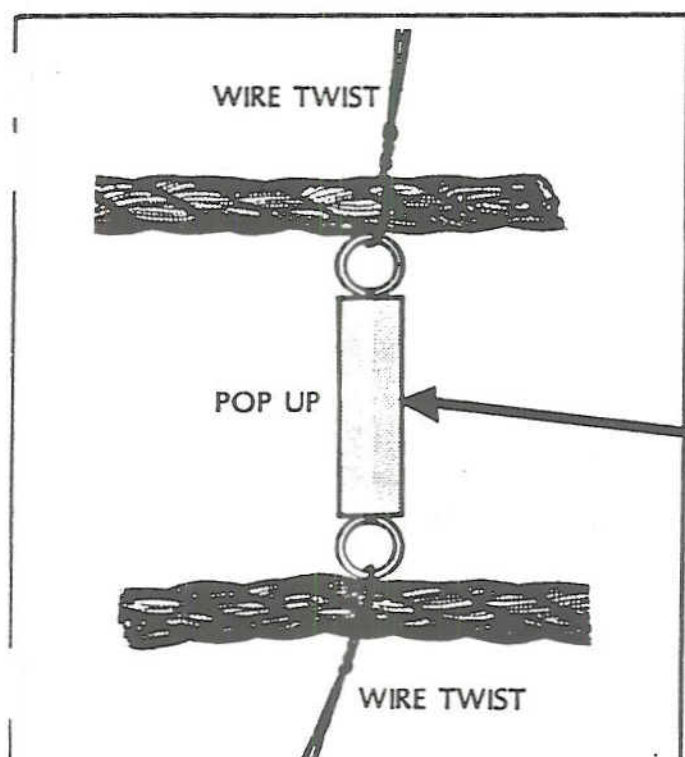


# POP-UPS

FIGURE VI

## TIMED FLOAT RELEASES FOR YOUR TRAPS

Pop-Ups guard against poaching, theft of your traps, and cut-off floats by keeping your floats under water for a preset period of time, then releasing them in time for you to pull in your traps. The small, metal Pop-Ups react with SALT WATER by corroding after the prescribed period of time. After they corrode (or disintegrate), the float that was previously being held under water is allowed to float to the surface. For example: The 3 Day Size gives you 3 Days of protection and 3 fishing nights. If you work your traps on Monday and set the floats under the Pop-Ups, the traps will be out of sight until Thursday morning. (The Pop-Ups will break during Wednesday night, releasing the floats).



### WIRE TWISTS

Pop-Ups are easily attached to the float lines with inexpensive Plastic (PVC) Coated Wire Twists. The Twists come in 5" lengths in packages of 100 (enough for 50 traps). It requires two Twists per trap. They are easy to use even when wearing gloves, and usually last for a complete fishing season.

PRICE PER PACKAGE OF 100.....\$ 7.00

AVAILABLE IN 7 DIFFERENT SIZES

SIZE	COST PER DAY OF PROTECTION	50 PER PKG. PRICE/ PKG.
1 Day	37¢ each	\$ 18.50
2 Day	20¢ each	\$ 19.95
3 Day	15¢ each	\$ 22.50
5 Day	10¢ each	\$ 25.50
7 Day	8¢ each	\$ 27.95
10 Day	7¢ each	\$ 34.00
14 Day	6¢ each	\$ 41.25







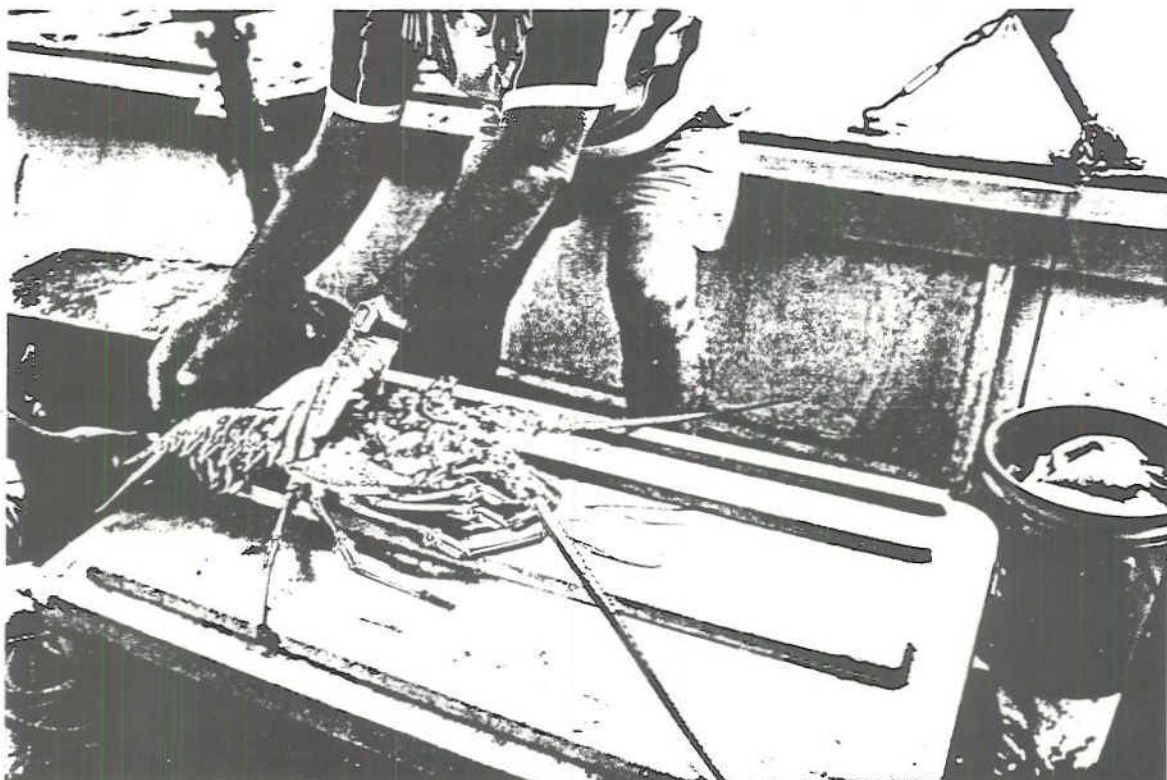
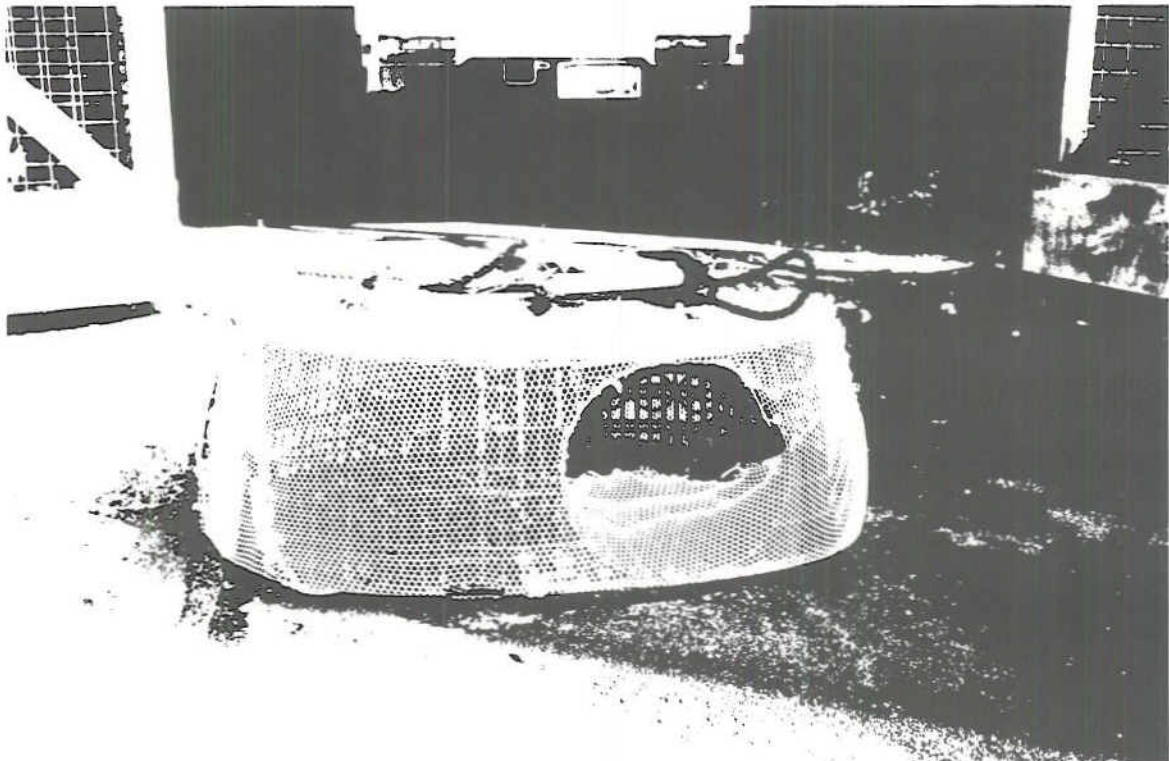


FIG VII





FIG VIII



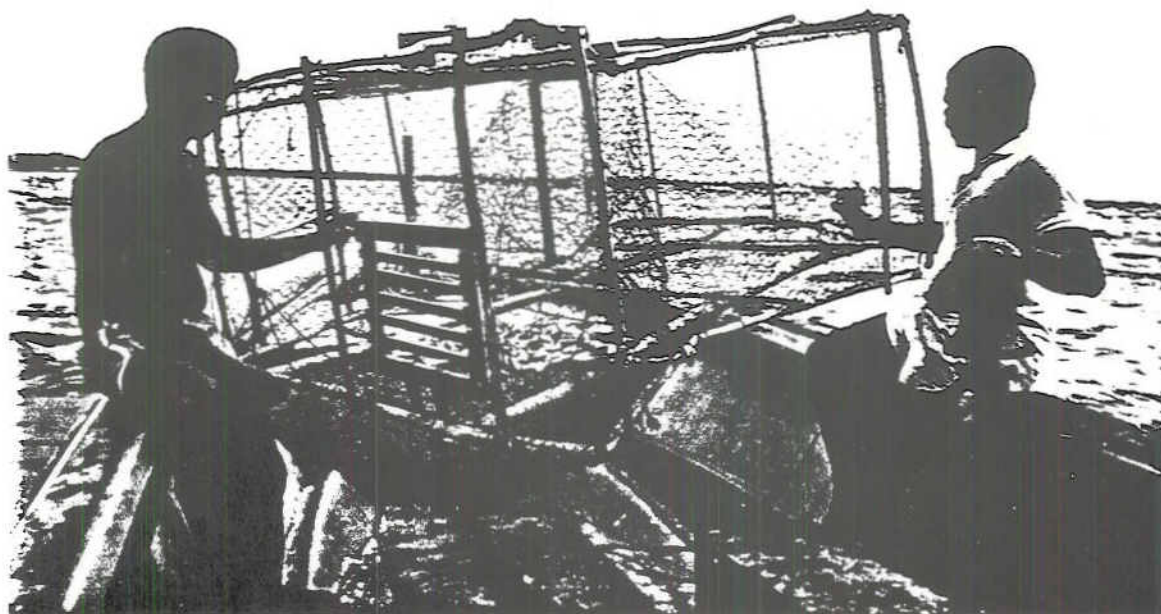






BOARDING A FISH POT

IX



USED FISH POT SHOWING EXPERIMENTAL "BIODEGRADABLE" DOOR



## APPENDIX 14

Experiments with Prototype FAD'S moored  
off Barbados, West Indies.



TECHNICAL CO-OPERATION ATN/5F-2474-BA  
INSTITUTIONAL STRENGTHENING OF THE FISHERIES DIVISION  
OF THE MINISTRY OF AGRICULTURE, FOOD AND FISHERIES,  
BARBADOS

EXPERIMENTS WITH PROTOTYPE FAD'S  
MOORED OFF BARBADOS, WEST INDIES



## EXPERIMENTS WITH PROTOTYPE FAD's MOORED OFF BARBADOS, WEST INDIES

### INTRODUCTION

"Fish Aggregating Devices" (FAD's) are a well established method for improving fishing conditions in the sea areas similar to that found around Barbados.

The masterfisherman decided to conduct a Pilot project in order to ascertain the viability of a FAD project and to establish if such a project could be recommended for a future Fisheries Division "extension work with the industry" programme.

### ACTIVITIES

FAD buoys were constructed out of locally available inexpensive materials (Fig 1 and 2). The first buoy was anchored in a water depth of 540 metres, six miles west of the deep water harbour of Bridgetown (see chart). A surface floating, "screeler" (local FAD of Bamboo and coconut fronds) was tied close to the buoy and, in addition, a subsurface FAD was suspended from the buoy (see Fig 3), this subsurface device was 20 metres deep and contained coconut fronds and old trawl net pieces at various intervals. The FAD was then left (28 November 1989) to have time to build up a marine colony. In fact, a reliable fisherman reported catching a 38 lb Dorado at the FAD within two days of deployment. The expert and his counterpart continued to monitor the FAD at regular intervals. Early results included spawn from flying fish gathered from the surface "screeler". This spawn was later hatched at "Bellairs Research Institute" and the young fish released into the sea.

In the first few weeks of the FAD's deployment other fishing boats were observed fishing in close proximity to the device. One fisherman reported catches of Kingfish and Dorado and other skippers were thought to have caught fish but these fishermen did not report in. The marine biologist has planned a coastal survey of vessels in order to collect information from vessels fishing near the FAD.





A pair of trolling booms were fitted to "Diadema" and fishing trips were made around the FAD. These fishing activities consisted of circumnavigating the buoy and trolling with spoon baits. The first trip resulted in a catch of four Kingfish. The fish ceased to "bite" as soon as the sun rose clear of the horizon, eg fish catches were accomplished between 0600 (sunrise) to 0730, after which there were no "bites". (Very bad weather for the whole month of January has hampered fishing activities.)

Large numbers of flying fish have been observed close to the FAD, in addition, five other species of ocean fish were also observed, these were below the main buoy, at the subsurface screeler.

#### COMMENT

An early problem that occurred was a broken bamboo used to raise the Radar reflector and flashing light unit. The damage appeared to have been the result of fatigue caused by the constant rolling action of the sea. The buoy has been re-designed (Fig 1 and 2) with a much lower Radar reflector and light.

#### OBSERVATION

Whilst it is still very early days for this project initial indications are promising. However a lot of data is required in order to properly evaluate such a system. In view of the experts impending departure a workplan has been drafted to cover the years 1990 to 1991 and 1991 to 1992. This workplan includes monitoring the FAD project, working in association with the Division's marine biologist.



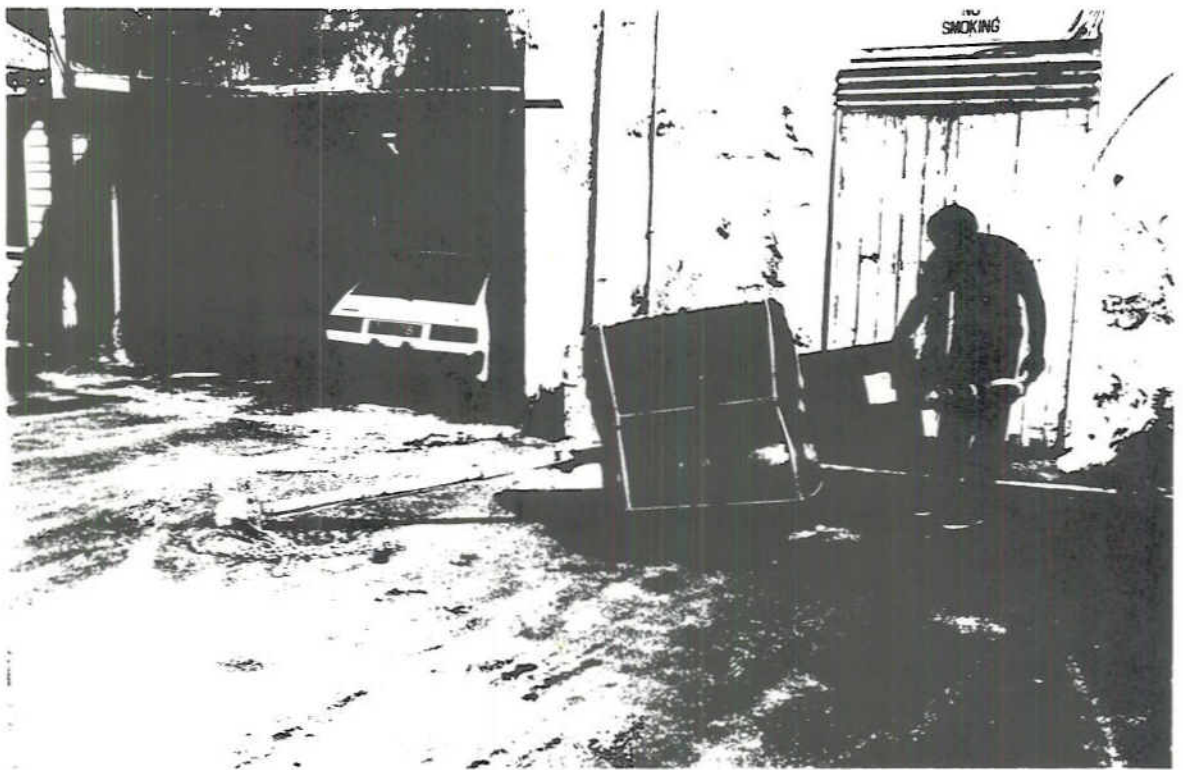


FIG 1

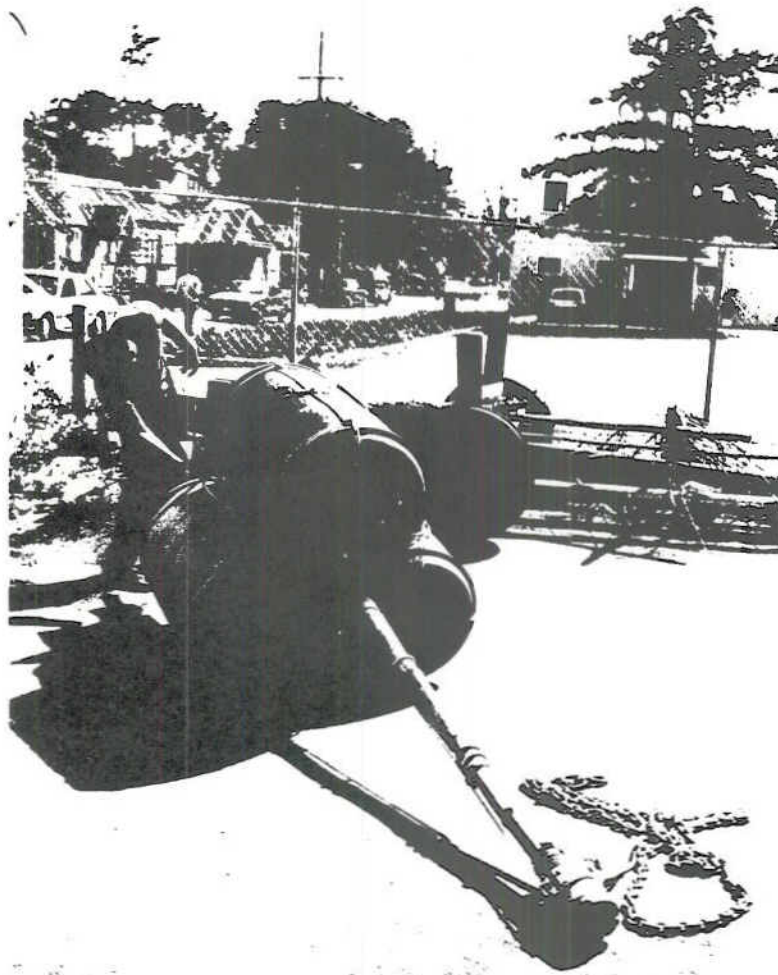
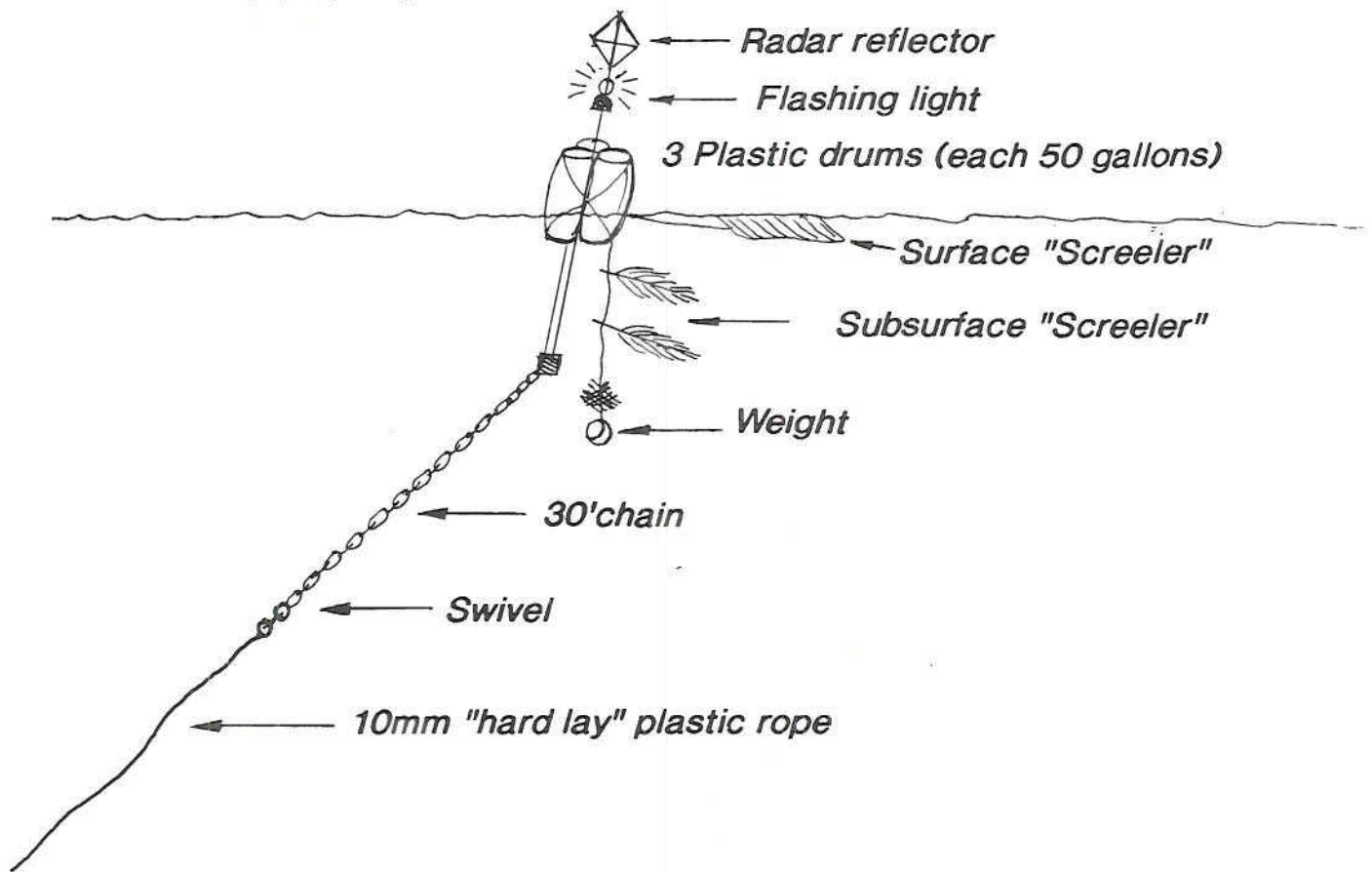


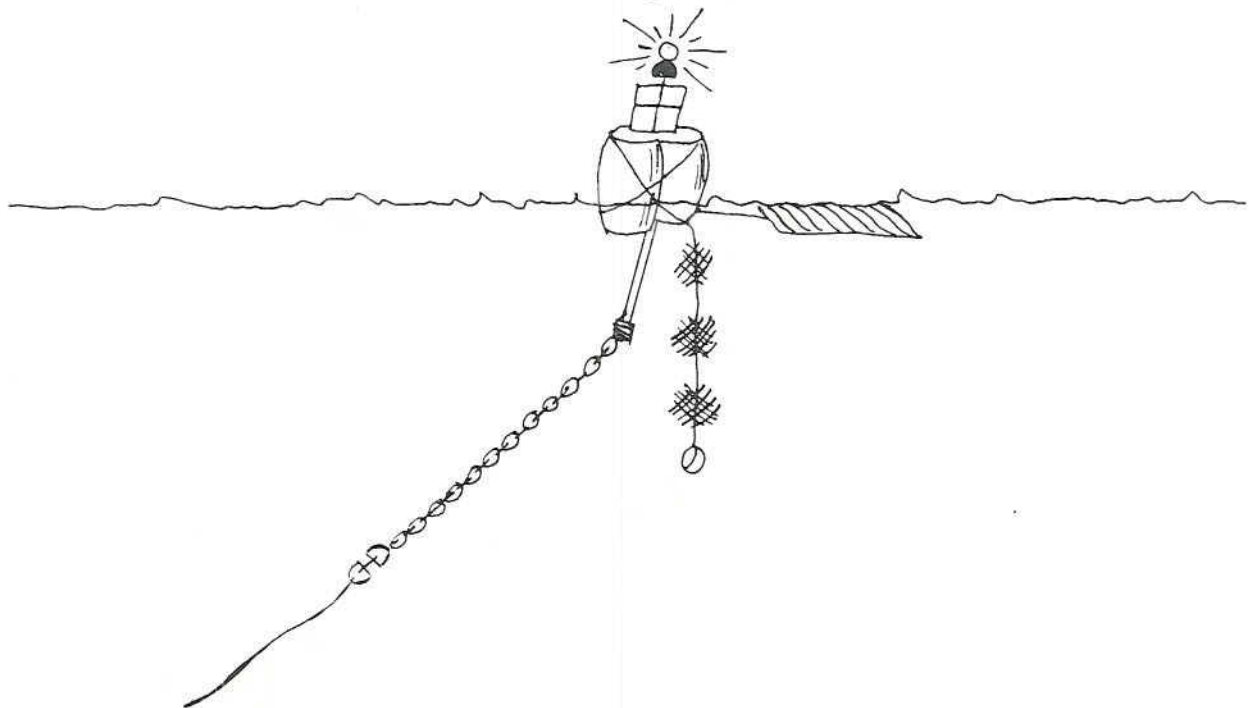
FIG 2



**INITIAL BUOY (FAD)**



**SECOND, RE-DESIGNED BUOY (as Fig. 1 & 2)**



**Fig. 3**





VAR 13°20'W (1985)  
+  
ANNUAL CHANGE 7'W

