

# Minutes

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<b>Subject:</b>	Meeting of the Aircraft Noise Community Consultative Group	
<b>Location:</b>	Meeting held in Person and via Microsoft Teams	
<b>Date:</b>	13 March 2023	<b>Time:</b> 1:03pm – 2:59pm
<b>Members Present</b>	<b>In Person:</b> Catherine Harland, Independent Chair Ben Levesque, Auckland Airport Garth Wyllie, Industry Representative Heather Haylock, Community Representative Helen Futter, Community Representative Joe Glassie-Rasmussen, Māngere-Ōtāhuhu Local Board (alternate) Kristina Cooper, Auckland Airport Malcom Bell, Franklin Local Board	<b>Via Teams:</b> Councillor Alf Filipaina, Auckland Council Anne Candy, Manurewa Local Board Bruce Kendall, Howick Local Board (from 2pm) Cath O'Brien, BARNZ Fiona Lai, Puketāpapa Local Board Geoff Hounsell, Airways Hugh Pearce, BARNZ Jack Tan, Albert-Eden Local Board Mark Easson, Community Representative Troy Churton, Ōrākei Local Board
<b>In Attendance</b>	<b>In Person:</b> Chris Middleton, CASPER Jeremy Lo, Auckland Airport Kathleen Delaney, CASPER	<b>Via Teams (cont):</b> Matthew Dugmore, Auckland Airport Stephanie King, Marshall Day Acoustics Nicholas Lau, Auckland Council Steve Peakall Marshall Day Acoustics (left 1.58pm) Sam Yun, Auckland Airport
<b>Members of the Public</b>	Nil	
<b>Apologies</b>	Andrea Marshall, Auckland Airport David Wong, Auckland Council Helen Twose, Auckland Airport James Evans, Airways Kay Thomas, Whau Local Board Kelvin Hieatt, Papakura Local Board Maria Meredith, Maungakiekie-Tāmaki Local Board Mark Allen, Waitākere Local Board Nick Bakulich, Māngere-Ōtāhuhu Local Board Patrick Whelan, BARNZ (alternate)	

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**1. Opening Karakia, Kristina Cooper**

**2. Apologies**

The Independent Chair declared the meeting opened at 1:03pm. The apologies were noted and accepted.

**3. Public Forum**

The Chair noted that no requests were received from the public to speak at or to observe the meeting.

**4. Minutes of Meeting Held on 19 December 2022**

No discussion and changes. The Chair moved (seconded by Malcolm Bell) and the ANCCG resolved that the minutes of the meeting held on 19 December 2022 be confirmed as true and correct.

**5. Matters Arising from the Previous Minutes**

Kristina Cooper worked through the Matters Arising paper with the following additional comments or discussion:

- **Matters Arising Item 1 (Completed):** Testing confirmed that it is possible to raise the altitude at LOSGA by 1000 feet (from 6000 feet to 7000 feet) for night flights and as confirmed by CAA, it will comply with the Noise Abatement rules. Changes will be reflected in the AIP for August 2023.
- **Matters Arising Item 2:** Previous initiative by Community Trust to assist residents with the practicalities of applying for the noise mitigation package. The flood and cyclone events have prevented the discussion from taking place. Matt will get in touch with Councillor Filipaina.
- **Matters Arising Item 3:** AIAL to develop a video featuring residents who have completed the noise mitigation package to raise awareness and understanding of the programme. This will roll out when the next round of noise mitigation offers go out in September /October.
- **Matters Arising Item 4:** Airways NZ to undertake a trial commencing February 2023 of an early morning flight path on Runway 05 for departing South Australian flights to turn soon after take-off to fly over the Manukau Harbour (thus avoiding flying over Manukau/Totara Heights/Conifer Grove). Geoff Hounsell, spoke to the item indicating it is still early days of the trial and a further two to three months of data is needed to enable a fuller report in June.
- **Matters Arising Item 5:** Option for appointment of a 4<sup>th</sup> community representative to be considered. Due to the flooding and cyclone event progressing the matter with Auckland Council and Auckland Airport has yet to occur. The Chair and Cr Filipaina will look to progress the matter by the next ANCCG meeting.

**6. Reflections on training day**

So far only two survey responses had been received. Jeremy will resend the survey link again to obtain feedback. Kristina Cooper indicated it is a very short survey to capture if the training day was set at the right level or if there is a need to make some adjustments in the future. She had observed that there was a lack of representation from a pilot's perspective at the induction day. That would have brought a technical perspective to explain the effects tail wind, flaps, and speed break deployment on an aircraft and would be a valuable addition for the next induction day. The Chair opened the floor for any feedback.

Bruce Kendall – Hopes to get another opportunity for an onsite visit to gain a better understanding of the airport control centre.

Kristina Cooper – Auckland Airport is working with airways to have the site visit in June. Airways have advised that due to the workspace being an active control centre we need to divide members into smaller groups.

Bruce Kendall – Felt it might be good to have the members sit in a simulation of an aircraft arriving at Auckland Airport. He had a chance to sit in one for an arrival into Sydney Airport and was surprised how short the runway looked from the view in the cockpit.

Malcolm Bell – Concurred with Bruce. He noted he was unable to attend the induction day as he was involved with setting up a Civil Defence centre and would welcome the opportunity to visit the control centre.

Helen Futter – Noted the content was excellent but would have preferred a longer mid-session break than the 20 minutes.

Heather Haylock – Found the meeting useful and thanked the various speakers. Some of the content was very technical and said it was great to have the screen shots of the presentations. The Chair encouraged those who had not done the survey to do so.

*Item 8 was dealt with at this point*

**7. Pilot presentation from BARNZ technical representative on aircraft operational requirements and impact on aircraft noise (including noise abatement rules in Civil Aviation Rule 93)**

Hugh Pearce – An aircraft captain who has been in the aviation industry for over 37 years in both the military and civil sector addressed the meeting. He is a Technical Advisor to BARNZ, representing international airlines operating in and out of New Zealand.

Modern aircraft that operate into Auckland are the quietest aircraft that have been designed. We predominantly have three types of wide body aircraft being Boeing 777 and 787 plus Airbus 350. The latter two are the quietest wide body aircraft in the world and the way aircraft are operated in modern times is also quieter when compared to past practices. Aircraft are operated to prolong the life of the engines and minimise strain and fatigue of parts. Aircraft are flown in way that the minimum amount of thrust is needed to get airborne in a full length of runway and to avoid operating the engine at very high temperatures. We use the assume temperature thrust reduction technique which tells the engine that the temperature is much hotter outside than it actually is. By doing that the engine computers only generate enough thrust to get the aircraft airborne, this minimises strain and aircraft noise. The aircraft uses high lift devices to slow down for landing and take-off. Once airborne, the pilot goes through a sequence of actions that balances the ability to accelerate the aircraft, the ability to get away from ground and look after engine. CAR Part 93 describes how the aircraft gets away from the ground and accelerates. Normally around 800 feet above the airfield a pilot reduces thrust and as the aircraft is flying faster, the high lift devices can be removed. The noise abatement rules are runway specific which determines the type of balance used to be as quiet as you can be.

Bruce Kendall – Recalls it was very noise pre-covid and since COVID, it has been a lot quieter, and he barely hears the aircraft. Hugh advised that some of the older technology aircraft are no longer flying to New Zealand. The older aircraft were the first aircraft grounded in the desert during COVID, and the industry is growing back with better technology. There are also fewer flights, although progressively more foreign operators are returning to New Zealand.

Kristina Cooper – If we are flying out of Auckland on Runway 05 towards Manukau, how high does the aircraft have to climb before turning? Hugh replied that the aircraft can't turn before 3000 feet turning to left as the aircraft is flying over a populated area, however, if the aircraft is turning to the right, the height is 2000 feet as it is over water. In contrast, for Runway 23L taking-off towards the Manukau Heads, if the aircraft is turning left, the height is 500 feet but if you're turning right, the height is 3000 feet as the aircraft will be flying over a populated area. In Wellington, it is only 1500 feet because of the geography and the need to turn at that height.

Troy Churton - which of the three aircraft causes the distinctive high pitch whirring noise on a deceleration approach and if it is an engine issue or a combination of slats or weather? Hugh answered, for arrivals in the past, the aircraft would descend and level off to decelerate to configure aircraft for landing (dive-drive-dive). This was a poor way to do things from a safety perspective especially if the pilot is approaching around terrain and in low clouds. Nowadays, the aircraft operates in a constant descending profile which is a far safer way of approaching an airport. Planning for the expected runway to be used can be put in place and programming the flight computer 300-400Nm away to provide for a continuous descent rather than having to decelerate and level off which requires the thrust to be activated causing a burst of noise and energy. What we have these days, is a three-dimensional approach allowing aircraft to do a curving flight path while continuously descending and at a certain point continuously decelerating which considerably reduces the need for high drag devices such as speed brakes. However, depending on local conditions all aircraft need speed brakes used judiciously. What you're hearing is a speed brake being retracted, not deployed, on

A320/321. Lifting the height at LOSGA from 6000feet to 7000feet can increase the need for speed brakes to be deployed because it steepens the approach path from LOSGA to the runway.

Kristina Cooper - please explain why aircraft need to take off into the wind and explain when the preferential runway can be used. Hugh explained airflow over a wing creates lift. The faster the airflow, the more lift is generated so pilots can lift off the ground at a slower ground speed and use less distance. Using an analogy, if you're kayaking up river, you have a lot of flow around your kayak. Going downstream, the water carries you along and to go faster than the water, you need to paddle a lot harder. By taking off into the wind, the wind velocity itself adds to the speed of the air flowing over the wing allowing aircraft to lift off sooner than if there was no wind. If the wind is behind the aircraft, that limits the aircraft as it need to be travelling at a higher ground speed to keep the same airflow over the wings.

Kristina Cooper – Brisbane Airport had an application turned down by CASA (Australia's Civil Aviation Safety Authority) for aircraft to use the preferential runway with 10 knots tailwind can that be explained. Hugh said 10 knots is less than ideal. Although most aircraft are certified up to 10 knots it presents an operational safety risk. 5 knots is acceptable in Auckland and allows for aircraft to be slotted in. Kristina identified that the windspeed at 2000feet is factored in when using the preferential runway mode. Hugh said it has to be at consistent gradient for the last 2000-3000feet to have a stable approach otherwise, a go around is needed on a missed approach which creates a lot of noise and defeats the purpose.

Bruce Kendall – How is wind speed calibrated at 2000feet? Is it through weather models or data coming from aircraft? Hugh replied, the GPS is constantly calculating what the aircraft is doing vs supposed to do. Bruce asked if the data from aircraft is going to a central collection point, so the air traffic controllers know what the wind and speed direct is at the airport? Hugh answered, they will know what the forecast is and in the early morning the ATC will ask the Pilot for the weather conditions at 2000feet. Geoff Hounsell added that ATC gets regular updates from the aircraft when applicable. New Zealand's MetService provides a report every six hours within a one-kilometre square radius. At touch down zones, we have continuous readings on the runway which calculate average wind over 2mins and 10mins. They get the forecast which is what MetService reports, supplemented by pilots reporting at 2000feet.

Mark Easson commented that for departures, the turn off from 05R at night is 4000feet. Secondly, for aircraft going to the far east, during the acceleration phase over city, they turn left at 4000feet and then accelerate to climb to 5000feet as the noise rules don't apply. Is this discouraged by ATC? Hugh said aircraft are not allowed to fly faster than 250knots below 5000feet and it is discouraged during the early hours. Geoff Hounsell said, at night time ATC uses a minimum of 4000feet before instructing the aircraft to turn off. After 11pm aircraft are not taken off the standard departure track and fly 14 Nm away from the airport beyond Maraetai before turning left. At this point the aircraft will be at more than 5000 feet up to 6000 feet. The only exception is when there's weather and the pilot has requested avoidance for safety reasons. Hugh added that when the aircraft has it's flap out, it can get airborne more quickly off the runway but climb at a greater angle is lesser. When the flap is retracted the climb rate is greater which allows the aircraft to climb and get further away the populated areas.

*Items 9 onwards were dealt with at this point.*

## 8. CASPER Account Managers

Kristina Cooper introduced Chris Middleton and Kathleen Delaney to the group. Christopher set up CASPER in Australia about two and a half years ago, previously all support came from the Netherlands. CASPER provides Auckland Airport's noise complaint system along with some of the noise monitors out in the field that record the noise levels as aircraft fly over and translates it into the online flight tracking system. This interacts with the complaint system which Auckland Airport responds to.

Chris Middleton – CASPER has been around since 2010 and has been a disruptor in the noise market. The founders are IT people but have come from an Air Traffic Control background. They build a flight tracking software and later added noise to it.

The company's innovative solutions focus on flight track, noise, and operations monitoring, situational awareness, and community engagement. The focus is on Airport Noise Management, Flight Tracking and

Complaint Management experience. They work to make data that is collected more visual and simpler for people to access and understand. CASPER software is used in more than 40 airports in 15 countries over four continents. They also work with Air Traffic Control, Airlines and Federal/Regional/Local governments and Military bases. Recently they won their first military contract in Asia Pacific with the Australian Department of Defence. Using subcontractors, they've rolled out 35 monitors in a month, installed CASPER Noise and Noise Lab. CASPER has also expanded into the Asian market in Korea, Indian and the Middle East in Abu Dhabi.

Chris is the Regional Manager for Asia, Pacific and Middle East, based in Melbourne. He has over 18 years of experience working in Airport Noise Management Systems, 30 years in IT and is part of the Airports Council International Committee. Kathleen Delaney is the Global Airport Solutions Manager based in Melbourne. She is responsible for customer solutions, support, and noise office and has over 10 years in Airport Noise Management Systems. She supports aviation clients such as Airservices Australia, Department of Defence Australia, London Heathrow Airport, Auckland and Wellington Airport.

Helen Futter asked what percentage correlation are you after for the military? Kathleen said for the military, they do not necessarily report on correlation as it involves linking a noise event to a flight. The military do not want their aircraft tracked so only noise events are recorded.

Chris discussed CASPER's Airport Solutions Portfolio, on slide 6 of the presentation. CASPER is also focused on the community engagement aspect to achieve better outcomes, not just on noise and operational solutions.

Bruce Kendall asked whether the cost of airport monitoring technology is getting lower? What is the ratio of cost of installation between the technology vs the structure? Chris Middleton said there's a general reduction in the overall price in technology. CASPER has gone ahead with a company called NTI Audio which is SWISS company. The unit relative to other devices is a fraction of the cost, roughly 2/3 that of competitors. CASPER uses commercially available devices and has software that manages the stream of the data to and from the device. The cost per unit is lower as they are an off-the-shelf product and parts are easily replaceable. The cost of setting up the structure and technology depends on the site that it is being installed at, whether there needs to be trenching, if the Noise Monitors will be mounted on a pole or mast, if a power source is available or needs to be connected to and if the finishing of the product requires it to be powder coated. This amounts to approximately 20%-25% of the overall cost. A site survey is conducted to determine what needs to be done before any installation.

Bruce Kendall asked if the solar panel is enough to power the noise monitor and what is the life of the solar panel batteries? Chris said they sufficient to power the whole system apart from some weather events recently, the batteries last about six days without being charged and the new technology requires less power draw and the batteries last about three to five years before a replacement of the entire battery is needed.

Chris presented on the CASPER Airport Solutions Portfolio which extends the capability of the system and on NMT hardware. The units that are being delivered come with a certificate of compliance with ISO20906:2009 Standards. He spoke about the CASPER Solution and the Noise Lab extension, a web based community engagement portal. Refer links below to view how it works.

Copenhagen Airport - <https://cph.noiselab.casper.aero/>

Geneva Airport - <https://gva-test.noiselab.casper.aero/>

Edinburgh Airport - <https://noiselab.casper.aero/edi/>

Ministry of Defence Netherlands - <https://noiselab.casper.aero/lwr>

Kathleen Delaney presented on changes for the CASPER complaint form. Kristina had reached out to select more options as to the reasons for a complaint. The current set up provide for analysis based on selection of one specific option. A free text field alone makes the content hard to analyse and respond to. Kathleen identified that overseas where free text has been used, the complaints have involved substantive use of profanities and abuse that resulted in these being disregarded completely and the option removed completely in a number of instances. An option being considered for Auckland is to add a secondary cause of complaint. Having multiple layers of complaint type allows for better analysis and focus can be shifted onto certain topics or types of complaints that needs more attention.



Kristina Cooper asked if there was interest from members in enabling people who use the complaint system to have the second field added? Bruce Kendall agreed.

Chair – queried whether there would be an option to select multiple reasons and when you aggregate the results you would be able to obtain the reasons that have been selected more frequently.

Chris – If a multiple reasoning system was introduced it would be hard to figure out what the actual noise issue is.

Chair – queried whether the categories in the drop-down box are the same or different to other countries.

Chris – Typically there's a short set of answers tailored to the specific local communities, with Kathleen identifying that the words can be adjusted to reflect the language style of each country.

Bruce – In the Botany and Howick communities there are many residents where English is a second-language and infrequently spoken, is there an option to respond or read in Chinese?

Chris – There is an option on the webform to change language and Kathleen said it can be enabled, if it has not been, as part of the system scheduled later on in the year.

Kristina – Chris mentioned an upgrade of the NMT to position these for the next ten years. It builds on the upgrade of microphones in CASPER's five monitors around two years ago. Auckland Airport is also taking the opportunity to get a sixth monitor in the East Tāmaki area due to an increase in complaints because of the easterly winds we are getting, with more flights taking-off towards Manukau and turning north over the East Tāmaki area. An exact location hasn't been determined and that monitor will be used as a back up to the three permanent monitors.

Mark Easson – How do CASPER's processes and information differ from Flightradar24 as there are discrepancies between them including track differences? Flightradar24 uses ADSB which is information from aircraft. Chris replied, CASPER uses Airways New Zealand radar and has a built-in delay. Geoff Hounsell advised that Flightradar24 is not an ATC feed and uses slightly detuned data which relies on people having their antenna stuck up. The data is subjected to reflections and shielding that can impact the data. If it loses track of the aircraft, it will then assume that the aircraft is going from where it was last seen to where it was going, and the aircraft can appear miles off its actual track.

*Item 7 was dealt with at this point.*

## 9. Quarterly Aircraft Noise Report Overview and questions

Stephanie King presented the summary report, drawing out the following key points.

Figure 1 page 3 – Aircraft operations are increasing, although the previous quarter is still below pre-pandemic levels, approximately 22% down but is on an upward slope.

Figure 4 page 6 – Lots of predominantly easterly winds this year. The historical average runway usage is approximately RW23L 70%/RW05R 30%. The runway usage in the three-month period November 2022 to January 2023 was RW23L 52%/RW05R 48%. In the last twelve months the runway usage was RW23L 51%/RW05R 49%. The runway use in the same quarter last year was RW23L 68%/RW05R 32%.

Figure 11 page 15 and Table 3 page 16 – Two main complainants, 23 (East Tāmaki) and 45 (East Tāmaki Heights) this quarter. Auckland Airport organised a meeting with them but they did not attend. Another meeting will be organised. As discussed earlier, a noise monitor will be deployed in the area to understand the noise levels.

Figure 22 page 24 – In blue are the departing flights crossing over East Tāmaki area and most of the flights are turning north passing the complaints at 5000-6000feet.

Figure 24 page 27 – Shows the two new relocated monitors: Whitford to Beachlands, Clevedon to Flatbush.

Table 6 page 32 – The three permanent noise monitors have high correlation, around 90%.

Troy Churton asked where in East Tāmaki will the noise monitor be installed? Stephanie advised they are still investigating but it may possibly be near one of the complainants. There are challenges as East Tāmaki has a lot of industrial sites. Kristina commented that aim is to get a dual purpose out of the monitor with a location that will pick up the departing flights as well as where the aircraft turns on the Green Smart Track.

Figure 28 page 35 – Shows the noise levels for the new monitor locations at Beachlands and Flatbush (MANA). Although they have just been deployed the noise levels are sitting around expected levels.

Helen Futter referred to Table 7 on page 33 – Looking at Flatbush, on the boundary of the MANA, does it need it be there for a year before fully representative? Stephanie replied that it has only been out for 2 months and will need to be in place for 6 months before it can be at a fully representative level. Helen queried that at the ANNA boundary the Ldn should be 55 but currently the Flatbush monitor is measuring Ldn57. Matthew replied, ANNA is 55Ldn so between ANNA and MANA, 57 Ldn is fine as the MANA boundary starts at 60Ldn.

Helen Futter also queried the modelling associated with establishing the HANA/MANA boundary and the safety or confidence levels involved as it sets noise level expectations and qualification for mitigation. Marshall Day would follow up in relation to the point raised.

## 10. Quarterly Noise Mitigation Report and Website update

Matthew Dugmore, Statutory Planner Auckland Airport, spoke to the item.

The 2023/2024 annual offer is currently planned to be issued in September 2023. There have been 3 pre-inspections undertaken by Homotech and an Auckland Airport representative during the reporting quarter. In the last quarter, 4 HANA packages have been accepted. Currently, there are 11 properties awaiting covenant registration. Over the last five years compared to the average number of eligible homes, only 6.6% of eligible homeowners usually take up Auckland Airport's offer. Since 2008, 495 installations were completed. Auckland Airport will be requesting further data for the total number of eligible properties located within the 2044 Future Aircraft Noise Contour (FANC). An estimated 5000 eligible properties are in the future contour and Auckland Airport has completed installations in around 10% of these. Matthew advised he is leaving at the end of the month with his successor currently being identified to attend the June meeting. The Chair thanked Matthew for his great contribution over the years.

The Chair commented on the table in the report identifying that while 2021 and 2022 figures of eligible properties are correct, the airport had made the commitment to accept applications from properties that were in the wider eligible group pre-Covid and proceed with installing the package. It is worth making a footnote to alert readers to that. Matt said a note can be made to when a house applied to when installation is completed. For the next meeting there will be a statement to explain why the figure dropped. Kristina commented that at one stage the number of eligible properties fell to zero however, all those living in the HANA were still offered the package.

Matthew Dugmore said the website update is being put into production and he is working with IT. It will go live before he leaves on 24 March.

Helen Futter praised Matt on the amazing job he has done over the last few years and asked about results from the Marshall Day testing after installation was completed. Matt said he will send the report out with the minutes and that the results were fully compliant.

## 11. Work plan and any other business

Kristina Cooper – There may be an opportunity to swap the Introductory overview of Quarterly Aircraft Noise Report with the Process for world-wide slot coordination of airline schedules. Jeremy Lo advised that unfortunately Bruce Cargill from Airport Coordination Limited is unavailable on both dates. Kristina suggested asking if another person can present on his behalf.

On behalf of the ANCCG the chair presented Kristina Cooper with a small gift and card for her contributions.

## Closing Karakia by Matthew Dugmore

**Meeting closed:** 2.59pm

**Next meeting:** 12 June 2023