TRANSACTIONS

VOLUME VIII

1953-54 1954-55

"*Landfall*"

(*See page 4*)

THE LIVERPOOL NAUTICAL RESEARCH SOCIETY

"All delight is in masts and oars and trim ships to cross the stormy sea."—Odyssey.

Vol. VIII TRANSACTIONS 1953-4 and 1954-5

Issued in 1957, the 750th anniversary of the grant of a charter to Liverpool by King John.

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The Society as a body do not necessarily agree with the statements made or opinions expressed herein, and the authors of papers are alone responsible for their statements and opinions.

THE LIVERPOOL NAUTICAL RESEARCH SOCIETY

(Founded 1938)

The objects of the Society are:—

1. To encourage interest in the history of shipping (particularly local shipping) by collecting and collating material relating thereto;
2. To undertake an historical survey of Liverpool vessels, their builders, owners and masters;
3. To disseminate such information by publications or by any other available means;
4. To co-operate in every suitable way with other organisations in Liverpool or elsewhere having similar or cognate objects;
5. To encourage the making and collection of scale ship models, and their exhibition.

The annual subscription of ten shillings entitles members to attend meetings of the Society, to read papers before it, to take part in any excursions that may be arranged and to receive "Transactions" and "News, Notes and Queries", issued from time to time.

For further particulars apply to the Hon. Treasurer.

Liverpool Nautical Research Society
28 Exchange Street East
Liverpool 2

EDITORIAL

As with most organisations, the Liverpool Nautical Research Society is suffering from the impact of rising costs. In an effort to avoid an increase in the subscription, the papers read during the sessions 1953/4 and 1954/5 have been printed in one volume. This alone would not have been sufficient and continued publication of '*Transactions*', without increased subscription, is due to donations received from several benefactors, to the steady increase in the Society's world wide membership, to the support of our advertisers and to the unselfish help of our printers.

Not all the business of the Society lends itself to publication in '*Transactions*'. The contributions at the meetings in December, '53 (Mersey Memories by E. Jones, Esq.); in April, '54 (Symposium on Shipping Casualities) and in February, '55 (Exhibition of Drawings by G. Dickenson, Esq. and P. S. P. Morter, Esq., F.R.I.B.A.) depended largely on visual appeal. Consequently, for these meetings, members must be referred to the brief accounts which appeared in 'News, Notes and Queries' at the time.

It is hoped that members will continue to make full use of 'News, Notes and Queries'. Its value—and the frequency with which it can be published—depends almost entirely upon the Editor receiving a steady flow of queries to be submitted to our members and of items of general interest.

The Society Badge, used for the first time in this issue, was presented to the Society by our President, Sir Ernest B. Royden, Bart.

In 1930, Mr. George Kruger Gray, the well-known heraldic artist, who has been dead many years now, designed a badge for Sir Ernest, which was never put to its intended use.

With a suitable alteration in the lettering it now becomes our official badge, and the Society is most grateful to the President for his kindness.

It is of interest to note that Mr. Gray, on one occasion, designed some of our coinage.

Landfall

In 1946, a tank landing craft, LCT 7074, was acquired by the Merseyside Master Mariners' Club from the Admiralty and converted into a comfortable club ship by Messrs. Bell and Burnie, Ltd., of Bootle, at a cost of more than twelve thousand pounds. She was "commissioned" as a club in August, 1948, and is moored in Canning Dock. Through the kindness of the Master and Committee of the Club, the Society has, for some years, held its meetings on board. These comfortable quarters provide just the right atmosphere for maritime matters, and this gesture is greatly appreciated by the Members of the Society.

(*Block of frontispiece kindly loaned by the Club Committee.*)

LOOKING BACK

by CAPTAIN E. W. C. BEGGS

Read 10th November 1953

Before I commence to talk about sea life, which is the subject of this paper, I would like to mention a few details about the Port of Liverpool, in the early eighties and for a time afterwards. Looking at the docks in those days, they were almost a forest of masts. Many of the old trades, which were necessary then, have almost disappeared, such firms as block and spar makers, sailmakers, and others. The vast army of riggers, many ex-seamen, who did all the work required, such as bending and unbending sails, renewing spars when needed, shifting vessels in dock or taking ships short coastwise passages have gone. All movement in the docks was almost entirely done with lines and not by tugs as now. Another fine body of men were the boatmen with their little gigs; these frequently went out as far as the Bar Ship, and sometimes as far as the Skerries in fine weather thus to meet inwardbound ships and secure their work when in port.

One saw vessels loading for all parts of the world. The cargoes were, as a rule, general, but coal and salt played a good part. As well as our own ships many of the finest American vessels traded to this country, especially to Liverpool and Birkenhead. Some of the principal steamship companies even of today, commenced with sailing ships, and some of these companies were originally founded by shipmasters, who later became shipowners themselves.

One very large trade was that of timber, and the vessels went by the name of timber drogers. Many were built in Nova Scotia, New Brunswick or Quebec. Most of them carried softwood and usually discharged in the north docks, especially that now named Carriers Dock. The heavy logs were hauled out through bow ports, which these vessels had, by horses on to a low quay. Many of these ships came to grief when crossing the Atlantic. It was a common thing to sight one of these vessels abandoned, waterlogged or dismasted. The crew had been taken off, and being laden with timber the hull would not sink. For years these derelicts were a serious menace to shipping. Warships at times were sent out to sink them.

To touch on the early training of boys at that time, this was almost all in sail. They had to put in four years at sea, the time in port was taken off, thus all the certificates of 2nd, 1st mate and master were all for sail. It was later, I think, that the steam ticket came in on the decline of sailing ships, or for the boys who only served in steam. One very sorrowful thing I remember was the many vessels that figured in the overdue lists from time to time. The daily papers gave far more shipping news then than now.

For instance, almost all sailing of vessels were recorded when leaving home ports, also their arrival at their destinations. It was not an uncommon thing to trace one or more ships as overdue, or in the re-insurance list. Very many of our finest Liverpool owned ships disappeared when carrying coal

from Newcastle, New South Wales, to west coast ports of U.S.A., Chile and Peru. It was thought their losses were either from fire or explosions, but nobody ever found out the reasons, as few of the crews, if any, were ever picked up. It was only four years before the time I am touching on that Samuel Plimsoll in 1876 got the Merchant Shipping Act passed. One never knows, but perhaps he was inspired by the great losses to shipping at that period. May I tell you of a personal matter. My father and mother's family had much to do with the sea in past years. My great-grandfather and grandfather on my mother's side were shipmasters out of Whitehaven. My father was in the Cunard Company and my youngest son is the sixteenth shipmaster in our families, or related to them.

Just before I left school my mother's family suffered some severe losses, and naturally they did not want me to follow the sea. Her cousin was master of a Liverpool ship named the *Egremont Castle* owned by Chambers, and on this voyage the master's brother was his 1st mate. Also on this trip he had his wife and two children with him. The ship left San Francisco with a full cargo of wheat for Birkenhead, but was never heard of again. A little time before this sad event an uncle, also of my mother's, was master of a large ship which was lost off the coast of Ireland, only wreckage being picked up gave any evidence of her fate. From the foregoing it can be seen why they did not want me to follow the sea. However I went and never regretted it—this will be seen later.

On the 12th of October 1881 I joined the barque *Pole Star* in the old George's Dock, the site where the present Mersey Docks and Harbour Board building stands. She was a vessel of 625 tonnage and owned by Messrs. Coltsworth Lyne & Co. The owners at that time had a fleet of sailing vessels trading regularly to San Francisco and the west coast of South America. My indentures were signed for five years. I was to receive £40 for that period. We loaded general cargo in the Salthouse Dock, but finally left the north-east Canning Dock, the very same berth where this Clubship is now moored. On the 5th November we left in tow of the Old Tug Company's tug *Rescue*, which towed us as far as Tuskar. Before going further I will give a brief description of the vessel. She was an iron barque, and perhaps one of the oldest vessels of her kind afloat, having been built at Hull in 1858, being then twenty-three years old. Few ships in my opinion ever had such a long and successful career in the Cape Horn trade. After another fourteen years she was finally sold to the Booth Line for a coal hulk at Para. The crew consisted of twenty-five hands. Four apprentices, carpenter, cook and sailmaker lived in what was called the half-deck, which was situated across the forepart of the poop, thus seven persons occupied this place, which was very small, and entirely without heat or ventilation. There was a small hatchway over the place we occupied, and in heavy weather this had to be closed on account of water coming down, and you can quite imagine the place became more than stuffy at times. All the A.B's had their quarters forward in a lower place, almost in the eyes of the vessel. We were favoured with fine weather for the time of the year. It was a custom then to sight Maderia if possible so as to check the chronometers and this we did when about ten days out. Soon afterwards we picked up a strong north-east wind which carried us into the Trades.

Well, in regard to my new life, I must admit it took me some time to get used to the food, which at this time was strictly in accordance with the Board of Trade scale of provisions at this period, and was as follows:—

Board of Trade Scale 1881

Biscuits	1 lb.	daily.
Salt Beef	1½ lb.	four days a week.
Salt Pork	1¼ lb.	three days a week.
Flour	½ lb.	three days a week.
Peas	⅓ pint.	three days a week.
Rice	½ lb.	one day a week.
Tea	⅛ oz.	daily.
Coffee	½ oz.	daily.
Sugar	14 oz.	a week, which had also to sweeten lime-juice.
Water	3 quarts	daily (for cooking, washing and drinking).

You will note that there was no butter, marmalade or condensed milk and many other things that are now on the revised scale.

We made a good run to the Equator and fortunately for myself and another's first voyage, Father Neptune did not pay us a visit. The south-east Trades are pretty much a head wind for outward-bounders, and with this many vessels have difficulty in weathering the coast of Brazil without having to tack off the land. However, we were fortunate enough to avoid this, but came in so close to Pernambuco that the city was in sight, and many of the small boats fishing outside were close to us.

My first Christmas Day at sea was running with a fine northerly wind off Cape Frio, bordering on the tropics, and I went for twenty-four years afterwards without ever having one at home.

Not very long afterwards I experienced the first heavy gale of wind. As it was the Pampero season off the River Plate, our captain's very watchful eye saved us from perhaps being dismasted. We had very little northerly wind, and about nine p.m. vivid lightning was seen in the south-west. The wind had fallen almost to calm. All hands were instantly called, and many wondered what the reason was for this strange action on the part of the captain, but we soon found out. We were ordered to clew up, and furl one sail after another. Before some of the larger sails were fast, and the men down from aloft, the storm struck us with great violence. Fortunately our light barque was snugged down enough to meet the first gust of wind. Long before midnight, and during the whole of the following day, we were riding out the gale.

One particular feature connected with these storms is the large number of locusts and butterflies that are blown out to sea. After the gale had moderated dozens of these were found where the ropes had been coiled up. The masts were also coated with thin sand. On many occasions since, I have experienced these blows when lying in the River Plate ports.

For a number of days afterwards we had fine weather. One day after dinner we saw a large turtle not far from the vessel. The gig was launched The first mate, two seamen and two apprentices manned her. The turtle was evidently having a sleep, but was soon turned over on its back and was then

lifted into the boat. During the next few days we had a change from our usual bill of fare.

When nearing the southern part of this ocean, you can always tell by coming in touch with the bird life, such as albatross, cape pigeons, penguins, or Patagonian donkeys. This name, I think, was given because of the peculiar noise they make, which resembles a donkey braying. They do this when disturbed from their sleep at night, as the ship approaches.

Vessels bound south pass inside the Falkland Islands, and if the weather and the wind is favourable, may use the Straits of Le Maire, and this we did on this passage. We had some very unpleasant weather when off the Horn, but as it was mid-summer, there was little darkness, which made things much more agreeable.

We reached Valparaiso after a passage of 194 days having covered 9,000 miles or more. Valparaiso, viewed from the bay is a beautiful place. In fact, its name means Vale of Paradise, though it is anything but a paradise in the winter season, when the 'norther' blows in from the sea, and it has been the graveyard of many vessels sinking at their anchorage during these storms. In fact later on, when 2nd mate of a little ship, we nearly sank in one of the great blows. The vessel we collided with, and ourselves, were both dismasted. Many other ships sank with great loss of life.

All the work of discharging and loading cargoes was done by the crew. After two months in port, we left with a full general cargo for Liverpool. It consisted of grain, copper, oil cake, honey and some other things. We had some very bad weather near the Horn, but being a fair wind we made pretty good time, arriving in Liverpool on August 13th, 1882. Thus ended my first voyage.

My second voyage was also for Valparaiso, as well as Carrizal where we landed some heavy boilers and machinery, putting them out with our own gear.

We left for Talcahano where we loaded a full cargo of grain, again for Liverpool, and it was from this port we made a very fast passage. Leaving port with a 'norther' blowing, we beat out of the Bay and upon clearing squared away with a fair wind. On the ninth day we rounded the Horn, and on the thirty-second day we crossed the Equator. The wind had been favourable most of the time. We sighted the Island of Corro, one of the Azores, on the fifty-second day. Unfortunately from there to Liverpool we had very light winds, but in spite of this, made the passage in sixty-eight days. We hear in these days a deal about the *Cutty Sark* and other tea clippers, but I think some of the west coast vessels, also the Swansea copper ore barques, quite equalled any of these vessels. One small vessel named *Nauphante*, the same company as the *Pole Star*, only 365 tons register, made two voyages to Valparaiso and back in under twelve months. The little ship *Grace Gibson*, 540 tons, of the White Star Line also made many rapid voyages, and many others one could mention. Incidently, I think she was the first sailing ship to navigate the Manchester Ship Canal.

I made two more voyages, one to Valparaiso, and my last to Callao, where I left the vessel. My reason for leaving I will explain briefly.

The voyage before, when well south, we were setting a topsail in the middle watch after a moderating gale, just to steady the vessel. There was

considerable sea at the time and the ship was rolling heavily. Five of us were on the capstan, and the 2nd mate, who was a perfect bully, said to one of the men that he was not putting his weight full on the bar. The man answered that he was. In an instant the 2nd mate unshipped his capstan bar and felled the man to the deck. A free fight started. However, the captain, coming from below, separated the two men.

On arrival at Valparaiso the man whom the officer had injured, went and saw the British Consul. He asked me to go with him, as a witness, which I did. The captain never forgave me for giving evidence against an officer, and you can imagine afterwards the 2nd mate was no friend of mine, so I made up my mind to leave the vessel, which I did.

There is no use my troubling you with all I went through, evading the police, as there was $40 reward out for me, and spending some time on shore before I shipped as able seaman on board a large wooden New Brunswick ship named *Macedon* of 1,485 tons register. She had a full cargo of coal for Pazta, a port a little further north.

Having had very bad weather when off the Horn, five of the men had to be discharged through illness, thus five new hands were engaged at Callao, myself being one.

After a short passage we arrived at our discharging port. The crew as usual worked all the coal out, and it was a very hot job indeed. The cargo was for the P.S.N. Company, and we lay alongside a large hulk. Each time a steamer came in for coal we had to heave off for a time. One very strange thing about this part of Peru is that rain was almost unknown, but at night-time the dew was so heavy that it would almost wet one through in a short time. It was one of the most fertile parts of South America, in spite of not having any rain. After a long time in port we left for some guano islands named Lobos-de-Afuera to load homeward. The islands were quite barren, situated about sixty miles off the coast. In reality it was the home for millions of sea birds, sea lions, seals and an abundance of all kinds of fish. Our fare was the same as if we were at sea, salt provisions, and the usual allowance of water. This had to be carried from the mainland in a small steamer, and not too often.

Many of these islands, which are also off the coast of Peru, had large quantities of guano, but all the deposits have long been worked out. We worked all the cargo in, as well as pulled the lighters on shore to be loaded. The fumes were so strong that many of the men could not stand the work below. Strange to say it did not effect me, and I was one of the crew that worked almost all the time below, with a wheel-barrow, and using a shovel trimming the guano.

After almost four months in port we left for Falmouth for orders. We were only a few days out when fever set in amongst the crew. Only the captain, 1st mate and a few of the seamen escaped having a turn. I was one of the few. Unfortunately, three of the men died, the sail-maker and two seamen. The trouble was that after the men got rid of the fever there was no nourishing food on board to bring their strength round, the ship being without any medical comforts of any kind.

Long before reaching the Horn we encountered very severe weather, and with the heavy lurching and rolling the vessel began to leak. Pumping

was therefore necessary every few hours. When a few hundred miles westward of the Cape, we had a tremendous gale. The leak increased a good deal, and for four days and nights we hardly left the pumps. One morning I was at the wheel with another man, and there was a mountainous sea following. One broke on board carrying the other man and myself right amidships. The wheel was taking charge and in a short time the vessel would have broached to, but the captain, hearing the sea coming over the poop, ran up from the cabin just in time to take the wheel, thus fortunately saving a disaster.

In the leaking condition the ship was in, the captain intended making for the Falkland Islands. However, after rounding the Cape the weather moderated, and we gradually ran into fine weather, and with less straining. We were thus relieved a little from continuous pumping, although this was done every four hours until we reached Falmouth after a passage of 120 days.

One can hardly ever forget the delight of seeing the green fields, it being mid-summer, and smelling hay, after months at sea, and the barren rocks of Peru; also to get some fresh provisions after being so long on salt food of the worst description. The bum-boats did a roaring business the days we were awaiting orders. We got orders for Antwerp, and here the voyage ended.

Only having a short period to complete my sea time before going up for 2nd mate's certificate, I secured a berth as quartermaster in the Holt liner *Titan* bound for China and Japan. She was one of the first two-masted steamers after the three-masted vessels *Agememnon*, *Ajax* and *Achilles*. The ship had single crank engines, hand steering gear, and few if any, of the modern things in steam now. She also carried sail. On arrival home I had put in a little more than four years' sea time. I made inquiries at the Board of Trade as to whether I could sit for 2nd mate's examination. However, I was informed that on account of deserting from the *Pole Star* I would have to appear before the Local Marine Board. This I did, and after many questions I was given a good talking to by the Chairman, who ordered me to make another twelve months at sea.

I then joined a large four-masted barque as A.B. The wages were £2/10/0. The vessel was a new ship named *Falls of Halladale*, of Glasgow; her tonnage was 2,026 tons register.

We left for Calcutta with a full cargo of salt on August 28th, 1887. One thing which was rather an exception in those days was having an entirely British crew.

I cannot touch on all the events which took place on the voyage of twelve months. It was certainly outstanding for long passages, being ten months at sea out of the twelve, 128 days Birkenhead to Calcutta, and after being two months in port we loaded a full cargo of jute for New York. Illness was very bad in Calcutta, many hundreds died every day with cholera. I was taken ill with fever.

When off the Cape homewards we had a succession of gales in which several ships foundered. For thirty hours we were almost on our beam ends, the galley and all the accommodation forward under water, and we received damage to deck-house, boats and standard compass. Near Bermuda we had a calm which lasted for twenty days and hardly moved. However, we arrived

at New York after being 180 days on passage, and we only sighted the land once, this was off Port Elizabeth. The vessel had been in the overdue list for some time. It was thought we had gone with the other ships missing. I left the ship at New York taking passage home in a Cunard steamer *Umbria*.

After passing for 2nd mate, I joined the ship *Beechwood* and again left for Valparaiso. Nothing of much importance took place, except that we were almost sunk in a northerly, this I mentioned before.

An ocean race I think is worth mentioning. It was between the *Beechwood*, the vessel I was in, and another vessel of the same Company, a barque named *Yosemite*. Both of us left Iquique bound for Queenstown together, and when night came on we were about two miles apart. After a passage of ninety-two days we made the Irish land and on arriving off Queenstown just before daylight, we saw the side lights of a vessel quite near to us. When daylight came, we saw it was the *Yosemite*. A tug came off and he took us in first, so we gained the race. After covering more than 10,000 miles, we had never sighted each other until the morning of arrival.

Being fourteen days short of my time for passing 1st mate I made several voyages in one of J. Markwood's steamers as 3rd and 2nd mates, trading out east to India and Burma, coal outward and rice homeward.

After passing for 1st mate I again went into sail, joining a small barque of 378 tons. We made the voyage to Brazil, West Indies and Southern States, and back to Swansea, where I left to come home.

I passed for master in 1892. The same year I joined Messrs. John Glynn & Company as 2nd mate, then 1st mate, and in 1897 was appointed master of the steamer *Mainiss*, a ship built at Seacombe by Bodler and Chaffer. I had command of four ships, three in the Mediterranean trade and one in the Spanish, Cuban and U.S.A. trades. In all, I served the Company for nine years, five of which were in command.

In 1902 I obtained command in the Manchester Liners. This Company had not long been going. In fact I was transferred from Glynn's and took a new vessel building on the Tyne. She was named *Manchester Miller*, of 2,660 tons and 9,000 tons dead-weight. In all, I commanded fourteen of their ships, and retired as Commodore of the firm, after being twenty-six years with the Company.

In a brief talk like this one cannot mention all the little occurrences which took place in my sea life of forty-eight years, thirty-two of which have been in command, but in many ways it was similar to any seaman's life in the years I am talking about. But, how different were the early days then to now. Not many of my generation are left. The ships have all gone, and in a few more years few, if any, of the older sail trained men will be left.

There is, however, a question I am often asked. It is this: "Do I think that the sail training was better than that which is now general in steam, or would it be any good, now, if more training ships were in use?" It is my opinion that it would be of little use now. Certainly discipline was more rigid, or strict, in sail, and perhaps there was more co-operation between the crews. Each man took a little share in the well-being of the vessel, and all were in the same boat, so to speak, and what was good for one was good also for others. But now that steam has superseded sail, I think things have very

much altered. For instance, you have the different departments, each with their own duties, not one body of men which depended so much on man power. One has only to look back on two great wars to see that the men who now man the merchant ships are as good as ever they were, in spite of no sail training they performed great deeds of valour, and showed remarkable endurance which has hardly ever been surpassed in our history. Modern warfare as we all know is most terrible, and merchant ships have had to play a bigger part than ever in war.

Well, in conclusion of this rather varied talk, in 1929 I retired from the sea, but in many ways, although I swallowed the anchor, my interest in the sea, and more especially those who, like myself, were seamen, has been as great as ever. However, it is good to have lived to see the wonderful improvements which have taken place. Improved accommodation, better food, and higher pay. These are only a few of the advancements which go to make sea life so much better now than in our early days. Nevertheless, even then we were happy, at least I was.

(*The Council records with regret the death of Captain E. W. C. Beggs on December 25th 1955 at the age of* 89.)

OLD WINDERMERE STEAMERS

by MAJOR E. H. PATTINSON

Read 12th January 1954

Lady of the Lake

(The first paddle steamer—1845)

In 1845 a small company called "The Windermere Steam Yacht Company", was formed under the chairmanship of Thomas Roper, of Newlands, Ulverston. The builder of the first steamer was Richard Ashburner, the Greenodd shipbuilder, which firm in later years went to Barrow and became the first Barrow shipbuilders. The steamer was built of wood, 80 ft. long, 11 ft. 6 ins. beam, depth 6 ft. 4 ins., forty-nine tons, 20 h.p., speed nine knots. She was laid down at the north side of the river at Newby Bridge. It was intended to be screw-propelled, but it was found that the shallow water in Bowness Bay and the river to Newby Bridge would require paddles. The paddle boxes were made as small as possible to avoid spoiling the lines of the vessel. She was schooner rigged with tall funnel and masts, rigging and long bowsprit after the fashion of the time. Her appearance was striking, black hull with gilded moulding and figurehead in white of the *Lady of the Lake.* The saloon was decorated in pink and white and fitted with carpet and mirrors.

She was launched by Miss Machill, of Pennybridge on 26th July 1845. After the usual speeches, J. R. Fell, of Flan Howe, presented Richard Ashburner with an inscribed snuff box. At night there was a dance on the deck, with music by Kendal Yeomanry Band. So ended a successful launching. Regular services commenced at once which started opposition from many quarters, the leader of which was the Poet Laureate, William Wordsworth. *Punch* wrote a sonnet importing to describe his feelings.

At a meeting of the Company in October it was reported that *Lady* had carried more than 5,000 passengers in her first short season. This figure I greatly doubt. It was decided to build a second vessel, similar to the *Lady.* She was built by the same builders at Newby Bridge, and called *Lord of the Isle.* The time tables of the two steamers were timed to connect with the coaches from Ulverston and Milnthorpe Railway Station on the old Lancaster and Carlisle Railway. The winter service only ran for one or two winters and did not start again until 1859. The old company did not have it all their own way. After four years of success another company was reported to be building an iron paddle vessel. The new company was called the Windermere Iron Steam Boat Company. The vessel was built by Messrs. McConochie & Claude of Liverpool in 1849. The parts were brought by train to Windermere and carted down to Lowwood, where she was put together. The name of this paddle steamer was the *Fire Fly.* She took longer to build than was expected and was not launched until 1st August by Mrs. Claude, wife of

the builder. She was 75 ft. long, 11 ft. 6 in. beam by 6 ft. 3 in. depth. There was soon trouble with this boat. Kendal papers published letters from indignant correspondents who, with many others, had been left stranded owing to her little habit of going off on private afternoon excursions instead of maintaining her time table. Capt. Mattix was the first captain and told many who sailed in her that she was difficult to steer.

The new company was believed to be backed by the Kendal & Windermere Railway. A meeting was held at Bowness on 6th February 1850 and adopted a proposal of James Birkett of Birkett Howes, that a new iron paddle steamer should be built, which was to be called *British Queen*. She was launched on the 19th November 1850, built by McConochie & Claude, but called the *Dragon Fly*. Length 95 ft. 16 ft. 6 in. beam, 354 tons, 12 knots, and could seat 250 passengers.

Both companies gave their vessels an overhaul prior to 1854, the *Lady* being greatly improved in speed and appearance. Sabotage was common between the crews of the two companies. The *Lord of the Isles* was so seriously damaged by fire that she never ran again. Frank Robinson has the details as follows. Jim Hiley's son was blamed for setting it on fire. He was locked up for it, but let off. Captain Searl of the *Lady*, on which he was sleeping, smelt fire. He ran up the village in his shirt, calling "fire", but little could be done. Bitter ill feeling continued, and the owners were definitely the victims of malice. Shortly after they advertized, in May, offering £10 reward for information leading to the recovery of some of the *Lady's* machinery, which had disappeared. No clue was obtained until 11th September, when one of her crew saw some of the missing parts in the water in Bowness Bay.

In 1856 the two companies saw the error of their ways and an advertisement in the paper of 15th May stated, "The Windermere Steam Packet had commenced on May 9th". The firms were appended and the whole was signed by order of the solicitors of the Windermere Steam Yacht Company and The Iron Steam Boat Company. The first meeting of the two companies took place on 5th May 1858.

As stated the winter service started in 1859. In December 1860 the company was sued in the Ambleside County Court by John Love, an Ambleside tailor, for loss of time and expense incurred by a refusal to take him on board at Waterhead for Bowness. Mr. Love was awarded his claim which amounted to seven shillings.

The United Company prospered so well that in 1865 in spite of announcing that another new iron steamboat had been ordered for 1866, and paying a 12½ per cent dividend, the reserve fund accumulated over many years was distributed among the fortunate shareholders.

The new vessel was the *Rothay*, the last of the paddle steamers, designed by Douglas Hebson, naval architect of Liverpool and built by the Lancaster Ship Building Company.

The iron plates were sent to Greenodd by sea and she was built at Newby Bridge. She was the first boat to carry two classes of passengers, and was launched on 7th June 1866 by the daughter of G. B. Crewdson of The Word, Windermere. It is probable that the *Lady of the Lake* had been broken up a year before.

Lady of the Lake

Swan (1869)

To face page 14)

Dodo

Lakeside scene when the German Emperor was the guest of Lord Lonsdale in 1895

Swan

(*The first screw steamer*—1869)

The railway was opened at Lakeside on 1st June 1869 and five days later another new steamer was launched, the first *Swan*. She was also the first screw boat on the Lake, being twin screw, to a revolutionary design by Douglas Hebson, and built by T. B. Sneath of Glasgow.

In February 1871, when a dividend of 10 per cent was declared, it was agreed to permit the Railway Company to buy out the concern on a guarantee of a perpetual dividend at that rate. I have other details of the business side of this transaction, but they hardly concern the subject matter of this paper.

The *Raven* was next built in 1871 for cargo work and ran as such until 1914, eventually being sold to Vickers. She was used for a time for testing mines during the last war, and is likely to continue life as a houseboat on Ullswater.

The *Cygnet* and *Teal*, sister ships, were next built in 1879. Twin screw, 100 tons, and 11½ knots. The *Cygnet* was in commission until a few years ago, and is now a houseboat.

There followed, at long intervals, four more boats, all owned by the Railway Company, which are still in use today.

Tern	1891	Twin screw,	steam	630	passengers
Swift	1900	,,	,,	781	,,
Teal (II)	1936	,,	diesel	877	,,
Swan (II)	1938	,,	,,	877	,,

An early private steam vessel, the *Fairy Queen*, was built by T. B. Sneath at Glasgow for Col. Ridehalgh in 1859. She was an iron yacht and her dimensions and other details were: length 65 feet; beam 11 feet; weight 22 tons; single screw, nominal H.P. 16.

She was conveyed by sea to Parkhead near Holker Hall and floated off on a special wagon with wheels about thirty feet apart and drawn by twenty-five horses for the road journey to the Lake.

At Bigland Scar the planks sank into the moss and she had to be left so as to obtain more horses the next day. At Cark one of the wheels broke. After repairs the convoy continued via Cartmel and Field Broughton to Staveley Meadow where the wheels sank again. With great difficulty they were extricated, and the *Fairy Queen* was finally launched at Lake Side on 24th February 1860.

Inclusion of this privately owned vessel illustrates the difficulties that were encountered in getting these vessels, not built actually on the lake, into the water. It is recorded that in April 1863 she sailed into Bowness Bay brilliantly illuminated with gas that was manufactured on board.

Another private launch of interest was the *Dodo*, the only private paddle steamer to sail on Windermere. She was built and owned by David MacIver of Liverpool and broken up in 1915.

Accidents

Dragon Fly ran aground on Bank Holiday Monday 1867, at Belle Grange with 400 passengers aboard; she was supposed to carry 250. The *Rothay*, then a steamer of a year old, took off all the passengers.

The *Swan* and *Tern* sank at Lake Side in the storm of 1895.

In 1901, the *Tern* rammed the *Swan* on the port bow off Storrs. She kept afloat for ten minutes and went down in ten feet of water off Storrs pier. Skipper of the *Tern* was dismissed after being captain for thirty years.

In 1909, the *Swan* ran on to the road at Belle Grange. Later in the same year she ran into a rowing boat and drowned two hands from *The Old England.*

Note: The illustration "Lakeside scene" was taken on the occasion of the visit of the German Emperor to the Lakes in 1895. He stayed at Lowther Castle as the guest of Lord Lonsdale and the party are pictured on board Mr. Charles McIver's steam launch *Tie-Tara* at Waterhead, Mr. David McIver's landing, with *Dodo* (left) and *Elfin* (right) in the background.

Acknowledgment: The author wishes to record his thanks to Mr. J. L. Hobbs of Barrow-in-Furness for permission to use material compiled by him.

THE LIFEBOAT SERVICE

With particular reference to Liverpool Bay

by CAPTAIN GEORGE AYRE, A.I.N.A., F.R.G.S.
(Hon. Secretary, New Brighton Lifeboat)

Read March 9th 1954

I make no apology for speaking to a nautical audience about the lifeboat service, because I respectfully submit that although you live in or near to a large sea-port, most of you know little about the service except perhaps the glorious fact that it is still, even in these days of the "Welfare State", fully supported by voluntary contributions. This to my way of thinking is its most outstanding virtue.

The lifeboat as such is something that appeals to and goes to the hearts, and consequently to the pockets, of the British public. Long may that be so, for in accordance with the maxim "those who pay the piper call the tune", those who subscribe, the British public, would soon call the tune, as they have a habit of doing, if the service falls below its well known and cheerful efficiency. Today, the Institution has the help of over a thousand branches and Ladies' Lifeboat Guilds, with thousands of honorary workers.

And the voluntary system is not only confined to the financial side of the Institution. Since its inception on 4th March 1824, the boats of the Royal National Lifeboat Institution have been handled by men who volunteered for the work. With one exception—the mechanic, a comparatively recent addition to the crew—all hands aboard are volunteers. There are no full time lifeboat men. They are paid for each service rendered at an agreed rate —a generous one—all hands getting the same amount.

The administration is probably the most economical business organization in the country. Only £3/16/0 of every £100 collected is spent on administration, and this administration covers more than 159 lifeboats. Of each £100 collected, legacies account for nearly 50 per cent and 30 per cent comes from subscriptions, donations, flag days and collecting boxes.

All station work is by voluntary unpaid secretaries and committees, members are drawn from every walk of life. District work is done by paid district inspectors whose area covers a lengthy coast line. For instance, the district in which we are situated goes from Solway Firth to Milford Haven and includes the Isle of Man.

In London, a small but efficient staff exercises control and directs the policy of the Institution. These modestly paid officials operate from a most unostentatious office in Grosvenor Gardens, near Victoria Station. Neither time nor money is wasted. The Institution is not top heavy with officialdom. It buys only in the best market, not necessarily the cheapest, and it takes pride in the fact that its stores, like the Gates of Heaven, are always open. At any time, night or day, anything required by the lifeboat stations around

the coast can be acquired from headquarters or the depot at Boreham Wood, Hertfordshire.

Money is only lavished on the boats themselves. Today a boat, similar to the New Brighton boat, would cost £31,000, but the workmanship and material is there. The Institution has adopted a principle that only the best is good enough for the lifeboat service. Out of every £100 collected, £32 goes towards new boats and £34 for the annual upkeep of the fleet.

So much then for the general outline of the National Service, the oldest lifeboat service in the world. I now turn to Liverpool Bay and in particular to the New Brighton station.

It is not generally known that in addition to the many other services efficiently rendered to the public by the Mersey Docks and Harbour Board, one of their obligations is the provision of life saving services in the Mersey Estuary and its approaches. At least this was the case up to the 1st July 1894 when, by mutual agreement, this service, previously operated by the Dock Board, was fully transferred to the Royal National Lifeboat Institution.

Originally there were five lifeboats supported by the Liverpool Dock Trustees and stationed respectively at the Magazines, at the Liverpool Docks, at Formby, at the Point of Air and at Hoylake, and it is of interest to note that in the third issue of the *Lifeboat Journal* for May 1852, silver medals were awarded to the five coxswains for having distinguished themselves in going off to save life.

The New Brighton lifeboat station was established in January 1863, and the following is the actual notice taken from the *Lifeboat Journal*, Volume V, number 40, 1863.

> NEW BRIGHTON, CHESHIRE.—A life-boat station, in connection with NATIONAL LIFE-BOAT INSTITUTION, has been established at New Brighton, on the south shore of the Mersey, near Liverpool, and a tubular life-boat, on the plan of the late H. RICHARDSON, Esq., has been stationed there.
>
> There were previously two life-boats in the Mersey, on the Liverpool side, maintained by the Liverpool Dock Trustees; but it being thought that a boat on the opposite shore, and nearer the mouth of the river, might often be of great service, the Institution was invited to station a life-boat there, and at the wish of the local boatmen, who would have to work her, a tubular boat was selected, which was considered especially suited to the locality where the life-boats have generally to be towed by powerful steamers to wrecked vessels on the outlying banks off the entrance of the river; and which description of boat has been found to tow more steadily and safely than any other.
>
> A public launch of this boat took place at Liverpool on the 24th of January last, in the presence of a vast concourse of people, after being drawn through the principal streets accompanied by the mayor and other authorities, military, naval reserve men, bands of music, etc., under the direction of Capt. H. T. RICHARDSON, late of the Dragoon Guards, son of the inventor of this description of life-boat.
>
> This boat was built by Mr. HAMILTON, the proprietor of the Windsor Ironworks at Liverpool. It is made of the best charcoal iron, and in the very best and strongest manner. Mr. HAMILTON liberally

gave up all profit on its manufacture. She is forty-two feet long, and rows fourteen oars.

Five years later the following notice appeared in volume VI, number 69 of the *Lifeboat Journal*:—

NEW BRIGHTON, NEAR LIVERPOOL.—The life-boat establishment at New Brighton, at the mouth of the Mersey, has recently been completely reorganized, and is now in a satisfactory and efficient state. There are two life-boats in connection with the Institution on this most important station, and their services are very frequently called into requisition: one is a tubular boat, from the design of the late HENRY RICHARDSON, Esq., of Aber Hirnant, and the other is on the plan adopted by the Society. The former boat is 40 feet long, 11½ feet wide, and pulls 14 oars. It is usually taken out to wrecks in tow of one of the numerous steam-tugs that are generally to be found in the vicinity of the life-boat station. It has lately been nearly rebuilt, in Liverpool, and was replaced on its post in August last, and is now reported to be much liked by the crew. It is always kept moored afloat near the landing stage at New Brighton in readiness for instantaneous service. A new self-righting life-boat was likewise placed on the same station in April last by the Institution. This boat, which is a 32-feet medium 10-oared one, has a transporting-carriage, and the boat and carriage have been placed in a commodious wooden boat-house erected in a very good position at the sole expense of J. C. EWART, Esq., a vice-president of the Branch. This latter boat, after being tried, made a favourable impression on the coxswain and crew. The cost of the tubular, and of the new self-righting boat, has been liberally defrayed by JOSEPH LEATHER, Esq., of Cheveley, who had previously given the Society the life-boat stationed at Holyhead. At his request, the tubular boat is named the *Willie and Arthur*, and the other boat, the *Lily*.

On the 1st July 1894 the whole organization of the lifeboats in and around the Mersey was taken over by the Royal National Lifeboat Institution, and the following statement is taken from volume XV, number 173, 1894 of the *Lifeboat Journal*:—

THE LIFE-BOAT INSTITUTION AND THE MERSEY DOCK AND HARBOUR BOARD.

For several years past the officers of the MERSEY DOCK AND HARBOUR BOARD have been so much occupied and pressed by their many important duties that they have found it simply impossible to give the attention and care which they could have wished to the life-boat service of the Board, established for the protection of vessels entering and leaving the Mersey. This fact has been fully recognized by the Board, and the adverse but not always fair criticism which has of late been passed upon them in the Press and elsewhere, as a result of occasional failures in connection with the life-boat service, has led the Board to listen to the suggestion made to them through the local committee of the Liverpool and New Brighton Branch of the ROYAL NATIONAL LIFE-BOAT INSTITUTION, that the Institution should take over their Life-boat Service and manage it for them. At the Annual

Meeting of the Branch held in February last it was proposed by Mr. JAMES SAMUELSON that a deputation should be appointed to confer with the Board in the matter. The suggestion was at once adopted, and the deputation—or sub-committeee, as it may be called—which consisted of Admiral GOUGH, C.B., Messrs. HAROLD D. BATESON, FRANCIS HENDERSON and C. H. BELOE, Captain BLENNER-HASSET and Mr. EUSTACE STRACY, set to work in earnest to bring about the suggested transfer. After careful consultation between the Dock Board authorities and the Institution's Liverpool and New Brighton Committee, an agreement was at length arrived at, and the transfer, which dates from the 1st July last, has been made. The success of the negotiations is however in no small degree due to the tact and energy of Mr. HAROLD D. BATESON, a well-known Liverpool solicitor, and the Honorary Secretary of the Liverpool Branch. Mr. BATESON threw himself heart and soul into the matter and, being well backed up by the Committees in Liverpool and London, carried it successfully through. We confidently hope that the change will result in increased efficiency in the life-saving service of the Mersey.

Although the report in the *Journal* does not say so, the agreement provided for the payment annually of a sum of £1,000 by the Dock Board to the Institution. That arrangement holds good today. In spite of the depreciation of the value of money the early contribution of £1,000 has not been altered or increased. However, together with the £700 the ladies of Wallasey raise each year, the station is more or less self supporting, the overheads today are approximately about £1,700 annually.

During the course of nearly sixty years, the service in Liverpool Bay has been streamlined, and the Hilbre Island, Point of Air, Formby and Southport stations have been closed, the two remaining boats being at Hoylake and New Brighton.

Power driven lifeboats, working from more distant stations, can cover the operational area as quickly as the sail and oared boats could from points nearer at hand, and the closure of the "out-board" stations was a logical and proper proceeding.

With the advent of power driven ships, the risk of shipwreck was reduced in direct proportion to the advance of ship-borne science. No more beating to windward off dangerous lee shores. The need for the lifeboat service diminished accordingly.

The New Brighton station is a "floating" one, the lifeboat lying off the Pier on moorings subjected to stress of weather and tide not encountered by a housed craft. A boarding boat at New Brighton landing stage is necessary and one is maintained suspended on mechanically operated davits.

The headquarters are in Egerton Street where most of the crew live, the committee room being above the stores. Only the mechanic is paid a full salary, the coxswain and second coxswain being paid a retaining fee. This is the general principle all over the country, and not just at New Brighton.

The summons for the services of the lifeboat crew is the time-honoured signal of three maroons, and it has been known for the lifeboat to be passing the Rock Light within seven minutes of the firing of the third maroon.

Close liaison is kept with the Seaforth radio station, the Port radar

station and the Formby coastguard station, and no call, however doubtful, is ever refused.

Eight silver medals and twelve bronze medals have been awarded since the Institution established the station, the first, a silver medal, being awarded in March 1863 and the last, a bronze medal, in September 1950.

Accidents there have been, and seven lifeboat men of this station have lost their lives, the first in 1883 and the last in 1925.

Prior to the present boat, there have been fourteen different boats stationed at New Brighton, all but two being either outright gifts or purchased with legacies left for the purpose. The total number of launches for all boats (to November 1953) is 416, and the number of lives saved is 886.

With the exception of about three years, there were two boats at New Brighton continuously from January 1863 to September 1950, when the station was reduced to one, shortly before the arrival of the present boat, the *Norman B. Corlett.*

Three boat names will be familiar to many of you: the *Queen* (1897-1924), the *William and Kate Johnson* (1924-1950) and the *Edmund and Mary Robinson* (1938-1950). Between them these three boats went on service 239 times, the *Queen* saving 196 lives, the *Johnson* 248 and the *Robinson* eighty.

Amongst a host of honorary officials mention must be made of the late Mr. S. S. Jerrett, who was chairman for practically thirty years and of the late Mr. B. J. Kirkham, who was associated with the branch for nearly forty years, sixteen as honorary secretary.

I think I am safe in saying that the lifeboats of the Royal National Lifeboat Institution are a masterpiece of naval architecture, and it is common knowledge that the material and workmanship is the very best obtainable. And that is no exception in the case of the present boat, the *Norman B. Corlett.*

This fine boat, a fifty-two foot, Barnett type, was presented to the station by Mr. Ernest W. Corlett (a vice-president of this Society) and members of his family, in memory of his son who was drowned in a yachting tragedy at Hoylake. She cost approximately £31,000, carries a crew of eight and can travel 216 miles at full speed without refuelling. Weighing 28½ tons, her two 60 h.p. diesels drive her at nine knots.

THE ROYAL NAVY DURING NELSON'S LIFETIME
THE OFFICERS AND MEN

by A. N. RYAN, M.A.

Read 11*th November* 1954

Nelson was born in 1758. He was killed in 1805. His life covered the period during which the British Navy established, though not without some reverses, an undisputed supremacy over its rivals. It was a period studded with great victories and achievements. In 1759 Hawke shattered the French fleet in Quiberon Bay. Between 1769 and 1778 Captain James Cooke made his voyages of Pacific exploration. 1780 saw the defeat of the Spanish fleet in the moonlight battle; 1782, Rodney's victory over de Grasse at the Saints; 1794, the First of June; 1797, Cape St. Vincent and Camperdown; 1798, the Nile; 1801, the first battle of Copenhagen; 1805, Trafalgar.

It was not, however, an age of uninterrupted triumph. There were times when the inefficiency, and perhaps the ill-luck of her rivals, rather than the skill and gallantry of her fleets saved Britain; the most notable being in 1779 when a Franco-Spanish fleet rode in the Channel, whilst the British Grand Fleet commanded by a veteran recalled from retirement groped blindly for the enemy off the Scillies. A similar episode occurred in 1796 when the Brest fleet evaded the British blockading squadron, crossed to Ireland, failed owing to a combination of bad weather and poor seamanship to effect a landing, and returned to France without being intercepted.

Then there were occasions when a moral collapse of the navy appeared possible. The year before Nelson was born was the year when Admiral Byng was court-martialled and executed for failing to do his duty. In 1778 there took place the Keppel court-martial. Augustus Keppel, commander of the Channel Fleet, was charged with misconduct at the battle of Ushant at the instigation of his second-in-command, Hugh Palliser. Palliser, a junior member of the Board of Admiralty exploited his political authority in an attempt to ruin his professional senior. Keppel was acquitted, but the trial produced a feud, partly political, partly personal, in the officer corps which had its echoes twenty years later. Worse still, the trial was conducted amid great publicity in an atmosphere of personal and political animosity, and revelations were made which reflected on the integrity of certain witnesses.

These affairs suggested that all was not well with the officer corps. In 1797 trouble of another sort beset the navy. The seamen of the Channel Fleet mutinied at Spithead, expelled unpopular officers and, though proclaiming their intention to sail if the French put to sea, refused in the meantime to obey orders until their grievances, prominent amongst which was low pay, had been redressed. The Spithead mutiny must be reckoned as perhaps the best organised mutiny in history. The outbreak at the Nore which

followed it was violent and demonstrative, but less ably led. Both mutinies were ended in a comparatively short time, the first by negotiation, the second by force. But rumbles of discontent were felt throughout the navy for sometime afterwards.

It is not my purpose here to describe the naval operations of the late eighteenth century. It is to examine some of the characteristics of the Royal Navy as an institution, an institution which reflected much that was characteristic of the eighteenth century society of which it was part. It is necessary to appreciate from the start that there existed an intimate connection between the navy and contemporary politics. In one sense, this was only natural. The statesmen and politicians, not the admirals, took the high-level decisions concerning the strategic employment of the sea forces of the realm. The First Lord of the Admiralty was, as he is today, a member of Parliament and a member of the government. But the connection went further than this. Many senior naval officers sat in parliament, both in Lords and Commons. As members they had political allegiances, political friendships and political enmities; and also political ambitions. The office of First Lord was not infrequently conferred upon a senior naval officer. The political association of leading officers had as a consequence that some of them might be opposed to the administration of the navy on political grounds. Another, and more serious, consequence was that political feuds were carried over from the House to the quarter-deck, though the extent to which they affected naval discipline must not be exaggerated. It is a fact, however, that naval officers of different political persuasions tended to take sides at the time of the Keppel court-martial in accordance with their political loyalties; the government supporters backing Palliser, those associated with the opposition backing Keppel. A like division even existed amongst those who had actually taken part in the action. A further aspect of the relationship between the navy and contemporary politics was that political service could be, and was rewarded by professional advancement. The rewards took a variety of forms; lucrative commands afloat, appointments ashore in administrative posts, the right to fill vacancies with juniors of one's own choice. All this meant that what we would call influence played an important part in governing appointments and, below a certain level, promotion. Such was the background to the naval profession.

The vast majority, perhaps ninety per cent, of potential officers first went to sea as captain's servant. They did not perform menial duties; but, two years' service at sea being a necessary qualification for appointment as midshipman, an appointment virtually controlled by the individual captains, service in the capacity of servant under the patronage of a captain was the usual way of fulfilling this condition. These boys rated as Volunteer First Class and they spent their time learning the rudiments of navigation and seamanship. For a boy to enter the navy in such fashion a naval connection of some sort was indispensable. The young relatives of naval officers often entered by this means. Nelson first went to sea as servant to his uncle, Maurice Suckling, a later Comptroller of the Navy. A famous fictional character, Midshipman Easy, started his career under similar circumstances. Captain Wilson "a sort of cousin to the family", borrowed a sum of money from Jack's father. Later Jack decided on a naval career.

"Jack, you shall, if you wish, go to sea".

"That of course", replied Jack, with the air of a conqueror: "but the question is, with whom?"

"Now it has occurred to me, that Captain Wilson has just been appointed to a ship, and I should like to sail with him."

"I will write to him", said Mr. Easy, mournfully . . . . . .

The answer from Captain Wilson was, of course, in the affirmative, and he promised he would treat Jack as his own son.

It is worth noting that Mr. Easy's successful application on behalf of his son owed something to Captain Wilson's indebtedness to him as well as to the vague ties of blood. To provide for a boy in this manner was a way of discharging a financial obligation. The naval connection, however, was not always so direct. When William Dillon decided upon a naval career in 1790 his father approached several relations and acquaintances who had links with the navy. One of them, Mr. John Bedingfield, Inspector of Seamens' Wills at the navy pay office, promised to co-operate. He approached the captain of H.M.S. *Saturn* and secured a place for the boy, thus launching him on a successful career. And when Master Dillon, who understood the value of influence and connection, went aboard his ship, he found that many of his messmates came from families long associated with the navy.

The majority of naval officers began their careers in this manner. Another way of entrance was through the Naval Academy established at Portsmouth in 1733. The course there was for a maximum of three years. Those who completed it satisfactorily were adjudged fit to enter the navy with the rating of midshipman. During the eighteenth century the Academy was unpopular. The advantages of going straight to sea under the patronage of a captain, or, as happened in some cases, of having one's name entered on the ship's books without actually making a voyage, were regarded as superior to three years of study. Men were also commissioned from lower deck for bravery or outstanding conduct. But their chances of reaching high rank were limited. Promotion to captain came for such men, if it came at all, rather late in life, and, as we shall see, to reach the top whilst still capable of active service, it was necessary to be posted as captain at a comparatively early age.

The most junior commissioned rank was that of lieutenant. By no means all the entrants reached that stage as is evidenced by the number of middle-aged midshipmen in the navy. These were men who had started out under favourable circumstances, but had, owing to lack of sufficient influence or lack of ability, missed their way.

Once commissioned, a man entered upon a most critical stage in his career, for it was important to rise to post-captain as quickly as possible. Whether the officer did so or not depended upon a variety of circumstances. The lieutenant whose chances of promotion were best was the one appointed to a frigate. There were considerable opportunities of enriching oneself by prize money in this class of vessel. There was also more chance of winning distinction in action, and of thus attracting official notice. The officers who took part in the great frigate actions which are splashed across the period soon became famous, and their chances of early promotion were good. Less fortunate was the newly commissioned officer appointed to a ship-of-the-line. Unless he had influential friends able to forward his career by drawing the

attention of the Admiralty to his case, he tended to become lost to official notice. The opportunities to win a reputation were fewer, and, as with the passing years he gained experience in the duties of a lieutenant, his value as an executive officer tended to retard his promotion; for the efficiency of a ship-of-the-line depended very much on the abilities of its senior lieutenants. The middle-aged lieutenants of the Royal Navy's capital ships were often embittered men, conscious of failure: hence their reputation as martinets. Other lieutenants who through lack of influence, ill-luck or limited ability failed to advance their careers frequently ended in command of a brig or sloop with the rank of commander and finished their service in that rank without being posted.

The successful officer was the one who was promoted to post-captain at an early age. The reason for this was that there was no intermediate rank between post-captain and rear-admiral. The first promotion from post-captain was in fact to Flag rank and with it the possibility of an appointment to high command. Now neither influence, nor talent, nor distinguished service could hasten this promotion. It depended upon seniority. In other words, once a man became post-captain, promotion to rear-admiral was ultimately certain, provided that he lived long enough to reach the top of the list of post-captains.

The coveted advancement was delayed by the fact that there was no system of retirement except insofar as men who, on attaining Flag rank, were judged unfit on account of age or infirmity for active service, were given half a rear admiral's pay and not employed. Such was often the fate of men who became post-captains comparatively late in life and found themselves discarded when their promotion to Flag rank arrived. A further complication was that the number of active Flag officers in the navy was limited. This was a survival from the days when there was no such thing in the navy as rank in our sense of the term, only posts. A man had to be carrying out a certain duty with a given establishment in order to merit a particular title such as captain or vice admiral, and once that particular duty was fulfilled he surrendered its equivalent rank. The very term post-captain was a survival of such an order of things. Now, although in the late eighteenth century the notion, that a man could only hold a particular rank as long as he was actively responsible for a corresponding post, was dying, it was not dead. The consequence of its survival was that, despite the creation of an increased number of Flag posts and the practice of superannuating some rear-admirals, both of which measures were introduced by Lord Anson in the middle of the century, the number of Flag officers in the Royal Navy continued to be restricted. By 1800 the situation had certainly improved, but the slow process of climbing to the top of the captains' list still meant that the career of a naval officer depended in great measure upon early promotion to post-captain. The majority of those who achieved high rank and fame in the wars of the period were posted when comparatively young. The outstanding example is indeed Nelson himself. He became post-captain when twenty-one. Collingwood, the Hoods, Jervis and Duncan, to mention only a few of the more distinguished officers, were all post captains by the time they had reached their early thirties.

An important consideration in the career of the eighteenth century

naval officer was prize money. Several officers made fortunes, were raised to the peerage and founded landed families. Such fortunes were not made by careful living and judicious economy. The source was prize money. Amongst senior officers certain commands were eagerly sought, and were on occasion given as a reward for political service, because they afforded great opportunities of obtaining wealth through the capture of enemy trade and property. The two most profitable commands in our period were the Indian Ocean and the West Indies. In the former, Edward Pellew, later Viscount Exmouth, won a fortune. The latter was described by a first lord as the most lucrative station in the service. If these commands were eagerly sought by senior officers, individual captains were anxious for opportunities to cruise in search of loot. Augustus Hervey when stationed in the Mediterranean in the middle of the century requested permission from the squadron commander to be detached from the fleet engaged in the monotonous and unrewarding duty of blockading Toulon for the purpose of hunting enemy merchant ships. The commander-in-chief, a friend of Hervey, obliged as often as he could with the result that in some two years Hervey grew richer by £9,000.

Influence and patronage and politics and prize money: all these things played a greater or lesser part in shaping the careers of Nelson and his brother officers. This is so obvious that there is a danger of assuming that professional advancement depended upon these things alone. They certainly enabled mediocrities, and many such held fairly high commands in Nelson's time, to reach the top of the naval profession. But they did not exclude talent. The talented youngster attracted the attention of his captain and increased his chances of promotion to lieutenant; the lieutenant who distinguished himself gained the notice of higher authority, and with it the possibility of early promotion to post-captain. The importance of influence, and perhaps of intrigue, must be recognized, but the fact remains that efficiency counted. Before a man could be commissioned, he had to serve six years at sea and pass an oral examination before a board of captains. Success in this examination, although not a guarantee of promotion to lieutenant was a necessary condition for it. A man's efficiency was also tried under more testing conditions. Survival depended in a great degree upon the efficient performance of one's duties. Shipwreck and the other hazards of a career afloat were more likely to come to the inefficient officer. In any case, the junior officer who bungled his duties was unlikely to gain early promotion. Furthermore, the service, although riddled with the workings of influence, contained men of judgment and integrity, capable of selecting the most talented young men, and honest enough to back them in the race for the coveted promotions in the junior commissioned ranks. There was usually to be found amongst the administrators at least one man determined to foster such talent as was brought to the notice of their lordships. He might allow his colleagues to find niches for the less able individuals whom they were pledged to forward, but he saw to it that the real talent was not overlooked in the process. The important thing is that the methods employed (to refer to them as a system would be misleading) worked. From amongst the boys who entered the navy as potential officers by private arrangement with individual captains: boys with diverse backgrounds, the sons of naval officers, of lawyers, of clergymen, of country gentlemen and so on, there emerged the sea officers of Britain.

It is true that there was wastage, that many never made the grade. It is true that some who were commissioned owed more to their connections than to their talent. It cannot, however, be argued that the eighteenth century practice failed.

The highest ranks in the service were also tainted with the prevalent abuses. Pecuniary ambition—quarrels between distinguished officers over the allocation of prize money were not uncommon—and political faction are only too evident. Important posts were conferred upon mediocrities, sometimes for personal, sometimes for political reasons. But as a rule, in times of crisis the really important commands were given to the best men regardless of other considerations.

In 1796, for instance, the nonentities were recalled, and Jervis was given the task of bludgeoning the Mediterranean Fleet into an efficient condition. When the need for a close blockade of Brest was recognized, the same strict disciplinarian was made commander of the Channel Fleet despite the opposition of those who preferred the lighter rule of Bridport, whom he superseded. Other instances pointing to the same conclusion could be given. On occasion political and personal considerations did triumph over professional ones. Then, the result, as in the War of American Independence, was stalemate or failure.

The Royal Navy manned its ships in a variety of ways. The nucleus of the crews consisted of a hard core of professionals, numbering from 16 to 20,000. This group, along with experienced and responsible seamen from the merchant marine, provided most of the non-commissioned officers when the navy underwent its great numerical expansions in time of war. Many of these regulars entered the navy as boys, and they served for life. The average age of entrance was between thirteen and fifteen, and the majority was provided by the Marine Society. They were drawn from the poorer classes of society: children whose parents could not afford to clothe and feed them, orphans, and young delinquents recommended to the Society by the magistrates. In times of peace, when the greater part of the men-of-war were laid up in ordinary, this small force of regulars was sufficient for the needs of the navy. But when war appeared likely or became a reality a great programme of recruitment was necessary.

In the first place the navy called for volunteers. Moved by the love of adventure, or by patriotic emotions, or by the desire to escape from a difficulty some men and boys entered freely. There was also the lure of the bounty. As an inducement to voluntary enlistment, local authorities offered bounties on the outbreak of war to men volunteering for service in the fleet, which bounties were a thing apart from the King's Bounty to which all volunteers were entitled. As the war progressed, these bounties tended to increase. In 1793, for instance, £2 was the average. By 1794 London was offering ten guineas to able seamen, eight to ordinary seamen, and five to landsmen if they would enlist.

In 1795 they had soared to as much as £45, and under the impact of the Quota Acts were to rise even more.

Individual captains were obliged to do their utmost to recruit men. A common practice was to open an agency at the port where the ship lay, usually in a tavern frequented by seafarers. There, attempts were made to

cajole individuals into joining up. At such agencies the chances of becoming wealthy through the acquisition of prize money were stressed. Sometimes a captain who had been fortunate in that respect was able to offer a personal bounty. The well known frigate captains usually had little difficulty in manning their ships; some were even able to be selective and to accept from amongst the volunteers anxious to serve with them only skilled and experienced seamen.

These methods attracted a mixed lot: boys, seamen proper, landsmen attracted by the sea, criminals fleeing from justice, men of all types in urgent need of cash. But bounties, the lure of prize money, the love of adventure, and patriotism failed to attract sufficient men. Then other means were used, all of which, though the entrants were technically volunteers, contained an element of compulsion. In this category were the Lord Mayor's men, numbers of whom were sent up to the fleet by the London magistrates. Often they were young men of respectable family who had by foolish conduct exposed themselves to arrest, trial and conviction. They accepted service in the navy as an alternative to the publicity and scandal involved in a prosecution. Petty criminals, sometimes with a respectable background, were given the same option.

Towards the end of the century, in the early years of the war with revolutionary France, another method was introduced. In March and April 1795 the Quota Acts were passed. This legislation imposed first on the counties and then on the seaports of the realm the duty of providing a number of men for service in the navy in accordance with an established scale. It was an attempt to put naval recruitment upon a systematic basis, and to encourage it in the inland areas of the country.

The sheriffs of the counties and mayors of the ports found it difficult to fulfil their annual quotas. At first they used the acts as a means of clearing undesirable characters out of their localities by shipping them in the King's service. But this pool of recruits was not inexhaustible, and in any case the local rogues soon became wary. The authorities, in order to complete their quotas, found it necessary to employ the bounty system on an extended scale. Bounties amounting in some cases to £70 were offered. In the main, two types were attracted by these financial inducements: the dregs of society of whom it was said they cost a guinea a pound; and respectable men who were in financial trouble and needed urgently a sum of money to meet a debt or a particular expense. Richard Parker, leader of the Nore mutiny was a quota man. The ringleaders of the Spithead mutiny, clearly men of education, intelligence and integrity, also included a number of quota men. The quota system did in fact introduce a new element into the lower deck: men who did not take for granted the bad conditions of service and pay and who refused to accept them. The Quota Acts may be regarded as a tentative move towards the idea of the nation in arms. By the very fact that they widened the scope of the intake into the navy and drew into it, for the first time in number sufficient to exercise an influence, men of a better social background than the majority of seamen, they also made necessary improvements in conditions and less harshness in the maintenance of discipline. There is certainly some evidence to suggest that by the end of the Napoleonic War the Admiralty was anxious to reduce both the incidence and the severity of flogging. This may reflect the realization by its members that wider methods of recruitment were incompatible with excessive severity in disciplinary matters.

It will be readily appreciated that, although these methods of recruitment produced men, they did not guarantee a steady flow of trained seamen into the fleet. And it was seamen above all that the navy needed. Many of the duties aboard a warship could be performed by landsmen with no previous experience of the sea. But no ship of war could be properly conducted unless it was manned for the most part by professional mariners: men accustomed to the ways of the sea, able to work the sails and perform other specialist tasks, proficiency in which only came as a result of experience.

The seamen were to be found in the mercantile marine and in the fishing fleets. It was here that the Impressment system came in. Conditions of service and pay were better in the merchant marine than in the Royal Navy. Merchant seamen were, therefore, reluctant to enlist. To man the King's ships, compulsion was necessary. The seamen so urgently needed on the outbreak of war were taken from the merchant marine and driven into the navy. It often happened, particularly at the beginning of a war, that the sailing of the fleet was delayed until the great homeward-bound convoys reached the Channel. On arrival the merchantmen were boarded by parties from the warships to secure seamen for the Royal service. The operation of the impressment system was not confined to home waters. The crews of merchantmen overseas were often decimated by the press to maintain the complements of the naval squadrons on foreign stations. Contrary to popular belief the press gangs did not as a rule operate indiscriminately, and it was sailors, not landsmen, who really feared it. In time of great emergency, however, it was less discriminate. Parties were sent ashore under the command of a lieutenant to search the dockyard areas of the port, and seamen, watermen, dock labourers were pressed. During a "hot press" any material was good enough. On these occasions people who were officially exempt from service, such as apprentices, as well as the physically unfit were swept in. The former could take legal action to secure their discharge, though by the time the slow administrative machinery began to work they might be serving in the East Indies or Carribean. The unfortunates who were physically unfit took their chance. Some captains might discharge them on the grounds that they were useless. Others less humane or less particular would take them aboard, and if they died, their deaths would be regarded as part of the inevitable wastage. The principal aim of the press was undoubtedly the recruitment of seamen, but there is no doubt that the gangs did not always operate within the legal limits set to their authority.

The crews of the Royal Navy were a very mixed lot: men of different nationalities (one eighth at least of those serving in times of war were foreigners), of different trades, and of different backgrounds. Drawn from every class of society, and including in their ranks criminals, they held one thing in common. The majority served unwillingly. They fought hard when the chance came, in some cases because they respected and admired their officers, but more often because they regarded battle as a relief from the monotonous routine of cruise and blockade. Victory in battle, moreover, made possible the end of hostilities and a share in prize money. But if they did not shirk battle, indeed rather welcomed it, the fact remained that the crews of the King's ships were held together not by loyalty, but by fear; the fear of physical punishment. Naval discipline rested upon that fact. Hence the

prevalence of flogging; for flogging was the only punishment capable of maintaining discipline without entailing the waste of precious manpower inherent in such punishments as discharge with ignominy or imprisonment.

Since the days of Ned Ward, there has been a tendency to identify the eighteenth century navy with corruption and inhumanity. There was, it is true, too much of both. The brief survey given at the beginning of this paper of the history of the navy during the lifetime of Nelson implies defects and shortcomings. But the inhabitants of the 'wooden world' did not consist only of harsh martinets, pushing and unscrupulous careerists and brutalized, ignorant seamen whose morals and way of life were sub-human. There existed in the officer corps a professional pride which ensured that efficient standards were not abandoned even at those times when political and personal animosities were at their height. The unpromising material which made up the crews could be, and was, moulded into a disciplined and smart fighting force, which could be led, not driven, by a good captain. It is probably a mistake to seek to extenuate the abuses which undoubtedly did exist, or, for that matter, to condemn them in tones which imply a smug assumption that our standards of honesty and public morality provide the criterion whereby those of the eighteenth century must be judged. What does need to be remembered is that, given the inadequacies of contemporary administrative techniques and the limited financial resources of the state, the organization and upkeep of an efficient navy posed colossal problems.

These problems were inherent in the conditions which existed at the time. Not only Britain but her maritime rivals also had to face them. The organization of the navy was in many respects haphazard; reforms were needed. Nevertheless Britain was able to put to see a fleet whose skill and morale were higher than those of her enemies. The outcome of the maritime struggles in the classic age of sailing ship warfare rested in great measure upon that fact. If this glimpse of some aspects of the structure of the Royal Navy during this age, has served to reveal its inherent strength, as well as its weaknesses, the explanation of that superiority will, I hope, be in some measure at least have been made clear.

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RESEARCH ON SHIP STAMPS

by E. W. ARGYLE

Read 9th December, 1954

It is with a great deal of misgiving that I am venturing to give a paper on the subject of nautical research, even if limited to ships on stamps, for I am very conscious that there are many members of this society who are among the leading experts in this country on matters appertaining to nautical research. My one hope is that if my paper does not add one iota to your knowledge of ships, or nautical research, you will at least find the collection of stamps of some little interest—that must be my only excuse for being present this evening.

The identifying of the ships depicted on stamps has many problems peculiar to the ship stamp collector. Among these may be mentioned the following:—

(a) Ships shown on the stamps of some countries never went near those countries.
(b) Many stamp pictures of ships are incorrectly drawn.
(c) Some stamps show "composite" drawings of ships, two different vessels being "put together" to make a picture of a single ship.
(d) Philatelic articles have frequently incorrectly "identified" vessels but these names have stuck.
(e) Stamp pictures of ships are so small that often identifying the vessels is difficult, owing to distinguishing features of the ships being left out for lack of space.
(f) Wrong ships shown on stamps.

Among the first group of problems, the stamps which show ships that never went near the country which issued the stamp may be mentioned the Cunard Line's *Umbria* on a stamp of Cuba and a Nile gaissa on a stamp of Mozambique. There are very many similar examples. The only safe rule for the researcher on ship stamps is to ignore altogether the background of the picture (or frame) and concentrate on the ship itself. What has repeatedly happened in stamp production is that the stamp printers have used stock designs for stamp illustrations, especially where ships are concerned, and as long as it makes a nice looking stamp, the appropriateness does not matter. If a country asks for a mail steamer on a stamp design, it gets a mail steamer. The fact that the country may be in South America and the mail steamer is a North Atlantic vessel is of no consequence. The origin of the stamp is no guide to the ship on the stamp. As an illustration of the use of the stock block or picture by stamp printers, I mention an example of the work of the National Bank Note Company of U.S.A. The stock picture, of 1869, was a die made by a Mr. James Smillie and depicts the *Adriatic*, of the Collins Line. The Citizen's Bank of Louisiana ten dollar bill shows how the *Adriatic* picture was used for bank-notes. Exactly the same picture, much reduced in

size of course, can be seen on an American twelve cents stamp of 1869 When Peru asked for a mail steamer on one of her stamp designs in 1874, out came the picture of the *Adriatic* again, and although the ship never went near Peru, she is shown on that country's stamp issues. A similar example of the use of the stock picture has led to what purports to be Cabot's *Matthew* leaving the Avon (on a ten cents Newfoundland stamp of 1897) appearing on a United States three cent issue of 1892 under the caption "Columbus' flagship". The same ship is officially given two different names! I am not aware that Columbus' flagship became the famous vessel of Cabot. Most historians seem to agree with Columbus that he lost his flagship, the *Santa Maria* at Haiti, in 1492.

The second group of problems I have mentioned, the incorrectly drawn ships on stamp designs, are quite common. Stamp artists very frequently work from photographs and are not too particular that they copy features of vessels exactly as photographed. For instance the Italian liner *Saturnia* on the current threepenny stamp of Gibraltar has been given a raking stem when the vessel has a straight one. The student of ship stamps must make a little allowance for artists' licence. Unfortunately, artists have only too often been a law unto themselves. Take the Cook Islands stamps which purport to show the landing of Captain Cook at Niue. Cook's ship is depicted as a brig; palm trees are shown on Niue, but they did not exist there in Cook's time, they were later imported from Samoa; there are mountains on Niue in the stamp picture, but actually these are the Rarotonga Mountains, Niue is a coral atoll; the picture in fact has been copied from a photograph of Point Venice, Tahiti, with artistic embellishments.

An Italian stamp depicts the training ship *Amerigo Vespucci*, but the stamp artist has given her a single line of ports when it would have been a simple matter to check that the ship had two line of ports.

The French brig *La Malouine*, of 1839, seems to be very strangely rigged if one accepts the picture of her on the stamps of Gaboon commemorating the settlement of the French in that territory of West Africa. It will be noted that the sails of the two masts face inwards to each other, I imagine this would take quite a lot of getting used to after sailing in orthodox rigged ships!

Perhaps one of the most humorous of all ship stamps designs, though it was not intended to be so, is the stamp of St. Helena, depicting an East Indiaman, according to St. Helena authorities. The ship in the stamp could never have been sailed. The main course is trapped between the mainmast and shrouds, in fact all the spars are on the wrong side of the masts. The St. George's Cross flag went out of use at least a century earlier than the type of ship depicted made its appearance, and the gunports have somehow got misplaced.

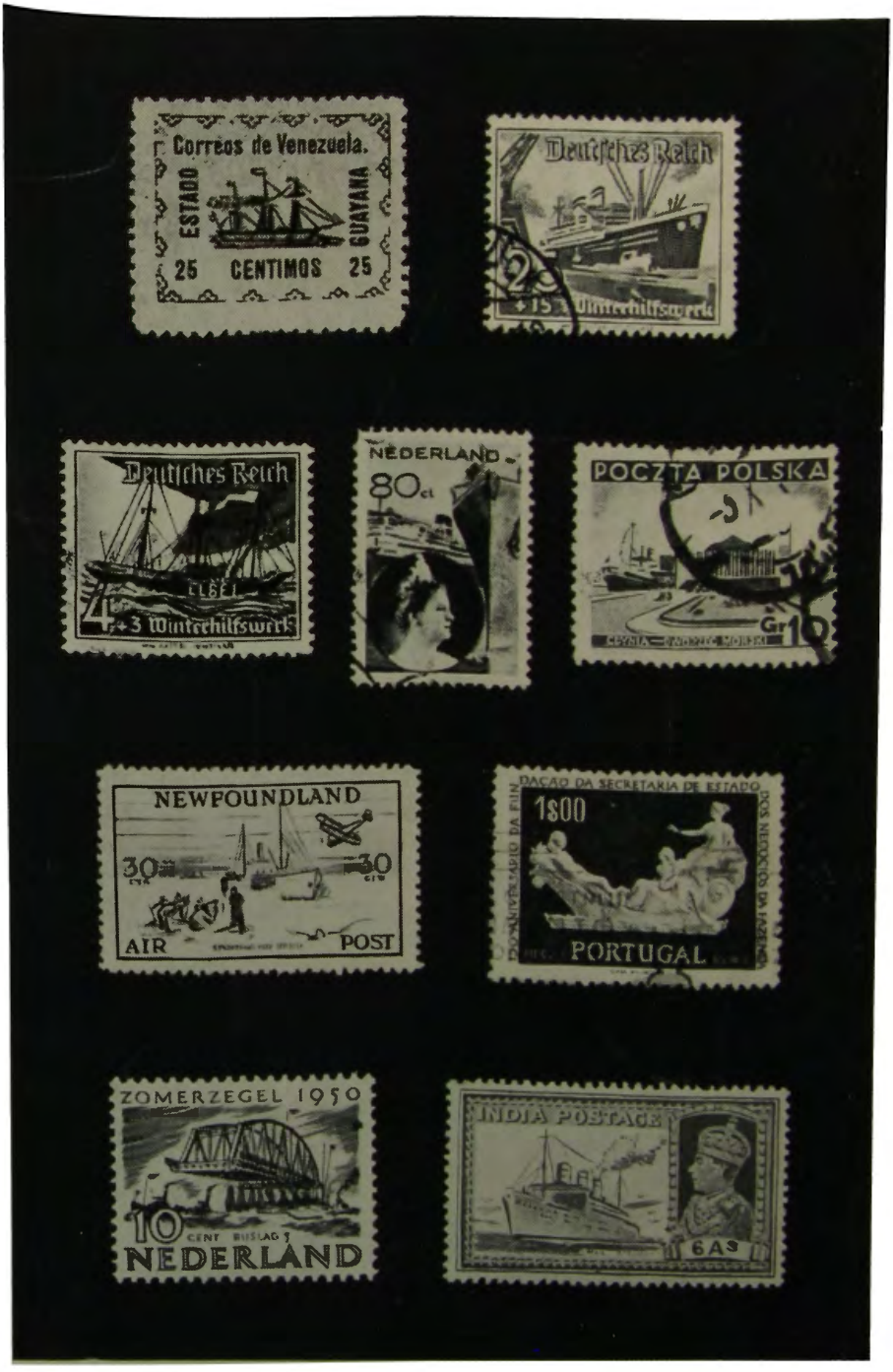
A curious artist's error has been made by the designer of the current Canadian six cents air stamp which depicts the stern wheel steamer *Distributor III* on the Mackenzie River. I have the original photograph from which the design is taken. The artist has faithfully copied the photo, even to the four pieces of crew washing hanging over the side at the port quarter. But the stamp designer has added two features not in the original picture. The plane overhead and the men on the left bank carrying wood for fuel for the steamer.

The latter detail is a mistake, for the ship is an oil burner. A curious fact regarding this vessel, one of the last stern-wheelers of Canada, is that her engines were previously in two different vessels of the same name.

An intentional change of a picture by the U.S. Postal Authorities led to a striking error of design which has aroused considerable controversy, not only in philatelic circles. A U.S.A. stamp depicts a mail tender alongside an outward-bound transatlantic liner from New York, and every New York school child knows that mail tenders only meet incoming vessels, never outward-bound ships, which take foreign mails on board at the docks before leaving port. The reason for the stamp picture is simply this. The design shows the German vessel *Kronprinz Wilhelm* arriving at New York on her maiden voyage with Prince Henry aboard. The liner was escorted by a German cruiser. The appearance of the latter was not considered suitable on the stamp by the Postal authorities and it was deleted and New York's skyline substituted for it. It was not till long afterwards that it was noticed that New York was on the wrong side of the picture and that the *Kronprinz Wilhelm* appeared to be leaving port instead of entering..

Composite drawings, the third group I have mentioned that give stamp collectors some headaches, can best be illustrated by the photograph I have here of an Arab zambuk off Ras Alargah. In the background of the photograph is the rocky coast of the Aden area. Comparing it with the stamp of Mozambique, one can see that the stamp designer has magically changed the mountains of Aden into a palm-fringed beach, but the dhow beating off the coast has not been altered. The artist has taken two different pictures and blended them together. A number of these composite drawings have been made for stamps. Belgium has issued a stamp showing a composite picture of the *Aquitania* and *Mauretania* (I), Sweden depicts a similar mixture of *Kungsholm*/*Gripsholm*, on a stamp of that country issued in 1936, Chile has issued a stamp depicting a composite drawing in which the stamp designer has combined features of the *Reina del Pacifico* and the Italian ship *Conte Biancamano*. One could mention a number of similar examples, and it is easy to realise how the person trying to identify the vessel in the stamp pictures, unless he has some previous knowledge that this has happened, is going to have a monumental task in recognising a ship that is so drawn. Composite drawings of ships for stamp purposes should be banned!

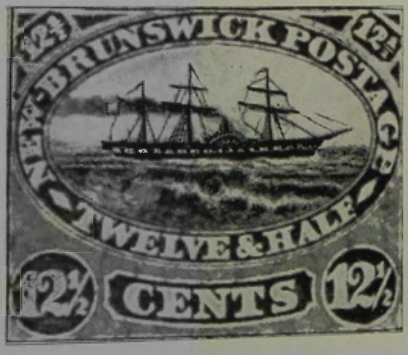
An occasional source of trouble to the philatelic nautical researcher is caused by stamp catalogues and philatelic journals wrongly naming the ships shown on the stamps. I have mentioned this to the editors of some of the journals concerned and their reply is "We are stamp magazine publishers, and do not profess to know anything about ships. If we are told the ship depicted is a certain vessel, and we see no reason to doubt it, we print the name given to us by the responsible authority." In view of the fact that to my knowledge, the Colonial Office have given out wrong information about ships on stamps one can hardly blame the editors of stamp journals for errors of this nature. And, of course, even the best researchers can make errors quite unintentionally. An honest researcher may be satisfied he has positively identified a vessel, only for later information to subsequently convince him his first beliefs were wrong. All historians are familiar with this happening.



A page showing a variety of ships for identification by the nautical research worker

To face page 34)

(*Block by courtesy of "Sea Breezes"*



P.S. Washington

Members of the Society assisted in the research which eventually led to the positive identification of this vessel.

As an example of the wrong ship being shown on a stamp the current Bermuda 2½*d.* stamp shows a picture of Sir George Somers and a drawing of his vessel in which he was shipwrecked in the Bermudas. No picture is known to exist of the *Sea Venture* from which Sir George colonized Bermuda after the shipwreck, and the stated picture of her on the stamp is in fact a random selection from Furstenbach's *Mercata Navales*, depicting a German ship of about 1625.

One of the great difficulties facing a ship stamp designer is the very small space allowed for his work, yet it is surprising how first class artists and engravers can by their skill and genius contrive to give perfect representations of ships in the space allowed them. Other artists not so skilful have been anything but successful in this matter and consequently some completely unrecognisable ships have resulted from their crude efforts. Yet, I have been asked several times what vessel is depicted on a stamp showing just a bare hull, a funnel and two masts with a couple of decks, and nothing else, no ports, samson posts, life-boats, ventilators, windows, or anything which could aid one in identifying a ship. Actually many ships on stamps are purely vessels contrived from the artist's imagination and represent no particular ship.

A number of stamps undoubtedly depict definite vessels yet have remained unidentified because the vessel could be one of several similar ships and the identification must therefore depend on official records. How does one go about obtaining this information? Obviously I can only speak for my own procedure in these instances, other men would go about getting this news in their own way. I have found the most successful way to get the news required is to write to newspaper offices, local postmasters, consulate officials, local stamp societies, nautical research societies, maritime museum officials, shipping companies, editors of stamp magazines, and if possible collectors in the area concerned. In my case I am extremely fortunate in having at my disposal the reference library of a well-known local newspaper office, and the Picton Reference Library of Liverpool, one of the finest in the world, and the Liverpool Commercial Reference Library, but collectors not so conveniently situated can obtain postal addresses to write to through their own public libraries. Apart from these sources I have built up my own reference files for ships on stamps and these have accumulated during the last thirty years approximately. Another valuable source (in my own case) for obtaining identification of ships is a local collection of ship photographs of steamships from earliest times to today, while of course, I have quite a modest library of nautical books. There is, however, a source of information available to all ship stamp collectors, which should help to solve many problems, the magazine *Sea Breezes*, which from the year 1946 to the present time has published each month an article about ships on stamps. Over 100 articles on ships on stamps should enable any new collector to get a very good start, and solve many problems for him, while the lists in that journal and in *Topical Time*,[1] should make identification of at least half of the ships philatelically depicted just a matter of simply looking at the list.

(1) *Topical Time*. "*Knowledge through stamp collecting.*" American Topical Association, Milwaukee, Wisconsin, U.S.A.

WAS THE RIVER ALT (FORMBY) EVER A POSSIBLE RIVAL TO THE RIVER MERSEY FOR THE FIRST DOCK?

JOINT PAPER BY E. CUTHBERT WOODS, F.R. Hist. Soc.
and JOHN S. REES

Read 13th January 1955.

Part 1. *By* E. CUTHBERT WOODS

From time to time the question of whether the River Alt was considered as a possible site for the first dock on Merseyside, crops up. It has done so quite recently in our *News, Notes and Queries* and, Mr. Rees and I felt it might be of interest to submit the evidence, little as it is, pro and con in the form of a joint paper.

I believe that it was Canon Hume—one of the founders of the Historic Society of Lancashire and Cheshire—who first drew attention to this belief, rumour, tradition or, whatever you may like to call it! He was an authority on the changes which had taken place on the sea coast, on both sides of the Mersey and, in 1863 he published *Antiquities from the Sea Coast in Cheshire.* About 1865 he was engaged in a controversy with Joseph Boult, F.R.I.B.A., President of the Architectural and Archeological Society, about the origin of the "submerged forest."[1] at the time to be seen on the shore both at Meoles on the Cheshire side and, about Crosby and Hall Road, on the Lancashire side of the Mersey. In the spring of 1865 Canon Hume visited the Formby district and was conducted round by "old Tommy Rimmer," whose mother was then aged ninety-four, so her traditional information respecting the district would reach back for about 150 years. He had an opportunity of testing the "tradition" which apparently was not new to him, which he gives in detail. Canon Hume says Tommy Rimmer stated "when the first dock was to be dug at Liverpool there was a great doubt as to whether Formby would not be a better place, but under the impression (afterwards found to be erroneous) that Formby had not a good foundation, it was decided to make it at Liverpool."[2] Ashton in his book *The Evolution of a Coastline*, 1920, quotes a letter he had from Mr. John Formby, of Formby Hall, probably the best living authority on the past of this district, his words are " I have heard that there was a great discussion whether the docks should be built at Liverpool or Formby about 1700."[2] So as recently as 1920 the belief was still current in the district. The belief by some at the present time that such discussions did take place, would appear to rest entirely on the basis of the two statements just mentioned, as they are the

([1]) Hist. Soc., vol. 18, p. 14 *et seq.*
(For this and other abbreviations see page 46)
([2]) Hist. Soc., vol. 18, p. 77 ([3]) Ashton, p. 111

only allusions to the subject that we have found. Nevertheless, in the seventeenth century Formby appears to have had a certain status as a port, and in the previous century (1577), when Henry, Earl of Derby, was *en route* to the Isle of Man, the ship on which he embarked at Liverpool was accompanied by two Liverpool ships; one from Douglas and, the *Elizabeth*, of Aulte,[1] which may have implied that Formby was of sufficient importance to be represented in the escort on such an occasion. In 1626 Sir Richard Molyneux, drew up a return of the local shipping for the Earl of Derby, which showed that Liverpool had twelve ships, with a total tonnage of 294; Formby with Altcar also had twelve ships, total tonnage 253.[2] The sea approaches to the river Alt round about the material period (1700) would, of course, have been of the first importance, but unfortunately no information of any real use is available. The first authentic chart, produced by Captain Grenville Collins in 1689, does not indicate that any approach channel to the mouth of the Alt existed. He points out that the channels are neither charted nor buoyed. The only aids to navigation shown on the chart were a Perch on the Black Rock, close to where the present New Brighton Lighthouse stands and, possibly, another one at Crosby Point, which may have been intended to mark an entrance to the mouth of the Alt, two miles distant. The Liverpool Corporation were evidently responsible for their erection, for in their minutes we find that in 1683 when the Black Rock Perch disappeared, it was ordered that a new perch should be made or the perch brought from Crosby. All shipping, whether bound for the Mersey or Chester Water made for the Hyle Lake and, if large, Collins tells us, anchored there until they had discharged some of their cargo into lighters when, if for the Mersey, they proceeded "over the Flatts" into the river. But having accomplished this they were not so safe or comfortable as in the Hyle Lake. Collins continues: "the ships lie aground before the town of Liverpool. It is bad riding afloat before the town by reason of the strong tides that run there, therefore ships that ride afloat, ride up at the Slyne where there is less tide." It is worth mentioning that when the Dock Committee was formed in 1761, one of the first things they did was to obtain an Act of Parliament to allow them (*inter alia*) to erect lighthouses and other lights at the mouth of this harbour. BUT, these beacons were not to direct ships into the Mersey but into the Hyle Lake, where at that date the whole navy could have been accommodated, and there to ride afloat in safety and shelter until suitable weather conditions to enter the Mersey prevailed. The Mersey is not easy of access even today, though charted and buoyed, with well-dredged channels and an excellent pilotage service. In the seventeenth century mariners would have to rely on the services of the local fishermen to conduct their ships into the Mersey. It is not unlikely that vessels bound to Formby waited in the Hyle Lake until a suitable stage of the tide, when, like the vessels whose destination was the Mersey, they sailed "over the Flatts" to the river Alt.

There were some foreign charts of the Mersey estuary, but they were not very reliable. There was *A New Sea Atlas or Water World*, published by Pieter von Alphen, at Amsterdam in 1661. This work collected by the diligent search of divers Stiermen, Pilots and Lovers of the Search of Navigation,

(1) Wardle (2) Parkinson, p. 42

fit to be used by lords and merchantsi n their study chambers,[1] shows Chester and Corsby (*sic*) but *not* Liverpool.[2] So much for that. Another Dutch chart about the same date, even refers to the Mersey as "Frodsham Estuary", in its sailing directions.[3] There were several maps, also of doubtful accuracy. Hume produces two "Heralds Maps", the dates being *circ.* 1565 and 1596, respectively, showing the Alt as quite an important inlet, but they are, I am afraid, not very reliable.[4] Speed's map of Lancashire, 1610, is perhaps more to be relied upon. Early maps show the Alt to have taken an almost due west course to the sea by a funnel-shaped mouth. This is to be seen in the maps by Saxton (1577), Speed (1610), Jansson (1646) and Morden (1700). The port of Altmouth is shown on all these maps except Speed's. It is also mentioned in the letterpress of Camden's *Britannia*, where Morden's map is shown. Ashton says, referring to Altmouth, "It is possible however, that a misleading statement in this book (*i.e.* Camden) may have started a much copied error.[5]

It is rumoured that the old port and town of Formby, stood on the edge of a channel, beyond which lay a long tidal covered sandbank. Mr. Mellard Reade (a high authority on the geology of these coasts) was of the opinion that a deep channel ran from the old port of Formby to about where Southport stands.[6] In Bowen's map, 1720, an important road which passed from Bolton, through Wigan and Ormskirk direct to Formby, suggests that the terminus was the harbour.[7] The Rev. Robert Cort, curate of Formby in 1787, and vicar in 1793, where he remained until his death in 1852, and was considered the "Father of the diocese," was told by an old man whom he visited on his death-bed that, as a boy he had frequently jumped down from the pierhead on to the decks of ships that were loading in the harbour. It is a great pity that the old man did not say the exact position of this pier. He was the last inhabitant of the deserted town of Formby, and lived at this time in the only house that remained, which was situated on the edge of the old burial ground. Shortly after the incident just related this house was removed. In 1743 a precept was secured at Chester for the removal of the church, and in 1746 the removal was completed. It is distant from the old site, a mile and a half.[8] Coming down to much later times, Dr. Sumner, of Formby, who died about 1883, aged 84 years, stated that, in his young days there were evidences of what is now the rifle range at Altcar, having been the site of a harbour, in which large vessels rode. He could remember large sized vessels sailing up the Alt, when its course lay further to the north. W. E.[9] Gregson, solicitor, of Great Crosby, whose views were based on research and observation, thought that the ruins of houses discovered when the Crosby sewer was being made early in the present century, were the remains of a small hamlet called Moorhouses, (described in another account as "an outlying portion of the Crosby (Blundell) estate, adjoining the modern village of Hightown) which is mentioned in certain Crosby and Blundell title deeds

([1]) Touzeau, vol. 1, p. 30
([2]) Parkinson, p. 7
([3]) ibid. p. 63
([4]) Hist. Soc., vol. 18, p. 30
([5]) Ashton, p. 113
([6]) ibid. p. 105
([7]) ibid. p. 114
([8]) Hist. Soc., vol. 18, p.75
([9]) Ashton, p. 113

It lay south of the river Alt and east of the present (Hightown) railway station.[1]

In the days of sailing ships before the advent of tugboats and, indeed, even when tugboats were available, but to a lesser degree, vessels waiting to leave the Mersey were, at times, delayed owing to adverse winds. In similar circumstances such delay was, of course, common to other harbours. But an added difficulty which faced vessels outward bound from the Mersey, was the length of the channels they had to pass through before they could reach the open bay. Assuming that, when the tide served and the wind was favourable, these small vessels from the Alt could cross the shore sandbank direct into Formby channel, the bay and sea-room would be comparatively near. The following is an example, though at a much later period, of vessels windbound in the Mersey. William Rathbone, who was born in 1819, used to tell how before his time (probably in 1816 when the harvest failed completely) his firm, Rathbone Brothers, joined with Cropper, Benson & Co., in chartering a pilot boat and sent her to New York to announce the failure of the wheat crop and the approaching opening of the ports for the importation of wheat. The pilot boat was towed out of the Mersey by the one small steam ferryboat, as the wind was westerly and persistent. When the pilot boat arrived back in the Mersey she found the westerly winds still prevailing, and all the vessels still in the river that she had left there.[2] In 1818, "After a continuance of stormy and boisterous weather, during February and March, it became moderate on March 25th, from which day to the end of the month (six days) nearly 800 vessels sailed."[3] Even the famous statesman, William Ewart Gladstone, was impressed by the spectacle of a large number of vessels leaving the Mersey after a spell of contrary winds. In his early recollections of Liverpool he said: "the most picturesque sight Liverpool had to offer was the exodus of sail from the port after a spell of westerly winds."[4]

Canon Hume's visit to Formby in 1865 was the second occasion on which he had been to the district. He first went there in 1849, when he discovered in the parish church of Formby a parchment roll dated 1679, 10ft. 4ins. long, made up of five separate slips, five to five and one-half inches wide. It is called *Formby Fifteenth Book*, giving the names of the persons who paid the tax of *Fifteenths* to the King. There are 199 names in all, headed by Richard Formby, which indicated a population of about one thousand, and this be it noted, was in 1679.[5] Speaking of Formby itself, Canon Haume says "at that time there was no house near the site of the old churchyard, and no trace of cultivation. The surrounding sand was much higher than the churchyard."[6] Canon Hume, after carefully considering all the evidence that he had collected, came to the following conclusions:

1. That a town and port had existed on the extreme west, close to the channel.
2. That it was destroyed by the blowing sand, and rebuilt a mile and a half inland.
3. That this occurred about 1745.

([1]) ibid. p. 113
([2]) Rathbone, pp. 63-4
([3]) Gore, 1841. Annals (1818) p. 46
([4]) Muir, p. 260
([5]) Hist. Soc., vol. 18, p. 78
([6]) ibid, p. 74

He continues, "Some of the sandy lanes are called "Streets" to this day, as Duke St., Cable St., Church St."[1]

Despite the fact that no evidence has been found that at the latter part of the seventeenth century Formby was an established and progressive harbour, still, at an earlier period it does appear to have enjoyed a degree of importance. Maybe, with this in mind, the responsible Formby citizens of 1700, hopefully envisaged a renewed era of prosperity and progress, if the river Alt could become the site of a dock, and so possibly the idea may have been mooted when the first Merseyside dock was contemplated.

Nevertheless, we of this generation find it difficult to realize that what in our youth we knew as a very sparsely populated area, may formerly have been a thriving port and, possibly a rival to Liverpool.

Part II. *By* JOHN S. REES

Is it true that the River Alt was considered as a possible alternative site for the first Mersey dock or, is it merely a lingering tradition? Mr. Woods having told us of what would seem to be the origin of this story, as well as other interesting details relating to Formby, my purpose is, in the main, to point out the difficulties that would confront vessels making for the River Alt and, to show that at that period the Port of Liverpool was well established and making steady progress, with important overseas trade, whereas Formby was in the remote background.

No evidence, so far as the Liverpool Corporation was concerned, has been found that such a project was ever remotely suggested as an alternative possibility. Obviously, to consider even the possibility of such a scheme at Formby the Liverpool Corporation must have had, in one way or another, some jurisdiction over that area. At any rate it was within the Port of Liverpool, a member of the Port of Chester, as defined in the Exchequer Warrant of 1680, showing the area covered by the jurisdiction of the Liverpool customs Collector.[2] For the purpose of the collection of local rates and duties, the limits and extent of the Port of Liverpool had not then been defined. However this may be, official records make it clear that the Liverpool Corporation regarded Formby as a place or creek belonging to the Port and, as such, was called upon to comply with the town's rules and regulations, which later will be referred to. That the Corporation did have some monetary obligation to the port of Formby is shown by an item that appears in the accounts of the Corporation's treasurer in 1722, £3 was paid to the overseers of the Port of Formby.[3] This record is of special interest being the only official reference that has been found describing Formby as a port. With this information before us we cannot reasonably ignore the probability that the Alt provided a measure of shelter and safety to, at all events, small vessels and, it gives some credence to the recollections of the spokesmen of Formby about which we have already heard.

Now let us take a glimpse at Formby's shipping in the seventeenth century. We have heard of the return made by Sir Richard Molyneux to the

(1) Hist. Soc., vol. 18, p. 76
(2) Hist. Soc., vol. 99, p. 36 (3) Chandler

Earl of Derby in 1626, showing that Formby, a creek of Liverpool, possessed twelve vessels, including three from Altcar, aggregating 253 tons, and that Liverpool vessels also numbered twelve, aggregating 294 tons. It will therefore be observed, so far as these figures indicate, that at that time the Formby tonnage was almost on a par with that of Liverpool. How the Formby vessels were employed is not shown. No doubt some, if not all, were fishing boats and their catches were for local consumption or were landed at Liverpool when a market could be found. There is evidence that at a later period fishermen took commodities from Formby to Liverpool by road.

The port books of 1660-61 include in a list of vessels frequenting the Port of Liverpool the following:[1]

Ann Gabbard, of Liverpool, from Formby and Bristol.
Providence, of Grange, from Grange.
Goodspeed, of Grange, from Grange.
Nightingale, of Grange.
No tonnages are given.

Grange is presumed to be Grange of Formby which was situated within the bend of the river Alt as it turns south before entering the Mersey estuary, and south of the position where the south-east landmark was erected in 1719. Grange Swashway is referred to by Lieut. Evans, R.N. in his *Sailing Directions into Liverpool*, 1832, as a spacious out-let in the Formby channel. It has already been suggested that the Formby vessels of 1626 were probably fishing boats, so it is not unreasonable to suppose that three of the vessels just mentioned frequented Liverpool to unload their cargoes of fish. That the Formby men were interested in the fish trade is evident from the following extract from Touzeau's *Rise and Progress of Liverpool*, dealing with the Liverpool town dues in 1642, he says, "It appears that certain barrels of herrings belonging to some Formby men, were seized for non-payment of the 'composition' money due thereon, and they were ordered to be sold, the dues to be retained and the balance restored to the owners. The reason given for this action was that the parties had refused to pay the dues 'in due time.' "[2]

The confiscation of their goods and the enforced payment of the town dues was apparently not a sufficient deterrent to prevent the men of Formby from again violating the local law, as will be evidenced by again quoting Touzeau: "On the 21st January 1653 it was propounded by Mr. Mayor concerning the payment of town's customs and compositions for all sorts of provisions imported hither and entered in the customhouse here upon occasion, of certain Formby men bringing in herrings and so going to Alt river without breaking bulk, who, denying to pay the town's customs, it is therefore this day upon the question voted and so ordered, viz: that notwithstanding they do not here break bulk, but only make their entry in the custom house and so pass away to any other place or creek belonging to this port, yet not withstanding they shall pay half duties and half composition for all such goods and provisions at the discretion of the Mayor and Aldermen for the time being,"[3]

Before attempting to discover facilities, if any, that the river Alt might

(1) Parkinson, p. 50
(2) Touzeau, vol. 1, p. 194 (3) ibid, pp. 241/2

have presented for the site of a dock, let us see what sort of a picture Liverpool presented about 1700. In 1694 the Mersey had been made navigable up to Warrington and, three years later (1697) 2,000 tons of goods a year were being sent each way between Liverpool and Warrington by this means.[1] Picton, in his *Memorials of Liverpool*, describing Liverpool at the end of the seventeenth century says: "The close of the century left a thriving, busy, prosperous town, with all the elements of business and commerce in full activity and progress . . . . . The population had now reached 5,145, the number of vessels in the year 102, with a tonnage of 8,619.[2]

The tobacco trade with Virginia was being built up at the commencement of the eighteenth century, not less than twenty Liverpool vessels, ranging from 70 to 300 tons, were engaged in the trade.[3] In 1709, the year the Act (8 Anne, cap. 12) for building the first dock was obtained, 374 vessels aggregating 14,574 tons, entered the port of Liverpool and, 334 of a total of 12,636 tons left the port. Of these vessels eighty-four belonged to Liverpool, aggregating 5,789 tons. [4]Shipbuilding was in progress, although it may not have reached the stage when it might have been described as an established industry. Nevertheless, it had assumed proportions sufficiently important to cause the Corporation to lay down certain charges to be paid when permission was granted to carpenters to build vessels on the corporation's land. It would therefore appear that the town of Liverpool and its shipping at that period had made considerable progress. As there was no dock accommodation vessels had to anchor in the river and, as a result of careless mooring vessels were sometimes a danger to one another.[5] In 1702 to minimise this danger, regulations as to the method of mooring vessels in the Mersey were introduced, the Water Bailiff being empowered to see that they were duly complied with. In some cases, according to the area where anchored, a vessel had to be moored with three cables and three anchors.[6] To facilitate the ferrying in small boats of cargo to and from the shore, vessels anchored as close to the beach as was practicable, and in north-west gales they were much exposed to the elements. The necessity for, and the advantage that would be derived from, an enclosed dock where ships could in safety lie afloat while discharging or loading, were obvious.

Mr. Woods has mentioned the facilities offered by the Hyle lake. It was indeed a most important feature ancillary to the sea approaches to the river Mersey. Its geographical situation was such that the great majority of vessels, even if not preparing to anchor there, bound to the Mersey passed the entrance. Almost all vessels inward bound came from the westward and passed through the Horse channel. This channel with a broad fairway carried deep water to within a short distance of the entrance to the lake, which could be entered at any stage of the tide. A west or south-west wind (the prevailing wind) would be favourable to reach the Horse channel. We have already heard that, if required, shelter and a safe anchorage could be found in the lake, until weather conditions made it prudent for a vessel to proceed to the river Mersey. The Hyle lake was equally useful to ships outward bound through the Rock channel. With the exception of the Black Rock Perch at the east end of the

(1) Picton, vol. 1, p. 143
(2) ibid., p. 147
(3) Parkinson, p. 70
(4) Enfield, p. 67
(5) Touzeau, vol. 1, p. 359
(6) Touzeau, vol. 1, p. 359

Rock channel and, possibly another perch at Crosby point, no official landmarks, lighthouses, buoys or other sea marks then existed, local navigation being confined to the hours of daylight. To enter the Hyle lake, Grenville Collins, referred to later, says: "Being on the back of the Hyleland, bring the mill and wood one on the other and run in keeping close along'st Hyleland and so into Hylelake and anchor."

Few measures had been taken to maintain and preserve the roads within Liverpool's boundaries, while outside, they appear to have been entirely neglected. On occasions private coaches were overturned or bogged down, particularly in winter time. Merchandise was transported on pack horses, and the nearest stage-coach road was at Warrington. Road facilities which to-day we take for granted, seem then to have been regarded as of secondary importance. With this knowledge we can easily imagine what the roads in and about an outlandish place like Formby must have been.

There appears to be no reason to doubt the accuracy of the recollections and statements of the several spokesmen that, at one time, a haven and a pier existed at Formby. But no authoritative confirmation has been found of the story that when the building of the first Liverpool dock was contemplated the Alt was considered as a possible site. It is conceivable that if the necessary materials and labour were available at such an out-of-the-way place, a dock might have been built there. To indulge in a simile, there would be no achievement in constructing a costly house unless a reasonable access to it was assured, otherwise it would be an obvious gamble. The most likely source from which information might be obtained relative to the sea or channel approach to any haven would, of course, be a local chart, if one existed. That being so, the only authorized chart of the Mersey estuary that existed in the seventeenth century has been examined. As you have been told, this chart was produced by Captain Grenville Collins in 1684. Unfortunately it is somewhat lacking in detail. Formby channel is referred to but, only so far as it might have been a channel to the Mersey and, then Collins points out that ". . . . . this place is not buoyed or beacon'd and so not known." Not a very comforting thought to start off with; a channel to the Alt is not mentioned, and Collins did not even hint at there being a haven at Formby. The next chart was published in 1738 from a survey made by Fearon and Eyes, the first comprehensive chart of the Mersey estuary. At that time, to reach the Alt a vessel would enter the Formby channel, steer a southerly course for about four miles to Crosby point where the Alt approach channel, which ran more or less parallel with the shore commenced; then, steer a northerly course for over two miles to the mouth of the Alt. During the whole of this passage a vessel would be manoeuvring on a lee shore, exposed to the prevailing winds Should the weather suddenly deteriorate before a vessel reached the safety of the Alt, disaster might have been the result.

The official records we have cited make it tolerably certain that there were vessels operating from Grange (Formby) so, it would seem that the river Alt provided a degree of utility and accommodation for a type of vessel. As vessels from Altcar were included in the return we have already mentioned, it may indicate that the river Alt was navigable that far inland. Little Altcar

is situated two miles north-east from the river's mouth, and is north of, and fairly close to, the Alt's bank.

You have heard that the course of the Alt appears to have been different from what it is to-day. Incidentally, it may be mentioned that, according to a Geological Ordnance Survey of 1869, brought up to 1942, the Alt winds its way from a south-easterly direction until it reaches a point more than two miles northerly of its mouth, when it turns west; then, its final course is southerly. This appears to be its course at the present time.

One problem that confronts us is, where was this haven or anchorage situated? Canon Hume is believed to have calculated that it was about 600 yards (roughly one-third of a mile) north-west of the present St. Luke's Church.[1] (built 1855). If this was correct, it was over a mile north-west of where the Alt's most northerly course runs to-day. Is it likely that the Alt has so materially changed its course since 1700? We have already heard that Dr. Sumner, of Formby, who died about 1883, aged eighty-four, stated that, in his young days there were evidences as to what is now the Altcar rifle range, having been the site of a harbour in which large boats rode, and he could remember good sized vessels sailing up the Alt "when its course lay further to the north." The rifle range is situated north of the mouth of the Alt and, west of its course, on the land separating this river from the shore. Dr. Sumner's statement as to the site of the harbour is more acceptable than that of Dr. Hume's.

The Liverpool pilots organized in 1766, were required to be qualified to conduct a vessel into and out of the Port of Liverpool, Chester water, Piel of Foudre and the Isle of Man, but the port of Formby is not mentioned. Vessels in the coasting or Irish trade were exempt from pilotage, but that fact would not have been sufficient to exclude knowledge of the port of Formby from a pilot's qualifications, if the port had been of any importance. That requirement was in operation until after 1840, so would cover the period when Dr. Sumner remembered seeing the "good sized vessels sailing up the Alt." It is disappointing that Blundell in his unique diary has not once mentioned the port of Formby. He was unquestionably ship-conscious and rarely failed to mention the name and that of the master of any vessel in which he or his relatives took passage and, of course, he visited the first dock (later the Old Dock) at Liverpool in 1715, the day that its first vessels entered.

We have emphasized the importance of the Horse channel and the Hyle lake relative to the navigation into the port of Liverpool but it is curious that when the building of the first dock was under consideration it was Formby channel that the Corporation recommended should be buoyed, not the Horse channel. Were the natural landmarks considered adequate for the lake? Although the buoying of the Formby channel would have been of much assistance to vessels bound to the river Alt the recommendation was to buoy it "for the guidance of mariners trading to and from the port (Liverpool)." However, it was not until 1738 that the Mersey channels were buoyed, and then very indifferently. In the meantime, in 1719, Formby, or to be more precise. Grange, had the distinction of being the site if not of the first dock,

(1) Ashton, p. 111

of the first landmark in Liverpool bay, erected on the south side of the river Alt. More than a century later this landmark was, as a lighthouse, to play a most important part in the navigation of the Mersey channels. But to turn from the sea to the land.

A few words about the overwhelming of the ancient village of Formby may not be out of place. This is supposed to have taken place or commenced in the 1730's. In 1720 a violent overflowing of the sea caused serious damage to land and property in that locality[1] It is not unlikely that the inrush of the sea resulted in the overflow of the Alt. Meols, Alt-Grange and other places were flooded, but on this occasion there is no mention of any damage by blown-sand, nor is a haven mentioned. The sanding up of the village of Formby appears to have been a progressive process, persisting over a lengthy period, a sort of creeping paralysis. Even had the necessary labour and equipment been available to remove the sand as it accumulated, the disposal of it would have presented a difficult problem. After the devastation by sand the cemetery was described as "a lonely and desolate burial-ground in a wilderness of sandhills." In 1828 Alexander Nimmo, who was consulted by the Dock Trust of Liverpool with regard to the possible consequences of the encroachment of the sea at Leasowe, made a survey of the shore, in the process of which he discovered a supposed burial-ground some distance below high-water mark. Speaking of this discovery in a paper read before the Literary and Philosophical Society of Liverpool in 1840, J. B. Yates, F.S.A. etc. said, a similar depository for the dead is discernible among the sandhills on the Lancashire shore at Formby, though now *half-covered* by the drifting sands.[2] In 1855 a small memorial church was built in the burying ground on the old site, by Mary, daughter of the Rev. Richard Formby.[3]

It was not unusual for people going to Liverpool from Grange (Formby) or Crosby to go on horseback along the shore. Probably the sandy surface was preferable to that of the unkept roads. On the 24th April 1704 the Rev. Edward Molyneux, a secular priest living at "The Grange" was found dead on the sands. As what may be evidence that in those early days there was a tendency to repeat a legend until it became acceptable, by some, as a positive fact, the following interesting story is given in full:

"A curious tradition regarding Mr. Molyneux has lingered to this day (1887) in the village of Little Crosby. It is said that he was the owner of a fleet horse, and that on the above day, after riding over the sands to Liverpool as he often did, he put up at his usual inn. When ready to return in the evening the ostler told him that his horse was lame, and offered another which he accepted, riding leisurely homewards. With the intention of robbing him, the man soon afterwards mounted Mr. Molyneux's horse, overtook him on the lonely sands and pulling him from his horse, was alarmed at finding that the fall had occasioned his death. He fled hastily from the spot, but several years afterwards being about to die at Lancaster for some other villainy, he confessed that he had been the cause of the death of Father Molyneux[4]."

The Rev. Edward Molyneux was an intimate friend of Blundell the

(1) Hist. Soc., vol. 105, p. 99
(2) Touzeau, vol. 1, p. 168 (3) Baines, vol. 2, p. 292
(4) Crosby Records (Chetham Society, No. 12)

Diarist, who records in his diary the finding of the body of the priest on the sands. As Blundell did not mention the cause of the Rev. Father's death the truth of the story appears to be in doubt.

In conclusion, the hazardous nature of the sea approach to the river Alt would surely have deterred the master of a vessel of any size from jeopardizing the safety of his charge, even with the hope of reaching such an innovation as an enclosed dock. The channels to the Mersey were also dangerous but in a lesser degree. New entrances and the keeping open of existing ones depended entirely upon natural causes, artificial aids in this direction not being employed until more than a century later.

Abbreviations and Sources

Ashton—William Ashton: *Evolution of a Coastline* (1920).
Baines—Edward Baines: *History of Lancashire* (1868). (Earlier Edition, 1836).
Chandler—Dr. George Chandler: *Local Government Finance* 1954.
Enfield—William Enfield: *History of Liverpool* (1773).
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Parkinson—C. Northcote Parkinson: *Rise of the Port of Liverpool* (1952).
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MARINE INSURANCE

by JOHN R. BIGLANDS, F.C.I.I., A.C.I.S., J.P.

Read 10*th March* 1955

The origins of Marine Insurance are safely hidden in the mist of centuries long gone by. It was not until the economic revival in Europe in the ninth century A.D. that Marine Insurance appeared in any form which would be recognizable today. At that time merchants would combine together to share each other's losses from the perils of fire, shipwreck and misfortunes at sea. These early syndicates of merchants formed for this purpose were conducted secretly, as such activities ran counter to the teachings of the Church which condemned them as usurious. In the tenth century with the growth of new seaports and towns the fuedal lords who were gaining great wealth from the fines and customs dues they imposed, granted charters to the merchants practising Marine Insurance, thus giving the newly developed branch of commerce a more businesslike air.

The twelfth century marked a rapid development in the economic life of Europe. This commercial expansion was due to the colonization of the underdeveloped parts of Germany and Poland, to the rise of the great medieval fairs and to a temporary decline of the Ottoman Turks who were gradually ceding to the north Italian cities trading ports on the north African coast and Black Sea shores. The main agents of Marine Insurance at that time were the Papal tax gatherers, drawn from the principal Italian business houses. Papal dues were paid in money and goods, and the transporting of such wealth called for insurance, it being more than likely that the commercial fleets would be attacked by pirates. These agents also bought English wool at the great wool fairs of Stamford, or Ramsay St. Ives, attended the great international fairs at Champagne and thus often had cargoes of great value moving over the waters at the risk of any peril which may beset them. Villani, an Italian historian, who died in 1348, stated that a system of marine insurance was devised in 1182 by the Jews who introduced it into Lombardy at the time of their expulsion from France. Certain it is that the Jews were the first people to commence trading with other nations, and there can be little doubt that some form of insurance was instituted very early in commercial development. Marine Insurance is undoubtedly the oldest form of insurance, and may in fact be termed "The handmaid of Commerce" as without this form of financial protection against the perils of the sea, particularly those to which the earliest navigators in their frail crafts were exposed, seaborne commerce would not have developed so rapidly.

One commercial practice which is closely akin and indeed completely interwoven today with Marine Insurance is that of General Average. By this term is meant the sacrificing of property or money in time of danger at sea for the ultimate safety of the whole adventure. Whilst it is true that the liability of a shipowner or merchant to pay general average does not initially

depend upon a contract of insurance, such payments where arising from a peril insured against, are recoverable from the marine underwriter. The origin of this practice is unknown, although it is certain to have existed from the commencement of sea-borne trade. In the earliest days, merchants travelled with their goods, and in time of peril at sea, when it became essential to jettison part of the cargo to lighten the ship and prevent her from foundering, a decision as to which part of the cargo was to be thrown overboard could only be amicably arrived at by an agreement on the part of those whose property was to be untouched, to make good the sacrifice on the arrival of the vessel safe in port. It is certain that the undertaking to make good such losses was established as a definite custom, thus avoiding the delay arising from bargaining in the face of danger that made immediate decision essential. The first people to translate this custom into law appear to have been the Rhodians in 900 to 700 B.C. although it is said that they copied the idea from the Phoenicians who flourished about the twelfth century B.C. The definition of the custom of G.A. as laid down by the Rhodians is recorded in Justinian's *Digest of Roman Law* of which one section reads·—

"The Rhodian Law decrees that if goods are thrown overboard to lighten a ship all shall make good by contribution that which has been given for all".

The modern law of G.A. is modelled upon that contained in the Roman Code. Thus although there is no record of the existence of any means of protection against losses at sea in these early times, losses of a G.A. nature were clearly governed by custom or law, and it is possible that some form of insurance cover, perhaps not as we know it today, was practised.

Another practice in those far off days, closely akin to Marine Insurance, was that of issuing Bottomry and Respondentia Bonds for the borrowing of money on the security of ship and/or cargo. These bonds were in common use among the earliest sea traders, and there is a reference in Plutarchs' 'Lives' to one Marcus Cato, a moneylender living between 234 and 149 B.C., specialising in a form of business very similar to Bottomry. It is said of him that he used to loan money in the most disreputable of all ways, namely on ships. His method was to require his borrowers to form a large company and when there were fifty partners, he took one share in the company himself, being represented by one Quinto, a freed man of his, who accompanied his clients in all their adventures. In this way his security was not imperilled but only a small part of it, and his profits were large. By this practice the merchant undertook to repay the loan plus interest only if his vessel and cargo arrived. Thus, unlike insurance where payment is made only after loss, by this practice payment was made before the risk commenced. The Carthagenians, Phoenicians and Romans made use of these Bottomry Bonds and there is a record that the Emperor Justinian, 533 A.D., fixed the maximum rate at twelve per cent.

The development of Marine Insurance made rapid advances in the fourteenth century. This is clear from the number of Ordinances which appeared in the fifteenth century. There is a record of a policy in 1329 covering a cargo of woollen goods for which a premium of 272 gold florins was paid. A policy issued in 1397 contains the following perils "of God, the sea,

of nations, fire, jettisons, restraints of lords or peoples or any other person, of letter of marque, of arrests and of any other peril, chance or mishap which in any way could have occurred or might have occurred". The wording is remarkably similar to that contained in the body of Marine Insurance policies today. The most interesting set of Ordinances appeared in Florence in 1523. In these Ordinances two distinct forms of policy are given, one for goods on a named vessel and the other for coastal traffic in the Adriatic. The perils insured against are listed and are practically identical to those appearing in the standard Lloyd's S.G. form of policy. Elsewhere in Europe attempts were made to codify existing Marine Insurance practice. Phillip II of Spain made a comprehensive attempt to organize the business on its present day basis. A similar reform was introduced into the Spanish Netherlands.

As England had early trade associations with the Low Countries it is possible that the practice of Marine Insurance was brought into this country by this route. The Jews, who were the financiers in England, from the time of the Normans until 1290, when they were expelled by Edward I, may have practised some form of Marine Insurance, but there is no record of this. They were succeeded by the Hansa merchants, who, under Royal Charter, had been granted a residence in London at the Steelyard, on the site of what is now Cannon Street Station. They had come from the towns of the Hanseatic League and because of their wealth were granted many privileges, such as immunity from taxation, monopoly in the export of wool, which enabled them to become very prosperous and virtually to have a monopoly of the export trade of this country. It was not until 1578 that the privileges were finally abrogated during the reign of Elizabeth, and finally they were expelled from the country and the Steelyard closed. During their period of commercial activity in this country whilst it is known that they practised Bottomry, there is no record that they practised Marine Insurance, although it is a reasonably safe assumption that some form of insurance was known to them.

The Lombards, who were driven from their homes in 1236 following the Papal war with Germany, were scattered over Southern Europe and a number of them settled in London. Lombardy had been one of the centres of early commerce, and its inhabitants had been the principal bankers of the then commercial world. Wherever they settled they continued their former commercial practices and in London they prospered so well that they became almost as influential as the Hansa merchants. They were mainly concerned, not with commerce, but with the provision of financial facilities, and they flourished so well that the Kings of England soon became indebted to them. From Henry IV they obtained a Charter and the grant of a piece of land between Bishopsgate and the Thames. This was an apparently useless piece of marsh land, but by draining and reclaiming the land, they ultimately acquired a site for their offices and dwellings which became known as Lombard Street. Their connection with Marine Insurance, is, as already mentioned, clearly established. As one clear indication of this there is the phrase still incorporated in the Lloyd's form of policy:—"This Writing or Policy of Assurance shall be of as much force and effect as the surest writing or Policy of Assurance heretofore made in Lombard Street." Following the expulsion

of the Hansa merchants their privileges were greatly curtailed, and as their business slowly but inevitably dwindled, they ultimately withdrew altogether.

Documentary evidence of the practice of Marine Insurance in England in the fourteenth and fifteenth century is almost non-existent, but the number of cases brought before the Admiralty Court with reference to claims under Marine Insurance policies clearly indicates that Marine Insurance was widely practiscd and understood. During the sixteenth century the style and wording of the policy rapidly developed and one policy issued in 1548 and another in 1563 bear a striking resemblance in style and phraseology to the Lloyd's standard form of policy today.

During the seventeenth century, Marine Insurance was carried on by bankers, moneylenders and merchants as a side line. Shipowners or merchants who desired to insure their property had to contact such persons who were willing to offer some form of insurance. Policies were made out and taken round to various offices, where any person who desired to take a share of the risk signed at the foot, indicating the amount of his share, hence the term- "Underwriter". Such policies had to be registered at an "Office of Assurance", where a fee of one-eighth per cent was charged, plus a contribution to the poor box. Presumably policies not so registered could not be enforced at law. In 1574 a Royal Patent was granted to one Richard Candler, giving him a monopoly of the right to make and register policies. The first Marine Insurance Act appeared in 1601 and it is interesting to note how clearly it defines the basic principles of Marine Insurance in the following words:—

"By means of a policy of insurance it cometh to pass that upon the loss or perishing of any ship there followeth not the undoing of any man but the loss lighteth rather easily upon the many rather than heavily upon the few, and rather upon them that adventure not than upon those which do adventure, whereby all merchants, especially the younger sort venture more easily."

The object of this Act was to set up a Court of Policies to deal with disputes in insurance matters. It will thus be seen that Marine Insurance was practised and finally established in this country some considerable time before the emergence of Lloyds.

In 1682 the first coffee house was opened in London and others soon followed. These houses soon became meeting places for those engaged in various branches of commerce, and they became the centres of great commercial activities. Of these coffee houses one was owned by Edward Lloyd, and to this house situated in Tower Street those engaged in shipping made a practice of resorting. Close to the Thames, frequented by captains of merchant vessels, those whose business was concerned with shipping found available there first-hand information regarding conditions abroad. It was thus natural that underwriters should frequent this coffee house, where business was most likely to be obtainable. Edward Lloyd himself, realising the value of reliable shipping information opened up correspondence abroad, and took steps to make available to his customers shipping information which would be of value to them. In the London Gazette, 1688, appear numerous advertisements by Edward Lloyd for the return of or news of lost property. Some relate to runaway slaves and deserters from ships, but from them it is clear that by that time his coffee house was much used for the sale

of ships and goods and commercial transactions generally. In "Lloyd's yesterday and today" the author quotes from an old pamphleteer, who wrote: "The room stinks of tobacco worse than hell of brimstone, and is as full of smoke as their heads that frequent it, whose humours are as various as those of Bedlam and their discourse at times as heathenish and dull as their liquor". "Auctions by inch of candle" were frequently held. By this method a pin was inserted in a candle about one inch below the flame, and bidding went on until the candle burnt down to the pin. The successful purchaser was the last one to make a bid before the pin fell. From Tower Street Edward Lloyd went in 1692 to the corner of Lombard Street and Abchurch Lane where the coffee house remained until 1770. Edward Lloyd also produced a news sheet, known as *Lloyd's News*, wherein he collected all the shipping information he considered would be of value to his customers. Its publication was however discontinued following a statement therein to which the authorities objected and which he refused to rectify.

The part played by the Marine Insurance companies in the development of the business belongs to a later era, but it is worth recalling that in 1720 two companies, the London Assurance and the Royal Exchange Assurance were granted Charters. This followed the period of furious speculation which culminated in the South Sea Bubble which involved thousands in financial ruin. All manner of wild cat schemes were floated and insurance, particularly Marine Insurance which was in the hands of the underwriters who had settled at Lloyd's coffee house, attracted numerous speculators. Of the many, the only two which ever functioned were the companies mentioned, and in the face of great opposition, particularly from underwriters at Lloyd's, they ultimately only succeeded in obtaining their Charter by undertaking to make a payment of £300,000 to the Privy Purse of George I. Both companies commenced operations in the Royal Exchange and for about a century had, along with the underwriters at Lloyds a complete monopoly in Marine Insurance. They found considerable difficulty, however, in fulfilling their promise to pay £300,000 to the King's Privy Purse, and they were finally relieved from this obligation by a Parliamentary Bill that each should make up their contribution to £150,000. During this period about nine-tenths of the Marine Insurance business still remained in the hands of Lloyd's underwriters who continued to flourish. In 1726 Lloyd's List was published; the only other newspaper in existence at that time being the London Gazette. This publication was a great boon to the business community at that time, containing information not only in regard to shipping, but tide tables, prices of stocks, rates of exchange and the prices of staple commodities. Information regarding casualties to ships was also included. In 1914 the Corporation of Lloyd's took on the printing and publishing of this newspaper, also at that time obtaining control of the Shipping Gazette. Ships' lists containing the particulars of the build of vessels were first printed in the year Lloyd's list was published, these being the origin of the first register books.

In 1770 those who specialised in Marine Insurance at the coffee house removed to Pope's Head Alley. It was about this time owing to the technical development of the business, that the insurance broker came into being. This new removal was only of a temporary character until eventually in 1773

offices were obtained in the Royal Exchange, where apart from the burning of that building in the fire of 1838 and whilst waiting for its reconstruction, Lloyd's remained until modern times, before moving to the present building in Leadenhall Street.

From this date to the break-up of the monopoly, which occurred in 1824, Lloyd's flourished. This was largely due to the naval wars in which this country was engaged between 1775 and 1815. History has shown that it is during times of war that Marine Insurance experiences its greatest prosperity. This is the natural consequence of the movement of large cargoes of all kinds across the seas to the belligerents, to the great rise in the values of the ships and their cargoes due to the increasing demand and to the fact that losses at sea in wartime are often so numerous and so costly that both ship-owners and merchants become more insurance minded than ever. The greater risks of loss and damage and the increased business on offer results in materially increased rates of premium and thus the increase in both rates of premium and values of the property insured makes war-time underwriting a profitable business for the marine underwriter.

During the early years the founders of Lloyd's had great difficulty in putting a stop to various malpractices of those who were not engaged in insuring legitimate ventures, and were more concerned with illicit gambling. Because of the monopoly they enjoyed with the two London companies, there were many persons who took advantage of any opportunity to attack them, and they had to struggle hard to build up a reputation for sound and honest dealing. Fortunately the times produced the man in the person of John Julius Angerstein who subsequently became affectionately known as the "Father of Lloyds". Under his wise and able leadership Lloyd's became organized and developed into the great national institution whose name became world famous and synonomous with honest and fair dealing. The early administration was carried on by a House Committee of about twelve to twenty members. A master was appointed to control the staff of waiters, to attend to the payment of the rent and other charges, to be responsible for the supply of stationery, newspapers and refreshments, to edit and publish shipping information of interest to the members and generally to act as manager of the concern. Later on other masters were appointed, but upon the appointment of a secretary in 1804 to conduct the official correspondence of the society, the duties of a master gradually diminished, and the title ceased to exist about the middle of the nineteenth century. In 1779 Lloyd's drew up a printed standard form of policy which, with little alteration forms the basis of the marine insurance contract today. Why has this not been translated into modern language? Because down the years, almost every phrase has been legally defined in numerous cases in the courts of this country, so that its legal purport is now known with precision and any attempt at alteration might readily lead to ambiguity and dispute.

The prosperity enjoyed by the underwriters of Lloyd's during this period naturally attracted the envious attention of influential people who desired to finance new companies to transact this class of business. In 1798 the Globe Fire & Life Insurance Company petitioned Parliament to grant them a charter, but this was refused mainly through the influence of certain members of Lloyd's who were themselves members of Parliament. In 1809 a number

of wealthy merchants prepared a fresh scheme and obtaining considerable support in Parliament succeeded in having a Select Committee set up to inquire into the Act of 1720. This committee reported in favour of repealing the Act mainly upon the grounds of the failure of the two existing companies to supply the need of shipowners and merchants. Parliament, however, refused to implement the report, and so for a further period of sixteen years Lloyd's and the two companies continued to enjoy a monopoly. As a result of this, however, Lloyd's reorganized by framing a new constitution, by which the society was to be governed by a committee of twelve members. A committee of treasury was set up to act as trustees for the subscribers and a Deed of Association was prepared and signed by over 1,100 members. A Committee of Correspondence was appointed, a secretary at a salary of £200 per annum and it was decided that 'Lloyd's Agents' abroad should be appointed only by the Committee of Management, individual appointment by underwriters being abolished. Many of the rules drawn up in 1811 remain as part of the constitution today. During this period Lloyd's Patriotic Fund was started and the society was also concerned in the establishment of the Life Boat Institution and the founding of Lloyd's Registry of Shipping.

The break-up of the monopoly occurred in 1824 when a repealing act was passed. Nathan Rothschild, the founder of the House of Rothschild, was instrumental in bringing this about and soon after formed the Alliance Marine Insurance Company. Another company formed at this time was the Indemnity Mutual Marine.

In 1838 Lloyd's was again rendered homeless by a fire which destroyed the Royal Exchange. Many of their valuable records were destroyed and during the six years they were awaiting the building of the new Royal Exchange in 1844 there is little record of their activities. From this date until the early 1870's Marine Insurance passed through a somewhat depressing period. This was due to the formation of many new insurance companies and to the period of depression which followed the end of the Napoleonic wars. The volume of business was reduced and there were many more underwriters only too willing to take up the available business on offer.

Due to the severe competition many of the new companies came to an untimely end. In 1871 a Charter of Incorporation was granted to Lloyd's. This Charter limited the business of the Corporation to Marine Insurance, but this was extended later by the Lloyd's Act of 1911. From about 1872 the business of Marine Insurance continued slowly to improve, partly as a result of the American Civil War and the increase in trade with the Far East following the opening of the Suez Canal. Of the new companies, formed after the abolition of the monopoly, only one survived, The Marine Insurance Company, which was founded in 1836. Following the passing of the Joint Stock Companies Act in 1844 however, many new companies were floated but of these only the Ocean Marine founded in 1859 overcame the difficulties of the time and survived. The American Civil War caused another boom and of the successful companies formed about this time were the London & Provincial and The Thames & Mersey formed in 1860, The British & Foreign, The Commercial Union and the Union Marine Insurance in 1863. The Thames & Mersey was launched by shipowners and merchants of London and Liverpool and the British & Foreign and Union Marine were both

Liverpool concerns. The Maritime was formed in 1864, The Merchants Marine in 1871 and the Standard Marine in 1872. The Sea Insurance Company Limited was founded in 1875. Many other companies were formed between this date and the outbreak of the first World War, but most of them proved unsuccessful. For some years prior to this war the overseas commerce of the country had been steadily improving and the prosperity of the Marine Insurance Market had correspondingly increased. This led to the tendency towards grouping and amalgamation, the weaker companies being bought up by the stronger organizations; stronger companies, for motives of economy and better administration, merging together; and the big non-marine companies, desirous of entering a profitable new field of insurance, acquiring ready made organizations by obtaining control of existent marine companies. Today the only existing marine insurance company operating completely independently is the Sea, although this company has found it advantageous to enter the Fire & Accident insurance fields and has recently acquired the Beacon Insurance Company. During the period of the two great wars, marine insurance, as was to be expected, boomed, but there are unmistakable signs today that the business is already facing difficult times such as were experienced during the 1920's following the first World War. Broadly this is due to a reduction in values, the infinitesimal risk of loss due to war perils, the heavy losses by theft and pilferage due to many causes as a direct result of war-time conditions, and the increased world capacity to assimilate all the marine insurance business available.

The business of Marine Insurance, world-wide in character, is such that individual underwriters have found it both wise and essential to group themselves together in various Associations similar in constitution to the various great trade associations formed by merchants operating in other branches of commerce. Thus there are various underwriting associations both in this country and throughout the world formed to protect the interest and facilitate the business of underwriters, particularly in matters of policy, linked by an international body known as the International Union of Marine Insurance. Tariffs such as are commonly adopted by many of the Fire and Accident companies are not a general feature of Marine business, although at times marine underwriters have found it necessary to adopt a common policy and arrange definite agreements among themselves.

It has also become essential for them to have some organization for the interchange of views on matters of common interest, and of information which will affect the business as a whole. This led to the formation in this country of Lloyd's Underwriters Association, The Institute of London Underwriters, The Liverpool Underwriters Association, and the Glasgow Underwriters Association. The Lloyd's Association is quite distinct from the Committee of Management and meets regularly solely for the discussion of technical matters and matters which affect the conduct of their marine insurance business. The Institute of London Underwriters, an association formed by the principal marine insurance companies in London, meets for the same purpose, one committee dealing with the underwriting side of the business and another with claims adjustment and settlement. One special function of their work, carried on by a special committee on which Liverpool is represented and which is known as the Technical and Clauses Committee,

is to produce and from time to time revise the standard sets of clauses, adopted for the sake of uniformity and attached to the marine policy of today, amending the basic form of insurance cover which has long since been insufficient to meet the requirements of both shipowners and merchants. These clauses today are known as Institute Clauses. These clauses prior to adoption are submitted for approval to the other British Associations and the trade concerned if necessary. The Institute of London Underwriters was founded in 1884. The Liverpool Association is much older, having been founded in 1808 and incorporated in 1882. These Associations keep in the closest possible contact with each other and much useful and confidential and technical information is circulated between them. The Associations have permanent secretarial staffs housed in offices which they maintain and are managed by an executive committee duly elected by their members.

To assist in minimizing marine losses wherever and whenever they occur, two Salvage Associations were formed originally by Marine underwriters, shipowners and merchants, but today are managed and controlled by Marine Underwriters themselves. These are the Salvage Association, London, and the Liverpool & Glasgow Salvage Association. These Associations were founded in 1857, the London Association being incorporated in 1881 and the Liverpool Association in 1885. These Associations are quite distinct from the Salvage companies formed for the purpose of engaging in salvage work as a commercial proposition.

The London Association has a permanent staff of experts and employs special officers throughout the world who are experienced in the salvage of both ships and their cargoes. It also has retained the services of many surveyors and technical experts who have the necessary experience and knowledge to deal with damages to ships and their cargoes whenever such may occur. The executive control is in the hands of a committee elected by representatives of the members who are the Marine companies and Lloyd's underwriters. The Liverpool & Glasgow Salvage Association is a similar body but unlike its London counterpart it maintains a fully equipped salvage vessel manned by special salvage officers and with its varied modern salvage plant is fully capable of rendering successful salvage services to the largest ocean going vessels, as has been demonstrated time and time again during its long history. During the recent war it operated as Salvage agents to the Admiralty covering the North Western approaches when valuable services were rendered not only to the Marine Insurance world but to the armed services of the Crown and the nation generally.

So much for what I feel has been but a somewhat sketchy and all too brief summary of the development of this vast business of marine insurance which now covers the whole of commerce by sea throughout the world. How is the day to day business carried on?

A Marine insurance company is organized like most other companies with its accounts, secretarial, investment, cash, statistical and other departments. Two departments, however, distinguish it. Its Underwriting and Claims Departments. The first, controlled by the underwriter decides what risks are to be accepted and the rates of premium to be charged, the other what amounts are rightly recoverable under the policies when loss or damage occurs. The underwriter when deciding whether or not to accept a risk

offered and what rate of premium he should charge must, to a great extent, make full use of his wide experience and knowledge of all matters which may affect the particular risk. When a hull risk is involved he will ascertain from his "*Vade Mecum*", Lloyd's Register, the age, tonnage, classification of the risk, survey details and other matters which will have a bearing on his decision. He will take into account the ownership concerned, the type of voyages the vessel is likely to perform, whether a liner or tramp, the conditions of insurance required and the results of insurance over the past four or five years. In his mind's eye he must conjure up a picture of the vessel concerned, be she a small private yacht or an ocean going liner, and visualize and assess the perils she will face during the period of insurance, either around the coasts or in the rivers of this country or across the oceans of the world. Having quoted a rate of premium, if accepted by the broker, this will be entered upon the slip, together with the amount of the risk which the underwriter is prepared to take, against which the underwriter will place his initials. The slip will then be taken by the broker round the market until the full amount to be written on the risk has been taken up. From this slip the policy, which is the legally valid document, will be prepared and ultimately signed by those underwriters participating in the insurance, each for his own share. Should the risk offered be on cargo, the underwriter will not only have to have some knowledge of the vessel by which the goods are to be carried, but will also have to assess the particular types of damage to which the cargo may be prone, the adequacy of the facilities at the ports of loading and discharge and the moral hazards involved, particularly in regard to the risks of theft and pilferage if these are to be covered. The insurance may be placed in a similar manner to that of a hull risk, although in modern practice merchants dealing in certain classes of merchandise make use of floating policies, or open covers, against which they declare all their shipments, thus obviating the unfortunate effects which may arise from the omission to declare for insurance any particular shipment, or failure to declare it until after some loss or damage is known. Having taken the risk, the underwriter will then have to make a decision as to how much, if any, of the amount underwritten he will reinsure. It must be borne in mind that the basis of successful underwriting, apart from the acquisition of extensive knowledge of ships and their cargoes, and the perils which beset them at various times at various places throughout the world, is to have as wide a spread as possible of the risks offered, thus allowing the widest possible operation of the law of average. Treaty reinsurance enables an underwriter to obtain a share of business from other markets both at home and abroad, thus giving him that spread of business which is essential and, to obtain such reinsurances, he must have some reinsurance to give in return. Further, to oblige a broker or a valued client he may have been compelled to accept a risk or a portion of a risk which he did not particularly desire. Reinsurance, particularly facultative reinsurance which, as distinct from Treaty reinsurance, is the placing of individual risks in much the same way as the original risk was placed, gives him the opportunity to cover his liability elsewhere. The underwriter will control the acceptance of risks not only submitted to him at his head office but also those from the various marine insurance markets throughout the world where he is represented either

through branches or, as is more likely, through agents who have a specialized knowledge of, and experience in, the particular market concerned. All risks, wherever they may be accepted, will speedily be reported to Head Office, so that the underwriter may exercise an effective control over his branch underwriters and agents, and know, within a relatively short time, his commitments on any particular risk.

The claims adjuster is responsible for the claims settlements to be made by his company. It is his duty to ascertain and compute the legal liability arising under the policy when loss or damage occurs, to know where and how to obtain the necessary technical assistance where this may assist in the reduction of such loss or damage, to control the various claim settling agencies throughout the world, where claims on his company's policies may be presented for settlement, and to take whatever steps may be necessary for the recovery from other third parties who may be liable for loss or damage for which there is an initial liability under the policy. At one time he may be dealing with some trivial damage suffered by a small yacht after breaking from its moorings, at another the claim arising from the stranding of a great ocean going liner. One claim may be in respect of a few bags of flour which have become damaged by seawater; the next a complicated G.A. claim concerning some thousands of bales of cotton involved in a serious fire on board ship. His knowledge of the law is culled from the Marine Insurance Act, 1906, which codified the legal decisions appertaining to Marine insurance prior to that date, and from the numerous legal cases since decided. The law of General Average must be well known by him, as well as the various carriers' Acts passed by the various maritime countries abroad. He must acquire the ability to apply to his adjustments not only the legal niceties applicable thereto but also the principles of equity and fair dealing which lead to the payment of many 'ex gratia' claims, which are not so infrequent as may be supposed. Claims for pilferage are an example. Pilferage today can, if time allows, be so skilfully carried out that only the most careful examination of the case or package concerned will make it apparent.

There are thus many occasions when a consignee of cargo will give a clean receipt for its delivery and only on opening the case or package will ascertain that part of the contents have been pilfered. He will then advise his underwriters or his agent who will appoint a surveyor to make an examination. The surveyor, however, will only be able to certify that he was shewn a certain number of articles which were stated to have been found in the case or package, which, compared with the quantities as stated on the invoice, disclose a shortage. It is obvious that, with an unscrupulous consignee, the whole or part of the missing contents may have been extracted by him after opening the case. Legally he is in the position that he can produce no conclusive evidence that the loss occurred during the currency of his policy. What is the claims adjuster to do? If he refuses to pay he may be penalising a perfectly honest claimant. He therefore must use his discretion and make use of any confidential information he may have or acquire regarding the claimant concerned, bearing in mind that of paramount importance is his company's reputation for honest and fair dealing, particularly in regard to the settlement of claims. The adjuster must be *au fait* with all the various kinds of insurance cover granted by marine underwriters, both that expressed

in clauses issued in marine insurance markets abroad and by individual underwriters at home, and that described in the standard clauses issued by the Institute of London Underwriters of which there are many.

This cover can range from total loss only (T.L.O.) to the full cover now granted in respect of hull insurances or from F.P.A. in respect of cargo to the full "all risks" conditions now often granted by marine underwriters. It is well to recall that the basic cover afforded by the marine policy was against loss or damage by perils of the seas, men of war, fire, enemies, pirates, rovers, thieves, jettisons, letters of marque and countermarque, surprisals, takings at sea, arrests, restraints and detainments of all Kings, Princes and People of what nation, condition or quality soever, Barratry of the master and mariners and all other perils that shall come to the hurt, detriment or damage of the said goods and merchandises on the ship.

Many of these perils are war risks, and are excluded from the marine cover by the F.C. & S. clause. We are thus left with the risks of loss or damage by fire, thieves, jettison—barratry and perils of the seas. This latter term refers to fortuitous accidents or casualties of the seas. It does not extend to the ordinary action of the wind and waves. It is interesting to note that the term "thieves" does not cover clandestine theft, *i.e.*, pilferage or a theft committed by any of the ship's company, whether crew or passengers. The term "all other perils" is not so all embracing as might appear, as it includes only those perils which are similar in kind to the perils previously specifically mentioned. It will thus be seen that the risks covered by the basic marine policy are not likely to give sufficient protection to the shipowner or merchant of today, and these risks are extended by the addition of other clauses written on or attached to the policy. Such clauses will include such risks as collision liability, negligence of masters, officers and crew, leakage, breakage, pilferage, non-delivery, damage by hook, oil, sweat and a variety of other perils for which, in theory at least, increased premiums are payable. The 'all risks' cover which is a modern development gives the widest possible cover obtainable, although such cover will not extend to damage caused by delay or inherent vice, this being loss or damage due to the nature of the commodity itself. Particular average claims are those most frequently dealt with by the adjuster. The word "average" about the origin of which some considerable doubt exists, means loss or damage sustained during a marine adventure. Particular average is a partial loss fortuitously caused by a peril insured against, and is borne by the owner of the property concerned, and subsequently recovered from his marine underwriter. General average on the other hand is a partial loss voluntarily and reasonably incurred in time of peril for the purpose of saving the whole. Unlike particular average, however, this loss is contributed to by owners of all property and ship, *i.e.*, ship, freight and cargo. F.P.A., another term frequently used in our business, means 'free of particular average' and means in effect that partial losses are not covered unless there is a major casualty such as a fire on board, stranding, or the vessel sinks, or the damage can reasonably be attributed to contact by the vessel with some external object.

There is thus a wide variety of marine insurance cover granted under modern conditions, and the claims adjuster must be familiar with the meaning and effect thereof as on him will rest the decision as to whether the loss or

damage for which a claim is submitted is covered by the perils insured against. General Average adjustments are prepared by average adjusters, professional men who are skilled in the law of general average and Marine Insurance, and who are called in by the shipowners when a casualty occurs which is likely to give rise to damage or expenditure of a G.A. nature. Their adjustments are often very complicated documents, covering sometimes 1,000 or more pages, and often involving the application of difficult points of law and practice. These adjustments are submitted to the claims adjusters concerned for their approval before any insurance liability indicated therein is approved for payment.

For the sake of convenience, particularly where a large number of underwriters are concerned in the risk, hull claims are often adjusted by an average adjuster and submitted to the claims adjuster for approval. Cargo claims, on the other hand, are usually dealt with and adjusted in the department of the Marine Claims Adjuster. Cases involving some complex salvage operations or some question of collision liability or, maybe, the liability of some third party, such as a shipowner, for loss or damage which is recoverable under the marine policy can often give rise to some interesting problems.

It is not always easy to decide whether loss or damage has been caused by a peril insured against, particularly when two or more perils have operated during the adventure. For instance:—A vessel during the war was torpedoed amd with difficulty arrived at a port of refuge. Owing to her condition she was not permitted to anchor within the port but had to remain in the roadstead outside. During the night a gale sprang up and, due to her damaged condition, she ultimately foundered and became a total loss. Was the cause of this loss a peril of the sea, *i.e.*, heavy weather, or was it a war loss, *i.e.*, torpedo damage? A solution to this question was imperative, as war risks were covered by a different set of underwriters from those covering the marine risks. It was ultimately decided that the loss was due to a war peril as the vessel had been in imminent danger of sinking from the time she was struck by the torpedo.

Again there may be a cargo of dried fruit which during transit had been damaged by rainwater, a risk covered by the policy, and on arrival at destination is found to be infested with weevils, a risk not covered thereunder. It is stated that the wetting of the fruit by rainwater created those conditions which ultimately gave rise to infestation by weevil. Is the underwriter to pay? Again a consignment of paint in tins may arrive in a totally damaged condition due to the paint having been frozen at some time during transit. The shipment was made during the middle of the winter months when heavy frost conditions were to be expected. Is the claim rightly recoverable, or can the underwriter refuse payment on the grounds that the shipper, knowing the climatic conditions through which his goods would pass at that time of the year, should have taken the necessary precautions to prevent the paint from becoming affected by frost.

The claims adjuster in dealing with these problems is called upon to make full use of his knowledge of the law, and, if necessary, to deal with the claims on the principle of equity applied with commonsense. His experience gives the adjuster often a sixth sense which enables him, at times, from the documents before him, to feel that there is something amiss. Enquiry through

his agents or the technical experts to whom he will often resort or research amongst the mass of confidential information which reaches him from all corners of the globe enables him on many occasions to uncover the truth which otherwise may have been denied him. Fraudulent claims are not unknown. There were the Greek losses during the mid 1920's, during the period of depression, when many Greek ships mysteriously sank and became total losses, it ultimately being ascertained that many of them had been scuttled.

Time will not permit me to do more than give you this glimpse of our business as it has developed down the ages and as it is in action today. With its roots deeply and firmly embedded in centuries long since gone by, it flourishes today with its branches stretching out across the seven seas giving financial protection to those who go down to the sea in ships and have their business in great waters, sustaining the commercial activities of those of all nations who venture their ships and their cargoes upon the deep.

THE DEVELOPMENT OF THE LIVERPOOL DOCK SYSTEM

by RODERICK ALAN STEPHENSON, M.Eng., A.M.I.C.E.

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As far back as the middle of the fourteenth century Liverpool occupied a somewhat important position in whatever maritime trade existed on the western seaboard of the country, and the port was then regarded as one of the best natural harbours along this coast.

The site of the original port was the shallow creek which ran inland from the right bank of the river in a north-easterly direction, commencing at a point about midway along the "deep" on the site of which the Custom House used to stand, and extending along the depression now occupied by Paradise Street, Whitechapel and Byrom Street. Its length was about one mile and judging from its position it must have been well sheltered from the action of the prevailing winds.

The vessels in those early days were few in number and small in size. It is recorded that twelve vessels with a gross burden of 177 tons represented the extent of the shipping belonging to the town in 1540.

From there being no record of wharves or quays, vessels must have loaded and discharged their cargoes either afloat in the river by means of boats, or by grounding on the banks of the creek and making use of carts at low-water.

Towards the end of the seventeenth century there began in Liverpool a great upsurge of industrial and commercial activity, which, once started, was to continue right through the eighteenth century with gathering momentum and on into the nineteenth century with few checks. The interdependence of the economic life of the town and port was a most prominent feature of this phenomenal expansion.

The disadvantages of handling cargoes by lighters while the ships lay at anchor in the river, or the damage that must have occurred to the larger vessels if they were allowed to take the ground in the more sheltered pool, are obvious. Men of energy and enterprise were not lacking and the problem was solved by the Corporation building an enclosed dock with gates to impound the water.

Construction was begun in 1709, and the dock, afterwards known as the Old Dock, opened to shipping in 1715. The design and construction was placed in the hands of Thomas Steers, who came from London for the purpose. It was three and one-half acres in area and designed to afford accommodation for 100 ships, and to have not less than ten feet of water within it at neap tides. The width of the entrance was thirty feet and the sill was placed roughly four feet six inches below mean tide level. As Old Dock Sill, this level is preserved to this day as the datum for constructional work in the port, though for charts and navigational purposes the more convenient

datum, ten feet lower, known as Liverpool Bay Datum is used, as the latter coincides with the low water level of a pretty average equinoctial spring tide, few tides ebbing lower. It is of interest to note that Holden's *Tide Tables*, first published about 1780, were computed from observations made at the entrance of the Old Dock.

There were no quay facilities or sheds such as we associate with docks today; in fact houses were allowed to come down almost to the water's edge.

It has been stated that it was the first commercial enclosed wet dock in the country, but there are records to show that it was preceded by at least ten years by the Howland Great Wet Dock at Rotherhithe on the Thames. The name of this dock was afterwards changed to Greenland Dock, and it is now incorporated in the Surrey Commercial group of the Port of London Authority. The Howland Dock appears to have been rather larger than the Old Dock, having a water area nearer ten acres and capable of accommodating 125 ships. The Howland Dock had been preceded by a small dock at Blackwall built by a shipbuilder in 1661 and mentioned by Pepys; and in 1686 there was a dock of four and one-half acres in existence at Dunkirk, and also one at Portsmouth Dockyard in 1700. Graving docks had been a existence for centuries previously though with crude gates, usually no more than a clay dam. Moreover, lock gates had been introduced on canals in Italy or Holland sometime in the fourteenth or fifteenth century.

Thus there would appear to be very little that was original about the Old Dock, unless it is that it was the first wet dock to be constructed on a site reclaimed from the foreshore of an estuary, or else the first built by a public authority.

Nevertheless, it is interesting to note the dates of other early first docks—Leith 1720, Hull 1778, Bristol 1809 and the first corporately-owned docks at London, the West India Docks 1802.

The approach to the Old Dock was via a narrow gut opening out into a pool of one and a half acres with a small graving dock built on its north side.

The rectangular form of dock was chosen after some argument, there being strong advocates of a long narrow dock, rather like a canal, extending a considerable distance up the Pool. No doubt more alongside accommodation would have been obtained, but with the disadvantage of cutting into the heart of the town, with all the attendant inconveniences such as are experienced between Birkenhead and Wallasey today.

The Old Dock proved a boon to all concerned and its acquisition greatly improved the position of Liverpool as a seaport. Trade expanded so rapidly that before long its capacity was found insufficient to meet the requirements of trade. The Corporation determined on extending the dock accommodation, and in 1753 there were constructed and opened to shipping the Salthouse Dock together with a pier, running out in a westerly direction to low water mark on the north side of the entrance gut, so as to form an open basin for the use of coasting vessels and to act as a breakwater protecting both the entrance to the Old Dock and that of the Salthouse Dock, which was built to the southward and westward of the Old Dock.

Off the open basin, or dry dock, were built three graving docks in 1765.

Canning Dock now occupies the site of the open basin and the entrance channel alongside the pier is now Canning Half-Tide Dock. The land west

of the South Dock, as Salthouse Dock was first known, was laid out as ship-building yards, which existed until Albert Dock was constructed.

This extension of dock accommodation soon proved to be inadequate to cope with the requirements of an expanded and rapidly growing trade and the New Dock and the New Dry Dock at its north end were opened in 1771. These were afterwards renamed Georges Dock and Georges Basin, and soon followed in 1788 by Kings Dock and Queens Basin to the south of Salthouse Dock and by Queens Dock in 1798.

The New Dock, or Georges Dock, was connected with the open basin adjacent to the Old Dock by the original graving dock, but Kings Dock was separated from Salthouse by Dukes Dock built as the terminal of the Bridgewater Canal.

The terms dry dock, graving dock and floating dock appear to have undergone some change since the eighteenth century. On the old plans a dry dock is a basin, open to the river, that dries out at low water; graving dock has the same meaning as today. A floating dock was a wet dock, or float, and not a floating graving dock as today.

Thus before the end of the eighteenth century there were at Liverpool five wet docks and three open basins, the former totalling twenty-seven acres water area, and two-miles length of quay space, the latter having a total area of ten acres of water space and about three-quarters of a mile of lineal quay space.

This early growth of the docks was associated with the development of natural waterways and canals for the inland carriage of goods. The roads in Lancashire and Cheshire were still wretchedly bad.

In 1694 the Mersey had been made navigable as far as Warrington. From there, transport was by cart to Stockport, and by packhorse over the Pennines.

In 1720 the Mersey and Irwell were made navigable as far as Manchester and in 1721 the Weaver was made navigable, bringing the Cheshire salt mines and manufactories into easy communication with Liverpool. Salt played a considerable part in the trade of the port during the eighteenth century.

In 1760 the Douglas navigation made possible water transport from Wigan to Liverpool via the Ribble estuary.

The Sankey Canal from St. Helens to the Mersey at Warrington was cut in 1757 by Henry Berry, the Liverpool dock engineer, and was the first modern English canal, preceding Brindley's Worsley to Manchester canal by several years. The Sankey canal was cut to provide access to St. Helens coal.

At the same time some improvement was taking place in the roads. In 1726 the Liverpool to Prescot road was placed under a turnpike trust on account of the heavy coal traffic. In 1749 it was extended to St. Helens, and in 1753 from Prescot to Warrington, and from St. Helens to Ashton-in-Makerfield. None the less, the roads were still very bad.

In 1773, the Bridgewater Canal was opened from Manchester to Runcorn with Dukes Dock as the Liverpool terminal.

In 1774 the Leeds and Liverpool Canal was opened as far as Wigan, though it was not completed until 1816.

In 1777, the Grand Trunk Canal was opened connecting the Bridgewater Canal near Runcorn to the Trent and in 1799 the Shropshire Union Canal was

extended to Ellesmere Port. Chester Basin, a small inlet between Georges Parade and Canning Dock, had been constructed in 1795 as a terminal for this canal.

About 1785 a small basin just south of Chester Basin and called Manchester Basin was constructed for river craft. In 1818 it was fitted with gates and used by coasters.

By the beginning of the nineteenth century Liverpool was the supply port for the manufacturing districts of Lancashire, Yorkshire and the Midlands.

Between 1772 and 1805 the total tonnage of shipping handled had increased from 170,000 to 670,000, foreign shipping increasing from 20,000 to 280,000.

The improved means of inland carriage, together with the great lead over other ports in the country taken by Liverpool in providing dock accommodation for ships, made the port a centre of commerce having facilities for trade second to none, with the result that the increase of shipping kept pace with that of the dock space.

Trade with India and China was freed of the East India Company's monopolies in the years 1814 and 1833 respectively, resulting in further opportunities of extending commerce, and of which full advantage was taken.

The opening of the Liverpool and Manchester Railway in 1830 marked the beginning of railway transport; it was closely followed by other lines and in 1837 the line was opened to Birmingham; in 1838 to London. In 1840 the Birkenhead and Chester Railway was opened and work started on a line from Liverpool to Lancaster, and in 1846 from Liverpool to Bury.

The railways greatly increased the means of communication and reduced the cost of inland carriage and improved trade generally. The first docks railway goods station was opened at Wapping in 1831, being connected to Edge Hill by a tunnel.

In 1844, one and one-half million tons of merchandise were carried to and from the port by inland and river conveyance exclusive of coal and salt.

The extension of the docks northward was continued at the beginning of the nineteenth century. Princes Dock was started in 1816 and completed in 1821. It was entered from the river by an open tidal basin from the south side of which a lock led to the dock. Whenever circumstances permitted, it was the practice to construct important entrances off open tidal basins with a view to providing shelter for vessels and the lock gates.

Clarence Dock was opened in 1830 well to the north of Princes and the intervening space filled in by the construction of the Waterloo Dock in 1834 and Victoria and Trafalgar Docks in 1836. Clarence Dock was for the exclusive use of steamships and isolated to minimise the risk of fire. Trafalgar was likewise a steam dock. Waterloo Dock was not either of the Waterloo Docks of today, but had its greater length east and west.

Practically all the north docks at Liverpool have been constructed by reclaiming the ancient foreshore, the only complete exception being Stanley Dock, which is entirely above the original high water mark. The method was to build a wall on the river front more or less along the low water line and to enclose the area of the future dock extension works by a return wall at the extremity carried up to the high water mark. After 1781 it became the practice to site a fort for the defence of the port on the corner between the riverside

wall and the return wall, the first one being constructed to the north of George's Basin.

The method of building the wall at this period was to dump sandstone rubble to form a foundation and build up the courses of sandstone masonry on the rubble, a raft of timber sometimes being laid to help in getting a level bed. Work could only proceed at low water and perhaps a low dam of clay might be used to extend the working period. These foundations have stood fairly well but there have been one or two local failures, in one or two cases resulting in collapse, owing to water seeping under the foundation and washing out the bed material if it was of a silty nature. Some of these older walls exhibit the remarkable phenomenon of rocking very slightly with the rise and fall of the tide. Later, diving bells and dams sheeted with cast-iron piles were used to get down to a rock foundation. The Brunswick river-wall was constructed behind an embankment.

The materials used for the construction of dock and river walls has varied. The walls of the Old Dock are said to have been built mostly of brick with stone copings. Later, sandstone masonry, much of it quarried from Runcorn, was used. The mortar was made from a blue-lias lime obtained from Halkyn in Flintshire. It was delivered in lumps, about the size of coconuts, on the quays close to the mortar mills where it was burnt and ground. The blue-lias lime contained the same substances that form the main ingredients of Portland cement, namely, chalk, or limestone, and clay, though the proportions were not the best. The resulting product gave a weak cement, stronger than ordinary lime mortar but not nearly so strong as Portland cement. In some cases it has degenerated to a slimy paste, probably due to the action of sea-water. Some of the old walls were built with bricks in the heart, made from clay excavated from the dock site.

By the middle of the nineteenth century much granite facing work was done, the stone mostly being quarried from the Board's own quarries in Kirkcudbrightshire. The vast quantities of stone setts required for paving the roadways were also obtained from the same source. Some granite also appears to have been obtained from Cornwall.

The docks were also developed rapidly southwards in the first half of the nineteenth century. The Queens Dock was enlarged in 1816 and a small dock, called the Union Dock, constructed on the south side with a large outer basin. The two were subsequently united and converted into Coburg Dock, which was entered directly from the river.

In 1832 Brunswick Dock was opened south of Coburg Dock. It was intended for the timber trade with a low inclined quay on the east side for hauling up timber unloaded from bow ports. Two graving docks opened out from its south end. The dock absorbed the site of the old tide mill reservoir called Jackson's Dam. The tide mill was erected about 1773 in place of an ordinary water mill whose stream had dried up. The reservoirs were of two sizes, the larger being eight and one-half acres and the smaller one and one-half acres. The mode of operation was as follows: the larger pond was allowed to fill at high water, and then as the tide fell it provided the water to operate the machinery until the next tide rose to meet the now reduced water level.

In the meanwhile the smaller pond had been allowed to empty with the

tide and the gates shut at low water to prevent it filling with the flood. Thus when the larger pond ceased to function, it was possible to continue operating the machinery by letting tidal water run into the smaller pond until the larger was available again after high water.

The mill ceased working in 1827.

Some time before 1840, a private concern had bought land between Brunswick Dock and the Herculaneum Pottery and formed Harrington Dock Company for the construction of docks and warehouses independent of the general dock estate. Two small inlets were constructed, named Harrington Dock and Egerton Dock, but were shortly after purchased by the Dock Committee.

The Old Dock was cleared of shipping in 1826 and filled in, the Custom House being built on the site. The level of the sill was preserved by a nine-inch step on the face of a nearby dock wall. The Dry Dock was enclosed in 1829 becoming Canning Dock, and enlarged in 1842. In 1844 the old entrance gut was enclosed as Canning half-tide, and in 1845 Albert Dock and warehouses opened.

The Albert Dock warehouses appear to be the first of the massive warehouses built on the docks, and are one of the monumental structures of Jesse Hartley, engineer to the dock estate from 1824 to 1860 and well known for the excellence of his work. Jesse Hartley seems to have been a very shrewd engineer. Though he built massively for his day, experience has shown that his judgment was good and by present day standards his works are by no means excessive in size.

The shipbuilding yards moved to west of Queens Dock and Brunswick Graving Docks, where they remained till the turn of the century. The expansion of shipbuilding and ship repairing at Birkenhead and Tranmere follows from the taking over of the Liverpool yards for docks.

South of the Brunswick shipbuilding yards was a small inlet with gates known as Toxteth Dock, later to be absorbed into a larger dock of the same name, becoming its river entrance.

When the timber trade shifted from Brunswick to Canada Dock a canal-type river craft dock was built on the site of the sloping quay on much the same pattern as the canal dock on the Wallasey side of the East Float surrounded by the Birkenhead grain warehouses. This was filled in at the turn of the century.

In 1855 Wapping Basin was constructed immediately east of Dukes Dock, connecting Salthouse with Wapping Dock, a new dock east of Kings, thus establishing continuity previously broken at Dukes Dock. At the same time Salthouse Dock was enlarged.

Eighteen fifty-eight marked the transfer of the docks to the newly constituted Mersey Docks and Harbour Board, and by 1866 the south docks had further developed. Between Queens Graving Docks and Coburg Dock, Eagle Basin and Trafford Dock had been built for river craft. Owned at first by the Corporation, they were in 1876 bought by the Board.

South of the Coburg Dock was the ferry basin and the dockyard, the latter being the gate-building depot and repair yard of the dock estate.

South of the dockyard was Brunswick half-tide dock, a vestibule to Brunswick Dock and now the Board's floating plant repair dock. Next came

Toxteth Dock, then a stretch of undeveloped land. Next, the small inlets, Harrington and Egerton, and a third belonging to the Bridgewater Trust. Close to these was a landing stage for a south ferry crossing, but it seems not to have prospered.

Then more undeveloped land and finally Herculaneum Dock, on the site of the pottery, with two graving docks.

The Herculaneum Pottery was opened in 1796, the operatives being brought from Staffordshire with their wives and families. It was closed in 1841 to make way for the dock opened in 1866.

Reverting to the north docks, Clarence Dock was entered from the river through a half-tide dock known as Clarence Basin. Clarence Basin was connected to Trafalgar Dock by a locking basin, in which the side walls opened out wider than the gates to give greater accommodation. On the north side of the half-tide dock was a basin from which the Clarence graving dock opened out, and which was provided with a gridiron.

In 1848, Salisbury, Collingwood, Stanley, Nelson and Bramley-Moore Docks were opened, Stanley Dock being connected with the Leeds and Liverpool canal by a flight of locks and provided with massive warehouses.

Salisbury Dock, like Clarence Basin, appears to have been a half-tide dock from its inception, marking a departure from previous practice.

In 1849 Wellington Dock entered through an outer half-tide dock, was opened. In 1855 a high-level coal railway was built on the east side, for the export of coal. High-level coaling staiths also occupied the east and north sides of Bramley-Moore Dock; that on the east side was afterwards demolished, and the berth is now used for unloading coal for Clarence Dock power station.

Development of the northern system continued unchecked.

Sandon Dock, with six graving docks opening from its north side, was opened in 1851. It was entered through an open basin, and followed by Huskisson Dock entered from the north side of the basin by two locks, one for a large number of small craft and the other for larger ships having a length of 390 ft. and a width of 80 ft.

In 1854 a fort was constructed at the north end of Huskisson Dock to replace one at Clarence, which had superseded that close to the site of Princes Dock. When Canada Dock was built north of Huskisson, the fort was left in an embayment of the river wall, which was not filled in until the fort was eventually removed to Seaforth.

Remarkable confidence in the future was shown at about this time, the land and foreshore being bought right up to Rimrose Brook at the extreme north end of Bootle in 1847. In less than thirty years this step was vindicated and the foreshore was enclosed by a wall more or less along the low water line and the land behind reclaimed as a preliminary to a dock extension scheme of remarkable size. It will be realised that most of the town sewers discharge into the Mersey, crossing the docks on their way to the low water mark. Thus whenever docks have been extended or reconstructed there has frequently been at least one sewer to be catered for.

In 1858 Canada Dock was opened, being more or less rectangular in general outline with a large tongue projecting into it from the north-west corner. The masonry of this tongue contained the 100 ft. wide and 498 ft.

long Canada Lock. This is entered from the river end via Canada Basin, the last of the open outer basins remaining, and now to be extinguished by the new Langton-Canada scheme.

The era of the large paddle steamer had begun about 1840, and, to accommodate these vessels entrances were made first about seventy feet wide, at Wellington, Sandon and Coburg, then eighty feet wide, at Huskisson, and finally 100 ft. at Canada, in 1858. Thus, in the twenty-one years from the opening of Clarence Dock, entrance widths had doubled from 50 ft. to 100 ft. Twenty-three years later no more large paddle steamers were being built, and new entrances were being made sixty-five feet wide.

Canada Lock was ready before Canada Basin and was used for a period as a graving dock. The passing of the large paddle steamer did not render the great width of the lock entirely superfluous, as by the end of the century the demand for entrances of that width had returned.

In 1862 Canada half-tide Dock, since renamed Brocklebank Dock, was constructed on the east side of Canada Basin, being entered directly therefrom by three entrances, the largest sixty feet wide, and giving access to two smallish branch docks, situated on its east side and named North and South Inland Carriers' Docks.

It had been intended to construct timber ponds, to the north of Canada Basin, to be entered from the river and Canada half-tide Dock, and work appears actually to have started on a small dock just north of the basin to be known as Castle Dock, but the scheme never matured.

Also in 1862, a branch dock was constructed off the south end of Huskisson Dock. Eventually the No. 2, it has been filled in after the *Malakanp* explosion in 1941.

In 1872 a second branch was added at Huskisson Dock and the Canada half-tide lengthened to the north. As the trade in general cargoes expanded, so the timber quays appear to have been taken over and reconstructed for the new trade and new timber quays constructed in the northerly extensions.

The shape of the docks from this time on was varied and the trunk and branch layout generally adopted where practicable in preference to the rectangular design. There are, of course, advantages and disadvantages with the two arrangements. In general the branch dock system gives more berthage per total area, but is less adaptable to changes.

Dock layout and design has been influenced by three major considerations:—

The growth and size of ships.
The introduction of quay cranes.
The use of mechanical plant for handling cargo.

Prior to the first war growth was very rapid and the increasing draught of vessels was a cause for concern. Since the second war, the rate of increase of draught has not been so marked, but vessels are carrying much bigger cargoes requiring more room on the quays for sorting, stacking and delivery.

Replacement of the horse cart by the motor lorry has resulted in more long distance cargoes being handled by road as against rail. Motor vehicles have grown in size and require more room.

Generally wider quays, wider sheds and wider roads are needed. This favours the long rectangular dock, but the frontage is not always available,

and the branch dock system or pier system has to be used. Sometimes a compromise is effected, such as has occurred with the filling in of Huskisson Branch Dock No. 2.

This shows the enormous importance of a very careful examination of the traffic requirements of docks, where very large capital cost is involved, in order to obtain a satisfactory return on the expenditure. However, planning is a continuous process and must meet changes as they arise. To try to plan too far ahead might be dangerous owing to the complexity of the problems and the number of variables.

The stage of development of a port in relation to the growth in size of ships has been an important factor in the problems facing it. Thus if the early days of the port coincided with the rapid growth of the size and numbers of ships, each group of new docks was bigger than its predecessor, and the old docks built for the ocean liners of their day were still big enough for coasters, provided that development was maintained in the right proportions. This process could not go on indefinitely however.

Gradually the emphasis must change from development by new construction to development by reconstruction; in effect from capital expansion to capital replacement. If the need for reconstruction is due only to the increasing size of ships and is not accompanied by increasing total tonnage, there may be very little extra revenue to offset the expenditure unless rates and dues are raised.

Though reconstruction had been undertaken before the inauguration of the Board in 1858 it was about this time that large scale reconstruction and modification were beginning to take place side by side with extension. Later reconstruction was to become predominant and some of the reconstruction schemes have been very extensive indeed.

In 1863 an extensive improvement was commenced at Waterloo Dock and Princes Basin, the latter an open tidal basin with locks into Princes Dock on the south and into Waterloo Dock on the north. The basin was converted to a half-tide dock having river entrances, the sills of which were lower than any then existing. Waterloo Dock, a rectangular dock with its greater length east and west, was replaced by two rectangular docks side by side, with their greater lengths north and south. The westerly one is the present West Waterloo Dock, and the easterly, known at first as the Corn Dock on account of the large corn warehouses surrounding it, is now the East Waterloo Dock.

This work was completed in 1868 and entailed the removal of the Liverpool Observatory, built at Princes Basin in 1844, to its present site on Bidston Hill.

The two landing stages, Georges to the south built in 1847 and Princes to the north built in 1857, were separated by Georges Basin, which gave access to Princes Dock on its north side and Georges Dock on its south.

There was a strong desire for an improvement to be made in the approaches to the stages, the outcome being that Georges Basin was closed, the two stages were joined by inserting a middle section 500 ft. long and a floating roadway built up the site of the basin from the new length of stage. The new landing stage was destroyed by fire in 1874 just before the official opening, but was promptly restored.

These works were really part of a much larger scheme for the improve-

ment of the central river front, but the next step was not taken until some thirty years later, in 1896, when Georges Dock was filled up, and the site turned over to streets and buildings. Water Street and Brunswick Street are carried across the site of Georges Dock, by means of a viaduct.

Meanwhile the lock between Princess Dock and Georges Basin had been converted into a graving dock and the passage between Georges Dock and Canning has become the inlet at the north end of the latter dock. The Princes graving dock has since been converted into a wet dock.

In 1873 the Board applied to Parliament to make the largest and most important extensions to the Liverpool docks that have been undertaken. The docks had been congested for some time but opinions were divided on what should be done. Three schemes were put forward by the engineer, George Fosberry Lyster, namely, extension northward, extension southward and extension eastward across Regent Road in the vicinity of Sandon Dock.

The first two schemes were adopted, and by them the total water space added was 110 acres—eighty-three at the north and twenty-seven at the south end, or forty-four per cent of the area of 252 acres of the whole Liverpool estate in 1873.

The extension northward comprised the construction of the Langton Dock, Branch Dock and Graving Docks and Alexandra Dock, all completed in 1880, and Hornby Dock completed in 1884.

The first stage was the construction of a sea-wall parallel with the low water mark from the north pierhead of Canada Basin to Rimrose Brook, a distance of 6,400 ft. The wall was returned at the north end to complete the enclosure of the foreshore, the waters of Rimrose Brook being conveyed to low water mark in a culvert behind the return wall. At the angle of the two walls Seaforth battery was built, being completed in 1874, and half-way along the wall, the North Wall Light.

The Seaforth battery replaced the Huskisson Fort, the foundations of which are being encountered at the south end of the present Canada Dock which is under reconstruction as part of the Langton-Canada scheme.

The main feature of the northern scheme was the enlargement and deepening of Canada Basin, and the sluicing arrangements to maintain the depth there. The principle of the acutely angled entrance facing upriver was first adopted for the Langton entrances, possibly on account of an unfortunate experience in 1868 when the storm gates of the Canada 100 ft. entrance were carried away.

The basin entrance was widened and splay jetties constructed outside to guide shipping and to house sluices, as the new entrances were to be two feet below low water of spring tides. This was four feet deeper than any other entrance on the Liverpool side of the river. Though the Alfred and Morpeth entrances at Birkenhead had been quite successfully maintained at the new depth some misgivings were felt about the Liverpool side, and extensive sluicing arrangements were decided upon. Profiting by the unfortunate experience of the Great Low Water Basin at Birkenhead, the floor of Canada Basin was concreted over after deepening and sluices laid beneath the floor with upcast outlets through the concrete. The arrangement worked remarkably well.

Langton Dock was designed as a half-tide dock, with two entrances side by side, but each had two pairs of gates, thus forming small locks. This had

the double advantage of providing locks for river craft which could then be locked in and out clear of tide time, and of providing a second pair of gates as a stand-by in case of damage. At some other entrances separate locks were provided for river-craft, but these require extra manning and maintenance.

The south works consisted of the enlargement of Herculaneum Dock to accommodate a new graving dock, and a branch dock parallel with the graving docks to serve as a petroleum dock and a possible connecting link with further southward development. On the east and south sides, chambers fifty feet long by twenty feet wide by nineteen feet high were excavated in the rock for storing petroleum in barrels. Between Herculaneum and Brunswick, two new docks, Harrington and Toxteth were built. The sills of these new docks were made two feet below Bay Datum in view of the success of the Canada Basin deepening, the Herculaneum river entrances being deepened four feet to conform. Owing to the narrowness of the estate just here Harrington and Toxteth docks have their greater length parallel to the river

The old docks from Georges to Brunswick were no longer deep enough, and to increase their effective depth an impounding pumping station was built at Coburg Dock to maintain the dock level at all times equivalent to that of high water spring tides. This expedient had already been adopted for increasing the depth of water on the sills of the Sandon Graving Docks and at Birkenhead.

To connect the two systems, Union Dock was built between Brunswick and Toxteth docks to function as a locking basin. It was situated to the east of the Brunswick graving docks. The impounding of the south docks ceased in 1909, two years after it was adopted for the north system from Hornby to Bramley-Moore.

Though the Liverpool docks owed their phenomenal growth at this time to railway communications and are well provided with rail tracks on the quays, not much direct loading from ship to rail wagon has ever taken place. This has come about because Liverpool was as much a warehouse port as a transit port and the bulk of the cargoes consisted of mixed merchandise that required sorting on the quays. After the cargoes had been broken down into those destined for Board's warehouses, private warehouses and the railways, the parcels were quite small, and as there were four or five different competing railway companies, it would hardly have paid them to send locomotives down to the quays, where there would be congestion, but it was more convenient in most cases, to collect and deliver from the railway goods stations by horse and cart even those goods for immediate despatch by rail. In fact the dock lines of railway were not started until 1849. Thus even in the days before long distance road transport, Liverpool was in one sense a road port.

At this point it might be well to include some account of the development of the Birkenhead docks, not only because they are part of the Port of Liverpool but also because the experience gained with a sluicing scheme there had its influence, as already mentioned, on the design of the Canada Basin sluices.

Sanction for the enclosure of Wallasey Pool, and construction of docks on its site, was obtained by Act of Parliament in 1844 by the Birkenhead Docks Committee, a body formed specially for the purpose and work was immediately started.

Morpeth and Egerton docks were opened in 1847, access from the river being obtained via Woodside Basin just north of the ferry pier. The east and west Floats were not finally opened until 1861, however, as the Birkenhead Docks Committee were unable to complete the proposed works owing to financial difficulties, being bought out by Liverpool Corporation two years before the Board took over in 1858, and the designs were changed to give deeper water in the Floats, some of the walls already built having to be made bigger.

The waters of the rivers Birket and Fender discharged into the head of the pool and had to be diverted by means of an open cut across what is now Bidston golf course and past the railway between Bidston and Birkenhead North stations, and finally through a large culvert two miles long under the streets of Birkenhead to Woodside Basin and the Mersey.

The most prominent feature of the Birkenhead docks was to have been the Great Low Water Basin. The design was changed several times but the primary object remained the same. It was to be an open deep-water harbour, into which vessels might run and remain or be locked at once into the Float. Its depth was to be maintained by a scour of water from the Float run daily. The water was to flow from sluices on each side of the lock at the head of the basin, which was more or less rectangular in form, measuring 1,750 ft. east and west and from 300 to 400 feet north to south; the depth was eleven feet below low water spring tides. On the southern side was a recess 1,000 ft. long by 35 ft. to accommodate a floating landing stage. The sluices had the collossal area of 800 square feet and were intended to give the effect of a subaqueous river quietly flowing along the bottom of the basin and removing any silt deposited by the tide, but not disturbing shipping or scouring out the bottom deeper than the original excavations.

The first sluicing trial was made at low water on 20th January 1864. Unfortunately the dam across the mouth of the basin had burst just as the site was being cleared preparatory to letting the water in in the normal way. The result was that the bottom had accumulated a deposit of about thirty-two inches in seven months since the bursting of the dam.

The condition of the water on leaving the sluices was that of a rushing torrent of white foam, with a boiling and tumbling motion and a speed up to eight miles an hour. The colour of the water changed as a dark brown cloud rose. At 150 feet from the head of the basin a wave was formed twelve to eighteen inches high.

It soon became evident that the running of the water was dangerous. The rapid lowering of the float was objectional; on closing the sluice paddles a wave twelve to fifteen inches high surged through the float. The head works of the basin were being undermined by scour, and the basin had to be cleared of vessels. The power let loose was of immense force, and a feeling arose that some great and sudden calamity, unforseen and uncontrollable, might at any moment arise. Sluicing in the dark was therefore discontinued.

Yet the effect of the scour over the main portion of the basin was tolerably equal, except at the head, where the bottom was swept below the primary level. At the end of ten months the bottom deposit had been reduced by eighteen inches leading to the conclusion that the primary depth could have been maintained.

It was finally decided to abandon sluicing altogether, owing to the danger of undermining the wall at the head of the basin and so leading to a sub-communication between the water of the Great Float and the low water basin, and owing to its being incompatible with the proper and efficient use of the basin as a dock.

Powers were obtained to close off the river end of the basin and to convert it into a wet-dock, but it was not until 1877 that this was completed and opened as Wallasey Dock.

After the sluicing was abandoned, the basin silted up at the rate of thirty-nine inches per year.

In the meanwhile the Alfred dock and entrances, including the 100 ft. lock, had been opened in 1866, and Morpeth lock, eighty-five feet wide, was opened in 1868 into an altered and enlarged Morpeth dock, the branch dock being constructed a year later by closing off Woodside basin. Though connected to the river by locks, Alfred Dock functions partly as a half-tide dock as well.

Later developments at Birkenhead were the construction of Vittoria dock in 1909, the construction of the Alfred eighty foot entrance lock in place of two smaller entrances in 1928, and Bidston Dock in 1933. The graving docks were constructed in 1864 and 1877.

The new north and south works completed in the 1880's, together with the expedient of impounding the southern central docks, the Birkenhead docks and Sandon Dock, did not suffice to meet the growing needs of trade.

In 1890 work commenced on deepening the Bar, and shortly afterwards possibly the most extensive scheme of reconstruction ever undertaken in the port was commenced. The docks between Canada Basin and Wellington were to a great extent remodelled.

Canada Lock was lengthened by the removal of the storm gates and deepened, the southern part of Canada Basin being deepened to conform.

Canada Dock was enlarged southwards into Huskisson Dock, the west quay straightened and lengthened, and two branch docks and a graving dock constructed on the east side on the site of the timber quays.

A new passage connected Canada and Huskisson Docks.

Huskisson Dock and the north branch dock were deepened, the walls being underpinned, that is concrete was placed beneath the existing masonry to extend it downwards to a deeper foundation.

The six Sandon graving docks were demolished and, opening off the main Huskisson dock, a third branch dock, the present No. 1, constructed in their place.

Sandon Basin and Wellington half-tide Dock were joined and converted into Sandon half-tide dock and the Sandon entrances constructed. The locks into Huskisson Dock were replaced by a new passage and Sandon Dock was altered.

The reconstruction work in the north docks did not cease there, but was continued with the construction of the Canada branch dock No. 3 in 1906, the underpinning of walls and deepening of parts of Canada Dock, the deepening of the Canada-Brocklebank Passage; the underpinning of the walls and deepening of Brocklebank Dock and the filling-in of the entrances from Canada Basin; the conversion of South Carriers Dock into Brocklebank

Graving Dock; the construction of the Brocklebank branch dock and a reinforced concrete wharf in continuation of its north wall; the widening and deepening of the Langton-Brocklebank Passage and the deepening of the Langton-Alexandra East Passage. Well over two miles of wall were underpinned.

The Brocklebank Graving Dock was provided with steel gates, the first in the Port, and still having the largest span, 141 ft. 8 ins. between centres of pivots.

Concurrently with these improvements in the north docks extensive improvements were in hand in the south system.

Kings Dock was replaced by two branch docks, Kings No. 1 and No. 2, branching off Wapping Dock. Two branch docks and a graving dock were constructed on the west side of Queens Dock in place of the Queens half-tide and Graving Docks the shipbuilding yards, and Eagle Basin and Trafford Dock.

This explains why the main docks here are on the landward side with the branches to the River, which is the opposite to the branch dock arrangement in the north docks.

Brunswick Dock was deepened, and was lengthened at the south end by the demolition of the graving docks and the elimination of Union Dock; the east and west quays were improved by the filling in of the river craft dock and of the passage to the Brunswick half-tide; and the present Brunswick deep-water entrances were constructed with sills at nine feet below Bay Datum. The entrances were constructed on the site of the shipbuilding yards already mentioned.

All four passages between Wapping and Toxteth docks were deepened to seven feet below Bay Datum and widened to 100 ft., and a cut dredged across the east end of Coburg Dock.

The amount of new and reconstruction work done by the Board from its inauguration in 1858 to the years just before the 1914-18 War was phenomenal. In the thirty-six years from 1861 to 1897 during which George Fosberry Lyster was engineer-in-chief, work to the value of approximately £20,000,000 was done. His son, Anthony George Lyster, was mainly responsible for the very extensive reconstruction works just described

It seems appropriate here to mention the Overhead Railway. As the line of docks extended the insufficiency of the old slow-running horse omnibuses, which used the line of docks railway, became sorely apparent. The idea had been first mooted in 1852 and in 1877 G. F. Lyster prepared a scheme followed by others for an elevated railway. The last plan he prepared was for an electric overhead railway in much the same form as that actually constructed. However, the Board finally decided that, as they were primarily a dock authority, they ought not to undertake the responsibility of administering a passenger railway. An arrangement was therefore made with a company who undertook the work and carried it out by their own engineers, Sir Douglas Fox and J. H. Greathead.

Immediately following the great reconstruction schemes came another great new construction, that of the Gladstone system. The graving dock was constructed first, just outside the north return wall on the line of the former Rimrose Brook, well to the north of Hornby Dock and isolated from it.

Opened in 1913, it was of remarkable size and still holds its place today as one of the largest graving docks of the world. One thousand and fifty feet long with a 120 ft. wide entrance and a sill fifteen ft. below Bay Datum, it is just large enough for the *Queens*, though with very little clearance for safety. It opened directly to the sea by a fairway marked with dolphins and was provided with a sliding caisson, which could hold back the water on either side so that it could be used as a graving dock or wet dock as required.

The river entrance, wet dock and branches, and the Hornby lock were opened in 1927. The entrance 1,070 ft. long, 130 ft. wide with sills 20 ft. below Bay Datum is the largest lock in the country.

Though provision has been made for an auxiliary lock on the west side of the existing entrance, and for a passage to connect to an even larger system to the north, present policy does not favour development by new construction but by modernisation.

From 1929 to 1949 the alterations were mainly in the central docks. They included the conversion of Clarence Dock to a power station site, the replacement of the old Clarence half-tide and Trafalgar lock by a wet dock in 1931 and the opening of the new Waterloo river entrance in 1949 as the first deep-water lock for the coastal trade. Princes Dock quays have been improved and the graving dock converted into a wet dock.

At the end of 1949 the Langton-Canada Improvement Scheme was started. Under this scheme the Canada Basin and the locks off it are replaced by a lock comparable with that at Gladstone though a little shorter. The west sides of Langton, Brocklebank and Canada docks are being reconstructed to give more quay space and the Canada-Brocklebank Passage widened and deepened, while the Langton-Brocklebank Passage and adjacent tongues will be demolished.

Though this scheme is not so extensive as those at the turn of the century, the problems are no less difficult, partly owing to the lack of land space but also because difficulties and costs increase with every foot of depth, and depth today is a necessity.

To plan the development of a great dock system is seen to call for a combination of foresight, adaptability and boldness, as the works laid down will outlive the vessels of the day and will see changes and innovations in the types and quantities of cargoes and in the methods of handling them.

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(Since reading his paper, Mr. Stephenson has been elected a full member of the Institute of Civil Engineers, and the Society takes this opportunity of congratulating him.)