Before the Hearing Panel
Appointed by the Waikato District Council

Under	The Resource Management Act 1991
In the matter of	Hearing 17: Te Kowhai Airpark Zone – Proposed Waikato District Plan

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Evidence of Darran Humpheson on behalf of Waikato District Council

(Noise)

26 February 2021

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Introduction

1 My full name is Darran Humpheson.

2 I am a Senior Acoustics Specialist at Tonkin & Taylor Ltd (**T+T**).

3 I hold a Bachelor of Science degree with Honours in Applied Physics and a Master of Science degree in Environmental Acoustics. I am a Member of the Acoustical Society of New Zealand and a Member of the United Kingdom's Institute of Acoustics. I am a New Zealand representative of the International Standards Organisation (**ISO**) technical committee ISO/TC 43 SC1 "Noise".

4 I have been employed in acoustics since 1991, and I have previously held positions as a consultant for international firms AECOM (Associate Director 2013-2019), Bureau Veritas (Technical Director 2012-2013), RPS Group plc (Technical Director 2002-2012) and as a UK Ministry of Defence scientist working with the Royal Air Force (Head of the RAF's Noise and Vibration Division 1991-2002). I specialise in environmental noise.

5 I have been engaged by Waikato District Council (**WDC**) to provide acoustic expertise as to noise effects from aircraft operations at Te Kowhai Airfield (**TKA**).

6 I have previously undertaken aviation noise assessment work in New Zealand and internationally in the private, commercial and defence sectors. I have also undertaken social surveys of aircraft noise include light aircraft and helicopter operations and have authored papers on the subject of aircraft noise nuisance and aircraft noise management.

7 In preparing this statement of evidence I have considered the following documents:

(a) Evidence of Laurel Smith (acoustics) on behalf of NZTE Operations Limits (**NZTE**);

(b) Evidence of David Serjeant (planning) on behalf of NZTE Operations Limits (**NZTE**);

(c) T+T noise assessment; and

(d) WDC section 42A report prepared by Emma Ensor.

Code of Conduct for Expert Witnesses

8 While this is not a hearing before the Environment Court, I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court of New Zealand Practice Note 2014 and that I have complied with it when preparing my evidence. Other than when I state I am relying on the advice of another person,

this evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Scope of evidence

9 My evidence describes:

(a) my involvement and role in Hearing 17, including the preparation of the T+T noise assessment;

(b) Particular features of General aviation (**GA**) noise;

(c) Relevance of NZS 6805:1992 to GA noise;

(d) My response to acoustic issues raised in the evidence of Laurel Smith; and

(e) Conclusion.

10 In my evidence I only consider those issues which require clarification or further comment for the S42A report of WDC's planning officer, Emma Ensor.

Involvement

11 T+T was engaged by WDC in March 2020 to provide noise expertise as part of the proposed Waikato District Plan. This expertise was jointly provided by my T+T colleague, Lindsay Leitch, and myself.

12 In August 2020 I was engaged by WDC to prepare an aircraft noise assessment of TKA.

General Aviation

13 The following four noise topics are typical concerns of GA activity:

(a) Circuit Training – this can be very repetitive with aircraft audible for long periods of time. Generally associated with pilot training and not aircraft joining the circuit pattern to land.

(b) Aerobatics – the noise can be erratic and last for prolonged periods of time.

(c) Parachute Dropping/Glider Tug aircraft – noise can last for a prolonged period of time as the aircraft will routinely circle and climb/descend overhead of the aerodrome.

(d) Piston Engines – general perception that piston driven fixed/rotary wing aircraft are more intrusive, especially when on full power with low background noise levels.

14 I understand that aerobatics and parachute dropping are not activities undertaken at TKA.

NZS 6805:1992

15 New Zealand Standard NZS 6805:1992 'Airport Noise Management and Land Use Planning' is used to assess and rate aircraft noise in the vicinity of airports (including aerodromes / airfields). This standard provides guidance on the use of the day / night sound level (Ldn) and the averaging of aircraft activity.

16 The Ldn parameter is the day / night average energy level and it has a 10 dB weighting for any aircraft noise events which occur during the period 10pm to 7am. Ldn is widely used to assess environmental noise from other sources as well as aircraft noise and has been used to establish reasonable noise thresholds for determining community response to noise from aircraft operations (take-off and landing movements) and other sources of environmental noise. The Ldn 10 dB weighting recognises that night-time noise can be more disturbing than noise that occurs during the day, and that noise at night can result in adverse health effects due to loss of sleep. The Ldn weighting means that, for example, a single flight during the night-time would be equivalent to ten similar flights conducted during the day.

17 NZS 6805 defines the airnoise boundary (**ANB**) as:

'an area around an airport within which the current or future daily amount of aircraft noise exposure will be sufficiently high to require appropriate land use controls or other measures to avoid, remedy or mitigate any adverse effects on the environment, including effects on community health and amenity values whilst recognizing the need to operate an airport efficiently.'

18 The recommended control measures within the 55 Ldn outer control boundary (**OCB**) but outside the 65 Ldn ANB are to prohibit new residential, schools, hospitals or other noise sensitive uses "*unless a district plan permits such uses, subject to a requirement to incorporate appropriate acoustic insulation to ensure a satisfactory internal noise environment.*"

19 NZS 6805 recommends that for areas exposed to greater than 70 Ldn that '*consideration should be given to purchasing existing homes, or relocating residents, and rezoning the area to non-residential use only*'.

20 NZS 6805 recommends that a busy three-month period is used to determine the typical level of aircraft movements that may occur over a busy 24-hour day. The Ldn is therefore an aggregate level of noise exposure, taking into account the number of aircraft movements and the noise level of those aircraft. The Ldn alone

does not provide any context on either the number or noise level of individual aircraft movements.

21 NZS 6805 does not specifically exclude taxiing noise from the assessment of aircraft noise, but states in section 1.4.3.4: "*Only noise resulting from aircraft operations shall be considered when determining sound exposure contours and the airnoise boundary"*. In some circumstances taxiing noise should be included if it generates appreciable levels of noise outside the boundary of an aerodrome, which then require land use controls.

22 Recent guidance provided by the World Health Organization[1] recognises that noise levels produced by aircraft greater than 45 dB Lden are associated with adverse health effects. 45 dB Lden is approximately equal to 44 Ldn. Adverse health effects can include sleep disturbance, hypertension and cardiovascular disease. At sound levels approaching 65 Ldn approximately 45% of the exposed population will be highly annoyed by aircraft noise compared to approximately 55% at 70 Ldn (WHO 2018).

23 In Australia, the Commonwealth Department of Transport and Regional Services (DOTARS) and the Department of the Environmental and Heritage of Australia developed a package of technical supplementary noise indicators[2] which included noise indicators based on number of movements to assist with understanding noise effects for communities surrounding Sydney Airport. These supplementary indicators have now been adopted by AirServices when presenting information to affected communities and relevant stakeholders in Australia. Aggregated noise exposure levels are provided alongside contours based on the number of aircraft which generate noise levels greater than 60 and 70 dB(A)[3] and flight pattern distribution maps. Ms Smith also addresses these supplementary indicators in her evidence, and I agree that there are no accepted thresholds other than the use of exposure based noise indicators such as Ldn, Lden, LAeq, ANEF etc.

24 Here in New Zealand, aircraft noise levels are only provided as Ldn contours and occasionally as LAe[4] contours when assessing the potential for sleep disturbance effects at night.

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[1] World Health Organization, Environmental noise guidelines for the European region, 2018,

[2] DOTARS (2000) Expanding ways to describe and assess aircraft noise. Discussion paper. Department of Transport and Regional Services & Department of the Environment and the Heritage of the Commonwealth of Australia.

[3] These sound levels are the maximum sound level (LAmax) of a single overflight and are used to determine disturbance due to individual aircraft movements.

[4] LAe – sound exposure level – the sound energy of a single event compressed into one second.

25 It has been shown for GA activity[5] where the noise of individual 'light aircraft' is much lower than large commercial jet and turbo-prop aircraft, that communities are generally more sensitive to the number of flights rather than the aggregated noise exposure level. For example, one large aircraft such as an Airbus 320 taking off has approximately the same sound energy compared to 100 Cessna 206 light aircraft (the type that currently operates from TKA). Studies (Kerry 1997) have shown that a single take-off is significantly less disturbing than multiple quieter flight movements because the quieter aircraft move slower and the noise is more persistent and spread over a much longer time period which means less respite periods during the day (and night).

26 Setting a limit solely on the Ldn allows an airfield operator to balance the number of aircraft movements against the noise that each individual aircraft creates. This encourages the use of quiet types of aircraft and conversely penalises the use of noisier ones. This approach does however require knowledge of both the noise level and the number of movements to derive the Ldn for compliance purposes. There are advantages and disadvantages of this control as I discuss later in my evidence.

27 In the UK, the Department of Transport[6], investigated community disturbance caused by general and business aviation operations at five airfields. It found that community disturbance from GA flying is largely unrelated to aircraft noise level if that level is below about 50 dB LAeq, but that above 50 dB LAeq the noise disturbance increases noticeably. The 1988 Department of Transport study also considered the differences in the disturbance caused by GA aircraft noise compared to other sources of aircraft noise. It found that GA noise was more disturbing than noise from air transport, the difference being equivalent to a 5 dB(A) increase in the noise level. The reasons cited in the 1988 study for this difference in tolerance of GA noise compared to commercial air transport noise rest mainly on public perceptions of the need for the flying activity. The research suggests for example that a light aircraft being flown for pleasure is regarded as more annoying, at like-for-like noise levels, than would be a commercial aircraft taking fare-paying passengers on holiday. The research also identified that for low noise areas such as rural aerodromes, the number of aircraft movements was a determining factor when assessing the degree of annoyance. The research cites that for aerodromes with less than 30 movements per day, reliance on an exposure-based noise metric

[5] Kerry G (1997). Responding to complaints about noise from military light aircraft. Telford Research Institute of Acoustics, University of Salford.

[6] Department of Transport, Civil Aviation Policy Directorate, "A study of community disturbance caused by general and business aviation operations", July 1988.

is not recommended as the noise from individual movements will determine the degree of annoyance experienced.

28 Unlike the noise experienced around a commercial airport which has reasonably well-defined periods of aircraft activity and minimal circuit activity, non-acoustic controls such as the number of movements and time(s) of occurrence, may also be relevant.

Response to evidence of Laurel Smith

29 Laurel Smith in her evidence raises a number of matters, which I respond to below:

Taxiing

30 I have prepared two aircraft noise models. The first was based on information provided in the Marshall Day Acoustics (**MDA**) consultant advice note (**CAN**) which is appended as Appendix A to Ms Smith's evidence. The first set of contours were much smaller that the MDA contours due to differing assumptions on the aircraft types used in the modelling. The second modelling exercise followed confirmation from Ms Smith on the aircraft types that were used in the noise modelling. I then used this information to produce a further set of contours, which were consistent with those present in the MDA CAN. These revised assumptions were then used to generate further contours.

31 The model I produced did not include the noise of taxiing aircraft as I focused on the noise effects outside the TKA boundary. Comparison of the MDA and T+T contours shows a widening of the MDA contours to the south along the length of the runway due to the additional noise from taxiing. This area only affects the immediate area within the TKA boundary and not outside the airfield, as the noise environment is dominated by aircraft performing flight operations. This finding is confirmed by Ms Smith in her paragraph 69.

32 Taxiing noise is an integral element of the aircraft noise environment and is only significant for those locations close to the boundary of an aerodrome. I agree with Ms Smith that controls should be simplified so that there is no 'double-up' on noise limits for aircraft flight operations or taxiing activities. A combined contour would then remove the need for a separate Airpark Noise Buffer and would address unintended compliance issues if aircraft noise is required to comply with the TKA zone.

15,000 v 19,645 movement numbers

33 The T+T contours I produced were based on 15,000 movements which equates to 50 movements per day during the busy 3-month period. The MDA contours were based on 19,645 movements (70 movements per day). One movement is counted

as either a take-off or landing. Touch and go manoeuvres are recorded as two movements.

34 Ms Smith in her evidence provides greater clarification for the basis of the assumed aircraft movement numbers, the reason for including a factor of 30% to determine the busiest 3-month day period, and why 19,645 movements were selected as the basis for determining the noise effects (projected to occur in 2039 - 18 years from the present day). I was not aware of these assumptions when I prepared the T+T noise contours.

35 Unlike a commercial airport, which has reasonably well-defined growth patterns based on the likely future passenger and freight needs for various routes, a GA aerodrome has much greater movement variability due to its wider 'customer' profile, e.g., private flights, leisure activities such as sightseeing, horticulture/crop dusting, flying training and flying schools. This variability can be seen in TKA's historical and forecast aircraft movements and hangars graph which is in Appendix 13 of the Section 32 report, reproduced below.

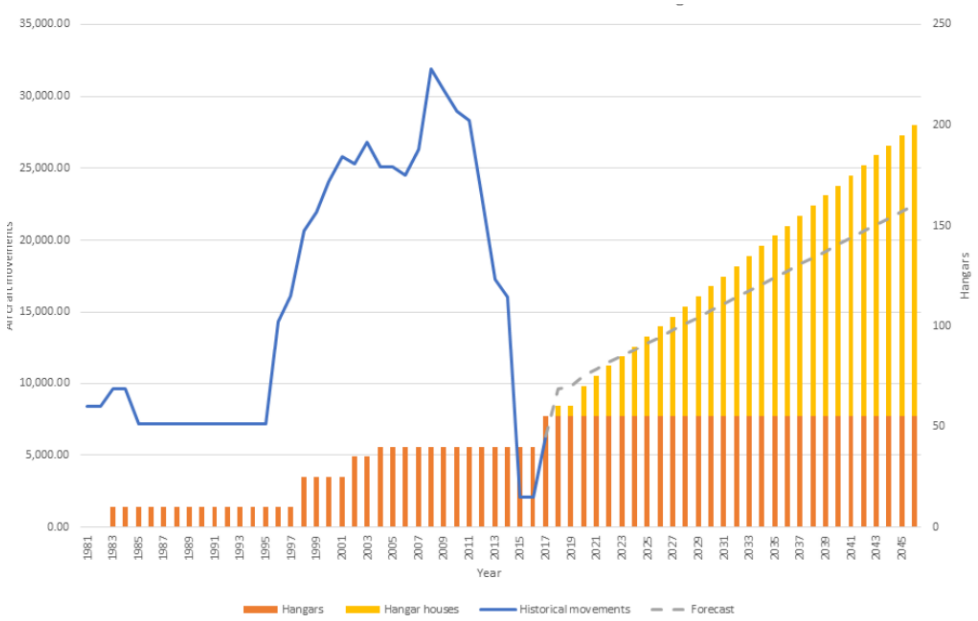

Figure 1 : Aircraft movements and Hangars (Appendix 13 of Section 32 report)

36 The figure shows linear growth from 2019 to an anticipated 21,000 movements with 200 hangar homes in 2045. For context, in 2019 there were 9,925 annual movements and during the mid-2000s, movement numbers significantly exceed both current day activity and the projected 21,000 movements. This variability gives rise to a degree of uncertainty on what is a likely level of future aircraft activity.

37 As can be seen in the 20-year period between 1995 and 2015 aircraft movement numbers fluctuate considerable from roughly 6,000 movements to over 30,000 movements in 2008 and to less than 5,000 movements in 2016. I am unsure as to the reasons for this peak in movements (it may be due to the intensive movements

that a flying school operation would generate). Should a similar pattern of activity occur in the future then in my opinion it would give rise to uncertainty amongst affected communities as to the level of noise that would be generated and experienced.

38 Airnoise boundaries serve two purposes:

(a) controlling noise noise sensitive development within the OCB and ANB contours – either prohibiting development or requiring acoustic treatment. Ideally the size of the contours should be sufficient to protect against reverse sensitivity effects from future development; and

(b) providing a cap on the amount of aircraft noise that can be generated by the aerodrome.

39 In comparison to (a), a contour cap would be more restrictive in size. For TKA a balance is required between providing appropriate land use controls and limiting the level of noise disturbance.

40 In comparison to Ms Smith's recommendation to provide for 19,645 movements in 2039, my preference would be to base the future noise contours on a likely situation which could arise within a shorter period than 18 years. A logical choice would be to base the controls on a 10-year time frame which aligns with the life of a district plan.

Development within the ANB

41 The NZTE submission seeks to make any new noise sensitive activities inside the ANB non-complying except activities associated with the Airpark. I agree with this approach, however I do have concerns regarding the development of residential units within the Airpark, i.e., hangar homes.

42 Noise sensitive development does include uses other than residential, such as educational facilities, community buildings, care homes, health centres and places of worship. These receivers could be located in Precinct B (commercial precinct) as I consider them to be more commercial rather than residential. However, these receiver types do have a noise sensitivity unlike typical commercial receivers and as such, a degree of noise protection should be provided, potentially by means of acoustic insulation requirement and / or requiring compliance with the ANB and OCB limits within Precinct B or that non-residential noise sensitive receivers are prohibited in Precinct B.

43 As Ms Smith confirms, future occupiers of these hangar homes will be actively engaged with activities at TKA. They will therefore be less sensitive to aircraft noise compared to non-aviation individuals outside of the Airpark boundary. There will be

situations whereby these hangar home residents require a good level of residential amenity with respect to noise. This is especially true when people are asleep and there is the potential for sleep disturbance because of their closer proximity to the operating areas of the airfield.

44 To ensure that the future noise amenity of these hangar home residents is protected, resource consent should be required for any new noise sensitive activities associated with the Airpark (residential development) within the ANB. This would mean that hangar homes are constructed to a minimum acoustic standard to ensure that internal noise levels within living and sleeping areas is appropriate.

45 I agree with Ms Smith that an upper Ldn limit should be applied to any hangar homes and I agree that 70 Ldn should be regarded as an absolute upper threshold[7]. As I have mentioned earlier at paragraph 19, adverse noise effects do occur at lower Ldn levels depending upon the context of the noise exposure i.e., whether noise is experienced outdoors versus indoors and the activities being performed (e.g., sleeping).

46 I note that Figure 4 to Appendix A of her evidence provides noise contours up to 69 Ldn. I have used this contour to estimate the position of the 70 Ldn contour. I have compared the location of Precinct D (residential precinct) to the likely location of the 70 Ldn contour and based on 19,645 annual movements it would appear that the 70 Ldn contour would encompass part of Precinct D. Should the future contours be based on 15,000 movements, the 70 Ldn contours would fall within Precinct A (operational precinct) only. Should the panel adopt 19,645 movements then I would recommend that further assessment is required to establish the precise location of the 70 Ldn contour which may require an amendment to the location of Precinct A and Precinct D.

47 Furthermore, noise from individual aircraft movements would result in high levels of noise as aircraft take-off and land. Acoustic insulation of hangar homes should therefore take into account the noise of individual flight movements as well as the overall level of noise exposure when determining the required sound insulation requirements.

48 I consider that an appropriate internal sound level would be 40 dB Ldn as included in the notified version of the proposed district plan. This is consistent with WHO recommendations.

[7] NZS 6805 recommends that consideration should be given to purchasing existing homes, or relocating residents, and rezoning the area to non-residential use only.

Circuit training

49 NZTE proposes a rule that disallows circuit training between 10pm and 7am. I agree that this restriction should be in place.

50 Repetitive movements in the circuit are a feature of small aerodromes and as I noted that they area a specific noise feature of GA. Circuit training is an ideal activity to practice arrival and departure movements (touch and go). The majority of circuit training is carried out by flight schools and it is not uncommon for a trainee to perform multiple circuits over the course of a lesson. This results in more or less constant noise in the vicinity of the aerodrome.

51 Flight schools has been identified in the Section 42A report as a non-complying activity at TKA due to the uncertainties of the associated noise effects based on the number of flights that would occur from this activity. Should a flight school be proposed at TKA, resource consent would be required to understand the scale of the noise effects and I support this approach.

Night flying

52 The OCB and ANB contours provided in Ms Smith's evidence do not include aircraft movements at night. Ms Smith states[8] that in theory the future noise model is equivalent to 6 night time movements and 10-day time movements. She states that this is unlikely to occur as it would severely restrict the number of allowable daytime movements. However, Ms Smith then discusses aggregating night time movements over the NZS 6805 3-month day period such that a busy night of activity would be balanced by nights with no aircraft movements. Ms Smith recommends 40 night-time departures over any 3-month period[9].

53 Technically this approach to managing noise is correct, but in my opinion aggregating night time results across a 3-month period would not provide protection to residents from the adverse effects of sleep disturbance during busy periods and due to the variability of GA movements (no fixed schedules). This approach could also be open to abuse such that substantial night time movements could occur over a few days resulting in significant sleep disturbance. In my opinion it is more appropriate to provide separate controls to limit adverse noise effects at night.

54 Ms Smith discusses the MDA approach to using a 95 dB LAe contour to address sleep disturbance effects. The examples she provides are from airports that are significantly larger than TKA with different noise characteristics. She considers

[8] Laurel Smith evidence Para 47

[9] Laurel Smith evidence Para 55

that, based on her predicted LAe contours, the noise from aircraft landings would be acceptable, whereas there should be controls for aircraft taking-off at night. I agree that departure noise is more significant, but in order to provide certainty for residents there should be controls for all types of activity, including circuit work at night.

55 There is a risk that sleep disturbance effects will occur at night if there is flying activity during the period 10pm to 7am and I note that there are airports which have curfew periods[10]. The greater the frequency of night flights, the greater the potential for adverse health effects to occur.

56 Should the hearing panel consider that night flights are necessary, rather than providing a cap on departures over a 3-month period it would be more appropriate to provide certainty to residents over a much shorter period, and a single week would in my opinion be appropriate. A single night would be too restrictive. I recommend that unless there any exceptional reasons, (such as flight safety, emergencies, flights arriving late), no more than 3 movements should occur each week between the hours of 10pm to 7am. This would equate to 36 movements over a 3-month period. There should be no circuit flying at night.

Engine testing

57 Ms Smith does not agree to a rule excluding engine testing between 10pm and 7am, rather controls on engine testing would be managed by the general noise limits.

58 Engine testing is required following maintenance and repair activities and is essential to demonstrate the airworthiness of the aircraft. My understanding is that there are no operational reasons for engine testing to be required at night at TKA. There are no aircraft activities which are considered essential or necessary for emergency purposes.

59 Prolonged engine testing can be a source of considerable disturbance as engines are often operated for minutes at a time at high power level including use of take-off power. Engine testing noise at night does have the potential to cause disturbance, especially as there are no dedicated areas where engine testing occurs. Owners of aircraft may simply perform an engine test outside the hangarage, which for neighbouring hangar home residents could be very close.

60 Rather than providing a rule package to control engine testing noise, it would be more appropriate to prohibit engine testing at night and for preservation of evening

[10] Wellington Airport

and early morning noise amenity, engine testing should not in my opinion occur during the hours of 8pm to 8am to prevent unreasonable noise disturbance.

Compliance

61 I understand having read her evidence that there is an automated movement monitoring system which would readily provide movement data, which can report on a rolling 3-month basis. Ms Smith proposes that a trigger of 4,500 movements over a 3-month period would be appropriate before noise modelling is required, i.e., 70% of the movements included in the MDA proposed noise boundaries. Should the hearing panel consider than 15,000 rather than 19,645 movements are appropriate, I have estimated that the appropriate trigger would be approximately 3,150 movements.

62 Ms Smith does not support increasing the frequency of noise modelling and in-field compliance monitoring from 3 years to 2 years.

63 I agree with Ms Smith that noise modelling should only commence after the 70% movement trigger value has been met. This requirement is necessary thereafter to demonstrate compliance with the aircraft noise boundaries. When the calculated noise level is within 1 dB of the ANB, annual contours should then be calculated and verified by in-field noise monitoring.

64 In-field noise monitoring is required by NZS 6805 as land use controls are based on the noise actually received – not what is predicted (source - foreword to NZS 6805).

65 I have shown (see Figure 1) that historical movement data at TKA is variable and can fluctuate year on year. A period of 3 years between compliance monitoring is in my opinion too long. I therefore consider that a shorter period of 2 years would be appropriate once the 70% trigger has been met. The resources required to undertake this exercise are not excessively prohibitive nor unreasonable. A more regular regime of monitoring would in my opinion provide assurance to residents, council and NZTE that actual noise levels are consistent with modelling. This is beneficial for GA aerodromes for situations where there are marked changes in the types of aircraft operating and where they fly (acknowledging that GA aircraft will tend to fly visual flight rules more so than using instruments, which may result in a more distributed pattern of flying).

66 I agree with the commentary provided by Ms Smith and her response at paragraph 11 that on years where modelling or monitoring do not take place, the compliance report would provide information on the recorded aircraft movement only.

Conclusion

67 General aviation is known to generate greater levels of disturbance compared to similar levels of commercial airport noise. Piston engine aircraft, slower speeds, repeated use of circuits, typically higher levels of activity on weekends and public perception about non-commercial flights all contribute to this elevated level of disturbance amongst exposed communities.

68 In my evidence I have considered the following topics:

(a) Taxiing – noise from aircraft taxiing only affects the extent of the 65 Ldn ANB within the boundary of the airfield (noise from this activity will still be audible at existing dwellings). A single contour showing the noise from aircraft operations and taxing should be used as the basis for land use planning controls.

(b) Movements – aircraft movement numbers at general aviation aerodromes can fluctuate considerably. Historical data at Te Kowhai airfield supports this conclusion. Rather than setting limits on a forecast situation is 18 years' time, I consider that land use planning controls should be based on the life of the district plan, i.e., a 10-year period.

(c) Development within the airpark – NZS 6805 recommends that new noise sensitive development in the 65 Ldn ANB is prohibitive. Hangar homes are an exception due to the occupants' connection with the airpark. With appropriate acoustic treatment, the internal noise amenity of these buildings will be protected. Development of hangar homes close to the operating areas of the airfield could result in noise levels approaching and possibly exceeding 70 Ldn. If this is the case, the current location of Precinct's A and B may require amending to prohibit residential development in areas of very high noise. Noise sensitive non-residential receivers, such as educational facilities and community buildings, could be located in Precinct B. Acoustic insulation and/or compliance with the ANB and OCB limits, or prohibiting this type of development in Precinct B are all appropriate control measures.

(d) Circuit training – trainee pilots will regularly use the circuit to perform touch and go manoeuvres. Should a flight school be proposed at the airpark then resource consent will be required.

(e) Night flying – to preserve the quality of sleep there should be controls to limit the frequency of night flying. Three movements per week is recommended.

(f) Engine testing – to preserve residential noise amenity, engine testing should be prohibited between 8pm and 8am.

(g) Compliance – once movement numbers exceed 70% of the 3-month movement number, compliance monitoring should occur every 2 years rather than every 3 years.

Dated this day 26 February 2021

Darran Humpheson