Modern Vietnamese Fishing Junks

With great admiration and respect, this article is dedicated to the brave and industrious fishermen of Vietnam who, for uncounted generations, have plied these temperamental tropic waters in their fragile basket boats, bringing food from the sea to their countrymen in return for a most meager living. The work described in this article was undertaken in the hope that their labors might be more amply rewarded. May the holds of their craft be richly ladened.

THERE are approximately 35,000 fishing junks of the bamboo-bottomed type being used in the coastal waters of Vietnam today. Heretofore, dependent upon the whim of the winds or upon their oars for motive power, the fishermen of Vietnam have been obliged to invest large portions of their time and effort simply in getting their craft to and from the fishing grounds. An even more grievous handicap has been the consequent limitation of their fishing range causing near shore grounds to be grossly overworked and leaving wholly unexploited the larger, richer shoals that lay tantalizingly out of reach.

Today, with junk motorization the Vietnamese fisherman no longer need be tethered to the shore by the calculated range of his luck and the endurance of his oarhands. The oarsmen in turn may now be freed for more rewarding work. There is small wonder that the hard pressed fishermen have responded so enthusiastically to the introduction of a simple, practical method for installing motors in their junks.

THE FISHING JUNKS OF VIETNAM

When considering the variety of fishing craft used throughout the world, one notes literally thousands of types that differ radically in design, length, draft, beam and the manner of construction. To those uninitiated in the ways of the sea, it may appear that such a variety of craft represents the capriciousness of the fishermen and their desire to have something different. This is far from fact. A carefull investigation of each type of fishing vessel reveals that it has been developed to meet local conditions such as seasonal winds, type of wave to be encountered, sudden violent squalls, maybe ice, extreme tides, high surf conditions, availability of building materials and many other factors. The unique « basket-bottomed » fishing junk of Vietnam is an example of resourceful adaptation. Nowhere else in the world is this singular type of craft constructed. Used principally in the coastal areas of Central and South Vietnam, it has a history of development that dates back over many hundreds of years. The warm tropical waters of the South China Sea, are abundant with teredo wood worms, small bivalves, mollusk and other marine life which attacks the untreated wooden bottoms of the boats in the most vicious manner.

Also, there are few deep water harbors along the coasts of Viet-Nam. This necessitates beach landing through surf to unload fish catches, or the use of open roadsteads for anchorage. For these reasons the bamboo-bottomed boat has evolved, and this craft, well suited to the area, is predominant in Vietnam.

Long before the invention of preservative marine paints, the Vietnamese was plagued with the necessity of frequently renewing the bottom of his boat because of the destruction caused by teredos and other harmful marine life. His problem was to find a material that would resist the attack of the worms. Good *sao* wood was available for general hull construction but it was the bottom of his boat that was causing trouble. Eventually he found that bamboo, strong, pliable, tough and light, when treated with a resin binder, best resisted the bite of the teredo.

CONSTRUCTION

Thus developed a boat ingeniously composed of two parts, the lower part made from long strips of bamboo woven into a vast, watertight basket. The upper part, a bottomless wooden hull, is fitted onto the basket, thereby comprising one of the most curious methods of boat construction in the world. The method used in attaching the hull to the watertight basket employs a longitudinal gusset at the chine. Removable, false deck planking is fitted within the wooden hull over the floor timbers for working deck space. *(See Illustration on back cover)*

Only the fish catch is carried in the bottom which is held in shape by long, flexible bamboo bilge stringers.

Choice lengths of bamboo are highly prized for junk construction. Poles sometimes as long as 50 ft. or more are brought from remote inland jungle sources and seasoned with great care.

Fishing craft of varying designs ranging from 2 to 14 tons gross (gross ton, 2,240 lbs) are constructed in this manner. These boats are excellent for sailing. To keep them from making excessive leeway, a large adjustable bow sheer rudder and an oversized stern rudder are used.

This craft is landed on the beaches through rough surf, or passed over treacherous sand bars to gain entrance into small river mouths or lagoons where rigid, all-wooden hulls would become dangerously embedded in the sand upon contact. However, when this unique craft is grounded, the flexible bottom absords the shock. By the lateral deformation, the bottom widens out like a soft rubber ball as the hull settles down. The boat then frees itself on the next wave.

The immersed basket bottom, due to its low cost and simple construction, can be replaced frequently, while the wooden upper hull, permanently secure from all but cursory contact with the water, lasts indefinitely.

The coastal areas of Central and South Vietnam are frequented by the Northeast and Southeast Trade Winds which provide the motive power for the sailing junks. The seasonal period for each wind is about six months. Thus, the east and west coasts of Vietnam are alternately either lee or weather shores according to the direction of the winds. Like all winds, the trade winds of the Orient are not constant but vary from dead calm to gale force. During some periods of the year they diminish in force when least expected, leaving the fisherman far offshore unable to return to dispose of his catch which consequently must be jettisoned as his craft has no way to carry ice in the hold.

GOING TO SEA IN A BASKET

We do not subscribe to the statement often heard that Vietnamese fishermen are afraid to go very far to sea in search of catches or to explore new fishing grounds. Our own opinion in this matter is much to the contrary. We believe Vietnamese fishermen are very courageous sailors. We congratulate them on being sensible enough to go no farther offshore than they can safely go with assurance of returning to port with their catches. This is evident when it is recalled that aside from oars, the wind is the only source of motive power, a factor which subjects them to the not-to-tender mercies and vagaries of the seasonal monsoons and trade winds. To more fully exploit their fishery sources, their paramount need has been for a motive power reliable in either fair or foul weather.

PROBLEM OF MOTORIZATION

The unusual construction of the Vietnamese « basket bottomed » craft, without keel, ribs, stern post, dead wood or horn timber, has presented a most difficult problem of motorization. Such a craft does not lend itself to the conventional methods of motor installation. Consequently, a new and radically different method had to be devised. By reason of the modest price the fisherman received from his catch, it was most imperative that any solution to the motorization problem be inexpensive, entailing only small capital investment and operational costs.

With the encouragement of Mr. William H. Fippin, Chief, Division of Agriculture and Agricultural Resources, and Mr. Levi W. Jordan, Deputy Chief, the challenging task of motorization was undertaken in the fall of 1957. In the beginning, several marine motor manufacturers were approached, but none had experience with similar installation problems. However, one Diesel engine manufacturer showed considerable interest in the problem.

HOW THE PROBLEM WAS SOLVED

Some method of motorization was explored. The ultimate solution came with the development and adaptation of an engine made in Japan.

Its basic principle of propulsion employs a vertical retractable propeller and drive shaft similar to an outboard motor. The first engine used was a 2 1/2 H.P. horizontal stroke, all purpose farm machinery Diesel engine which transmitted power to the propeller assembly by means of a V-Belt. To absorb engine vibration which could be injurious to the bamboo bottom, the engine bed was suspended from the gunwales of the craft and the engine mounted on four automobile clutch springs.

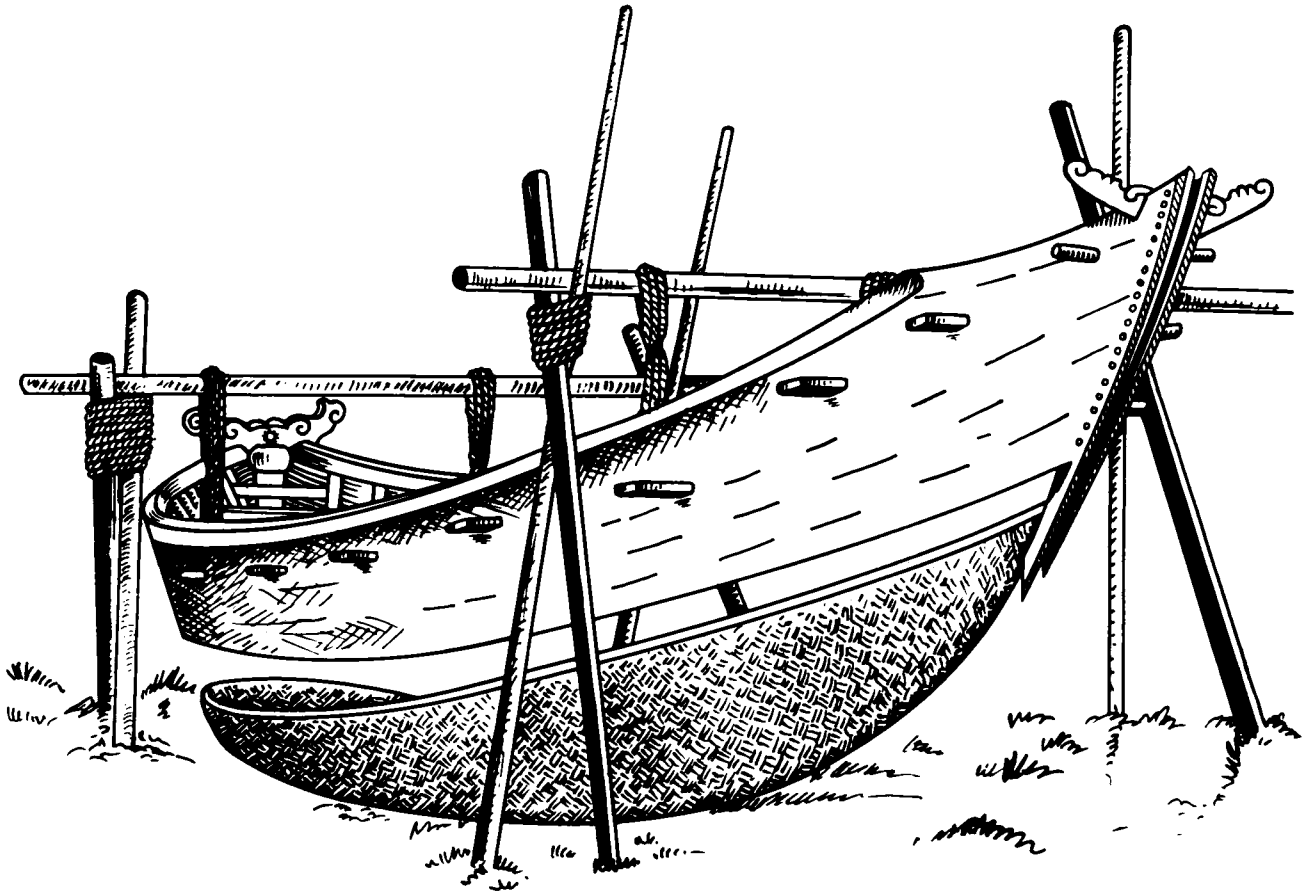
Thus, by the cooperative efforts of the GVN Fisheries Directorate, the Diesel specialist of a private firm and the makers of the chosen engine, a method was developed whereby this unusual craft could be successfully motorized. The first public demonstration test run was made in the waters adjacent to Vung Tau on January 10, 1959.

Important features of this installation are its low cost and its multiple uses. The engine and propulsion assembly can be transferred to another craft in less than one hour when preparation has been made for motorization. Or the farm engine can be carried up to the fishing village by four men, to be used for any number of power purposes

such as pumping water, polishing rice, running a fiber decorticator, etc. The primary objective in motorizing the junks was to enable the net fishermen with their larger craft to reach new fishing areas of considerable distance from home port, thus lowering the fishing intensity on near shore and local fishing grounds. Both surface net fishermen and bottom trawlers have experienced an increase in catch. Another interesting aspect of motorization has been the return of older men to the fishing fleet. A husky oarsman to help row the craft back to port when there is a lack of wind is no longer a prime requisite in crew recruiting.

FISH CATCHES HAVE TRIPLED

It is surprizing how successful this peculiar type of motorization has been with small bamboo bottomed boats used for long line fishing. With American Aid help, boats are being motorized at the rate of 1,000 a year. The country has tripled its annual catch, and a new era of prosperity has come to the coastal villages of Vietnam.



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