

3. IND-20: FRP BEACHLANDING CRAFT, 8.5 m WITH 9 hp DIESEL WATERCOOLED ENGINE

3.1 Fishing trials

The modified IND-20 with a 9 hp watercooled diesel engine (Figure 3, see facing page) was operated partly from Vizhinjam harbour and partly from Poonthura village. Several fishing gear were **tried** (see table below). Large mesh driftnets were operated during June 1989- February 1990 while small mesh driftnets were used during the period March-August 1990. The driftnets were usually set once a night. Drift longlines and bottom longlines were only used for a few trials. Trolling lines were operated throughout the daylight period to and from the fishing ground.

Fishing gear

<i>Twine size (denier)</i>	<i>Stretched mesh size (mm)</i>	<i>Hook per piece (No.)</i>	<i>Hung length per piece (m)</i>	<i>Cost per piece (Rs)</i>	<i>Pieces (No)</i>	<i>Total length (m)</i>	<i>Total cost (Rs)</i>
Large mesh driftnet							
21od18	110		60	3700	3	180	11,100
21od18	120		66	3600	7	469	25,200
21od18	140		77	3500	7	539	24,500
							60,800
Small mesh driftnet							
21od9	80		104	3500	15	1560	52,500
Trolling line (Multi hooks/lines)							
		10	100	100	2	100	200
Drift longline							
		5	150	1100	20	3000	22,000
Bottom longline							
		300	350	1070	3	1050	3,210
TOTAL COST (Rs)							138,710

Initially, the target species for the IND-20 were, primarily, the larger tuna, shark and billfish species further offshore. The fishing area was 20-30 nautical miles out from Vizhinjam.

The boat would leave for fishing about 13.00 hours and return the next morning at about 09.00 hours. With an average speed of 5.5 knots, it took 4-6 hours to reach the fishing area. The engine was used for about 10- 11 hours on each trip and the fuel consumption was about 20 litres of diesel. The crew was normally four persons.

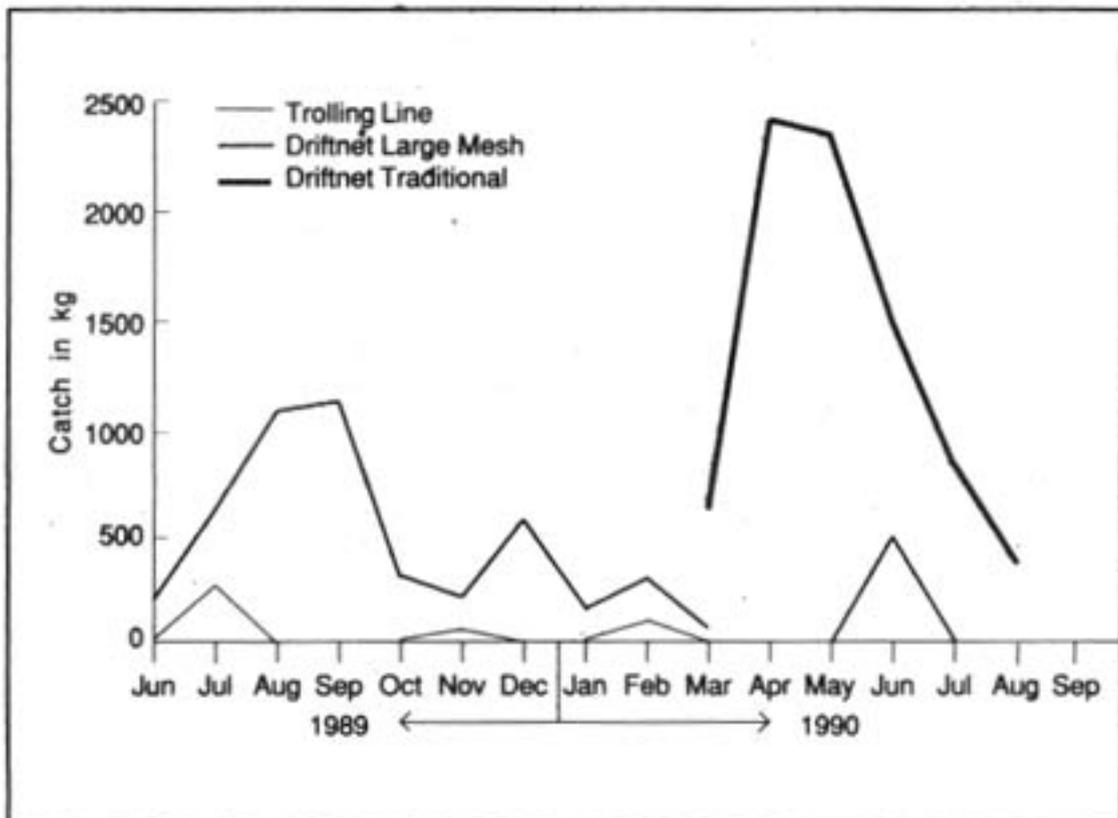
The operational data of the IND-20 over a one-year period shows that there were 247 fishing days. The reasons for not fishing on the remaining days were:

Holidays	61
Engine problems	29
Rough weather	13
Mending of fishing gear	6
Other reasons	9
TOTAL NON-FISHING DAYS	118



The IND-20, 8.5 m with 9 hp diesel water-cooled engine

Fig. 4. IND -20 : Monthly catch record by type of fishing gear



3.2 Catch

The record of the catch by type of fishing gear is shown in Figure 4.

The catch with large mesh driftnet in the offshore area was very low (Figure 4, see facing page). During the nine-month period, 155 trips were made and average catch of 30 kg/trip was recorded, which is clearly insufficient for economic viability. A few trials were made with pelagic drift longline for shark, using 20 baskets each of 150 m and 5 hooks. The results were very poor. The use of the bottomset longline of 1000 m with 350 hooks proved to be difficult, due to interference by large trawlers operating at depths ranging from 100 to 250 m and at a distance of 25-30 nautical miles from shore. The fishing area was, therefore, changed in March 1990 to 10-15 nautical miles inshore. The fishing gear too was changed to small mesh driftnets. During the six month period March - August 1990 the average catch per trip increased to 66 kg/trip. The total length of net utilized, however, was about 1200 m and this proved to be difficult to supervise. Several cases of stealing of fish from the net were reported.

As a result of these trials it was concluded that the offshore trials with the IND-20 were negative, the main reason seeming to be the poor availability of large pelagic species within the range of operation of IND-20 because of the width of the continental shelf. Whereas a depth of 200 m is reached 30 nautical miles from Vizhinjam, this depth is reached about 20 nautical miles from the shore on the east coast of India, where IND-20 operates successfully with large mesh driftnets and drift longlines for large pelagic species.

3.3 Cost of construction

The following cost of the IND-20 is based on the price of the craft as delivered from the Andhra Pradesh Fisheries Corporation Boatyard in Kakinada on the east coast:

	Rs
Hull	72,000
Engine 9 hp (diesel)	22,000
Engine installation	22,000
Sail rig	2000
TOTAL	118,000
Fishing Gear (large mesh driftnets)	60,000
TOTAL INVESTMENT	178,000

The low catches obtained with large mesh driftnets during the fishing trials show that this craft is not economically viable in this part of Kerala. For inshore fishing with small mesh driftnets, the IND-20 is unnecessarily expensive. The same fishing results can be produced with cheaper craft.

3.4 Engine and speed performance

The IND-20 has a 9 hp watercooled diesel engine with a liftable propeller and rudder and the engine fitted in a watertight box. The installation incorporates a reduction gearbox (no neutral and reverse). The method of installation has been proven on the east coast, with few problems experienced with the installation itself.

The problems that occurred on the IND-20 in Kerala were mainly related to a malfunctioning water pump, resulting in overheating and loss of fishing days. The boat lost a total of 29 fishing days due to engine problems in a one-year period. This is about twice as high as on the outboard powered IND-26. Although a diesel engine should basically be more reliable than an outboard kerosene/petrol motor, there have been several quality problems connected with the Indian-made diesel engines which the imported outboard motors do not suffer from.

The speed of the IND-20 is 5.56 knots (while the IND-26 and IND-28 do 7- 7.5 knots). Speed is a very important status factor for the fishermen in Kerala. For this reason alone, it is difficult to introduce this type of IND-20 in Kerala. On the east coast, where there are very few craft with outboard motors, there is no problem in finding acceptance among the fishermen for the slower IND-20.

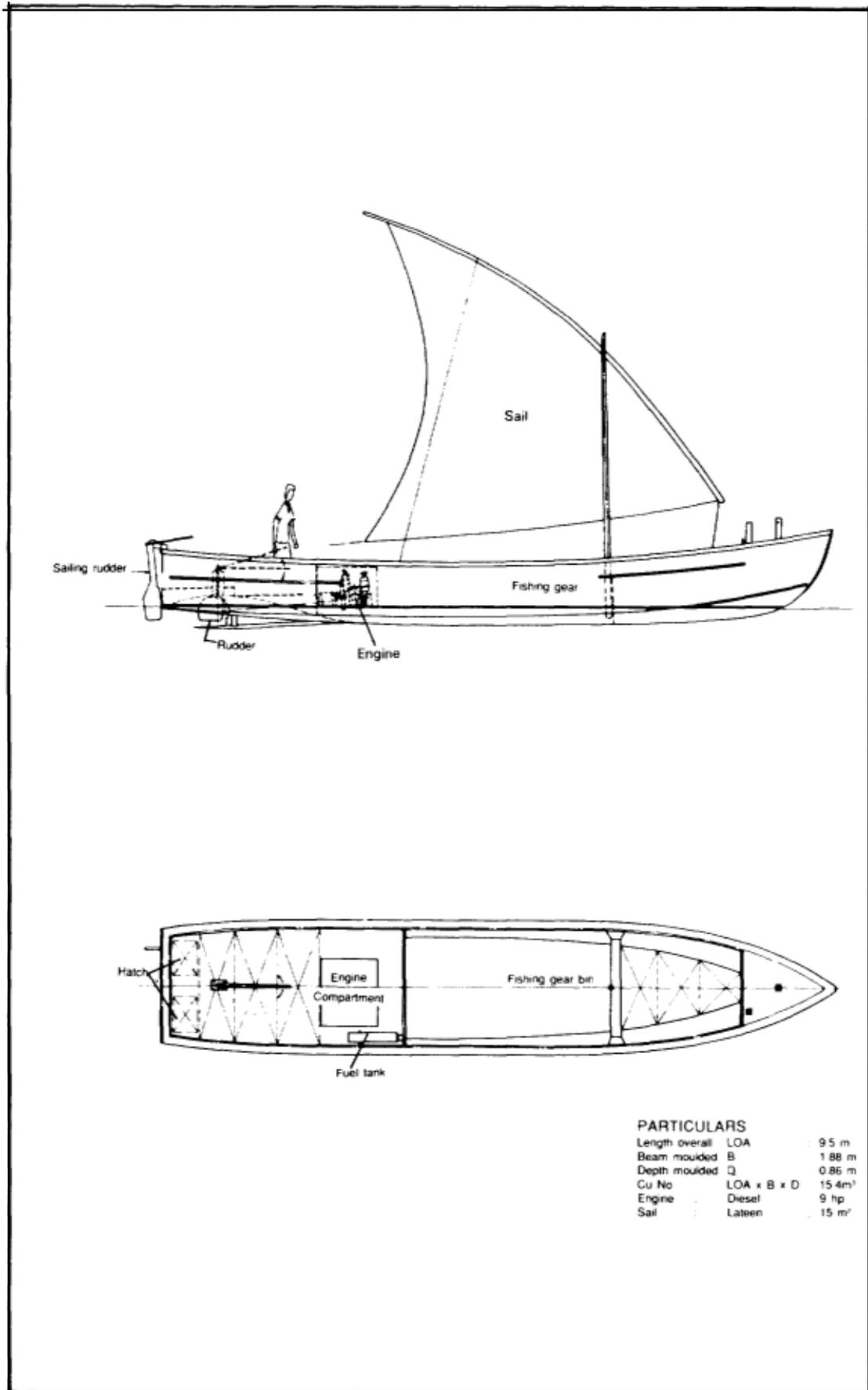


Fig. 5. IND-27: General arrangement