



MISPLACED

As the likelihood of war grew during the 1930s, the RAF's re-equipment became vital. To maintain the pace, some types were ordered into production straight off the drawing board – a risky, but necessary process.

While the Saunders-Roe Lerwick was a handsome flying-boat, it flattered to deceive. It required many modifications but nothing cured its problems. As the RAF was faced with a paucity of modern equipment, the Lerwick was pressed into action and its brief service life was littered with accidents and fatalities.

Air Ministry Specification R1/36 sought to replace the Saunders-Roe (Saro) London and Supermarine Stranraer biplane flying-boats. In March 1936 four companies received the requirement: Blackburn, Saro, Short Brothers and Supermarine. The contender from Supermarine was favoured but the

MUCH WAS EXPECTED OF
DESCRIBES THE LAST SARO



company was gearing up to produce Spitfires, so Saro won a production contract for its design, which took its name from the main town of the Shetland Islands.

After the original submission had been revised by chief designer Henry Knowler from a shallow gull-winged form to a deep-hulled arrangement, a contract for ten S.36 flying-boats was awarded, later upped to 21 examples. The first Lerwick, L7248, flew from Cowes, Isle of Wight, in the hands of Frank Courtney during late October 1938. It was powered by two 1,375hp (1,025kW) Bristol Hercules HE.1M radials.

Trials immediately revealed problems. Despite water tank and wind tunnel tests with models, the real thing suffered serious hydrodynamic problems, including a tendency to porpoise, sometimes severely. In the air, elevator overbalance and instability in roll and yaw were encountered; 'hands-off' flight was impossible.

By January 1939 the second example, L7249, had begun testing, while L7248 passed to Marine Aircraft Experimental Establishment (MAEE) at Felixstowe, Suffolk, in mid-March. (MAEE moved to Helensburgh, Scotland, in September 1939.)

At MAEE, L7248's shortcomings were confirmed and it was returned to Cowes. It was given two auxiliary tailplane fins and an extended chord rudder, but no real improvement resulted.

Various combinations of enlarged and auxiliary tail surfaces, as well as an experimental twin fin and rudder configuration were tested. An enlarged fin extending from the leading edge and a rudder of increased chord and height were settled on, but it only marginally improved flight control. Investigations into water performance continued until 1941.

Trials at Felixstowe found that the Lerwick's top speed was only around

214mph (344km/h), rather than the 235mph demanded by R1/36 and that take-off runs were unduly long. Efforts were made to shed weight, while the crew complement was reduced from nine to six.

CANCELLED, REINSTATED

After a hatch had been inadvertently left open, L7249 sank at its Felixstowe moorings on September 1, 1939. Two days later war broke out and L7252, also on MAEE charge, encountered bad weather on a flight from Pembroke Dock in Wales to Stranraer in Scotland. Fg Off David Banks spotted a gap in the rain clouds and descended, but found himself over Dun Laoghaire, Dublin. Alighting, he tied up and presented himself to the harbourmaster, who allowed him to buy stores at the local shop, and then charged him £5 before he was sent on his way. Crew and aircraft were lucky not to be interned; ➔

Far left

A sergeant of 209 Squadron about to release a carrier pigeon from the side hatch of a Lerwick.

Below

Lerwicks at East Cowes in the summer of 1939. All have extensions to their original upper rudder profiles, while L7248 (foreground) is fitted with auxiliary fins.

THE LERWICK, BUT IT TURNED OUT TO BE AN ABJECT FAILURE. PETER LONDON
O FLYING-BOAT TO ACHIEVE SERIES PRODUCTION



"...the Lerwick suffered serious hydrodynamic problems including a tendency to porpoise, sometimes severely. In the air, elevator overbalance, and instability in roll and yaw were encountered..."

Right
A Lerwick of 4 OTU during the summer of 1941.

Below
The first Lerwick, L7248, at MAEE Felixstowe for assessment in March 1939.

as war broke out across Europe, Ireland had declared its neutrality.

During the summer of 1939 the re-equipment 240 Squadron began at Invergordon, Scotland. Four Lerwicks had arrived by October but the unit's conversion to the new type was abandoned and the London biplanes had to soldier on.

Grave doubts were expressed over the Lerwick's future. The programme was cancelled on October 24, only to be reinstated eight days later. Air Marshal William Sholto Douglas wrote to the Vice-Chief of the Air Staff, ACM Sir Wilfrid Freeman, on December 16 suggesting the Lerwick be scrapped and Saro build Sunderlands instead.

But Sunderland production at Cowes would have taken many months to achieve and at that critical time Britain was acutely short of flying-boats. During December, 209 Squadron at Invergordon and Oban began exchanging its elderly Supermarine Stranraers for Lerwicks.

During April 1940 the reworked Lerwick L7254 was assessed by MAEE at Helensburgh. Wing incidence had been increased, somewhat shortening take-off run. Other problems lingered: power-off stalling characteristics remained severe and when power was applied and flaps lowered the aircraft could become uncontrollable.

With the wings modified, Lerwicks entered operational service. During Christmas Day 1939, L7255 of 209 Squadron made its first, uneventful,

patrol. The following day L7256 arrived, but immediately became unserviceable due to leaks from the hydraulics and fuel tanks.

GROUNDED

Complaints and troubles persisted. Following a throttle lever collapse on February 5, 1940 all Lerwicks were grounded for modification. To prevent a marked pitch-down movement when the rear turret was rotated from aft to beam, deflectors had to be installed.

Lerwicks could not maintain height on a single engine, or direction against the torque of the remaining engine at increased power. The centre of gravity was typically at the aft end of the range, which made load distribution complicated.

The engine nacelles suffered excessive vibration, particularly during take-off and landing, necessitating modification of the mountings. Hydraulic failures caused the bomb doors to droop open. To improve seaworthiness the wing floats were given additional buoyancy, which improved water handling somewhat. Excessive corrosion was found around the rear turret, due to ingestion of spray.

LOST WITHOUT TRACE

The final Stranraer sortie for 209 Squadron took place on April 22, 1940, before the unit became all-Lerwick. Already 209 had suffered crew losses with its new mount. Returning from its first operational



patrol on February 20, L7253 stalled and hit the water hard near Lismore Island in the Inner Hebrides, collapsing its starboard wing float and turning turtle. All six crewmen escaped, but four drowned before rescue boats arrived.

Having returned from shipping escort duties L7261 was lost on June 29 following a float collapse while taxiing cross-wind, fortunately with no casualties. This machine had been on charge with 209 a mere 13 days.

Moving in the summer of 1940 to Pembroke Dock, 209 was tasked with patrolling the Irish Sea, but the Lerwicks were soon grounded for more modifications. On July 26 L7262 was allowed to help search for a lost Fokker T.8W floatplane of 320 Squadron.

From November, 209 Squadron returned north to Stranraer. On November 21, L7251 sank at its moorings on Loch Ryan during a gale, after its front turret had been left unsecured.





Worse was to follow. On December 6, L7255 was lost, again on Loch Ryan in high winds, after a collapse of its starboard float. During an exceptionally long take-off run on Loch Ryan on January 7, 1941, L7262 was holed and the aircraft sank in two minutes. Two crewmen were killed. On February 22, L7263 disappeared on patrol in fine weather and the six people on board were never seen again.

ATROCIOUS ATTRITION

By the end of 1940 extensive tank tests of the Lerwick's hull had been carried out at Royal Aircraft Establishment, Farnborough, and Short Brothers had been invited to render its expertise. Extensive structural changes to the lower hull, lowering the planing bottom and deepening and moving the step, were found to help reduce the porpoising trait.

The value of these changes was



Left

The Lerwick's bomb bays were built into the engine nacelles. This is L7265.

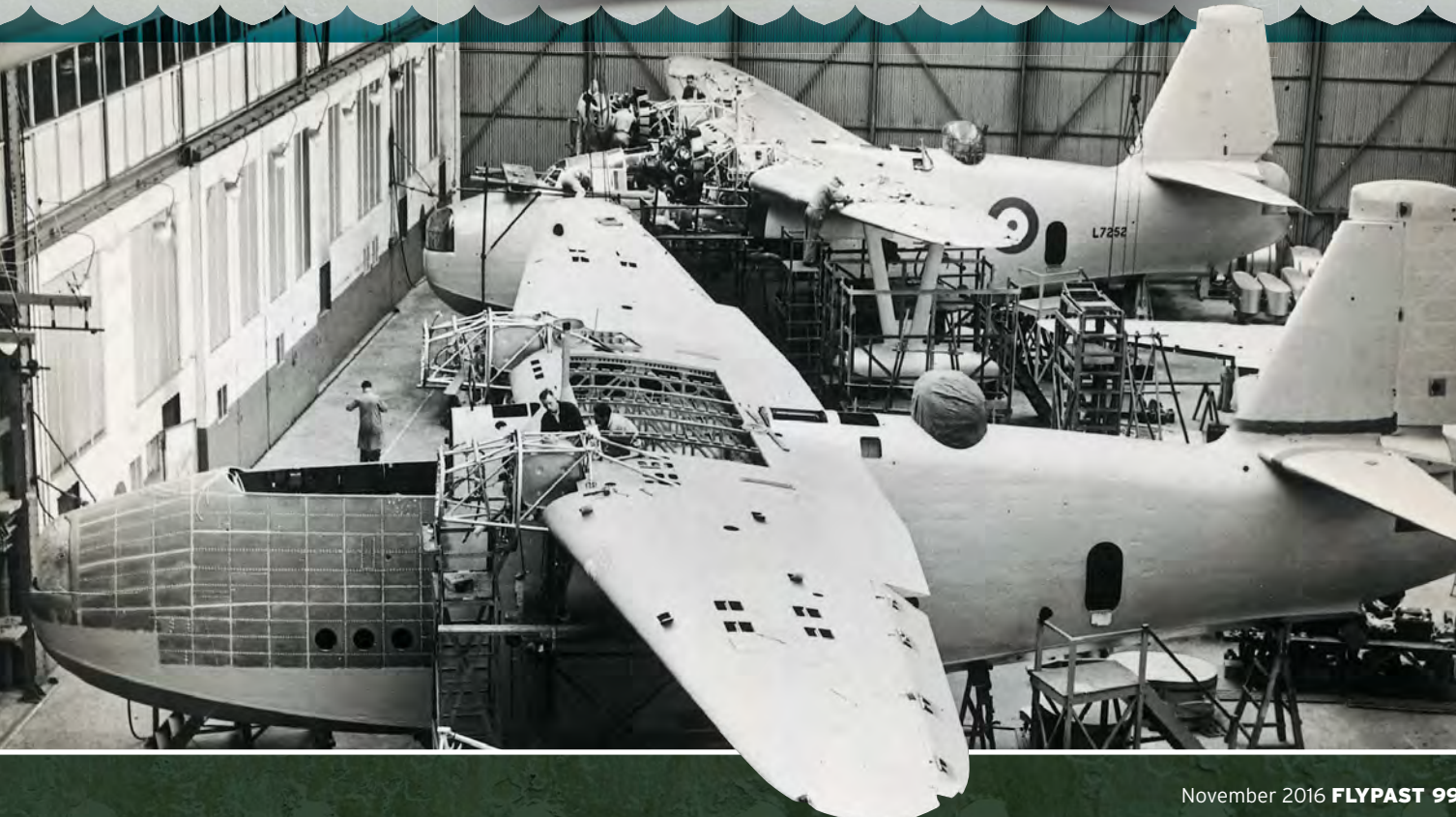
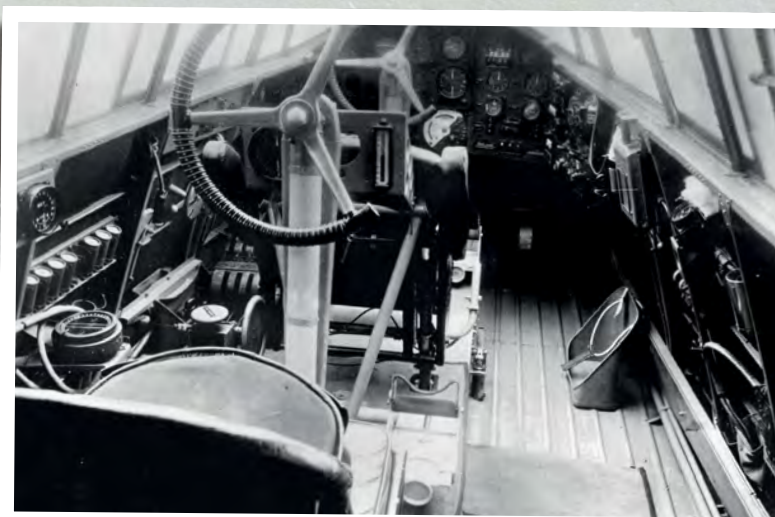
Below left

The cockpit of Lerwick L7248, equipped with large spectacle control columns in tandem layout.

Below

Lerwicks under construction at the Saro East Cowes premises.

“Lerwicks could not maintain height on a single engine... Hydraulic failures caused the bomb doors to droop open... Excessive corrosion was found around the rear turret, due to ingestion of spray”



SARO'S 'SHRIMP'



Lerwick L7256 is seen above moored at the mouth of the River Medina at Cowes, Isle of Wight.

It was built at Saro's factory at East Cowes, a matter of yards from its mooring, and was taken on charge by 209 Squadron at Oban in Scotland on December 26, 1939. Behind it, an Elder Dempster line banana boat steams eastward up the Solent, bound for Southampton.

But the centre of interest is the four-engined flying-boat overhead - the one-off Saro A.37. Saro responded to Specification R5/39 seeking a replacement for the Short Sunderland, but the requirement was quickly abandoned when it was realised that the magnificent Short still had plenty of 'life' left in it.

Saro had launched its S.38 project and embarked upon the build of a half-scale aerodynamic prototype, the A.37, nicknamed 'Shrimp'. Although its original purpose had gone, the A.37 was completed and civilian registered as G-AFZS. It was first flown by Leslie Ash from the Solent in October 1939.

After trials at the Marine Aircraft Experimental Establishment at Helensburgh in Scotland in 1941 and use for development work on the Short-Saro Shetland, it was scrapped in 1949. KEY COLLECTION



confirmed using L7248 and L7250, and more reworking took place. But the terrible attrition rate continued. On March 24, L7252, operating temporarily from Pembroke Dock but still with 209 Squadron, was being used to evaluate experimental blind-flying apparatus in poor weather conditions.

Failing to reach the safety of the estuary, the aircraft alighted in an extremely rough sea. On hitting the water it was thrown vertically upwards by a large wave. An engine broke off at the firewall and its propeller sliced through the hull - L7252 sank rapidly, thankfully without loss of life.

Strikes against the enemy were rare but in preparation for encounters with the Luftwaffe, during March 1940 L7257 engaged in gunnery practice with a target-towing Hawker Henley. On March 25, L7256 released a bomb at a submarine just beneath the waves, without discernible effect. Success remained elusive on June 20, when L7260 bombed the head of a submarine trail.

CANADIAN STOP-GAP

By April 1941 Consolidated Catalinas began to arrive with 209 Squadron. Gradually the surviving Lerwicks were transferred, mostly to 4 Operational Training Unit at Stranraer. But the Lerwick was not suited to instructional duties. The tandem pilots' seats meant that, after performing some take-offs and landings by way of illustration, the instructor had to stand behind the pupil and verbally coach him as he tried to cope with the aircraft.

At Cowes, Saro turned its production capacity to building Walrus and later Sea Otter amphibians for Supermarine as well as sub-contracting for other manufacturers. Post-war the SR.A/1 jet and the enormous Princess passenger flying-boats did not get beyond the prototype stage.

More accidents occurred involving Lerwicks, one killing nine of 12 men in overloaded L7268 after its port engine failed and it dived into the sea near Tarbat Ness on October 14. L7257 sank at its Invergordon moorings on November 11, and L7265 crashed at Invergordon on December 21 after suffering wing distortion.

Surprisingly, during the summer of 1942 the Lerwick briefly re-entered operational service, joining 422 Squadron RCAF at Lough Erne, Northern Ireland, as a stop-gap until Sunderlands became available. On September 10, L7267 hit the sea violently on alighting, bounced, and the entire tail section broke off.

From October the remaining Lerwicks were finally retired, and after passing through manufacturer Scottish Aviation, were struck off or became training aids. First to leave Lough Erne was L7258 on October 14. Seven days later, in a final tragedy Lerwick L7248 flew into a hill at Faslane near Helensburgh during calibration tests; the seven aboard were killed.

The enquiry commented on the pilot's inexperience but suggested starboard engine failure had led to the crash, stressing: "The handling characteristics have never been satisfactory when flying with one engine". It's hard to imagine anyone was sorry to see the Lerwick go. ●

Below

'O-for-Queenie' L7265 of 209 Squadron at speed on the waters of Loch Ryan.

ALL VIA AUTHOR

