

AVRO

MANCHESTER

● Night bomber ● Father of the Lancaster ● Maritime patrol



BRITISH AIRCRAFT
OF WORLD WAR II

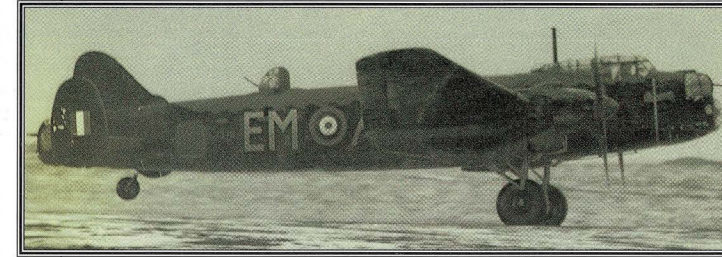


Overshadowed by the Lancaster that replaced it in service, the Manchester was plagued by the unreliability of its Rolls-Royce Vulture engine. First flown in 1940, the Manchester had a brief operational career, flying its last mission in mid 1942. The Manchester's real claim to fame was that, with the marriage of its airframe and four Rolls-Royce Merlin engines, it became Britain's top night bomber, the Avro Lancaster.

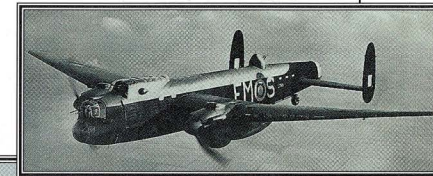
▲ With its potent defensive and offensive armament, the Manchester might have been a useful design, but the Vulture engine forced it to spend more time under repair than in service.

PHOTO FILE

AVRO MANCHESTER

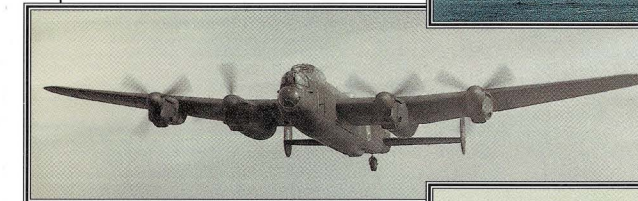
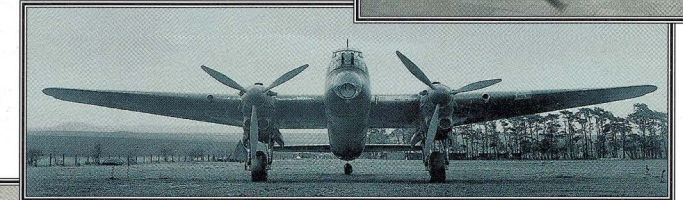


▼ **Night raider**
This Manchester Mk IA is from No. 207 Squadron, which was based at RAF Waddington.



▲ First of the few

This is a Manchester Mk I with a central tail fin. The fin was later removed and the tail span increased by another 10 feet, as in the Lancaster.



▲ Short span

Like many of the first RAF night bombers, the Manchester had a short wing span to fit pre-war hangars.



▲ Son of Manchester

With four reliable and powerful Merlin engines, most of the Manchester's ills were cured. The Lancaster immediately replaced its ancestor in squadron service.



▲ Waiting for the night

A Mk IA Manchester awaits another night of bombing operations. A Westland Lysander army cooperation aircraft is parked behind it.

◀ Well protected

One of the best qualities of the Manchester was the good coverage of its defensive armament, with tail, nose and dorsal gun turrets.

FACTS AND FIGURES

- Flying Officer L. T. Master of No. 50 Squadron won a Victoria Cross while flying a Manchester.
- The first 13 Manchesters built were destroyed in a German air raid on the Metropolitan Vickers factory.
- Manchesters took part in the first 1,000-bomber raid over Cologne.
- Manchesters dropped 1,855 tons of bombs and incendiaries on operations.
- The first Lancaster was actually a Manchester III with four Merlin engines.
- The original company designation of the Manchester was the Avro 609.

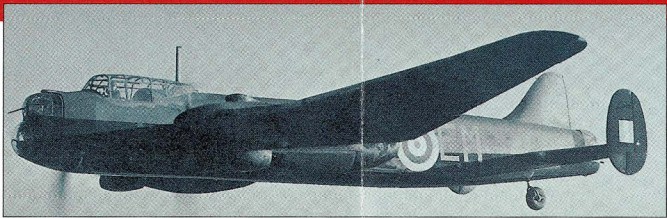
PROFILE

Killed by the Vulture engine

Had the Manchester been powered by a more viable engine, its career might have been much longer. However, it was stuck with the Rolls-Royce Vulture, a mighty V-24 cylinder inline that failed to deliver the power intended and suffered from chronic unreliability. The engine was also intended to power a rival Handley Page design, which was later cancelled.

The first Manchester prototype flew in July 1939, and a second in 1940. The Air Ministry ordered 200, and then

an additional 400. Following flight trials, the wing span was increased by 10 feet and a central fin was added between the two endplate fins (later deleted in the Mk IA). The first squadron, No. 207, was formed in November 1940 and carried out its first mission in February 1941. Nine bomber squadrons and one flight of Coastal Command received the aircraft. The Manchester was not really a success in combat, suffering from a number of airframe faults as well as endless failures of the Vulture engine. The last Bomber



Left: No. 207 Squadron had the dubious privilege of taking the Manchester to war first, over Brest harbor on February 25, 1941.

Command operation with the aircraft took place over Bremen on June 25-26, 1942. Only 202 Manchesters had been built—about 40 percent were lost on operations and 25 percent in accidents.

Were it not for the Manchester, Avro might not have built the Lancaster, the British best night bomber of the war. The type also gave Bomber Command useful ideas about how its future bomber aircraft should look.



Above: The first Manchester bomber is seen in December 1940. Unfortunately, this example and several others were destroyed in an enemy air raid a few days later.

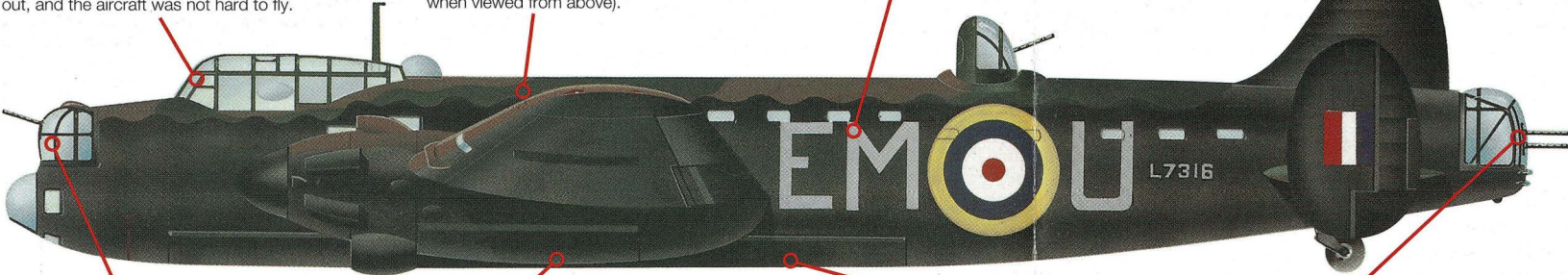
MANCHESTER Mk IA

One of the first Manchesters into action, this No. 207 Squadron aircraft enjoyed a brief operational career. The RAF roundel with its white band was abandoned later in the war because it was too visible at night.

The nose, which was almost identical to the later Lancaster, was one of the better parts of the design. Two pilots sat side by side in the cockpit, with an astrodome behind, which enabled the navigator to take clear measurements of the stars for stellar navigation. The controls were well laid out, and the aircraft was not hard to fly.

All operational Manchesters were painted in the standard flat black lower (to avoid detection by enemy searchlights) and camouflage upper (to blend in with the terrain when viewed from above).

EM was the squadron marking for No. 207 Squadron, the first Manchester operator. Later in the war, the squadron flew Lancasters, and then the Avro replacement, the Avro Lincoln.



The nose gunner sat in a powered turret with a pair of Browning 7.7-mm (.303 caliber) machine guns. The gunner rarely had to use his guns at night.

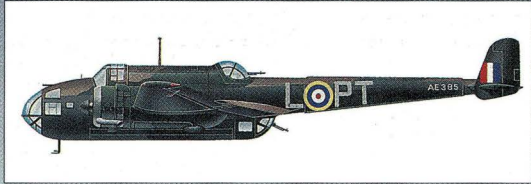
Following flight trials, wing span was increased by 10 feet. This wing was a sound design, capable of accepting a new engine configuration and absorbing massive battle damage.

The capacious bomb bay was one of the most useful Manchester features. It could hold the large RAF 4,000-lb. "Cookie" bomb that became a standard load for British bombers at night.

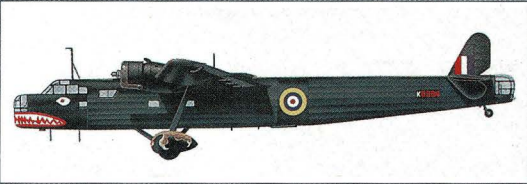
The rear gunner fired four Browning machine guns. He was usually the most vital gunner, as night fighters tended to attack from below and behind. He would call out evasive actions to the pilot if the aircraft came under attack.

RAF bombers of 1939

HAMPDEN Mk I: The only RAF medium bomber at the start of the war, its lack of defensive armament saw the aircraft reduced to second-line duties with Coastal Command squadrons.



HARROW Mk II: The first monoplane bomber to enter service with the Royal Air Force, the Harrow was in service before World War II, although it was quickly replaced with the Wellington.



WELLINGTON Mk IC: One of the first aircraft capable of bombing Germany, the Wellington took the brunt of Bomber Command's early raids in World War II.



SPECIFICATION Manchester Mk I

Type: Medium bomber.

Powerplant: Two Rolls-Royce Vulture 24-cylinder engines rated at 1,760 hp.

Maximum speed: 264 m.p.h. at 17,000 ft.

Cruising speed: 185 m.p.h.

Combat radius: 1,625 mi. with 8,100-lb. load.

Service ceiling: 19,200 ft.

Weights: Empty 29,370 lb.; loaded 55,880 lb.

Weapons: Two 7.7-mm (.303 cal.) machine guns in the nose turret and mid-upper turret, four 7.7-mm (.303 cal.) machine guns in the rear turret; 10,330 lb. of bombs or incendiaries.

Dimensions: Span 90 ft. 1 in. Length 69 ft. 4 in. Height 19 ft. 6 in. Wing area 1,137 sq. ft.

ACTION DATA

BOMB LOAD

The Manchester's ability to deliver a respectable bomb load caused its performance to suffer. However, it could carry more than the Wellington. The Lancaster, which is widely regarded as the best British four-engine bomber of World War II, corrected all the mistakes of its predecessor.

MANCHESTER Mk I

10,330 lb.



WELLINGTON Mk III

4,490 lb.



LANCASTER Mk I

13,970 lb.



SPEED

Although its maximum speed was comparable to that of similar twin-engine bombers, the Manchester's Vulture powerplants were unreliable and often resulted in the aircraft being lost due to mechanical failure. Rapid progress in engine development led to Bristol powerplants being installed on the Wellington.

MANCHESTER Mk I

264 m.p.h.



WELLINGTON Mk III

234 m.p.h.



LANCASTER Mk I

286 m.p.h.



RANGE

During the war, RAF aircraft on bombing missions needed to cross Europe to attack targets in Germany. Although the Manchester could reach these objectives, many were lost. The Lancaster, which improved the striking power of Bomber Command, owed much of its design to the earlier Manchester.

MANCHESTER Mk I

1,625 mi.

WELLINGTON Mk III

1,535 mi.



LANCASTER Mk I

2,525 mi.