Senate Standing Committee
Rural & Regional Affairs & Transport
Parliament House
CANBERRA ACT 2600

Mr Dick Pearson Secretary, SKAAG Inc.

Email: seniorclerk.committees.sen@aph.gov.au

13 November 2020

Dear Sir,

Subject: Submission - Senate Inquiry - General Aviation Industry

Please find attached submission relating to several aspects of the Terms of Reference covering the above-mentioned inquiry. This submission was prepared by the **Save Kempsey Airport Action Group Inc.** and has been endorsed by similar community groups as listed below:

- Save Swan Hill Serenity Action Group Inc.
   Ms Kaye Mitchell:
- Port Macquarie Residents Impacted by Flight Training Ms Kate Moor:
- Mildura Pesky Planes Residents Group Ms Christine Allen
- Parafield Airport Noise Ms Amber Young:

This submission focuses on the need for legislative and regulatory action to address the impact of industrial scale flight training on residents' amenity, well-being and mental health.

Relevant Federal Ministers and regulatory authorities have been well aware of this issue for many years and have continually chosen to ignored it.

Further, this submission address some of the same issues that *Air Services Amendment Bill (2018)*, attempted to address. That Bill was examined by the previous Senate Committee which, unfortunately, recommended the Bill not proceed. Although well intentioned, that Bill attempted to address a to broad a range of issues in one hit – the 'elephant needs to be eaten one bite at a time'.

Please note that a submission similar to the one attached has recently been made to the Future of Australia's Aviation Sector Issues Paper (2020) published by the Department of Infrastructures, Transport Regional Development and Communications.

Yours sincerely,

Consider signed if sent via email or aph account.

Dick Pearson
Secretary,
Save Kempsey Airport Action Group Inc.

# **Senate Rural and Regional Affairs** and **Transport Legislation Committee**

Inquiry - Australia's General Aviation Industry

**Submissions by Save Kempsey Airport Action Group Inc.** 

#### Issue

Current General Aviation (GA) policy settings, legislation and regulatory frameworks do not provide any protection for residents living in the vicinity of rural and regional airports from the impact or threat of high intensity flight training operations on their amenity, wellbeing and mental health. Legislators and regulators are blind and deaf to this issue and are held hostage to the advocacy and views of the General Aviation sector.

#### **Terms of Reference**

This submission meets the Senate Committee's Terms of Reference at:

- a) i. the application of the Civil Aviation Act 1988 & CASA Regulations 1998 being fit for purpose
- b) the **immediate and long-term social** and economic **impacts** of CASA decisions on **individuals** across regional and regional Australia
- c) ii. CASA's processes and functions re the efficacy of its engagement ... including public consultation
- d) any related matters

There is a risk that this Senate Committee will dismiss this submission, focus on Reference Term a) i and ignore the others, particularly Reference Term d). But we live in hope that some Senators will have a heart or conscience sufficient to have the problem dealt with. Rather than just complain about a problem, this submission actually recommends solutions, or at least points the way to solutions.

#### **Background**

The (pre Covid-19) worldwide shortage of pilots has seen a substantial increase in **industrial scale** flight training schools establish, or seeking to establish, at many rural and regional airports nationwide.

Australia's climate and high standard of civil aviation makes it attractive to foreign owned flight training schools to establish operations in Australia, primarily and often exclusively to produce trained pilots for their home airlines.

There are three categories of airports/aerodromes where residents are (or potentially) impacted by industrial scale flight training operations:

1. Well Entrenched & Multiple Operators - Federally Leased Examples

2. Entrenched - Council Owned & Operated

3. Under Threat - Council Owned & Operated

Examples: Moorabbin, Parafield, Jandakot Examples: Port Macquarie, Mildura

Examples: Kempsey, Swan Hill

Australia's larger Federally leased, non-capital city airports are operated by independent business entities in a commercial environment and for many years have been host to multiple flight training schools each with fleets of training aircraft. The business entities managing these airports exist to maximise returns on investment and hosting multiple, large scale flight training business assists in meeting that end. Flight training operations at these airports are extremely well entrenched.

With the larger flight training airports at or nearing capacity, flight training entities (primarily foreign owned) are making significant inroads into establishing operations at **smaller rural & regional airports/aerodromes**, operating at scales not previously experienced by surrounding communities in terms of 'normal' levels of GA activity.

Normal GA activity being where aircraft take off and go somewhere or come from somewhere and land - noise is over within a minute or two.

Existing residents surrounding many smaller rural & regional aerodromes, generally owned and operated by cash strapped local Councils, are now expected to live with large scale operations unexpectedly foisted upon them to produce or seeking to produce 200 to 600 pilots per year, despite well documented evidence of the associated impacts on their well-being and mental health.

The strongest documented evidence is found in the Air Services Amendment Bill (2018) put forward by Senator Janet Rice and the associated report following examination by the previous Senate Rural and Regional Affairs and Transport Legislation Committee in 2018.

The previous submission by the Moorabbin Airport Residents' Association Inc. is indicative of community frustrations and anger at the absence of any form of acceptance of the problem much less action by Federal authorities (see attached **Appendix A**).

#### **Analysis**

The issue is **CONSTANT NOISE DENSITY** - primarily from the 'circuit training' component of flight training.

Flight training is one of 27 classifications of GA activities (Source: 2017 General Aviation Study - Table 1.2, Page 7). This is the **only** class of GA activity that involves repetitive, low-level (< 500 ft - 1,000 ft) 'circuit training' activity over residential and rural residential areas involving multiple aircraft in the circuit at one time, flying from 7.00 am to 10.00/11.00 pm every day of the year, conducting 'touch & go' manoeuvres and 'simulate engine failures' over residential areas.

Decision makers at all levels of government are ignorant of what's involved in training a pilot, particularly the 'circuit training' component, and the impact it has on peoples' lives. Decision makers have no lived experience.

An outline of what is involved in training pilots is attached as **Appendix B.** 

Each airport is effectively a 'factory' operating in a nationwide 'industry' of producing trained pilots, hence the term 'industrial scale' flight training operations. These operations are often conducted under the guise of Registered Training Organisations (RTO) providing Vocational Education & Training (VET). A glaring anomaly exists. Depending on the training activity, VET is subject to State based regulations administered by local governments regarding location and noise generation - for example, an RTO providing training in operating noisy earth moving plant is restricted to industrial locations, away from residential areas, with limits on training days/times and noise emissions. No such legislative controls exist for pilot training once the wheels leave the runway.

Regulators refuse to recognise the unique nature of flight training in the GA mix and the impact it has on residents. CASA Regulation 157 (Low Flying Aircraft) allows circuit training to be exempt from minimum altitude requirements as it conveniently deems these aircraft to be 'in the process of taking off or landing'.

Interestingly, a previous iteration of the Department of Infrastructure, Transport, Regional Development & Communications in 2012 initiated and led a project in conjunctions with State land use planning and development control agencies to develop the **National Airports Safeguarding Framework (NASF)**.

This initiative was designed to protect airports from the encroachment of inappropriate development (such as residential areas). It is noted that no similar initiative has ever been undertaken to protect existing residents from the introduction of inappropriate aviation activity.

Existing residents living in the vicinity of rural and regional aerodromes (i.e. within the standard 3 nm circuit radius) have lived in harmony with both RPT and GA activity for decades. They recognise the intrinsic value of these airports to their local community and are quite aware that maintaining their presence comes at some financial cost to their local Council. Residents are arguably prepared to pay the price.

Notwithstanding, communities are usually prepared to support their local Councils in **reasonable** efforts to make their airports more economically sustainable. However, the quantum 'economic benefits' often touted by proponents and all levels of government, particularly local governments, does not compensate for the intrusion and loss experienced by those affected by industrial scale flight training. Further, Councils often attempt to facilitate the establishment of large-scale flight training schools by stealth - lack of openness and transparency is often standard practice for many Councils. Kempsey (NSW) & Swan Hill (VIC) for example.

Communities are aware and generally accept that GA activity at their airports will naturally increase over time. However, they do not expect the sudden imposition of industrial scale flight training operations at the expense of their amenity, well-being and mental health. The fact that many of the training entities are foreign owned and train pilots exclusively for their own airlines is offensive to impacted residents.

The question is often asked: **You bought into or built near an airport, what did you expect?** The answer is simple: People expected 'normal' GA activity where aircraft take off and go somewhere or come from somewhere and land, any time day or night, where noise is over within a minute or two.

Despite people doing their own pre purchase due diligence, Councils often operate with lack of openness and transparency and do not adequately inform new or existing residents about negotiations in train to facilitate flight training operations at their rural or regional airports. Examples include:

- 2010: Mid North Coast (NSW) Regional Aviation Plan. The 2010 MoU between Kempsey, Port Macquarie and Taree Councils, inter alia, slated Kempsey and Taree airports as pilot training airports. This information was withheld from the Kempsey community.
- 2016: After undisclosed negotiations with a foreign owned flight training school, Kempsey Council facilitated a Development Application to construct an \$18M flight training facility at its airport. Notification was limited to only those property owners immediately bordering the airport.
- 2020: After months of undisclosed informal dialogue, Swan Hill Rural City Council (VIC) resolved to
  enter into a Heads of Agreement with a foreign owned flight training school looking to expand its
  Mildura based operations and establish a satellite facility at Swan Hill airport. The initiative was done
  in advance of any community consultation.

Flight training, particularly circuit training, produces a unique, intrusive and unacceptable noise profile even if relatively quiet aircraft are used that have **individual** noise outputs at ground level well within regulatory limits. The cumulative noise profile, or **'constant noise density'** experienced as a result of the Doppler Effect from circuit training activity is graphically represented in **Appendix C** (separate PDF file).

Whilst absolute/peak noise levels may be (but often are not) within acoustic standards, these standards fail to take account of the sustained or constant noise density generated by repetitive, short cycle aircraft noise events where aircraft fly low over homes at intervals of 1 to 2 minutes and often less.

This problem materialises with Consultants measuring and reporting on aircraft noise (often with Councils as clients) and assessing these against AS 2021:2015 (Acoustic - Aircraft Noise Intrusion - Building Siting & Construction). AS 2021 establishes (arguable) 'acceptable' **internal** noise limits for habitable buildings **providing** such buildings are sited and constructed to achieve appropriate noise attenuation. Two points to note:

- Existing buildings in the vicinity of rural and regional airports were not sited or constructed with the standard in mind.
- The standard does not address 'acceptability' of external noise limits with regard to outdoor amenity.

Consultants continually and conveniently misapply AS 2021 in the absence of any other suitable standard.

Before the start-up of any flight training schools at rural and regional airports or approvals granted for training operations by 'visiting' aircraft, it is essential that independent, comprehensive and robust **Environmental Impact Statements** are prepared to address all aspects of **social**, environmental (including the **human environment**) and economic impacts for consideration in all jurisdictions. Cost/Benefit assessments alone are inadequate.

#### **Conclusions**

#### General

The capacity to affect real and substantial remedies for residents suffering from the constant noise
from large scale flight training operations would likely vary depending on the classification of the
airport/aerodrome in question. Addressing the issue at Federally leased airports where flight training
is well entrenched with multiple operators would likely require a different approach than Council
owned aerodromes under threat of 'take over' by foreign owned flight training schools. One size
won't fit all.

#### Legislators

- Legislators and Regulators, through lack of lived experience, do not appreciate the impact industrial scale flight training operations has on the amenity, well-being and mental health of residents.
- The balance between the interests of the General Aviation sector and existing on-ground communities, with particular regard to industrial scale flight training, is excessively skewed toward the aviation industry. The Department of Infrastructure, Transport, Regional Development and Communications was eager to develop the National Airports Safeguarding Framework to protect airports from encroaching development but has shown no interest in providing reciprocal protection for existing residents.
- CASA and Airservices pay 'lip service' to flight training related noise complaints and they play off each other (i.e. 'not our problem') in standard cut & paste responses to noise complaints. Along with the Department of Infrastructure, Transport & Regional Development, these agencies collectively apply considerable clout and push back to any attempt to address the problem.
- There is an unacceptable disconnect between State based legislative and regulatory frameworks covering land use planning and development control regarding noise generating industries and Federal legislative and regulatory frameworks (or absence thereof) covering noise generation from large scale vocational flight training activities.

• General Aviation policy settings, legislation and regulations fail to address the issue of aircraft noise and have not kept pace with the (pre COVID-19) growth and nature of the flight training sector and its emergence at hitherto unaffected rural and regional airports.

#### Regulators

- Under Australian classification of civil aviation activities, 'Instructional Flying' is the only one within the gambit of 21 General Aviation activities that has excessive adverse noise impacts on residents living in the vicinity of airports. (See General Aviation Study 2017)
- CASA Regulation 157 (Low Flying Aircraft) Clause 4e is the mechanism which CASA permits
  repetitive, intrusive low-level circuit training over populous areas exempt from otherwise altitude
  minima.

#### **Standards**

- There is no adequate Australian standard addressing aircraft generated noise impacts on health similar to the WHO Environmental Noise Guidelines for the European Region.
- AS 2021:2015 was not designed for the purpose of determining 'acceptable' levels of aircraft noise for **existing** residential properties that were not sited or constructed to meet the standard.
- AS 2021:2015 is repeatedly and deliberately misapplied by consultants and client Councils in assessing the social impact of flight training operations on **existing** residents.
- There is no adequate Federally endorsed model for assessing the full gambit of environmental impacts emanating from industrial scale flight training at rural and regional airports, in particular, the social impacts are given scant regard.

#### **Local Government**

• If left to their own devices and if granted greater decision-making autonomy, local governments will continue to facilitate the establishment of industrial scale flight training operations at rural and regional airports regardless of the impact on their communities, particularly as a result of infrastructure upgrade grant funding under the Regional Airports Program (RAP).

#### Recommendations

- 1. That the Federal government finally accept that large scale flight training and residential areas cannot co-exist.
- That the Federal government treat Flight Training as a unique class of activity within General Aviation and review policy, legislation and regulatory framework with a view to providing adequate protection for residents living with, or threatened by, large-scale flight training activity (particularly circuit training).
- 3. That the Department of Infrastructure, Transport, Regional Development and Communications (the Department) initiate a program to work with State and Local Governments to:
  - a. Jointly facilitate the relocation of flight training businesses, where noise is a problem, to other aerodromes in rural areas where communities, when fully informed, are willing to accept such operations. Examples: Tamworth, Glen Innes.

- b. Identify 'greenfield areas' sufficiently removed (say minimum 10 km) from existing townships and rural residential areas where industrial scale flight training operations might suitably establish.
- 4. That following from Recommendation 3 (b) above, the Federal government require any future industrial scale flight training businesses to collaborate, fund and build their own training aerodrome/s and aviation related facilities well away (say minimum 10 km) from existing townships and rural residential areas.
- 5. That the Department approach Standards Australia to develop a Standard covering the acceptability level/s of aircraft generated 'constant noise density' in the outdoor environment subject to human habitation and occupation. Request Standards Australia verify that current AS 2021:2015 is not fit for this purpose.
- 6. That the Department work with State land use planning and development control agencies to develop an Environmental Impact Statement model for application in the aviation sector to address social, environmental (including human environment) and economic impacts. A Quadruple Bottom Line (QBL) approach should be considered to address *People, Profit, Planet* and *Progress*.
- 7. That the Federal government develop Australian National Environmental Noise Guidelines, commencing with aviation, similar to the World Health Organisation (WHO) Environmental Noise Guidelines for the European Region.

https://www.euro.who.int/en/health-topics/environment-and-health/noise/environmental-noise-guidelines-for-the-european-region

#### Prepared by:

Save Kempsey Airport Action Group Inc. (NSW)

#### **Endorsed by:**

Swan Hill (VIC): Save Swan Hill Serenity Action Group Inc.

Port Macquarie (NSW): Residents Impacted Flight Training

Mildura (VIC): Pesky Planes Residents Against International Flying School

Parafield (SA) Parafield Airport Noise Group

#### Appendix A

2018

SUBMISSION from: MOORABBIN AIRPORT RESIDENTS' ASSOCIATION, Inc. (MARA)

**TO:** Senate Standing Committee's Inquiry into the effectiveness of Airservices Australia's

management of aircraft noise. (2018)

#### **SUMMARY:**

The community who live, work and study around Moorabbin Airport have never had an effective complaint mechanism for reporting the noise that is generated by the airport. Neither the Moorabbin Airport Corporation, ASA or CASA have seen it as their role to address the community's issues regarding noise and its impact on their lifestyle. Not surprisingly then, there has never been community consultation, nor any effective management of aircraft noise.

We believe Airservices Australia has failed in its duty to conduct open and informed public consultation with the community affected by Moorabbin Airport aircraft noise. We believe it has also failed in its duty in several of the Senate Inquiry's other Terms of Reference, which we will address below. The result is a community which is frustrated, ignored, powerless and lacking faith in Govt. Aircraft Authorities - no one listens, no one helps. The "National Aviation Policy White Paper" – December 2009: <a href="http://www.infrastructure.gov.au/aviation/nap/">http://www.infrastructure.gov.au/aviation/nap/</a> on Page 209 states that Airservices Australia

"also plays an important role in the effective management of aircraft noise and in distributing information about its incidence and effects."

The community around Moorabbin Airport have never experienced this and are eager to participate in Airservices Australia's 'effective management of aircraft noise'.

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MARA shall address some of the Inquiry's Terms of Reference in regard to noise, where they are applicable to the local community living and working around Moorabbin Airport.

- 1. Has Airservices Australia conducted an effective, open and informed public consultation strategy with communities affected by aircraft noise.
- a) The short answer is a resounding NO! There has never been any public consultation strategy with the community, effective or not. From our repeated efforts over 12 years to engage ASA in consultation regarding aircraft noise, we have had no success in any way at all. When asked specifically by the community for open and informed public consultation ASA is uncooperative, unhelpful and obfuscating. Little wonder nothing has ever been achieved. The result is great anger and frustration in the community. We do not know where else to voice our concerns.
- b) ASA sees their role as dealing with aircraft safety the community is not of interest to them. Consequently, all community concern over noise during the last 12 years has resulted in absolutely NO action or amelioration of the problem.
- c) The Moorabbin Airport Corporation Consultative Committee (MACC) (of which Airservices Australia is a member) was set up to consult with interested aviation parties and the community. It is widely praised as a success by politicians and the Govt. as an example of genuine effectiveness. Sadly, that is an illusion.
- d) Airservices Australia as well as the Moorabbin Airport Corporation do NOT consult, nor do they listen, nor do they act on community concerns and suggestions. In 12 years, NOTHING has improved regarding community concern over noise, in fact the problem is worse than it ever was.
- e) The whole process is nothing more than window dressing, with Airservices Australia an uncooperative participant. We believe there needs to be a change in the operating style of Airservices Australia to honestly address community concerns over noise.

# 2. Has Airservices Australia adequate triggers for public consultation under Legislation, and whether procedures used by Airservices Australia are compliant with these requirements.

- a) I quote The Hon. Judi Moylan MP Fed. House of Representatives House Debates Thursday 29 October 2009: http://www.openaustralia.org/debates/?id=2009-10-29.121.1 talking about Airservices Australia and their method of operation. The words could have been written by the local community frustrated and starved of consultation opportunities for so long. The triggers are there, but ASA is not compliant with these requirements under legislation, even when directed by a Government Minister.
- b) Quote: 20/10/ 2009 HR House Debates: "In general, committee members have been critical of the lack of public consultation. (of ASA) I have asked for public consultations on at least four occasions. ASA is a corporate entity, has primary control over airspace and takes 95 per cent of its funding from the industry, and there is an urgent need to review the way it conducts business and the operation of the act that governs it to ensure that ASA has clearly defined community consultation obligations." Judi Moylan MP

# 3. Is Airservices Australia accountable, as a government-owned corporation, for the conduct of its noise management strategy.

- a) Airservices Australia has never been brought to account, as far as we know, regarding the conduct of its noise management strategy at Moorabbin Airport. Complaints have been constant and more numerous as the years have gone by. Excessive noise of training flights by ever-increasing numbers of overseas students flying old, noisy planes, and helicopters flying low and flouting regulations with impunity have fallen on deaf ears for years. We are unaware of any Govt. investigation of ASA's methods or management of its noise management strategy.
- b) Simply put, there appears to be NO noise management strategy whatsoever conducted by ASA at Moorabbin Airport. We can say with certainty that NO consultation with the community has taken place. This unacceptable situation continues no Govt. has ever required ASA to demonstrate, report or explain their dealings with our community regarding noise issues. c) In 2008 Minister Albanese wrote to ASA, informing them of the Govt.'s expectations in regard to their operations.... Statement of Expectations for the Board of Airservices Australia for the period 1November 2008 to 30 June 2010

#### http://www.airservicesaustralia.com/aboutus/docs/statement of expectations.pdf

In it, there was this statement that the ASA must.... "Support the Government's environmental initiatives in relation to climate change and aircraft noise management. This includes the maintenance and appropriate resourcing of the Noise Enquiry Unit."

- d) The Noise Enquiry Unit is a good example of the 'smoke and mirrors' approach that exists. ASA has an Australia-wide telephone number where the community can register noise complaints. This is based in Sydney, it is not manned on weekends (when there is a lot of noise) no immediate action is taken, no airport is contacted immediately, and we were informed by ASA that nothing is done regarding these noise complaints beyond recording them for statistical purposes.
- e) At the end of a defined period, the airport concerned is sent a list of the number of complaints only, with no details, no comments or suggestions for improvement. Air Services does not follow-up these complaints nor continue to monitor them. We would question whether the 'Statement of Expectations' specifically required by the Minister in this matter is being carried out as per the spirit or letter of the stated instruction.
- f) ASA takes no further action after this it does not require the offending airport to report back on measures taken nor actively work with them to address the noise complaints reported. There is no onus on the airport to act on these statistics. They are just filed away and forgotten.
- g) Again, all this looks good on ASA's website, it seems to be fulfilling its accountability requirements as a Govt.-owned corporation, but in reality, the Noise Enquiry Unit is totally useless and ineffective.
- h) So far, no accountability practices such as fact-finding investigations, reports, meetings, or action plans exist the community concludes that ASA is unapproachable, disinterested and deliberately shirking its gazetted responsibilities. The community is frustrated, angry and feels powerless to have any input as a genuine stakeholder in Moorabbin Airport.

i) As far as MARA is aware, there has been no calling to account of Airservices Australia by the Govt. for failing to consult with the community, nor any censure, penalties or strong-worded directives to improve their performance. MARA recommends that more explicit legislation be framed, which requires ASA to show actual and measurable evidence of consultation, action taken and the consequent visible and effective results.

# 4. Does Airservices Australia require a binding Community Consultation Charter to assist it in consulting fully and openly with communities affect by aircraft noise.

- a) The community would welcome and embrace such a Charter. After years of being ignored and considered an unwelcome nuisance by Airservices Australia, a Charter would shine a spotlight on ASA practices. It would mean that ASA would no longer be a law unto themselves. A binding Community Consultation Charter would introduce scrutiny and supervision, and would replace the secretive and uncooperative mind-set which now permeates ASA's dealings with the community.
- b) The Minister's Statement of Expectations makes it clear that ASA is directed to "support the Government's environmental initiatives in relation to climate change and aircraft noise management" In our opinion, it is a duty ASA has, up to now, totally ignored in regard to aircraft noise management at Moorabbin Airport. A binding Community Charter would end the years of frustration, bureaucratic stone-walling, and lack of cooperation that has characterised Air Services Australia's dealings with the the local community around Moorabbin Airport.

Anna Emanuel: Secretary – MARA, Inc.

#### **Appendix B**

#### Understanding the process involved in training pilots

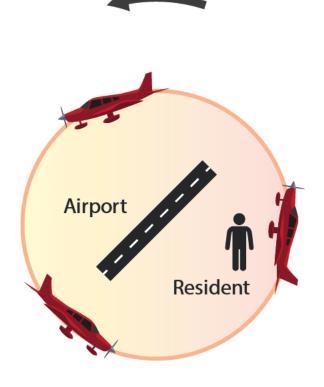
- ➤ Pilot training to achieve basic competence & licencing involves three stages circuit training, intermediate training and cross-country navigational training.
- Circuit training involves flying repetitive, low altitude circuits within the circuit envelope of 3 nautical miles (5.6 km) radius around the airport as explained in Airservices Fact Sheet.
- As per the Airservices Fact Sheet, the standard circuit is flown in the left hand (anti clockwise) direction. From take-off, CASA Regulations require the pilot to follow the extended centreline from the runway, climb to at least 500 ft before making a left turn and continue climbing to 1,000 ft before making another left-hand turn into the standard circuit at the standard circuit altitude.
- Training circuits are exempt from the standard circuit altitudes described above. Training circuits are flown at altitudes between <500 ft and 1,000 ft as the flights are deemed 'in the process of taking off or landing'. See CASA Regulation 157 (Low Flying Aircraft).</p>
- Circuit training also involves repetitive 'touch & go' activities and the practice of 'simulated engine failure after take-off' (SEFATO) manoeuvres and generally includes several training aircraft in the circuit at one time.

Circuit training is the most intrusive and objectionable aspect of pilot training and has proven to have the most significant adverse impact on existing residents in terms of amenity, well-being and health at many rural & regional airports around Australia. This impact is substantially magnified with the industrial scale operations being foisted on these airports to service the growing demand for trained pilots worldwide – particularly in China.

### Appendix C

See separate PDF file – 'Constant Noise Density Graphic'





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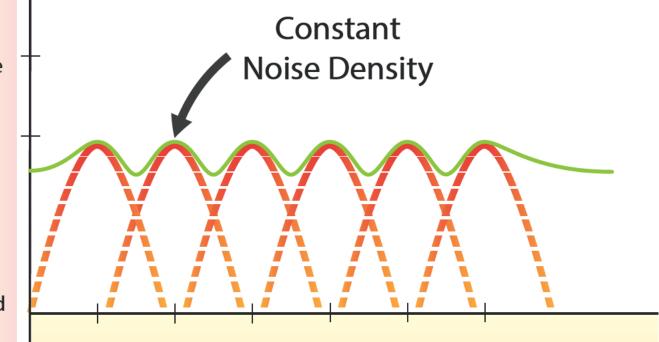
737

Dash 8

Air Ambulance

> DA 40 71 dB (A)

Ambient Background Noise Level



**CONSTANT NOISE FLUCTUATING EVERY 60-90 SECONDS** 

TIME

**BASED ON TIMED OBSERVATIONS**