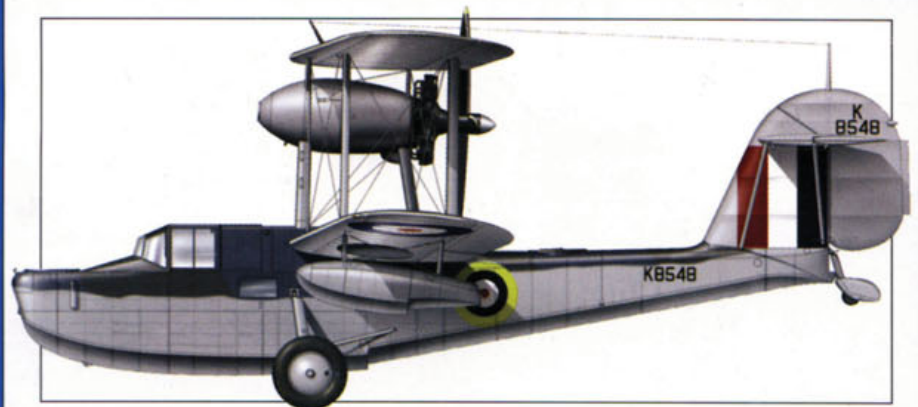




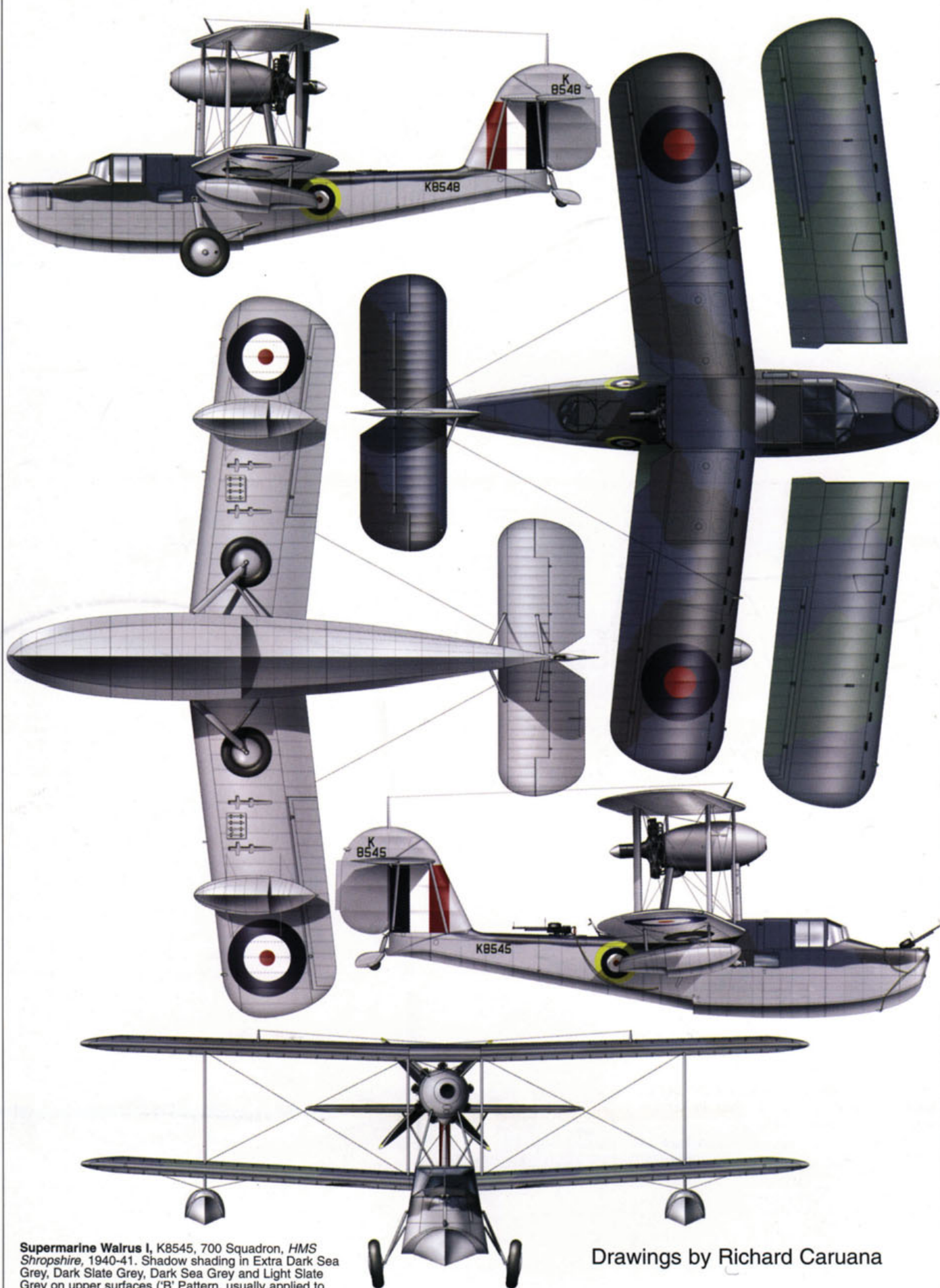
WARPAINT SERIES No. 39

Supermarine **WALRUS**

BY ALAN W. HALL AND RAY STURTIVANT

The Fleet Air Museum's Supermarine Walrus, now serialised L2301, had an interesting career. It was bought by the Irish Air Corps in 1939 and serialised No.18. Subsequently it became EI-ACC with Aer Lingus and was found derelict at Thame airfield, Buckinghamshire, before being rebuilt at Arbroath for the museum.





Supermarine Walrus I, K8545, 700 Squadron, *HMS Shropshire*, 1940-41. Shadow shading in Extra Dark Sea Grey, Dark Slate Grey, Dark Sea Grey and Light Slate Grey on upper surfaces ('B' Pattern, usually applied to even-serialled aircraft); Sky Grey undersides. Large fin flash, Type 'A1' roundels on fuselage, 'B' above top wings and 'A' under lower wings

Drawings by Richard Caruana



Rough seas. HMS Southampton's Walrus L2317 being picked up in the North Atlantic in July 1939. The TAG awaits the hook whilst the Observer hangs on to the starboard strut to balance the aircraft against the waves. (via Ray Sturtivant)

Supermarine

WALRUS

By Alan W. Hall
and Ray Sturtivant

WHEN one considers the beauty of the Supermarine Spitfire design against the unaesthetic, yet practical Walrus, and then considers that both were designed by the same man, namely R.J. Mitchell, it is easy to realise what a versatile and able practitioner he really was. Both aircraft played a significant part in World War 2, yet the Spitfire gained the lime-light whilst the Walrus did a job that was mundane and often boring, although in its earlier days it did take part in a number of brief and exciting actions when in service with the Royal Navy.

The Walrus's ancestry stretched back to 1915 when the Admiralty set out a requirement for a small single-engined reconnaissance flying boat which eventually took the form of the AD (Admiralty Department) two-seat coastal patrol boat built by Pemberton-Billing Ltd of Woolston, Southampton and the forerunners of the Supermarine company.

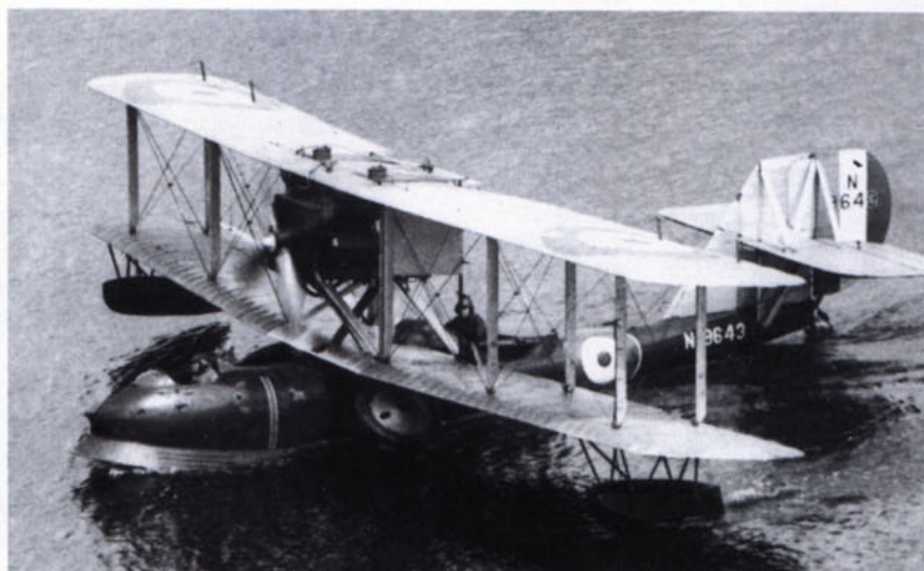
Walrus predecessor. The Seagull III was not a success with the Fleet Air Arm but nine were ordered for the Royal Australian Navy's hydrographic survey work. The Seagull formed the basis for all subsequent work on the Walrus. (via Ray Sturtivant)

The original design, although successful in its own way, needed updating in the light of experience and improved engine technology which brought forth the Seagull series of flying boats featuring a tractor engine fitted between the mainplanes, the lower one of which was fixed to the dorsal line of the hull.

The immediate predecessor in the series leading up to the Walrus was the Seagull III

which appeared in 1921 and was initially known as the Seal. It was used in squadron service but was not popular because of poor hydrodynamic performance, combined with lack of power, range and speed. The Royal Australian Navy (RAN) also used the Seagull III but in a slightly different role and the eight examples received did hydrographic survey work along the Great Barrier Reef until 1933.

When Pemberton-Billing joined the Vickers Group and became the Supermarine





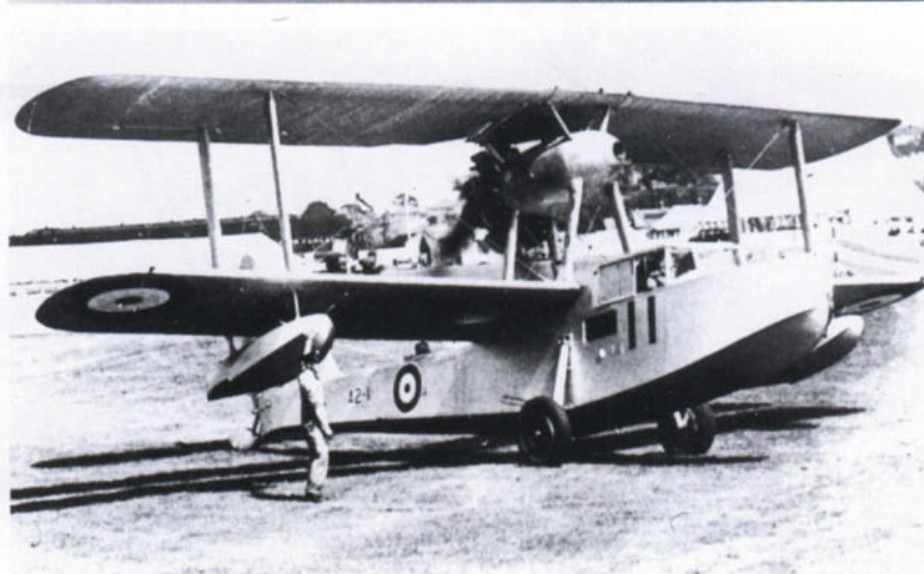
Above and right: Two pictures of the prototype Walrus, coded N2, in flight. The aircraft was originally coded N1 but it was discovered that this clashed with another Supermarine-built aircraft and had to be changed ready for the display at RAF Hendon given by the Society of British Aircraft Constructors on 26 June 1933. (Charles E. Brown)

Division within that company, Mitchell, who was their chief designer at that time, was able to draw on the wider resources of the larger company for his work which included a request from the RAN for a successor to the Seagull III.

Vickers had also designed small single-engined flying boats and one - the Viking - employed an entirely different approach to hull design that had been the cause of the Seagull III's poor performance on water.

These improvements were incorporated in what became the Supermarine Type 236 which proved to be a very advanced aircraft by the standards of the day and when it finally entered service with the Royal Navy became the first in British squadron service featuring a fully retractable main undercarriage and completely enclosed crew compartment.

The design had an all-metal hull construction and was offered with alternative power plants of either the radial Bristol Pegasus IIM2 or the in-line Rolls Royce Kestrel, although no production aircraft were fitted with the latter. A four-bladed wooden propeller, fitted in the pusher configuration, kept the aerodynamic qualities of the engine clear of much of the water and spray that was a common feature of smaller flying boats in the

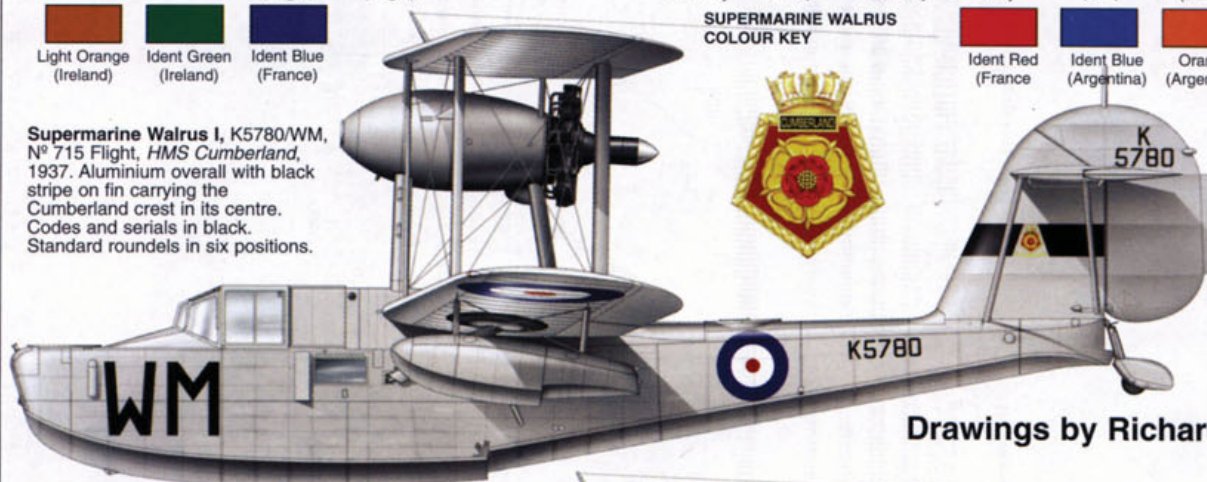


The Royal Australian Navy ordered the Seagull V, as it was known, before Royal Navy interest was forthcoming. Here the prototype A2-1 is seen, coded '11', at a pre-war display in an overall silver colour scheme. (via C.E.Motley)

Supermarine Walrus camouflage and markings

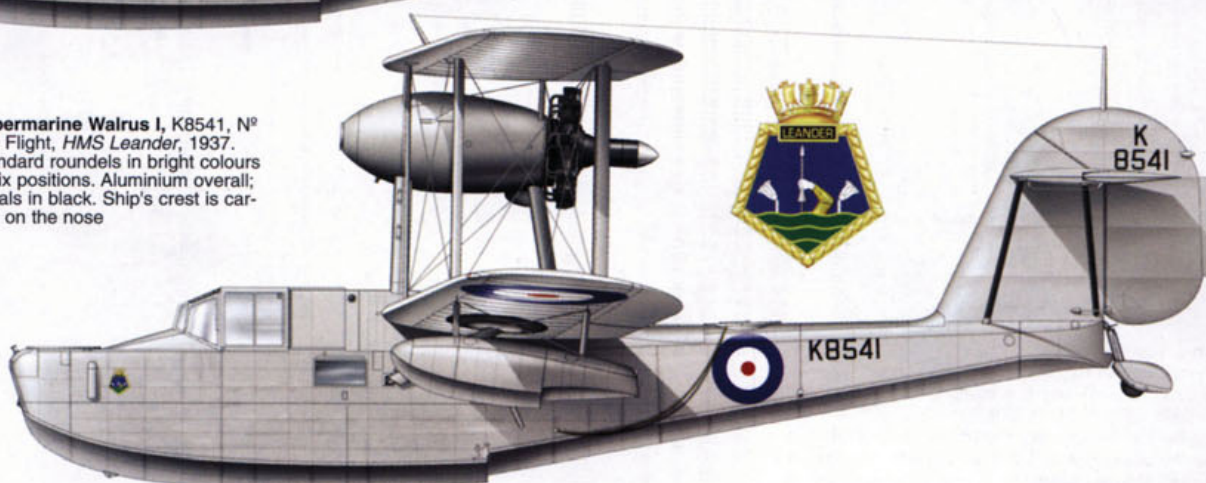
Aluminium	Night/Black	Ident Blue (Bright)	Ident Red (Bright)	Sky Grey	Sky	Extra Dark Sea Grey	Dark Slate Grey	Dark Sea Grey	Light Slate Grey	Ident Blue (Dull)	Ident Red (Dull)	Ident Yellow
			SUPERMARINE WALRUS COLOUR KEY 									
Light Orange (Ireland)	Ident Green (Ireland)	Ident Blue (France)										
												
Ident Red (France)	Ident Blue (Argentina)	Orange (Argentina)										
												
Ident Yellow	Yellow-Orange	Yellow-Orange										

Supermarine Walrus I, K5780/WM, N° 715 Flight, *HMS Cumberland*, 1937. Aluminium overall with black stripe on fin carrying the Cumberland crest in its centre. Codes and serials in black. Standard roundels in six positions.

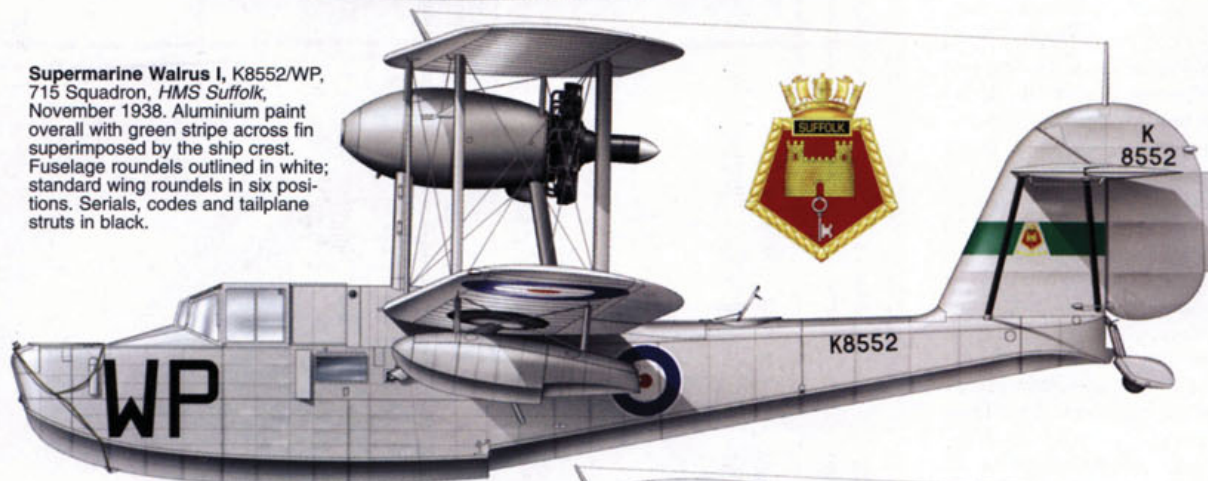


Drawings by Richard Caruana

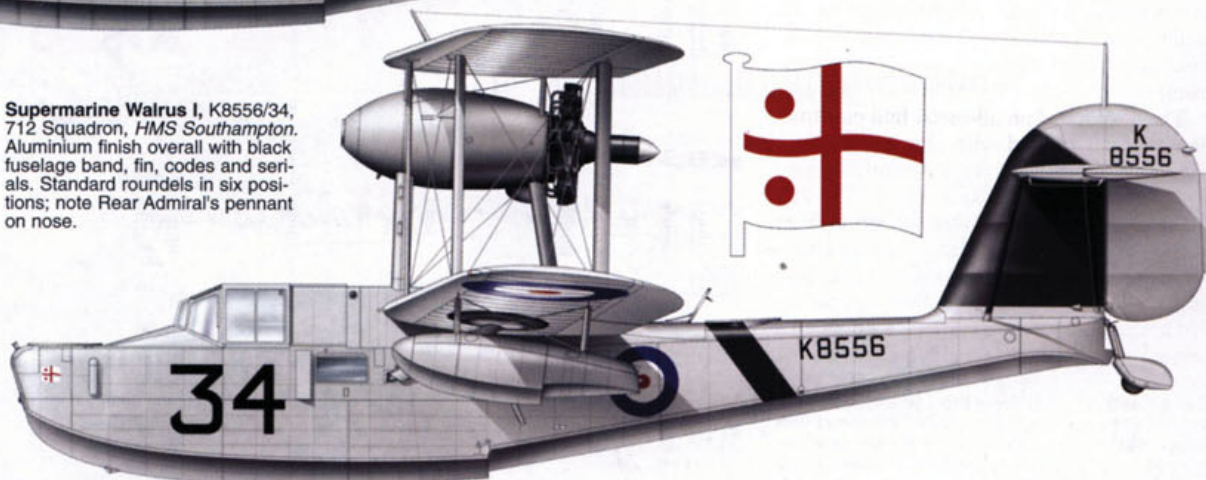
Supermarine Walrus I, K8541, N° 720 Flight, *HMS Leander*, 1937. Standard roundels in bright colours in six positions. Aluminium overall; serials in black. Ship's crest is carried on the nose



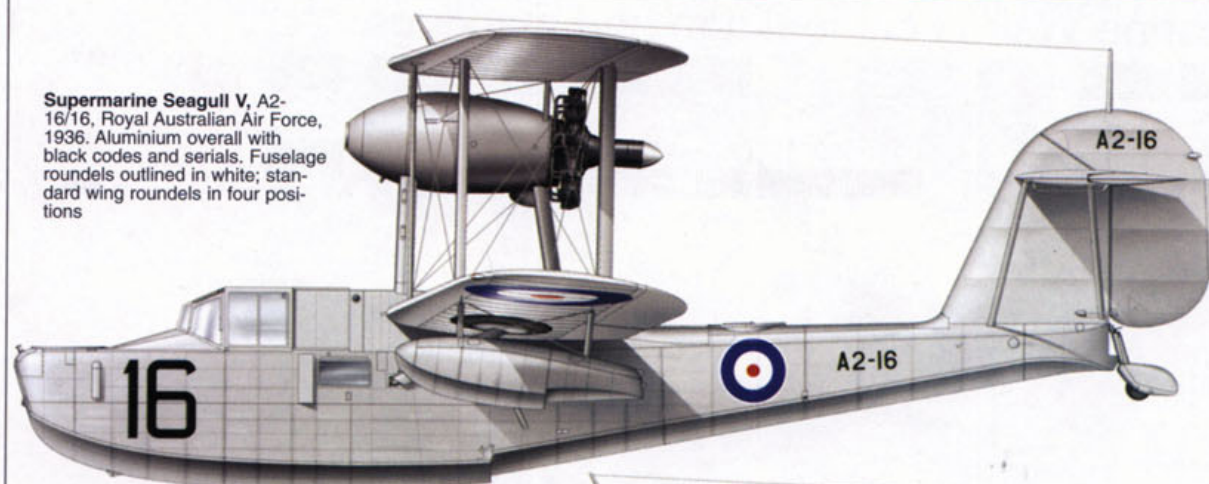
Supermarine Walrus I, K8552/WP, 715 Squadron, *HMS Suffolk*, November 1938. Aluminium paint overall with green stripe across fin superimposed by the ship crest. Fuselage roundels outlined in white; standard wing roundels in six positions. Serials, codes and tailplane struts in black.



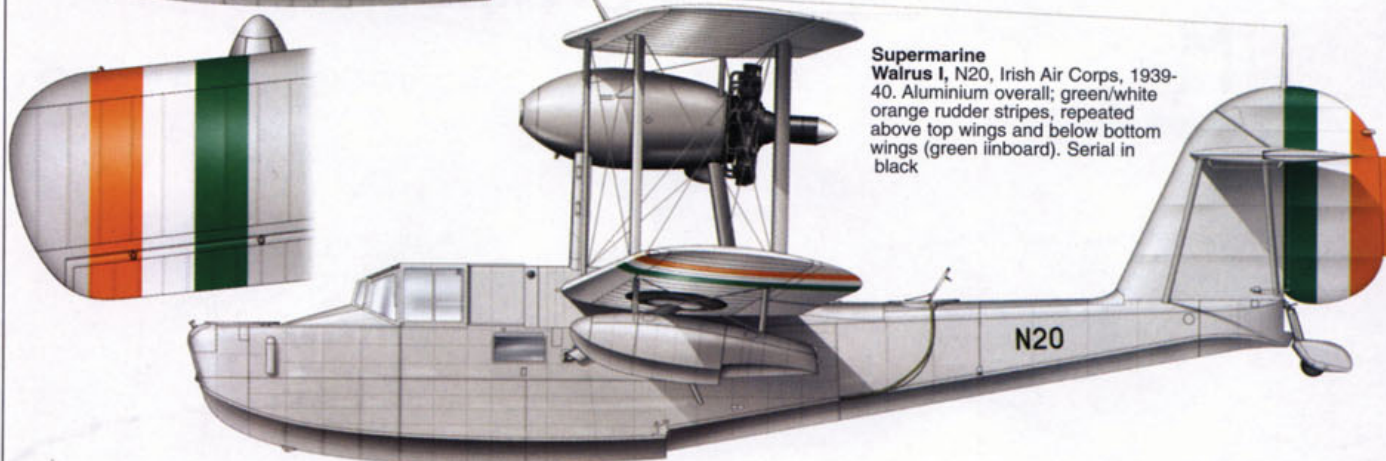
Supermarine Walrus I, K8556/34, 712 Squadron, *HMS Southampton*. Aluminium finish overall with black fuselage band, fin, codes and serials. Standard roundels in six positions; note Rear Admiral's pennant on nose.



Supermarine Seagull V, A2-16/16, Royal Australian Air Force, 1936. Aluminium overall with black codes and serials. Fuselage roundels outlined in white; standard wing roundels in four positions



Supermarine Walrus I, N20, Irish Air Corps, 1939-40. Aluminium overall; green/white/orange rudder stripes, repeated above top wings and below bottom wings (green inboard). Serial in black



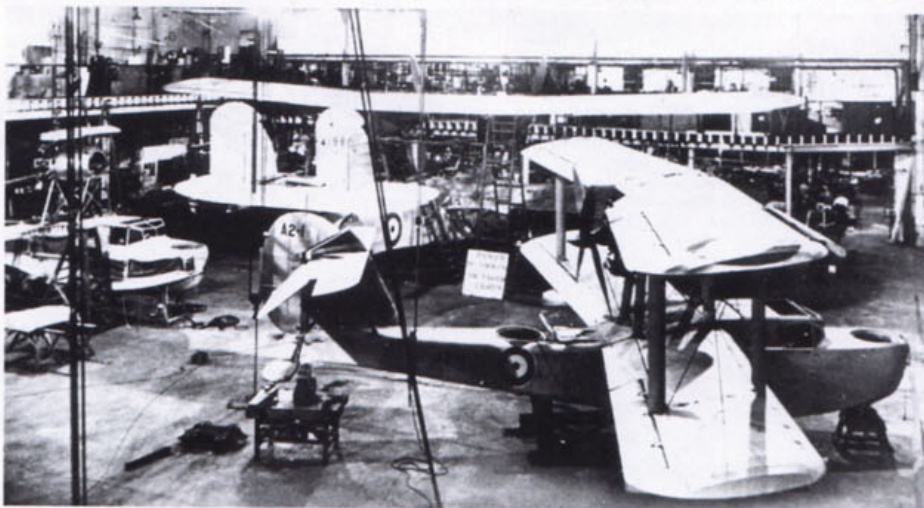
Walrus L2309 was an early production aircraft and belonged to 765 Squadron when based at Lee-on-Solent in 1939. In 1940 it moved to Sandbanks, Poole Harbour to become the Basic Seaplane Training School for both the RN and RAF. (via Ray Sturtivant)

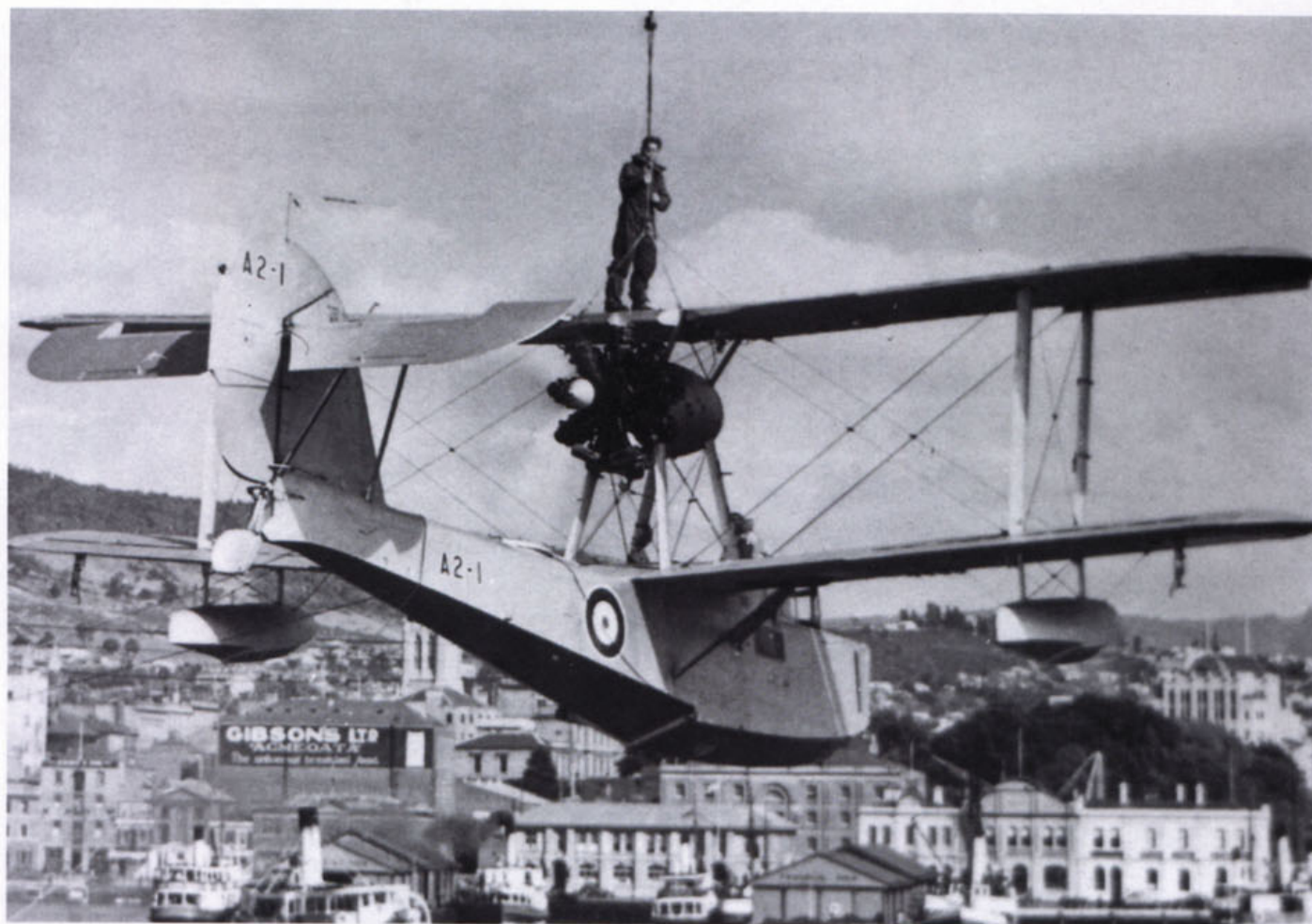
landing or take-off position. Folding wings were also provided but because of the single-bay wing construction auxiliary struts had to be fitted before the wings could be placed in this position. Provision was made for 122 gallons of fuel in the inboard sections of the upper wing.

A crew of three - pilot, navigator and wireless operator/air gunner - was provided for and open gun positions for .303 Lewis machine guns were provided in the nose, which was also a useful picking up point for moorings, and in the mid-ships position. Underwing attachments for four 100-lb anti-submarine bombs were fitted and bomb aiming was done by the navigator using a portable bomb sight which was fitted on the nose using the forward gun position and leaning over the fuselage to look downward. These were rarely used and whenever the Walrus was in use for its offensive role it was common for the pilot to release the bombs by luck and experience.

As most Walrus amphibians were used on warship Catapult Flights a rather complicated and exposed system was used to attach the slings which were then coupled up to the ship's crane and the aircraft hauled aboard. One member of the crew climbed out of the

Production of the Walrus began at the Supermarine works at Woolston but was soon moved to a new factory on the River Itchen not far away in order to accommodate the urgent need for Spitfire production.





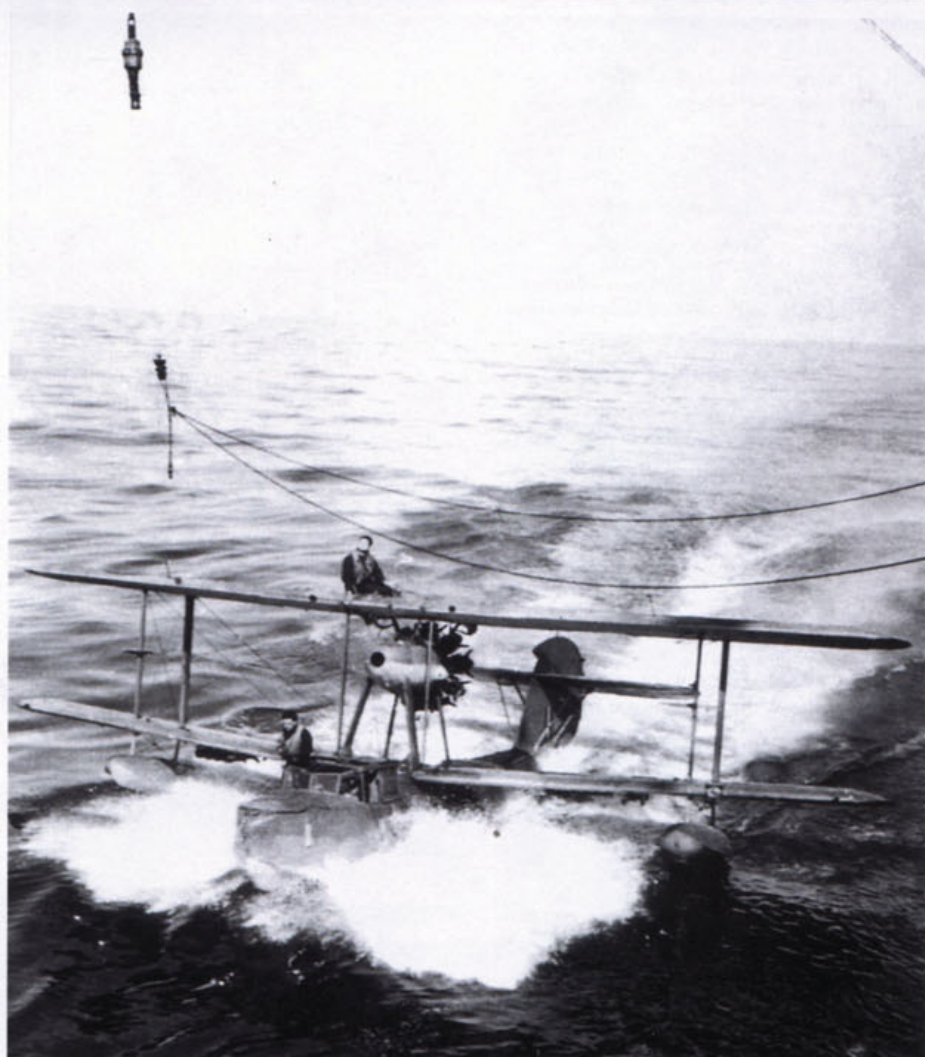
The first Seagull V serialised A2-1 was assigned to *HMAS Australia* a cruiser which was later attached to the Mediterranean fleet after the ship had its catapult fitted at Portsmouth dockyard in 1934. A2-1 was damaged beyond repair when a sling extension on the ship's crane parted whilst in Alexandria harbour and the aircraft fell 40 ft onto the starboard 4-inch gun mounting.

fuselage after a water landing and mounted the interplane strut on the front of the engine and, in spite of the spray, manually attached the hook. Experience with this manoeuvre led to the parent ship executing a sharp turn to port or starboard just before the landing and in the calmer water thus created the Walrus, with its very short water landing, put down on the sea and then use the shelter provided by the ship's bulk to get alongside out of the prevailing wind. Even so, the operation was at times, somewhat hazardous. Photographs of a Walrus taxiing in a choppy sea also show the other crew member not engaged in the actual piloting of the aircraft, balanced precariously on one wing tip to use his weight to balance the aircraft against the thrust of the propeller and the seas causing the opposite wing tip float to dig into the waves and the aircraft to turn over.

ORDERS TAKE SHAPE

Work started on the construction of the Seagull V for the Australian order in 1930 but because of Supermarine's very full order book and the restricted space available for

In much calmer waters than the aircraft shown on page 1, this Walrus of the *HMS Norfolk* Flight is seen approaching the ship's starboard side with the crew man on the top wing about to connect the hook and cable ready for hauling on board. (via Ray Sturivant)





The second production Walrus K5775 was sent to the Marine Aircraft Experimental Establishment at Felixstowe for initial trials. No prototype Walruses were built as trials had already been held with the Seagull V.

work on the Seagull at Woolston to continue it received very low priority. In fact it was not until the strongest representations were made to the company by the RAAF representatives on the High Commission in London, on behalf of their Navy colleagues, that work was speeded up.

The prototype Seagull V eventually made its first flight on 21 June 1933 with chief test pilot J.F. 'Mutt' Summers at the controls.

Right: Walrus L2190:43 belonging to HMS Birmingham of the Fourth Cruiser Squadron 1938-40. (A. W. Hall) Below: Interim pre-war codes on Walrus K5780:WM of HMS Cumberland on the China Station in 1937-38.



Shown making the first landing for the type on *HMS Eagle* in the Mediterranean in 1937 is this Walrus serialled L2169. Interesting to note is the mixture of both RAF and RN uniforms of the handling party. (via R.L.Ward)

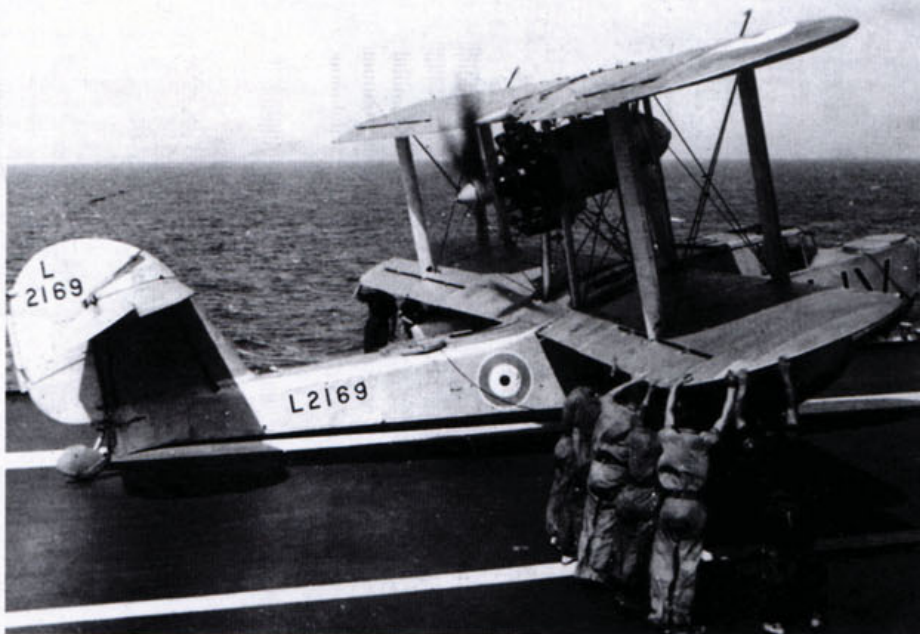
In spite of the lukewarm reception given to the Seagull V by the RAF a particularly interesting attitude was forthcoming because the flying boat had overcome one of the most problematic characteristics of the RAF's Seagull III in that it was such a poor performer on anything but still waters.

'Mutt' Summers established early on in the flight trials that the Seagull V had few vices. It proved to have a very short 300 yard take-off roll and a similar landing run. It meant that the Walrus in its eventual form was never fitted with an arrester hook - unique amongst Naval aircraft apart from helicopters and VSTOL aircraft.

With the prototype having completed its early flight trials, during which it showed quite remarkable aerobatic qualities, and unbeknown to Mitchell, 'Mutt' Summers decided to loop the aircraft during the annual Society of British Aircraft Companies display at RAF Hendon on 26 June 1933.

It is interesting to note that at this point the identification 'N1' was painted on the rear fuselage but it was discovered that this was also the number allocated to a Stranraer flying boat prototype so the Seagull V became 'N2'. Confusion has been caused by a few photographs of the Seagull V as 'N1' being taken before the mistake was discovered. In fact Seagulls N1 and N2 are the same aircraft. When the RAF eventually took a sudden, albeit rather belated interest in the Seagull V, they gave the same aircraft the RAF serial

In keeping with the Australians the Royal New Zealand Navy ordered three Seagull Vs before the war to equip their own cruisers. NZ151 was the first of these coded 'A'. Like their RN counterparts they were initially silver overall.



K4797. The change to RAF serialling came when the RAF took over the flight testing of the aircraft after manufacturers trials had been completed.

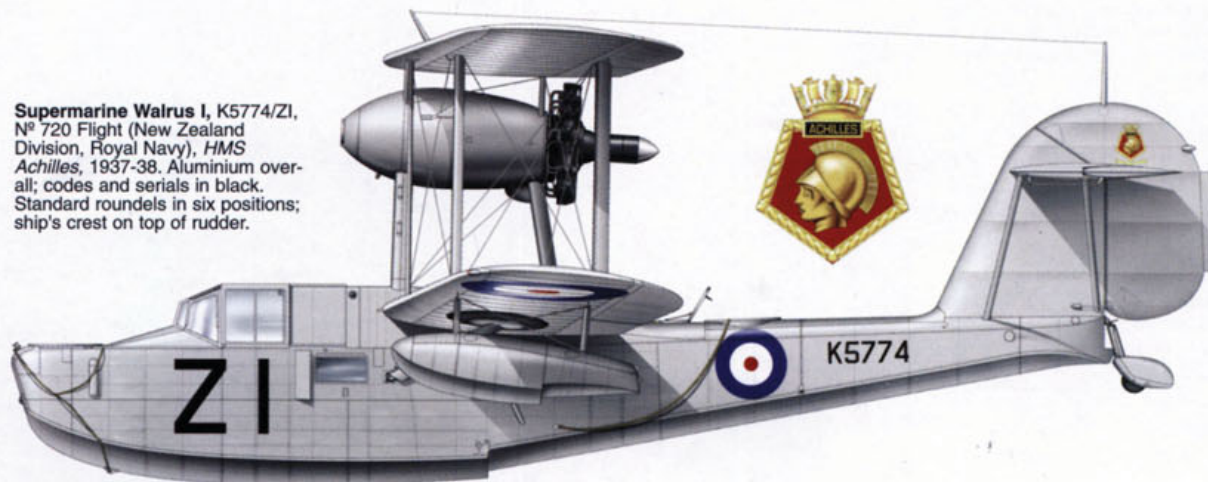
From Southampton the Seagull V was transferred to the Marine Aircraft Experimental Establishment (MAEE) at Felixstowe on 29 July 1933 where it began 17 months intensive trials both ashore and afloat with the manufacturers, RAAF service representatives and RAF pilots well versed in flying boat test work.

Amongst the requirements was the need for the Seagull to be fully capable of catapult operations from battleships and cruisers.

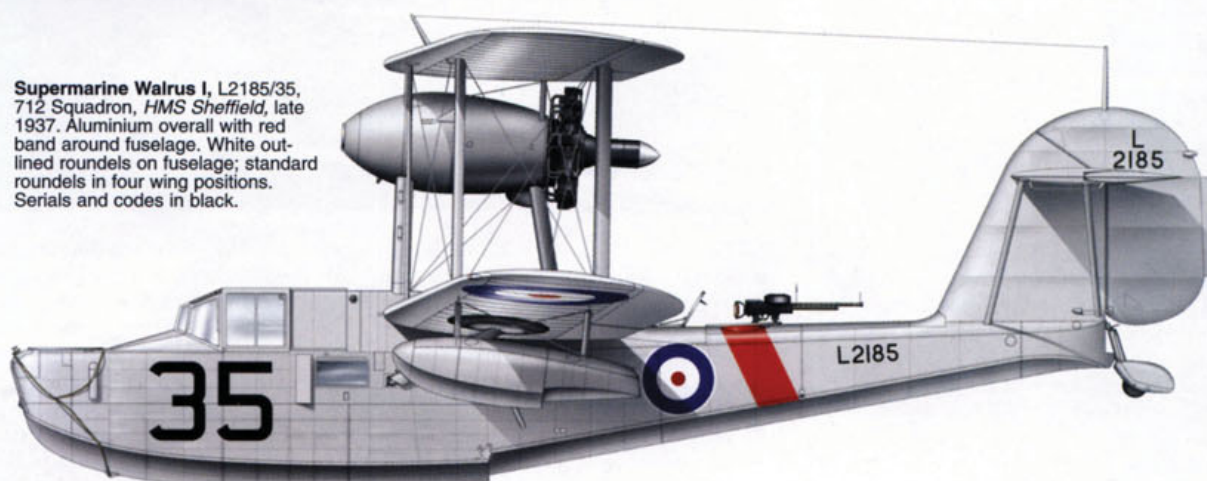
No.444 Flight was formed and initially went on board *HMS Repulse* and then in early 1934 transferred to *HMS Valiant* both Home Fleet battleships. Both launches and recoveries were successfully completed but not without a certain number of near misses when the aircraft was landed in 30 knot winds and six foot high seas. Much could be said for the soundness of the amphibian's hull design so much so that the only really significant changes that were carried out were some modifications to the wing tip floats and the fitting of spray deflector panels to the cabin windows. 'Mutt' Summers advised making the undercarriage legs less robust to ease carrier deck landings



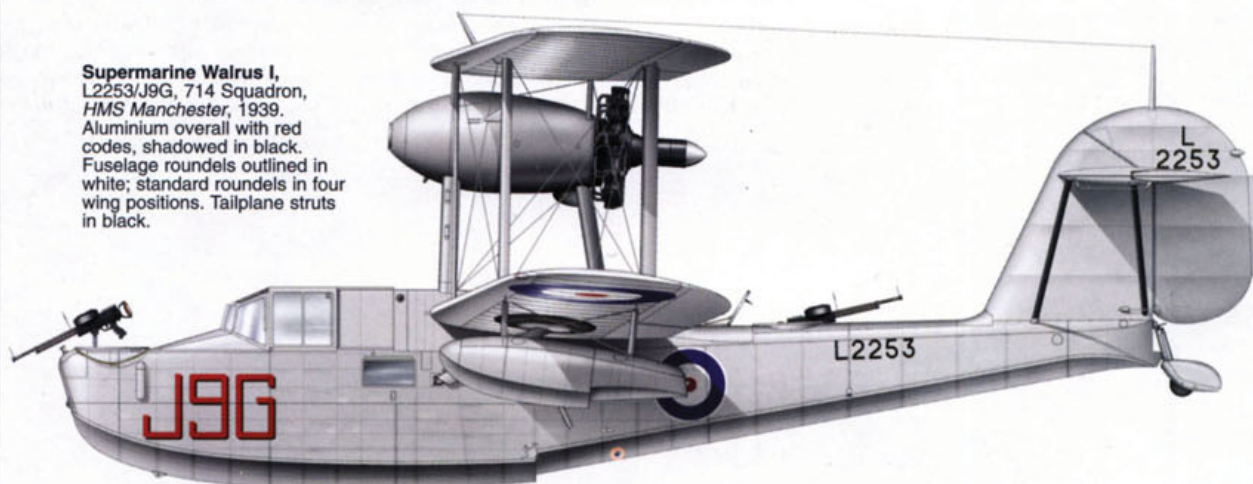
Supermarine Walrus I, K5774/ZI,
 N° 720 Flight (New Zealand
 Division, Royal Navy), *HMS*
Achilles, 1937-38. Aluminium over-
 all; codes and serials in black.
 Standard roundels in six positions;
 ship's crest on top of rudder.



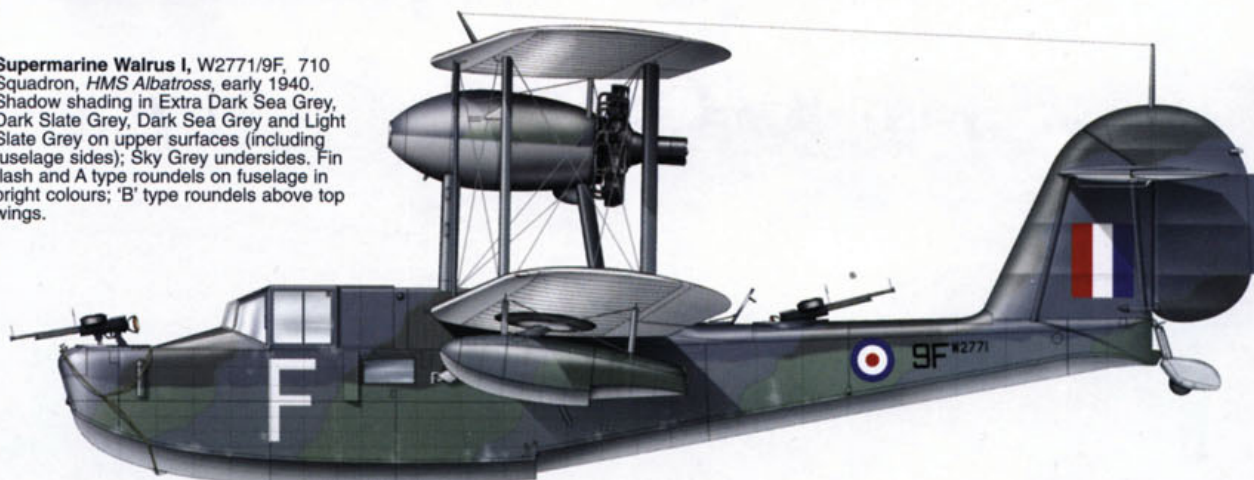
Supermarine Walrus I, L2185/35,
 712 Squadron, *HMS Sheffield*, late
 1937. Aluminium overall with red
 band around fuselage. White out-
 lined roundels on fuselage; standard
 roundels in four wing positions.
 Serials and codes in black.



Supermarine Walrus I,
 L2253/J9G, 714 Squadron,
HMS Manchester, 1939.
 Aluminium overall with red
 codes, shadowed in black.
 Fuselage roundels outlined in
 white; standard roundels in four
 wing positions. Tailplane struts
 in black.



Supermarine Walrus I, W2771/9F, 710
 Squadron, *HMS Albatross*, early 1940.
 Shadow shading in Extra Dark Sea Grey,
 Dark Slate Grey, Dark Sea Grey and Light
 Slate Grey on upper surfaces (including
 fuselage sides); Sky Grey undersides. Fin
 flash and A type roundels on fuselage in
 bright colours; 'B' type roundels above top
 wings.



and slight modifications to the tailwheel which also acted as a water rudder

IMPRESSIVE

With the trials complete the Air Ministry admitted that the results were impressive and that they had reversed their decision about the use of small amphibians on warships.

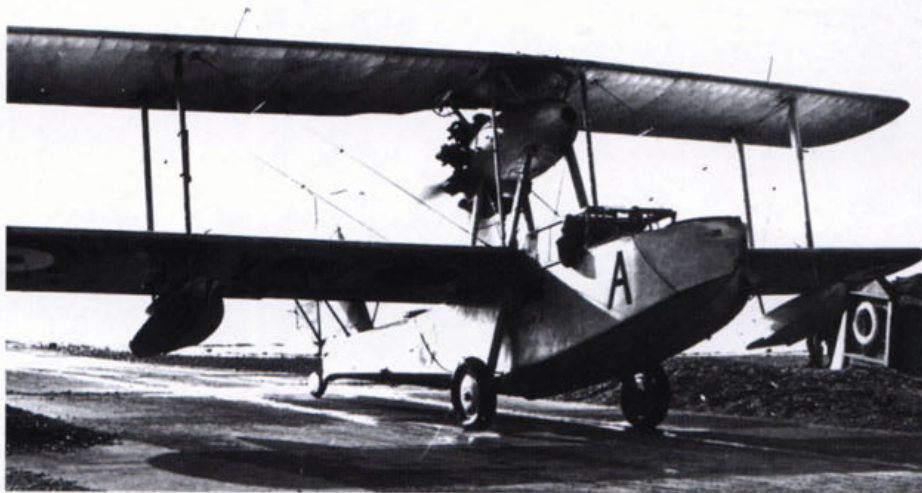
The Royal Australian Navy was equally delighted with the results of the trials and accordingly ordered 24 Seagull Vs for their cruiser squadron in January 1935 at the same time as the original Seagull V prototype was taken over by the RAF. For some unknown reason the Air Ministry order was not placed until May 1935 under Specification 2/35. An order for 12 was placed and it was at this time that Supermarine's amphibian acquired the RAF-RN name of Walrus.

By the end of 1935 a further 36 had been ordered to equip the new *County* and *Town* class cruisers then being built. A change in engine variant was also made at the time the RAF's Walrus initial contract was signed and beginning with K5773 the 725-hp Pegasus VI became standard on all subsequent production aircraft.

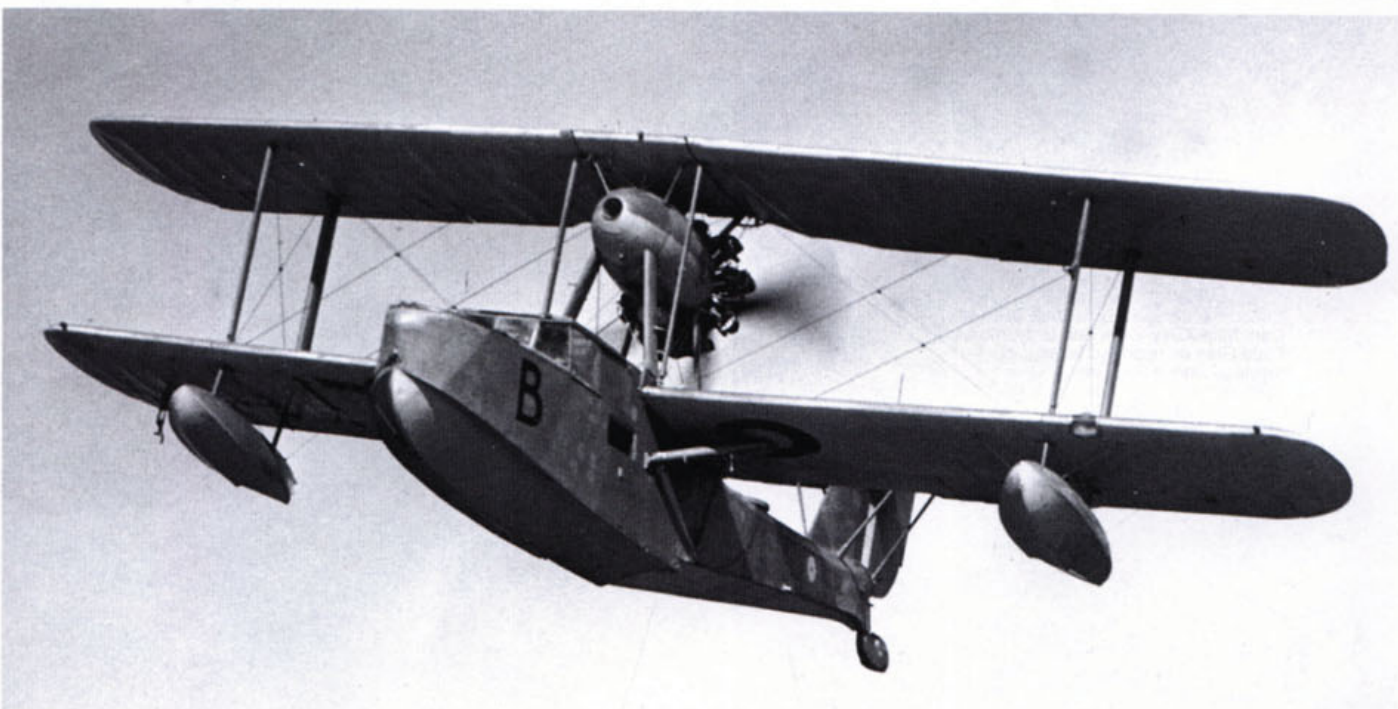
So rapid, comparatively, was the expansion of the RAF and the RN from about 1935 onwards that it was hardly surprising that a further Air Ministry contract was placed. On 10 July 1936 Contract 534422/36 called for 136 Mk. Is to be built at Supermarine's Southampton works but it was soon realised that this could not be done because Spitfire production was then getting into its stride and the two production lines could not survive one beside the other.

Accordingly a new factory was built in February 1939 on the banks of the River Itchen not far from the original Woolston factory and it was from here that the production line for the Walrus was set up, completed hulls being towed up river to Hythe for com-

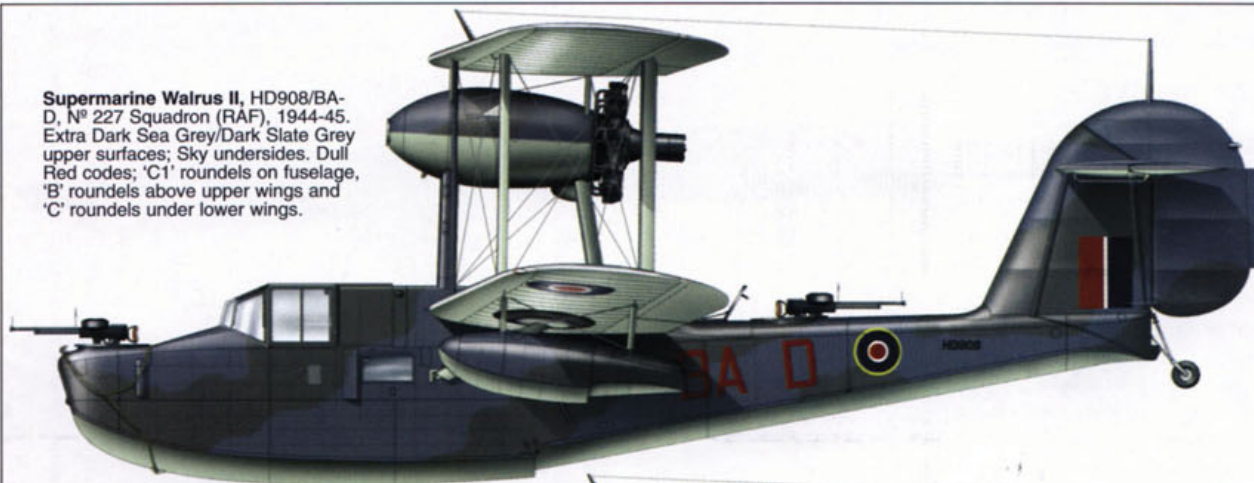
Another view of one of the Royal New Zealand Navy's Seagull Vs. This is obviously the second one NZ152 but coded 'B' in sequence with the others. All three served on RNZ cruisers, mostly in the Mediterranean during the war. (via R.L.Ward)



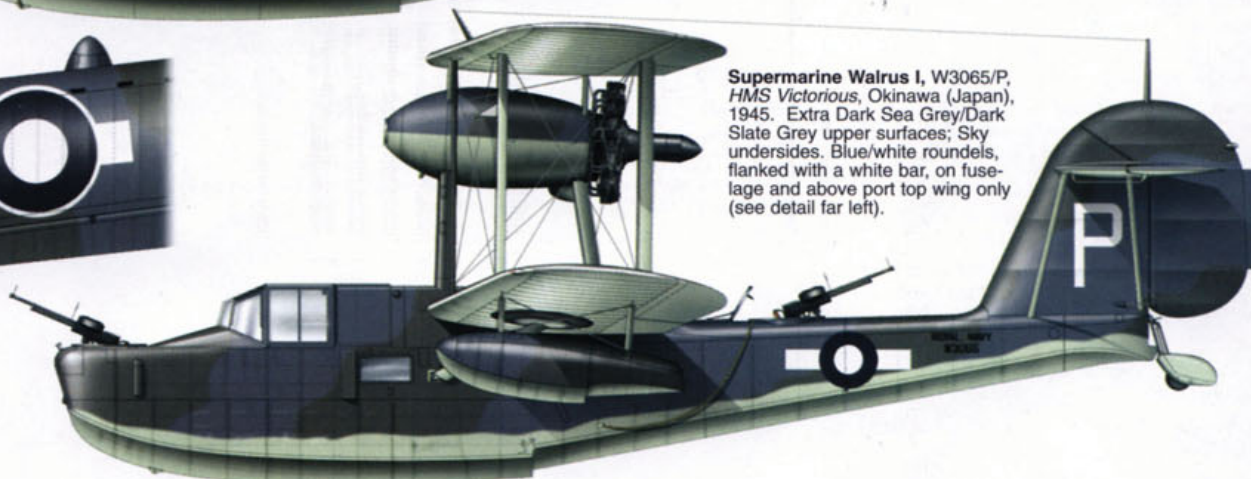
Above: Walrus K8564:A of the School of Naval Cooperation, Lee-on-Solent in 1937 (via Ray Sturtivant)
Below: This Walrus, L2253:J9G is firmly dug into the sand during desert detachment from its parent ship *HMS Manchester*'s 714 Squadron in 1939. No explanation as to how it got there or its eventual fate has been discovered. (via Ray Sturtivant)



Supermarine Walrus II, HD908/BA-D, N° 227 Squadron (RAF), 1944-45. Extra Dark Sea Grey/Dark Slate Grey upper surfaces; Sky undersides. Dull Red codes; 'C1' roundels on fuselage, 'B' roundels above upper wings and 'C' roundels under lower wings.



Supermarine Walrus I, W3065/P, HMS Victorious, Okinawa (Japan), 1945. Extra Dark Sea Grey/Dark Slate Grey upper surfaces; Sky undersides. Blue/white roundels, flanked with a white bar, on fuselage and above port top wing only (see detail far left).



pletion and flight testing.

In spite of this the new factory could not keep up with demand for the Walrus and eventually it was decided that all production for the Mk.I, and the wooden-hulled Mk.II, should be concentrated at the Saunders-Roe factory on the banks of the River Medina in

Launching at sea from *HMS Warspite*, Walrus '9A' which might be L2288 of 700 Squadron, is seen being shot off the ship's catapult in the Mediterranean as the *Ark Royal* in the background has Sea Gladiators on board and was probably part of Force H taking part in a Malta convoy in 1941.

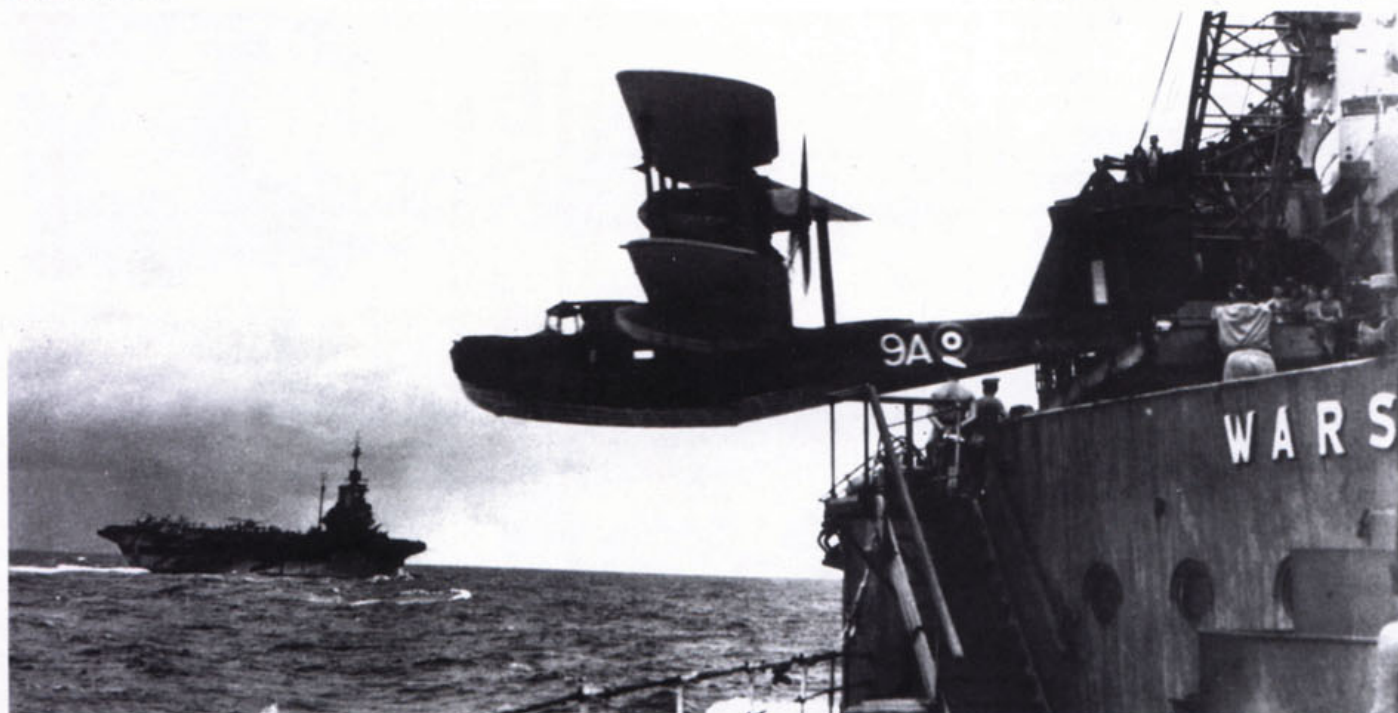
West Cowes, Isle of Wight, with smaller factories on the island and elsewhere, supplying components to the main production line.

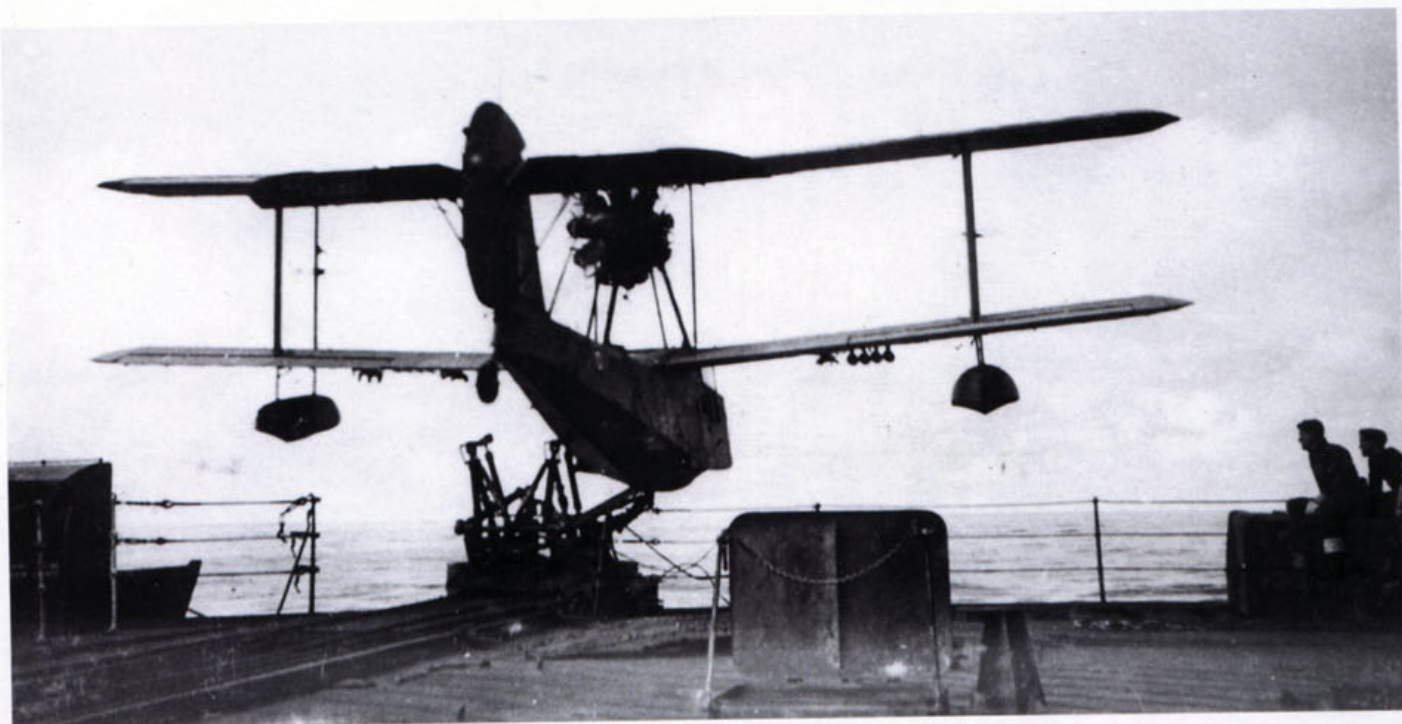
CONSTRUCTION

A thing that often surprises contemporary visitors on first viewing the Walrus is its small size. With a wing span of 45 feet compared to the Spitfire Mk.I's 36 ft.10 ins it is easy to see that a mere eight feet in width is small compared to overall size when one is put alongside the other.

Although a biplane the Walrus incorporated many an advanced design and construction method that was being introduced at that time. It had an anodised alloy hull into which catapult spools and reinforcing ribs were made from stainless steel. The wings although conventional in construction were to incorporate much stronger steel main spars. Ailerons were of basic metal construction and fabric covered whilst the rest of the wing was plywood and fabric covered.

The Walrus had no flaps but the inboard trailing edge section of each lower wing was





Catapult shot for a Walrus seen from the rear. The ship is *HMS Glasgow*, one of the County class cruisers, and the picture was taken in the North Atlantic during convoy escort duties. (G.Abrams)

designed to fold downwards and forward to allow the wing to be folded back. On the tail unit the fin was built integrally with the hull and the tailplanes externally braced.

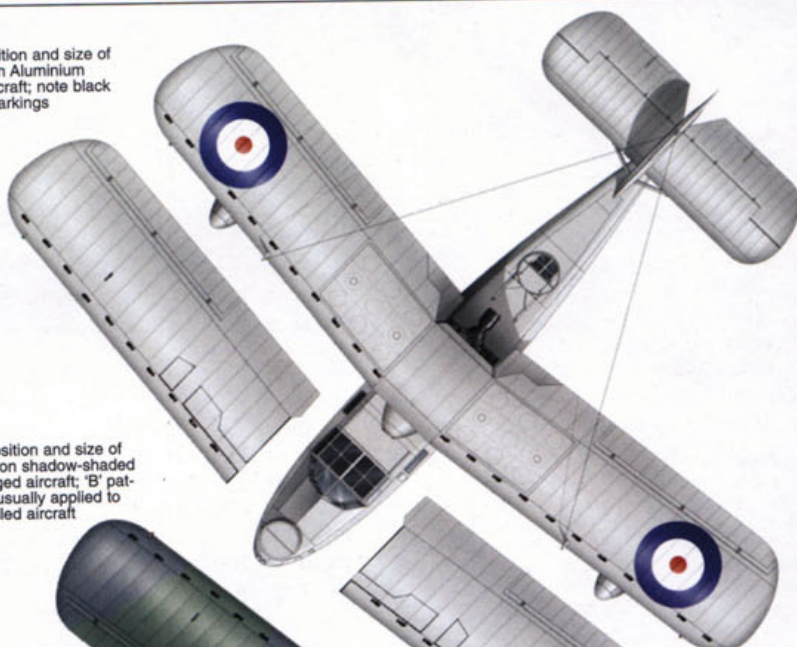
One of the Walrus's near unique features was its engine position. A pusher rather than a puller power plant was mounted on four uprights with further struts to the top wing. To allow access and the leading edge of the upper mainplane while the engine was running footsteps were incorporated in the leading edge of the struts. As there was only a narrow gap between the top wing and the fuselage, the propeller had to be 'halved' in that its diameter was much less but consisted of four-blades to take advantage of the power available. To add to this it was necessary to retain a balanced airflow over the tail surfaces so in order to counter the considerable torque that was developed, the entire engine power egg was angled three degrees to starboard.

Fuel was carried in the inboard section of each upper mainplane, the normal load being 122 Imperial gallons, but with an overload capacity of 155 Imperial gallons. This gave the Walrus a range of of 600 miles at a cruising speed of 92 mph.

The Mk.II was of all-wooden construction which was easier to repair than the metal hulled Mk.I. Most of the Mk.IIs were therefore used for training purposes but a number of minor modifications were made by Saunders Roe. These included a rubber tyred tailwheel whilst all Walrus production that became part of the air-sea-rescue organisation were fitted with hand rails round the forepart of the hull to facilitate ditched aircrew grabbing hold of something when they were picked up. One Walrus (L2271) was even equipped with a nose-mounted 20-mm cannon for use against E-boats.

Before leaving the prototype it should be mentioned that it also drew fame to itself by becoming the first of its type to land on water

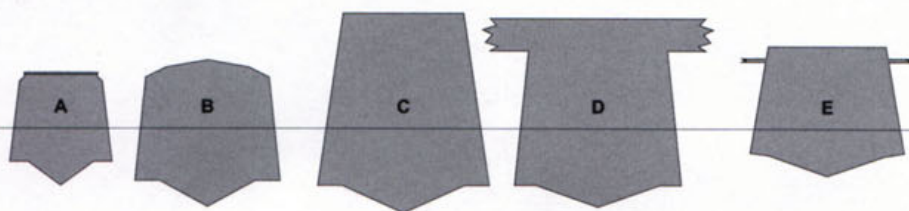
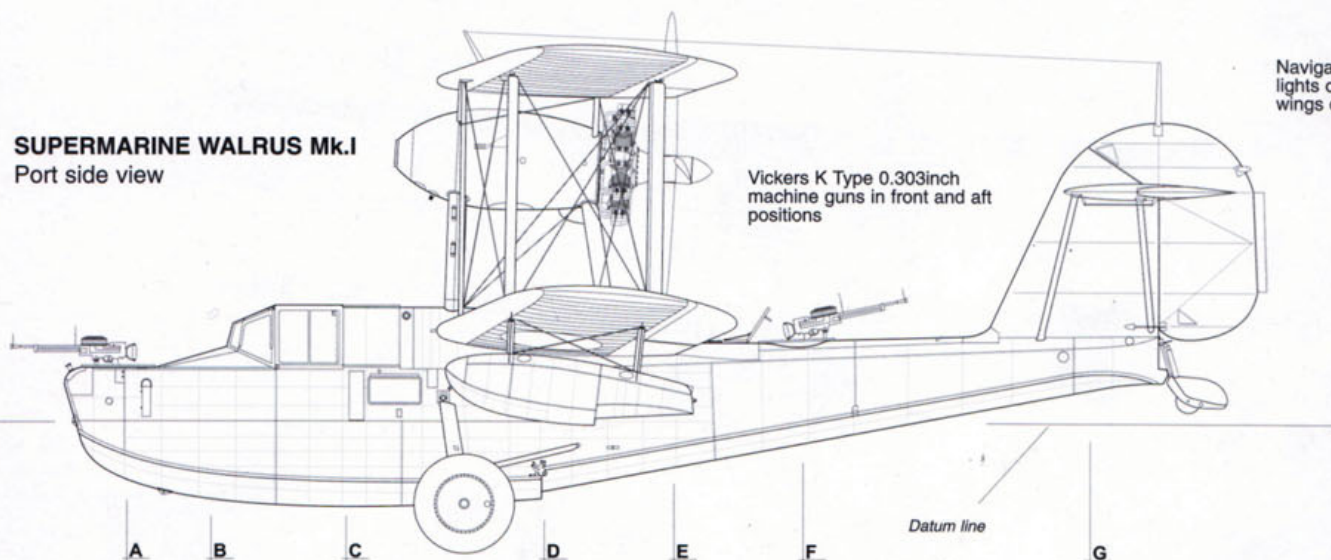
Below: Position and size of markings on Aluminium finished aircraft; note black walkway markings



Below: Position and size of markings on shadow-shaded camouflaged aircraft; 'B' pattern was usually applied to odd-serialled aircraft

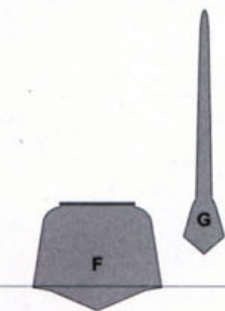


SUPERMARINE WALRUS Mk.I
Port side view



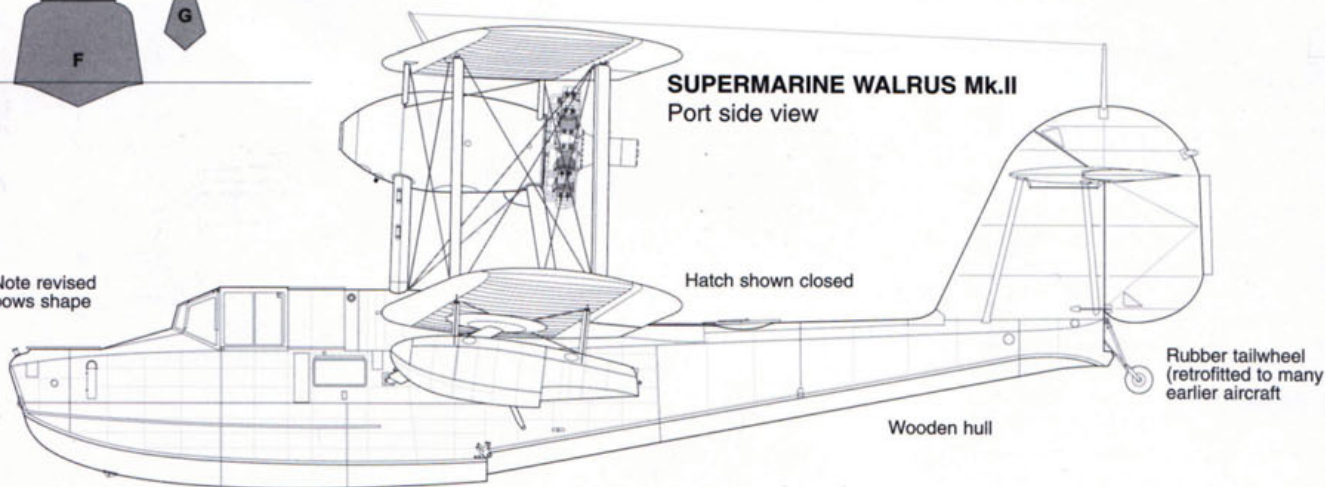
SUPERMARINE WALRUS
Fuselage cross-sections

1:72nd SCALE

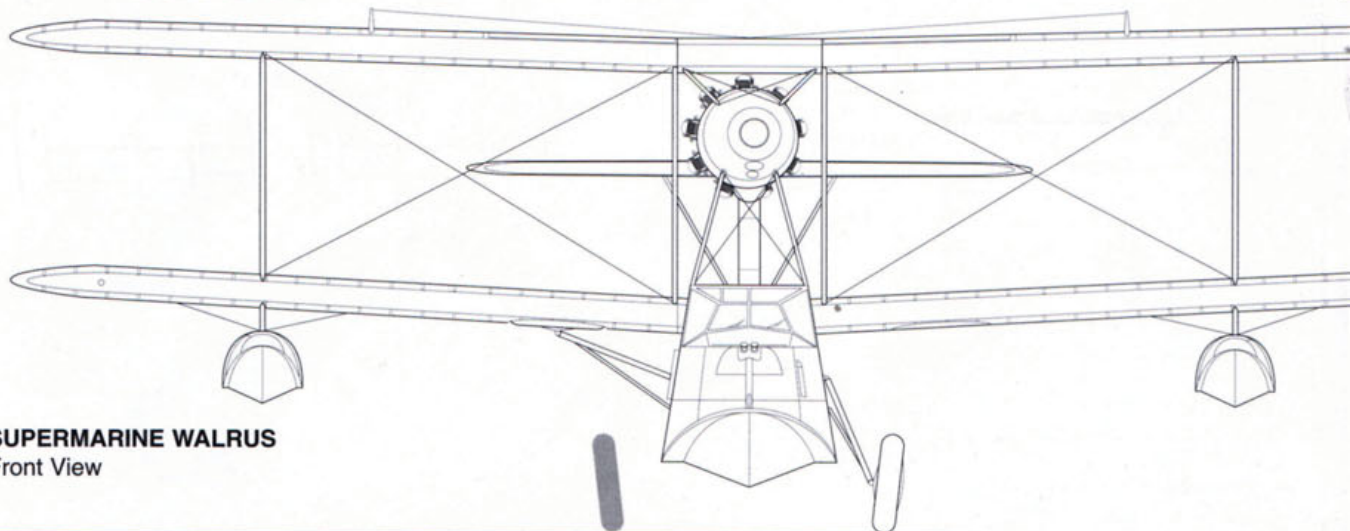


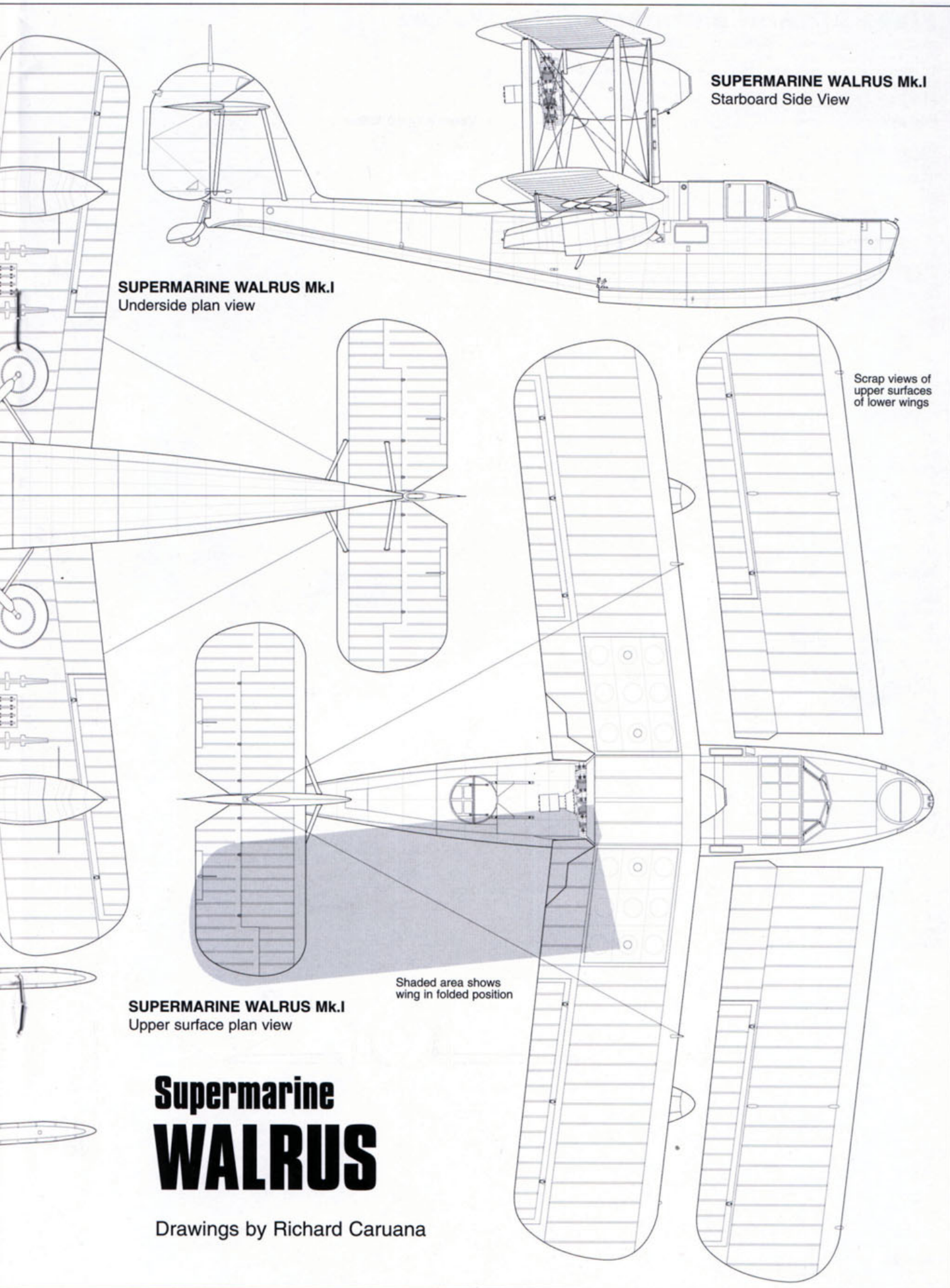
Note revised bows shape

SUPERMARINE WALRUS Mk.II
Port side view



SUPERMARINE WALRUS
Front View





SUPERMARINE WALRUS Mk.I
Starboard Side View

SUPERMARINE WALRUS Mk.I
Underside plan view

Scrap views of
upper surfaces
of lower wings

SUPERMARINE WALRUS Mk.I
Upper surface plan view

Shaded area shows
wing in folded position

Supermarine **WALRUS**

Drawings by Richard Caruana

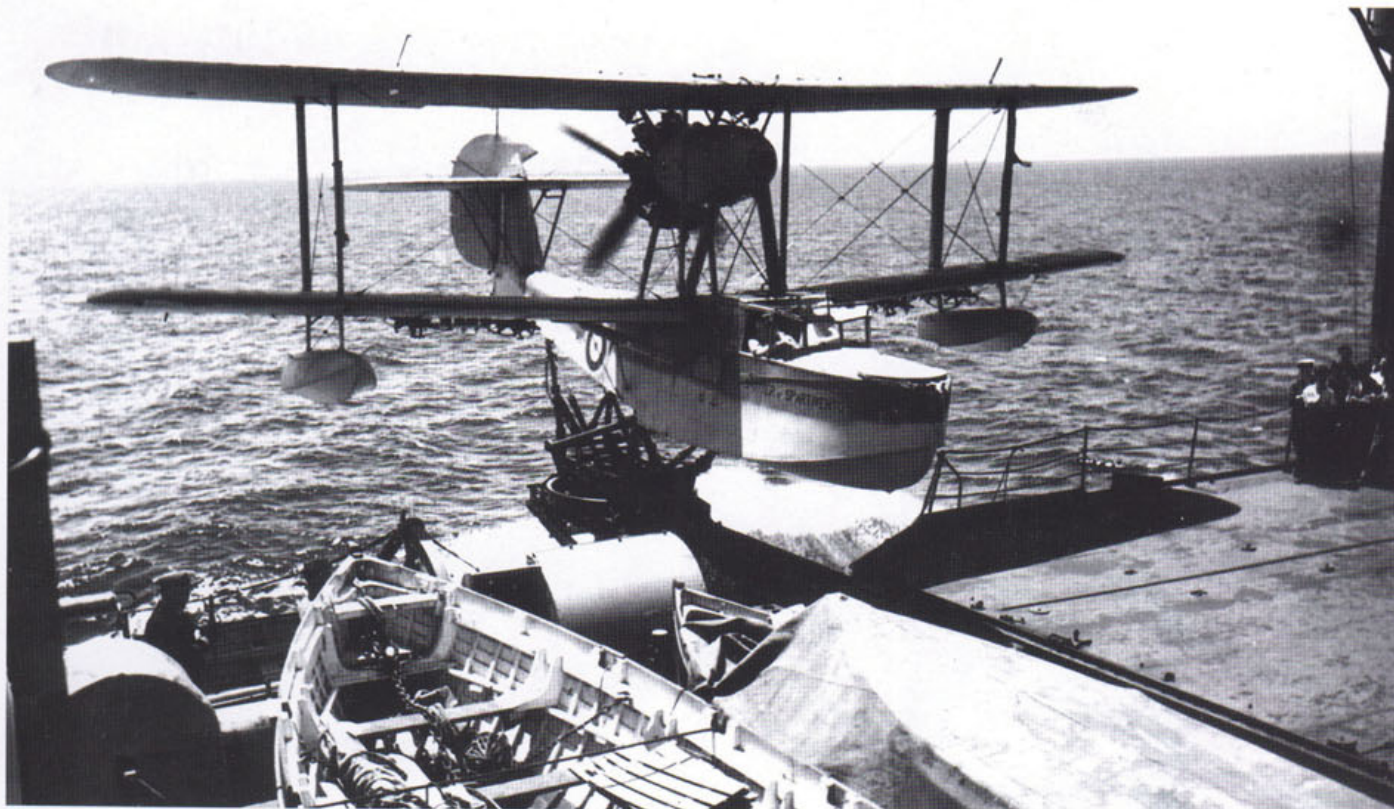
Fleet Air Arm units using the Walrus

700 (Algiers) Sqdn	P5696, P5697, W2787, W3074, X9528, X9589.
700 (Gibraltar) Sqdn	X9471, X9530, X9555, Z1780, Z1809.
700 (Mediterranean) Sqdn, later 700 (Levant) Sqdn	L2249, L2298, W2765, W2788, W2789
701 Sqdn	1940/1 - L2181, L2196, L2280, L2281, L2294, L2307 named 'Gertie the Cow', P5651, P5656, P5657, P5659, P5662, P5697, P5702 named 'Priscilla', P5705, P5707, P5708, P5711, P5716, P5717, P5718, R6543.
701 Sqdn	1942/3 - L2249, P5669, W2706, W2708, W2709, W2710, W2767, W2788, W2789, W3011, W3012, W3013, W3014, W3016, W3017, W3089, X9479, Z1756, Z1757.
702 Flt/Sqdn	K5778, K8550, P5649.
703 Sqdn	X9574, X9577, X9578.
710 Sqdn	L2184, L2209, L2213, L2227, L2233, L2238, L2248, L2249, L2263, L2273, L2280 'F' named 'Freddie', L2290 'A' named 'Audrey', L2313, L2320 'M', L2326, L2233, L2334 'A9K', L2335, P5654, P5664 'C', P5667 'Z' named 'Zulu', P5696 'H' named 'Harry', P5709 'G' named 'George', R6552 'F', R6582, W2671, W2673 'K', W2677 'K', W2681, W2683 'L', W2715 'B', W2738 '9A', 'Audrey III', W2742, W2744 '9P' named 'Pauline', W2745, W2749, W2752, W2759, W2771, W2778, W3035, W3036, W3043, W3087, W3088, W3094, X9501 'K', X9504 '9G', X9507 '9F', X9509.
711 Flt/Sqdn	K5773 '068', K8338 '067', K8339, K8345, K8540, K8561, L2174, L2176 '067' & '071', L2177 '071', L2194 '069', L2195, L2204, L2221 '068', L2225, L2261 'F9C', L2262.
712 Flt/Sqdn	K5774, K9543, K8545 '36', K8546 '36', K8547, K8556 '34', K8559 '35', K8561, K8562, K8564, L2170, L2172, L2174, L2175, L2178, L2179, L2180 '38', L2184 '41' & 'G9U', L2185 '35', L2186, L2190, L2191 '42', L2192, L2194, L2195 '40', L2196 '37', L2200, L2201 'G9W', L2202, L2203, L2210, L2215, L2216, L2217, L2236 'G9U', L2237, L2238, L2239, L2244 '36', L2245, L2256 '39', L2269 '38', L2270, L2271 '34', L2272, L2273, L2274, L2278, L2280 '147' & 'G9K', L2281, L2307, L2308, L2310, L2311, L2317, L2324, L2325, L2326 'G9W', L2331, L2332, L2333, P5647 'G9B', P5652.
714 Flt/Sqdn	K5775, L2193, L2253 '307' & 'J9G', L2254, L2255 '305', L2274, L2275, L2276, L2277, L2285, L2292, L2294, L2297 'J9C', L2298 'J9B', L2299 'J9A'.
715 Flt/Sqdn	K5776 'WO', K5780 'WM' & '2', K5781 'WN' & '3', K5782 '2', K8537, K8538, K8539 'WS', K8548, K8552 'WP', K8553, K8555, L2169 'WV', L2171, L2187, L2188 'WT', L2189, L2190 '43', L2205, L2208, L21212 'WU' & 'K9C', L2213 'WR' & 'K9G', L2235, L2242, L2243, L2260.
716 Flt	L2260
718 Flt/Sqdn	K8340 '769', K8341 '780', K8342, K8343 '769' & '768', K8542, K8544, K8549, K8557 '780', K8560 '769', L2236, L2274, L2278, L2279, L2284.
720 Flt/Sqdn	K5774 'Z4 also 'Z-2' & 'Z-1', K5776, K5783 'Z-2', K8541, K8558 'Z-3', L2222 'Z-4' & 'P9A', L2241.
726 Sqdn	X9484.
737 Sqdn	L2176, L2220, R6543, W2740, W2743, W2754, W2796, W2797, X9571.
740 Sqdn	1943 - L2170, W2676, W3007, W3008, W3040, W3070, X9466, X9469, X9524, X9569, X9589, Z1822, Z1823, HD804, HD826, HD828.
740 Sqdn	1943-4 - K5775, L2220, L2287, R6543, R6550, W2726 'M9T', W2737, W2778 'M9N', W3049, W3062, W3080, Z1822, W3092, X9463, X9537, Z1763, HD805, HD863.
742 Sqdn	W2674.
743 Sqdn	W3089 'Z2', Z1768 'Z3', Z1771, Z1775, Z1781, HD909.
749 Sqdn	L2239, L2263, L2278, P5666, P5708, R6553, W2670 'W2QF', W2674 'W2QM', W2686 'W2QG', W2687, W2717, W2739 'W2QO', W2793, W3034, W3064, W3067 'W2QK', W3068 'W2QP', W3071, W3091 'W2QN', W3095, W3096 'W2QR', W3098 'W2QQ', W3101, X1046, X9461 'W2QV', X9462 'W2QT', X9470 'W2QU', X9473, X9474, X9475 'W2QAA', X9476 'W2QC', X9477 'W2QL', W9478 'W2QS', HD871 'W2QH', HD900 'W2QAC', HD901 'W2QD', HD904 'W2QE'.
751 Sqdn	K8543, K8545, K8546, K8547, K8548, K8551, K8554 'W9F' & 'W9N', K8555, K8560, K8564, L2170, L2172 'W9C', L2173, L2174, L2175 'W9Q', L2178, L2180, L2181, L2184, L2185, L2190 'W9O', L2196, L2210, 'W9M' & 'W9C', L2212, L2215, L2223 'W9T', L2230, L2231 'W9A', L2232 'W9S', L2247, L2248, L2249, L2250 'W9F', L2251, L2306, L2309, L2324 'W9Z', L2332, L2336, P5649, P5650, P5656, P5660, P5662 'W9Y', P5663, P5665 'W9D', P5667 'W9H', P5697, P5700, P5707, P5708, P5709 'W9N', P5716, R6543 'W9P', R6544, R6549 'W9W', W2672, W2676 'E', W2677, W2678, W2688 'AA4Y', W2711, W2712, W2713, W2716, W2718 'AA5Y', W2721, W2723, W2728, W2729, W2740 'AA5Q', W2741, W2743, W2753, W2754, W2760, W2785, W2786, W2796, W3007, W3008, W3019, W3022, W3023, W3032, W3037, W3040 'AA5R', W3075, X9466, X9469, X9480, X9482, X9512, X9523, X9524, X9527, X9528, X9556, X9569, X9570, X9572, X9573 'W9B', X9585, X9589, Z1761, Z1762, Z1765, Z1783, Z1819, Z1822, Z1823, HD804, HD826, HD828.
754 Sqdn	K5775, K8552, K8556, K8559, L2169, L2180, L2183, L2196, L2200, L2201, L2202, L2209, L2210, L2216, L2219, L2220, L2226, L2244, L2257, L2259, L2279, L2281, L2282, L2283, L2306, L2317, P5701, X1045.
757 Sqdn	Z1821.
763 Sqdn	K8551, K8554, L2251, L2252, W2678, W2729, W2743, W3075, Z1763.
764 Sqdn	K5773, K8340, K8343, K8551, K8562, L2169, L2178, L2183, L2209, L2210, L2213, L2220, L2223, L2230, L2234, L2235, L2253, L2271, L2280, L2282, L2283, L2289, L2293, L2307, L2336, P5658, P5707, R6546, R6547, R6584, W2670, W2672, W2673, W2678, W2704, W2718, W2729, W2743, W3010, W3028, W3031, W3037, W3075, W3079, HD832, HD872, HD910.
765 Sqdn	K5778, K8340, K8343, K8551, L2169, L2176, L2180, L2181, L2183, L2191, L2209, L2213, L2217, L2219, L2223, L2224, L2225, L2234, L2245, L2253, L2254, L2266 'BL3Y', L2271, L2280, L2282, L2283, L2287, L2289, L2293, L2307, L2309, L2313, L2314, L2325, L2335, P5658, P5697, R6547, R6552 'L3T', R6584, W2672, W2732, W2737, W2728, W3004, W3020 'S', W3029, W3069, W3070, X9521 'BL3S', X9591 'L3X'.
772 Sqdn	K8543, L2251, L2274, L2280, L2287, R6543, R6548, W2682, W2718, W2726, W2728, W2729, W2766, W2790, W3049, W3062, W3080, X9463, X9580, Z1766, HD825, HD869, HD878.
773 Sqdn	K8549, L2266, L2267, R6551, R6590, W2729, W2740, W2741, W3069, W3089, W3092.
777 Sqdn	W2681, W2748, W2789, W3084, X9505, X9511, Z1807, HD854, HD856, HD861.
778 Sqdn	K8555, L2217, P5697, P5709, P5720, W2746, W2780, X1045, X9512.
782 Sqdn	L2196.
783 Sqdn	K8564, L2170, L2184, L2238, L2253, L2280, L2281, L2291, R6585, W2685, W2688, W2718, W2758, W2786, X9569, Z1823.
787 Sqdn	K8547.
788 Sqdn	L2171, L2254, W2683, W2701, W2731, W2750, W2752, W2775, W3033, W3043, W3066, X9501, X9503.
789 Sqdn	W2731, W2745, W3026, W3035, W3045 'C', W3090, X9483, X9484, X9502, X9509, X9578, X9583, Z1767.
1700 Sqdn	W2745, W2774, W2775, W2776, W2794, W3022, W3038, W3090, W3094, X9483, X9508, X9574, X9581, X9583, X9587, HD913



with the undercarriage extended. After completing its trials K4747 went to No.444 Flight based on *HMS Nelson* and was used more or less as an Admiral's Barge for the C-in-C Home Fleet. Later, whilst landing in Portland harbour, the pilot forgot the essential operation of retracting the undercarriage and with the Admiral on board it turned turtle much to the amusement of those looking on. The occupants luckily escaped with only minor injuries and the aircraft was beached and rebuilt as a standard aircraft returning to service at a later date. Then, in common with all other Walruses it was fitted with an undercarriage warning horn to prevent a similar occurrence.

Hitherto the catapult flights of the FAA had operated a motley collection of land planes fitted with floats including the Fairey IIID and IIIF, Osprey, Flycatcher, Seal, Shark and Swordfish. Such was the promise of the new amphibian that most of these types were very quickly supplanted and by the outbreak of war only a few Swordfish and the new Seafox remained, the latter being notable for its invaluable spotting during the River Plate episode.



Above: Ready for launch. A 700 Squadron Walrus in early wartime markings, L2228, named 'Spotter of Spartivento', was serving on board *HMS Sheffield* at the time. Left: Overseas Walrus training units were established. This aircraft is W3089 :Z2 and was part of the No.1 Naval Air Gunnery School at Yarmouth, Nova Scotia, Canada.



Below: RAF to the rescue. Fortunately in calm waters, this Walrus II W3070:AQ-N of No. 276 Squadron is seen picking up a member of air crew from a rubber dinghy probably in the English Channel or North Sea in 1941, where the squadron together with seven others were serving on air sea rescue duties round the coast. They were instrumental in picking up over 1,000 ditched aircrew during the war. (via Andrew Thomas)



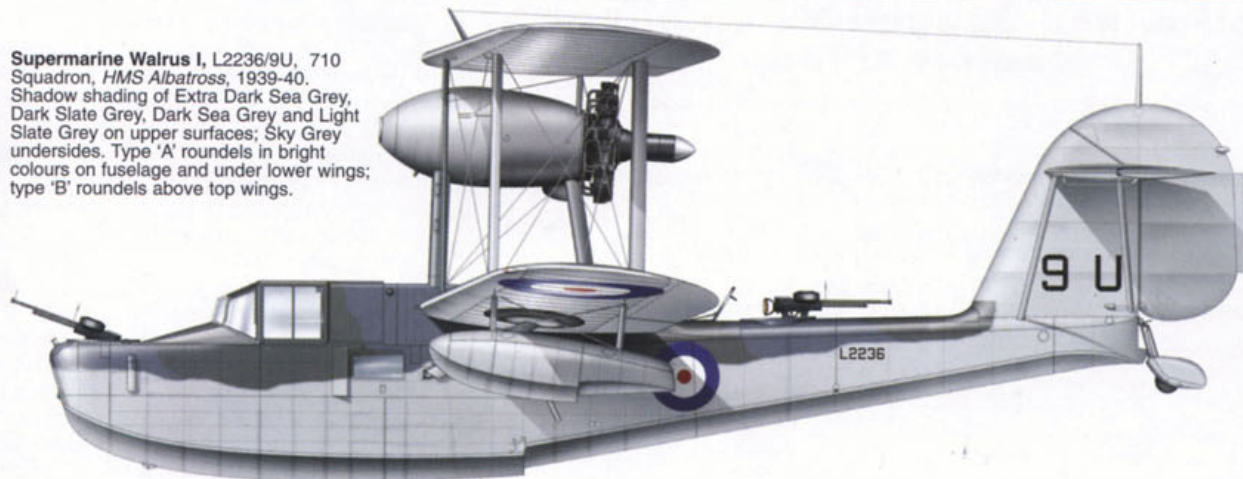
and *Manchester*. Even further afield the China Station saw the introduction of the Walrus in ships of the 5th Cruiser Squadron when 715 Flight received some in November 1936 for *HMS Cumberland* (by then part of the Far East Squadron) and *HMS Kent*, followed in 1937 by *HMS Suffolk* and then *HMS Birmingham*.

In the Western hemisphere, 718 Flight provided for the needs of the 8th Cruiser Squadron in the American and West Indies Station with *HMS Exeter* and *HMS York* both receiving a Walrus in October 1936. To complete the picture at this stage, 720 Flight provided Walrus for *HMS Achilles* in the New Zealand Division this being supplemented by *HMS Leander* in April 1937. 720 Flight was the only pre-war Flight to be equipped exclusively with the Walrus, its aircraft receiving codes in the range Z-1 to Z-4.

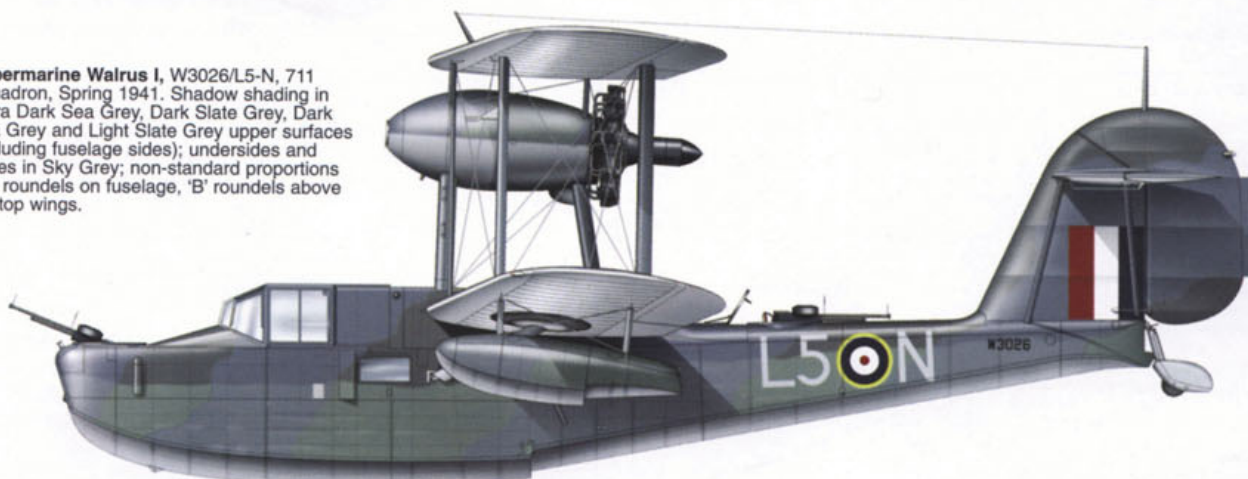
With the exception of the machines of the New Zealand Division, identification markings, or side number in Naval parlance, comprised two or three digit numbers in the range 067 to 071 painted on the side of the nose, of which at least 068 and 069 were taken up by 711 Flight although it is believed that K8338:45 also belonged to this Flight. 712 Flight was more consistent confining itself to two digit codes in the range 34 to 42. 714 Flight used codes 305 to 307, but 715 Flight was another unit using two digit codes, one machine being L2190:43 aboard *HMS Birmingham* 718 Flight was another three digit unit with codes in the range 769 to 781.

For a brief period in late 1936 and the spring of 1937 the FAA adopted a system of two-letter codes but not all Flights chose to adopt this and it was soon abandoned. One

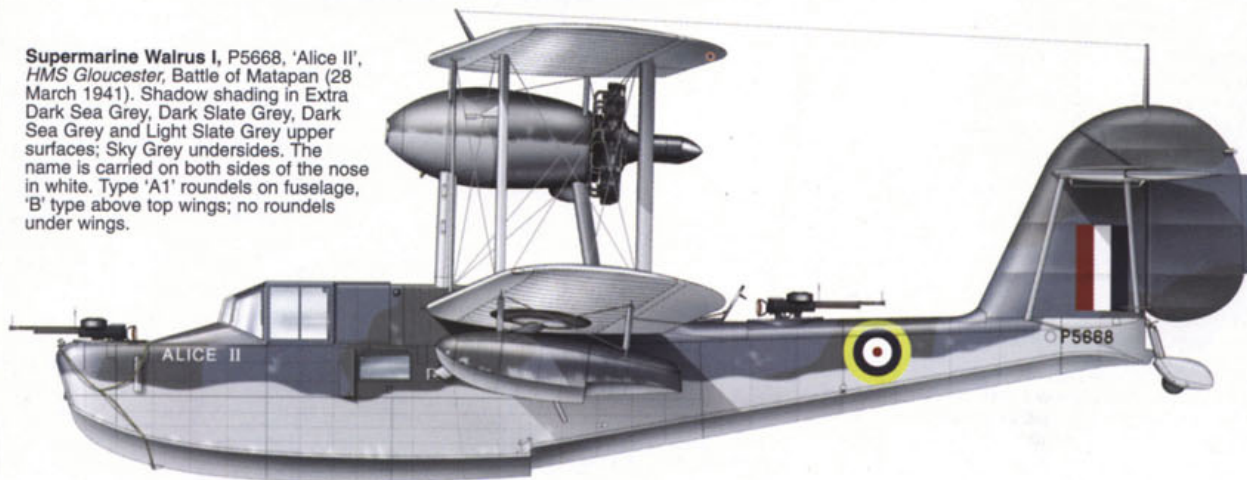
Supermarine Walrus I, L2236/9U, 710 Squadron, HMS Albatross, 1939-40. Shadow shading of Extra Dark Sea Grey, Dark Slate Grey, Dark Sea Grey and Light Slate Grey on upper surfaces; Sky Grey undersides. Type 'A' roundels in bright colours on fuselage and under lower wings; type 'B' roundels above top wings.



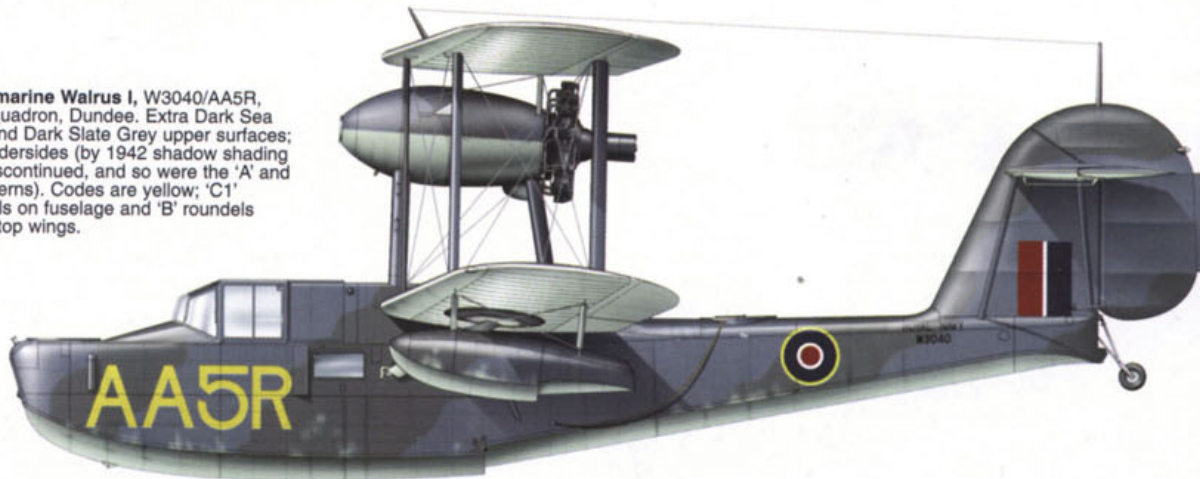
Supermarine Walrus I, W3026/L5-N, 711 Squadron, Spring 1941. Shadow shading in Extra Dark Sea Grey, Dark Slate Grey, Dark Sea Grey and Light Slate Grey upper surfaces (including fuselage sides); undersides and codes in Sky Grey; non-standard proportions 'A1' roundels on fuselage, 'B' roundels above the top wings.



Supermarine Walrus I, P5668, 'Alice II', HMS Gloucester, Battle of Matapan (28 March 1941). Shadow shading in Extra Dark Sea Grey, Dark Slate Grey, Dark Sea Grey and Light Slate Grey upper surfaces; Sky Grey undersides. The name is carried on both sides of the nose in white. Type 'A1' roundels on fuselage, 'B' type above top wings; no roundels under wings.



Supermarine Walrus I, W3040/AA5R, 751 Squadron, Dundee. Extra Dark Sea Grey and Dark Slate Grey upper surfaces; Sky undersides (by 1942 shadow shading was discontinued, and so were the 'A' and 'B' patterns). Codes are yellow; 'C1' roundels on fuselage and 'B' roundels above top wings.



Walrus and Seagull Vs on board capital ships

HMS/HMNZS Achilles	K4797, K5774 'Z-4' & 'Z-2' & 'Z-1', K5776, K8558 'P9A', L2222, L2236, L2241, W2724, NZ151 'A', K8560, L2174, L2243, P5713.
HMS Ajax	L2284, W2748 'A', W3046 'B', W3048, X9529, Z1817, HD876.
HMS Anson	L2247, L2327, W2705, W2755, W2678, W2783, X9510, X9513, X9516, X9520, Z1804, HD812, HD860, A2-1, A2-4, A2-5, A2-8, A2-11, A2-12, A2-19, A2-24, L2293.
HMS Barham	K2775, L2170, L2191, L2224, L2232, L2233, L2239, L2325, L2331, L2332, L2333, P5658, W2740, W2790, W3032, W3048, W3072 'S', X9565, X9586, Z1761, HD869.
HMS Belfast	W3032, X9562, Z1761, Z1763, Z1817, HD875.
HMS Bermuda	K8341 '780', K8560 '769', L2184, L2274, L2278, L2279, R6549, W2713, W2719, W3047.
HMS Berwick	K8539 'WS', L2184, L2187, L2188 'WT', L2189, L2190 '43', L2212 'WU' & 'K9C', L2215, L2260, P5655, P5669, P5709, P5717, R6588, W2688, W2718, W2731, W2742, W2789, W3039, X9502, X9580.
HMS Birmingham	L2293, L2318, L2321, L2322, L2327, P5715, W2768, A2-1, A2-3, A2-9, A2-16, A2-17, A2-22.
HMS Canberra	L2189, L2190.
HMS Ceylon	K5780, L2190 '43', L2200, L2213 'K9G', L2242, L2286, L2295, L2313, W2714.
HMS Cornwall	K5776 'WO', K5780 'WM', K5781 'WN' & '3', K5782 '2', L2184 'G9U', L2201 'G9W', L2205, L2235 'G9U', L2236 'G9U', L2238, L2326 'G9W', L2336, P5646 'B', P5663, P5715 'A', W2702.
HMS Cumberland	K8345, K8548, L2169 'WV', L2174, L2204, L2221 '068', L2254, L2257, L2262, L2268, L2324, L2335, P5647, P5705, R6550, W2678.
HMS Devonshire	K5776, L2227, P5714, W2678.
HMS Dorsetshire	L2331, W2787 'Romeo II', W3015, W3019, W3073 named 'Juliet', W3082, W3100.
HMS Duke of York	P5665, P5710.
HMS Edinburgh	L2278, P5662, P5663.
HMS Effingham	K8340 '769', K8341 '780', K8343 '769', K8542, K8544, K8557 '780', K8560 '769', L2236, R6587, W2676.
HMS Exeter	W2731, W2776, W2779, W3038, W3045, W3085 'B', L2177, L2184 '41', L2190, L2195 '40', L2208, L2210, L2217 '41', L2227, L2281, L2308, L2310, L2311, L2330, P5651, P5652, P5699, P5704, P5712, W2726, W2774, W3083, X9460, X9465, X9472, Z1764, HD863.
HMS Gambia	L2297 'J9C' named 'FRANCOIS', L2298 'J9B' named 'HENRY', L2299 'J9A' named 'ALICE', L2318, P5668 named 'ALICE II'.
HMS Glasgow	L2171, L2321, A2-1, A2-7, A2-9, A2-13, A2-14, W3097, W3099, X9529, X9559, X9565, Z1814.
HMS Gloucester	K5782 '2', L2243, L2320, P5719, R6550, W2676, W3062.
HMS Hobart	L2288, P5661, R6545, W2700, W2704, W3046.
HMS Howe	L2227, L2231, L2295, L2300, L2306, L2324, L2333, L2336, P5659, P5661, P5669, P5710, P5711, P5718, P5719, W2675, W2682, W2700, W2750, W2791, W3040, W3081, W3100, X9480, X9528, X9564 'Y', X9565, X9567, X9575, Z1769, Z1810.
HMS King George V	HD874.
HMS Labuan	K5782, K8541, K8558 'Z-3', L2188, L2222 'Z-4' & 'P9A', L2322, L2330.
HMS Leander	L2257, L2274, L2275, L2276, L2277, W2798.
HMS Liverpool	K8338 '067' & '45', K8339, K8345, K8540, K8561, L2176 '067', L2196, R6543, W2673, W2727, W2728, W2796, W3019, X9480, X9556.
HMS London	P5696, R6548, W2776, W2791, W3042, Z1761.
HMS Malaya	L2226, L2253 '307' & 'J9G', L2254, L2255 '305', L2257, P5650, P5659, P5666.
HMS Manchester	L2319, P5664, W2755, A2-1, A2-3, A2-5, A2-11, A2-12, A2-14.
HMS Manooora	W2679, W2680, W2757, W3009, W3050, W3066, W3084, W3085, W3086, X9506, X9584.
HMS Mauritius	K4797 '056', K5778.
HMS Nelson	1 aircraft (serial unknown).
HMS Neptune	K5772, K8543, K8545 '36', K8546 '35', K8547, K8561, L2191 '42', L2196 '37', L2202 '36' or '37', L2244 '36', L2273 '36' or '37', L2307, L2331, P5698, W2717, W3008, W3028, W3094, W3098.
HMS Newcastle	W2723, W3032, Z1820.
HMS Newfoundland	L2289, P5706.
HMS Nigeria	K5775, L2184, L2193, L2307, P5648, P5706, P5710, W2778, W3022, X9563, X9568.
HMS Norfolk	L2243, L2293, L2319, A2-4, A2-17.
HMS Perth	1 aircraft coded 'A' (serial unknown).
HMS Prince of Wales	L2249, L2289, W2701, W2706, W2710.
HMS Queen Elizabeth	K4797, W2727, W3074, X9528.
HMS Renown	R6586, R6587.
HMS Repulse	L2274, L2288, W3044, X9508, X9576.
HMS Resolution	L2184, P5649, P5661, W3046, HD831.
HMS Rodney	L2180 '38', L2185 '35', L2226, L2227, L2228, L2256 '39', L2269 '38', L2280 '147' & 'G9K', P5658, P5659, P5670, R6544, R6584, R6585, X9481.
HMS Sheffield	K5773 '068', K8548, L2176, L2194 '069', L2213, L2221 '069', L2285, L2290, P5718, W2777.
HMS Shropshire	K5779, K8556 '34', K8559 '35', L2191, L2237, L2245, L2271 '34', L2288, L2294, L2317, P5651, P5707, W2754.
HMS Southampton	K8537, K8538, K8552 'WP', L2181, L2213 'WR', L2244 '36', L2254, L2281, L2284, L2336, W2670, W2674, W2676, W2682.
HMS Suffolk	K8338 '067', K8561 '071', L2176 '071', L2177 '071', L2204, L2256, L2261 'F9C', L2262, P5669, P5719, X9581, Z1813.
HMS Sussex	K8542, A2-2 '076', A2-4, A2-9, A2-19, A2-21, A2-22.
HMS Sydney	W2685, W2750, X9469, Z1811.
HMS Uganda	N-2, W2701, W2758, W2781.
HMS Valiant	L2264, L2288, W2774, W2775.
HMS Warspite	L2293, L2322, P5664, W2783, X9513, X9514, X9517, X9520, A2-1, A2-3, A2-8, A2-11, A2-13, A2-14, A2-18.
HMS Westralia	K8341, K8342, K8343 '768', K8544, L2278.
HMS York	

unit that did use them for a time was 711 Flight, one of the new aircraft was L2169:U-V. Another unit to adopt the system was 715 Flight and codes WR to WU inclusive were used respectively on L2213, K8539, L2188 and L2212. Normal codes were soon re-applied and these remained for the next two years. But when the Admiralty regained control of its air arm in May 1939 all aircraft

were allocated codes in a new letter/number/letter system of which the first two symbols identified the parent unit. In the case of the Walrus Flights these unit codes were F9 (711 Flight), G9 (712), J9 (714), K9 (715), L9 (716), N9 (718), and P9 (720).

As war clouds loomed and more capital ships came into service, so the flights increased in size. In recognition of their

enhanced status the flights were gradually reclassified as squadrons and by the outbreak of war all of the catapult units had achieved this distinction. By then Walruses were embarked in nearly 30 battleships and cruisers. In addition nine aircraft of this type were on board *HMS Albatross*, a seaplane carrier, these being aircraft of the newly formed 710 Squadron on their way to West Africa where they would carry out anti-submarine patrols for the next four years.

The Walrus was also to prove invaluable for second-line work. When the navy took over on 24 May 1939, 751 Squadron formed at Ford for observer training, its machines being coded W9. Similar work was undertaken at Lee-on-Solent by the W5 coded Walruses of 754 Squadron. Also at the latter station was 765 Squadron, operating as the Seaplane School and Pool with a mixture of Y8-coded Seafox and Swordfish, most of which gave way to L3-coded Walruses which were probably coded Y8 at first.

Quite a number of wartime training units had Walruses as their main equipment. 751 Squadron moved to Arbroath late in 1940 operating mainly from its Dundee satellite from August 1941, with the W9 code giving way to AA4 and AA5 under a new coding system adopted in 1943. This unit was joined at Arbroath by 754 Squadron, which remained at the parent station until both squadrons disbanded in the Spring of 1944. 765 Squadron also moved in the autumn of 1940 taking up residence at Sandbanks, Poole Harbour where it became the Basic Seaplane Training School for Seaplane Training (Part 1), using codes L3 and BL3 until disbanding in October 1943. Advanced seaplane training was undertaken by 764 Squadron which formed at Lee-on-Solent in April 1940 with the Swordfish, Seafox and Walrus. It left for Pembroke Dock in July 1940 but moved further up Milford Haven to the new Naval Air Station at Lawrenny Ferry or *HMS Daedalus II*. Operating as Seaplane Training (Part 2), the Walruses were later augmented by Kingfishers, were uncoded, although code Y9 is known to have been allocated to this unit.

In January 1941 an overseas Observer Training School came into existence when 749 Squadron formed at Piarco, Trinidad. Aircraft were coded in the W2QA to W2QZ range, with additional aircraft being given codes W2QAA to W2QAC, though it is thought that these somewhat cumbersome codes were sometimes abbreviated by omitting the W2 prefix. 749 Squadron was engaged in carrying out anti-submarine patrols in the early part of 1942. Other units to use the Walrus for second line duties included 737 Squadron at Dunino for TBR training in 1943 and 740 Squadron as part of the Observer School at Arbroath at around the same time. Quite a number of units had a few Walruses on strength. Aboard *HMS Pegasus* 763 (Seaplane Training) Squadron supplemented its Kingfishers by a few Walrus in 1942-43, for instance.

WARTIME SERVICE

The use of spotter aircraft for the main armament of surface ships to observe and correct the fall of shot was standard practice before the invention of radar. All ships which had armament that could be used for action over

RAF Air Sea Rescue squadrons were also established in the Mediterranean. This picture shows Walrus L2217 of No. 293 Squadron when based at Foggia, in southern Italy and covering downed aircrew rescues in the Aegean Sea. (via Ray Sturtivant)

the horizon needed this facility and the Navy's Catapult Flights with either one or two mainly Walrus or Seafox aircraft on board were used for this work.

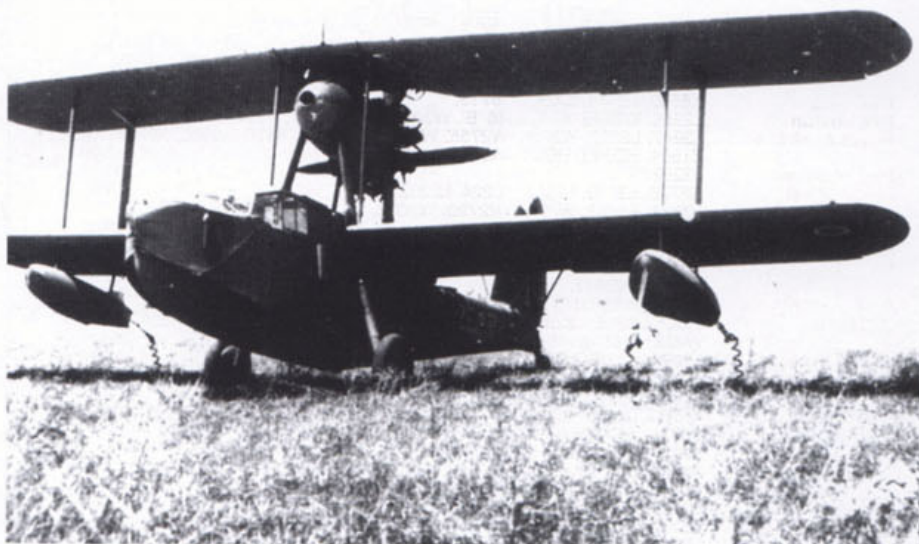
Few gun actions came their way in the early part of the war but in the Mediterranean several actions took place in which the Walrus was involved. Initially a Walrus, followed by a Seafox took part in the Battle of the River Plate when the German *Admiral Graf Spee* was brought to book off Montevideo and scuttled.

Subsequently one of the most famous actions was fought around Cape Matapan during which the Italian fleet put to sea and was trounced by the Royal Navy. *HMS Gloucester's* Walrus was launched at the beginning of the action and spotted for the British ships but had to leave the scene after having seen other Italian warships on the horizon. The Walrus eventually caught up with the ship again back in Alexandria harbour after an adventurous series of flights including a desert landing.

The Walrus was, however, to prove its worth in other directions. During the early stages of the war they were used to round up a series of German commerce raiders which were sinking Allied merchant shipping in the South Atlantic and Indian Oceans. To find them the Royal Navy used the Walrus on board cruisers and similar ships to search far ahead and at the same time keep a watchful eye on possible German submarine activity during times of need.

The Walrus also took part in the Norwegian campaign using the relatively calm waters of the fjords instead of being catapult launched.

HMAS Hobart together with *Leander* and *Dorchester* used the aircraft for bombing raids



using 250-lb GP bombs during the rout of the Italian forces from Somaliland and Abyssinia. Later in the desert war, RN ships were often used to bombard shore defences and here the spotter abilities of the Walrus were used as originally intended. There were no less than 14 aircraft of the Walrus or Seagull V types available on warships of the Mediterranean fleet in mid-1940.

Final front-line operations in the Mediterranean came at the time of the invasion of North Africa and photographic evidence shows that Walruses of ship's Flights were given the briefly used blue and white US national insignia.

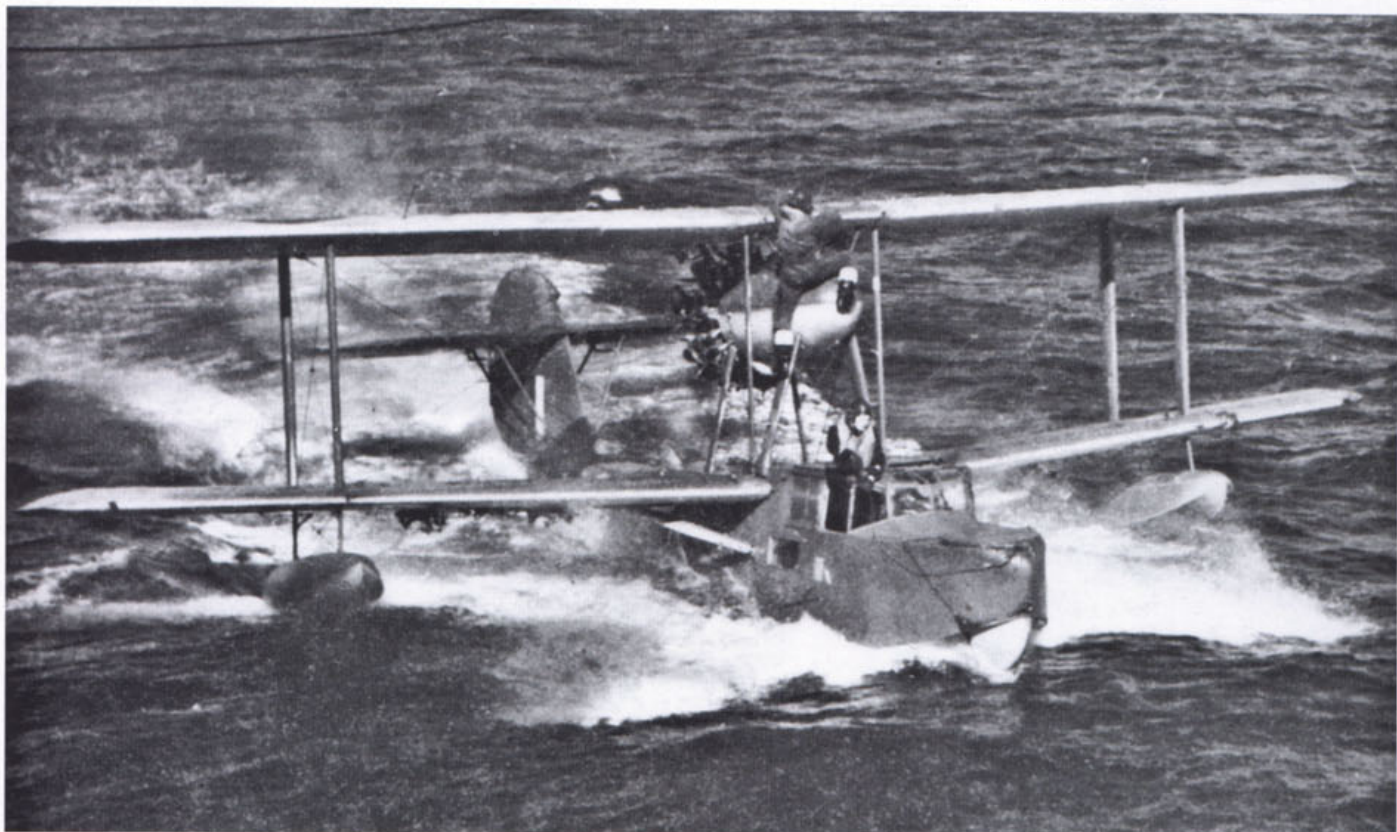
By 1943 the Walrus and other catapult aircraft had been superseded by radar and, as the space on board could be put to good use for additional anti-aircraft armament plus the removal of several hundred gallons of highly volatile aviation fuel, the ship's crews were not sorry to see them go.

But the Walrus was not finished as far as sea-going duty was concerned. The task of air-sea rescue was one instance of this and almost all of the Fleet aircraft carriers had at least one Walrus for plane-guard operations similar to those performed by helicopters today. Most of these operations were carried out with the British Pacific Fleet and there are on record any number of successful ASR flights where ditched aircrew were picked up under the noses of the Japanese.

AIR-SEA RESCUE

It fell to the Luftwaffe to set up the first air-sea rescue services during the European war. These started at the time of the Battle of Britain and consisted of Heinkel He 59 air-

This unidentified Walrus was used for spotting duties on board *HMS Prince of Wales*. Note the bomb or depth charge shackles under the wings. (S.Lenney via R.L.Ward)



RAF units with Walruses on strength

269 Sqn	L2207, W2713, W2798, W3049, X9464, X9561, X9568.
275 Sqn	K8562, L2246, L2282, L2306, P5663, R6548, R6590, W2746, W2758, W2780, W3027, W3037, X9467, X9469, X9567, X9571, X9575, Z1758, HD823, HD832, HD868, HD908, HD910, HD916, HD925 PV-S, HD927, HD929 PV-Z, HD930, HD932.
276 Sqn	L2180, L2181 AQ-Y, L2210, L2220, L2246, L2271, L2306 AQ-R, L2335, P5658 AQ-M, W2718 AQ-Z, W2737, W2773, W2774 AQ-X, W2780, W2784, W3006 AQ-R, W3026 AQ-N, W3029, W3032, W3062, W3070 AQ-N, W3081 AQ-S, W3083, W3084, X9519, X9522, X9573 AQ-A, X9591, Z1758, Z1819, HD908, HD915, HD931, HD934.
277 Sqn	K8554, K8562, L2183, L2223, L2246, L2271, L2283, L2289, L2315 BA-T, W2680, W2725, W2735, W2736, W2737, W2766, W2773, W2782, W3010, W3022, W3024, W3042, W3049, W3072, W3076 BA-W, W3077, W3097, X9469, X9521, X9523, X9526, X9563 BA-A, X9573, Z1763, HD867 BA-F, HD868, HD876, HD877, HD908 BA-D, HD912, HD914, HD917 BA-U, HD921, HD923, HD936.
278 Sqn	K8547, K8554, L2181, L2268 MY-A, L2271, L2284, L2292, L2307 MY-G, P5663, R6548 MY-E, W2677, W2688, W2715, W2721, W2735, W2736, W2754, W2766, W3049, W3076, W3084, X9523, X9563, X9573, HD823 MY-P, HD830, HD908, HD915, HD916 MY-B, HD917 MY-AA, HD918, HD920 MY- & MY-B, HD926, HD928, HD933, HD935.
281 Sqn	R6546.
282 Sqn	1943-4 - L2306 FG-Q, W2715, W2726, W2741 X, W3047, W3076, W3084, X9564, X9571 FG-R, Z1758 FG-P, HD830, HD908, HD915.
283 Sqn	L2205, P5696, W2734, W2747, W2787, W2788, W3074, X9476, X9530, X9579, Z1756, Z1777, Z1780, Z1783, Z1784, Z1805, Z1809.
284 Sqn	P5718 P, R6547, R6549, R6588, W2757, W3012, W3016, X9471, X9498, X9506 C & S, X9565, X9593, Z1756, Z1777 S, Z1779 Z, Z1784, Z1813.
292 Sqn	W2749, W2794, W3033, W3038, W3086, X9574, HD805, HD806, HD807, HD808, HD816, HD827, HD911.
293 Sqn	K8549, K8562, L2170, L2207, L2209, L2217 ZE-P & ZE-W, L2266, L2324 ZE-V1 & ZE-U, P5667 ZE-V, P5718, R6547, R6549 ZE-DR, W2719, W2729, W2746, W2750, W2757 ZE-P, W2772 ZE-W & ZE-N, W2796, W3042, W3048 ZE-H, X9474 ZE-S, X9482 ZE-X, X9503, X9506, X9529 ZE-T, X9565, Z1769, Z1777, Z1779, Z1813, Z1822.
294 Sqn	L2331 B1, W2706 E, W2708 A, W2709 H, W2710, W2789 FD, W3010, W3013 K, W3016, W3017 F & O, W3050 G, W3062 L, X9466 B & M, X9584 C & D, X9590, Z1757 Z, Z1776 E & P, Z1782.
624 Sqn	K8550, L2172, L2201 B, L2263 O, P5667 D, R6543, W2704, W2741 E, W2746, W2797, W3020, W3072 C, W3080, X9474, Z9521 D, X9522 J, X9589 A, Z1756, Z1769 A, Z1822.

craft painted white with large red crosses landing on the water and picking up downed aircrew from both sides.

The RAF were not slow to follow and, in addition to patrols by fighter aircraft, also set up a number of ASR squadrons around the coasts of Britain equipped with the Walrus, Anson and Lysander.

The increasing tempo of operations over Germany and the day and night raids by Bomber Command and the Eighth Air Force meant that many more crews were liable not to make the sea crossing before engines gave out and they were 'down in the drink'.

A number of dedicated ASR squadrons were formed including Nos. 269, 275, 276, 277, 278, 281 and 282. In the Middle East and Italy, four more were established, these being Nos. 283, 284, 293 and 294. It is on record that one of the former - No.277 - rescued no less than 598 aircrew out of approximately 1,000 saved through direct aircraft action.

As the war progressed and air-to-sea radar became available the Walrus was equipped with it, primarily in anti-submarine operations but by 1944 the ASR squadrons had it too and were thus able to identify dinghies at longer distances and in poorer weather conditions than hitherto.

Almost every station near the coast of Britain had at one time or another a Walrus amphibian in residence. One always remembers the familiar Anson being used as a squadron hack but the Walrus was also a very valuable addition to this facility.

MISCELLANEOUS DUTIES AND TRAINING

The Walrus was adaptable. One squadron - No.624, based at Grottaglie in Italy - was employed in mine-spotting duties. Detachments were based around the Italian

Left: Hold him down. Flight deck crew of HMS Ameer welcome on board a Walrus of 896 Squadron flown by Sub.Lt.Gregory RNVR. Below: One of the few pictures showing the target towing equipment fitted to some Walrus aircraft. The starboard side had the winch and the port side streamed the drogue. The aircraft belongs to the No.8 Communications unit, RAAF and is coded ZA:W. (via Alan W.Hall)



coast and in Greece for this purpose until the squadron was disbanded in November 1945.

The Walrus also saw service as a target tug aircraft. Some of the earliest examples were equipped with a wind-driven winch which protruded from the starboard cabin window with the cable and target being deployed from the port window.

As the Royal Navy had the most Walrus aircraft in service they naturally undertook amphibious training for their aircrew and three squadrons - Nos 754, 764 and 765 were based at Lee-on-Solent, Poole Harbour and Lawrenny Ferry, Pembroke, respectively - and carried out basic seaplane and amphibious operations for newly formed Flights about to go to sea. In turn, the Flights themselves worked up with their own aircraft at these venues whilst their ships completed building or were being repaired.

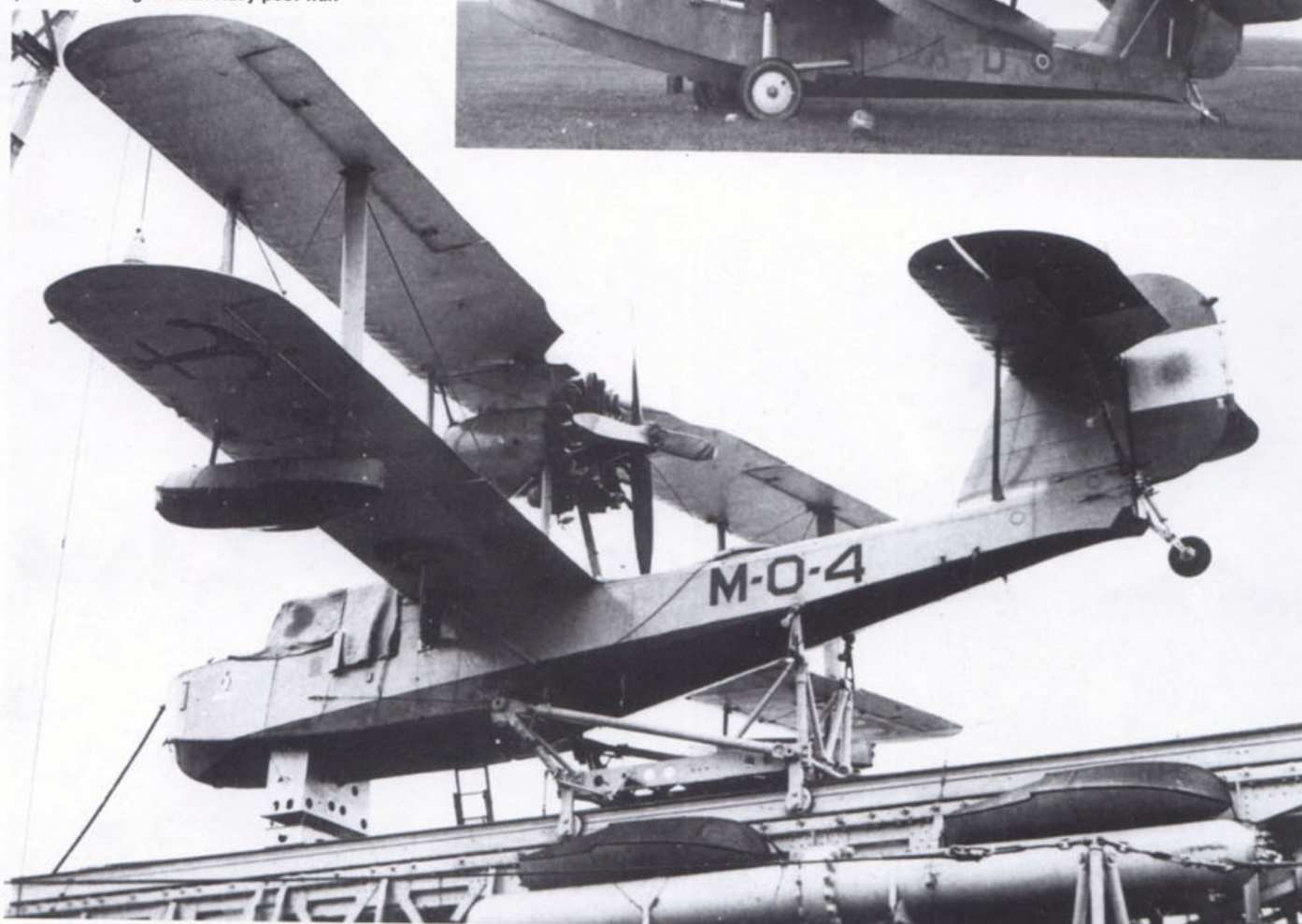
Overseas the Walrus was used for Telegraphist Air Gunner (TAG) training purposes at the Royal Canadian Naval Air Station Yarmouth, Nova Scotia and in Trinidad additionally for Observer training. The latter also provided anti-submarine patrols and kept a watch on the French warships laid up in Martinique.

POST WAR PRESERVATION AND EXPORT

The Walrus was superseded in the later stages of the war by the Supermarine Sea Otter a more powerfully engined, though similarly configured, amphibian.

Continued on page 24

Below: One of the eight Walruses that were supplied to the Argentinian Navy post-war.



Above: A slightly dodgy cross wind landing for this Walrus from 1700 Squadron landing on the deck of *HMS Ameer* on 8 July 1945 after having rescued a downed Hellcat pilot from 200 yards off the Japanese held coast. (via R.L.Ward) **Below:** Walrus II HD908:BA-D of 277 air sea rescue Squadron when based at RAF Digby in 1944. Note the tail wheel instead of a water rudder (via Ray Sturtivant)





1

Walrus in detail

Pictures of the Fleet Air Arm Museum's aircraft
by Martin Waligorski and Richard L.Ward



3

1. A general view of the Fleet Air Arm Museum's Walrus L2301 before restoration as G-AIZG. 2. Inside the port undercarriage way leaving the legs exposed the whole thing being wound in a



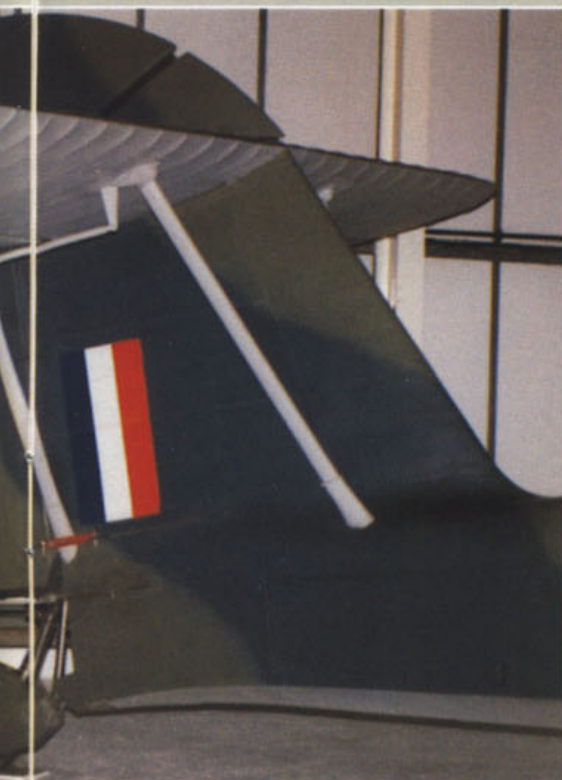
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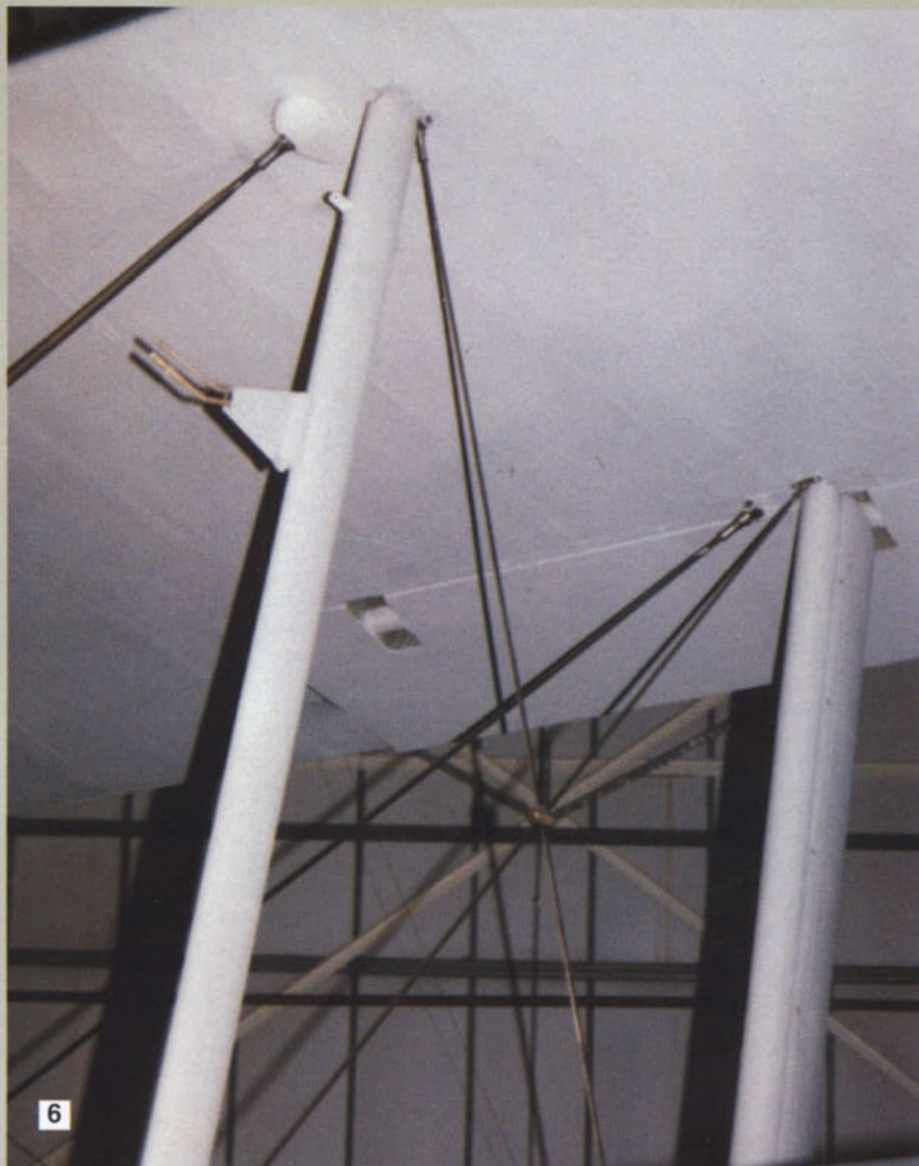
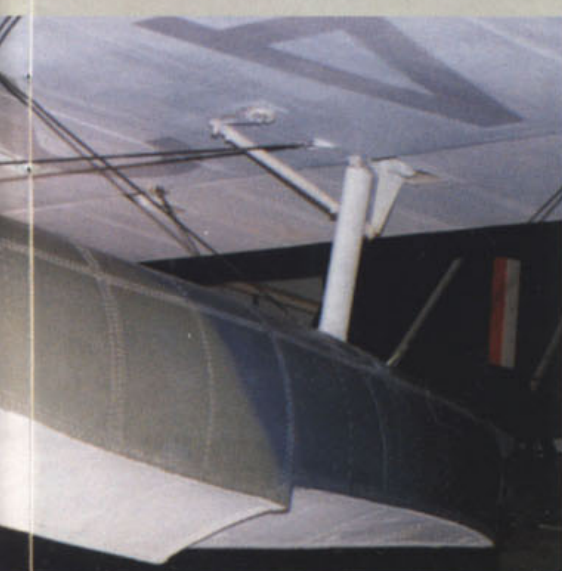
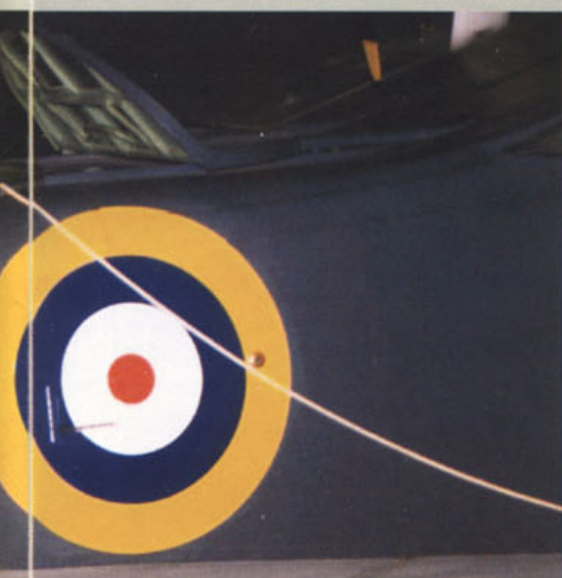
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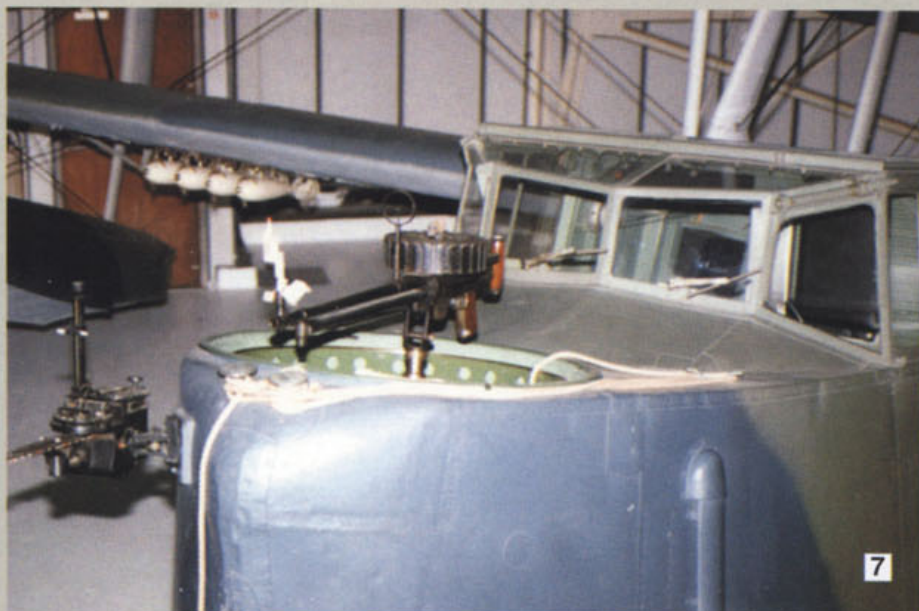
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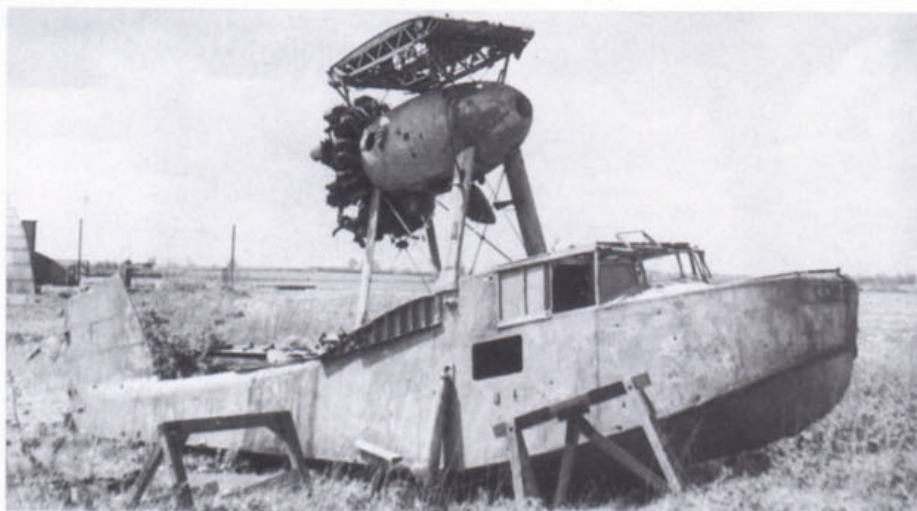


L25301 which was previously ex-Irish Air Corps and Aer Lingus. The undercarriage retracted in a simple in and out by a hand crank in the cockpit.



3. The Walrus tail unit had the tailplanes set high on the fin to avoid damage from sea water. Of all metal construction the flying control surfaces were fabric covered. The tail wheel was mounted inside a small float interconnected with the rudder that could be used to direct the aircraft when on water. 4. The rear part of the fuselage had a gunner's position but was also used for picking up aircrew from the sea. The circular opening had a single Lewis or Vickers K gun mounting and was covered by a sliding hatch that folded back and formed a shield from the slipstream. 5. A close up of the port float. Note the rigging and the small anchor point at the float's tip. 6. Looking up into the rigging of the port side main planes. A pitot tube was fitted to the front strut. 7. The front gunner's position with a Lewis gun mounted. The hatch over this was normally closed in flight and only opened after the aircraft had landed. On the starboard side of the fuselage is mounted the aircraft's bomb sight. This was rarely used as it was felt easier to drop any ordnance by line of approach and was therefore hardly ever carried under operational conditions.





Continued from page 21

With 746 Walruses built, there were obviously many that survived the war and were used as previously stated for non-operational communications work and a variety of other essential duties.

With the ending of the war, the Walrus disappeared quickly and had been entirely phased out of Royal Navy service by the end of 1946. A dozen or so were still flying in the Royal Canadian Navy training establishment at Yarmouth and others were noted at a Flying Training School at Kingston, Ontario. Similarly the RAF soon declared the Walrus surplus to requirements and many of the wooden-hulled Mk.IIs were burned for fire practice.

Apart from the Australian export order, several other small exports were made, including two aircraft, M-0-9 and M-0-10, for the Argentinian Navy. Eight further aircraft were sent to Argentina during 1947 while France's Aeronavale had an undiscovered number which were employed on ASR and training duties with 53S at Hourtin.

Examples are also known to have been exported in small numbers, to Turkey and Egypt and one even went to the Soviet Union.

Civil sales were at first thought to be highly possible and at one time Saunders-Roe at Homerton, near Cowes, Isle of Wight, was full of Walrus airframes in various stages of civil conversion. The war had proved that this type of aircraft was ideal for operating in the under-developed parts of the world and several were bought by Australian companies such as Amphibious Airways who had two Seagull Vs and two Walruses for charter, ambulance and survey work in New Britain and the Solomon Islands. These aircraft were licensed to carry an almost unbelievable ten passengers and two crew. One wonders how they all got in and what seating was provided! At least two of these aircraft survived until 1954.

Another former Seagull V was bought by Australian interests for sightseeing along the Great Barrier Reef up until 1962. This aircraft (VH-ALB) was refurbished and entered into the UK to Australia air race in 1969 but only reached Indonesia where it suffered damage which prevented it from continuing. Subsequently, this aircraft, the oldest Seagull then flying, was returned to Australia and after being rebuilt is now part of the RAF Museum's Battle of Britain collection.

British interests bought several surplus Walrus Mk.Is and IIs for conversion as

whale spotters from the *MV Balaena*. United Whalers, the company concerned, took three to the South Atlantic, registered G-AHFL, G-AHFM and G-AHFN. They were used without undercarriages and launched from the ship using a catapult and crane taken from *HMS Pegasus*. The venture was not as successful as first thought and public opinion concerning the methods used brought the project to a halt. Other aircraft awaiting conversion at Cowes were abandoned. Two aircraft, PH-NAW and PH-NAX, were embarked on a Dutch whaling ship the *Willem Barendsz* but not used.

It is interesting to note that G-AHFN was used for air racing and won the Folkestone Trophy in 1946 flown by John Grierson who was appointed as aircraft manager by United Whalers.

The first of the trio was sold in Norway as LN-TAK and operated a charter service with

The remains of Walrus, originally N18, bought by the Irish Air Corps and later in service with Aer Lingus as EI-ACC. It remained at Thame airfield, Buckinghamshire, before being rescued by the FAA Museum and rebuilt at Arbroath. (R.L.Ward)

another Walrus by Vestlandske Luftfartsselskap after United Whalers had given up the project

Apart from the example in the RAF Museum, the Royal Navy has preserved a Walrus at Yeovilton. This one was part of the original sale to the Irish Air Corps serialised N.18. It was again sold, this time to Aer Lingus who registered it as EI-ACC. It returned to the UK to take up the registration G-AIZG and was eventually sold for scrap in 1963 after having spent several years abandoned and in a derelict condition on Thame airfield, Buckinghamshire. The remains were bought by the museum and it now has a permanent place in the exhibition after having been completely rebuilt at RNAS Arbroath.

The Australian War Museum has one example brightly painted all-yellow whilst one is known to have survived in Canada,

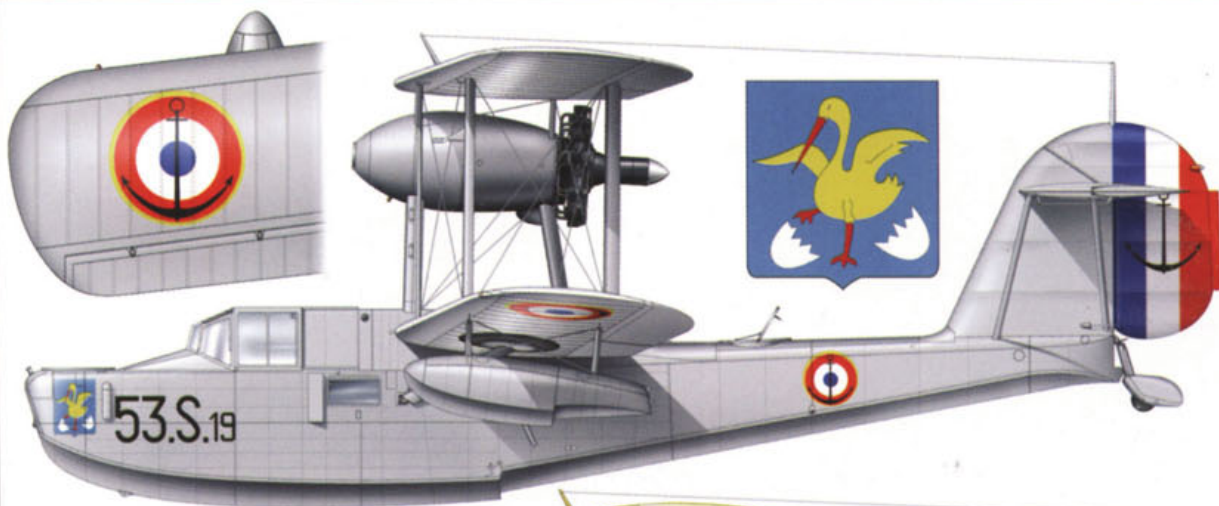
Thus ended the story of the Walrus, an aircraft overtaken by technology in that its prime role of Fleet spotting and reconnaissance, was eliminated following the invention of radar. Nevertheless it did a highly important role in other directions and will doubtless be remembered with affection by its nickname 'Shagbat' by countless RAF and Fleet Air Arm aircrew.

Civilianised Walrus (Seagull V) VH-ALB was formerly A2-4 used post-war for sight seeing tours over the Great Barrier reef. It also took part in the England-Australia air race in 1969 but force landed in Indonesia and did not complete the course. Subsequently rebuilt in Australia it is now on display in the RAF Museum, Hendon, (via Ray Sturtivant)

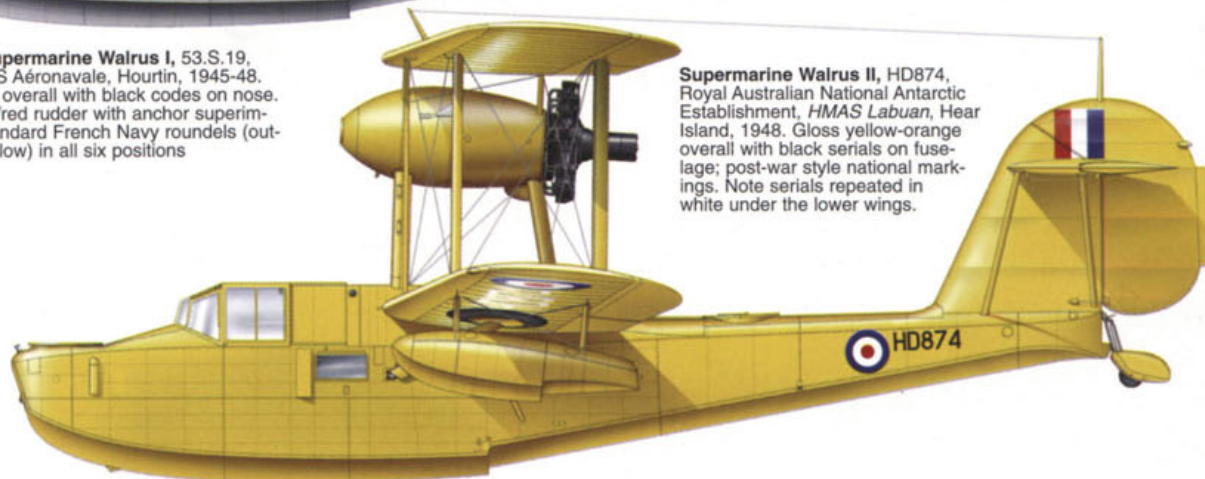


Supermarine Walrus kits and accessories

Scale	Variant	Manufacturer	Reference	Remarks
1:72	Walrus II	Matchbox	PK105	Injection moulded kit
1:72	Walrus	Airfix	CC137	Injection moulded kit
1:72	Walrus	Esoteric	NAF36	Vacuform with metal parts
1:48	Walrus	Classic Airframes	CF451	Injection moulded kit
1:48	Walrus	Merit	SM815	Injection moulded kit
1:48	Walrus	SMER	SR114	Injection moulded kit same kit as Merit

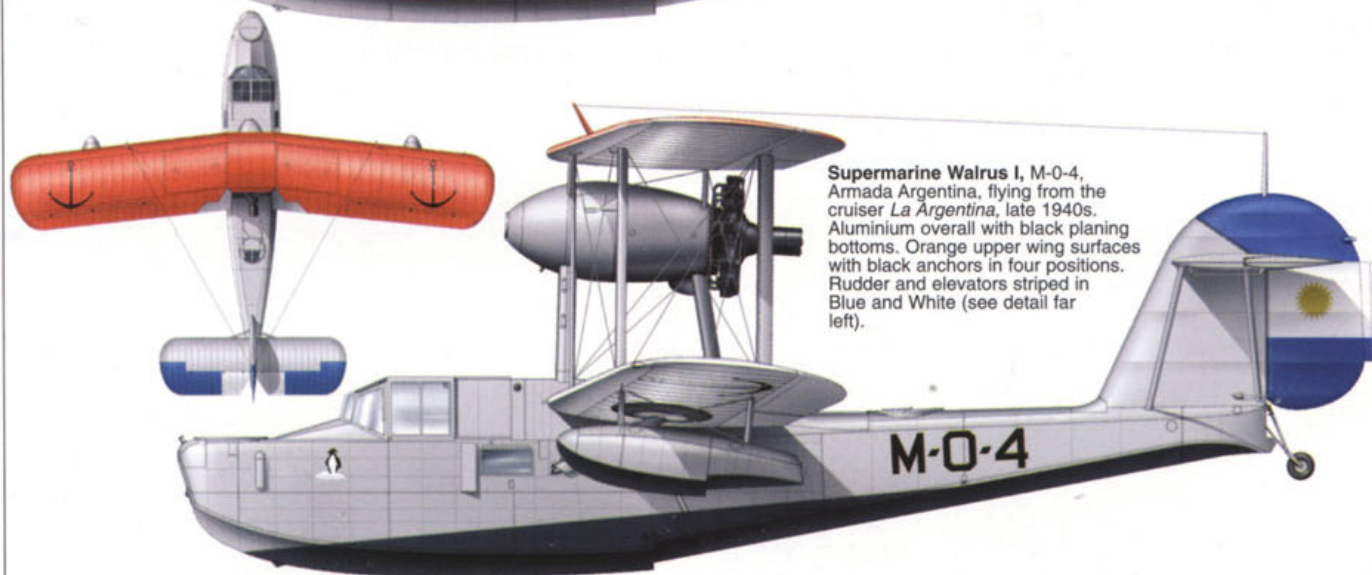


Above: Supermarine Walrus I, 53.S.19, Flotille 53S Aéronavale, Hourtin, 1945-48. Aluminium overall with black codes on nose. Blue/white/red rudder with anchor superimposed. Standard French Navy roundels (outlined in yellow) in all six positions



Supermarine Walrus II, HD874, Royal Australian National Antarctic Establishment, *HMAS Labuan*, Hear Island, 1948. Gloss yellow-orange overall with black serials on fuselage; post-war style national markings. Note serials repeated in white under the lower wings.

Supermarine Walrus I, G-AHFN/2 (ex-L2336), United Whalers Ltd., London, *MV Balaena*, winner of the Daily Express Trophy Race at Lympe, 1946. Yellow upper surfaces; aluminium undersides. Registration on fuselage is in green, repeated under lower wings in black with G-AH under starboard and FN under port. Race number '2' on rudder in black.



Supermarine Walrus I, M-0-4, Armada Argentina, flying from the cruiser *La Argentina*, late 1940s. Aluminium overall with black planing bottoms. Orange upper wing surfaces with black anchors in four positions. Rudder and elevators striped in Blue and White (see detail far left).



Supermarine Walrus specification

Seagull V

Dimensions: Span: 46 ft 0 ins, Length (on chasis) 38 ft 0 ins, height: 15 ft.0ins, wing area: 610 sq ft.

Power plant: One 625 hp Bristol Pegasus HM2 engine driving a four-bladed propeller.

Performance: Max speed: 125 mph at 3,280 ft, alighting speed: 54 mph, range: 634 miles at 95 mph; max rate of climb: 900 ft. per min, climb to 10,000 ft 17.25 mins, service ceiling: 15,500 ft.

Armament: Two manually operated Lewis or Vickers K guns in nose and midships position. Shackles under wings for either two depth charges or up to two 250lb GP bombs

Crew: Three, pilot, navigator and telegraphist/air gunner.

Walrus Mk. I and II

Dimensions: Span 45 ft 10 ins, length: 37 ft 7 ins, height: 15 ft 3 ins, wing area: 610 sq ft.

Power plant: One 750 hp Bristol Pegasus VI driving a four-bladed propeller.

Performance: Max speed: 135 mph at 4,750 ft, alighting speed: 57 mph, range: 600 miles at 92 mph, max rate of climb: 1,050 ft per min, climb to 10,000 ft 12.5 mins., service ceiling: 18,500 ft.

Armament: Two manually operated .303 Vickers K or Lewis guns in nose and midships positions. Shackles under wings for two depth charges or two 250 lb GP bombs.

Crew: Basically three but could be four for special operations. Pilot, navigator and wireless operator/gunner

The RAF Museum's Walrus Mk.I was a former Australian Seagull V, A2-4 civilianised as VH-ALB.



Four Walrus aircraft of 764 Squadron, of the Royal Navy's Basic Seaplane Training unit which was based at Lawrenny Ferry, Milford Haven seen during a rare formation flight over south Wales. (via Ray Sturtivant)

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