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Senate Standing Committees on Rural and Regional Affairs and Transport
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SUBMISSION TO THE INQUIRY INTO THE IMPACT AND MITIGATION OF AIRCRAFT NOISE

The Qantas Group welcomes the opportunity to make a submission to the Inquiry into the impact and mitigation of aircraft noise and notes the focus on noise in the Government's Aviation Green Paper to be released in the coming months.

Aviation plays a critical role in connecting Australian communities – especially those in rural, regional and remote Australia and makes an important economic contribution. The Qantas Group alone helps to generate more than one per cent of gross domestic product and more than 170,000 jobs in Australia through total economic contribution and economic contribution of Qantas Group facilitated tourism.

The Qantas Group acknowledges government and community concerns about aircraft noise and continues to pursue efficiencies and implementation of the latest innovations in flight planning and air traffic management to mitigate its effect. The Qantas Group's aim is to optimise the flow of air traffic, reduce emissions and ensure that Australia's airspace remains safe, secure and efficient.

It is important that the impact of some noise mitigation initiatives on efficiency and emissions are properly understood. Attempts to address noise concerns and mitigation often result in inefficient flight paths and operating procedures that lead to increased track miles, higher fuel burn and emissions, which work directly against the sustainability objectives of the industry and the broader community.

The Qantas Group encourages the Committee to work with airlines, and aviation sector stakeholders more broadly, to fully understand the relationship between noise and emissions, and to ensure that the economic and environmental impact of noise mitigation measures are considered appropriately when making their recommendations, to avoid unintended consequences.

Qantas Group Approach to Aircraft Noise

The Qantas Group is committed to actively managing its noise emissions. As Australia is an International Civil Aviation Organization (**ICAO**) contracting state, the Qantas Group must consider noise around airports within the framework of ICAO's 'Balanced Approach to Aircraft Noise Management[1]'. This consists of identifying noise at an airport and analysing the measures available to reduce it through:

[1] https://www.icao.int/environmental-protection/Pages/noise.aspx

- Reduction at source;
- Land-use planning and management;
- Noise abatement operational procedures; and
- Aircraft operating restrictions.

The Qantas Group supports continued alignment with international standards for aircraft noise.

Reduction at source

All Qantas Group aircraft meet or exceed ICAO's aircraft noise standards.

The most effective way of reducing aircraft noise at the source is continual renewal of aircraft fleet types. Modern aircraft are markedly quieter than prior generations, and investment in new aircraft will continue to play a significant role in the management of aircraft noise.

The Qantas Group has a major fleet renewal program underway which represents the largest and most significant fleet order in Australia aviation history, with deliveries continuing for at least the next decade. These state-of-the-art aircraft include the Airbus A320NEO family, the Airbus A220-300, the Boeing 787-9, 787-10 and the Airbus A350-1000 and will deliver a range of benefits such as lower emissions and improved mechanical reliability, and importantly, **up to a 50 per cent reduction in noise footprint**.

Jetstar has now taken delivery of ten Airbus A321neo LR's that are fitted with CFM Leap A1 engines that burn up to 20 per cent less fuel than Jetstar's earlier A321 aircraft. *Figure 1 below, prepared by Airbus, compares the noise footprint of the A321 versus the A321 NEO over Sydney Airport.*

Qantas has also commenced the retirement of its older B717 fleet, with the first aircraft exiting service in June 2023 after 19 years of flying. The B717 fleet will be replaced by new Airbus A220-300 aircraft over the next three to four years. The A220 aircraft offer longer-range capability allowing for more point-to-point flying within our regional network across Australia, approximately 25 per cent fewer CO_2 emissions per seat, up to 50 per cent noise footprint reduction compared with previous generation aircraft and around 40 per cent less nitrogen oxide emissions than industry standards. An A220 Fact Sheet is attached at Appendix A.

Land-use planning and management

Effective land-use planning and appropriate zoning is critical – particularly for greenfield sites – to ensure that noise impacted residences are minimised and balanced with community needs for commercial aviation and freight growth.

Effective land-use planning also ensures that development around airports supports the requirements of aviation operations. Failure to ensure coordinated airport planning will incrementally decrease the usefulness, efficiency and value of airport sites. Subsequent variations to matters such as noise sharing arrangements, movement caps, curfews and aircraft approaches can impose a significant economic impact on airports, airlines and the broader community.

The Qantas Group supports the principles outlined in the National Airports Safeguarding Framework (**NASF**) regarding noise, as well as other benefits to aviation including turbulence and wind shear. Inappropriate development around airports can have safety, operational and efficiency implications for airlines, with flow on effects for the viability of airports in terms of ability to provide the economic benefits to the areas they service.

Increased implementation of NASF mechanisms by relevant authorities as airports develop their Major Development Plans is critical to prevent negative implications on sector users. This should occur at an early stage of development in order to prevent unintended impacts and subsequent restrictions being placed on both airports and airlines. Given the relatively long lead time for these developments, unintended impacts can eventuate many years from initial development planning.

The Qantas Group supports increased collaboration between all levels of Government to ensure implementation of NASF principles in planning decisions.

Noise abatement operational procedures

Aircraft manufacturers design aircraft and airlines implement policies to ensure aircraft operate in the most efficient manner possible. This typically coincides with quieter operations and reduced emissions. Some of the procedures used by the Qantas Group include:

- **Noise Abatement Departure Procedures**, which include a combination of utilising runway directions when weather conditions permit and tracking the aircraft in specified directions over the ground after take-off to minimise the impact of noise during departure. Additionally, continuous climb procedures are utilised to minimise the time the aircraft is at a lower altitude during departure;
- **Noise Abatement Approach Procedures**, which include Continuous Descent Operations where an aircraft descends continuously toward the runway at a lower (and subsequently quieter) engine power setting, without having a requirement to temporarily level off which requires additional engine power. Additionally, flight paths for the arrival are designed to manoeuvre around residential areas;
- **Reduced Thrust Take-off**, which means using advanced aircraft performance software to calculate the minimum amount of engine power required for the aircraft to be able to take off, as opposed to using the maximum available power, thereby reducing the noise produced by the engines;
- **Minimum use of reverse thrust on engines after landing**, depending on the available length of the runway. Often, with more runway length available than the minimum distance required for the aircraft to stop after landing, there is no requirement to decelerate and stop the aircraft as soon as possible. By allowing the aircraft to decelerate at a slower rate after landing, reverse engine thrust is not required, removing the requirement for the engines to provide increased reverse power;
- **Single Engine Taxi In**, which involves shutting one of the aircrafts two engines down after landing and taxiing to the airport terminal using one engine only. This effectively halves the amount of noise the aircraft is making whilst taxiing on the ground; and
- **Participation in trial procedures at Brisbane Airport** in order to develop innovative new ways of reducing noise impacts. Some examples include taking off from different parts of the runway that are further away from residential areas, as well as changing aircraft configurations and flap settings such that the aircraft can climb at a steeper angle after take-off.

It is important to recognise that the application of noise abatement operational procedures can result in additional emissions, so the noise benefit must be carefully balanced with the impact to emission reduction targets. Examples include:

- **Noise Abatement Departure Procedure** where take off is required in a certain direction in order to avoid residential areas. Often this requires taking off with a tailwind instead of the preferred option of departing into wind for performance and efficiency benefits. The tailwind component requires a higher engine power setting for the aircraft to be able to take off, resulting in increased emissions;
- **Noise Abatement Approach Procedures** which often require the aircraft to track or manoeuvre laterally across the ground around residential areas to avoid the aircraft flying over them. This results in a greater distance the aircraft needs to fly in order to make its way to the landing runway and being airborne for a longer period, resulting in increased emissions for the flight than if the aircraft was able to fly a shorter, more efficient route to the runway. For example, Airservices estimates that manoeuvring aircraft over water at Brisbane Airport to minimise noise adds 37 nautical miles and creates an additional 700 kilograms of carbon emissions per flight; and
- **Requirements to use 'full length' departures in the Brisbane trial**, where the aircraft is required to take off from the far end of the runway results in a significant increase in taxi time for the aircraft and subsequently more emissions.

The Qantas Group welcomes the continued opportunity to explore with the Government and the broader community any procedures which balance noise considerations with operational requirements and sustainability targets.

Aircraft operating restrictions

The *Sydney Airport Long Term Operating Plan* (**LTOP**) is a program which manages the aircraft noise associated with Sydney Airport. This plan was developed in the 1990s and there has been at least one complete refresh of airline fleets since that time, with another now underway. Notwithstanding this, there is no recognition of the actual aircraft noise footprint of aircraft since the LTOP was introduced and Qantas Group supports its review and modernisation.

The Qantas Group supports the view expressed in the Government's Aviation Green Paper that additional restrictions or curfews are not warranted and agrees that there should not be any significant change to the underlying curfew principles, including the Government's commitment to ensuring Western Sydney Airport will be curfew-free.

Curfews reduce operational and commercial flexibility to grow and develop a variety of destinations and markets. They can be disadvantageous to many airports, including rapidly growing regional airports, by curtailing and inhibiting opportunities for further dispersion, growth and development of air services, tourism and other economic benefits that affect the wider community.

The introduction of curfews across additional airports would reduce airline network efficiency and growth in capacity through higher aircraft utilisation, and drive duplication of infrastructure, likely leading to worse noise and environment outcomes.

The Qantas Group has long advocated for minor amendments to the *Sydney Airport Curfew Act 1995 (Cth)* to deal with:

- The increasing demand for overnight freight movements, particularly given the curfew-free Western Sydney Airport is not scheduled to open until 2026; and
- Practical measures to deal with extraordinary weather and infrastructure events.

Overnight freight movements

The Qantas Group operates to 14 domestic freight destinations across six States, directly connecting 14 international destinations with a dedicated freighter network. This is performed by dedicated freighters and complemented by belly space in passenger aircraft. The belly space of passenger aircraft on its own is insufficient to meet freight demand. For example, one A321P2F carries the equivalent of the belly space of around 14 narrow-body passenger aircraft.

Overnight freight is critical to the economy and the overall freight infrastructure and network in Australia. It provides critical regional-to-city and regional-to-regional connectivity for express delivery, particularly next day delivery. Freight is generally lodged by customers during the day, delivered to the airport at the end of the retail day and flown overnight, and delivered by van the following day. This speed is particularly critical for supplies such as perishables, pharmaceuticals, medical equipment and human organs for transplant. Overnight flying also reduces congestion during the peak daytime hours when passengers generally fly.

The demand for domestic overnight air freight in Australia has fundamentally changed over recent years. Qantas Freight overnight freighter volumes have increased by 22 per cent from a national perspective since financial year 2019 and 28 per cent in and out of Sydney Airport between financial years 2019 and 2023. Research conducted by Australia Post Group shows that e-commerce is continuing to grow, with 4.3 per cent more households shopping online in the first quarter of financial year 2024 compared to the previous quarter.[2] Given Sydney Airport services Australia's largest city and is a critical domestic freight market, this demand cannot be met without some flexibility with respect to the curfew, particularly before Western Sydney Airport opens in 2026.

The current restrictions on aircraft permitted to conduct critical overnight express freighter operations into Sydney Airport are antiquated. At present, the only aircraft permitted to operate these services is the British Aerospace 146 (BAE-146), which was designed in the 1970s, manufactured in the early 1980s and ceased production in 1993.

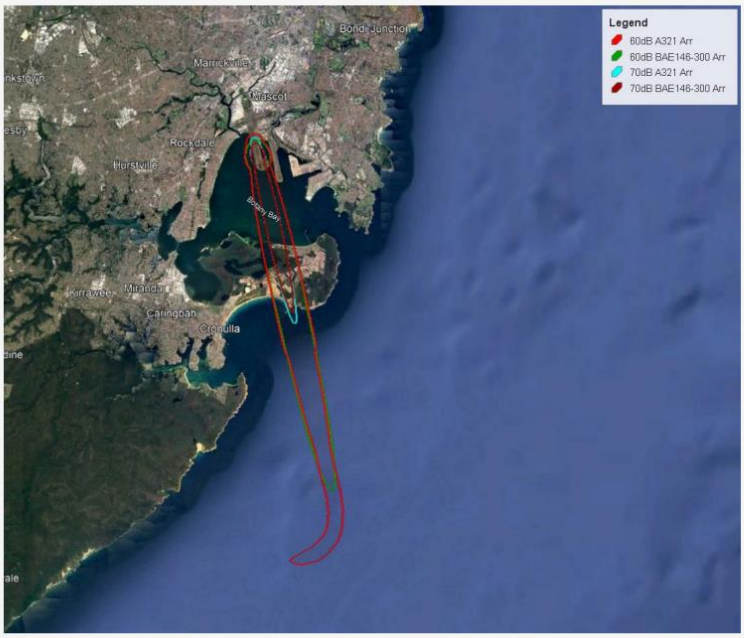
Aircraft technology has significantly advanced in the past 30 years and freight aircraft are now markedly quieter than the BAE-146. Qantas Freight is currently modernising and simplifying its dedicated short-to-medium haul freighter fleet from six aircraft types to two, namely Airbus A321P2F and A330P2F aircraft, which both offer increased efficiency, greater capacity and improved sustainability outcomes.

In terms of noise, the A321P2F and A330P2F aircraft are both Chapter 4 noise compliant (the strictest noise level set by ICAO). In contrast, the BAE-146 is Chapter 3 noise compliant, which is the standard that was introduced in 1977 and superseded by Chapter 4 in 2006.

The A321P2F delivers a similar noise footprint to the BAE-146, but it has more than double the payload and a longer range. Figure 2 below, prepared by Airservices, compares the noise footprint of the A321P2F versus the BAE-146 over Sydney Airport.

[2]Australia Post Inside Australian Online Shopping Quarterly Update July-September 2023, dated 11 October 2023.

Figure 2: Noise Footprint of A321P2F vs BAE-146



Additionally, the A321P2F and A330P2F aircraft offer significant operational efficiencies. They can carry 12 tonnes and 32 tonnes more freight per movement respectively than a BAE-146, reducing the number of total flights required to meet Australian domestic freight demand. Further, BAE-146 aircraft do not have the range to complete all required routes. For example, an A321P2F can fly Sydney to Perth direct and a BAE-146 cannot. To complete the same route would require two BAE-146 aircraft carrying freight via Melbourne and transferring to an A321P2F onwards to Perth.

In addition to lowering emissions through more direct flying, the A321P2F delivers a substantial emission improvement over the BAE-146. Based on the fuel burn per aircraft and accounting for capacity differences, the Qantas Group estimates that the A321P2F reduces emissions per tonne of capacity by at least 33 per cent (subject to the aircraft variants) compared to a BAE-146.

On this basis, there is scope to review and modify certain aspects of the curfew to deliver additional flexibility and improved productivity per movement, while still meeting the original policy objectives and reducing noise.

Rather than referring to specific aircraft, Section 13 of the *Sydney Airport Curfew Act 1995 (Cth)* (which refers to “BAE-146 and DC9 Aircraft used for freight”) should be amended to include noise criteria which would allow additional aircraft types to be utilised for overnight freight operations. The noise criteria could also be amended from time to time as technology and noise compliance standards evolve to ensure continuously improved outcomes. The result of this reform would be that all operating aircraft would feature a narrower noise footprint than the currently allowable BAE-146, emissions intensity per tonne of freight would reduce, and productivity would increase per aircraft movement.

This view was supported by the Productivity Commission’s findings in their 2019 inquiry into the Economic Regulation of Airports. The report found that alternative types of freight aircraft should be allowed to operate during the curfew, provided aircraft noise and the number of movements are not increased above current levels. The Productivity Commission also found that the Sydney Airport curfew was inefficient, exacerbates unexpected delays and leads to more noise, failing the needs of the community and the aviation industry more broadly.[3]

[3] Productivity Commission. 2019. Economic Regulation of Airports – Productivity Commission Inquiry Report No.92, pg 29-32.