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No 25

WINTER 1977-78

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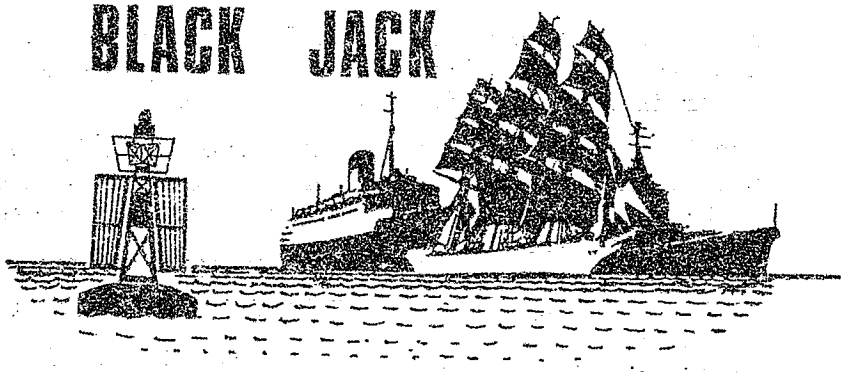
BLACK JACK



Published Quarterly by the Southampton Branch of the World Ship Society

Membership of the World Ship Society is £6.00 per year, which includes Southampton Branch membership, the quarterly issues of 'Black Jack' together with the Society's monthly magazine 'Marine News'

'Black Jack' is available on its own at 50p (including postage) for 4 issues

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SOUTHAMPTON BRANCH

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Joint Magazine Editors: Nigel V Robinson, 2 Glencarron Way, Bassett, Southampton, SO1 7EF
& David T Hornsby
Publicity Officer: W H Mitchell
Outings and Visits Secretary: David T Hornsby, 'Greystones', Southampton, Rd., Cadnam, SO4 2NG Tel; Cadnam 3704
Projectionist: David F Hutchings

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The AGM came and went without any startling surprises, including lack of response for the post of SECRETARY. Although the Secretary is continuing to function as caretaker until the end of the year, unless someone comes forward before then, the Branch will be without a Secretary, putting an unfair, and perhaps intolerable burden on the remaining members of the Committee.

The inter-Branch quiz was held at Newport in a very social atmosphere, and although our Branch was well beaten, a good time was had by all. In particular, an excellent spread was provided by the Isle of Wight ladies, and Les Smith, whose job as quiz-master involved a great deal of hard work, performed the task in his usual light-hearted manner.

PROGRAMME -- January to March 1978 **********

All meetings are held on second Tuesday of the month in (until further notice) Rm 1, Murray Building, (at end of Salisbury Rd off University Rd) University of Southampton. Meetings commence at 7-30pm.

Tues January 10 'GRP Warship Construction' an illustrated talk by Nigel Warren of Vosper Thornycroft

Tues February 14 Film Evening - we hope to obtain some interesting films of American ports

Tues March 14 Slide Competition (1977 slides) - further details later.

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WE WISH A VERY HAPPY CHRISTMAS AND NEW YEAR TO ALL OUR MEMBERS AND FRIENDS

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NAVAL SUPPLEMENT -- this quarter we have pleasure in presenting another Naval Supplement full of very interesting articles AND illustrations. This production has been in the hands of our 'Navy Department' under the capable editorship of David Hutchings. It all makes very interesting Christmas reading!

In their long histories, the Peninsular & Oriental SN Company and Southampton Docks have become almost synonomous names, each assisting the other in its expansion over the years.

The Peninsular SN Company was formed in 1837 for a steamer service, with mail contract, from London and Falmouth to Spain and Portugal, terminating at Gibraltar. By 1840, steamers were using Southampton, anchoring off the Royal Pier, two of these being the Oriental and the Liverpool. In that same year a Royal Charter conferred the title of Peninsular & Oriental SN Company who contracted to carry mails to Egypt. A further stipulation was that there should be a service between the United Kingdom and India within two years.

SOUTHAMPTON AND THE P & O

by W.H. Mitchell

At this time the Southampton Dock Company was building its first dock, the North East Open Dock - later, Outer Dock - and although incomplete, the first ships to use the dock were two P & O paddle steamers, Tagus (783 gt) and Liverpool (500 gt) which arrived from Lisbon and Gibraltar with passengers and cargo on 29 August 1842, berthing at (now) No 9 berth. Indeed, the corner steps at No 9 berth were referred to as 'P & O steps' for many years.

A month later, on 24 September 1842, the wooden paddle steamer Hindostan (2,017 gt), one of two ships specially designed for the new India service, left Southampton. She had 150 berths. Sailing via the Cape, she reached Calcutta in 91 days. Later, she was joined by the Bentinck and Precursor and all three ran eastwards from Suez to India. Thus the route to India had been shortened and a new era in travel had begun. Passengers leaving the ship at Alexandria went by slow horse-drawn barges 50 miles on the Mahmoudieh Canal to Cairo, then across 100 miles of desert in horse-drawn carriages to Suez, there to embark in the eastbound ships. Later, Nile steamers were built and resthouses placed in the desert. Cargo and even coal for the Suez ships had to be transported by camel train, sometimes as many as 3,000 camels being used. Passengers for the Far East had to tranship again at Galle, Ceylon.

On 1 July 1843, when the official opening of Southampton's first dock took place for general trade, it was a P & O steamer again that is recorded as having been the first steamer to use it. This was the 548-ton paddle steamer Pacha.

Another outstanding event, after great public agitation, was the opening of a mail service to Australia and with great celebration the screw steamer Chusan made the inaugural sailing from Southampton on 15 May 1852. Built of iron, she averaged 8½ knots, taking 80 days via the Cape to Sydney. She then sailed in a Singapore-Australia service, passengers from Britain connecting at Singapore.

Two years later, on 20 January 1854, crowds again flocked to Southampton's waterfront to see the world's largest, iron screw steamer Himalaya (3,508 gt) of the P & O make her maiden voyage. She was acquired by the Government during the Crimean war and became a troopship. During this war of 1854-5, eleven of the company's ships were chartered for trooping and some 62,000 men and 15,000 horses were embarked at Southampton.

But not only did P & O run their ships from Southampton - they had them built there, Day, Summers & Company turning out several iron ships from their Northam shipyard. The Aden (812 gt) was built in 1856, the Granada (571 gt) in 1857 and in 1858 the 1,330-ton Northam was launched. Again, in 1863, P & O asked Day, Summers to build the two-funnelled Syria (1,932 gt), an iron paddle steamer with oscillating engines.

In 1869 an event of international importance was to cause some problems for the company. The event was the opening of the Suez Canal when the steamer route from London to China was cut by 50 days. The mail contract however, called for mails to go via the expensive overland route and not by the new

waterway. And so they did - the Post Office insisting on this arrangement for a number of years.

During the mid-1870s, Southampton suffered a great blow in that under pressure from London exporters, P & O moved to London where, it was alleged, cargoes could be more conveniently handled, although passenger ships still called at Southampton until January 1882. This was indeed a setback for the town, for the company employed many men in offices, warehouses and stores and even had built a school for the children of employees in Paget Street and is still referred to by some as the P & O school.

However, P & O ships were still to be seen under trooping arrangements. In 1894 Southampton was selected as a government base for India and Colonial transport services and the company chartered out to the government the Britannia and Rome for the Indian trooping season. Later, in the Boer war of 1900-1902, nine ships were engaged as troopships, carrying some 150,000 troops. The ships included Assaye, Plassy, Sobraon, Soudan and Somali. In peacetime, in the off-season, government-chartered troopships were anchored off Netley.

It was not until 1925 that the P & O returned to Southampton as a service when, on 4 July, the 9,100 gt Khyber called from London to load for Port Said, Colombo, Singapore, Hong Kong and Yokohama, this developing to a fortnightly, then weekly, call with 'K' and 'M'-class ships. The first call on the London-India service was made by the Bangalore on 27 April 1929.

The P & O had embarked on a build-up of the fleet when the 1914-18 war ended. The 16,000-tons Naldera and Narkunda, both with three funnels, were turned out in 1918 and 1920 and in 1923 the Mooltan and Maloja were finished for the Australia run. Two years later came the Cathay, Comorin and Chitral and then the four 'Ranchi'-class of 17,000 tons in 1925 - Ranchi, Ranpura, Rawalpindi and Rajputana.

In June 1929 the company took delivery of the 20,000 tons, twin screw, Viceroy of India, notable for her turbo-electric machinery. She immediately commenced cruising from Southampton.

Similar machinery was also given to the 22,000 tons Strathaird and Strathnaver of 1931, three funnelled, and a departure was that these 'Strath' ships were given buff funnels and white hulls as against the black funnels and hulls and khaki upperworks of other P & O ships. The Corfu and Carthage were delivered in 1931 for the Far East service and were joined by the Canton in 1938, which called at Southampton in the October, on her maiden voyage.

In the late 1930s, three more 'Straths' joined the fleet - Strathmore, Stratheden and Strathallan - but these were single-funnelled and had geared turbines. One of the last ships to be built before war was the motorship Ettrick, an 11,000 tons, specially-built troopship. Her maiden voyage was from Southampton to the West Indies on 13 January 1939. She and Cathay, Narkunda, Viceroy of India and Strathallan were all sunk in the last two months of 1942.

Practically all these ships were seen at Southampton, particularly from 1929 when P & O cruising commenced with a 15 cruise programme with three 'Ranchi'-class ships and the Viceroy of India. The lucrative trade is exemplified by figures which show that from 28,000 cruising passengers moving through Southampton Docks in 1928, there were 70,000 in 1936. In those days, apart from the cruising liners, a P & O ship could be seen at the Itchen Quays every Saturday.

But came the war and in the ensuing six years, seven passengerships, one troopship and eleven cargo ships were lost and rebuilding of the fleet was again the task. The company resumed services to the Far East and Australia after war ended as quickly as ships could be converted from war service. The Carthage left Southampton for Hong Kong in July 1948, her running partners being Canton and Corfu. These were joined by the new, fast cargo liners Somali, Soudan and Surat, Shillong, Sunda and Singapore.

In September 1949 the P & O's then largest liner, Himalaya (28,000 tons) made a short private cruise from Southampton before commencing her maiden voyage from London to Australia in the month following, and on 1 July 1950 the new Chusan (24,000 tons) left Southampton on her maiden voyage to the Far East. The Arcadia and Iberia (29,000 tons) joined the fleet in 1953-4.

The P & O and Orient Lines announced that there was to be an integration of the two companies and the two fleets were combined four years later, in 1964.

On 3 December 1960, the new Orient - built liner, Oriana of 42,000 tons left Southampton on her maiden voyage to Sydney and later, on 2 June 1961 was joined in service by P & O's largest ever ship, the 45,270 tons Canberra, which left Southampton for Australia. In 1960, the ageing Carthage and Corfu were sold for breaking up in Japan, their places being taken by two ex-Belgian ships, Baudoinville and Jadotville of similar tonnage which were renamed Cathay and Chitral.

With the completion of the two giant liners, other ships became surplus tonnage and the Strathnaver and Strathaird were sold in 1961 to Hong Kong breakers, the Canton and Orontes (ex Orient Line) being sold in the following year. The Orion went in 1963 and the two remaining 'Straths', Strathmore and Stratheden were sold to Greece in 1963-4. Over the years the 'Straths' had featured in many Southampton Docks sailing lists, particularly in the cruising field. The Stratheden had also made four round voyages to New York for Cunard in 1950.

Exciting news came for the port in 1969 when the P & O decided that from the autumn all passenger liners would be based at Southampton. This took in the Canberra and Oriana, already firmly based at Southampton because of their size and the Arcadia, Chusan, Himalaya, Iberia, Orcades, Oronsay and Orsova. All had been featured in cruises from the port but this now meant ten more voyages each year to Australia and much employment in repair yards, offices and stores. The Cathay and Chitral were transferred to the associated Eastern & Australian SS Co in 1969-1970.

But, as with all passenger shipping, the aeroplane was gradually ousting the big liner and, in July 1972, the Iberia was withdrawn for scrapping at Kaohsiung, followed by the Orcades, Orsova and Chusan next year. The Himalaya soon followed in 1974 and Oronsay in 1975.

As this is written, only three large passenger ships run in the fleet, Canberra, Oriana and Arcadia, all employed cruising from Southampton or Australian ports. There are however cruising ships operating from the West coast of North America and from Australia, apart from the three named above and there is also the ex-British India schoolship Uganda.

Meanwhile, P & O is a partner of Overseas Containers Ltd and own three large container ships. Of these, Osaka Bay is employed in the Trio Line's service from European ports and Southampton to the Far East. P & O Ferries also have the Dragon working from the port to Havre.

As a port, Southampton was built up by the passenger trade. Now, with almost complete domination of the aeroplane over the passenger liner, it is pleasing to know that the cruising market is quite buoyant and that the remaining P & O liners based at Southampton are scheduled for many more cruises from the port, at least in the immediate future.

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Southampton Maritime Museum

The Maritime Museum is moving into a phase of positive development with the aim of becoming a focus for all interested in maritime history who are not members of established socities as well as for those who are. A winter lecture series of 10 talks is now fully subscribed and the exhibition of paintings by Kenneth Shoesmith (sometime artist of Royal Mail Lines) has been very popular.

The Maritime Museum Library has been added to considerably with a bequest of some 70 books by the late R M Bonham of Bournemouth and a few other notable items. The library is being brought together in one room for the first time, based on Tudor House Museum. Members of WSS are welcome to use it. If you have time on your hands there is a lot of sorting and indexing to be done. If you can help contact Adrian Rance on Southampton 24216.

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nautical notebook

by Dock Head Correspondent

In the dying era of the large passenger liner it is pleasing to be able to report the first time visit to Southampton of the Eugenio C (30,567g). She was launched on 21 November 1964 by CR dell'Adriatico of Monfalcone and completed in 1966 for Costa Lines Italy-South America service. At waterline level her stern has a special guiding profile which, it is claimed, improves performance. The Eugenio C arrived from Buenos Aires before sailing five hours later on the start of a world cruise.

The last quarter has seen the final departures of three more famous names from the port. The Chandris liner Australis ('40, 33,691g) (ex America '64, ex West Point '46, ex America '42) sailed on her final voyage to Australia on 18 November with a full complement of 2,200 passengers and so ended the last passenger liner service from Britain. Two more South Africa mail ships, Windsor Castle ('60, 36,123g) and SA Vaal ('61, 32,697g) (ex Transvaal Castle '66) both departed under new names. The Windsor Castle became Margarita L for her new owners, John S Latsis of Greece and SA Vaal became Festivale for Carnivale Cruise Lines Inc. The only difference in the livery of each vessel were the funnel colours; Margarita L had a yellow funnel with black top and Festivale a grey funnel with black top.

On 22 September the Russian car ferry/liner Kazakhstan ('76, 16631g) called during a cruise. She is the third of five 'Gruziya'-class ships, all built in Finland over the past year or so. Making a return to the port was another Soviet ship, Maksim Gorkiy ('68, 24981g) (ex Hanseatic '74 ex Hamburg '73) which called in 1974 and was temporarily renamed Britannic for the purpose of making the film 'Juggernaut'.

A number of ships have called for repairs in recent weeks. Two oil rig supply/support vessels put into Husbands Shipyard after encountering heavy weather while on a voyage from Rotterdam to Bombay. They were the American Moon ('73, 227g) and Ekofisk Moon ('72, 190g), both owned by Jackson Marine Corpn, USA. The small, West German fifty-year old coaster Anna Helene ('28, 148g) (ex Vertraven) which, after being at the Town Quay for a fortnight, sailed for South America, only to return 48 hours later with engine trouble again! While on a voyage between Antwerp and the Persian Gulf with a cargo which included three small tugs on deck, the Northridge (1598g), which had already undergone repairs at Dover, put into the port with recurrent engine trouble. Built originally as Cairngorm for W Robertson of Glasgow in 1973, she was sold to her present owners, North Africa Line of London in 1977. Other vessels in for repairs recently have included Anchor Line's coastal gas tanker Lanrick ('57, 1177g), Hadley Sg Co's Corato ('69, 1476g), which made a short stay at 34 berth with generator trouble and, on a larger scale, the Norwegian gas tanker Mundogas Brasilia ('61, 6804g) which was in for several days. She was built in 1961 for Oivind Lorentzen of Oslo.

Two more of the Sunderland-built bulk carriers used 7 Drydock for checking and final completion - Reardon Smith's Welsh City ('77, 39236g) and the Yugoslavian Kosmaj ('77, 38551g).

A ship to undergo a name change whilst in 7 DD was the Jersey Fisher ('71, 829g) after her long time charter to British Rail had ended with the arrival of the Earl Godwin at Portsmouth. She took the name Commodore Challenger, her operators being Commodore Shipping of Guernsey The Earl Godwin opened the new ro-ro service from Portsmouth to the Channel Islands.

Also drydocked was Cunard's Matangi ('61, 10486g) (ex Port St Lawrence '76), another of the six Cunard freight ships promised to be overhauled at Southampton to compensate for the QE2 being refitted in the United States.

On 21 October the destroyer Cavalier arrived at Husbands shipyard, there to be converted into a floating museum and then moored locally, hopefully by next spring. HMS Cavalier was built by J Samuel White & Co of East Cowes

in 1944 as HMS Pellew, the 'Ca'-class when ordered in 1942 at first being given spare names until the proper 'Ca' names were allocated at the end of that year, by which time two of the eight ordered had been laid down. Her geared turbines gave her a speed of nearly 37 knots.

The Challenger Colocotronis ('63, 31248g) (ex Berge Odel '71) which had been in the docks since the beginning of the year finally left the port after a name change. She was renamed St Nicolas by her new owners, Seafort Shipping of Monrovia and after anchoring in the Solent awaiting orders, departed on 24 October.

Another Solent caller for engine repairs was the Feng Xiang ('75, 10273g), flying the flag of the Peoples Republic of China. She is a typical example of the modern type of ship now owned by the Chinese.

Car shipments have continued to flourish with one or two new names in the arrival lists including Anders Jahre's Janega ('71, 24,981g) and two Mitsui-OSK sister ships, Kanagawa Maru ('70 17433g) and Tochigi Maru ('71 17430g). The most interesting vehicle carrier to call was the Greek Dolphin Elena ('54 5383g), her arrival being delayed owing to engine repairs at Hamburg. She was built by Eriksberg, Gothenburg as a tanker for Wilhelm Wilhemsen, Oslo who named her Tabriz but in 1975 she was sold and renamed Domianos, then returning to her original name Tabriz in 1976 before being purchased by her present owners Dolphin Shipping Company who converted her into a vehicle ferry. In conversion her stern was re-shaped and a ramp fitted either side of the hull. The ramps are carried in a vertical position and lowered to the quay for loading or discharge. She is operated by the Italian line, Traghetti Del Mediterraneo and she is likely to be calling regularly on service to Apapa. More vehicles were also shipped on the Macpak ferry Goya ('77 3779g) which made her maiden sailing in the new Southampton-Bordeaux-Bilbao service on 17 October.

Several Ugland ships have also called since car cargoes have moved through Southampton and the Axel U ('67 18669g) came to discharge Datsun cars. She was recently converted to a car carrier and has two sisterships frequently seen here, Andreas U and Johann U.

Industrial trouble by the New York dockworkers which lasted for several weeks caused changes in the Atlantic Container Line's schedules and two vessels which normally operate on other routes called. They were the Atlantic Conveyor ('70 14946g) which is owned by Cunard and the West German, Wallenius-owned Atlantic Cinderella ('70 15437g).

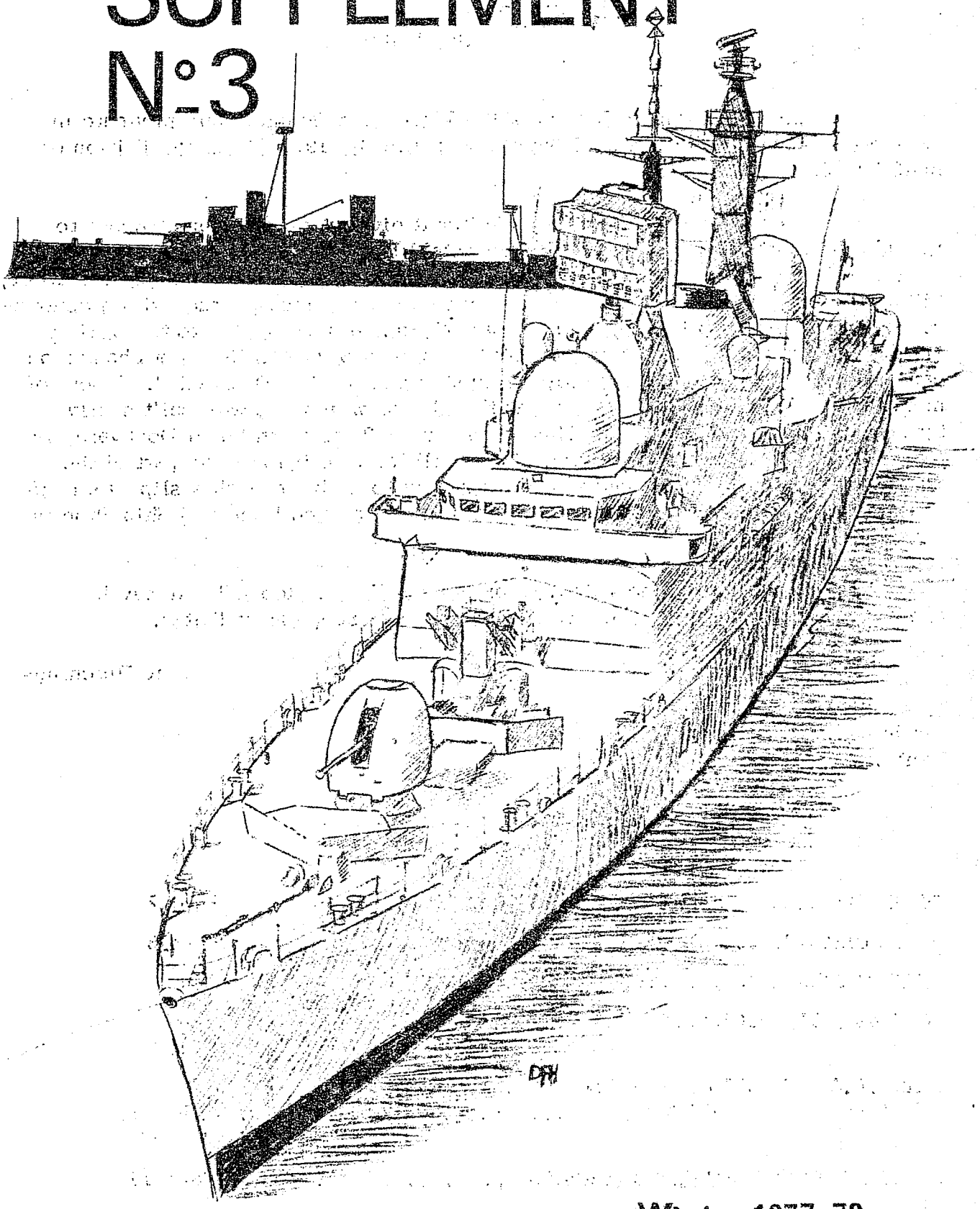
The nineteenth Trio-group containership Thames Maru ('77 50722g) arrived from the Far East on 21 October. Owned by Mitsui-OSK she is a sistership to Elbe Maru which has been in service for several years now, and has a capacity for approximately 1950 TEUs.

One trade which seems to have returned to the port after a long absence is banana imports. Two Russian ships, the Nikolay Kopernik and Mikhail Lomonosov both built in Poland in 1974 have discharged. They belong to a class of eight ships of the same design, have a gross tonnage of 6,400 tons and a speed of 21 knots. Two French reefers also made first time calls - the Karukera ('63 5404g) owned by Cie de Nav Fruitiere of Paris and the C.G.T (French Line) reefer Pointe Sans Souci ('73 6505g).

A tug tow of some interest was made by the Polish salvage tug Jantar which arrived from Apapa/Lagos on 23 September. In tow she had a very large barge which had on board a Westminster Dredging Company dredger. The barge can carry four dredgers at one time and is a safer and cheaper way of transporting small craft on long distances. When the barge arrives at its destination it is flooded and its cargo simply floats away. The Jantar was built by C Hill & Sons of Bristol in 1958 and has a gross tonnage of 1226. She has a sistership, Koral.
Another tow was by the London Tug's Moorcock which arrived on 1 December and sailed the next day from Husbands with the pontoon Sterling Challenger. The Moorcock ('59, 273g) was built for the Gamecock Towing Company which was absorbed into the Alexandra subsidiary, London Tugs Ltd., in 1968. ...

BLACK JACK

NAVAL SUPPLEMENT No.3



Winter 1977-78

World Ship Society

Southampton Branch

FOREWORD
by the Editor

The Southampton Branch of the World Ship Society have pleasure in presenting this, the third, Naval Supplement with the 1977 Christmas Edition of BLACK JACK.

As this is my first term as Editor it gives me particular pleasure to include three articles by authors already established as writers of international repute with books and magazine series to their individual credit - Messrs. Sigwart, Mitchell and de Kerbrech. John Lawes makes a very welcome return with a contribution of local warship interest and Norman Woods, a new member to the Society and Branch, makes his debut with a detailed survey of FURIOUS in her chameleon career. "Pompey" orientated articles includes one on DREADNOUGHT. A note of nostalgia here comes from a report that the slip on which she was built nearly three-quarters of a century ago, Number 5 Slip in Portsmouth Royal Dockyard, is currently having its cranes dismantled and will later be filled in as part of the 'Yard's modernisation programme. The last ship to be built on this slip was HMS ANDROMEDA, completed in 1968. The magnificent arched Number 3 Ship Shop is also to be demolished.

Any letters concerning the articles will be welcomed and may be forwarded to the appropriate author through me, the Supplement Editor.

David Hutchings

1, Westborn Road,
Fareham,
Hants.

CONTENTS

HMS FURIOUS

by N.K. WOODS

Displacement: 19,100 tons

Dimensions: 786½ ft. (OA), 735 ft. (PP) x 90 ft. over bulges x 21¾ ft.

Machinery: 4 Shaft Geared Turbines 94,000 SHP = 31½ knots

Protection: Main Belt 2 ins. (Fwd) 3 ins. (Amid) Deck 1-1½-3 ins. Armament.

Planned as a Cruiser:

2 x 18" QFG, L/35 in single turrets one forward and one aft. 11 x 5.5" QFG, 4 x 3" A/A; 2 x 21" TT submerged and 2 x 21" TT above waterline.

Actually Fitted:

1 x 18" after turret; 11 x 5.5"; 2 x 3" A/A; 2 x 21" TT submerged; 4 x 21" TT above waterline.

The FURIOUS and her sister ships COURAGEOUS and GLORIOUS, owed their existence to a plan drawn up by Lord Fisher as early as 1909 for a heavy force to penetrate the Baltic. However, after the Dardenalles operation and the departure of Lord Fisher from the Admiralty, the Baltic operation was abandoned, but nevertheless the construction of these ships was continued.

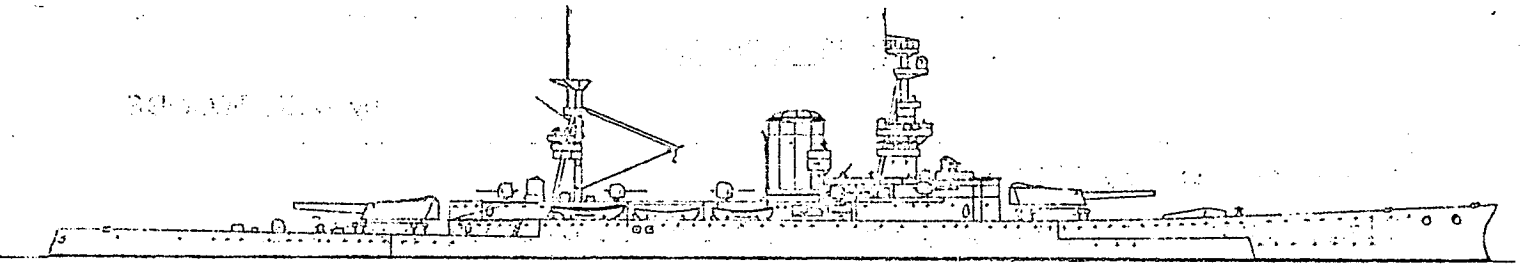
The FURIOUS was laid down on 18.6.15 by Armstrongs of Newcastle and for the first time in a warship High Tensile Steel was used for the armour plate. She was launched on 15.8.16 and shortly before her completion she was converted into a seaplane carrier. This conversion began in March 1917 in which her forward part became a seaplane carrier and her after part remained as designed. The forward 18" turret and structure were dispensed with and a flight deck, 89' x 51' with a height of 14', was constructed in its place with a hangar for 8 - 10 seaplanes beneath it. Conversion was completed in July 1917.

Along the sides of the flight deck, retractable palisades were fitted in order to protect the plane from the wind. To launch the seaplanes a trolley was used on which a seaplane with its floats was placed for launching. It was possible to launch but not to land the aircraft.

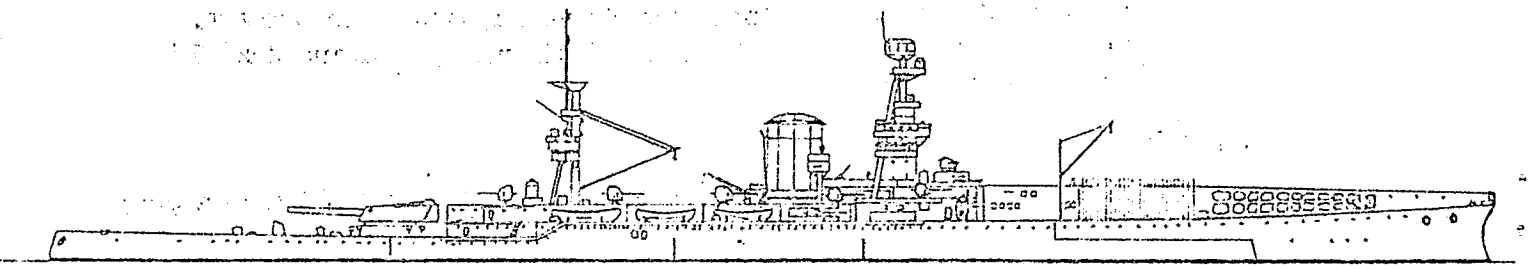
After the Contractor's Sea Trials were completed the ship came into Royal Navy hands and aircraft launching trials were carried out. These trials came under the supervision of Squadron Commander Dunning. The aircraft had to make a tight turn around the superstructure to get above the ship's axis and then touch down. The first trial landing was made by Dunning himself on 2.8.17 which was successful, but the second on 7.8.17 was not and Dunning was killed. Further attempts of this kind were subsequently forbidden.

Military requirements made it necessary for aircraft to be able to land on deck and a proposal was made to provide a landing deck aft. Thus the Admiralty decided to carry out a further conversion which commenced in November 1917 and completed in March 1918.

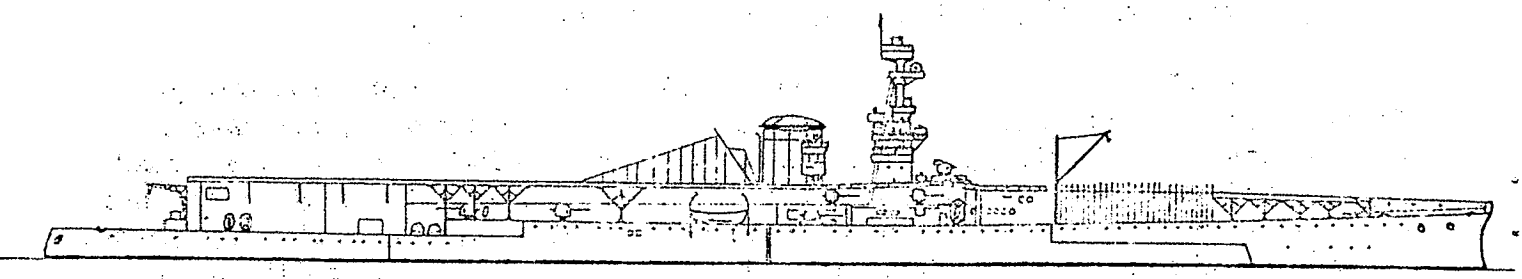
This second conversion meant the removal of the after 18" turret and superstructure abaft the funnel, this being replaced by a landing deck of 283' x 69', interconnected by ramps around the funnel, superstructure and the forward flight deck. A hangar with workshops was installed under the after flight deck, and aircraft were brought to surface by means of a hoist.



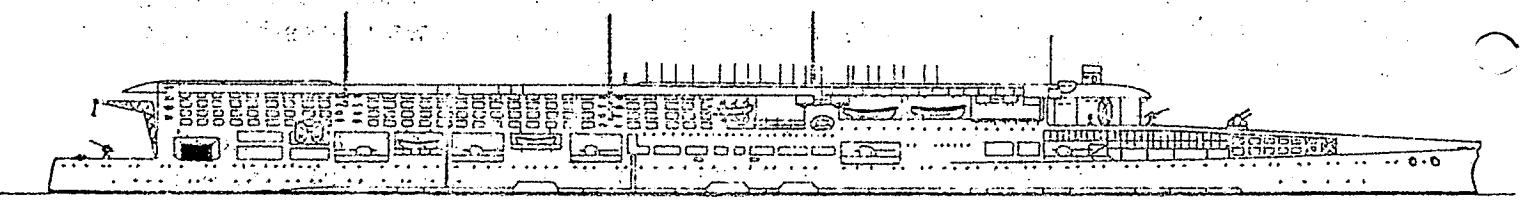
FURIOUS - ORIGINAL DESIGN



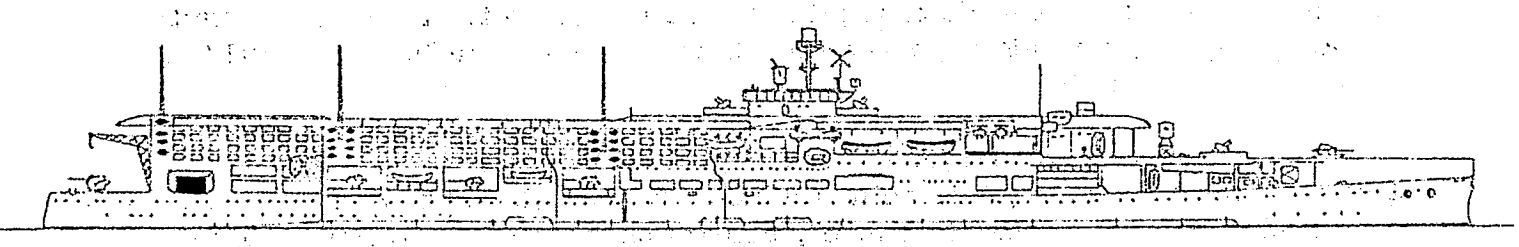
FURIOUS - 1917



FURIOUS - 1918



FURIOUS - 1935



FURIOUS - 1944

DRAWN BY N.K. WOODS

SCALE 0 50 100 FEET

FURIOUS originally carried 16 aircraft but later 26 were carried; arrestor equipment and crash barriers were also installed to prevent the aircraft from hitting the funnel. In this conversion she also lost one of her 5.5" Q.F.G's.

In July 1918 FURIOUS took on board 7 Sopwith Camels to practice low-level bombing, their potential targets being the Zeppelin hangars at Tondern where 3 Camels flew in and started beacon fires to guide in the others. Two Zeppelins were destroyed in the raid.

Only after experience with the new aircraft carrier ARGUS did the Admiralty order FURIOUS to be yet again converted, paying particular attention to the experience gathered so far. This conversion commenced in 1922 and completed in 1925 when she emerged as a fully-fledged aircraft carrier. Now without an island structure she had a full length hangar which accommodated 33 aircraft. During this conversion the 10 x 5.5" Q.F.G's remained and in addition 3 x 4" A/A were fitted.

The ship was commanded and flight-controlled from a crow's nest situated forward on the sides of the flight deck but this was found to be inadequate. Therefore in 1930 a retractable conning position was fitted which protruded from the flight deck. This too proved inadequate; a further 16 x 40 mm. AA were also fitted at this time. The ship was converted yet again in 1938-9 with an island superstructure and mast being fitted on the starboard side. During this conversion all of her 5.5" Q.F.G's were removed and replaced by 12 x 4" AA.

During the Second World War she served with distinction at the Narvik campaign and with the Home Fleet during 1939-1944. Minor changes were made to her armament. when 8 x 40 mm. AA and 22 x 20 mm. AA were fitted. During her career her original propulsion unit and protection were left unchanged other than the flight deck being fitted with 1" thick armour plate.

She was placed in reserve in 1944 and finally sold for scrap. Demolition began at Dalmuir on 15.3.48 and at Troon, hull only, on 22.6.48.

Drawings by N. K. WOODS

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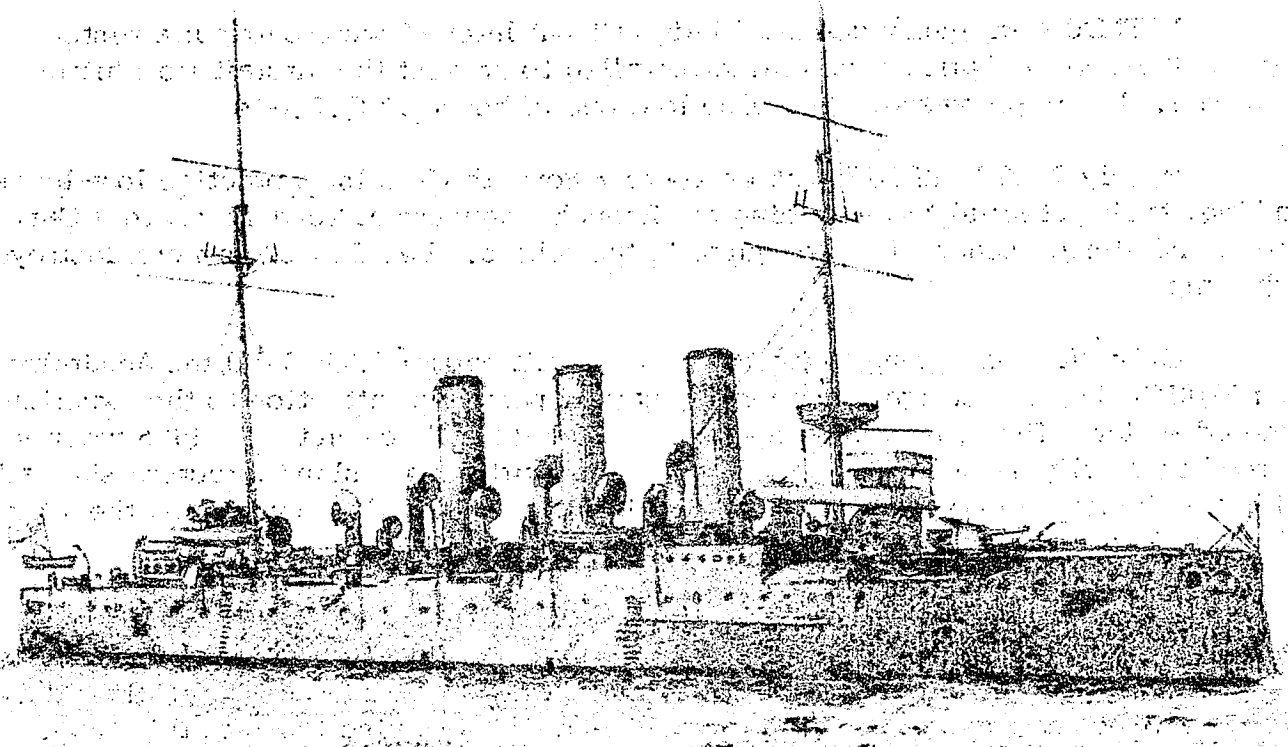
SOLENT TRAGEDY

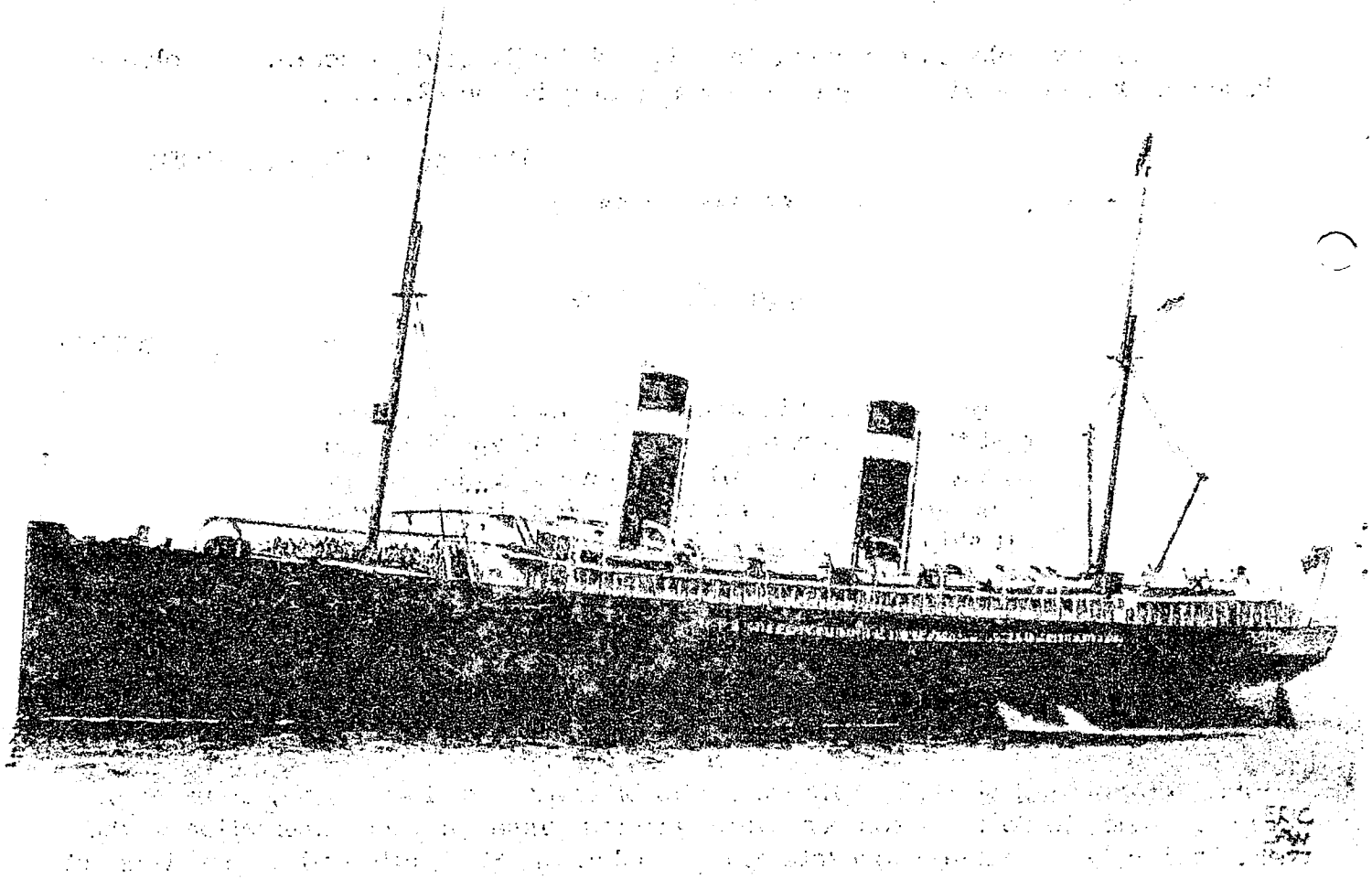
by W. H. MITCHELL

Before reading this article, it must be remembered that the accident took place in 1908 and that prior to 1st January 1933 all orders were "Helm" orders. This old custom was a survival from the days when all ships were steered by tillers, therefore, in 1908, if a ship was required to go to starboard, the order would have been "Port" i.e. the reverse order was given and then disobeyed by the helmsman. From 1st January 1933 direct "Steering" orders became effective.

It happened in the afternoon of Saturday 25th April 1908. Typical of the unpredictable English spring climate a wild blizzard was blowing and, consequent to the London to Southampton boat train carrying passengers for embarkation on the St. Paul arriving half-an-hour late at the Docks, the St. Paul's sailing time was put back from noon until 12.25 p.m.



HMS GLADIATOR



ST PAUL

Drawings by Eric Law

She had on board 168 passengers and 362 crew, as well as mails and cargo, and was bound for Cherbourg, with New York as her final destination. She also carried a licensed Trinity House Pilot.

Turning at Calshot Spit, she was proceeding at half-speed, which was about 9 knots, down the starboard side of the Solent on a course W½S (mag) when the look-out, peering through the blinding snow saw a vague dark shape, later to be recognised as the British cruiser HMS Gladiator, bearing half a point on the port bow about a ¼ to ½ mile away. The cruiser sounded one short blast and was showing her port side so the helm of the St. Paul was put "hard-a-port" (meaning she turned to starboard), a short blast was given and the starboard engine put full speed astern. This put both ships in the safe position of being able to pass port to port and no apprehension was felt by those on the American liner.

However, on the Gladiator it was thought that the St. Paul had sounded two short blasts, possibly the second being an echo occasioned by the difficult weather conditions, and that she was acting under a "starboard" helm. Accordingly the cruiser's helm was put "30° starboard" which meant that she turned to port and moved straight across the path of the liner. Quickly the port engine of the St. Paul was put full speed astern, but it was too late and although the helm of the Gladiator was put "hard-a-port" in a last desperate effort to throw her quarter clear, the stem of the St. Paul crunched into the cruiser's starboard side, just about midships, with the harsh jarring sound that only metals in tremendous impact can make, the armour plating of the cruiser being twisted as if made of cardboard.

For several seconds the two ships lay locked and then, as the St. Paul slowly drew away it was seen with sickening hearts by those on the St. Paul who had rushed on deck at the collision, that the Gladiator had a great jagged rent in her side into which the water was pouring. Her watertight doors were immediately closed but it was quite apparent that her end was near and her Captain turned her head shorewards in an effort to ground her rather than have her sink in deep water. In this attempt he was only partly successful as the cruiser, broadside to the still biting wind, heeled over, drifting inshore near Yarmouth, on her starboard side. And to the ears of the Coastguard and awe-struck onlookers ashore came faintly the voices of the sailors singing "Sons of the Sea" as they huddled upon the upturned hull.

The American liner, her bows buckled by the crash, lowered boats and gave all possible assistance, rescuing many sailors and staying until there was little else to do. Then she returned to Southampton, there to disembark her passengers before drydocking for repairs.

Later, at the roll call 27 men were found missing, all from the cruiser.

On 3rd June 1908 an action for damages was heard in the Admiralty Court. The Plaintiffs were the British Admiralty and the Officers and crew of HMS Gladiator suing for lost effects, whilst the Defendants were the International Mercantile Marine Company of New Jersey. Both sides claimed that proper look-outs were not posted; that proper whistles were not given and that each other's ship was going at an excessive speed. The Gladiator accused the St. Paul of failing to pass on the port side of the cruiser and blamed the liner for "starboarding her helm" and attempting to pass the Gladiator on the starboard side and then "porting her helm" before she had altered course sufficiently to clear the Gladiator and failing to give proper signals. Likewise, the Defendants claimed that the Gladiator failed to pass the St. Paul port side to port side; that her helm was improperly "starboarded" and that she did not give proper sound signals that she was directing her course to port.

On 20th June the President of the Court gave judgement. He said it was clear from the courses that there ought not to have been the least difficulty in passing port to port. The position in which the vessels were found in the collision was only possible if the Gladiator "starboarded". She did "starboard"; but it was said that the St. Paul "starboarded" and sounded two short blasts. He was quite satisfied that the St. Paul was not "starboarded". Corroborating the statement of the Captain of the St. Paul was an Army Officer who, from the mess window of Fort Victoria, just west of Yarmouth and some 500 yards from the collision, heard only one blast of the siren of the St. Paul. The President said, in his opinion, that the Gladiator alone, was to blame.

It took 5 months to salvage the Gladiator and the operation was more or less split into three phases.

The first phase of the operation began with the realisation that the Gladiator, perched, as she was on deeply shelving shingle, might easily slip into deep water. Pumps were installed inside the hull and, after two pontoons with a combined lifting capacity of some 200 tons had been lashed to the hull, she became slightly buoyant. Then, winches ashore, after great struggles, pulled her slowly inshore where all openings were sealed up with wooden patches.

Now although all guns and deck fittings were removed, the two masts had been left and in the second phase of the salvage they came in extremely useful. Two tripods, each 30' high were erected on the uppermost side of the wreck in line with the masts. They were not fixed, so that they would fall out of the way as the ship became upright. Five pontoons were then attached to the underwater side of the hull. From the masts two cables were stretched up over the tops of the tripods to two tugs. The tugs pulled, the pontoons strained upwards, nearly 300 tons of iron, acting as a counterweight on the upper side of the hull, pressed down, the pumps inside the hull spewed out the water and slowly the cruiser came upright.

But although upright she was still sitting on the shingle and so phase 3 was the construction of a huge cofferdam on the deck and five months after the tragic accident she became afloat and was towed across the Spithead to Portsmouth Naval Dockyard.

By a remarkable coincidence the St. Paul sank in New York harbour on 25th April 1918, exactly ten years to the day after the collision with the Gladiator.

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Drawings on page 6 by Eric Law:

Top Drawing:

HMS Gladiator was launched in 1896. She was a cruiser of the "Arrogant" Class, of 5,750 tons displacement and was armed with 10 x 6 inch and 9 x 12 pdr. guns and three torpedo tubes. In her salvage, assistance was given by the Liverpool & Glasgow Salvage Company's Ranger (1880, 409g) before she was righted and towed to Portsmouth, her original destination on voyage from Portland.

Bottom Drawing:

The St. Paul (1895, 11,600g) was a passenger ship of the American Line. Early in 1918 she was taken up as a transport and renamed Knoxville but after a refit and on berthing at New York, she capsized and sank. She was later salved and in late 1920, as St. Paul, resumed the New York-Cherbourg-Southampton run until scrapped in Germany in 1923.

PORTSMOUTH DOCKYARD AND THE "DREADNOUGHT"

BY D. F. HUTCHINGS

The idea of the all big-gun ship was first published in the 1903 edition of "Janes" by Constructor General Cuniberti of the Italian Navy. The basic concept, in simple terms, was for a fast vessel with armour capable of withstanding any contemporary missile and having armament heavy enough to penetrate enemy armour at its thickest point, at the waterline. He, Cuniberti, proposed a vessel of 17,000 tons displacement with parameters of 521 x 82 x 27 feet, twelve inch thick armour, a speed of twenty four knots and twelve 12 inch guns, thus doing away with smaller calibre weapons which detracted from ascertaining with any accuracy the fall of shot from the bigger weapons.

Great Britain rejected these plans as impractical (as they had similarly rejected the steam engine, torpedo and submarine, in the previous century) knowing full well that if the plans were taken seriously the Royal Navy would become obsolete overnight. But, when the Japanese laid down their AKI and SATSUMA based on Cuniberti's principles and the Americans ordered the MICHIGAN and SOUTH CAROLINA, the British formed a Committee on Design and became determined to act quickly in order to be "first past the post" with the new type and thus lead the rest of the world in the Naval race that would follow. The Committee on Design had, as its Chairman, the dynamic First Sea Lord Admiral (Jackie) Fisher who had, he claimed, proposed such a ship as they were considering back in 1900 whilst C-in-C Portsmouth, when he had discussed his ideas with Chief Constructor Gard. The Committee proposed a ship with ten twelve inch guns (giving eight guns on the broadside and four or six firing ahead or astern) in five turrets. The design speed was 21 knots, two knots faster than any other battleship afloat, 527 (490 b.p.) x 82 x 26½ feet draught (normal) and 17,900 displacement. Twenty seven 12 pdr. guns were also carried as anti-torpedo boat protection.

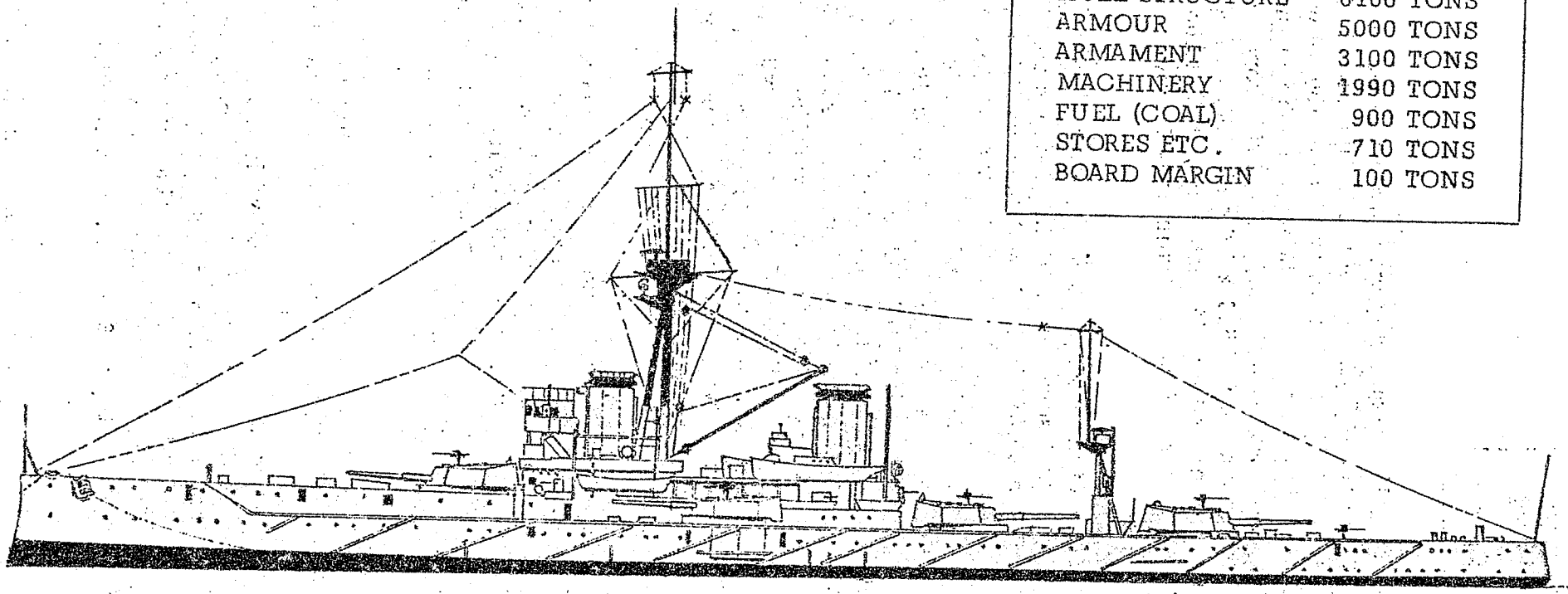
The design was finalised in February/March 1905 with Phillip Watts responsible for the final design. Speed of building and secrecy were to be the keywords as Fisher was determined to shock the Germans, whom he recognised as our next potential foe instead of the French as popularly and traditionally thought, with an impressive show of speedy shipbuilding. Guns were taken from the then still building LORD NELSON and AGAMEMNON and extra funds for armour and other materials were voted by Parliament to enable a quick building to be achieved.

By mid-May 1905 a start had been made on the gathering of materials until five months later when, on 2nd October, the DREADNOUGHT was officially laid down.

In Portsmouth Dockyard since May, steadily increasing amounts of money, men and material had been devoted and appropriated to her construction. By the end of September 1905 £12,217 had been spent on about 6,000 man-weeks of labour (1 week = 48 hours) with 1,100 men being employed by the time of the laying down of the keel, so it can be seen that the ship was well underway even before the actual date of keel laying. Material expenditure also amounted to £29,078. Construction proceeded under the supervision of J. H. Narbeth R.C.N.C.

In 1905 a normal Dockyard working week consisted of 48 hours, worked as 41¼ hours in winter and 50 hours per week in summer, this being prior to the installation of electric lighting in the 'Yard. A working day was from 7 a.m. to mid-day and 1.30 p.m. to 5.00, plus Saturday mornings.

HULL STRUCTURE	6100 TONS
ARMOUR	5000 TONS
ARMAMENT	3100 TONS
MACHINERY	1990 TONS
FUEL (COAL)	900 TONS
STORES ETC.	710 TONS
BOARD MARGIN	100 TONS



H.M.S. DREADNOUGHT 1906-22
DRAWN BY D.E. HUTCHINGS 9/77

However, the men employed on the DREADNOUGHT worked from 6 a.m. to 6 p.m. with half an hour for lunch, thus making an 11½ hour day or 40% overtime. Overtime such as this was considered a better policy than shift working as there was no "change-over" period and also the men thus employed were concerned with their jobs continuously, thus maintaining interest. Another incentive to work hard came from the fact that the Dockyard was laying men off to reduce the working complement to 8,000, so this also had the effect of making shift work impracticable as there were insufficient men in the constructive trades to double-up in a shift work routine without taking men away from the normal working of the 'Yard. Two to three thousand men were involved in the building of the DREADNOUGHT or 25% of the total workforce! Wages at this time were between £1.0s.0d. and £1.15s.0d. per week (£1.00 and £1.75).

A lot of drawing work was cut out by the expedient method of taking most of the information directly from the ship's lines scrieved in on the Mould Loft floor which was under the supervision of a Mr. Bond. These lines were still there until a few years ago when they were planed off. Good planning and giving of direct orders also greatly contributed to the speed of the building. Amongst many "firsts" the DREADNOUGHT boasted turbines, tripod mast and quadruple propellers. The total cost of the warship was given as between £1,783,803 and £1,813,000.

By the end of November 1905 £2,500 per week was being expended and £10,000 was set aside for the payment of overtime. £523 had been estimated as the cost of launching and a further £1,119 estimated for the provision of launching booths. His Majesty King Edward VII performed the launching ceremony on 10th February 1906. Trials commenced on 3rd October, a year and a day after the official laying of the keel.

The subsequent history of the DREADNOUGHT was fairly uneventful. She rammed and sank the U29 (responsible for torpedoing and sinking the ABOUKIR, HOGUE and CRESSY) in the North Sea whilst in the Fourth Battle Squadron on 18th March 1915. On 9th May 1921 she was sold for £44,000 to Thos. Ward and 2nd January 1923 arrived at Inverkeithing for breaking up.

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THE RFA OF YESTERDAY - RECOLLECTIONS OF A RETIRED RFA MASTER

by Captain E. SIGWART

I joined the RFA in January 1926 as Third Officer of the "SLAVOL". I was years later, to my surprise, and doubtless to the suspense of Their Lordships, to be Second, then Chief Officer, and finally Master of this splendid ship. I thought at least, that when the time came for her demise, I might be offered her as a going concern, but it was not to be! At this time, forty years ago, Noah's Ark had just been declassed by Lloyds Register, which was just as well, otherwise the impecunious Admiralty of those days would undoubtedly have acquired her as a store ship, at least, judging by some of the peculiar antiques they gathered in! Of all the ships in which I served "SLAVOL" heads the list in my pantheon.

In those days, the RFA as we know it, was in its formative years, and was still growing up and the pangs of adolescence were to be felt. Admiralty, being a newcomer in the field had to rely largely on the advice of various ship owners on the running of a Mercantile Marine manned shipping company. They were greatly assisted by the British Tanker Company (BP), which in those days was very little wiser, as they

were only just starting a fleet themselves. Messrs. Davies & Newman, Lane & Macandrew, Bowring, Gow Harrison, Huntings & Andrew Weir were all implicated, possibly others. It must be said, that standards were pretty low in those days, and very much the old "Trampship" style, which caused a large turnover in Officers. (I remember a wireless message being received in 1932 in a "War" class ship, in the SW Monsoon off the Arabian Coast stating "Board of Trade allowance not to be exceeded"). This out of the blue and apropos of nothing. This from the Managers, not the Admiralty! However, we who stayed, I think, gradually grew fond of the life, which had many compensations, and enjoyed working with the Navy. At least, I did!

Before the 1914-1918 war, oil for the Navy was in an experimental stage, and apart from the "PETROLEUM", "KHARKI" and "ISLA" (tankers) "MAINE" (built in 1887), hospital ship, "MERCEDES", a Temperley rigged collier, and a few small dockyard manned coasters, that was the lot. A number of colliers were chartered by the Admiralty, manned by their owners' crews. I believe that the first RFA manned ships were these three tankers, and the hospital ship. Elementary coalings at sea was practised by the RN with the colliers, and from this gradually developed the stirrup method of oiling at sea. "KHARKI" and "ISLA" were very small ships, the giant "PETROLEUM" was about 6,000 tons, a coal burner. As the war progressed and oil became more used, a large number of MFA's (Mercantile Fleet Auxiliaries) were used, and from one management, Messrs. Lane & Macandrew, the "LEAF" system of naming came into being.

During the War, three classes of Admiralty designed oiler were built, and most of them had long and full lives. Smallest were the 1,000 ton class, then the 2,000 tonners, and finally the 5,000 tonners. Immediately prior to the war, five 2,000 tonners were under construction in Naval Yards, some of them in service I think. These were "BURMA", "TURMOIL", "TREFOIL", "MIXOL" and "THERMOL", not exact sisters but similar. RAN later had a similar ship, RAFA "KURUMBA", but of her I know nothing, though I saw her in the Persian Gulf after the last war, as the Panama registered "ANGELIKI". These five engines-aft craft, were extremely cranky and lacking in stability (a characteristic inherited by the next lot of 2,000 tonners). One unfortunate, "TREFOIL" had added to this a very early diesel engine. I always felt that this should have been placed in the more aptly named "TURMOIL", as according to the late Jock Lawrence, one of the stalwarts of the concern, that was the usual state of the engine room, and he should know, as he was a junior Engineer in her! When the war ended, and with indecent haste, they were placed in reserve, the last to function being "BURMA", the most successful of them. "MIXOL" and "THERMOL" (where, oh where, dear D's of S, departed and otherwise do you rake up these titles?) spent practically the whole of their lives, certainly all their peacetime existence, laid up side by side in the large dry dock in Gibraltar. During Spring Manoeuvres each year, their cuddling was disturbed, and side by side they were towed to the pens at the North end of the harbour, out of the way, and as the Fleet departed, still side by side, they safely voyaged back, to be comfortably bedded down till next year.

Just before the 1939 conflict, they were surveyed, lots of tophamper and mastage removed to improve their stability, and they came home to function quite normally, though hideous of appearance, till the end of the war, when they were sold and snapped up for commercial coastal work, on which they spent a quite considerable time. These five were originally quite decent looking ships, the other three scrapped in the thirties.

A 9,000 ton diesel engined class had been projected, to be engined with a number of submarine diesels, but only one was completed, and not RFA manned. This was "SANTA MARGARITA" (originally to be "OLYMPIA"), which spent nearly all her life as an Anglo-Saxon Oil Co. (Shell) ship, being re-named several times, first "MARINULA", then "TRIGONIA". I wonder if she had a Latin Chief Engineer originally, who was constantly invoking the name of the Saintly Lady above in his efforts to get his engines to function? Otherwise why the name? She was made a hulk at Gibraltar shortly before the war. (At least, I think it was Gib:, it may have been Trinidad!). Anyhow, the need for an oil hulk at Freetown, then a major convoy assembly port, being made known, she motored out and was left in the hands of a shipkeeper. Oddly enough, as far as I know, the only time she was required to move, she was manned by an RFA engineering staff. "AQUITANIA" came in and received about 6,000 tons of fuel from her then prepared to depart on her business, but for the error of a pilot who landed her on a shoal at the mouth of the harbour. Panic Stations of some magnitude immediately occurred in the offices of the harbour authorities, and RFA CAIRNDALE, the exceedingly mobile base oiler being under boiler clean, her Second Engineer, Mr. D.L. S. Hood, led some of his staff on board "TRIGONIA", got her going, defuelled "AQUITANIA" and returned the hulk to her buoy. The Cunarder floated, refuelled and departed in a more exemplary manner. "TRIGONIA" whatever her current name, and whether re-engined or not, was an odd, long lean hungry looking ship, with a vertical exhaust pipe aft for a funnel, and was reputed to have broken the heart of every Chief Engineer who was unlucky enough to run her!

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From the beginning of November to the end of December there are several dates worthy of note from both World Wars and a few are listed below :-

November 1st.	1914	-	Battle of Coronel (west coast of South America)
5th.	1940	-	A.M.C. JERVIS BAY saved her convoy by her own destruction by the ADMIRAL SCHEER
9th.	1914	-	EMDEN sunk by HMAS SYDNEY
9th.	1941	-	HMS AURORA and HMS PENELOPE sank an entire Italian convoy and its escort unaided
11th.	1940	-	The Fleet Air Arm struck the Italian Fleet anchored at Taranto
23rd.	1939	-	RAWALPINDI and SCHARNHORST battled out their uneven duel
December 7th,	1941	-	Japanese attack on Pearl Harbour
8th.	1914	-	Battle of Falklands ("Sturdee's Revenge")
10th.	1941	-	HMS PRINCE OF WALES and HMS REPULSE sunk by Japanese
13th.	1939	-	Battle of River Plate
17th.	1939	-	GRAF SPEE scuttled at Montevideo
26th.	1943	-	SCHARNHORST sunk off North Cape

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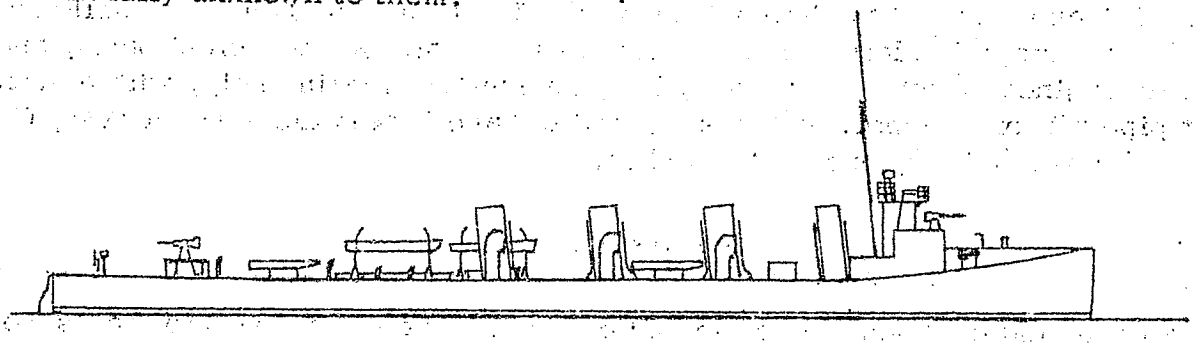
EARLY THORNYCROFT SHIPS

THE TRIBAL CLASS - 1905 - 1908 PROGRAMMES

by W. J. LAWES

The Admiralty's next design after the River Class destroyers (see Black Jack Winter '76) was for 'Ocean-going' destroyers. Their directive being that such vessels should be able to steam at 33 knots for eight hours in a moderate sea, burn fuel oil and carry the same armament as the River class.

Confidential letters were sent to seven firms stipulating these conditions on 19th November 1904, inviting designs and tenders by 1st December. This gave each company only 11 days to consider and design ships over 7 knots faster than the River class, and using a fuel that was virtually unknown to them.

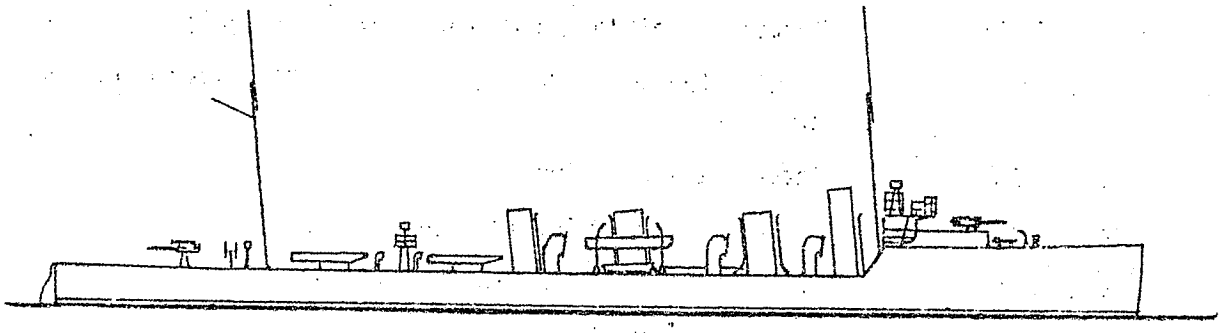


50 ft

HMS TARTAR as in 1908

All of the initial designs were rejected. Many amendments were suggested by both sides, before the Admiralty accepted the designs from Armstrongs, Cammell Laird, Hawthorn Leslie, J. S. White and Thornycroft in August 1905.

Thornycroft's ship was the TARTAR. She was the first destroyer to be built at their yard at Woolston, and was also their first four-funnelled ship. HMS TARTAR was launched 25th June 1907 at a cost of £140,024. On trials she achieved 35.36 knots with 22500 h.p. This performance gained Thornycroft a premium of £12,000 offered by the Admiralty for speeds in excess of the designed 33 knots.



HMS NUBIAN as in 1914

50 ft

In July 1906 tenders went out for additional ships of the type. For the first time the Admiralty supplied a sketch design, embodying the best features of the boats under construction. This sketch was for the guidance of the firms submitting their own designs. Only two contracts were accepted, one each from Thornycroft and J.S. White. The ship built at Woolston was HMS AMAZON, and she differed in several ways to the TARTAR. Her overall dimensions were larger, with a resultant increase in displacement; she had a raised fo'c's'le where the TARTAR had a turtle-back fo'c's'le, and she was the first destroyer to carry out trials with a new 4 in. gun. The gun armament was changed with the second group of Tribal class destroyers as the 12 pdr. was considered to be too small a gun on ships of their size.

HMS AMAZON cost £134,687, was launched on 29th July 1908, she achieved 33.2 knots on trials.

Under the 1907-08 programme, Thornycroft built a third vessel, the NUBIAN. She was virtually a copy of the AMAZON. HMS NUBIAN cost £141,212 and was launched on 21st April 1909. Her trial speed was 34.7 knots.

As a class, the Tribals were as varied as the races they were named after. Individual builders still drew up their own design within the Admiralty's specification. Some of the ships were built with 3 funnels, some had 4, while the VIKING (Palmer's) had the distinction of being the only R.N. ship with 6 funnels.

Modifications to all ships before 1914 caused their displacement to rise and speed to decrease. By 1912 for example, NUBIAN's displacement had risen by 100 ton, reducing her top speed by over 1 knot. AMAZON and NUBIAN, in common with other 4-funnelled ships of the class, had their foremost funnel heightened to keep fumes clear of the bridge. The Tribals became 'F' class in October 1913.

In general the Tribals were good sea-boats, but performances varied considerably from ship to ship, TARTAR, for example, was very 'wet' forward due to her turtle-back fo'c's'le. Although originally designed to operate as Ocean-going destroyers, their heavy fuel consumption gave them a limited radius of action. Because of this factor, in July 1914 the Tribal class formed the 6th Flotilla at Dover, where they stayed for the duration of the war. The main duty of the ships based at Dover was to ensure the safe passage of troops across the Channel, a duty that involved constant patrols against enemy submarines and destroyers. The Tribals served up to 800 nights at sea between 1914 and 1918.

During a patrol on the night of 27th October 1916, the NUBIAN was engaged in a rather confused action with a raiding force of German Destroyers. As a result of this action her forecastle was blown off by a torpedo, but fortunately the after part of the ship stayed afloat. A few weeks later HMS ZULU (Hawthorn Leslie) lost her stern when she was mined. The fore part of ZULU and the after part of NUBIAN were towed to Chatham, where after 6 months work, the two 'halves' were joined together. The resulting ship was commissioned as HMS ZUBIAN.

Details of the Thornycroft ships of the Tribal class are summarised below:-

	Yard No.	Length (B.P.)	Beam	Displacement
TARTAR	425	270 ft.	26 ft.	850 tons
AMAZON	471	280 ft. 1 in.	26ft. 7½ in.	970 tons
NUBIAN	501	280 ft. 2 in.	26ft. 8½ in.	990 tons

Engines: Parson's turbines, 3 shafts, 6 Thornycroft Boilers.

Armament: TARTAR: 3 - 12 pdr. guns; one on either side of the forecastle, one aft on the upper deck. Later this was increased to 5 - 12 pdr. guns. Two 18 in. Torpedo Tubes mounted on the centre line.

AMAZON and NUBIAN 2 - 4 in. guns; 2 - 18 in. Torpedo Tubes.

Battle Honours gained by these ships were :-

TARTAR: Dover Patrol 1914-18

AMAZON: Dover Patrol 1914-18

NUBIAN: Dover Patrol 1914-16

In addition HMS ZUBIAN was awarded Battle Honours for:-

Dover Patrol 1917-18

Zeebrugge 1918

Ostend 1918

She was also credited with the sinking of the German submarine UC 50 in 1918.

HMS TARTAR was sold for scrap in 1921, the AMAZON having been sold to the same fate two years earlier.

The names of many of these ships were revived by two later Tribal classes, the Destroyers of the 1935 and 1936 programmes, and the General Purpose Frigates of 1955 to '58 programmes.

********** Drawings by W.J. LAWES

BRASS DOOR - NEVER HEARD OF IT !

STORY OF A LOCAL GROWN HYDROFOIL BOAT

By

Richard de Kerbrech

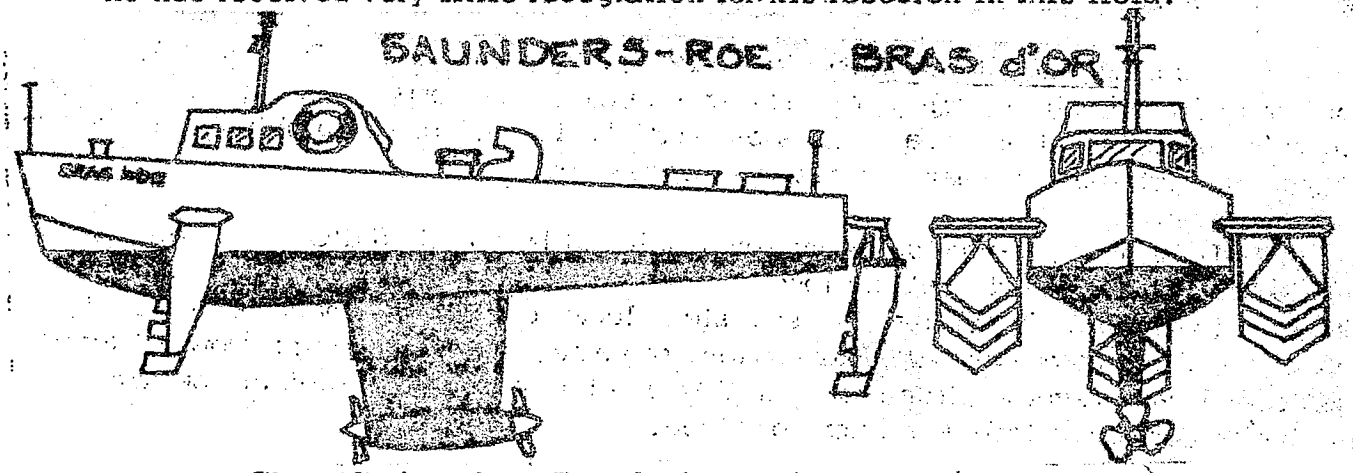
(Sketches by the Author)

Perhaps 1977 will go down as the year of the successful hydrofoil. Forefront in this field of development at present is Boeing with the latest type of military and commercial hydrofoils, namely the P.H.M. (Patrol Hydrofoil Missile) for NATO and the JETFOIL. The latter craft was operated during the summer between London and Zeebrugge by P & O with the FLYING PRINCESS. Prior to this, the JETFOIL had been exhibited to privileged dignitaries at HMS VERNON, Portsmouth, during a visit there in early May.

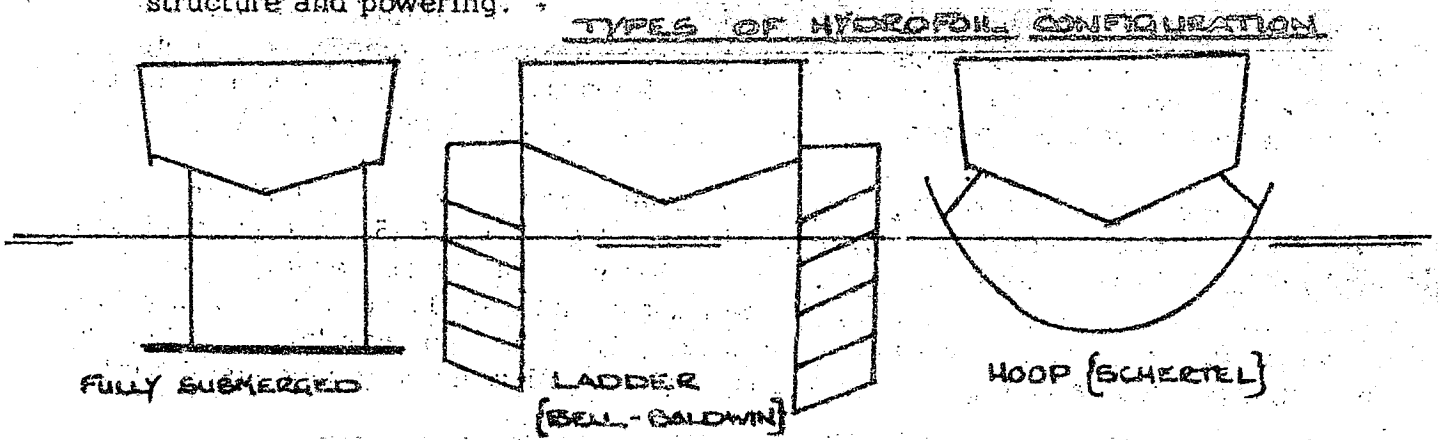
In recent years the World's navies have become more aware of the tactical and economic advantage that may be derived from the replacement of conventional warships with comparatively smaller and very much faster hydrofoils. These could carry less crew and be able to complete many tasks in about one-third the time, at

the same time being more versatile and less vulnerable to attack.

All good news in 1977-78 but its all been considered before, for these type of craft are no strangers in the local waters of the Solent. In the 1930's, John Samuel White of Cowes, in association with Captain Hampden and Mr. H.C. Carey, filed about five patents for craft fitted with ladder foil units. A craft was built and run in the Solent and was said to have become foilborne but relevant information concerning this craft is not known to exist. (Author's search - Ed.). Prior to the war, the pioneer work by Mr. Christopher Hook at Cowes, led to the eventual patent specification based on his HYDROFIN craft in 1942. In this type of vessel Mr. Hook developed a system which employed mechanical sensing devices to feather the foils for lift, as he was not too keen on the use of electrical sensing methods which he called "hydronics". After getting no joy in the U.K. he took his ideas and "know-how" to the United States. It is fair to say that he has received very little recognition for his research in this field.



Classified work in Canada during the last war concerning hydrofoil craft based on the Bell-Baldwin (ladder foil) system of lift, led to the Canadian Defence Research Board seeking British collaboration in their hydrofoil research programme in 1951. The eventual successful design of hydrofoil that evolved was found to be a happy medium between aeronautical and naval architectural principles and experience, concerning hydrodynamics, structure and powering.



The Saunders-Row group had for many years been concerned with the design and construction of fast marine craft and flying boats. In view of this past experience the company was requested to carry out a survey of the practical possibilities of hydrofoil craft and as a result several design studies were produced under contract.

The name of the project BRAS d'OR was chosen by the Canadian Defence Research Board after the lake on Cape Breton Island, Nova Scotia on which Alexander Graham Bell and F. W. Baldwin carried out pioneer work on hydrofoils between 1907-1918. Special emphasis during these trials was on the ladder foil lift or the Bell-Baldwin system and this same system of lift would be employed in the new BRAS d'OR.

Full model tests to predict the craft's resistance, spray behaviour and stability were carried out during some 20,000 test runs in the 3 tanks at Saunders-Roe (Osborne Experimental Laboratories); the programme of experiments was contracted for by the Admiralty. The structural integrity of the designed craft was assessed at Osborne also. Concurrent with these events, the Canadians were undertaking research on the craft as well.

Following tank tests a larger $\frac{1}{4}$ scale model of the proposed craft was built for further investigation; this model was radio-controlled and achieved speeds in excess of 20 knots during trials in the Medina mouth and Osborne Bay. The $\frac{1}{4}$ scale model was used to obtain additional evidence on "scale effect" and to examine the behaviour of the craft in genuine sea conditions.

Saunders-Roe of Beaumaris in Anglesey, built the BRAS d'OR, the hull being constructed of aluminium alloy, and she was launched in April 1957. She underwent functioning trials in the Menai Straits off North Wales before being shipped to Canada where more extensive research trials were carried out.

The driving transmission system employed by the BRAS d'OR comprised of a horizontal nacelle mounted at the lower end of a single large strut positioned amid-ships. Right angled bevel gear transmission, located within the nacelle and strut, drove propellers at the nacelle extremities, the after propeller being a Dowty "Rotol" controllable and reverse pitch type. In this configuration the method of powering and behaviour of the foils were not combined.

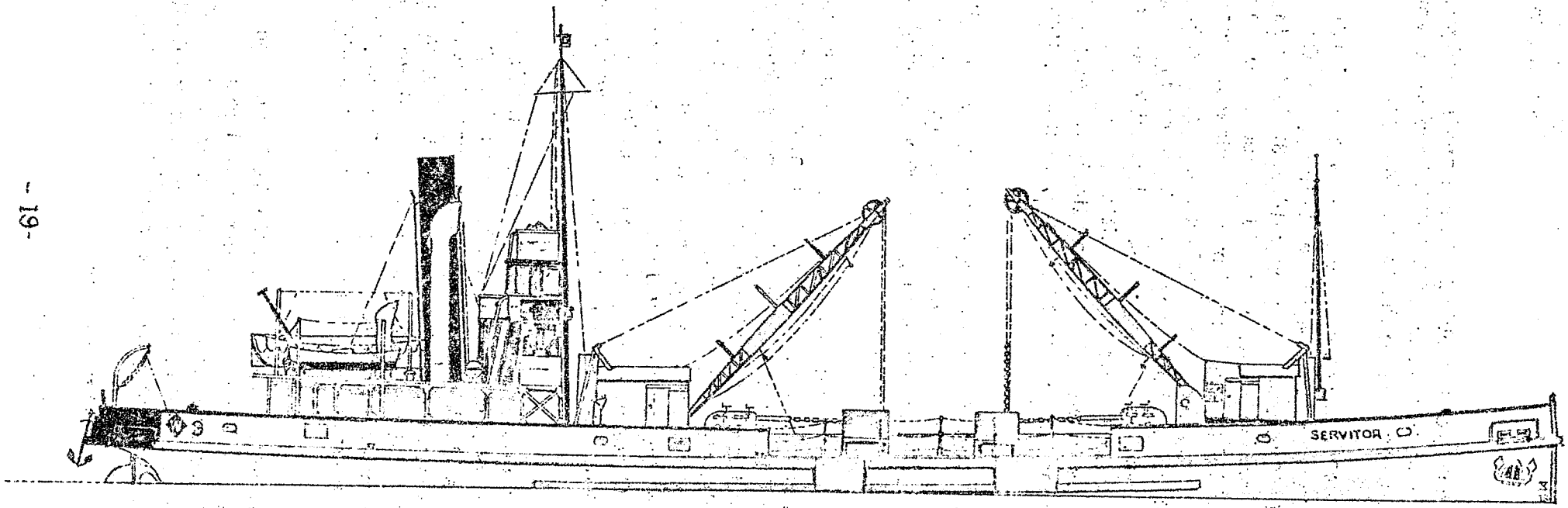
A brief description of the Bell-Baldwin system of foils used will not be out of place here. The BRAS d'OR had three foil units, the rear one being steerable with three rungs in its ladder. Two front ladders had four rungs each. All the rungs were vee-shaped in front elevation and had considerable dihedral.

Subsequent trials carried out on the Saunders-Roe BRAS d'OR together with experience gained from the U.S. hydrofoil tests led the Canadian Naval Research Establishment (N.R.E.) to prepare proposals for a 200 ton all-weather oceangoing A.S.W. hydrofoil. Early in 1961 the Canadian Department of Defence contracted the De Havilland Aircraft of Canada Ltd. to design the F.H.E. (Fast Hydrofoil Escort) 400.

During mid-1968 the F.H.E. 400 was launched by Marine Industries Ltd., Sorel, Quebec with a displacement of 180 tons and a length of 151 feet and was named BRAS d'OR. Following this event, the earlier British built namesake was renamed BADDECK. The BADDECK was in existence right up until 1971, but its present whereabouts or ultimate fate is not known! However, its successor was laid up ashore at Halifax, Nova Scotia at the end of 1971 for 5 years following very successful trials.

Statistics:			
	Displacement, tons	-	$17\frac{1}{2}$
	Length o.a., ft.	-	59
	Main Engines	-	2 x Rolls Royce "Griffon" engines modified to suit marine conditions
	Speed	-	40+ knots

Footnote: Christopher Hook at present lives in Bosham, West Sussex and is one of the U.K.'s leading Consultants concerning the design and application of hydrofoils.



S.S. GRAB HOPPER DREDGER
'SERVITOR'

SCALE 0 10 20 30 Feet

DRAWN BY D.F. HUTCHINGS 10/77

SERVITOR - DIGGING AWAY FOR THE NAVY

By D. F. HUTCHINGS
(Drawing by the Author)

1977 has seen the passing of the oldest of the Navy's dredgers. After 42 years of service the steam grab hopper dredger SERVITOR became "beyond economical repair" and has reportedly wound her way to the breaker's yard.

At a reported cost of £37,000 she was built in 1935 by Fleming & Ferguson Limited, dredger builders, at their Phoenix Works at Paisley, her Yard Number being 525. She was 168 feet b.p. (174 feet 7 inches overall) x 32 feet x 13 feet moulded depth, draught was 11.83 feet at hopper sides and 11.66 feet before and aft of hopper. She was built to class Lloyds 100A1✠ as a grab hopper dredger for channel purposes. Six main bulkheads divided her into fore peak/ballast tank, crew space, hopper area and boiler feed tanks, oil fuel tanks, boiler room, engine room and finally aft peak. Two stockless anchors of 15½ cwt. each and four stockless side dredging anchors of 7 cwt. each made up part of her equipment. Elm belting protected her sides with additional elm pads on her sides in way of the areas liable to damage from the two grab buckets. Her crew was made up of Master, Mate, Engineer, two crane drivers, 4 seamen and 3 stokers.

Throughout her career SERVITOR served with the same Authority, albeit this authority changing in title no less than six times - firstly SEC (Superintendant, Civil Engineering), then Manager, Civil Engineering, Navy Works, MPBW, D of E and latterly D of E/PSA (Property Service Agency).

Her employment took her to both sides of these Islands serving variously from Liverpool round to the Humber. Once she went as far as Northumberland where she dug pipe trenches for the Windscale reactor site. Non-dredging activities included pile driving and erection of navigational beacons. Before World War II, in 1938, she was employed in cleaning out the coaling pens at Portland and for some time brought up nothing but coal. During the War she was scheduled to go to Dunkirk but when she was ready to sail the trip was cancelled as she was considered too valuable an asset to risk. During the Coronation and Weymouth Reviews she acted as "refuse disposal" (gash) ship, collecting rubbish from the assembled warships and dumping it out at sea.

Since the War she has recovered many bombs and shells from the sea, harbour and Dockyard basins. On one occasion she even brought a German plane to the surface! Over the past ten years SERVITOR has paid an annual visit to Plymouth to maintain the jetty berths there. When the decision was made to dispose of her, her triple expansion steam engines (oil-fuelled, two return tube boilers) were offered to Greenwich for preservation but the offer was declined and the engines have gone with the ship. She had been a well maintained vessel with a pride being taken in her brasswork.

The work previously ably performed by SERVITOR has "gone out" to contract but before she was laid up in 1976 she made a sentimental journey, on March 29th of that year, from Portsmouth Harbour to Outer Spit Buoy with a party of distinguished guests on board and on her return to the Harbour, berthed at Royal Clarence Yard, Gosport, later transferring to the Trot where she joined the sad line of ships in reserve or awaiting disposal.

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