

MAINTENANCE AND REPAIR OF HARBOUR CRAFT

1939-1945

by

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PART I

The Second World War clearly showed the extent to which the demand for craft suitable for water transport in harbours and bases and for certain functions in the defence of these areas can expand under conditions of total war.

Resulting from the increased significance of this commitment, craft so employed are now considered under the term "Naval Servicing Craft." The term will be used in this sense in this article, and may be defined as including all craft whose essential functions lie within harbours and anchorages and are directly connected either with local defence or carriage of personnel and stores. Dredgers and their associated hopper barges are not, however, included within this classification.

Such a definition embraces a wide range of craft (and consequently of propelling machinery), a certain proportion of which can be adapted for service as boom patrols, for the Examination Service, and various "minor" rôles in harbour defence. At one end of this range are tugs (*Tids, Tanacs, Empire Tugs*), trawlers, drifters, motor fishing vessels, and certain armed yachts; at the other end, dinghies and small motor craft of all types. Between these two extremes lie every conceivable type of lighter, dumb and self-propelled, designed solely for the transport of dry or liquid stores, coal, or ammunition and a very extensive range of decked, half-decked, and open craft suitable for transport of personnel or of small quantities of dry stores as required. As may be supposed, the maximum expansion occurs in the realm of these latter general-purpose craft for which the increased naval commitment in war constitutes a high demand.

Experience during the Second World War made it clear that the provision of naval servicing craft of all types must be considered as an integral part of any naval war plan both in the expansion of existing ports and the establishment of advanced operational bases. The logistics of the craft must be adequately provided for and due allowance made in any proposed administration to permit of a properly constituted maintenance organisation.

These principles, now generally accepted, were not recognized at the beginning of the War, and this article is an attempt to describe the development of craft maintenance and the evolution of a technical administration. In order to do this, it is necessary, however, to consider first the conditions under which the various types of craft are required to function, the nature of the craft used and, in broad outline, the types of machinery fitted in them.

The Function of Naval Servicing Craft in Established Ports

The basic rôle of the naval servicing craft (N.S.C.) may be taken as that of a carrier of stores and personnel from ship to shore and *vice versa* when the ships using a port are unable for some reason to berth alongside.

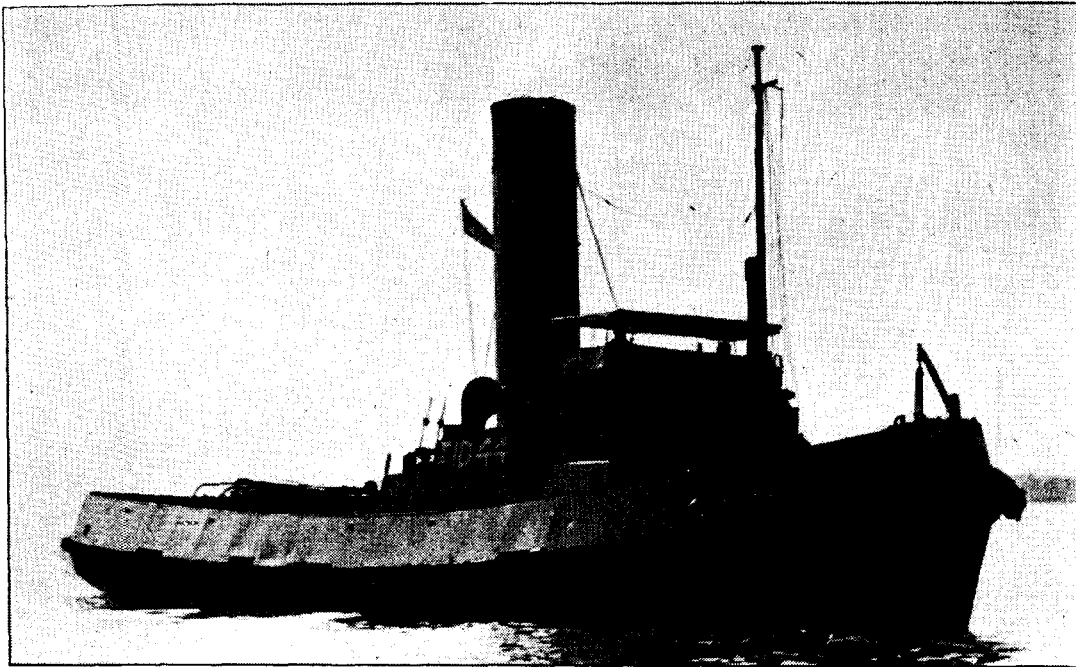


FIG. 1.—“TID” TUG. ALL-WELDED STEEL HULL. 200 I.H.P. COMPOUND ENGINE BURNING COAL OR OIL

This function is influenced in scope and nature by the part played by the port or base in the logistic picture. When the primary role is that of handling cargo vessels a high proportion of lighterage both dumb and self-propelled and a supply of small tugs will be required to handle bulk stores. In addition to these primary requirements, these ships will also require transport to enable officers and crews to land and to enable provisions and stores to be embarked for the next stage of their passage. Again, they may have defects which will entail a party of workmen with tools and spare parts being ferried out, or they may require fuel or lubricants.

On the other hand, a port or base may handle warships as a predominating function. Here the water transport requirements will probably include handling small quantities of stores together with fuel and lubricants, but will include a higher percentage of personnel carriers for landing of libertymen and for “landing parties.” There will also be a demand for boats of higher speed and superior standard of comfort and appearance for the transport of senior and other officers on duty from ship to ship or ship to shore.

In addition to the function of transport, certain individual types of craft such as requisitioned yachts, motor fishing vessels (M.F.V.) and fully-decked harbour launches lend themselves conveniently to certain semi-operational duties in ports. Such duties as Examination Service, boom patrols, and even shallow-water sweeping are satisfactorily carried out by these vessels. Although such craft are normally lightly armed and fitted with additional protection for personnel no radical alterations are necessary, and it is probable that a large percentage of these craft will continue to be found from N.S.C. sources.

A large port or base will generally combine the two main roles referred to, handling part of its commitment alongside and part by naval servicing craft.

In addition to the functional characteristics, the physical features of the port will have an influence upon the kind of craft that will be employed. This factor may well have a predominating influence in the planning of craft for advanced bases and temporary operational ports. The main factor concerned

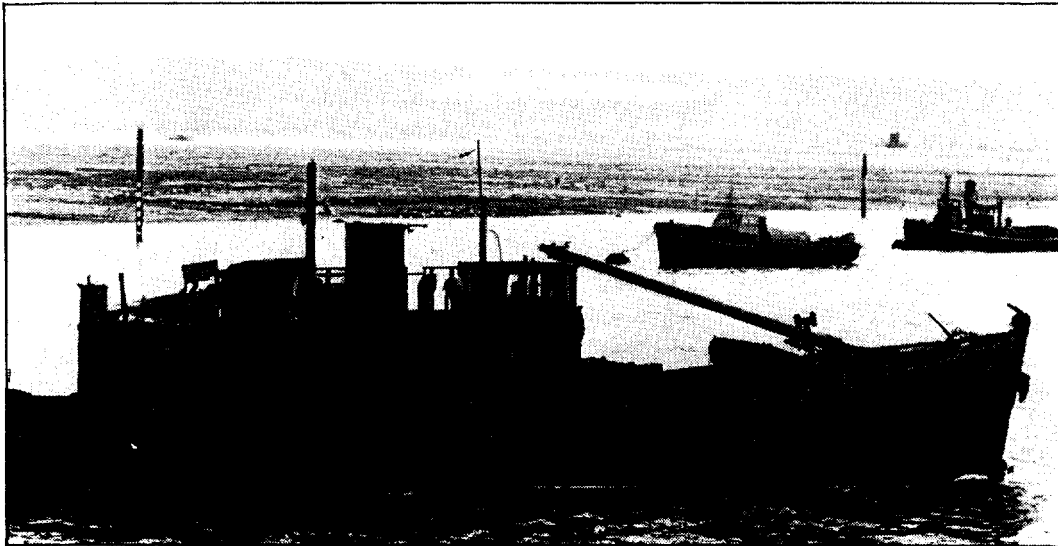


FIG. 2.—75 FT. M.F.V. WITH LISTER DIESEL ENGINES 160 H.P. 30 TONS CARGO OR 200 PASSENGERS. SINGLE SCREW

is the available depth of water, both in channels and at quays. When loading and discharging is carried out over beaches, it remains a function for landing craft as at present there is no N.S.C. suitable for continual beaching. The characteristics of a port from the point of view of shelter will decide whether dumb lighters or larger M.F.V. are most suitable. In far-flung bases where, due to irregular coastline or other causes, considerable distances have to be covered by the water transport, craft with good fuel endurance may be preferred to others which in most respects might be suitable but would involve complicated fuelling routines. Finally, in localities where shore facilities and alongside berths are cramped and confined it is often necessary to employ smaller craft than would otherwise be economical in the interests of a quick turn round on discharge, by quick manoeuvring with a minimum risk of collision and traffic jams.

During the war a very large number of different types of craft were in service, reaching about 120 as a maximum. This large variety was directly due to the necessity of using ready-made craft. The carriage of small quantities of dry stores and of personnel can be dealt with by a large variety of craft with equal facility and thus craft of a wide range of types could be called upon to deal with it. It will be realised, however, that this had a serious effect on the maintenance problem, since the types of engine fitted were in most cases dictated by motives far removed from standardization. When Admiralty construction began to come into service a very considerable reduction in types began, though the influence of this was probably felt more in the Eastern Theatre than in the Home Ports and bases in U.K.

Although the fundamental functions involved in water transport were the same in the two World Wars, the vastly greater extent of a "Global War" meant a corresponding increase in the number of craft required and every possible type of craft had to be pressed into service. The casual absorption of local craft into the organization of a port had to give place to a co-ordinated system of procurement and allocation which became, in the later stages of the War, closely linked with the planning of operations by liaison with the Naval Staff.

The Function of the Naval Servicing Craft in Offensive Operations

In addition to the expansion of ports and bases in U.K. a further requirement in harbour servicing arose in the prosecution of invasion operations.



FIG. 3.—45 FT. M.F.V. WITH CHRYSLER ROYAL PETROL OR ATLANTIC 6 B.E. DIESEL ENGINES 60 H.P. SINGLE SCREW. 14 TONS CARGO OR 100 PASSENGERS.

All the transport requirements mentioned in the previous section are re-produced wherever a base has to be established on a foreign shore ; it is immaterial whether the base is planted in a captured port or constructed on open coast line as in Normandy. It is reasonable to anticipate that all local craft in a captured or re-captured port would be rendered, at any rate temporarily, unavailable for use by the invader and craft must be imported to take their place until the port is re-established. It is obvious that where a base is established on an open coast-line water transport will be required when the craft of the amphibious forces have withdrawn and to supplement them when in the interests of economy it becomes necessary.

Here, then, is a commitment that requires planning and for which haphazard allocation can result in complete failure. The use of requisitioned craft of heterogeneous types cannot be accepted especially when the scene of operations is distant from friendly shores. In addition to maintenance on site, the problem of transport arises, directly influenced by the distance factor. Certain naval servicing craft such as 90 ft M.F.Vs. can make ocean passages under their own power, but the further the scene of operations the less the serviceability of the craft when they arrive. The transport of craft by carrier ships imposes a limit on size and weight and these details must be firmly established in the planning stage to avoid freightage failures.

Closely linked with this requirement is the servicing of the Fleet Train. Here the requirement will be mainly small scale transport of personnel and stores until temporary bases are set up and lighterage in a "knocked down" form can be assembled. Here, again, is a freightage problem together with a need to reduce the maintenance burden to the minimum in the interests of shipping space. Again, a problem to be planned in all aspects.

Institution of Admiralty Requisition

Shortly after the Munich crisis action was taken to secure details of fishing craft and other vessels suitable for conversion to the needs of a National Emergency. Considerable progress was made in surveying craft for this purpose, but difficulty was, however, experienced by the staff in deciding the merits of craft that were to fulfil functions the nature of which they could not be expected to be fully conversant.

During the months immediately pre-war, when preliminary expansion was



FIG. 4.—45 FT. PL(D) WITH ATLANTIC DIESELS 40 H.P. 8 KNOTS,
90 PASSENGERS

taking place, requisition proceeded on the old-established lines, all authorities under the Admiralty and other Ministries proceeded with their requisitioning programmes without regard to each other or to any overall plan.

The rapid development of ports and the establishment of fresh bases around the coasts of Great Britain and Northern Ireland soon necessitated a co-ordinated system of requisition and subsequent allocation to be adopted.

Small Vessels' Pool—1939

In November, 1939, a small department called the Auxiliary Patrol Service was established but was succeeded a month later by the institution of The Small Vessels' Pool (S.V.P.). This Department, which came under the 3rd Sea Lord (Controller), was handed the task of finding 1,000 more craft and of cataloguing those already under requisition and available for requisition. The Director of the Small Vessels' Pool (D.S.V.P.) had at the outset a staff of seven to assist him in this work, and it is a measure of the extent of this requirement in total war that in 1945 a staff of 85 had become necessary, the total number of craft on the books having risen from 1,414 in 1939 to 13,619 in 1945.

In order to avoid delay, the Director of the Small Vessels' Pool was empowered to allocate or to change allocations without further authority from a date shortly after its inception until the close of hostilities. It is impossible to touch on all the branches of the activities of this department in this article, and remarks will be confined to those aspects which directly affected the maintenance situation.

The cataloguing of requisitionable craft was greatly assisted by the issue of an Order (No. 718) under the Emergency (Defence) Act which compelled all owners of craft to report particulars to D.S.V.P. By this means 698 yachts and motor boats were provided at Dunkirk.

The requisition by Commanders-in-Chief in Home Port areas and by other Ministries ceased and their requirements were stated to D.S.V.P. whose business it was to find the craft, but not to question the correctness or validity of the stated requirements.

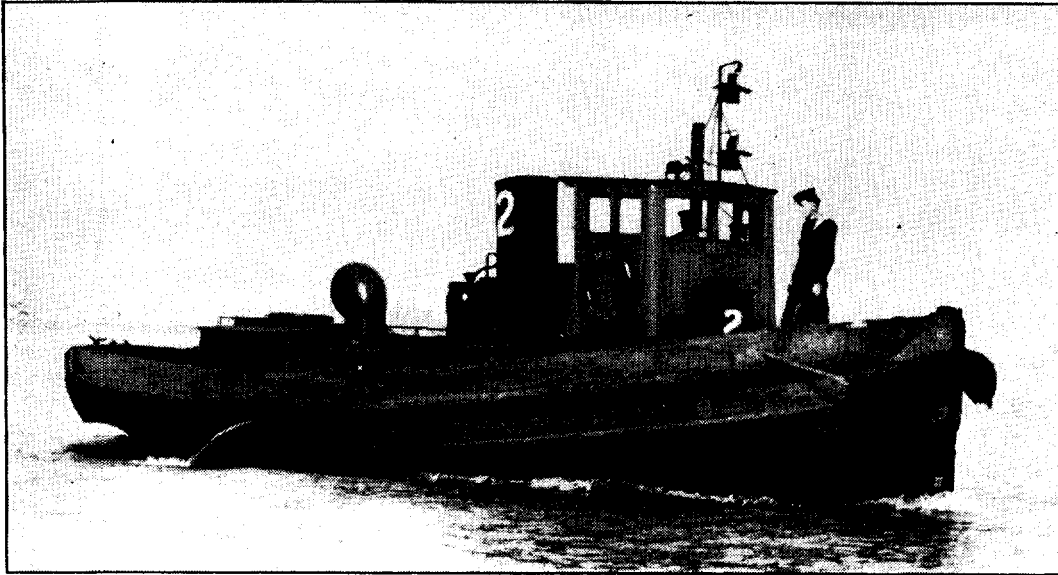


FIG. 5.—52½ FT HARBOUR LAUNCH (DIESEL) RUSTON HORNSBY, GARDNER, OR CROSSLEY DIESELS. 100 PASSENGERS. SINGLE SCREW

The Introduction of Foreign Craft

As a result of the cessation of independent requisition and procurement, the requirements of craft placed before D.S.V.P. necessitated the closest examination of all sources in U.K. and the investigation of resources in foreign countries to satisfy them.

The use of civilian agents in European countries and in Canada and Newfoundland resulted in a small supply of foreign craft which later swelled to a sizeable extent when refugees fled from their countries after invasion by the forces of Hitler.

Many of the foreign craft were of obsolete patterns and in many cases engine production was in the hands of the enemy. Little spare gear was available on requisition and no drawings or other particulars were obtainable.

Steam and I.C. Engines as Propulsive Agents for Naval Servicing Craft

The interval between the World Wars saw a big development in the use of the internal combustion engine both ashore and afloat and increasing numbers came into use for the propulsion of fishing, pleasure, and small commercial craft so that at the onset of hostilities a large percentage of the requisitioned craft were already fitted either with petrol, semi-Diesel or Diesel engines.

Here, then, was an important change from the days of steamboats. The maintenance of steamboats was a well-understood commitment in terms of personnel and equipment, and the repair organization of the Navy was founded upon a basis of steam propulsion. The onset of the last emergency found the Service without technical administration suited to the requirements of a large number of I.C.-engined small craft. The realization of this deficiency resulted in the establishment of special organizations to deal with Coastal Force Craft and later with Landing Craft.

At first sight it might be thought that the maintenance and repair requirements of craft of such common type as were requisitioned for naval servicing could readily be undertaken by civilian firms dealing in engines of popular types. It will be shown to what extent and why this did not turn out to be correct.

The employment of requisitioned craft with engines of a generally orthodox appearance together with the popularization of motoring also gave rise to false analogies with motor cars. The enthusiastic amateur motorist, whose mechanical knowledge was often limited to knowing where to put the petrol and that water should occasionally be poured into the radiator, was apt to consider that motor-driven craft should be capable of long service with a similar amount of attention. When practice showed the error of this principle, blame was generally placed in the wrong quarter.

Maintenance and Repair of Craft, 1939-1942

Each port and base round the shores of Great Britain and Northern Ireland was manned and equipped to deal with its chief operational function, be it minesweeping, coastal forces, etc. The assumption that all "incidental" craft could be handled in between whiles was taken for granted since "non-service motor boats were such reliable craft and everyone knew that fishing boats went on for ever and only required fuel and lubricating oil."

The repair of craft and engines was provided for under the Emergency Repair Organization and was generally put out to private contract. Supervision was afforded by Base Engineer Officers (B.E.Os.) or E.R.Os. when this was necessary.

During the first months of the War when the best of the craft requisitioned by local authorities were in use, the availability of small stocks of spares taken over with the craft and the well-kept state of most of the engines rendered the maintenance of the craft a fairly simple matter. The efforts of the base personnel, therefore, were not extended beyond the purchase and fitting of minor spare parts when these had not been requisitioned, since the craft were hand-picked with an eye to the local supply of engine parts. Base Engineer officers were, under these conditions, only too thankful to be able to concentrate on the operational craft and to leave the other craft to their subordinates.

This halcyon period was, alas, of short duration. The local stocks of spare gear began to give out and raw personnel were sent to the base staffs for training and experience. Notions of maintenance and upkeep procedure were very limited. Boats began to break down with engine trouble and remained un-serviceable due to lack of spares. This led to the overburdening of the better craft which remained in action, continually running without attention until they too began to fail, and B.E.Os. were at their wit's end to maintain vital services.

The arduous service demanded from those requisitioned types of craft which were originally designed for seasonal or pleasure purposes began to show its effect in hull damage and steering gear defects. The continuous running at high outputs of the engines fitted in such craft when operating under adverse weather conditions and handled by very unskilful personnel increased the incidence of engine failure in this type of craft.

The demand for fresh craft, therefore, arose as much from these causes as from the actual extension of the port commitments though the latter was occurring in harmony with the development of hostilities. The supply of foreign craft to fill the gaps only added to the worries of the base staffs who had neither the time nor the knowledge necessary to operate such unfamiliar types and to remedy even minor defects which caused the craft to become un-serviceable. The allocation of craft having been made with no regard to the mechanical implications involved, the bases found themselves with a thoroughly mixed collection of engines, British and foreign, the operation and maintenance of which was often "a closed book" to the local staffs.

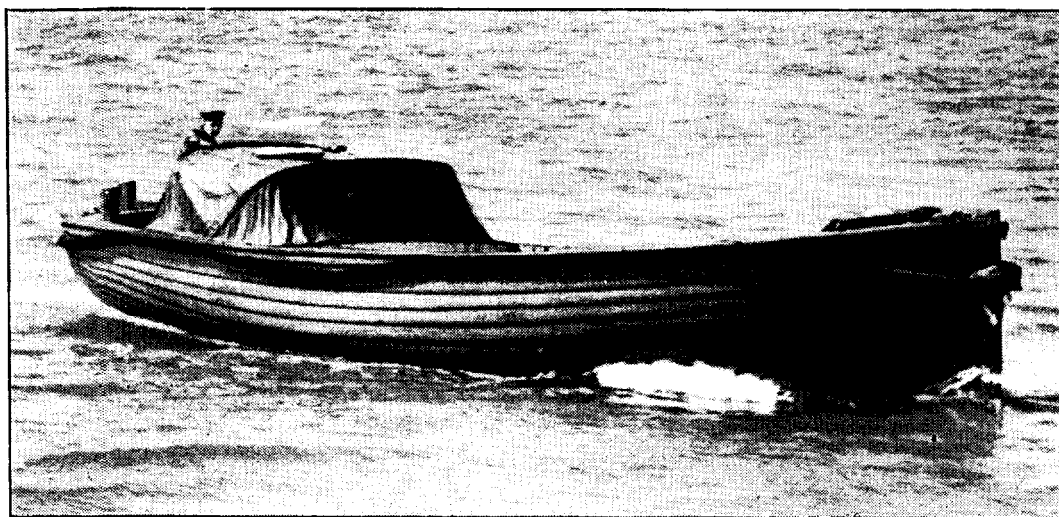


FIG. 6.—HARBOUR LAUNCH (PETROL). VOSPER FORD V8 OR CHRYSLER CROWN ENGINES.
30 H.P. 8.5 KNOTS

E.R.Os. did all they could to assist in obtaining spares and putting in hand repairs necessary to keep the craft running, but commercial repair potential was by now becoming increasingly occupied with requirements for war material of a high degree of priority. The result was that the commitment arising from the requisitioned craft in bases became more and more crowded out and the manufacture of spare parts for them had to give place to priority orders for other gear and materials required for the prosecution of the War.

Owing to centralized allocation by the Admiralty no information or assistance could be afforded by local Flag Officers regarding details of craft allocated to the various bases. The Admiralty organization was limited to the bare requirements of expansion, and the available data only referred to the capacity and sea-going capabilities of the craft and a few details as to accommodation, and the like. The necessary information upon which to base demands for spare parts and to raise defect lists had therefore to be obtained by each base by examining its own particular craft, and was supplied to the repair organizations in whatever form and in such a degree of detail as might be considered necessary by the bases concerned. The inadequacy of such a system worked by inexperienced and sometimes not over-enthusiastic personnel needs no stressing.

The shortage of officer personnel on the technical side, allied to the ignorance and inexperience of the raw ratings who were drafted to bases to pick up a little knowledge led to a certain amount of ineffective "tinkering" with engines and fittings, a great deal of which did more harm than good. A crisis in operating these craft in bases, especially the smaller and more isolated places, was able to grow unchecked, hidden from effective action by the gathering avalanche of war.

It was inevitable that B.E.Os. should concentrate on work which was organized and officially directed and for which the logistic needs were properly organized and clearly promulgated, and ignore the increasing number of broken down craft which were sometimes left to deteriorate without further attention, but there is no doubt that even under these discouraging conditions a degree of ingenuity and honest endeavour was displayed in many cases but the task was too formidable.

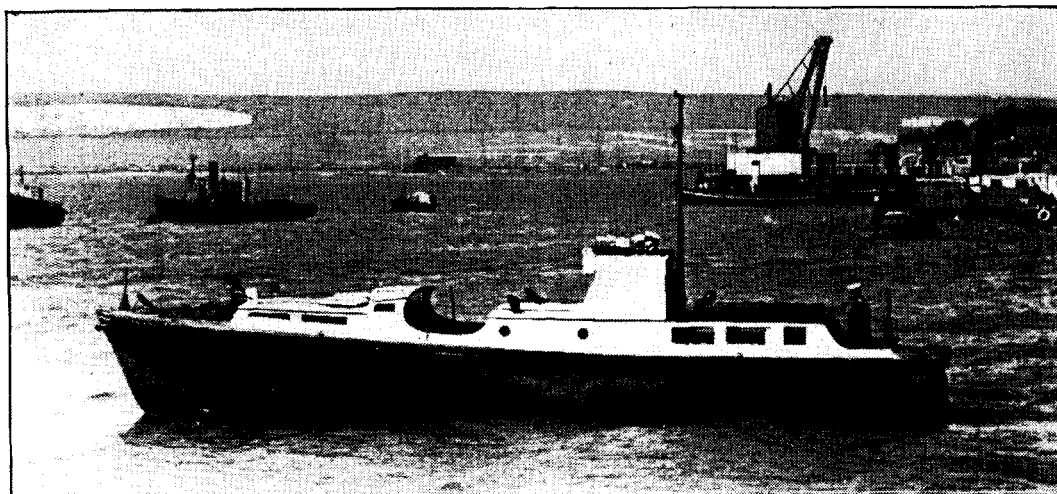


FIG. 7.—MEDIUM SPEED PICKET BOAT. GARDNER DIESELS. 85 H.P. 13 KNOTS.
TWIN SCREW. 90 PASSENGERS

First Steps toward Economical Operation

It has already been stated that the S.V.P. was primarily concerned with providing craft and not with the manner in which they were operated or with the validity of the requirement. The heavy demand for craft accompanied by the low percentage of availability called, however, for remedial measures.

In 1941, therefore, action was taken to investigate the situation in bases and to endeavour to economize in the craft in service by reorganizing the operation of the craft. As a result of this investigation a few craft were temporarily returned to their owners and a few old fishing craft were released for the fisheries as a result of economies thus achieved. It had also become evident that requirements for craft had to be carefully sifted and then cut down to the maximum extent in order to prevent waste.

Thus began the organizational control of naval servicing craft. The S.V.P. being manned by executive officers R.N.V.R. had, however, neither the time nor the qualifications to consider the engineering problems involved by their mass allocations and it was not until the end of 1942 that the repair situation became so serious that steps in this direction became imperative. The need for a "maintenance margin" of craft in order to achieve economical operation had, however, been appreciated and the representatives of D.S.V.P. in the various areas began to give what assistance they could.

New Construction

From the overall view of craft in service now becoming available to D.S.V.P. it became evident that as far as ready-made craft were concerned the demand would soon out-distance the supply. It was, therefore, necessary to give consideration to the construction of suitable craft to fulfil specifically the requirement for naval water transport. The normally-recognized sources of new construction were by now fully occupied in the production of fighting ships and craft, and the construction of craft for naval servicing was therefore largely entrusted to small firms both on the coast and inland which had not hitherto handled Admiralty contracts. It was necessary to ensure that orders were placed in such a way that firms should, as far as possible, be employed on building craft with which they were familiar and for which local labour of a reasonable standard was available. Although all craft built under this programme were built to Admiralty drawings and specification some variation of style and workmanship occurred. In the design of larger craft various types

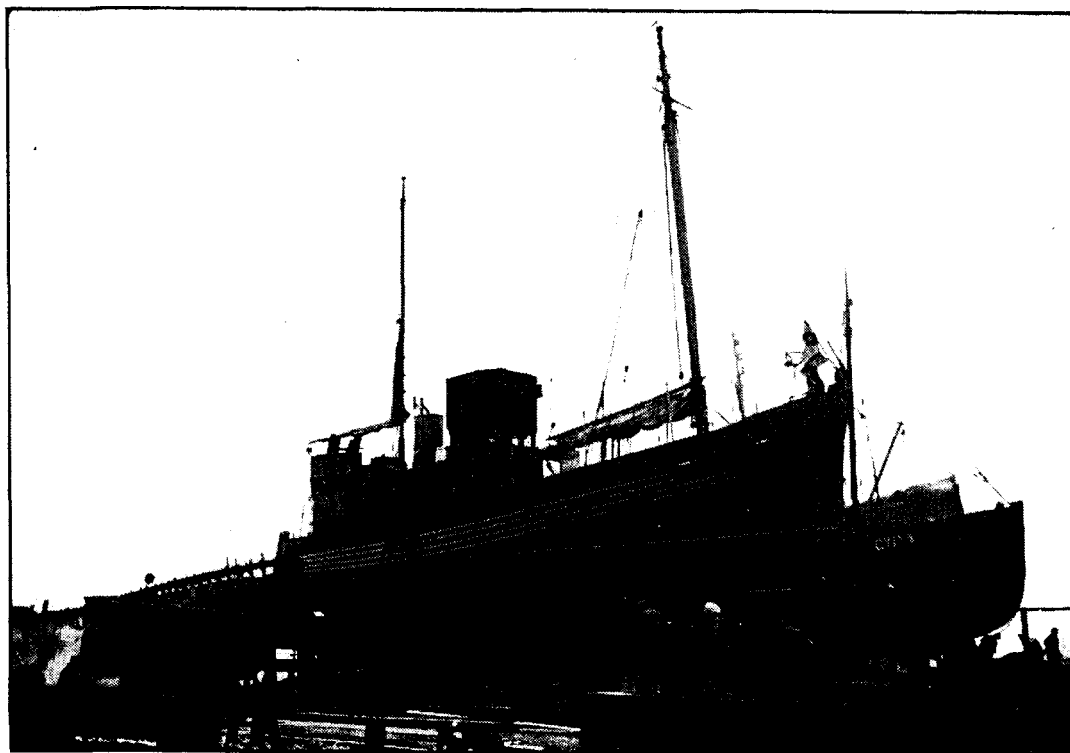


FIG. 8.—75 FT M.F.V. ON THE STOCKS BEFORE COMPLETION. SAILS ARE INCLUDED IN NORMAL OUTFIT

were considered before it was finally decided to concentrate on the M.F.V. pattern. In deciding the designs to which this type was to be built, every attention was given to the needs of the fishing industry of England and Scotland with a view to the employment of the craft after the war was over.

Owing mainly to the steel shortage all craft built for naval servicing were of wood construction. The construction of M.F.V. was entrusted to firms who had been building wooden motor-minesweepers of which the programme was by then easing off. Other types of craft were built wherever capacity was available. In Part II of this article when the problems of naval servicing craft maintenance in the Far East will be considered, further details of the constructional features of these craft will be given, since it was in this theatre that the Admiralty-design N.S.C. was the predominating type.

Owing to the difficulty of finding adequate capacity in U.K. the possibility of building abroad both in Europe and U.S. was first explored. This policy proved to be disappointing as many legal and political problems were involved, for example the U.S. would only build for life-saving, until her eventual entry into the war; again the rapid spread of the enemy forces in Europe obviously restricted the sources of building potential. In the end some twelve trawlers and a few small craft were obtained in this way.

Resulting from experience gained from the craft in operation a small programme which included 60 each of 61½ ft M.F.V. and 52 ft H.L.(D) and 36 of the 36 ft H.L.(P) open launch type was put forward in 1941 (though against strong opposition). In June, 1942, the first of the Admiralty Type M.F.V. came into service.

Toward the end of 1942 the construction of M.F.V. in 90 ft, 75 ft, and 45 ft (fully-decked) types amounting to 1,000 craft was approved. The total number of craft built to Admiralty design at Home and in the Dominions eventually amounted to about 4,000.

The advent of the Admiralty-designed naval servicing craft with engines and equipment of known, if not wholly standardized, types was a milestone in the development of the maintenance of these craft.

It must be remembered, however, that with a nation engaged in total war the manufacture of engines and spare gear for this purpose must take its place in the priority queue. Thus when ready-made engines could be obtained, as they could, from U.S. and Canada, together with adequate spare parts, it was only reasonable to instal them in new construction.

The use of these craft, therefore, while relieving the dearth of spares and facilitating the promulgation of maintenance procedures, still gave rise to a complex logistical problem owing to the impossibility of grouping craft geographically in accordance with their engine types. The result was that a group of craft of exactly similar type would have four different types of engines, English and U.S., all operating in the same base.

The Small Craft Pool System in Bases

Consequent upon the investigations by D.S.V.P. outlined in a previous section including examination of log books (when available) and the investigation into the suitability as to speed and size of craft allocated to each function the conclusion was arrived at that a large percentage of the craft in bases could be organized into "pools" and operated as a "taxi" service for daily requirements. The number of craft under "permanent allocation" to specific officers in a base would then be reduced to a minimum.

This system was, therefore, introduced by administrative authorities where large numbers of craft were employed. Admiral Commanding Orkneys and Shetlands (A.C.O.S.) was the first to adopt the system and was followed by F.O.I.C. Greenock (300 craft) who also arranged special maintenance personnel and facilities. By 1944 this system was accepted as the only method of handling these craft in the numbers required in time of war.

The supreme advantage of this system, technically speaking, was that it provided the necessary administrative structure upon which properly organized maintenance could be imposed and a technical administration supervised by the more senior technical officers then became possible. This benefit was greatest in the large bases where the ramifications of the administrative structure had made proper supervision of maintenance and operation impossible; in the smaller bases, however, it had the effect of making the needs and requirements of the craft more evident and to place them on a higher administrative level.

Though this was a move in the right direction the concrete requirements in spare parts and repair facilities had still to be met.

The Establishment of a Technical Section in S.V.P., February, 1943

While the staff of D.S.V.P. at Headquarters and in the "field" now combined procurement, allocation, and supervision of operation, the craft casualty list continued to mount, since the staff had no powers or qualifications to assist in the detailed technical problems involved.

After meetings had been held between D.S.V.P., and other Admiralty departments, a plan was put forward for approval whereby this deficiency might be filled.

As a result a technical section of a Lieutenant-Commander (E), two Commissioned Engineers and a Supply Officer were added to staff of D.S.V.P. In due course five outside men with technical qualifications and experience of small

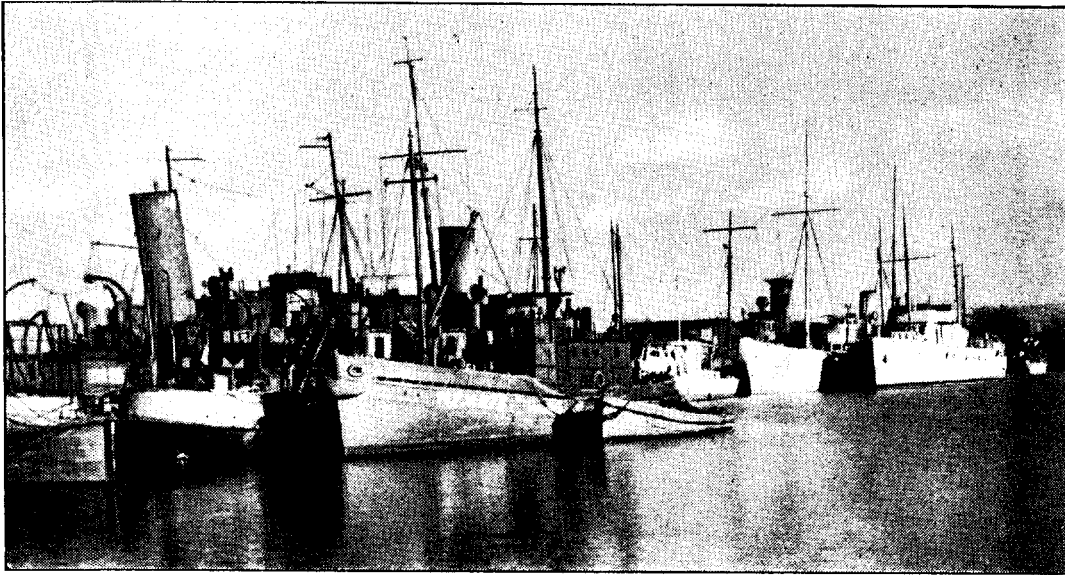


FIG. 9. -- M.F.V. AND VARIOUS AUXILIARY VESSELS AWAITING DISPOSAL AT GLASSON DOCK, NEAR LANCASTER

motor craft were appointed as Small Craft Repair Liaison Officers (S.C.R.L.O.) and distributed by areas over the country.

Operation of the Technical Section of S.V.P.

The first task of this small technical section was to obtain details of the machinery of all craft in service in order to supply the Engineer-in-Chief and the Director of Electrical Engineering with data upon which block orders for spare gear could be placed. The difficulty of this task under the conditions then obtaining can well be imagined. The state of the technical administration of craft in the bases was such that much of the information asked for had to be obtained direct by the S.C.R.L.Os. in addition to their main duties, and not from base staffs but from the craft themselves.

As the activities of this section and its representatives became known it became a clearing house for inquiries and information for naval and other authorities regarding craft of this type and thousands of queries were answered and inquiries put through in pursuance of this "unofficial" though extremely valuable function.

Although some effort was made to re-allocate so as to achieve a grouping of similar types of craft, the status of the section was such that its activities were confined to the sphere of co-ordination of requirements and the direct promulgation of information relating to the craft in U.K.

Maintenance in U.K. Bases, 1943 to End of Hostilities

Consequent upon the reforms brought in by D.S.V.P., base staffs began to find that official notice was being taken of how the craft were organized and of the difficulties encountered in maintenance and repair.

By the formation of boat pools and the consequent centralization of maintenance work it was becoming possible to comprehend the causes of the high incidence of breakdown. It was unfortunate, however, that it was not generally understood by technical officers of many bases exactly how these causes could be co-ordinated and how the results, in terms of spare gear demands and accurately-worded defect lists were issued to the authorities concerned. Such a position was bound to mean delay in getting requirements

dealt with, because these requirements (well understood by their authors) were not stated in a form that could be dealt with (alongside thousands of others) by authorities completely unfamiliar with the attendant circumstances.

When the S.C.R.L.Os. began to penetrate the bases it was shown to be useless to report a boat broken down with "cracked exhaust manifold" to D.S.V.P. and expect a new manifold by return of post, because, as explained by the S.C.R.L.O., it did not work that way. The importance of describing engines by make, model, and makers number when ordering spares was stressed; such information was not often available "in the office," and with the assistance of the S.C.R.L.O., the information was collected. The importance too of issuing correct consigning instructions to supplying authorities began to be fully realized. The functions of the E.R.O. (Constructive, Engineering, Electrical), also began to be better understood together with the importance of indicating fully the nature of defects in order that these officers might allocate repair capacity in a suitable manner and work out their programmes with all commitments duly co-ordinated (as far as emergencies would permit).

As time went on technical officers in bases found the S.C.R.L.Os. becoming encyclopædic in their knowledge of the "tricks of the trade," and miraculous in unearthing spare parts for obscure types of engines and explaining how they fitted in. They began to find that "Jones" in one base and "Snooks" in another had experienced precisely the same defects in their "6-cylinder Thunderbox engines," and that the S.C.R.L.O. had taken it up with all and sundry and discovered the answer to the problem. It was soon found that nothing was too much trouble for these enthusiastic officers, they had their eyes open and ears rigged, and it was not much use "pitching a yarn" without sound evidence to support it.

Order and discipline began to creep into the maintenance and technical administration of these craft, and the availability began to rise. When the block orders for spare gear, which had replaced the individual orders placed by E.R.Os., and S.C.R.L.Os. began to bear fruit the situation further improved, though the supply of spare gear definitely lagged behind the demand. The institution of the boat pool system began to extend to the establishment of central maintenance bases and the personnel, hitherto vastly disinterested, began to get keen as results began to show themselves. The larger bases built up a sound administration for organization and maintenance which was a source of pride, although often a hard and thankless task, to the personnel involved.

The reorganization of the system of supply of spare gear caused a certain amount of difficulty at first as its significance was not clearly understood either by base staffs or by certain repair firms who continued to place orders for parts independently of the main Admiralty contracts.

The new arrangements for spare-gear supply made it even more important to supply adequate information by correct filling in of demands S.140 and furnishing of correct consigning instructions. Delays occurred until this became more fully understood and the technical organization of the base administration suitably extended or adjusted.

In 1944 and 1945 a new commitment for certain bases and ports arose from the care and maintenance, fitting out, and final despatch of M.F.V. convoys for the Far East. The responsibility for checking spare gear and equipping these craft for sea was placed on certain bases suitably situated for this purpose, while shipments of light craft for the Far East were made from the larger ports. The routine work involved in this commitment proved in the event to be a major "headache" for reasons that will be considered in Part II.