

# MEMO

**To:** Patrick Moss – Acting Team Leader, Whau  
**From:** Andrew Gordon – Specialist  
**Date:** 29 October 2021 (Revision 2)  
**Subject:** 15 Cremorne Street, Herne Bay – Peer review of noise effects

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## Introduction

I refer to your brief dated 07/05/2020 and a request for comments regarding a section 127 application LUC60134603-A for a variation to conditions of consent relating to helicopter movements at an existing consented helipad located at 15 Cremorne Street, Herne Bay.

I have reviewed the following documents regarding an assessment of noise effects from the proposal: -

- Acoustic assessment dated 16 April 2021 by Hegley Acoustic Consultants (HAC)
- Acoustic assessment dated 4 May 2021 by Hegley Acoustic Consultants
- Acoustic assessment dated 22 May 2021 by Hegley Acoustic Consultants (S92 response)

I visited the area immediately surrounding the application site around 9 May 2020.

## Background

Existing consent R/LUC/2015/940 provides for use of a helipad with the number of flights not exceeding two flights (four movements) per week and no more than one flight (two movements) on any one day.

The maximum number of flights is based on ensuring compliance with the consented noise limit of 50 dB  $L_{dn}$  at sites where written approval was not obtained.



## AUP (OP) E25 Noise and vibration

Rule E25.6.32 specifies the following for helipads:-

### E25.6.32. Noise levels for helicopters take-off or landing

- (1) The take-off or landing of a helicopter on any site except for emergency services must not exceed  $L_{dn}$  50dB or 85dB  $L_{AFmax}$  measured within the boundary or the notional boundary of any adjacent site containing activities sensitive to noise and  $L_{dn}$  60dBA within the boundary of any other site.

Activities sensitive to noise are defined in the AUP (OP) namely:

*Any dwelling, visitor accommodation, boarding house, marae, papakāinga, integrated residential development, retirement village, supported residential care, care centres, lecture theatres in tertiary education facilities, classrooms in education facilities and healthcare facilities with an overnight stay facility.*

I note the  $L_{dn}$  noise metric is defined in NZS 6802:2008 *Acoustics – Measurement of environment sound* which is referenced in AUP (OP) E25.6.1 (1).

Although not referenced in the AUP (OP), the requirements specified in NZS 6807:1994 *Noise Management and Landing Use Planning for Helicopter Landing Areas* are commonly used for assessment purposes.

The Ldn noise metric is recommended in NZS 6807:1994 *Noise Management and Land Use Planning for Helicopter Landing Areas*. Ldn is the day/night average level and measures overall noise exposure and considers the number of helicopter movements, the loudness of each movement and sensitivity associated with any night flights. NZS 6807:1994 recommends in Table 1 – Limits of acceptability, an Ldn of 50 dBA for dwellings.

## Discussion

The section 127 application initially proposed an increase in helicopter movements to a maximum of 20 per week and 6 per day which HAC assessed would continue to comply with 50 dB Ldn within adjacent sites, except within 3 River Terrace (who provided written approval for the original consent).

HAC state an increase in flight movements will remain compliant due to the shorter shut down and start up times for the helicopter type expected to predominantly use the helipad (i.e. Air Bus H130T2). However, there is no evidence provided to verify this helicopter will be representative for all movements associated with the helipad.

HAC state (report dated 4 May 2021) that to provide for a good factor of safety the applicant has revised their application to limit helicopter movements to a maximum of 8 per week and 4 per day.

As guidance only, an interested party to the application engaged Marshall Day Acoustics (MDA) to peer review the HAC assessment (prior to the revised application). Modelling carried out by MDA utilized SoundPlan software because, from MDA experience, this software predicts more representative noise levels. In this regard MDA report: -

*“For the EC130 helicopter, we found that SoundPLAN predictions (using DIN 45684-1 Aircraft Class H1.1) align well with our measurement results from a range of locations (approximately +/- 2 dB). SoundPLAN also allows terrain and buildings to be included in the model to accurately predict the effect these have on sound propagation. As such, we are comfortable that our modelled predictions are a reasonably accurate representation of the likely noise levels of helicopter take-offs and landings which take into account the specific screening effects for each receiver point.”*

The following table summarises the number of helicopter movements and level of compliance: -

Scenario	Daily	7 day
Existing consent	2	4
Original variation proposal	6	20
Maximum to comply according to HAC modelling (note does not include sites where previous written approvals were obtained)	6	22
Maximum to comply according to MDA modelling excluding 3 River Terrace	2	8
<b>Revised variation proposal</b>	<b>4</b>	<b>8</b>

Predicted dB Ldn levels averaged over 7 days: -

	HAC modelling existing consent	Based on HAC modelling for variation proposal	Based on MDA modelling for variation proposal
18 Cremorne St	44	43	48
20 Cremorne St	47	46	50
9 Cremorne St	44	43	42
8 Wairangi St	46	45	48
11 Cremorne St	-	-	40
3 River Terrace	-	-	57

Generally, doubling the maximum number of flights from the existing consented situation (i.e. 4 movements per week) to the proposed number (i.e. 8 movements per week) will increase the Ldn by 3 dBA at neighbouring sites. However, this depends on the duration that the helicopter is on the ground during ground idling, flight idling, shut down, cold start-ups or warm start-ups. Therefore, depending on the duration, changes of +/- 3 dBA will occur as evident in the above table.

This is the situation with this proposal as explained by HAC in the report dated 4 May 2021: -

***“To provide for a good factor of safety it is proposed to limit flights to four per week (29% of the flights to satisfy a 50dBA Ldn limit) with a maximum of 2 flights on any one day (50% the number of flights to reach the 50dBA Ldn limit). The above equates to a similar noise exposure for the neighbours to what is currently experienced.***

***However, this does not take into account the reduced start-up and shut down times for the Air Bus H130T2 which, as set out above, is significant. As a result, the noise exposure for residents will be reduced to below what is currently permitted by the existing consent and considered to be reasonable (50dBA Ldn)."***

I confirm the modelling carried out by HAC demonstrates noise from the proposed increase (doubling) of flights is predicted to comply with the 50 dB Ldn limit except at 3 River Terrace. The MDA modelling averaged over a week supports this conclusion however only 2 movements per day will ensure compliance when assessed in accordance with NZS 6807:1994 (i.e.  $\leq 53$  dB Ldn).

In regard to the maximum noise level (or  $L_{AFmax}$ ), I agree with HAC that there will be no or negligible change to that currently permitted and experienced in terms of the existing consent for the site.

I note that although this application provides for an increase in the number of movements that may occur on any one day or on any week, introducing a new limit of 104 flights a year will ensure that longer term effects will remain the same as currently consented (i.e. two flights or four movements per week as required in existing consent condition 10 equals 104 flights (208 movements) in any year).

I generally support the proposed changes to conditions 10 and 11 namely: -

10. *The number of flights per week shall not exceed four flights (eight movements) with no greater than two flights (four movements) on any single day, and no greater than 104 flights (208 movements) in any calendar year.*
- 12 *The helipad shall not be used for any helicopter creating noise effects greater than an 'Air Bus H130T2' unless it has been demonstrated by a suitably qualified acoustic professional to the satisfaction of Council that the level of noise will comply with condition 7.*

And the following new condition:-

*The noise from helicopters using the helipad approved by this consent shall comply with the requirements of NZS6807:1994 Noise Management and Land Use Planning for Helicopter Landing Areas.*

Remaining conditions do not change and are retained (i.e. 7, 8, 9, 11, 13 and 14).

Regards

Andrew Gordon  
**Specialist**