

VINTAGE WINGS OF CANADA

WESTLAND COMPANY

LYSANDER III A

AIRPLANE HISTORY COMPILED BY VWC VOLUNTEER DON MACNEIL



INTRODUCTION

In 1934, Westland Aircraft Ltd. designed and developed the Lysander in response to a British Air Ministry specification (A.39/34) for a two seat, high wing, monoplane observation aircraft that could operate in close co-operation with front line army units from unprepared air strips. Duties envisioned for the design included: tactical reconnaissance, artillery spotting, message communications, urgent front line supply requirements and limited ground attack duties. These perceived duties drove the requirements for good pilot visibility, rough field, short take-off and landing (STOL) capability with light armament and bombing capacity.



The "Lizzie" as they were affectionately called by their Royal Air Force aircrews replaced vintage Hawker Audax bi-planes then populating Army Co-operation squadrons in the aerial spotting and reconnaissance role. They later served with Coastal Command in search and rescue and shipping protection. Other roles included flying anti-invasion coastal surveillance patrols and target towing.

While not their main role, but probably their most famous one and that to which the aircraft was ideally suited (good pilot visibility, speed and STOL performance), "special operations" was where Lizzies were used by Royal Air Force Squadrons 138 and 161 to successfully fly allied agents into and out of occupied Europe and Southern France under the cover of darkness.

Few Lysanders survive in flying condition today and are considered rare birds in the current warbird movement.



Photo: John Brennan

Design History

The prototype Lizzie made its first flight in 1936 with production aircraft first entering RAF service with No. 16 Squadron based at Old Sarum airfield near Salisbury, England in 1938.

The army cooperation role requirements resulted in an interesting wing design, a high gull-wing with strut bracing, automatic leading edge wing slats and slotted wing flaps. Looking like the wings of a prehistoric bird, this wing design provided the high lift required for STOL operations as well as speed. Sturdy landing gear and large wheels enabled rough field landing and take-off. The aircraft's cruise and maximum speed is often overlooked because of the excellent STOL performance and low stall speed of 65 mph. With a powerful 870 hp, Bristol Mercury XX or XXX engine, they were capable of 300 mph in a dive and cruised with considerable range at a brisk 206 mph (332 km/h) which was impressive for the times.

To communicate with army units on the ground and to preserve radio silence, Lizzie crews could extend a fuselage mounted hook and snatch messages from the ground with replies sent by dropping weighted packets containing hand written messages.

The ground support requirement resulted in an aircraft fitted with one .303 Browning

Dimensions:	Imperial	Metric
Wing Span:	50"	(15.24 m)
Fuselage Length:	30' 6"	(9.29 m)
Height:	11' 6"	(3.5 m)
Wing Area:	260 sq ft	(24.2 sq m)

Weight:		
Empty:	4,404 lbs	(1,834 kg)
Fully Loaded:	5,833 lbs	(2645 kg)

Performance:		
Maximum Speed:	212 mph	(341 kph)
Cruising Speed:	206 mph	(332 kph)
Landing Speed:	55 mph	(88 kph)
Range:	600 mi	(966 km)
Max Climb:	1,410 ft/minute	(429.77 m/minute)
Max Altitude:	21,500 feet	(6,550 m)



machine gun in the nose of each wheel spat and dual Browning machine guns in the rear cockpit. Wheel strut and rear fuselage mounts provided the capability to carry 40-pound bombs.

At the outbreak of war, four of seven Lysander squadrons were first deployed with the British Expeditionary Force to France as 50 (Army Cooperation) Wing with a fifth squadron added later.

Lysanders operating alone or sometimes in pairs, were no match for German fighters although a few did defend themselves successfully and in one or two cases pressed home attacks on less capable enemy aircraft.

Prior to the Dunkirk evacuation, Lysanders operated from Amiens, Boulogne, Calais and Dunkirk. They dropped supplies for troops defending Calais during the evacuation and were the last aircraft to leave France with the failure of the Dunkirk invasion.

Only 50 of the original complement of 174 Lysanders serving in four British squadrons in France from 1939 to early 1940 survived and return to Britain. For an aircraft with a role that became obsolete in these early stages of the war, Lysanders went on to considerable success throughout the war in other roles including air-sea rescue, target towing and special operations.

Between 1940 and 1941 four squadrons were formed to conduct air sea rescue operations. In this role, the lives of many allied airman and seamen were saved when located by Lysander crews off the coast of England and Europe. Lysander crews would drop life rafts and supplies allowing survivors to evade the enemy or the perishing cold until rescued by Walrus flying boats or fast motor launches.

Perhaps the first stealth, black painted Lysanders with their short take-off and landing characteristics, were ideally suited to deliver supplies and pick up Allied agents or downed Allied aircrew in occupied France and Belgium under the cover of moonless nights. This Lysander role, which was popularized in the press and movies was referred to as special operations. Lysanders

proved ideal in this important but limited role which involved only a single flight (six aircraft) of aircraft from 138 Squadron which were later transferred to 161 Squadron.

Special Operations' insertion flights operated from the RAF base in Tempsford, England and were generally conducted on moonless nights using only the map reading and dead reckoning navigation skills of their pilots who flew alone. Mark III (S.D.) Lysanders were specifically designed for this role with a 150 gallon long-rang fuel tank suspended under the fuselage. A boarding ladder with rungs marked by luminous paint were fixed to the port side of the after-cockpit which facilitated fast boarding and evacuation of the aircraft by allied agents. Between August 1941 and late 1944 over one hundred such flight were flown with some 700 resistance movement agents making the trip while documents, maps and messages were also carried both ways.

Lysanders served throughout the war in the U.K., Europe, the middle east and India. Altogether 1425 of these now rare aircraft were built in England and a further 225 in Canada. Lysanders built under license in Canada were primarily used as target-tugs or communication aircraft. Lysanders were finally declared obsolete in January 1946.



Photo: Nick Blacow



Lysander Design and Specifications

This two-place monoplane incorporated a strut braced, high-lift, slotted wing design which gave it excellent short take-off and landing performance. A large “greenhouse” cockpit with high pilot and observer seating position gave excellent all-around visibility.

The largest Elektron (magnesium-alloy) extrusion ever made at that point in history formed a single large arch for the main landing gear assembly. Large wheels allowed landing on rough ground. Landing lights and optionally machine guns were incorporated into the nose of each wheel fairing.

Wings – high gull-wing mono-plane, fabric on metal alloy frame construction

Fuselage – fabric on metal alloy frame construction; with enclosed cockpits

Landing Gear – fixed

Power Plant – one Bristol Mercury XX or XXX 870 hp (649 kW) poppet valve, radial engine

Propeller – de Havilland variable pitch three-blade, propeller

Accommodation – two crew comprised of single pilot and observer/radio operator/air-gunner

Manufacturer – Westland Aircraft Ltd., Yeovil, Somerset and Dorchester England; built under license in Canada by National Steel Car

Armament –one fixed Browning 0.303 in (7.7-MM) Browning machine gun in each wheel fairing fed by a 500 round ammunition box in the fuselage; early models equipped with one 0.303 inch machine gun, manually operated Vickers K gun or Mk III Lewis guns in rear cockpit, models after 1942 had twin Browning guns with belt feed. Four 20 lb (9kg) light bombs under rear fuselage; 500 lb (227 kg) of bombs could be carried on stub wing racks attached to wheel fairings.

Origins of Vintage Wings Lysander

1942 - Originally built by the National Steel Car Corp. at Malton, just west of Toronto and assigned manufactures construction number 1206 and RCAF serial number 2365.

1942 - Taken on strength with RCAF June 23.

1946 - Struck off strength August 28 from No. 2 Training Command and stored at No. 210 Reserve Equipment Maintenance Satellite, Weyburn, Saskatchewan.

1972 - Sold to Martin Riehl of Calgary.

1977 - Sold to Harry and Anne Whereatt of Assiniboia, Saskatchewan and restored with wings from RCAF Lysander, serial number 2376.

2007 - Acquired by Vintage Wings with original Canadian civilian registration C-FVZZ.



Photo:DND