

Airlines & Aircraft Fleets

Manchester Airport is the UK's global gateway in the North, serving 25.2m passengers in the Financial Year 2022/2023. It is the only airport outside of London with two full-length runways and is home to 49 airlines serving 196 destinations across four continents. Over 2,900 people are employed directly by MAG and around 16,000 more jobs are supported across the site. Manchester Airport is currently undergoing the final phase of its £1.3bn transformation programme, which is set for completion in 2025.

Our Services

Manchester Airport has regular scheduled, 'no frills', pure freight and charter flight services. Scheduled flights are regular services based upon repeat demand for travel. In order to serve these needs many long haul aircraft fly through the night, departing in the evening and arriving in the early morning. A large number of services to domestic and European airports are operated at times which allow business and leisure passengers to return within the same day.

Charter and 'no frills' scheduled services provide low-cost travel to popular destinations (often as part of a package holiday). In order to bring the cost of a holiday within the reach of more people, charter and 'no frills' (airline scheduled operators) must operate in a different way to traditional scheduled operators. To be cost-effective these airlines must fill as many seats as possible and must make two or more round trips from Manchester in a day. This high usage of aircraft often necessitates flying in the busy morning and evening periods and a limited number of aircraft operating within the night period.

Demand

The unique mix of regular scheduled, 'no frills', pure freight and charter services operated at Manchester Airport requires a 24-hour operation. Manchester Airport has been operating in this way since 1st April 1952.

The extra capacity afforded by the Second Runway helps us to meet the peak demand for travel in the morning and evening. Changes have been made to our airline fees and charges to smooth these peak demands to ensure better use of our runway capacity throughout the day.

Aircraft using Manchester Airport

On the following pages there is an illustration of aircraft types that are, or, have been used at Manchester Airport. The selection of an aircraft for a particular service will be determined by many factors, the most obvious being range/capacity. Other considerations include the facilities available at the destination airport, any noise regulations and aircraft availability.

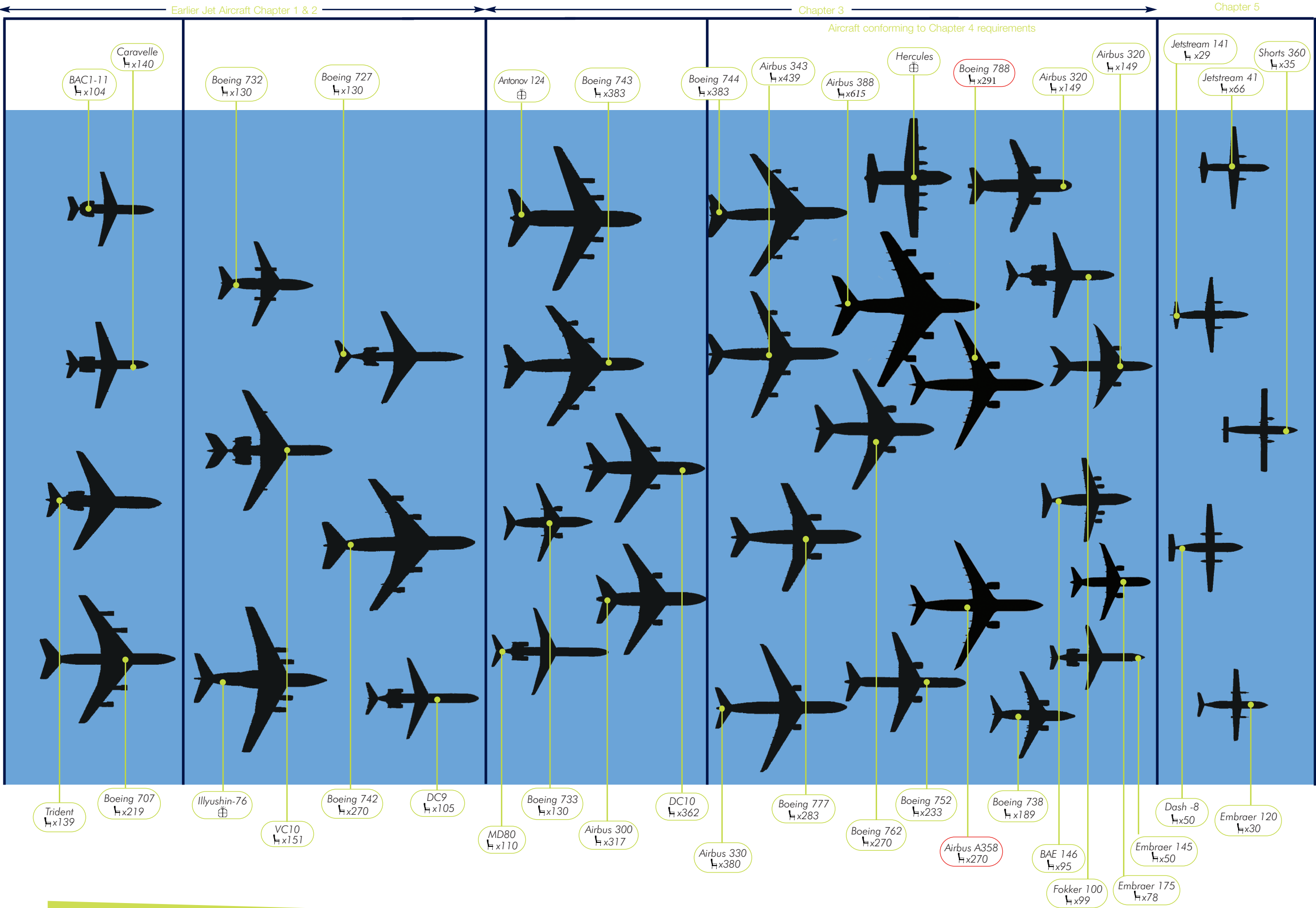
Aircraft Design

Each generation of aircraft is on average 15% quieter than that of the generation they replace. Overall, manufacturers have achieved a 75% noise reduction in the past 30 years as a result of improvements in the design of aircraft engines/airframes. Aircraft today are 20-30dB quieter than the first generation of jet aircraft, such as the Boeing 707 and Comet. They now produce less than 1% of the sound of these early airliners, with less than a quarter of the annoyance. These improvements have taken time and investment. The high purchase price of an aircraft means that in the same way as a train, bus, ship, lorry or car the cost has to be offset over the life of the airframe. Due to a compulsory high standard of maintenance and rugged construction found in the public transport industry, individual aircraft are in service for many years.



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- Ryanair
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- SunExpress
- British Airways



- KLM
- Eurowings
- Aurigny Air Services
- Qatar Airways
- Lufthansa
- Loganair
- Egyptair
- Scandinavian Air System
- Singapore Airlines
- Swiss International Air Lines
- Virgin Atlantic Airways

Noise

Key:
x Typical number of seats Freight Aircraft

Please note: the plan above is relevant to Manchester Airport for illustration purposes only and does not necessarily correlate with industry certification

The beginning

The de Havilland Comet became the first passenger jet airliner to enter airline service on 2nd May 1952. These first generation jet aircraft such as the de Havilland Comet, Douglas DC-8 and the Boeing 707, brought about huge advances in terms of speed, range and passenger comfort, however they were extremely noisy. Further advances in jet aircraft technology revealed short-comings (particularly in noise abatement), therefore these first generation jet aircraft were later classified as Chapter 1. After 1984 Chapter 1 aircraft were no longer permitted to fly in commercial service.

Of course not all aircraft are powered by jet engines. Many regional/short-haul services use propeller driven aircraft. The majority of aircraft powered by Turbo-prop engines have been classified as Chapter 5 aircraft.

Chapter 2

The maturing of the jet engine meant second generation aircraft, such as the Boeing 737-200 and Boeing 727 could be categorised into a quieter noise standard; Chapter 2. Though quieter than their predecessors they were still noisy by today's standards, Chapter 2 aircraft were phased out of regular commercial operations in Europe and North America in 2002. A small number of airlines have chosen to re-engine or fit hush kits to the engines of their Chapter 2 aircraft so that they conform to the quieter Chapter 3 standards.

Chapter 3

Most aircraft in use now conform to the far stricter noise standards required for Chapter 3. There are many aircraft types that meet Chapter 3 requirements. Those at the noisier end of the Chapter 3 spectrum have become known as marginally compliant and although this is not an official sub category, the term is well recognised within the aviation industry. Examples of 'marginally compliant' Chapter 3 aircraft include the McDonnell Douglas MD-80 Series and the Boeing 747-300.

Chapter 4

In 2001, ICAO (International Civil Aviation Organisation) agreed a new certification standard to be introduced for all new jet aircraft entering service from 1st January 2006 (known as Chapter 4). The new standard improves on the existing Chapter 3 standards by at least 10 dBA.

Many aircraft in service today improve upon Chapter 3 standards by more than 20 dBA. Around 75% of the current in-production aircraft are capable of meeting an improvement of at least 14 dBA.

The marginally compliant Chapter 3 types mentioned above contribute disproportionately to the noise climate and are frequently responsible for a large number of noise complaints. Our fees and charges discourage the use of these marginally compliant aircraft in favour of more modern types.



Newer Aircraft

Airbus 380

The Airbus A380-800 is now in daily service with Emirates flying from Manchester to Dubai. The aircraft operating from Manchester are configured with 615 seats. The aircraft can be configured for up to 960 passengers over the two decks.

In comparative terms the A380 generates half as much noise energy as the 747-400 on departure and arrival. The combined effects of the low fuel consumption of its engines and light weight materials and systems result in the A380 achieving a fuel burn of 12% less per seat than the 747-400.

Boeing 787 Dreamliners

The Boeing 787-800 and 787-900 Dreamliners are now in regular operation across the world; Thomson Airways and some of our other carriers (such as Qatar Airways) fly them from Manchester. The Thomson Airways Dreamliners can carry 291 passengers on routes of up to 8,500 nautical miles (10,000 miles).

The power for the Boeing 787s is provided by a new generation General Electric GEnx or Rolls-Royce Trent 1000 engines. Much more of the aircraft, than others in service, is constructed of new lightweight materials. The aircraft can fly for 15 hours and burns fuel in a way that makes it 20% more carbon friendly than older aircraft types. The airliner is designed to offer increased efficiency and reduced operating costs.

Airbus 350

Airbus have launched their own super efficient twinjet; the Airbus A350-900. The aircraft is designed to complement the A380 with a smaller capacity airframe and to compete with the Boeing 787.

The A350 is the first Airbus with both fuselage and wing structures made primarily of carbon fibre-reinforced polymer. This new aircraft benefits from Rolls-Royce Trent XWB or General Electric GEnx engines.

Airbus A350-900s are now in regular service from Manchester with Cathay Pacific Airways and Singapore Airlines.



Advances in Engines

The "next-generation" CFM LEAP engines can reduce fuel usage by 16% and bring take-off volumes down to just 70 decibels. At London Stansted Airport we have recorded a 40% reduction in noise between Ryanair's Boeing 737 MAX fleet compared to its slightly older Boeing 737-800 jets.

Rolls-Royce have developed UltraFan, the Ultimate TurboFan, new engine architecture, fan system technology, materials and a power gearbox to create a very high bypass ratio engine. UltraFan is 25% more efficient than the first-generation Trent and offers 40% less NOx and 35% less noise and almost zero nvPM particulates at cruise.