PALMERSTON NORTH AIRPORT
NOISE MANAGEMENT PLAN (NMP)

Final | 07 April 2025

MARSHALL DAY Acoustics

84 Symonds Street
PO Box 5811
Victoria Street West
Auckland 1142 New Zealand
T: +64 9 379 7822 F: +64 9 309 3540
www.marshallday.com

Project: **PALMERSTON NORTH AIRPORT**

Prepared for: **Palmerston North Airport Limited**
PO Box 4384
Palmerston North 4442

Attention: **Chief Executive Officer**

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1.0 INTRODUCTION

This Airport Noise Management Plan (NMP) has been prepared on behalf of Palmerston North Airport Limited (PNAL) in accordance with the requirements of the Palmerston North City Council (PNCC) District Plan Rule 13.4.6.2. This 2024 NMP has been updated from the 2020 NMP written by Beca.

Appendix A contains a glossary of terms used in this NMP.

The purpose and objectives of this NMP are:

i. To set out the standards that apply to noise generated from airport activities
ii. To identify the monitoring and reporting process for aircraft operations noise emissions
iii. To identify the monitoring and reporting process for engine testing noise emissions
iv. To identify the monitoring and reporting process for ground-based noise emissions
v. To articulate a clear process for complaints and communications to be received, recorded, resolved and monitored
vi. To manage the effects of PNAL operational noise on the surrounding community
vii. To assist PNAL in ensuring compliance with all elements of Rule 13.4.6 in the PNCC District Plan
viii. To consider any feedback from Manawatū District Council

This NMP addresses the following:

- Airport noise performance standards in the PNCC District Plan (Section 2.0);
- Compliance monitoring procedures for monitoring and reporting of noise compliance (Section 3.0) in accordance with the PNCC Rule 13.4.6 from:
  - **aircraft operations** (Rule 13.4.6.1 (i));
  - **engine testing** (Rule 13.4.6.1(iv)), and;
  - **ground-based operations** (Rule 13.4.6.1 (vii));
- Aircraft noise management procedures (Section 4.0);
- Complaints and communications procedures (Section 5.0); and
- Summary of NMP review process (Section 6.0).

A full reproduction of the PNCC District Plan Rule 13.4.6.1 can be found in Appendix B.

2.0 DISTRICT PLAN AIRPORT NOISE PERFORMANCE STANDARDS

Section 13.4.6 of the PNCC District Plan outlines permitted activity noise standards relating to 'Sound Emissions in the Airport Zone'. The following summarises these standards.

2.1 Aircraft Operational Noise – Rule 13.4.6.1 (i)

"The Palmerston North Airport Company shall ensure that noise emissions from aircraft operations shall not exceed 65 L_{dn} at the Airnoise boundary as shown on Map 10.6.6.1 when measured and assessed using the methods described in NZS 6805:1992 Airport Noise Management and Land Use Planning.

The following is an exception to the rule:

(a) The operation of unscheduled flights required to meet the needs of a national or civil defence emergency declared under the Civil Defence Act 1983

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(b) Closure of major airports due to weather and the use of Palmerston North Airport by diverted aircraft

(c) The use of Palmerston North Airport by diverted aircraft due to operational emergencies at other airports

This monitoring programme is to be carried out by a suitably qualified and experienced person and all measurements shall be in accordance with NZS 6805:1992 Airport Noise Management and Land Use Planning."

To comply with this provision on an on-going basis, PNAL will implement strategies contained in this NMP, specifically, the compliance monitoring strategies identified in Section 3.1.

2.2 Engine Testing Noise – Rule 13.4.6.1 (iv)

The engine testing rules that apply are most easily described as being split into two parts, daytime and night-time (described further below).

In summary, engine testing noise controls apply to all on-aircraft engine testing that is performed at the airport. The night-time noise rules are more stringent, reflecting people's increased sensitivity to night-time noise. However, there are some less stringent controls applied to a limited number of tests at night. These are to provide some operational flexibility.

The relevant rules are summarised below and shown in full in Appendix B.

	Noise Limit	**Notes**
Daytime (7.00am to 10.00pm)		
All days	55 dBA $L_{eq(15\ hour)}$	– Exclude noise from essential unscheduled engine testing of jet aircraft
Night-time (10.00pm to 7.00am)		
All nights (except on three nights within any three successive calendar months)	55 dBA $L_{eq(1\ hour)}$ 70 dBA L_{max}	– Total duration of testing in any one night shall not exceed one hour – Total exposure of engine testing in any one night shall not exceed the total $Leq_{(1\ hour)}$ limits given – Engine testing shall take place within a certified noise mitigation facility – All engine tests at 60% power setting or more shall be notified to PNAL within 24 hours of the event, who shall keep a register of such events
On each of the three nights within any three successive calendar months	60 dBA $L_{eq(1\ hour)}$ 70 dBA L_{max}	
Note: The Rule also includes requirements for essential unscheduled night-time testing. As night-time testing has not occurred historically, we have excluded these rules for brevity		

Refer to the PNCC District Plan Rule (iv) in Appendix B for the full set of engine testing controls.

To comply with this provision on an on-going basis, PNAL will implement strategies contained in this NMP, specifically, the compliance monitoring strategies identified in Section 3.2.

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2.3 Ground-based operations – Rule 13.4.6 (vii)

"Where the Airport Zone, Residential Zone and Rural Zone interface the following noise rules shall apply in the Airport Zone:

- *Daytime (7.00am – 7.00pm)* *55dBA $L_{Aeq\,(15min)}$*
- *Evening (7.00pm – 10.00pm)* *50dB $L_{Aeq\,(15min)}$*
- *Night-time (10.00pm – 7.00am)* *45dB $L_{Aeq\,(15min)}$*
- *Night-time L_{max}* *75dBA L_{max}*

This rule replaces the limits set out in R13.4.6.1(ii) which is now considered obsolete. Rule R13.4.6.1(vii) will be the only standard relevant to this NMP.

Aircraft operations and engine testing are excluded from these standards, in keeping with R13.4.6.1(ii) that this rule replaces. This rule applies at the zone interfaces, even if this interface falls within the airnoise contour.

To comply with this provision on an on-going basis, PNAL will implement strategies contained in this NMP, specifically, the compliance monitoring strategies identified in Section 3.3.

3.0 COMPLIANCE MANAGEMENT

The PNCC District Plan requires (Rule R13.4.6.2) that the PNAL NMP address mechanisms for establishing and maintaining compliance with R13.4.6.1. The previous version of this NMP (Dated 13 August 2020) contained mechanisms to cover Rule 13.4.6.1 (i) relating to aircraft operations only. This NMP now also contains management procedures for engine testing and ground-based operations.

3.1 Aircraft operations

PNAL will undertake compliance monitoring at the Airnoise Boundary (ANB) through a "count and calculate" method. The rolling 3-month L_{dn} noise level at representative noise sensitive locations on the ANB will be calculated each month using the actual aircraft movement records and established noise levels for individual aircraft operations at the compliance monitoring locations. The four compliance monitoring locations that have been agreed upon are shown on the attached plan (refer to Appendix C).

This approach requires PNAL to collect accurate records of all aircraft operational activity that occurs at the airfield.

The noise levels for individual aircraft operations will be established through a combination of noise modelling and in-field measurements. The L_{AE} (SEL) for each prevalent aircraft type at Palmerston North Airport under four different operations will be required – Arrival on runway 07, Arrival on runway 25, Departure on runway 07, Departure on runway 25. Prevalent aircraft include scheduled passenger services, regular freight services and other regular operations.

For aircraft types that fly infrequently at Palmerston North Airport, noise levels shall be assigned to that aircraft type based on a knowledge of its characteristics such as engine make, type and size and propeller characteristics and any available and relevant noise measurement data. For example, all single piston engine general aviation aircraft may use generic noise data for this aircraft type.

The count and calculate monitoring spreadsheet will be updated with actual aircraft movement data every month by PNAL. The spreadsheet will provide a report showing the calculated rolling 3-month L_{dn} at the four compliance monitoring locations. PNAL will publish the reports on the PNAL website.

The count and calculate monitoring spreadsheet has been prepared by an independent acoustician and details of the modelling and measurements used to establish the noise levels for individual aircraft operations at the compliance monitoring locations will be recorded for future reference.

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The monitoring spreadsheet will be updated at such times as any substantial change in aircraft type for scheduled operations occurs. The monitoring spreadsheet will be audited every five years by an independent acoustician who will recommend changes as required to ensure it is a reliable noise monitoring tool. Details of any changes will be recorded. The next audit of the spreadsheet is scheduled for 2027.

If the calculated noise level at any of the compliance assessment locations is greater than 64.0 dB L_{dn} then PNAL will agree an approach with PNCC on how to verify compliance and manage aircraft operations noise to comply with the 65 dB L_{dn} limit. Methods to check compliance would be either calculation of compliance contours using records of actual aircraft activity or by in-field noise measurements.

3.2 Engine testing

An engine testing noise assessment was carried out in early 2024 using 2023 noise measurement data[1]. This assessment concluded that at the time engine testing noise was compliant with the relevant rules. It recommended that further engine testing compliance assessments should be carried out every three years at minimum.

The assessment for engine testing noise shall be carried out sooner than every three years if any of the following applies:

- there is a significant increase (≥50%) in aircraft operations year on year
- in the event of a significant increase (≥50%) in observed engine testing activity in the logs
- in the event of regular night-time engine testing taking place

To check this, PNAL should keep records of:

- Aircraft operations that occur at the airfield
- Logs of all engine testing activity that occurs at the airfield, including details on the aircraft tested, power setting, location that the test occurred and time of day

As part of the three yearly engine testing assessment, noise level measurements to quantify engine testing noise levels may be required. Currently there is no continuous monitoring of engine testing noise.

The engine testing noise monitoring programme should occur for a minimum period of one month Noise monitors should be deployed at a minimum of two positions to include both on and off the airfield (see Appendix E for an example of possible monitoring locations).

During the monitoring period, engine testing logs and operational activity records will be kept.

The noise monitoring results and activity records will be correlated and analysed by an independent acoustician. Engine testing noise will be correlated to calculate $L_{Aeq, 15\,hour}$ (assuming no night-time engine testing has taken place). Extraneous noise (such as road traffic and aircraft operation noise) will be excluded from the calculations.

The results from the engine testing noise analysis will be summarised in a report and provided to PNCC within 3 months of the completion of the engine testing noise measurements.

If any calculated or assessed noise levels at any of the noise monitors are not compliant, then PNAL will agree an approach with PNCC on how to manage the engine testing noise to comply with the relevant limits. Current approaches are detailed in Section 4.2.

[1] This assessment is detailed in Rp 001 R06 20210600 SJP (Ground Noise Monitoring and Compliance Assessment)

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3.3 Ground-based operations

A ground-based noise assessment was carried out in early 2024 using 2023 noise measurement data[2]. This assessment concluded that at the time ground-based noise was compliant with the relevant rules, with the specific exception of freight jet aircraft using APUs whilst on the stand at night. (Please refer to Section 4.3 for extra information on noise management.)

It is recommended that further ground-based noise compliance assessments should be carried out every three years at minimum.

The assessment for ground-based noise shall be carried out sooner than every three years if any of the following applies:

- there is a significant increase (≥50%) in aircraft operations year on year
- within 1 year of any significant changes to the airport infrastructure that may give rise to a significant increase in ground-based operations
- in the event of a significant increase (≥50%) in observed freight activity in the logs

To check this, PNAL should keep records of:

- Aircraft operations that occur at the airfield

As part of the three yearly ground-based noise assessment, noise level measurements to quantify ground-based noise levels may be required. Currently there is no continuous monitoring of ground-based noise.

The ground-based noise monitoring programme should occur for a minimum period of one month Noise monitors should be deployed at a minimum of two positions to include both on and off the airfield (see Appendix E for an example of possible monitoring locations).

During the monitoring period, operational activity records will be kept. These records will contain movement data for all vehicles and ground-based activities, as well as engine testing occurring at PNAL.

The noise monitoring results and activity records will be correlated and analysed by an independent acoustician. Ground-based operations noise will be correlated to calculate the $L_{Aeq(15min)}$ and night-time L_{AFmax} during the monitoring period from ground-based activity. This correlation is needed to exclude all other on airfield noise sources (i.e. aircraft flight operations and engine testing). Other extraneous noise, such as road traffic, will be excluded from the calculations.

The results from the ground-based noise analysis will be summarised in a report and provided to PNCC within 3 months of the completion of the ground-based noise measurements.

If any calculated or assessed noise levels at any of the noise monitors are not compliant, then PNAL will agree an approach with PNCC on how to manage the ground-based noise to comply with the relevant limits. Current approaches are detailed in Section 4.3.

3.4 Timing of compliance management

This NMP sets out 3 yearly cycles for the assessments of engine testing and ground-based operations. It also provides requirements for the assessments to occur earlier than the 3 yearly cycle.

We note that it may be more efficient to carry out both the engine testing and ground-based operations assessments at the same time. Therefore, if either assessment is deemed to be required earlier than the 3 yearly cycles, then consider undertaking both assessments earlier or delaying both until next cycle.

[2] This assessment is detailed in Rp 001 R06 20210600 SJP (Ground Noise Monitoring and Compliance Assessment)

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4.0 MITIGATION AND MANAGEMENT

4.1 General aircraft noise management

PNAL will assist in promoting voluntary compliance with noise limits by operators, with the objective that emission of noise from aircraft operating in close proximity to the airport and urban environment of Palmerston North city is kept as low as practically possible, consistent with safety.

The key noise mitigation mechanism that PNAL will encourage relates to promoting considerate flying practices balanced with the need to ensure flight safety is not compromised. Noting the later caveats the following general noise mitigation procedures will be promoted for aircraft using or overflying Palmerston North Airport:

- Circuits left-hand for main runway 07 and right-hand for runway 25. **Refer Note 1.**
- Between the hours of 10.00pm and 7.00am local time jet and turbo-prop powered aircraft shall on departure from runway 25 not commence a left-turn within 4 nautical miles of the airport; and on departure from runway 07 not commence a right turn by visual reference below an altitude of 1,500ft. **Refer Note 2.**
- Between the hours of 10.00pm and 7.00am local time aircraft should not operate at an altitude of less than 3,000ft over the Palmerston North urban area between the extended runway centreline and the Manawatu River except during approach and take-off from the runway.

Note 1: For a number of air traffic management reasons, including separation requirements, on occasions a non-standard circuit may be approved. The non-standard circuit is only used to preserve or enhance safety margins. Aircraft are returned to the standard circuit when there is no longer any operational requirement for them to remain in the non-standard circuit.

Note 2: There may be occasions when a turn prior to 4 nautical miles may be required due to flight separation requirements or for IFR Standard Instrument Departures for conventional (non-PBN equipped) aircraft.

Note 3: There may be occasions when aircraft operations below 3,000ft may be required due to flight separation requirements.

4.2 Engine testing noise

To manage noise generated from all aircraft engine testing, PNAL will:

- Keep a record of all aircraft engine testing activity, with airfield users required to provide this to PNAL monthly
- In conjunction with operators:
  - ensure aircraft are oriented so that their engines face away from nearby residential receivers, where practicable
  - Move testing to another location further from nearby residential receivers
- Consider restricting the amount of engine testing allowed at Palmerston North Airport where required, particularly at night

4.3 Ground-based operations noise

A large portion of ground-based operations noise is from APU's (auxiliary power units). PNAL is currently investigating, in conjunction with the operators, methods to reduce or control APU noise to compliant levels. If it is found that the noise from ground-based operations still exceed the relevant noise controls, PNAL will investigate the following methods to manage or mitigate APU noise:

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- Provide appropriate acoustic screening between the APU and the noise sensitive receivers
- Restrict the use of the APU to daytime only
- Require the use of quieter GPUs in place of APUs

These measures are currently being investigated and the results of this investigation will be reported in the next ground-based noise assessment carried out in accordance with Section 3.3.

4.4 Noise reporting

The following noise reports shall be made available on the PNAL website, as well as being provided to PNCC and MDC (Manawatū District Council) for comment.

- Aircraft operations (results from count and calculated noise monitoring – to be published every 3 months)
- Engine testing (results from the three yearly engine testing noise assessment)
- Ground-based operations (results from the three yearly ground-based noise assessment)

This will enable immediate access for all interested persons, maintaining transparency in compliance of R13.4.6.1(i).

5.0 COMPLAINTS AND COMMUNICATIONS PROCEDURE

The PNCC District Plan requires that PNAL identify and establish procedures and systems to:

- Facilitate communication between residents around Palmerston North Airport, airport users, PNAL and PNCC
- Identify key people for communications purposes and methods of contact
- Provide a dispute management system to receive, record, deal with and monitor complaints

The following section addresses these requirements.

5.1 Communications procedure

PNAL will convene an 'Airport Noise Liaison Committee' to manage local airport noise issues. This Committee will contain representatives from the following interest groups:

- PNCC
- MDC
- PNAL

The primary functions and activities of this Committee will be:

- Promotion of communication and understanding between all parties;
- Receipt and review of complaints reports;
- Advising on complaints handling procedures to avoid the escalation of disputes and ensure their efficient management; and
- To establish and use mediation as the method of resolving complaints so as to avoid escalation of problems.

Meetings of this Committee shall be convened on an as required basis. Meetings will be held at Palmerston North Airport.

The Palmerston North Airport website (https://pnairport.co.nz/) will be used to provide the wider public with information relating to the airport such as this NMP and the results of field monitoring.

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5.1.1 Key personnel identification

PNAL provides general contact information, such as email contact, postal address, and phone number, on the airport website. Separate to this, key airport personnel are listed on the airport's website, including a list of all airport directors and management staff. A summary of each individual's role in the organisation is also provided.

Members of the public can contact PNAL with any queries relating to airport functions and services by emailing info@pnairport.co.nz, calling +64 6 351 4415, or writing to:

Noise Query

Palmerston North Airport Ltd

P O Box 4384

Palmerston North

5.2 Complaints procedure

The purpose of the complaints procedure below is to provide the community with a mechanism to report specific instances of annoyance believed to be caused by aircraft noise emissions. PNAL is responsible for the maintenance of, and reporting from, the noise complaints system.

5.2.1 Receipt of complaints

Complaints may be made to +64 6 351 4415, where complainants can leave the following details:

- Name
- Contact details
- Date/time
- Location of complaint
- Nature of complaint (i.e. jets flying overhead, helicopter circuits, engine testing)

Phone complaints will be received by PNAL staff appropriately trained in complaints management procedures and have a general background in airport, aircraft operations and noise issues. This contact phone is accessible from 5:00am until 30 minutes after the last arriving or departing flight daily, seven days per week.

Alternatively, persons wishing to lodge a complaint may do so in writing, addressed to the following:

Noise Query

Palmerston North Airport Ltd

P O Box 4384

Palmerston North

Or to the email address info@pnairport.co.nz.

5.2.2 Recording and resolution of complaints

PNAL will investigate all complaints and provide a preliminary response within five working days, and a final written response within 20 working days. PNAL staff managing the complaint will also record any information that they have available as to the cause of the noise incident, such as weather conditions. Any remedial actions taken will also be advised to the complainant.

Any unresolved or on-going complaints will be referred to the Airport Noise Liaison Committee for discussion.

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Any threatening or abusive complaints will likely not be acknowledged and may be referred to the New Zealand Police.

PNAL will put in place arrangements with local aircraft operators and the Air Traffic Services providers and RNZAF for investigating complaints (provision of flight details and, where possible, the nature and cause of the noise incident).

Complaints lodged with MDC or PNCC directly will generally be resolved by the respective council within two working days or referred to PNAL within two working days of receipt for PNAL to action as noted above.

5.2.3 Monitoring of complaints

PNAL will maintain a Complaints Register of all recorded noise-related complaints. Copies of this register will be provided to PNCC and MDC at 12-monthly intervals. The register will include information relating to the nature of the complaint, weather conditions at the time of the complaint, actions arising, and a broad comment on any specific trends emerging from the data. PNAL will make comment on any appropriate noise mitigation measures that may be required as a result of these trends.

An example of the Noise Complaint Register and Form can be found in Appendix D.

6.0 REVIEW OF NOISE MANAGEMENT PLAN

The PNCC District Plan requires that this NMP be reviewed by PNCC and PNAL, with input from the community and MDC, at three-yearly intervals. The NMP has been prepared as of November 2024. The next review of the NMP is therefore due in 2027.

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APPENDIX A GLOSSARY OF TERMINOLOGY

A-weighting	The process by which noise levels are corrected to account for the non-linear frequency response of the human ear.
Noise	A sound that is unwanted by, or distracting to, the receiver.
dB	Decibel. The unit of sound level.
dBA	The unit of sound level which has its frequency characteristics modified by a filter (A-weighted) so as to more closely approximate the frequency bias of the human ear.
L_{Aeq}	The equivalent continuous A-weighted sound level. Commonly referred to as the average sound level and is measured in dB.
$L_{Aeq,t}$	The L_{Aeq} sound level averaged over a period of time, defined by **t**. This could be any period of time, e.g. 15 minutes or 24 hours.
$L_{Aeq,24h}$	The L_{Aeq} sound level averaged over a 24-hour period from midnight to midnight.
L_{Amax}	The A-weighted maximum sound level. The highest sound level which occurs during the measurement period. Usually measured with a fast time–weighting i.e. L_{AFmax}
L_{dn}	The day-night sound level calculated from the measured L_{Aeq} over a 24 hour period with a 10 decibel penalty applied to the night-time period (2200-0700 hours)
SEL or L_{AE}	<u>Sound Exposure Level</u> The sound level of one second duration which has the same amount of energy as the actual noise event measured. Usually used to measure the sound energy of a particular event, such as a train pass-by or an aircraft flyover
NZS 6805:1992	New Zealand Standard NZS 6805:1992 *"Airport Noise Management and Land Use Planning"*
NMP	Noise Management Plan
MDC	Manawatū District Council
PNAL	Palmerston North Airport Limited
PNCC	Palmerston North City Council
Aircraft engine testing	The testing of aircraft engines, whether in stationary aircraft or remotely mounted, for and related to the purposes of engine maintenance, and does not include normal aircraft operation engine run-ups such as aircraft warming up on the apron or the movement of aircraft to and from the engine testing location.
Ground-based operations	This involves all aspects of aircraft handling at the airport, as well as aircraft movement around the aerodrome except on active runways. These includes loading of cargo, refueling and taxiing.
Aircraft operations	The operation of aircraft during, or immediately before or after flight.

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APPENDIX B RULE 13.4.6.1 PALMERSTON NORTH CITY COUNCIL DISTRICT PLAN – SECTION 13:

13.4.6 RULES: SOUND EMISSIONS IN THE AIRPORT ZONE

R13.4.6.1 Airnoise Contour

(i) The Palmerston North Airport Company shall ensure that noise emissions from aircraft operations shall not exceed 65LDN at the airnoise boundary as shown on Map 10.6.6.1 when measured and assessed using the methods described in NZS6805:1992 Airport Noise Management and Land Use Planning.

The following is an exception to the rule:

(a) The operation of unscheduled flights required to meet the needs of a national or civil defence emergency declared under the Civil Defence Act 1983.

(b) Closure of major airports due to weather and the use of Palmerston North Airport by diverted aircraft.

(c) The use of Palmerston North Airport by diverted aircraft due to operational emergencies at other airports.

Refer to Section 4 – 'Definitions' for a definition of aircraft operations.

Palmerston North City Council District Plan | **SECTION 13** | **AIRPORT ZONE 25**

Palmerston North City Council District Plan

Explanation

Council considers that it is important to ensure that the effects associated with aircraft operational noise are managed, as far as practicable, at the source of these emissions. This rule places a requirement on aircraft operations associated with the Palmerston North Airport to comply with the limit specified at the airnoise boundary. In addition to this requirement, mitigation measures relating to aircraft operational noise are also contained in the Residential, Rural, Industrial, and Recreation Sections of this Plan.

(ii) Sound emissions from sources other than aircraft operations and aircraft engine testing shall not exceed the following limits when measured at or within the boundary of any land used for residential purposes in a rural or residentially zoned area, other than within the Airnoise Contour boundary:

7:00 am to 10:00 pm 55 dBA L_{10}

10:00 pm to 7:00 am 45 dBA L_{10} and 75 dBA L_{max}

Explanation

Given the level of activity within the Airport Zone associated, for example, with the servicing of aircraft, there is significant potential for adverse noise effects to be created. The above rule is based on the guidelines contained in New Zealand Standard 6802:1991 - Assessment of Environmental Noise, and has been included here to protect those residential properties located in close proximity to the airport from noise which is generated by other activities aside from aircraft operations.

(iii) Movements of military jet training aircraft shall be limited to the hours of 8:00 am to 9:00 pm (New Zealand Standard Time) or 10:00 pm (New Zealand Daylight Time), whichever is later.

Explanation

This rule has been included in the District Plan with the co-operation of the New Zealand Defence Force. The rule complements other methods to mitigate the adverse effects of noise from jet training aircraft, which may use the Airport. Those other measures include operational controls by the Royal New Zealand Air Force over their own activities in the form of standing orders to pilots, and arrangements with the Airport Company for use of the Airport.

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(iv) Engine Testing

(a) All aircraft engine testing within the Airport Zone shall comply with the following:

1) Daytime:

(i) Between the hours of 7.00am and 10.00pm, noise emissions from aircraft engine testing shall not exceed 55dBA Leq 15 hours, provided, however, that noise emissions from essential unscheduled engine testing of jet aircraft shall not be included in the calculation of Leq 15 hours.

(ii) If there is an adequate and available noise mitigation facility testing shall take place within that facility.

2) Night-time:

(i) Between the hours of 10.00pm and 7.00am the following day, the total noise exposure from all aircraft engine testing shall not exceed the following limits:

(ii)

Table (a)

	Total Leq 1 hour	L max
1. All nights (except on three nights within any three successive calendar months)	55 dBA	70 dBA
2. On each of the three nights within any three successive calendar months that the above exception applies	60 dBA	70 dBA

(iii) The total duration of aircraft engine testing taking place between the hours of 10.00pm and 7.00am in any one night shall not exceed one hour.

(iv) The total exposure of aircraft engine testing taking place between the hours of 10.00pm and 7.00am, in any one night, shall not exceed the Total Leq 1 hour limits specified in the table above.

(v) All night-time aircraft engine testing shall take place within a certified noise mitigation facility. A certified noise mitigation facility shall be one that is designed, located, constructed, operated and maintained so as to meet the limits in the table in (a) above, and is certified as such in respect of each type of aircraft engine proposed to be tested. All certification shall be undertaken by an acoustical consultant (see definition section) who shall provide a certification report to the Palmerston North City Council prior to the construction of the noise mitigation facility, which shall state that the proposed facility will provide for engines to be tested in compliance with limits in the table in (a) above. Within three months of the commencement of testing of any type of aircraft engine and every two years thereafter a compliance report prepared by an acoustical consultant shall be provided to the Palmerston North City Council that demonstrates compliance with the noise limits in the table in (a) above. After the first three month period, if and so long as a compliance report is not in force for the facility for any engine type, the facility shall not be certified in respect of that engine type for the purposes of this rule.

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(Note not forming part of this rule: the duty to adopt the best practicable option to control noise under section 16 of the Resource Management Act 1991 will apply).

(vi) All engine tests at 60% power setting or more shall be notified to Palmerston North Airport Limited within twenty-four hours of the event, who shall keep a register of such events.

(vii) Notwithstanding the above conditions for the night-time testing of aircraft engines–

(a) The total noise exposure from all essential unscheduled engine testing occurring between the hours of 10:00pm and 7:00am (refer to definitions) need not comply with the limits and requirements in (i) to (v) above, but shall not exceed the following limits:

Table (b)

	Total Leq 1 hour	**Lmax**
1. All nights (except on one night in any successive period of three calendar months)	65 dBA	80 dBA
2. On the night that the above exception applies.	70 dBA	80 dBA

(b) The total duration of essential unscheduled testing taking place between the hours of 10.00pm and 7.00am in any one night shall not exceed one hour.

(c) The total exposure of essential unscheduled engine testing taking place between the hours of 10.00pm and 7.00am, in any one night, shall not exceed the Total Leq 1 hour limits specified in Table (b) above.

(d) Essential unscheduled engine testing at 40% or more power setting not undertaken within a certified noise mitigation facility, and not complying with the limits and requirements in (i) to (v) above, shall take place on no more than five nights (10pm to 7am the following day) in any successive period of three calendar months.

(e) All essential unscheduled engine testing at 40% or more power level shall be notified to Palmerston North Airport Limited and to the Palmerston North City Council prior to the testing taking place. The notification shall include the fault to be rectified, likely time duration and power level of the engine test and likely location or choice of location of the test.

(f) If there is an adequate and available noise mitigation facility that can accommodate the aircraft engine testing being undertaken, the testing shall take place within that facility.

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(g) Where there is no adequate or available noise mitigation facility and the essential unscheduled engine testing exceeds 40% power level, such testing shall not occur within 400 metres of any part of a residential zone outside the Airnoise Contour and any rural zoned dwelling existing at 31 March 1998 outside the Airnoise Contour.

(viii) Notwithstanding clauses (a)(2)(ii) and (a)(2)(vi)(b) of R13.4.6.1(iv) Engine Testing, the total duration of all aircraft engine testing taking place between the hours of 10:00pm and 7:00am in any one night shall not exceed one hour.

(b) Engine testing noise shall be measured and assessed at or within the boundary of any site zoned residential, or at or within the notional boundary of any rural dwelling existing at 31 March 1998, other than within the Airnoise Contour boundary. Noise levels shall be measured in accordance with NZS6801:1991 Measurement of Sound. Notional boundary defined as "A line 20 metres from the facade of any rural dwelling or the legal boundary where this is closer to the dwelling".

(c) If engine testing noise emissions occurring between the hours of 10.00pm and 7.00am the following day comply with the noise limits set out in R13.4.6.1(ii) then no limits on frequency or duration of testing apply.

> ***Explanation***
>
> *This rule recognises that there is an operational necessity for testing aircraft engines as a core function of the Airport, while limiting the potential for adverse effects on the amenity of surrounding residences, particularly at night. The rule sets a number of conditions for aircraft engine testing to occur, recognising the special attributes and characteristics of noise emissions from this source.*

(v) Noise Insulation

Any habitable room used by a noise sensitive activity and any office activity in a building within the Airport Environs Precinct shall be protected from noise arising from outside the building by ensuring the external sound insulation level achieves the following minimum performance

Palmerston North City Council District Plan

standard:

$D_nT_{,w} + C_{tr} > 35$ dB

Compliance with this performance standard shall be achieved by ensuring habitable rooms are designed and constructed in a manner that accords with an acoustic design certificate signed by a suitably qualified acoustic engineer stating the design as proposed will achieve compliance with the above performance standard.

(vi) Ventilation

Where bedrooms and sleeping areas with openable windows are proposed, a positive supplementary source of fresh air ducted from outside is required at the time of fit-out. For the purposes of this requirement, a bedroom is any room intended to be used for sleeping. The supplementary source of air is to achieve a minimum of 7.5 litres per second per person.

Office activities shall be provided with mechanical ventilation to comply with the Building Code (G4) at the same time as achieving the required external sound insulation level.

> ***Explanation***
>
> *Acoustic insulation is required for noise sensitive activities in buildings within the Airport Environs Precinct to mitigate the potential adverse effects on such uses and to avoid potential for constraint that such uses can place on airport operations. The ventilation requirement for bedrooms is to ensure noise attenuation is not compromised if compliance with the requirements of the Building Code (G4) for natural ventilation is achieved by installing openable windows. The required airflow level is based on the minimum standard for habitable spaces set out in NZS 4303: 1990.*

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(vii) Residential Interfaces

Where the Airport Zone and the Residential Zone and Rural Zone interface the following noise rules apply in the Airport Zone:

Daytime (7:00am to 7:00pm)	55dBA $L_{Aeq(15min)}$
Evening (7:00pm to 10:00pm)	50dB $L_{Aeq(15min)}$
Night-time (10:00pm to 7:00am)	45dB $L_{Aeq(15min)}$
Night-time Lmax	75dBA L_{max}.

Explanation

The Airport Zone is intended to accommodate noisy activities and this can result in tensions forming at interfaces with residential and rural activities. Residents living close to the airport should not realistically expect a high level of aural amenity with respect to nearby activities. The noise rules for activities in the Airport Zone that interface with residential activities are in place to ensure that noise does not become unreasonable or excessive.

APPENDIX C COMPLIANCE MONITORING POSITIONS

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APPENDIX D NOISE COMPLAINT REGISTER AND FORM

Ref No	Time/ Date Received	Complainant	Contact details	Complaint method	Nature of Complaint	Location	Aircraft details	Commentary	PNAl team member responsible	Date actioned

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<table>
<tr><td colspan="2">COMPLAINANT</td><td>Complaint No:</td></tr>
<tr><td colspan="2">Name</td><td>Company</td></tr>
<tr><td colspan="2">Address:</td><td>Phones
HM____________________________
Bus____________________________
MOB __________________________
Time __________________________</td></tr>
<tr><td colspan="2">Nature of Complaint</td><td>Time</td></tr>
<tr><td colspan="3">Where</td></tr>
<tr><td colspan="3">Aircraft Type if known) registration, colour, distinguishing characteristics</td></tr>
<tr><td colspan="3">Investigation / By Whom</td></tr>
<tr><td colspan="3">Date and Actions</td></tr>
<tr><td colspan="3">Response to Complainant:</td></tr>
<tr><td colspan="3">Recommendations (if any)</td></tr>
<tr><td colspan="2">Signed (by the person investigating to track accountability)</td><td>Date ______________________</td></tr>
</table>

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APPENDIX E POSSIBLE LOCATIONS FOR NOISE MONITOR DEPLOYMENT

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