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APPENDIX

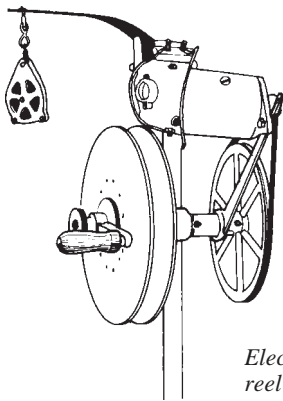
***OTHER DEEP-BOTTOM  
FISHING METHODS***

Apart from the standard line-fishing technique described in this manual, there are a number of other ways of capturing deep-bottom fish. Some are well-established and successful, while others are not very widespread. Many experiments have been carried out to develop new deep-bottom fishing methods, some of which have been successful, others less so.

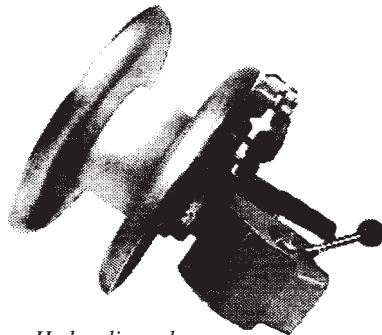
## Electric and hydraulic reels

One obvious way to increase the vessel's fishing power is to mechanise the fishing operation. This can be done using electrically- or hydraulically-powered reels to haul the lines, rather than relying on muscle power. A range of styles and models are available, including true reels (which store the line, as well as hauling it) and line pullers (which haul the line, but do not store it).

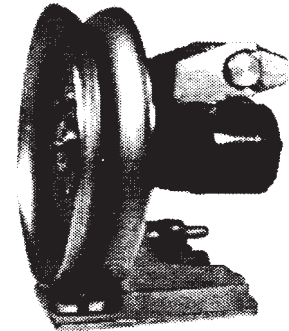
*Mechanised deep-bottom fishing reels*



*Electric reel*



*Hydraulic reel*

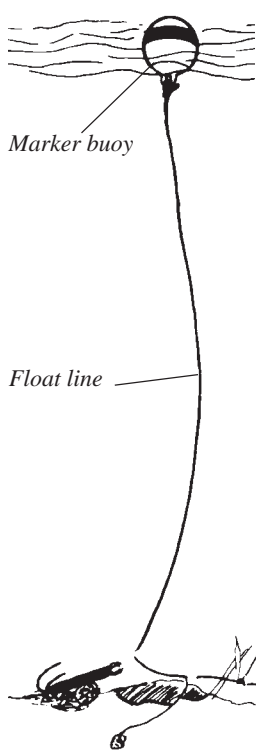


*Hydraulic line puller*

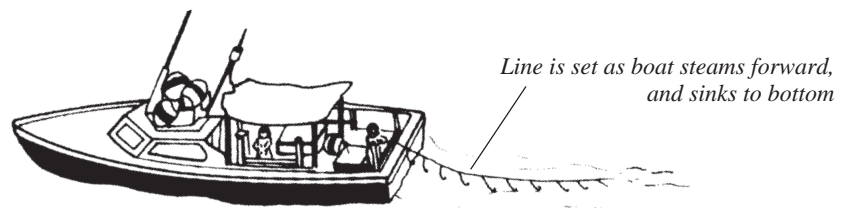
The use of mechanised hauling systems obviously requires that the vessel be suitably equipped with an electric or hydraulic power system. The reels are relatively costly – between US\$ 500 and 1,000 depending on the model – but they greatly increase fishing efficiency, and in some cases allow a single fisherman to operate more than one fishing line.

## Bottom longlines

An alternative way to increase fishing power is to have more baited hooks in the water at any one time so that more fish can be caught. Bottom longlines work on this principle.



A basic bottom longline consists of a mainline which may be tens or hundreds of metres long, and which has baited hooks attached to short traces at regular intervals along its length. The ends of the longline are normally weighted or anchored, and at least one end has a retrieval line running to the surface.



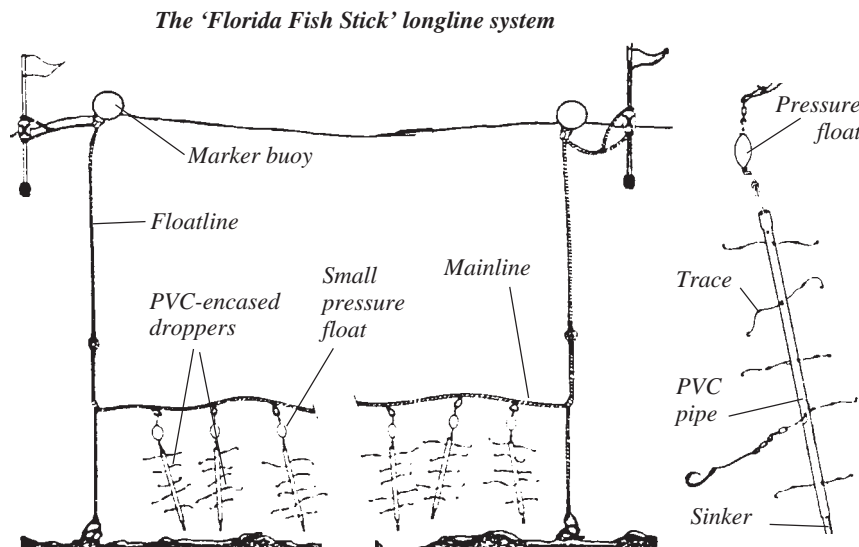
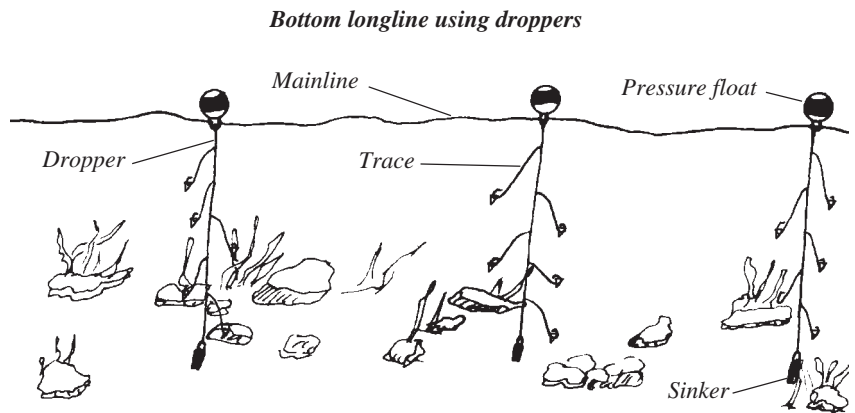
The line is usually set from a moving boat and then buoyed off until the time comes to haul it in. The float is set first, followed by the floatline, the anchor, the mainline, another anchor, and then another floatline and float. The line can be hauled from either end depending on weather and other fishing conditions.



In the most simple type of longline, the hooks simply lie along the sea floor. In deep-bottom fishing, this can lead to hooks becoming caught on rough or rocky ground, resulting in heavy gear losses. In addition, many deep-bottom fish actually feed just above the sea floor and are reluctant to take bait that is lying on the bottom. As a result, various methods are used to raise the baited hooks a little way above the sea floor.

One way to do this is to attach floats at various points along the mainline so that the entire mainline is lifted off the bottom. The disadvantage with this is that the mainline, or parts of it, may be lifted **too** high, so that it is several metres above the seafloor.

A better way is to replace the traces along the mainline with 'droppers' instead of simple traces. A dropper is very much like a deep-bottom fishing terminal rig. It consists of a length of monofilament or cable with several attachment points for traces, a sinker at one end and a small pressure-resistant float at the other. When the longline is set, each dropper stands vertically on the sea floor as in standard deep-bottom fishing.



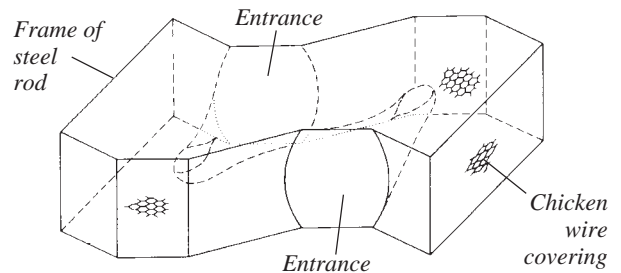
A further development on this system was the 'Florida Fish Stick' longline system. In this method the dropper was encased inside a rigid PVC tube with holes cut at intervals along the side so that the traces could protrude through. The purpose of the system was to avoid the extensive tangling of the droppers which occurs from the movements of the hooked fish while the longline is still on the bottom. However the system caused as many problems as it solved as the PVC-encased droppers were costly, easily broken, and very difficult to handle on the boat.

The Florida Fish Stick system has now been essentially abandoned as a deep-bottom fishing method, although curious fishermen still experiment with it occasionally.

## Traps

Numerous experiments have been carried out throughout the Pacific to capture deep-water snappers by trapping. This is based on reports of a successful trap fishery for these species in the Caribbean. Most trials have used Caribbean-style 'Z-traps' made of a frame of steel reinforcing rod covered with galvanised chicken wire or similar mesh. The traps are usually about 1.8 m long by 1.2 m wide by 50 cm high.

*Caribbean-style 'Z-trap'*



Predictably, the difficulties of stowing, manoeuvring and especially hauling these heavy, bulky traps aboard small fishing vessels, combined with generally low catch rates and a high incidence of trap loss or damage, has meant that they have never been successfully adopted as a commercial fishing method in the Pacific. Although still the subject of occasional trials or experiments, Z-traps are now generally regarded as unsuitable for deep-bottom fishing in the Pacific

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*Secretariat of the Pacific Community  
Coastal Fisheries Programme - Capture Section  
B. P. D5, 98848 Noumea Cedex  
New Caledonia*

*Phone: +687 262000  
Fax: +687 263818  
E-mail: [Capture@spc.org.nc](mailto:Capture@spc.org.nc)  
Web site: <http://www.spc.org.nc>*