



THE HARBOUR WITH THE FLOATING DOCK AND A LARGE GERMAN TYPE M.L

THE RHINE SQUADRON

BY

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Introduction

Before the author came to Germany he often wondered what the Royal Navy was doing on the Rhine. Since then, he has heard several people ask that question. To these, and many others who may wish to know, this article, which is not highly technical, is written.

Naval Bases in Germany

After the Second World War, the Royal Navy was based in Germany at Cuxhaven, Wilhelmshaven, Kiel and Hamburg until the German naval vessels had been disposed of, and base equipment no longer required by the allied navies was dismantled. In 1949, the bases at Wilhelmshaven, Kiel and Hamburg were closed down, although liaison officers with small staffs were left in Kiel and Hamburg. The German minesweeping base at Cuxhaven was renamed H.M.S. *Royal Albert* and became the headquarters of the Royal Naval Elbe Squadron. Small liaison staffs were also stationed in Berlin and Minden, whilst Benkhäusen, near the Army and Air Force headquarters, and in a central position to the Naval units, was adopted as the headquarters of Flag Officer, Germany.

To meet Supreme Headquarters, Allied Powers, Europe requirements, naval bases were opened in the various allied sectors of the Rhine with the main objects of controlling shipping, supporting the army, and showing the Flag.

The United States Navy opened three bases at Mannheim, Karlsruhe and Schierstein (Wiesbaden), to cover their 100 miles of the Rhine, and the French chose Kehl, Bingen, and Koblenz for their two sectors. The site selected for the British naval base was at Uerdingen.

THE RHINE BASE

Location

The River Rhine, which flows for 140 miles through the British sector of Germany from Konigswinter to Emmerich, has long been regarded as a natural defence in war. It is the main river artery in Germany, and carries a never ceasing flow of heavy barge traffic, chiefly to and from the Ruhr district, for which Duisburg, the biggest inland port in Europe, is the harbour.

Uerdingen is a small industrial town about 12 miles from Duisburg, and approximately half-way along the British sector of the Rhine. The harbour chosen for the naval base is about seventy yards wide and half a mile long, running parallel to the Rhine and five hundred yards from it. The spit of land dividing the harbour from the river had been used by a soap factory, a soft-drink works, and as an unloading point for scrap metal. War damage had put the soft-drink works out of action and the scrap metal had spread into its grounds. No berthing pontoons were fitted against the steeply graded harbour banks, but five and ten ton electric cranes, owned by the harbour authorities, were available at the harbour entrance. This then, was the state when the advance party arrived at Uerdingen in October, 1949, to set up a naval base.

A Start is Made

Three dumb barges were towed from Wilhelmshaven to Uerdingen to serve as living ship, offices and workshop. They were accompanied by a small number of German type M.L.s which formed the original Squadron, or Flotilla as it was then called. The barges were moored alongside the harbour bank to provide berthing facilities for the M.L.s.

The living ship had been used for accommodation of German minesweeper crews during the war and was, therefore, ideally suited for its new role. It became the Headquarters ship of the flotilla and was named H.M.S. *Royal Prince*. The office barge had sufficient compartments built in the superstructure to meet initial requirements.

The workshop barge contained woodwork, light machine, fitting and electrical shops. A planing machine, circular saw, band-saw and benches were already installed, and the light machine shop was fitted with two lathes, a drilling machine, grindstone, milling and shaping machines. The barge had been converted to a repair ship at Wilhelmshaven, using machinery from the German naval base.

The grounds of the soft-drink works were cleared of scrap metal and rubble, and wooden sheds, transported in sections from Wilhelmshaven, were erected. The first two provided repair facilities for motor transport. Light machinery, powered by electricity from a four-cylinder Diesel generator, was installed so that most repairs to vehicles could be undertaken. Further wooden buildings were erected for a wardroom, offices and recreation rooms. Later, when more operational craft arrived, some of the war damaged buildings were repaired and became living quarters for the chief and petty officers and junior ratings.

The nucleus of a repair and maintenance team for craft and motor transport was recruited from German labour at Wilhelmshaven. Most of these recruits were experienced in maintenance of the M.L. machinery, since some had been

employed in this capacity in the German naval base, while others had been mechanics in the German Navy. As the number of craft and vehicles increased, additional labour was recruited locally to form a maintenance party which could deal with all types of minor repairs.

Arrangements were made with selected shipyards at Duisburg and Koln for dockings and major repairs of craft. Most of the shipyards are small, and craft, including L.C.T.s going to refit, are shipped on cradles which are lowered on rails into the river from the sloping bank of the shipyard. The cradles are hauled up the bank and the craft removed on to wooden blocks. Usually, the craft is placed across the sloping bank at what appears to be an alarming angle, and if the river rises to a high level, as it did in January this year, flooding is quite likely to put an end to the slipping.

In the early days, the shipyards were keen to take on craft repair work, but they are less willing now because most are busy on the construction of barges tugs and small vessels for Rhine traffic. They also feel that repair work to the squadron's craft is unlikely to be a regular order, and prefer, therefore, to obtain contracts from German firms to build up a good trade liaison for the future.

The hull and machinery work undertaken by these small shipyards is of a reasonably high standard, though they often use primitive methods when carrying out their work. For example, when drill-testing a plate, a hooked wire and thumbnail is used by one firm for measuring thickness. Most of the yards are, however, re-equipping with new machinery, and soon these primitive methods will disappear.

Composition of the Squadron

The number of craft has varied with S.H.A.P.E. requirements from the original holding. At present, about sixty craft form the squadron, although many are in immediate reserve. Approximately half are British L.C.T.s, L.C.M.s and L.C.A.s, the remainder being ex-German.

The German craft are basically of two types, the large M.L. and the small M.L. Both are of wooden construction, and during the war were used as Air Sea Rescue craft and Torpedo Recovery Vessels respectively. Since the war, and until taken over by the Royal Navy, some were used by the Customs Service for frontier inspection.

The large M.L.s are fitted with twin 6-cylinder, 4-stroke, reversible Diesel engines with exhaust blowers, built by Motoren Werke Mannheim (M.W.M.), each developing 825 h.p. at 850 r.p.m. An auxiliary twin cylinder Diesel engine, capable of driving an air compressor, dynamo or bilge pump by clutch is also fitted. The direct drive main engines can propel these 70-ton craft at a top speed of 24 knots. The length overall is 90 feet and the maximum beam 16½ feet.

The small M.L.s have single 6-cylinder, 4-stroke Diesel engines, either M.W.M. type or Klockner-Humbolt-Deutz. These reversible engines are air starting and develop between 250 and 300 h.p. at 650 r.p.m., giving a top speed of 13 knots to the 30-ton craft. No auxiliary is fitted, the auxiliaries being driven off the main engines. The air bottles are filled by back-charging. The length of these craft is 60 feet and the maximum beam 11 feet.

Repair Policy

The German craft have been absorbed into the squadron piecemeal as each became available, and considerable alterations were necessary before they were suitable for service. The fitting of armanent, ammunition lockers, additional fuel, fresh water and lubricating tanks and alterations to the accom-

modation were part of the modifications required, but the engine-room machinery presented one of the biggest long-term planning problems.

No records of the history of the machinery were available, and six different types of main engines, with four dissimilar types of auxiliary engines were fitted. Some of the types were no longer in production, and most were of war-time design. It was decided as a long-term policy to standardize on one type of main engine and auxiliary for the large M.L., and two main engine types for the small M.L. This would ease the problem of ordering and stocking engines and spare gear. As each craft became due for major refit, obsolescent engines were removed and standard types fitted. In craft where the standard engines were already fitted, these were completely reconditioned at a suitable major refit, to remove uncertainty regarding the internal condition, and to provide a basis for calculation of future overhauls.

The major overhauls were carried out by German contractors, but at the same time, action was taken to re-equip the base workshops with suitable machinery, so that major overhauls could be undertaken by the base repair staff. In August, 1954, to ensure that these facilities were adequate, two major overhauls of M.W.M. 6-cylinder Diesel engines were successfully carried out.

The German M.L.s have reasonable accommodation and cooking facilities, and are capable of proceeding long distances from base without re-fuelling or re-provisioning. The wooden hulls of these craft and the British L.C.A.s however, are more liable to damage from natural hazards than steel craft, and occasional emergency slippings are necessary. In addition, when the river level is low, craft frequently sustain rudder or propeller damage, and repairs are usually beyond the capabilities of the shallow water divers. The absence of a method of slipping craft within base resources was a serious drawback, for, apart from the expense of slipping a craft at a private shipyard, contractors are not always able to provide a vacant berth at short notice. The construction of a slipway within the section of harbour belonging to the base would have been an expensive operation and the proposed site also met with opposition from the German harbour authorities. The plan was, therefore, abandoned.

A vehicle trailer and three stands were purchased so that an L.C.A., requiring emergency underwater repairs or periodical docking could be lifted on to the trailer by a crane at the harbour entrance. The trailer was then towed into the base and the L.C.A. jacked on to a stand under cover. Motor cutters and small craft could receive similar treatment. The problem still remained unsolved for the remaining craft.

THE FLOATING DOCK

In June, 1953, a report was received that a small steel floating dock, used by Bloehm & Voss for seaplanes during the war, was held by the R.E.M.E. at their workshops at Hamburg. It had not been used since the war. No drawings or details of the dock were available, but a quick inspection showed that it would be suitable for at least the British L.C.M.s and the German small M.L.s. A site by the harbour bank within the base was dredged and piles sunk while the dock was slipped and refitted at Hamburg. In October, 1953, the dock was towed into position and secured. During the winter months, the theoretical capabilities of the dock were assessed, and modifications carried out to prepare the dock for taking craft.

It was intended to hold trials in the New Year, but they were delayed for over a month by severe icing in the harbour. Towards the end of February, the harbour was free of ice, and trials to get the feel of the dock started. The first attempt at lowering nearly ended in disaster, when, shortly after the pontoon deck had been submerged, the flood-valves had to be closed quickly to arrest

a rather rapid nose-dive. Trials proceeded with more caution after this, and the dock was successfully lowered and raised several times.

A German motor boat, length 42 feet, beam $8\frac{1}{2}$ feet and weight 7 tons, was chosen as the guinea pig for the first docking, since damage to this craft would not affect the squadron operationally. It was reported that this motor boat had no projections below its straight keel, and no special precautions were therefore taken beyond settling the craft centrally on the blocks. Side shores were placed, and the dock raised with a feeling of achievement which was tempered later when it was discovered that the boat did have an extension below the keel but, by luck, it had nestled neatly between two adjacent keel blocks.

A small German M.L. followed the motor boat into the dock, and then with experience growing throughout the year, a total of two large M.L.s, seven small M.L.s and eight L.C.M.s were given periodical or emergency dockings. No attempt was made to dock a large M.L. until October, when enough experience had been obtained to assess the effect of such an operation. Calculations showed that, although near the limit, docking such a vessel was a practicable proposition, and it was gratifying to see the first large M.L. towering in the dock as proof. Many devices were rigged as auxiliaries to the dock, the most notable being a pontoon with a travelling hoist for removing the propeller shafts from craft for examination, and a vertical oil-fired boiler for supplying de-icing steam to dock tank and ballast systems during cold weather.

The acquisition of the floating dock and the L.C.A. trailers enable 95 per cent of the craft held to be slipped or docked within base resources. A ten-ton crane, to be mounted on the harbour bank, is expected shortly, and this will give independence from the harbour authorities when lifting L.C.A.s and the heavier craft engines for refit. Two derricks have been installed in the workshop barge for lifting lighter engines.

OTHER ITEMS

Craft Defects

To the list of normal troubles expected from war-time built I.C. engined craft, certain other defects which occur chiefly as a result of river work, such as silting of cooling water systems and frequent underwater damage, must be added.

In winter, a rigid cold weather routine is adopted to protect the machinery of craft afloat, as freezing of the water in the harbour is common. However, to offset these additional troubles, operating in fresh water gives the underwater paint of craft a much longer life and docking periods can usually be extended when necessary, without ill effects.

Motor Transport

The motor transport for the seven Royal Naval units in Germany is administered and maintained in the base. About 150 vehicles, mostly of German manufacture are involved. Minor repairs to vehicles are carried out by individual units using spare gear despatched from base stores, but major repairs and general overhauls are undertaken by base workshops.

Supplies of Equipment and Stores

Most of the material requirements of the Occupation Forces are met by purchases through funds allotted from the German budget. Each Royal Naval unit makes a quarterly bid, under the various financial subheads, to Flag Officer, Germany. The amount to be spent under each subhead by each unit

for the quarter is then apportioned, according to priorities, by Flag Officer, Germany from funds allocated to the Navy. The subheads include:—

Buildings:	construction and repair.
Motor Transport:	purchase and repair of vehicles.
Craft:	refits, dockings and purchase of spare gear.
Labour:	wages for German staff.

All expenditure on material requirements is vetted by a member of the German Finance Bureau, who checks that prices charged are fair and reasonable.

Since naval dockyard facilities are so remote from the squadron, the base has been built up to a stage where it is largely self-supporting. Equipment has been installed to enable most repairs, formerly carried out by German contractors, to be done by base repair staff. Stocks of spare gear and stores for items of German origin are also maintained in larger quantities than are normal in naval bases. The build up, within the financial allowance and availability of labour, has been gradual but substantial results have been achieved.

Complement

The German complement of the base is only slightly less than the British complement, and over 80 per cent of the repair staff is German. The average German employee is hard working. He likes to be given an order and will then work until the job is finished, or he is told to stop. The repair staff mechanic is not highly skilled, and is roughly equivalent to a good English garage mechanic. He is, therefore, more suited to a system of 'repair by replacement' than to tasks which require considerable ingenuity and skill.

The British Sailor or Royal Marine of the base is handicapped ashore in the familiar role of ambassador, by language and financial difficulties.

Within the base, however, the relationship between the British and German is good. It is believed that similar relationships exist in other Service units, and it is hoped that this influence will go a long way towards a better understanding between the two countries.

Squadron Activities

The squadron's activities are not always confined to the British sector of the Rhine. All available craft were in Holland, rendering useful service, during the flood disaster in the spring of 1952. Representative craft were at Spithead for the Coronation Review, and in Paris for the twentieth 'Internationale Salon Nautique' in 1954, while L.C.A.s have been transported sixty miles by road and lifted by Miller's crane into the Mohne Sea for Canadian Army exercises.

Occasional visits are also made by the squadron to the American, French and Dutch bases on the Rhine, and craft on exercises or ceremonial visits have called at Belgian towns. Switzerland was visited during the autumn cruise last year, and it is understood that this is the first visit ever made by craft of the Royal Navy to that country.

The squadron, therefore, in addition to its main functions, has frequent opportunities of promoting good relationship with representatives of allied countries in N.W. Europe.
