

## Westland Lysander



[Westland Lysander aux couleurs de la RAF en vol](#)

Le Westland Lysander reste célèbre aujourd'hui pour avoir infiltré ou exfiltrer des agents en territoire occupé pendant la seconde guerre mondiale, particulièrement en France. Ces opérations se faisaient de nuit et nécessitaient des capacités ADAC. Le Lysander fut conçu par Arthur Davenport sous la direction de Teddy Petter. Alors désigné P.8, il devait répondre à la spécification A.39/34 de 1934, qui visait à remplacer les Hawker Hector. L'appareil devait servir à la coopération inter-armes, en clair au réglage d'artillerie, ainsi qu'à la liaison. Petter interrogea les pilotes de la RAF pour connaître leurs désirs, et il en résultat que l'appareil devait disposer d'un excellent champ de vision, de capacités ADAC et de bonnes capacités de vol à faible vitesse. Le résultat fut un appareil dont la conception faisait ancienne : train classique fixe, aile haute qui donnait la fausse impression d'être en mouette, moteur Bristol Mercury à refroidissement par air, construction métallique mais ailes entoilées. Mais malgré les apparences, il était avancé et ses dispositifs hypersustentateurs lui donnaient une vitesse de décrochage de seulement 104 km/h. Il effectua son vol inaugural le 15 juin 1936 et fut mis en concurrence avec le Bristol 148 : deux prototypes de chacun furent commandés. Le Lysander fut rapidement déclaré vainqueur et fit l'objet d'un contrat de production en septembre 1936, pour 144 exemplaires. Le Lysander, ainsi nommé en référence au général spartiate Lysandre, entra en service en juin 1938 au sein du squadron n° 16 et fut affecté à des unités dont la tâche était le réglage d'artillerie et le largage de messages. Lors de la déclaration de guerre, les Mk II supplantaient les Mk I, ces derniers étant alors affectés au Moyen-Orient ou en Birmanie. 4 escadrons furent affectés au corps expéditionnaire britannique en octobre 1939. Lors de la bataille de France, ils servirent à la reconnaissance et à l'attaque au sol léger.

Malgré quelques victoires aériennes, ils furent vulnérables à la Luftwaffe, même escortés. Sur 175 appareils déployés en mai et juin 1940, 118 furent perdus. Dans le pur rôle de reconnaissance, ils furent remplacés par des P-40 et P-51, et dans le rôle de réglage d'artillerie par des Auster. Il commença alors à servir dans des missions SAR, en larguant des dinghys aux pilotes abattus dans la Manche.



[Westland Lysander IIIA de la RAF exposé](#)

Dès août 1941, un escadron destiné aux missions spéciales fut formé, le n°138. Il s'agissait de permettre aux agents du SOE de maintenir le contact avec les résistants en France occupée. Le Lysander III fut sélectionné afin de remplir cette mission, et modifié avec une échelle fixée et un réservoir supplémentaire sous le ventre. Peints en noir, ils n'opéraient que les nuits de pleine lune. Ils permirent d'infiltrer ou d'exfiltrer des agents, ou des pilotes abattus, jusqu'en 1944. Le squadron 138 fut rejoint par le squadron 191 début 1942. 101 agents furent infiltrés et 128 autres récupérés. Quand à la Luftwaffe, elle connaissait peu cet appareil, qu'elle chercha à étudier. L'unique Lysander capturé intact, en mars 1942, fut détruit lorsqu'un train percuta le camion qui le transportait. Les Forces aériennes Françaises Libres utilisèrent 24 Lysander à partir du 29 août 1940, au sein du Groupe Mixte de Combat 1 basé à RAF Odiham. Ils servirent à emmener des gaullistes chargés de convaincre les autorités du Cameroun, du Gabon et du Tchad de rejoindre la France Libre. Leurs missions furent essentiellement de la reconnaissance, parfois de l'attaque au sol. Le Canada fit construire le Lysander sous licence par National Steel Car, à partir d'octobre 1938. Le premier des 225 exemplaires construits vola en août 1939. Ils furent rejoints par 104 autres exemplaires construits en Grande-Bretagne. Là-aussi, ils servirent dans des missions de coopération avec les troupes au sol, ou de remorquage de cibles. La Fleet Air Arm utilisa 18 Lysander. Il fut également vendu à la Finlande (4 Mk I et 9 Mk III), à l'Egypte (18 Mk I, utilisés jusqu'en 1951, et 2 Mk III), à l'Inde (22 Lysander II), à l'Irlande (6 Mk II), au Portugal (8 Mk IIIA), à la Turquie (36 Mk II) et aux USA (25, pour des missions d'entraînement). Un escadron polonais de la RAF, le N° 309 "Land of Czerwien", l'utilisa. Les volontaires birmans reçurent 5 Lysander Mk II. Il fut retiré du service de la RAF en 1946 et les exemplaires égyptiens furent les derniers à être utilisés en service, en 1948 contre Israël. Nombre de surplus furent revendus sur le marché civil après-guerre. 1786 exemplaires furent construits. Une vingtaine ont survécu de nos jours, exposés et deux en état de vol.

Source : <https://aviationsmilitaires.net/v3/kb/aircraft/show/693/westland-lysander>

Version anglaise Wikipédia

The **Westland Lysander** is a British [army co-operation](#) and [liaison aircraft](#) produced by [Westland Aircraft](#) that was used immediately before and during the [Second World War](#). After becoming [obsolete](#) in the army co-operation role, the aircraft's [short-field performance](#) enabled clandestine missions using small, improvised airstrips behind enemy lines to place or recover agents, particularly in [occupied France](#) with the help of the [French Resistance](#). [Royal Air Force](#) army co-operation aircraft were named after mythical or historical military leaders; in this case the [Spartan](#) admiral [Lysander](#) was chosen.

### Design and development

In 1934 the [Air Ministry](#) issued [Specification A.39/34](#) for an army co-operation aircraft to replace the [Hawker Hector](#). Initially [Hawker Aircraft](#), [Avro](#) and [Bristol](#) were invited to submit designs, but after some debate within the Ministry, a submission from Westland was invited as well. The Westland design, internally designated P. 8, was the work of [Arthur Davenport](#) under the direction of "[Teddy](#)" [Petter](#). It was Petter's second aircraft design and he spent considerable time interviewing [Royal Air Force](#) pilots to find out what they wanted from such an aircraft. The army wanted a tactical and artillery reconnaissance aircraft to provide photographic reconnaissance and observation of artillery fire in daylight – up to about 15,000 yards (14 km) behind the enemy front. The result of Petter's pilot enquiries suggested that field of view, low-speed handling characteristics and [STOL](#) performance were the important requirements.



Westland Lysander Mk.III (SD) in overall black camouflage as used for special night missions into [occupied France](#) during World War II.

Davenport and Petter designed an aircraft to incorporate these features. The Lysander was to be powered by a [Bristol Mercury](#) air-cooled [radial engine](#) and had high wings and a fixed [conventional landing gear](#) mounted on an innovative inverted U square-section tube that supported wing struts at the apex, and contained internal springs for the [faired](#) wheels. The large streamlined spats also contained a mounting for a Browning machine gun and fittings for removable stub wings that could carry light bombs or supply canisters.<sup>[1]</sup> The wings had a reverse taper towards the root, which gave the impression of a bent [gull wing](#) from some angles, although the spars were straight. It had a girder type construction faired with a light wood stringers to give the aerodynamic shape. The forward fuselage was [duralumin](#) tube joined with brackets and plates, and the after part was welded stainless steel tubes. Plates and brackets were cut from channel [extrusions](#) rather than being formed from [sheet steel](#). The front spar and lift struts were extrusions. The wing itself was fabric covered and its thickness was greatest at the strut anchorage, similar to that of later marks of the [Stinson Reliant](#) high-winged transport monoplane. Despite its appearance, the Lysander was aerodynamically advanced; being equipped with fully automatic wing [slats](#) and slotted [flaps](#)<sup>[2]</sup> and a [variable incidence](#) tailplane. These refinements gave the Lysander a stalling speed of only 65 mph (56 kn; 105 km/h).<sup>[3]</sup>

The tube that supported the wings and wheels was the largest [Elektron alloy](#) extrusion made at the time. Due to the difficulties involved in manufacturing such a large extrusion Canadian-built machines had a conventionally fabricated assembly. The Air Ministry requested two prototypes of the P.8 and the competing [Bristol Type 148](#), quickly selecting the Westland aircraft for production and issuing a contract in September 1936. The high-lift devices gave the Lysander a short take off and landing (STOL) performance much appreciated by the Special Duties pilots such as Squadron Leader [Hugh Verity](#). The wings were equipped with automatic [slats](#) which lifted away from the leading edge as the airspeed decreased towards stalling speed. These slats controlled automatic [flaps](#). Slow speed flight was therefore greatly simplified, "and it was possible to bring a Lysander down to land, if not like a lift, at least like an escalator".<sup>[4]</sup> The inboard slats were connected to the flaps and to an air damper in the port wing which governed the speed at which the slats operated. The outboard slats operated independently and were not connected and each was fitted with an air damper. On a normal approach, the inboard slats and the flaps would begin to open when the airspeed has dropped to about 85 mph (74 kn; 137 km/h) and be approximately half down at 80 mph (70 kn; 130 km/h). The only control that the pilot has is a locking lever which he can set to lock the flaps down once they have been lowered automatically.<sup>[5]</sup>

## Operational history

### United Kingdom



Lysander Mk.IIIAs of No. 1433 Flight RAF, over [Madagascar](#) in December 1942.

The first Lysanders entered service in June 1938, equipping squadrons for army co-operation and were initially used for message-dropping and [artillery spotting](#). When war broke out in Europe, the earlier Mk.Is had been largely replaced by Mk.IIs, the older machines heading for the Middle East. Some of these aircraft, now designated type L.1, operated with the [Chindits](#) of the [British Indian Army](#) in the [Burma Campaign](#) of the Second World War.<sup>[6]</sup> Four regular squadrons equipped with Lysanders accompanied the [British Expeditionary Force](#) to France in October 1939, and were joined by a further squadron early in 1940. Following the [German invasion of France and the low countries](#) on 10 May 1940, Lysanders were put into action as spotters and light bombers. In spite of occasional victories against German aircraft, they made very easy targets for the [Luftwaffe](#) even when escorted by [Hurricanes](#).<sup>[7][8]</sup> Withdrawn from France during the [Dunkirk evacuation](#), they continued to fly supply-dropping missions to Allied forces from bases in England; on one mission to drop supplies to troops trapped at [Calais](#), 14 of 16 Lysanders and [Hawker Hectors](#) that set out were lost. 118 Lysanders were lost in or over France and Belgium in May and June 1940, of a total of 175 deployed.<sup>[8][9]</sup> With the [fall of France](#), it was clear that the type was unsuitable for the coastal patrol and army co-operation role, being described by [Air Marshal Arthur Barratt](#), commander-in-chief of the British Air Forces in France as "quite unsuited to the task; a faster, less vulnerable aircraft was required."<sup>[10]</sup> The view of Army [AOP](#) pilots was that the Lysander was too fast for artillery spotting purposes, too slow and unmanoeuvrable to avoid fighters, too big to conceal quickly on a landing field, too heavy to use on soft ground and had been developed by the RAF without ever asking the Army what was needed.<sup>[11]</sup> Nevertheless, throughout the remainder of 1940, Lysanders flew dawn and dusk patrols off the coast<sup>[12]</sup> and in the event of [an invasion of Britain](#), they were tasked with attacking the landing beaches with light bombs and machine guns.<sup>[13]</sup> They were replaced in the home-based army co-operation role from 1941 by camera-equipped fighters such as the [Curtiss Tomahawk](#) and [North American Mustang](#) carrying out reconnaissance operations, while light aircraft such as the [Taylorcraft Auster](#) were used to direct artillery.<sup>[14]</sup> Some UK-based Lysanders went to work operating air-sea rescue, dropping dinghies to downed RAF aircrew in the English Channel.<sup>[15]</sup> Fourteen squadrons and flights were formed for this role in 1940 and 1941.

### Special duties



Lysander in Italy evacuating an American [OSS](#) officer.

In August 1941 a new squadron, [No. 138 \(Special Duties\)](#), was formed to undertake missions for the [Special Operations Executive](#) to maintain clandestine contact with the [French Resistance](#).<sup>[1]</sup> Among its aircraft were Lysander Mk.IIIs, which flew over and landed in occupied France. While general supply drops could be left to the rest of No. 138's aircraft, the Lysander could insert and remove agents from the continent or retrieve Allied aircrew who had been shot down over occupied territory and had evaded capture. For this role the Mk.IIIs were fitted with a fixed ladder over the port side to hasten access to the rear cockpit and a large [drop tank](#) under the belly. In order to slip in unobtrusively Lysanders were painted matte black overall (some early examples had brown/green camouflaged upper surfaces and later examples had grey/green upper surfaces). Operations almost always took place within a week of a full moon, as moonlight was essential for navigation. The aircraft undertook such duties until the liberation of France in 1944. Lysanders were based at airfields at [Newmarket](#) in [Suffolk](#) and later [Tempsford](#) in [Bedfordshire](#), but used regular RAF stations to fuel-up for the actual crossing, particularly [RAF Tangmere](#). Flying without any navigation equipment other than a map and compass, Lysanders would land on short strips of land, such as fields, marked out by four or five torches or to avoid having to land, the agent, wearing a special padded suit, stepped off at very low altitude and rolled to a stop on the field.<sup>[16]</sup> They were originally designed to carry one passenger in the rear cockpit, but for SOE use the rear cockpit was modified to carry two passengers in extreme discomfort in case of urgent necessity.<sup>[17]</sup> The pilots of No. 138, and from early 1942 [No. 161 Squadron](#), transported 101 agents to and recovered 128 agents from [Nazi-occupied Europe](#).<sup>[18]</sup> The Germans knew little about the British aircraft and wished to study one. Soldiers captured an intact Lysander in March 1942 when its pilot was unable to destroy it after a crash, but a train hit the truck carrying the Lysander, destroying the cargo.<sup>[19]</sup> In the Far East, from 1944 [No. 357 Squadron RAF](#) operated six SD Lysanders as C Flight for dropping agents in support of [Fourteenth Army](#) in Burma.<sup>[20]</sup> Lysanders were also used as target-towing and communication aircraft. Two aircraft (T1443 and T1739) were transferred to the [British Overseas Airways Corporation \(BOAC\)](#) for training and 18 were used by the [Royal Navy's Fleet Air Arm](#). All British Lysanders were withdrawn from service in 1946.

### Free French

Lysander also joined the ranks of the *Forces Aériennes Françaises Libres* ([Free French Air Force](#), FAFL) when *Groupe Mixte de Combat* (GMC) 1, formed at [RAF Odiham](#) on 29 August 1940, was sent to French North-West Africa in order to persuade the authorities in countries such as [Gabon](#), Cameroon and [Chad](#), which were still loyal to [Vichy France](#), to join the [Gaullist](#) cause against the [Axis powers](#), and to attack Italian ground forces in [Libya](#). As with all FAFL aircraft, Lysanders sported the [Cross of Lorraine](#) insignia on the fuselage and the wings instead of the French tricolour roundel first used in 1914, to distinguish their aircraft from those flying for the Vichy French Air Force. Lysanders were mostly employed on reconnaissance missions, but were also used to carry out occasional attacks. In all, 24 Lysanders were used by the FAFL.

### Canada



110 (AC) Squadron RCAF Lysander II in silver delivery scheme at [RCAF Station Rockcliffe](#) Lysander II.T target tug with black and yellow stripes

One hundred and four British-built Lysanders were delivered to [Canada](#) supplementing 225 that were built under licence by [National Steel Car](#) at [Malton, Ontario](#) (near [Toronto](#)) with production starting in October 1938 and the first aircraft flying in August 1939. The [RCAF](#) primarily operated Lysanders in the [Army Co-operation](#) role, where they represented a major improvement over the antiquated [Westland Wapiti](#) which could trace its origins back to 1916. Initial training was conducted at [RCAF Station Rockcliffe](#) (near [Ottawa, Ontario](#)) with [No. 123 Squadron](#) running an army co-operation school there. Units that operated the Lysander for training in this role in Canada include [2 Squadron](#), [110 Squadron](#) (which became [400 Squadron](#) overseas) and No. 112 Squadron RCAF. [No. 414 squadron](#) formed overseas and joined 110 Squadron and 112 Squadron with Lysanders. Prior to going overseas 2 Squadron was disbanded and its airmen reassigned to 110 and 112 Squadrons to bring them up to war establishment (2 Squadron would later reform in England as a [Hawker Hurricane](#) unit and eventually be renumbered as [402 Squadron](#)). In all there were three squadrons ready to begin operations against the [Axis Powers](#). Although [Operation Sea Lion](#) – the planned German invasion of [Great Britain](#) – was averted by the British victory in the [Battle of Britain](#) in 1940, the high losses suffered by RAF Lysanders in the [Battle of France](#) resulted in any plans for cross-channel offensive operations by Lysanders being put on hold, although the Canadian squadrons continued training with the Lysanders until suitable replacements were available. [No. 118 Squadron](#) and No. 122 Squadron RCAF were the only Canadian units to use their Lysanders on active-duty operations – 118 in [Saint John, New Brunswick](#), and 122 at various locations on [Vancouver Island](#), where they performed [anti-submarine](#) patrols and conducted [search-and-rescue](#) operations. During the same period, No. 121 Squadron RCAF and several [Operational Training Units](#) (OTUs) used Lysanders – painted in a high-visibility yellow-and-black-striped scheme – for target towing duties.<sup>[21]</sup> For a brief period in 1940 when every available Hurricane fighter had been sent overseas to fight in the Battle of Britain, leaving the RCAF without a modern fighter aircraft at home in Canada, two RCAF Lysander-equipped squadrons which were supposed to convert to fighter aircraft but had none to convert to were re-designated as operational fighter squadrons. [111 Squadron](#), a [coastal artillery](#) squadron which earlier had replaced its [Avro](#) trainers with Lysanders and been reclassified as an army co-operation unit, was again reclassified as a fighter squadron – the only one on the Canadian west coast – in June 1940. Lysander-equipped [118 Squadron](#) also was redesignated as a fighter squadron. The Lysander completely lacked the capability to operate in a fighter role, and neither squadron saw action as a fighter unit while equipped with Lysanders, but their designation as fighter squadrons did allow RCAF fighter pilots to work up at a critical time without having to wait for the arrival of true fighter aircraft. No. 118 Squadron was disbanded in September 1940, and when it reformed in December 1940, still as a fighter squadron, it was equipped with 15 old, otherwise unwanted [Grumman Goblin fighters](#) produced by [Canadian Car and Foundry](#). Both 111 and 118 Squadrons soon re-equipped with the [Curtiss P-40 Kittyhawk](#), bringing the brief service of Lysanders in fighter squadrons to an end. By late 1944 all Canadian Lysanders had been withdrawn from flying duties.<sup>[21]</sup>

### Other countries

Other export customers for the Lysander included the [Finnish Air Force](#) (which received four Mk.I and nine Mk.III aircraft), the [Irish Air Corps](#) (which took delivery of six Mk.II aircraft), the [Turkish Air Force](#) (which received 36 Mk.IIs), the [Portuguese Air Force](#) (which took delivery of eight Mk.IIIA aircraft), the [United States Army Air Forces](#) (which received 25), the [Indian Air Force](#) (which took delivery of 22) and No. 1 Squadron of the [Royal Egyptian Air Force](#).<sup>[22]</sup> The REAF received 20 aircraft. Egyptian Lysanders were the last to see active service, against [Israel](#) in the [1947–1949 Palestine war](#).

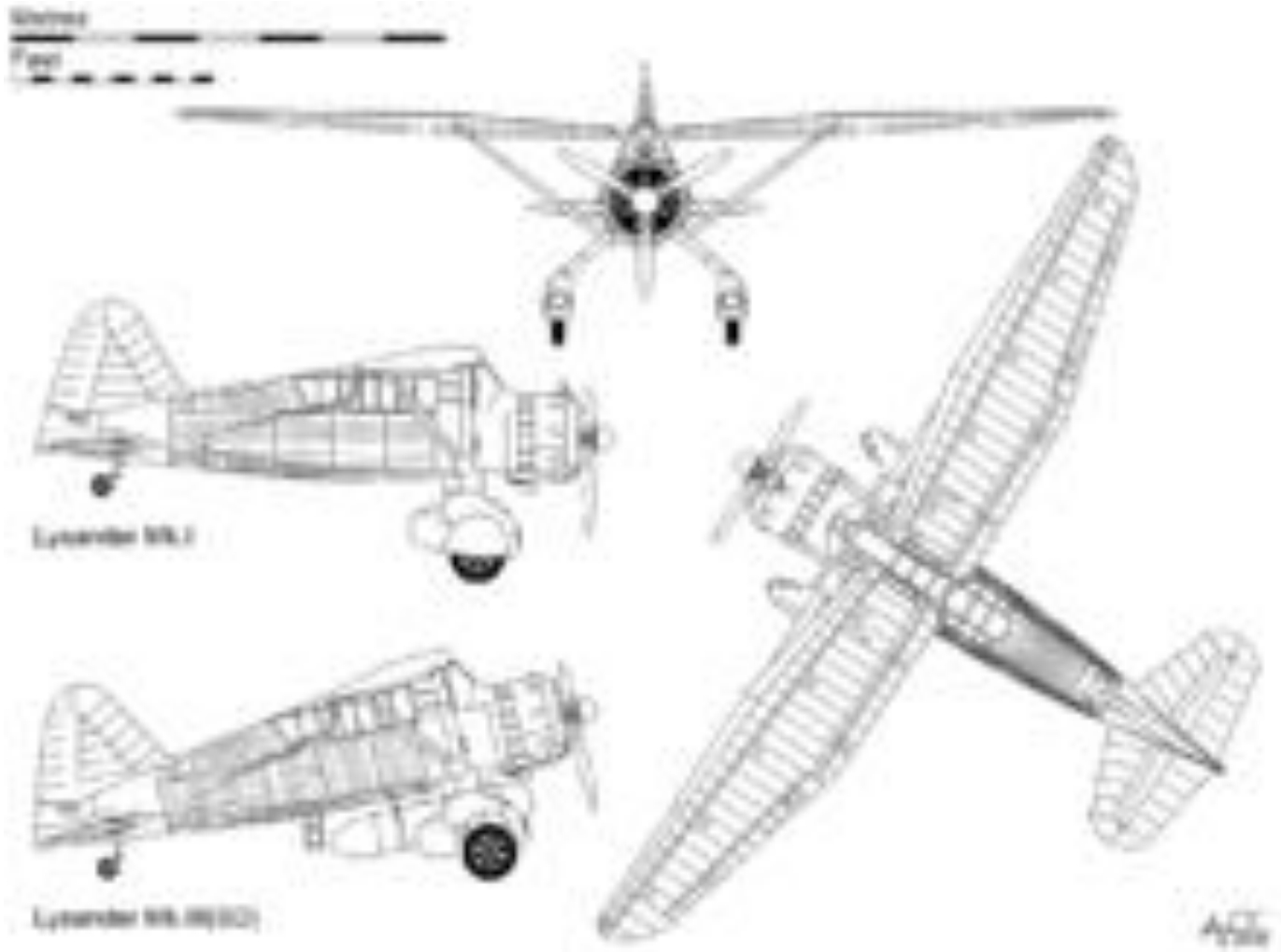
### Civilian use

After the war a number of surplus ex-Royal Canadian Air Force Lysanders were employed as aerial applicators with Westland Dusting Service, operating in [Alberta](#) and western Canada.<sup>[23]</sup> Two of these were saved for inclusion in [Lynn Garrison](#)'s collection for display in [Calgary](#), Alberta, Canada.

### Production

A total of 1,786 Lysanders were built, including 225 manufactured under licence by [National Steel Car](#) in [Malton](#) near Toronto, Ontario, Canada during the late 1930s (1938-1939).<sup>[24]</sup>

## Specifications (Lysander Mk.III)



Lysander Mk.I drawing, with additional side view of Mk.III (SD) covert operations aircraft.

### General characteristics

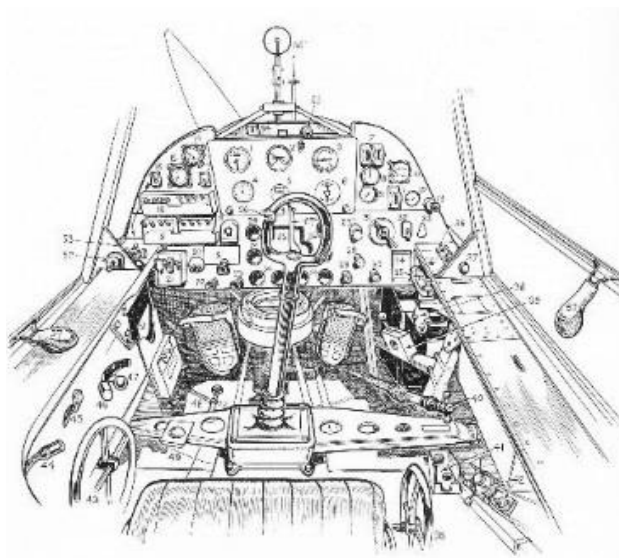
- **Crew:** 2 (1 pilot, 1 pass.)
- **Length:** 30 ft 6 in (9.30 m)
- **Wingspan:** 50 ft 0 in (15.24 m)
- **Height:** 14 ft 6 in (4.42 m)
- **Wing area:** 260 sq ft (24 m<sup>2</sup>)
- **Airfoil:** RAF 34<sup>[50]</sup> modified<sup>[51]</sup>
- **Empty weight:** 4,365 lb (1,980 kg)
- **Max takeoff weight:** 6,330 lb (2,871 kg)
- **Powerplant:** 1 × [Bristol Mercury XX](#) 9-cylinder air-cooled radial piston engine, 870 hp (650 kW)
- **Propellers:** 3-bladed

### Performance

- **Maximum speed:** 212 mph (341 km/h, 184 kn) at 5,000 ft (1,524 m)
- **Stall speed:** 65 mph (105 km/h, 56 kn)
- **Range:** 600 mi (970 km, 520 nmi)
- **Service ceiling:** 21,500 ft (6,600 m)
- **Time to altitude:** 10,000 ft (3,048 m) in 8 minutes
- **Take-off distance to 50 ft (15 m):** 915 ft (279 m)

## Armament

- **Guns:** 2x forward-firing .303 in (7.7 mm) Browning machine guns in wheel fairings and two more for the observer.
- **Bombs:** 4x 20 lb (9 kg) bombs or 1x drop tank (fuel or cargo) under rear fuselage *and/or* 500 lb (227 kg) of bombs or drop tanks on undercarriage stub wing hardpoints (if fitted)



INSIDE THE COCKPIT OF THE WESTLANDER LYSANDER. (1) Airspeed indicator; (2) Artificial horizon; (3) Rate-of-climb indicator; (4) Altimeter; (5) Artificial horizon; (6) Turn-and-bank indicator; (7) Fuel pressure gauges; (8) Boost gauge; (9) R.p.m. indicator; (10) Cylinder temperature; (11) Oil pressure gauge; (12) Oil thermometer; (13) Switch for compass lamp; (14) Brake and gun air-pressure gauge; (15) Clock; (16) Flare solenoid switch; (17) Magneto switches; (18) Bomb selector switches; (19) Airspeed push control; (20) Bomb fuze switches; (21) Bomb-release master and jettison switch; (22) Carburettor cut-out control; (23) Radiator adjusting control; (24) Stowage for eight signal cartridges; (25) Oxygen regulator; (26) Gun firing button; (27a) Brakes operating lever; (27b) Priming pump; (28) Oil warning control; (29) Cockpit heating control; (30) Air intake control; (31) Priming cock; (32) Starting magnetos switch; (33) Starter push-button; (34) Engine data plate; (35) W.T. Morse key; (36) Switchbox for navigation lamps, gun heating and pressure-head heating; (37) Gunner's warning lamp push-button; (38) Identification lamps switchbox; (39) Forced landing flares release; (40) Cowling control; (41) Signal pistol stowage; (42) Wireless remote controls; (43) Tail-plane incidence handwheel; (44) Microphone and telephone socket; (45) Flap locking lever; (46) Bomb firing switch; (47) Throttle and mixture levers; (48) Camera sight which is used through lens in floor; (49) Camera control mounting; (50) Stowage for compass and drift calculator; (51) Stowage for maps; (52) Landing lamp switch; (53) Fuel cock; (54) Reflector gun-sight master switch; (55) Dimmer switch for reflector gun-sight; (56) Ring and bead gun-sight; (57) Sliding window catch; (58) Seat adjusting hand wheel—and there is also the compass which is not numbered but is obvious forward of the control column.