

NELSON AIRPORT LIMITED

NOISE MANAGEMENT PLAN

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1. INTRODUCTION

This Noise Management Plan (**NMP**) has been prepared by Nelson Airport Ltd (**NAL**).

The objectives of this NMP are:

1. To enable the Nelson community and NAL to engage on airport related noise management matters with respect to Nelson Airport;
2. To acknowledge that noise managed within the prescribed limits is an inherent part of NAL's operations;
3. To define the process for monitoring and reporting of operational aircraft noise levels at Nelson Airport;
4. To define the process for monitoring and reporting of aircraft on-wing engine ground run testing;
5. To provide a process for the management of noise related complaints;
6. To identify and manage the effects of aircraft noise on the community;
7. To provide certainty to the community with respect to compliance with noise limits and noise effects.

The purpose of this NMP is to provide the Nelson community, the *Nelson Airport Noise and Environment Advisory Committee (NANEAC)*, and *Nelson City Council (NCC)* a framework for the management of noise and compliance at Nelson Airport.

All airport tenants will be appraised of their obligations with respect to noise management at Nelson Airport including compliance and reporting requirements.

This plan shall be reviewed by NAL at such times as any substantial change in aircraft type for scheduled operations occurs or at no greater interval than 5 years, or at any time upon the reasonable request of the Nelson Airport Noise and Environment Advisory Committee (**NANEAC**).

This plan (and any subsequent amended plan) shall be lodged with the NCC.

2. NOISE MANAGEMENT PLAN PROCEDURES AND CONTROLS

2.1 Aircraft Operations Noise Monitoring

This section describes the collection and reporting of noise monitoring information at Nelson Airport to demonstrate compliance with Designation DAA2, the Nelson Resource Management Plan (NRMP) and the investigation of noise complaints.

To ensure compliance with the relevant sections of the NRMP and Designation DAA2 aircraft operations noise at Nelson Airport shall be measured, predicted, and assessed in accordance with NZS 6805:1992 Airport Noise Management and Land Use Planning by a person suitably

qualified in acoustics. Noise from aircraft engine testing and other airport activities shall be measured, predicted and assessed in accordance with NZS6801:2008 Acoustics – Measurement of Environmental Sound, and NZS6802:2008 Acoustics – Environmental Noise by a person suitably qualified in acoustics.

In accordance with NZS6805:1992 Designation DAA2 establishes an Air Noise Boundary (ANB) at the 65 dB Ldn contour, an Airport Effects Control Overlay at the 60 dB Ldn contour, and an Airport Effects Advisory Overlay at the 55 dB Ldn contour based on estimated aircraft operational activity at Nelson Airport in calendar year 2020. These contours are defined on Map A4.1 of the NRMP.

Measurements required under this section shall be conducted during reasonable meteorological conditions where possible. Summary information on meteorological conditions shall be recorded together with the measured noise levels.

The sound exposure level (L_{AE}) for each type of aircraft under four different runway operations will be required – Arrival 02, Arrival 20, Departure 02, Departure 20.

Noise measurements for the ANB Ldn Rule/Condition are to be carried out at three locations (Figures 1 & 2) over sufficient duration to obtain approximately five measurements of each of these four activities for the critical aircraft operating at Nelson Airport. For aircraft types that fly infrequently at Nelson and where insufficient measurements were obtained during the noise measurement programme (for example due to meteorological conditions or lack of aircraft of that type operating at the time), 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.

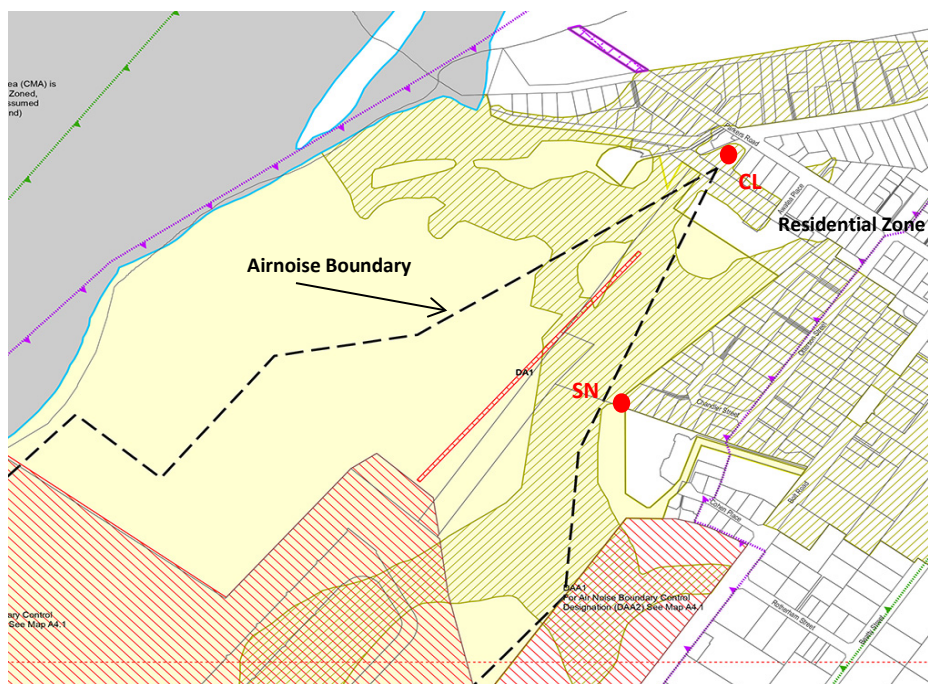


Figure1: Noise monitoring locations CL & SN

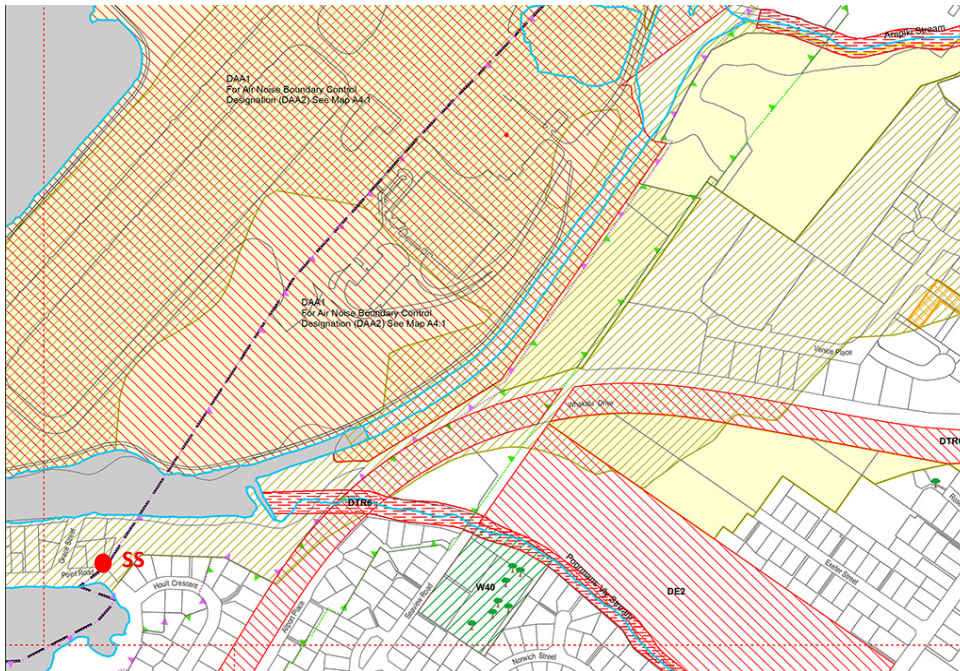


Figure 2: Noise monitoring location SS

Noise measurements for the night-time Single Event Rule/Condition are to be carried out at the three locations over sufficient duration to obtain approximately five measurements of each of these four activities for the aircraft to be certified for night operations at Nelson Airport.

Measurement of the L_{AE} of a landing aircraft shall include the surge of noise arising from the application of reverse thrust shortly after touchdown, but only where the highest 1 second L_{Aeq} level for the reverse thrust operation is within 15dB of the highest 1 second L_{Aeq} level for the otherwise loudest part of the landing procedure for any of the measurement positions.

2.2 Noise (L_{dn}) Calculation & Monitoring Procedure

A spreadsheet calculation system shall be maintained by a reputable acoustic consultancy and used by NAL to determine compliance with the 3-month rolling L_{dn} limit.

The primary aircraft movement information shall be obtained from Airways NZ computer records.

During the time the airport control tower is unattended, all IFR aircraft movements shall also be determined. The current method for determining aircraft movements is automated via lighting request made to Airways NZ in Christchurch.

During any period when aircraft noise measurements are being carried out at Nelson Airport, the take-off and landing details for all aircraft movements shall be recorded based on local observation unless such details can be reliably ascertained by other means.

2.3 Night Single Event Calculation & Monitoring Procedure

Single event noise levels for each aircraft and type of operation shall be integrated to obtain an L_{AE} SEL value for the aircraft type at each of the three locations for each of the four operations as determined under section 2.1 of this report. An aircraft and type of operation then becomes certified to take place between midnight and 6:00am, if it does not exceed 95 dB L_{AE} SEL at any of the three monitoring positions.

NAL will ensure that any aircraft approved to operate from the airport between midnight and 6.00 am will be in compliance with the L_{AE} SEL limit. Noise level data for regularly visiting aircraft shall be established in terms of this Section of the NMP and reviewed by NAL prior to providing approval.

2.4 Reporting

A report of the calculated rolling 3-month L_{dn} at each of the three locations shall be forwarded to the Nelson City Council and NANEAC on a frequency agreed by NANEAC.

A report of all aircraft movements between 2200 hours and 0700 hours shall also be provided to the Nelson City Council and NANEAC on a frequency agreed by NANEAC. The report shall identify the aircraft types and time of movements, and identify events arising under Rule In:r 39(e).

NAL shall also report to the Nelson City Council and NANEAC any exemptions of the 95 SEL limit authorised under Rule IN:r39(c).

2.5 Audit

Every 5 years an independent audit of NAL's noise management performance shall be carried out in accordance with Designation DAA 2 Section 2.7 the results of which shall be supplied to the NANEAC and publicly notified as required by DAA2.

2.6 On-Wing Aircraft Ground Run Engine Testing

Definition: "On-Wing" relates to any engine maintenance test run undertaken while the engine is attached to the aircraft.

Aircraft operators are required to carry out maintenance procedures on aircraft and their engines at regular intervals. These procedures may require mandatory testing that requires the ground running of aircraft engines for a specified duration before an aircraft can be returned to flight.

NAL has established the procedures for maintenance related engine ground runs contained in Appendix 1 of this plan.

As required by Nelson Plan INr.25 on wing ground run engine testing at Nelson Airport shall be carried out in the ground run enclosure shown in Figure 3.

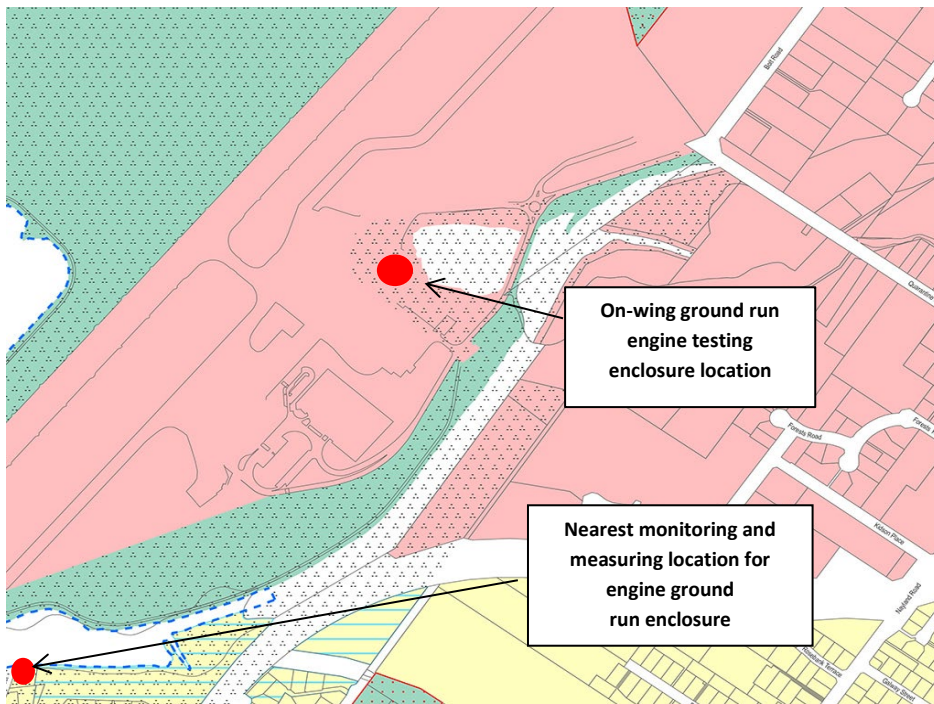


Figure 3: On-wing ground engine testing enclosure

To ensure compliance with the Nelson Resource Management Plan by maintenance operators, NAL shall establish procedures for on-wing aircraft ground run engine testing (Refer to Appendix 1).

Noise from aircraft on wing engine testing and other airport activities shall be measured and assessed in accordance with NZS6801:2008 Acoustics – Measurement of Environmental Sound, and NZS6802:2008 Acoustics – Environmental Noise by a person suitably qualified in acoustics.

NAL shall require aircraft operators and/or their maintenance suppliers undertaking maintenance related aircraft engine ground runs at Nelson Airport to maintain a ground run engine testing log and provide a copy to NAL monthly, or upon request.

A review of maintenance related aircraft engine ground running compliance shall be undertaken in conjunction with the 5 yearly independent audit of NAL’s noise management performance.

2.7 Considerate Flying Practices

Nelson Airport is situated within close proximity of residential and commercial zones. There is potential for residents below the flight approach and departure paths and near to the airport to be adversely affected by noise from aircraft and the airport.

Where issues arise or are brought to the attention of NAL through the complaints processes available, NAL will bring these to the attention of the pilot and/or the operator concerned. Where necessary mitigation procedures will be agreed by NAL and the aircraft operator. Any issues and consequential actions will also be reported to the NANEAC.

Pilots in command of fixed wing general aviation aircraft will be encouraged by NAL to adopt the following:

- Avoid using private houses as a reference point for training or manoeuvres.
- Activities such as glide approaches, simulated forced landings and simulated engine failures after take-off shall be conducted in specially designated areas or restricted to runways that do not have built up areas under the flight paths.

Pilots in command of helicopters will be encouraged by NAL to adopt the following:

- Avoid using private houses as a reference point for training or manoeuvres.
- Hover training is only permitted in designated areas of the airport.
- On airport sling load training shall be undertaken at locations specified by NAL.
- Helicopters with noisy characteristics should use take-off techniques which achieve the maximum height possible prior to crossing the Nelson Airport boundary.

3. NOISE COMPLAINT MANAGEMENT

The purpose of this section is to establish a procedure for receiving and dealing with noise complaints inclusive of their recording in a register and an acknowledgement to the complainant of receipt.

Any corrective actions taken are to be reported to the complainant and where non-compliance with the Designation has been established report inclusive of remediation steps to the NANEAC.

Noise complaints may be lodged with either NCC or NAL. Complaints received by NCC will be passed to NAL for response and action.

NAL will maintain a register that records, name, address, time and date, and detail of the complaint including nature, timing, duration and source of noise in addition to actions taken.

NAL will take steps to expeditiously investigate the noise complaint and respond to the complainant.

NAL will engage with airport noise generators and users as appropriate to resolve any issues raised by complainants.

NAL will report details of all complaints and resolutions to the NANEAC.

4. CONSTRUCTION NOISE MANAGEMENT PLAN

This plan forms part of NAL's overall noise compliance management plan.

NAL regularly undertakes construction and maintenance within the airport zone, including:

- Capital work projects.
- Pavement construction and resurfacing.

- General maintenance works to infrastructure including the runway, taxiways, aprons, vertical structures, and groundworks.
- Marine defence systems.

NAL is mindful of the close proximity of Nelson residents to the airport and acknowledges that operational constraints may require works to be carried out during night periods.

When major works are proposed NAL shall assess the potential for construction noise impacts from within the airport boundary.

Except where an emergency situation may predicate otherwise, NAL will establish mitigation measures in conjunction with the appointed contractor(s) and project management.

NAL will inform nearby residents when construction noise at night is likely to impact nearby residents.

NAL will require contractors operating at night to have a noise management plan as a contractual condition and shall monitor for compliance.

5. NELSON AIRPORT NOISE AND ENVIRONMENT ADVISORY COMMITTEE (NANEAC)

5.1 Purpose

To consider and where appropriate make recommendations to NAL on matters related to aircraft noise and aircraft on wing engine testing issues that arise from the operations at Nelson Airport.

5.2 Membership

NAL in consultation with NCC shall appoint an independent Chairperson for a 3-year term, renewable by agreement. Any costs associated with this role shall be borne by NAL.

The NANEAC committee membership shall be comprised of (in addition to the Chairperson):

NAL Representative(s) including a management representative	2 members
Nelson City Council	1 member
Representatives of the Nelson community elected by NANAC. The term shall be comparable with that of local body elections.	3 members
A representative of the scheduled airlines operating at Nelson Airport This representative shall be determined by consensus of all scheduled airlines operating at Nelson Airport	1 member
A representative of the general aviation fixed (1) and rotary wing (1) community	2 members

These representatives shall be determined by consensus of all general aviation fixed and rotary operators at Nelson Airport	
A representative of Airways New Zealand	1 member
A representative of the aviation maintenance community This representative shall be determined by consensus of the major maintenance providers at Nelson Airport	1 member
The NANEAC Committee shall meet bi-annually or more frequently if required by circumstance.	
A quorum shall comprise; one NAL representative; one NCC representative; one aviation community representative and one community representative, plus the Chairperson.	

5.3 Roles

NAL as the owner and operator of Nelson Airport is responsible for ensuring that airport operations and aircraft movements comply with Airport Designations DAA1, DAA2, Section DO11 of the Nelson Plan, and NZ Civil Aviation Authority (CAA) Rules and Regulations.

Nelson City Council is the territorial authority with the responsibility of ensuring that activity undertaken at Nelson Airport is undertaken in accordance with the operative District Plan.

Airways New Zealand are responsible for the management of all air traffic within New Zealand's airspace including directing traffic on the runways and manoeuvring areas of Nelson Airport.

Operations at Nelson Airport have the potential to affect the amenity of the surrounding residential community areas and conversely residential development has the potential to generate reverse sensitivity issues. **Community Representatives** have a responsibility to represent the views of the residential community as a whole, provide feedback on NANEAC deliberations and to promote communication and understanding between the resident community and NAL.

Airlines, General Aviation, and Maintenance operators, (the aviation community) are the generators of aircraft noise arising from operations at Nelson Airport. The aviation group's representatives are also key participants, with NAL, in managing the issues and effects of aircraft noise.

5.4 Activities

To identify community concerns regarding aircraft noise.

Co-operatively propose and develop rules and procedures to minimise the impact of aircraft noise on the community.

To assist NAL to review the procedures for handling noise complaints and where necessary amend and make publicly available.

To monitor noise levels and compliance with the noise management rules and procedures.

5.5 Meeting Procedures

NAL will publish notice of a meeting to all NANEAC committee members not less than 5 working days prior to each meeting. The notice will record time and place of the meeting and the business to be conducted.

A meeting must comprise a quorum of NANAEC members as required under clause 5.2.

A NANEAC member may appoint an alternate to attend one or more meetings provided the Chairperson is advised prior to the meeting.

NAL will record accurate minutes of the meeting and circulate the minutes no later than 10 working days after each meeting.

5.6 Dispute Resolution

NAL is committed to resolving any differences between the parties represented on the NANEAC through the provision of information, analysis, consultation and the development of a consensus.

Should an occasion arise where a consensus cannot be reached on matters before the Committee and it is essential that a decision is required, the Chairperson, who shall have the sole prerogative to determine that a consensus cannot be reached, shall in the first instance act as a mediator to resolve the issue within the Committee.

Should a consensus still not be achieved the Chairperson shall refer the matter to the NAL Chief Executive Officer (CEO) and both the Chairperson and CEO shall attempt to resolve the issue sitting as an extraordinary sub-committee of the NANEAC.

NAL shall obtain such information, analysis or legal opinion as may be necessary to assist the Chairperson and CEO to reach a consensus.

If despite best efforts the independent Chairperson and CEO cannot achieve a consensus the independent Chairperson shall make the decision and inform the NANEAC of that decision.

All information made available to the Chairperson to inform the final decision shall be made available to NANEAC.

APPENDIX 1



NELSON AIRPORT MAINTENANCE ENGINE RUN PROCEDURES

AIRCRAFT OPERATIONS TAKE PRECEDENCE OVER ENGINE RUNS

Distribution List

Airways	Rescue Fire Service
Air NZ Regional Maintenance	Fieldair
Air NZ	OriginAir
Sounds Air	NZ Aviation Academy
Repaircraft	Nelson Aviation College

INTRODUCTION

Air NZ Regional Maintenance has priority use of the engine run bay.

All other requests for use of the engine run bay must be lodged in advance with Nelson Airport Ltd.

The Nelson Resource Management Plan requires that maintenance run-ups must, where possible, be undertaken in the engine run bay (Rule INr25 (b)).

INSIDE THE RUN-BAY

Controlled Aerodrome: (When **Airways/Recue Fire Service** are on duty).

When a **high powered (above 20% torque)** engine run up is to be undertaken in the engine run bay the following actions will be undertaken to ensure safety of operations.

- 1 **The Aircraft Operator** will notify **Airways** of intentions prior to start-up.
- 2 **The Aircraft Operator** will activate the flashing beacon NNE of gate 11.
- 3 After starting at low power, **the Aircraft Operator** will request clearance from **Nelson Delivery 123.3** to commence high power prior to increasing above 20% torque.
- 4 **Airways** will close hold point A3, the central runway and the portion of taxiway Alpha between A3 and Z1 to all aircraft while the aircraft is at high power.

- 5 **The Aircraft Operator** will comply with all **Airways** instructions during the period of the engine run to ensure aircraft safety.
- 6 **The Aircraft Operator** will notify **Airways** once the run up is complete. **The Aircraft Operator** will turn off the beacon.

Uncontrolled Aerodrome: (When **Airways/Rescue Fire Service** have stood down).

When an engine run is to be undertaken outside promulgated hours the following actions will be undertaken to ensure safety of operations:

- 1 **The Aircraft Operator** will monitor channel 127.4 for aircraft in the vicinity.
- 2 **The Aircraft Operator will activate the flashing beacon NNE of gate 11 as per AIP Ground Movements (2) procedures.**
- 3 **The Aircraft Operator** will broadcast on channel 127.4 of the impending run-up.
- 4 **The Aircraft Operator** will communicate and co-operate with any air traffic identified in the area to ensure the safe operation of that aircraft landing or departure.
- 5 **The Aircraft Operator** will ensure the run-up does not delay emergency flight operations or unreasonably delay other operators.

OUTSIDE THE RUN-BAY

1. Run-ups may only be undertaken outside the run-bay when there is a requirement that cannot be met within the run-bay facility.
2. Operators must be aware of the following requirements of the Nelson City Council Resource Management Plan.

INr.25.1

a) no person shall start or run an aircraft propulsion engine for the purposes of aircraft engine testing unless carried out in compliance with the following maximum noise levels at or within the boundary of any residentially zoned site: Monday to Sunday

6am to 10pm:

55 dBA Leq(8 hours)

All other times:

45 dBA Leq (8 hours)

All days 10pm to 6am:

75 dBA Lmax, and

b) between 6am and 10pm aircraft engine testing shall as far as practical be carried out within an effective noise enclosure. From 10pm to 6am aircraft engine testing shall be carried out within an effective noise enclosure, and

c) in some emergency situations it may be necessary to conduct

essential unscheduled maintenance and engine testing that cannot comply with the above noise limits. No more than 12 of these tests can be conducted in any calendar year. The time, duration, and other essential details shall be recorded and reported as soon as practical to the Nelson Airport Noise Environment Advisory Committee (NANEAC).

3. Date, time and run length of all test runs must be recorded and provided to Nelson Airport Ltd on request.
4. Engine testing outside the testing bay is recognised as a single event and subject to the Single Event Limit (SEL).
5. Safety of the run up and any effect on other airport users is the responsibility of the operator undertaking the run-up.
6. Any damage to property, plant and/or equipment that results from any run-up is the sole liability of the operator undertaking the run-up.
7. Facilities available for run ups outside the run bay are restricted to:
 - a. Light aircraft run-up stand.
 - b. Taxiway Alpha run-up stand. This is the concrete pad on Taxiway Alpha just north of hold point A3.
 - c. Apron area subject to the conditions detailed below.

LIGHT AIRCRAFT RUN-UP STAND

1. This area is only to be used by light aircraft (max 6 seats) for pre-flight engine runs only (ie no maintenance runs).
2. The aircraft operator is responsible for ensuring that the run-up, including the prop-wash generated, does not affect the safety of the runway, taxiways, aprons and operations in the surrounding areas.
3. The operator must communicate the intention to run up to Air Traffic Control prior to commencing to ensure awareness and obtain information of possible conflicting operations.
4. All parties should work co-operatively towards facilitating the run-up in a safe and proper manner.

TAXIWAY ALPHA RUN-UP STAND

1. All operations on the taxiway are under the control of Air Traffic Control during promulgated hours.
2. Aircraft shall be positioned such that prop wash is parallel or diverging from the Runway centreline.
3. High power (>20% torque) run-ups on this stand will have the following effect on aircraft operations at Nelson Airport:
 - Run up aircraft facing north – Taxiway ALPHA closed between hold points A3 and Z1. Hold point A3 closed, hold point A4 and Z1 open.

- Run up aircraft facing south – Taxiway ALPHA closed between hold points A3 and A4. Hold point A3 open, hold point A4 closed.
 - Arriving or departing aircraft requiring take-off or landing on the Runway or use of Taxiway ALPHA at hold point A3 have priority and will necessitate the run-up aircraft reducing engine torque to idle.
 - High power engine runs are permissible while aircraft are taxiing on the runway provided propwash is parallel to or diverging away from the Runway centreline.
4. Where run-ups are undertaken outside air traffic control hours the operator must undertake whatever watches are necessary (including radio and visual) to ensure all other traffic may safely use all airport facilities.
 5. Safety of other operators and all persons, property and plant in the vicinity of the run-up operation **outside Air Traffic Control hours is the responsibility of the operator of the aircraft.**

ENGINE RUNS ON APRON GATES

Nelson Airport Ltd acknowledges the requirement to undertake unexpected engine maintenance test runs on the apron.

The apron is not controlled by ATC and the operator of the aircraft assumes full responsibility for the safety of the proposed engine run subject to the conditions below.

When undertaking such runs the aircraft operator **must ensure that they are able to be contacted by ATC.**

1. Start up and unexpected essential engine runs at low power only (max 20% torque) are permitted on apron gates for short periods at the discretion of ATC (**absolute max 5 minutes**).
2. Advise ATC prior to the engine run commencing. ATC has authorisation to restrict or cancel engine runs for any reason eg noise, safety, exceeding 5-minute time limit.
3. The operator of the aircraft undertaking the engine run must ensure the safety of all aircraft and persons from effects of the engine run.
4. Passenger boarding/disembarking takes precedence over engine runs on the apron.
5. Operators undertaking engine runs must notify users of adjacent gates before commencing the engine run.

Any safety issues arising out of these procedures must be notified to Nelson Airport Ltd or Rescue Fire Service as soon as possible.