

Murrayfield airpark and resort complex

Royal Aero Club of WA & Hawkview Holdings Pty Ltd.

**Report and recommendations
of the Environmental Protection Authority**

**Environmental Protection Authority
Perth, Western Australia
Bulletin 713
October 1993**

THE PURPOSE OF THIS REPORT

This report contains the Environmental Protection Authority's environmental assessment and recommendations to the Minister for the Environment on the environmental acceptability of the proposal.

Immediately following the release of the report there is a 14-day period when anyone may appeal to the Minister against the Environmental Protection Authority's report.

After the appeal period, and determination of any appeals, the Minister consults with the other relevant ministers and agencies and then issues his decision about whether the proposal may or may not proceed. The Minister also announces the legally binding environmental conditions which might apply to any approval.

APPEALS

If you disagree with any of the contents of the assessment report or recommendations you may appeal in writing to the Minister for the Environment outlining the environmental reasons for your concern and enclosing the appeal fee of \$10.

It is important that you clearly indicate the part of the report you disagree with and the reasons for your concern so that the grounds of your appeal can be properly considered by the Minister for the Environment.

ADDRESS

Hon Minister for the Environment
12th Floor, Dumas House
2 Havclock Street
WEST PERTH WA 6005

CLOSING DATE

Your appeal (with the \$10 fee) must reach the Minister's office no later than 5.00 pm on 11 November, 1993.

Environmental Impact Assessment (EIA) Process Timelines in weeks

Date	Timeline commences from receipt of full details of proposal by proponent	Time (weeks)
2.8.93	Proponent Document Released for Public Comment	
20.8.93	Public Comment Period Closed	4
8.9.93	Issues Raised During Public Comment Period Summarised by EPA and Forwarded to the Proponent	3
28.9.93	Proponent response to the issues raised received	3
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Summary and recommendations

The Environmental Protection Authority assessed a proposal by the Royal Aero Club (RAC) and Hawkview Holdings Pty. Ltd. to construct an airpark involving a resort complex, expanded airstrip utilities and a nine hole golf course at lots 11 and 12 Nambeelup Road, Nambeelup in the Shire of Murray in July 1992. The site for this development is indicated on Figure 1. In view of the potential environmental impacts associated with this development, proposal was assessed by the EPA as a Consultative Environmental Review (CER).

Following detailed assessment of this proposal, and consideration of issues raised in public submissions received by the Authority during the four week public review period of the document, the proposal was found by the Authority to be environmentally unacceptable due to the impact of noise from both the existing and proposed airstrips on the adjacent properties. In its assessment report, published in July 1992 (Bulletin 639), the Authority concluded that it would reconsider the project if *'an alternative, better site could be found or an increased noise buffer were added to the proposal so that acceptable noise levels could be achieved'*.

In April 1993, the RAC indicated to the Authority that it wished to pursue the option of modifying the proposal to try to achieve acceptable noise levels. The Authority advised the proponent that it was prepared to re-assess the proposal if substantial modifications were made to the original proposal, specifically in relation to noise control.

A revised Consultative Environmental Review document was subsequently prepared by the Royal Aero Club of WA in July 1993, which incorporated detailed list of commitments in relation to noise management and the relocation of one of the runways, as indicated in Figure 2.

In view of the potential environmental impacts associated with revised proposal, the Authority determined that it should be subject to formal assessment under Part IV of the Environmental Protection Act as a Consultative Environmental Review (CER).

Several issues were raised by the public, involved Government agencies and the Authority following review of the proposal as described within the CER document. These issues, the proponent's response to the issues, and the Authority's assessment of this response is summarised as follows :

• *Impact of noise on adjacent landowners*

The CER includes a number of commitments undertaken by the proponent to address the potential impact of noise on adjacent landowners. These commitments include:

- operation of a policy of 'priority use' of runways to reduce noise levels experienced by nearby residents;
- an undertaking to conduct aircraft engine tests between 7am and 6pm within a purpose built enclosure;
- restricting flying circuit training aircraft movements to between 7am and 10pm;
- ensuring that less than 1% of all takeoffs occur between 10pm and 7am;
- a requirement that runway 27 not be used for takeoffs except for emergencies, when the other runway is unavailable;
- requiring that flying training circuits turning to the west following take-off from runway 05 be reviewed by RAC upon request of the EPA;
- negotiation by the Royal Aero Club of WA to purchase residential properties potentially affected by aircraft noise (i.e. which cannot comply with prescribed noise levels) when/if the current land owners wish to sell;
- noise emissions to be managed so that noise levels measured at any residence, where occupiers have not indicated that higher noise levels are acceptable, do not exceed an average of 60 dB (A) L_{dn} and, for aircraft used for training purposes, 65 dB(A) maximum;

- the installation and maintenance of a noise monitoring system in the Nambeelup area (west of the Airpark) which would provide statistical data which records LDN levels, and noise which exceeds 65 dB La (slow) for more than 15 seconds; and
- the formation of an advisory community group to include residents and land owners of the Nambeelup-Murrayfield precinct, to monitor community attitudes and expectations with regard to the Airpark.

No additional commitments were made by the proponent following review of issues raised in submissions.

In assessing the potential impact of noise, the Authority took into consideration the above commitments, and a document entitled the 'Basis for Aircraft Noise Assessment', included as an appendix to this assessment report. This document was prepared as part of the assessment of this proposal, and recognises the limitations of the traditionally adopted Australian Noise Exposure Forecast (ANEF) model.

• ***Impact on adjacent land uses and land values***

The proponent has expressed the view in response to issues raised in public submissions that the proposed airpark will not restrict existing land uses in the vicinity of the airpark, and may in fact be likely to improve the value of land adjacent to the airpark. The proponent also reiterated a commitment to purchase properties as they become available on the market to establish a noise buffer adjacent to Nambeelup Estate (the neighbouring kennel estate).

The Authority considers that these issues, while valid, would be more appropriately addressed within the planning context. Environmental acceptability of the airpark proposal in the long term includes the maintenance of appropriate zoning of the land to the south, to ensure there is no long term land use conflict. Environmental approval of this proposal therefore has implications on the planning process.

• ***Impact on wetlands***

The proponent has undertaken commitments to address the following issues:

- the preparation of a nutrient and irrigation programme prior to construction of the golf course and resort to manage fertiliser use and irrigation techniques to ensure adjacent wetland habitats are not adversely affected by nutrient applications associated with management of the golf course, to the satisfaction of the Environmental Protection Authority and the Waterways Commission;
- the design and implement a monitoring programme of groundwater levels and wetland water levels in vicinity of proposal following construction of the airpark, in consultation with the Water Authority of Western Australia, to the satisfaction of the Environmental Protection Authority; and
- the maintenance of the functions of all existing wetlands proposed to be retained on site, to the requirements of the Environmental Protection Authority during construction and operation of the resort; and
- maintenance of remnant vegetation on site wherever possible, and an undertaking to replant cleared areas with indigenous trees and shrubs following construction.

• ***Sewage management***

The proponent has undertaken a commitment to install and operate a sewage treatment plant, to the satisfaction of the Environmental Protection Authority and the Health Department, following construction of the airpark.

- *Water supply*

The proposal is located on the 'Murray Groundwater Area'. The proponent would therefore require a well licence from the Water Authority of Western Australia under the 'Rights in Water and Irrigation Act' before water supply wells are drilled.

The Authority has concluded that the proposal as described is environmentally acceptable, subject to the following recommendations.

Recommendation 1

The Environmental Protection Authority has concluded that the proposed 'Revised Murrayfield Airpark and Resort Complex' is environmentally acceptable. In reaching this conclusion, the Environmental Protection Authority has identified the main environmental issues as:

- **noise associated with the use of aircraft at the proposed site;**
- **impact of airpark on adjacent land uses and land values;**
- **impact on existing wetlands;**
- **sewage management; and**
- **water supply.**

Accordingly, the Environmental Protection Authority recommends that the proposal could proceed subject to the proponent's commitments listed in Appendix 4 (Recommended Environmental Conditions are listed in Section 5) and the Authority's recommendations.

The Authority considers that the proponent should ensure that noise levels at any adjacent residential properties do not exceed acceptable limits. In support of the commitments made by the proponent the Authority makes the following recommendation.

Recommendation 2

The Environmental Protection Authority recommends that the proponent manage noise emissions from the airpark to ensure that noise levels at any residential premises in occupation by an occupier who has not, in writing, indicated that higher noise levels are acceptable, do not exceed:

- **an average of 60 dB (A) L_{dn} (this average noise constraint will limit the number of aircraft movements); and**
- **for aircraft used for training purposes, 65 dB (A) maximum (this maximum noise level will limit the noise level — and hence the aircraft size — for individual aircraft movements.**

Technical explanation

The index L_{dn} is called Day-Night Average Sound Level, which is an energy weighted integrated noise level, averaged over a twenty-four hour period, and which incorporates "penalties" for the increasing subjective annoyance that people may experience at different times of day. For instance, aircraft flying at noon, with all the attendant ambient noise will be subjectively less intrusive than the same aircraft flying in the quiet of the evening or night. Therefore, in calculating the "average" noise level (L_{dn}) emissions measured for aircraft operating at night have a penalty of 10 dB (A) added to it (i.e. an aircraft measured at 50 dB (A) at night is considered to have 60 dB (A) 's worth of annoyance).

The Authority considers that this index, when applied in conjunction with a maximum permissible noise level at any time, of 65 dB (A) at adjacent residential properties, will ensure that acceptable noise levels are achieved.

In view of the significant degree of public concern expressed in submissions received on the proposal, the Authority considers that an appropriate Noise Monitoring Programme should be implemented by the proponent to ensure that aircraft operations do not create a nuisance to nearby residents adjacent to the airpark.

Recommendation 3

The Environmental Protection Authority recommends that the proponent prepare a Noise Monitoring Programme to the requirements of the Authority. This programme should include but not necessarily be limited to the following details:

- **restrictions of use of both proposed runways by aircraft involved in circuit training flying and standard flying operations;**
- **the installation, operation, and maintenance of the proposed noise monitoring station in the Nambeelup Park area;**
- **the proposed reporting mechanisms to the Environmental Protection Authority by the Royal Aero Club in the event that recorded noise levels exceed specified noise limits as recorded at the above mentioned monitoring station at Nambeelup Park; and**
- **reporting mechanisms by the Royal Aero Club to the Environmental Protection Authority in the event that noise emissions from the airpark exceed specified noise limits at any residential premises in the vicinity of the airpark.**

1. Introduction

In July 1992 the Environmental Protection Authority assessed a proposal by the Royal Aero Club (RAC) and Hawkview Holdings Pty. Ltd. to construct an airpark and associated resort complex at lots 11 and 12 Nambelup Road, Nambelup in the Shire of Murray, as indicated on Figure 1.

Following detailed environmental impact assessment of this proposal, the Authority concluded that the proposed development was environmentally unacceptable due to the impact of noise from both the existing and proposed airstrips on the adjacent properties. In this assessment report, the Authority concluded that it would reconsider the project if *'an alternative, better site could be found or an increased noise buffer were added to the proposal so that acceptable noise levels could be achieved'* (Environmental Protection Authority Bulletin 639).

A modified airpark proposal was subsequently submitted to the Authority by the Royal Aero Club of WA in July 1993 for assessment, illustrated in Figure 2. These modifications specifically relate to potential noise impacts associated with the revised proposal, in accordance with concerns previously identified by the Authority.

In view of the potential environmental impacts associated with the development, the Authority determined that it should be subject to formal assessment under Part IV of the Environmental Protection Act as a Consultative Environmental Review (CER). These documents were distributed to every individual and organisation who forwarded a submission to the EPA on the original airpark proposal for a four week public review period, ending on 20 August 1993.

2. The proposal

The revised proposal is illustrated in Figure 2 and includes:

- a resort complex to accommodate approximately 370 tourists;
- expanded airstrip facilities, involving two sealed runways (05/23 and 09/27) and one grassed runway (location of the primary runway (05/23) has been relocated 30 metres to the east of the previously identified location) for use by single and twin engine propeller driven aircraft with a maximum carrying capacity of 12 persons. It is expected that both experienced and trainee pilots will utilise the site; and
- a nine hole golf course.

A total of 53 submissions were received on the proposal during the public review period from individual members of the public, petitions prepared by local landowner groups, Homeswest, the City of Mandurah, the Health Department, the Water Authority of Western Australia, the Peel Inlet Management Authority, and the Department of Planning and Urban Development.

A list of individuals and organisations who forwarded submissions to the Authority on the CER document is included in Appendix 1. A detailed list of issues raised in the submissions is included in Appendix 2. The proponent's response to these issues is included in Appendix 3.

3. Environmental issues and their management

Several environmental issues were identified by the Environmental Protection Authority and submissions following review of the CER. A summary of these issues, the proponent's response to them and the Authority's assessment of the issues is detailed in this Section.

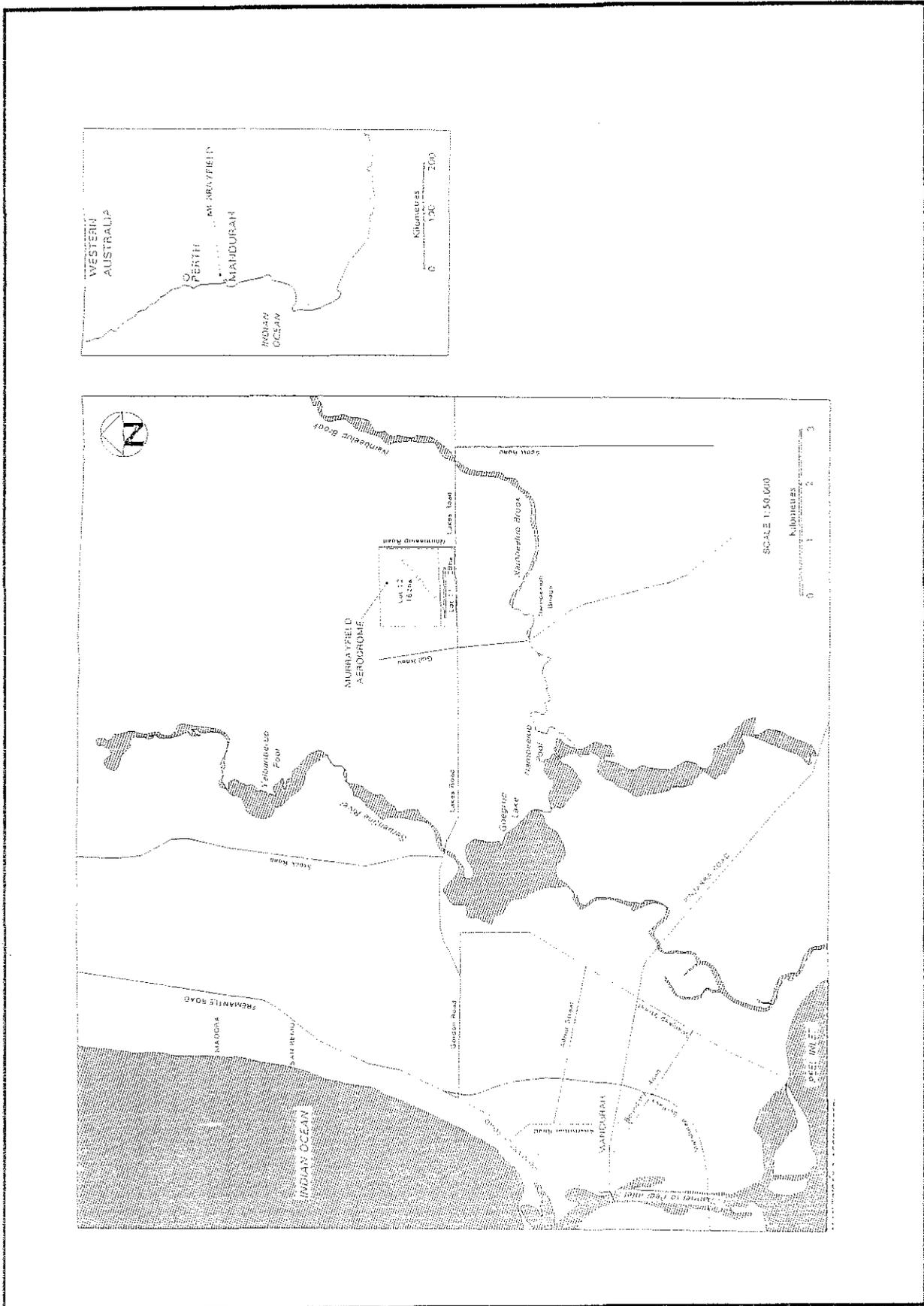


Figure 1: Location of Murrayfield Airpark proposal. (Source: Consultative Environmental Review, July 1993).

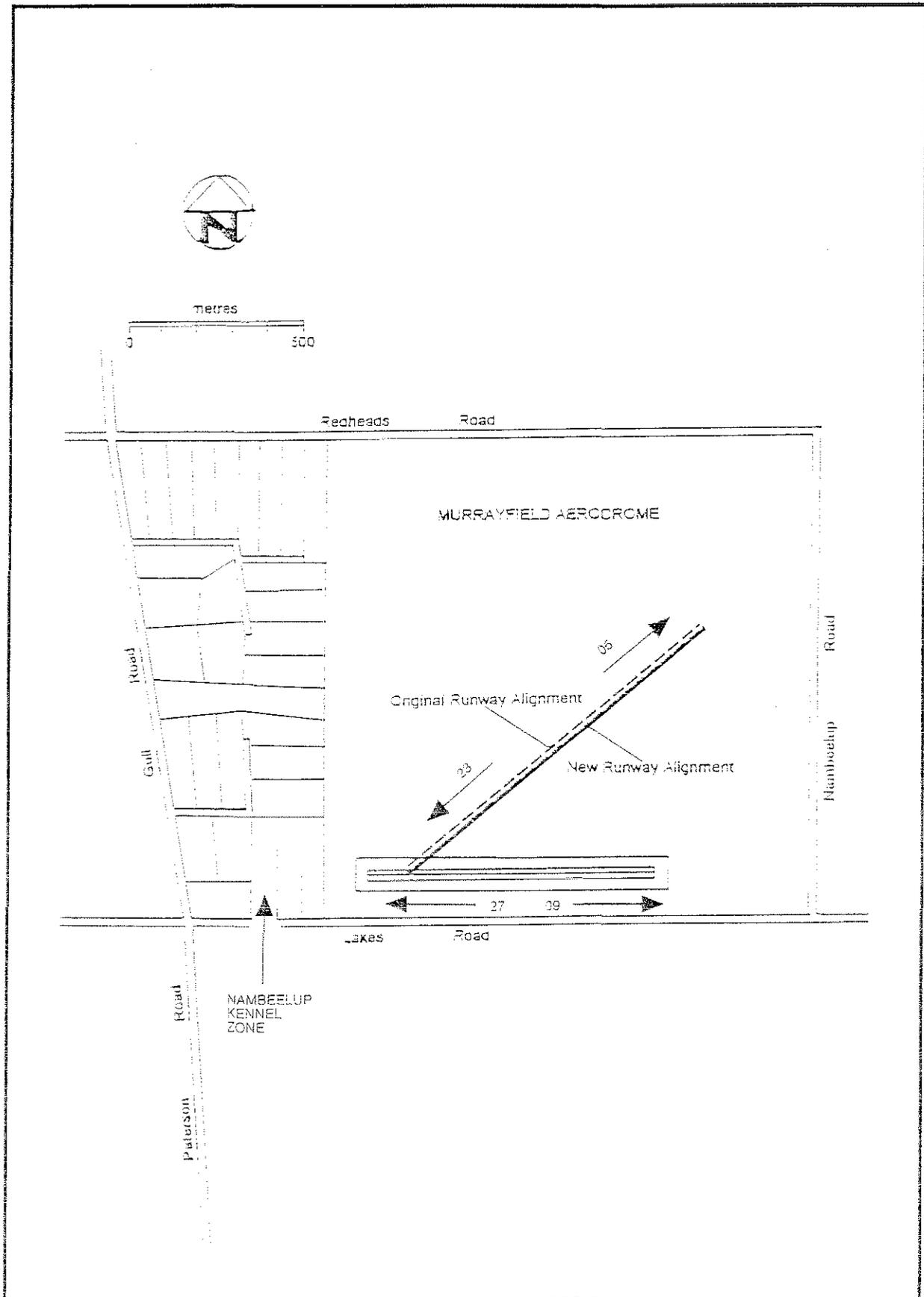


Figure 2: Revised concept plan for Airpark (Source: Consultative Environmental Review, July 1993).

Following consideration of these issues and the proponent's response to them, the Authority has concluded that the proposal as described is environmentally acceptable.

Recommendation 1

The Environmental Protection Authority has concluded that the proposed 'Revised Murrayfield Airpark and Resort Complex' is environmentally acceptable. In reaching this conclusion, the Environmental Protection Authority has identified the main environmental issues as:

- **noise associated with the use of aircraft at the proposed site;**
- **impact of airpark on adjacent land uses and land values;**
- **impact on existing wetlands;**
- **sewage management; and**
- **water supply.**

Accordingly, the Environmental Protection Authority recommends that the proposal could proceed subject to the proponent's commitments listed in Appendix 4 (Recommended Environmental Conditions are listed in Section 5) and the Authority's recommendations.

3.1 Impact of noise on adjacent landowners

Issue:

The issue of noise was raised as the primary environmental issue of concern to the Authority during its original assessment of the Murrayfield Airpark in July 1992 (EPA Bulletin 639). This issue still remains as the principle issue of concern to the Authority. The majority of submissions opposed to the airpark also expressed this concern, and many claimed that noise associated with the airpark would be unacceptable, despite the further work undertaken by the proponent to address this issue in the revised Airpark proposal.

In general, submissions which raised this issue expressed the view that land was purchased by residents in the area to live a quiet lifestyle. Development of the airpark was therefore considered to be contrary to the expectations of people purchasing properties in the area, and concerns were expressed that the airpark would destroy the existing atmosphere/peace/tranquillity/serenity that initially attracted people to the area.

Concern was also expressed in several submissions that the proposed ANEF contours quoted within the CER document are unreliable, unrealistic, unsuitable and inaccurate. Further details regarding concerns expressed in submissions are included within Appendix 2.

Proponent's response:

In anticipation of these concerns, during the preparation of the CER document, the proponent liaised closely with officers of the Authority in an attempt to identify suitable noise management options. As a result of this liaison, the CER document includes a number of commitments undertaken by the proponent to address the potential impact of noise on adjacent landowners. These commitments include:

- operation of a policy of 'priority use' of runways to reduce noise levels experienced by nearby residents;
- an undertaking to conduct aircraft engine tests between 7am and 6pm within a purpose built enclosure;
- restricting flying circuit training aircraft movements to between 7am and 10pm;
- ensuring that less than 1% of all take-offs occur between 10pm and 7am;
- a requirement that runway 27 not be used for take offs except for emergencies, when the other runway is unavailable;

- requiring that flying training circuits turning to the west following take-off from runway 05 be reviewed by RAC upon request of the EPA;
- negotiation by the Royal Aero Club of WA to purchase residential properties potentially affected by aircraft noise (i.e. which cannot comply with prescribed noise levels) when/if the current land owners wish to sell;
- noise emissions to be managed so that noise levels measured at any residence, where occupiers have not indicated that higher noise levels are acceptable, do not exceed an average of 60 dB (A) L_{dn} and, for aircraft used for training purposes, 65 dB(A) maximum;
- the installation and maintenance of a noise monitoring system in the Nambeelup area (west of the Airpark) which would provide statistical data which records LDN levels, and noise which exceeds 65 dB L_a (slow) for more than 15 seconds; and
- the formation of an advisory community group to include residents and land owners of the Nambeelup-Murrayfield precinct, to monitor community attitudes and expectations with regard to the Airpark.

No additional commitments were made by the proponent following review of issues raised in submissions.

EPA's evaluation:

The Authority acknowledges the proponent's efforts to effectively manage noise associated with the airpark operations through the implementation of these commitments.

In assessing the potential impact of noise, the Authority took into consideration the above commitments, and compiled a report entitled 'Basis for Aircraft Noise Assessment', included in Appendix 5. This report was prepared as part of the assessment of this proposal, and recognises the limitations of the traditionally adopted ANEF model. Further, it draws on alternative approaches to noise control based on maximum acceptable levels for each aircraft movement, together with a maximum average level which serves to control the total number of aircraft movements which may occur, and the noise impact they may have.

Following consideration of these commitments, the Authority has concluded that potential noise generated from the airpark operations is acceptable, provided the Authority's noise limitations are met and a detailed Noise Monitoring Programme is effectively implemented to the requirements of the Authority. The Authority notes that the land use adjacent and to the west of the Airpark is a kennel estate which has been shown to generate noise itself as a result of the dogs which reside there.

The Authority has concluded that the proposal as described is environmentally acceptable, subject to the following recommendations.

Recommendation 2

The Environmental Protection Authority recommends that the proponent manage noise emissions from the airpark to ensure that noise levels at any residential premises in occupation by an occupier who has not, in writing, indicated that higher noise levels are acceptable, do not exceed:

- **an average of 60 dB (A) L_{dn} (this average noise constraint will limit the number of aircraft movements); and**
- **for aircraft used for training purposes, 65 dB (A) maximum (this maximum noise level will limit the noise level — and hence the aircraft size — for individual aircraft movements.**

The index L_{dn} is called Day-Night Average Sound Level, which is an energy weighted integrated noise level, averaged over a twenty-four hour period and which incorporates "penalties" for the increasing subjective annoyance that people may experience at different times

of the day. For instance, aircraft flying at noon, with all the attendant ambient noise will be subjectively less intrusive than the same aircraft flying in the quiet of the evening or night. Therefore, in calculating the “average” noise level (L_{dn}) emissions measured for aircraft operating at night have a penalty of 10 dB (A) added to it (i.e. an aircraft measured at 50 dB (A) at night is considered to have 60 dB (A) ’s worth of annoyance).

The Authority considers that a L_{dn} , when applied in conjunction with a maximum permissible noise level at any time of 65 dB (A) at adjacent residential properties, will ensure that acceptable noise levels are achieved.

Following consideration of the proponents commitments (Appendix 4) and public concern regarding excessive noise, the Authority recommends that the Authority's above noise limitations be met and that a detailed Noise Monitoring Programme be effectively implemented.

Recommendation 3

The Environmental Protection Authority recommends that the proponent prepare a Noise Monitoring Programme to the requirements of the Authority. This programme should include but not necessarily be limited to the following details:

- **restrictions of use of both proposed runways by aircraft involved in circuit training flying and standard flying operations;**
- **the installation, operation, and maintenance of the proposed noise monitoring station in the Nambeelup Park area;**
- **the proposed reporting mechanisms to the Environmental Protection Authority by the Royal Aero Club in the event that recorded noise levels exceed specified noise limits as recorded at the above mentioned monitoring station at Nambeelup Park; and**
- **reporting mechanisms by the Royal Aero Club to the Environmental Protection Authority in the event that noise emissions from the Airpark exceed specified noise limits at any residential premises in the vicinity of the Airpark.**

3.2 Impact on adjacent land uses and land values

Issue:

The view was expressed in several submissions that construction of the proposed airpark would depreciate the existing land values adjacent to the site, and that to ensure an effective noise buffer, the proponent should purchase all adjacent properties. It was also suggested that the Airpark would impact on existing land uses of areas adjacent to the development site. More detail regarding these concerns is included within Appendix 2.

Proponent's response:

In response to issues raised in public submissions, the proponent has expressed the view that the proposed airpark will be likely to in fact improve the value of land adjacent to the airpark. The proponent has also reiterated a commitment to purchase properties as they become available on the market to establish a noise buffer adjacent to Nambeelup Estate.

EPA's evaluation:

Land adjacent to the Murrayfield site is predominantly zoned ‘rural’. A ‘Special Use Zone - Kennels’ also exists to the west of the site as indicated in Figure 2. In order to proceed with this proposal, the local Shire of Murray Town Planning Scheme would have to be amended to rezone the airpark site from ‘Rural’ to ‘Special Use Zone - Airpark’. The Authority has been advised that this rezoning process has been ‘frozen’, pending the outcome of the Authority's environmental impact assessment of the airpark. The Department of Planning and Urban Development has advised the Authority that it is awaiting updated rezoning documents from the

Shire of Murray before providing specific advice on the acceptability of the proposal in a regional planning context.

The Authority also notes that when the revised CER was released in August 1993, a claim was made in the 'Introduction' section that the proposal is in accordance with proposed planning and development in the vicinity of the site. This statement was considered by the Authority to be inaccurate and misleading to members of the public reading the CER and the proponent was subsequently requested to amend the CER document accordingly and to forward the amendment to all individuals and organisations who had received a copy of the CER document.

The Authority considers that environmental approval of this proposal has implications for the planning approval process since the Town Planning and Development Act, rather than the Environmental Protection Act provides mechanisms to ensure that adequate separation distances are maintained, to prevent incompatible developments occurring too close together.

In the case of rezoning required to the Shire of Murray Town Planning Scheme in order to allow for the Murrayfield proposal to proceed, the Authority considers that the Shire of Murray should ensure that an appropriate zoning is maintained adjacent to the proposed airpark, to minimise the potential for long term land use conflict. **Any approved Town Planning Scheme amendment should ensure that mechanisms are in place to ensure that incompatible land uses are not established in areas where it is known that acceptable noise levels are likely to be exceeded through normal operations associated with the airpark.**

3.3 Impact on wetlands

Issue:

The Authority notes that the proposed airpark is located on low lying land, which includes a number of wetlands and ephemeral stream courses. The construction of the airpark would impact on these existing wetland ecosystems.

Proponents response:

The proponent has undertaken commitments to address the following issues :

- the preparation of a nutrient and irrigation programme prior to construction of the golf course and resort to manage fertiliser use and irrigation techniques to ensure adjacent wetland habitats are not adversely affected by nutrient applications associated with management of the golf course, to the satisfaction of the Environmental Protection Authority and the Waterways Commission;
- the design and implementation of a monitoring programme of groundwater levels and wetland water levels in vicinity of proposal following construction of the airpark, in consultation with the Water Authority of Western Australia, to the satisfaction of the Environmental Protection Authority;
- the maintenance of the functions of all existing wetlands proposed to be retained on site, to the requirements of the Environmental Protection Authority during construction and operation of the resort; and
- maintenance of remnant vegetation on site wherever possible and an undertaking to replant cleared areas with indigenous trees and shrubs following construction.

EPA's evaluation:

The Authority considers that commitments undertaken by the proponent in relation to this issue are adequate to address potential environmental concerns.

3.4 Sewage management

Issue:

The Airpark proposal is located within the catchment of the Serpentine River, which flows into the Peel Inlet via Lake Goegrup. As the proposal is located within the Peel Harvey catchment, all development should be consistent with principles set down in the 'Statement of Planning Policy No. 2' Peel Harvey Coastal Plain Catchment (Department of Planning and Urban Development). This includes appropriate disposal of effluent.

Proponent's response:

The proponent has undertaken a commitment to install and operate a sewage treatment plant, to the satisfaction of the Environmental Protection Authority and the Health Department, following construction of the airpark.

EPA's evaluation:

The proposed sewage plant will require a Works Approval license and Licence from the Authority, in accordance with Part V of the Environmental Protection Act. The environmental performance of the plant will also need to comply and meet conditions set under these approvals.

The CER also makes reference to the fact that treated effluent may be used to irrigate recreational and landscaped areas. This reticulation may result in increased nitrate levels in the groundwater which may pose a public health risk to people using the groundwater in the nearby Nambelup Park development. The Authority therefore considers that if this option is pursued the nitrate levels in groundwater below the airpark site would need to be carefully monitored and results included in the proposed Nutrient and Irrigation Monitoring Programme as discussed in Section 3.3 of this assessment report.

3.5 Water supply

Issue:

The Water Authority of Western Australia's submission on the Murrayfield raises the issue of potable water supply. A potable water supply would need to be identified to allow the development to proceed.

Proponent's response:

In the response to issues raised in public submissions, the proponent states that it is aware that a groundwater license is required from the Water Authority of Western Australia before any production wells are drilled. Accordingly, the proponent has undertaken an additional commitment to liaise with the Water Authority regarding a groundwater well license prior to construction of the airpark.

EPA's evaluation:

The Authority considers that the above issue has been adequately addressed.

4. Conclusion

The Environmental Protection Authority concludes that the proposal is environmentally acceptable provided the proponent's commitments and the recommendations of this report are implemented.

The Authority has established an implementation and auditing system which requires the proponent to advise the Authority on how it would meet the requirements of the environmental conditions and commitments of the project. The proponent would be required to develop a Progress and Compliance report for this project as a section of the recommended audit programmes.

The Authority's experience is that it is common for details of the proposal to alter through the detailed design and construction phase. In many cases alterations are not environmentally significant or have positive effects on the environmental performance of the project. The Authority believes that such non-substantial changes, and especially those which improve the environmental performance and protection, should be provided for.

The Authority believes that any approval for the proposal based on this assessment should be limited to five years. Accordingly, if the proposal has not been substantially commenced within five years of the date of this report, then such approval should lapse. After that time, further consideration of the proposal should occur only following a new referral to the Authority.

5. Recommended environmental conditions

Based on the assessment of this proposal and recommendations in this report, the Environmental Protection Authority considers that the following Recommended Environmental Conditions are appropriate.

1 Proponent Commitments

The proponent has made a number of environmental management commitments in order to protect the environment.

- 1-1 In implementing the proposal, the proponent shall fulfil the commitments (which are not inconsistent with the conditions or procedures contained in this statement) made in the Public Environmental Review and in response to issues raised following public submissions. These commitments are consolidated in Environmental Protection Authority Bulletin 713 as Appendix 4. (A copy of the commitments is attached.)

2 Implementation

Changes to the proposal which are not substantial may be carried out with the approval of the Minister for the Environment.

- 2-1 Subject to these conditions, the manner of detailed implementation of the proposal shall conform in substance with that set out in any designs, specifications, plans or other technical material submitted by the proponent to the Environmental Protection Authority with the proposal. Where, in the course of that detailed implementation, the proponent seeks to change those designs, specifications, plans or other technical material in any way that the Minister for the Environment determines on the advice of the Environmental Protection Authority, is not substantial, those changes may be effected.

3 Proponent

These conditions legally apply to the nominated proponent.

- 3-1 No transfer of ownership, control or management of the project which would give rise to a need for the replacement of the proponent shall take place until the Minister for the Environment has advised the proponent that approval has been given for the nomination of a replacement proponent. Any request for the exercise of that power of the Minister shall be accompanied by a copy of this statement endorsed with an undertaking by the proposed replacement proponent to carry out the project in accordance with the conditions and procedures set out in the statement.

4 Noise management

- 4-1 The proponent shall prepare ensure that noise emissions from the airpark are effectively monitored and managed.

- 4-2 Prior to use of the new airpark, to meet the requirements of 4-1, the proponent shall prepare a 'Noise Monitoring Programme' to the requirements of the Environmental Protection Authority. This programme shall include but not necessarily be limited to the following details:

- restrictions of use of both proposed runways by aircraft involved in circuit training flying and standard flying operations;

- the installation, operation and maintenance of the proposed noise monitoring station in the Nambeelup Park area;
 - the proposed reporting mechanisms to the Environmental Protection Authority by the Royal Aero Club in the event that recorded noise levels exceed specified noise limits as recorded at the above mentioned monitoring station at Nambeelup Park;
 - reporting mechanisms by the Royal Aero Club to the Environmental Protection Authority in the event that noise emissions from the airpark exceed specified noise limits at any residential premises in the vicinity of the airpark; and
 - Royal Aero Club response in the event of excessive noise.
- 4-3 The proponent shall ensure noise emissions from the airpark activities do not cause noise levels at any residential premises in occupation by an occupier who has not, in writing, indicated that higher noise levels are acceptable, to exceed an average of 60 dB (A) L_{dn} and for aircraft used for training purposes, 65 dB (A) maximum.

5 Time Limit on Approval

The environmental approval for the proposal is limited.

- 5-1 If the proponent has not substantially commenced the project within five years of the date of this statement, then the approval to implement the proposal as granted in this statement shall lapse and be void. The Minister for the Environment shall determine any question as to whether the project has been substantially commenced.

Any application to extend the period of five years referred to in this condition shall be made before the expiration of that period, to the Minister for the Environment by way of a request for a change in the condition under Section 46 of the Environmental Protection Act. (On expiration of the five-year period, further consideration of the proposal can only occur following a new referral to the Environmental Protection Authority.)

6 Compliance Auditing

In order to ensure that environmental conditions and commitments are met, an audit system is required.

- 6-1 The proponent shall prepare periodic “Progress and Compliance Reports”, to help verify the environmental performance of this project, in consultation with the Environmental Protection Authority.

Procedure

The Environmental Protection Authority is responsible for verifying compliance with the conditions contained in this statement, with the exception of conditions stating that the proponent shall meet the requirements of either the Minister for the Environment or any other government agency.

If the Environmental Protection Authority, other government agency or proponent is in dispute concerning compliance with the conditions contained in this statement, that dispute will be determined by the Minister for the Environment.

6. References

Alan Tingay and Associates (on behalf of) Royal Aero Club of Western Australia and Hawkview Holdings Pty. Ltd (1991) ‘Murrayfield Airpark and Resort Complex - Consultative Environmental Review’ Report No. 91/17.

Alan Tingay and Associates (on behalf of) Royal Aero Club of Western Australia and Hawkview Holdings Pty. Ltd (1993) ‘Revised Murrayfield Airpark and Resort Complex - Consultative Environmental Review’.

Environmental Protection Authority (1992) Murrayfield airpark and resort complex. Report and Recommendations of the Environmental Protection Authority (Bulletin 639).

Appendix 1

List of individuals and organisations who forwarded a submission during public review of the Consultative Environmental Review document

- G Green and L Cameron
 - H W and R S Scott
 - Mr G Rogers
 - M and J P Capotorto
 - Mr J A Snare
 - Mr J W Crabb
 - S and S Gibson
 - P N and L J Wirth
 - Ms M Spratt
 - B Thompson
 - E J and J R Koerting
 - K and A Fliegner
 - Mr R Buckeridge
 - H W and Y M Scott
 - J A Long
 - K J Clatworthy
 - Ms A Carter
 - N C Selsmark
 - Mr T Esze
 - M Devantier and J Newbury
 - M R Cloke
 - Mr T Elliott
 - M J Elliott
 - K Pritchard
 - B Crawford
 - R Crawford
 - Ms R Crawford
 - Mr R S Crawford
 - N Yost
 - D A Yost
 - W and F M Scanttebury
 - H E Ward
 - Mr B Davis
- (plus 3 other individual submissions))

- Wandalup Farms
- Jandakot Special Rural Association
- Residents of Lot 89 Nambeelup Road
- Residents of Lot 88 Nambeelup Road
- 1 petition from the general farming community surrounding the Murrayfield Airpark site
- 2 petitions from residents of Parkland Estate
- 1 petition letter from residents of Riverlands Estate
- 1 petition letter from residents of Mandurah

- Shire of Murray
- City of Mandurah
- Waterways Commission (Peel Inlet Management Authority)
- Water Authority of Western Australia
- Department of Planning and Urban Development
- Homeswest
- Health Department of Western Australia

Appendix 2

Issues raised by public submissions and the Environmental Protection Authority following public review of the Consultative Environmental Review document

MURRAYFIELD AIRPARK DEVELOPMENT PROPOSAL - CONSULTATIVE ENVIRONMENTAL REVIEW ISSUES RAISED IN PUBLIC SUBMISSIONS

The public submission period for the Consultative Environmental Review (CER) Murrayfield Airpark development proposal commenced on 27 July 1993 for a period of four weeks, ending on 20 August 1993.

52 submissions were received by the Authority. These included :

- 21 standard form letters expressing support for the proposal;
- 17 individual letters (14 opposed ; 3 supportive - claim that the proposed development would be of benefit to Mandurah /Murray districts)
- 7 petition letters (with a total of 125 signatories opposing the proposed development)
- Submissions from the following State Government and local authorities :
 - Homeswest
 - City of Mandurah
 - Shire of Murray
 - Health Department
 - Water Authority of Western Australia
 - Waterways Commission (Peel Inlet Management Authority)
 - Department of Planning and Urban Development

In summary, the following issues were raised in submissions received by members of the public :

Noise

The majority of submissions opposed to the Airpark expressed the view that noise associated with the Airpark would be unacceptable. Several submissions expressed the view that land was purchased by residents in the area to live a quiet lifestyle. Development of the Airpark would be contrary to the expectations of people purchasing properties in the area, and concerns were expressed that the Airpark would destroy the existing atmosphere / peace / tranquillity / serenity that initially attracted people to the area, and affect the quality of life. It was feared the area would become a 'noisy playground for student pilots', which would also affect shift workers living in the area, making their jobs more dangerous due to interrupted sleep.

It was claimed in several submissions that the proposed ANEF contours quoted within the CER document are unreliable, unrealistic, unsuitable and inaccurate. It was claimed the contours are based on information that is misleading and selective, as the ANEF contours could change with small variations in flight paths, pilot operating procedures and meteorological conditions. It was claimed that in documented reports such as the 'Australian Community report of the House of Representatives Select Committee of Aircraft Noise' (September 1985), it had been acknowledged that noise contours did not accurately represent the actual noise exposure as measured on the ground, as they were based on a single aircraft movements, not multiple movements as proposed at Murrayfield. This, it was claimed, makes the proposed use of ANEF contours meaningless. Further, the ANEF contour was intended to be a plot of 'estimated' noise exposure on forecast aircraft movements. It was not intended to be used as a guide for the potential siting of airports, as stated in the CER, and was overly simplified.

Land values

Several submissions expressed the view that construction of the Airpark at the proposed site would depreciate the existing land values in proximity to the Airpark, or else make future sale of these properties impossible. The CER document made reference to buffer zones, and several submissions expressed the view that if these were to be effective, the proponent should buy out adjacent properties to effectively create a buffer zone. It was claimed that existing land owners would also be prevented from developing their land due to creation of a buffer zone. It would force out existing adjacent residents. Other submissions expressed the view that the proposed buffer zones ignore the people already living within the 5 km zone, and particularly at the north east boundary of the airport.

It was claimed in one submission that reference to a buffer area was not valid as the Shire of Murray had not issued a statement documenting that this is planning policy for the area. It was claimed that neither the proponent nor the Shire should be allowed to use someone else's land to provide a buffer zone without their permission. This land is already in private ownership, and was not purchased with this land use in mind.

Another submission claimed that the proposed buffer described in the CER is misleading as the siting of the proposed runways extended from start to finish at the property boundaries of the land owned by the RAC.

Land Use

Several submissions claimed that the proposed buffer zone associated with development would restrict the use of a designated 'kennel zone' (under Shire of Murray TPS). This zone is currently the only one between Perth, Southern River kennel zone and the southern coast, and may lead to loss of income from existing kennel operations. It was also suggested that claims made in the CER that the Nambeelup Park kennel zone has recently established are untrue and misleading. This Park was established in 1989. At that time there was only a rural airstrip, not a proposed airpark.

The view that the proposal is in accordance with existing and proposed plans for land use in the area as claimed within the CER was claimed to be incorrect and misleading. Reference to the fact that the Airpark would be built in an area designated for 'Public Utility' in the SW Corridor is also misleading, as this area is designated for service facilities such as sewerage and electricity, not airports. Also land surrounding the proposed Airpark is presently marked as 'Possible Future Urban'.

One submission claimed that the effect of smells and animal noises at feeding times emanating from the existing piggery located near the Airpark would have an unacceptable impact on users of facilities associated with the Airpark, such as the golf course and proposed resort area. This issue may force the relocation of an already existing land use, which would be unfair.

Alternative sites

Several submissions expressed the view that the CER failed to adequately address the options for alternative site locations, i.e. it failed to consider that fact that homes are already located in the area, built without the expectation of a future airpark in close proximity. Submissions claimed that the proposal should be located in an area before homes are built, so residents know what to expect. The example of a new airfield at Wanneroo was quoted as a good example of a well planned airport.

It was claimed in several submissions that information presented within the CER is inconsistent from page to page, making intentions unclear, for example in Section 2.5.2 of the CER relating to the intended use of runway 09/27. Parts of the CER state that the runway is proposed to be used for 'emergencies only' (p. 3), others that it will be used for 12 % of operations (p. 7), other parts that it will not be used for take offs (p. 11). Concern was also expressed that there would also be no way of monitoring plane heights and flight paths once the Airfield was established, to make them comply with proposed standards. One submission claimed that compliance by pilots to the 'Civil Aviation Authority Codes of Conduct' to help control excessive noise emissions, as stated within the CER was unrealistic.

It was claimed that proposed night flying was presented in a confused manner., i.e commitment 13 states that 'no aircraft involved in circuit training will take off or land at Murrayfield between 10 pm and 7 am'. Commitment 15 states that 'less than 1 % of take offs will occur between 10 pm and 7 am'. Which is correct ?

Several submissions claimed that the proposed re-siting of the runway would not make any difference to potential noise impacts originally identified in the EPA's assessment report of July 1992 (Bulletin 639). It was claimed that tests undertaken and documented in the revised 1993 CER are misleading as these were done during strong s/w winds, which would carry the noise away. Further, no simulations were done on twin engine aircraft, which are significantly louder and may possibly be used at the site. Noisy planes such as 'Tigermoths' and 'Chipmonks' may also be used, which when continuously taking off and landing (for example in a training situation), would be disruptive and exceed noise standards quoted. Also it was claimed that simulations were undertaken during test flights by an experienced pilot. High intensity flight training for learner pilots is likely to be loud, as they could not be expected to have much control of the aircraft, and are likely to be louder than the simulated tests quoted within the CER document. Further, it is likely that general aviation aircraft (up to 57 000 Kg) would not have to comply with any noise standards (as per existing Jandakot Master Plan, 1986).

One submission claims that the proposed Airpark would have an unacceptable noise impact on the existing piggery operations adjacent to the site. The submission quoted documented sources, stating that noise associated with aircraft would upset pig behaviour and productivity. Another submission claimed that cattle would also be distressed, causing harm and damage to themselves as well as surrounding property.

Another submission claimed that RAC commitments included within the CER to liaise with members of the local community about potential noise issues and management have been non-existent to date. Further, previous relations between the RAC and public over noise associated with Jandakot Airport have been unsatisfactory and unco-operative. Hence, there was no reason to believe that further negotiations with the RAC would be satisfactory or improve if this proposal were to proceed, and therefore enforcement of commitments in relation to noise control would be extremely difficult. Also if non-compliance did become a significant problem, it was claimed that there is nothing in place to correct the situation other than a promise.

Pollution

Several submissions expressed the view that lead levels, known to be higher in aviation fuel than normal vehicle fuel, would have a detrimental effect on nearby residents living under the flight paths of planes.

Concern was also expressed that proposed activities may affect TV and radio reception.

Impact on wetlands and groundwater

One submission claimed that the proposed development would have an unacceptable impact on groundwater in the vicinity, and wetland areas nearby.

Safety

Some submissions claimed that development of the Airpark would make the future use of Lakes Road unsafe due to low flying aircraft, and also increase the risk of accidents.

Restriction on size of aircraft

No reference was made in the CER document regarding restrictions of size of aircraft proposed to use Airpark. This was considered vital if associated issues such as noise are to be effectively controlled.

Public Consultation

Several submissions claimed that the RAC had not attempted to discuss proposal with local residents adequately, as claimed in the CER.

CER documentation inaccurate

The point was raised that the claim in paragraph 6 (page 1) of the CER that the proposed Airpark was 'in accordance with proposed planning and development within the south-west corridor' is untrue and blatantly misleading. During the public submission period, the EPA requested the RAC to reword this paragraph, yet many people who received the CER document did not receive advice of this amendment.

The CER document stated that the existing runway had been used since 1980 for commercial and private aircraft. Several submissions claim that this statement was not true. This airstrip was planned to be used as ancillary rural use, not for commercial purposes. The proposed use would therefore be a 'new' use

It was also claimed that the CER was ambiguous, for example, the CER stated that use of runway (09/27) would be restricted to emergency use. Other parts of the CER stated that it would be used 12% of the time. Which is true? Claims included within the CER that the airpark could be used by the Royal Flying Doctor were questioned as patients in the area would be transported by conventional ambulance, not plane.

Finally, it was claimed that meteorological records referred to in the CER are inaccurate, as details were taken from Mandurah. The proposed site is 12 kms inland, and therefore subject to different wind regimes.

Appendix 3

**Proponent's response to issues raised by the Environmental
Protection Authority and in public submissions**

TELEPHONE: (09) 332 7722
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TELEGRAPHIC ADDRESS:
"Royalaero" Perth



41 EAGLE DRIVE,
JANDAKOT, W.A. 6164

27th September, 1993

The Chairman
Environmental Protection Authority
8th Floor Westralia Square
141 St. Georges Terrace
PERTH WA 6000

Attn: Ms E. Bunbury

Dear Ms. Bunbury,

Enclosed please find responses to issues raised in the Public Submissions to our Murrayfield Airpark C.E.R.

We look forward to a favourable conclusion so that this very worthwhile project may proceed.

Yours faithfully

JOHN DOUGLAS
GENERAL MANAGER

ENVIRONMENTAL PROTECTION AUTHORITY	
28 SEP 1993	
File No	85/93 Initials EBU 6

69688/1000

✓
Noted
GE Bunbury
28/9/93

MURRAYFIELD AIRPARK

CONSULTATIVE ENVIRONMENTAL REVIEW

**RESPONSES TO ISSUES RAISED IN PUBLIC
SUBMISSIONS**

ALAN TINGAY & ASSOCIATES

SEPTEMBER 1993

1. NOISE

1.1 Unacceptable Noise

Modelling performed by the Civil Aviation Authority (CAA) together with monitoring by an officer at the Environmental Protection Authority (EPA) has indicated that the levels of sound from operations at the airpark will meet the wide range of standards and criteria quoted in the revised CER. These criteria include those proposed by the EPA for future environmental assessments regarding acoustic emissions. The criteria used by the EPA take into account the levels of background noise in the area that could potentially be affected by a proposal. As a result of conformance to the criteria the proponent considers that noise associated with the airpark will be of an acceptable level.

Australian Noise Emissions Forecast (ANEF) contours are used to predict the potential effects of an operating aerodrome on areas adjacent and the ANEF contours are based on the forecast movements in 5 to 10 years time of both single and twin engine aircraft. As with any predictive tool they are indicative rather than definitive. It is this factor together with concerns regarding ANEF contours voiced by the EPA that lead to the proponent inviting an officer of the EPA to measure the amount of noise that would be generated from use of the aerodrome runways. Noise recordings were made on the ground at a location within an adjacent property where the highest level of noise would be expected. As previously discussed these measurements indicate that the operation of the new runway will conform to EPA standards that pertain to noise.

1.2 Proposed Restrictions of Use of Runway 09/27

The CER document on Page 3 states that a noise management and abatement program will include the restriction of the use of the existing runway 09/27. The use of this runway will not be fully restricted as is discussed in more detail later in the CER. On Page 7 of the CER the text reads, "analysis of the meteorological records indicates that the primary runway (05/23) will be used for 81% of the operations and the secondary runway (09/27) for 12% of operations". This sentence means that for 81% of the time weather conditions will allow the use of runway 05/23 to the exclusion of runway 09/27. Similarly the use of 05/23 will be prevented by prevailing weather conditions for only 12% of the time and during this time runway 09/27 will be used.

On page 11 of the revised CER, commitment No. 14 describes how runway 27 will not be used for take-offs except where such take-offs are associated with the provision of emergency services. In considering the above it should be noted that the designation 27 and the designation 09 in runway 09/27 represent the different ends of the same runway. The Westerly (27) end of runway 09/27 has the flight path on take-off over the south end of Nambelup Kennel Estate. Consequently, the proponent has committed to limiting take-offs from the 27 end of this runway to emergency services only. This commitment does not prevent planes from landing on the 27 runway, nor does it prevent take-offs from the 09 end of the runway.

It can be seen from the above that the proponent proposes that the use of runway 09/27 be restricted in that it will only be used when necessary (12% of the time) and

that when it is in use no take-offs from the 27 end will occur unless required in an emergency.

1.3 Control of Trainee Pilots

The proponent disagrees that there would be no way of monitoring the heights of aircraft and flight paths, once the airfield was established. With the development will come a constant presence of professional flying instructors on the site. It is in the best interest of these professional instructors to ensure CAA standards and disciplined operations are in accordance with the Aerodrome Operations Manual. As a result the proponent believes that it is quite realistic to believe that the Civil Aviation Authority codes of conduct will be conformed to by operations at Murrayfield.

1.4 Restrictions on Night Flying

Both commitment 13 and 15 are correct. Commitment 13 relates to flying circuit training only. The proponent has committed to ensuring that no aircraft involved in circuit training will operate from Murrayfield Airpark between 10.00pm and 7.00am on any day. In contrast, commitment 15 relates to all take-offs and landings. In commitment 15 the proponent has further committed that less than 1% of all take-offs from Murrayfield Airpark will be between 10.00pm and 7.00am.

1.5 Resiting of Runway

The claim that the proposed resiting of the runway would not make any difference to potential noise impacts is refuted. The CER describes in full how the resiting of the runway will impact on noise impacts. One of the principal concerns of the EPA was that some adjacent properties were within the 25 ANEF contour. Movement of the runway east ensures that this is now not the case. The EPA LBN standards have been tested and met in on-site testing of operational aircraft.

1.6 Conditions During Monitoring

The noise analysis undertaken and documented in the revised 1993 CER was done in conditions considered to be typical of that existing on the site. Winds were not considered to be excessively strong and in fact were about 15 knots from the south-west.

1.7 Aircraft Type and Noise

It is not considered that the types of aircraft mentioned will produce noise exceeding those recorded in February 1993. A number of commitments relate to noise levels in the revised CER, that is, commitments 18, 19, and 20. These state that noise levels are not to exceed 60dB LBN and 65dB LA slow maximum at any residential premises. The proponent is of the opinion that the twin engine, Tiger Moths, Chipmunk and

other aircraft expected to operate from the site on a regular basis will not exceed these criteria.

1.8 Trainee Pilots and Noise

The proponent considers that there is no basis for the conclusion that aircraft flown by student pilots are likely to be noisier than those flown by experienced pilots. Student pilots are accompanied by instructors until such time as they are experienced enough to confidently handle the aircraft they are flying. The noise produced by an aircraft is not directly related to the pilot under these circumstances.

1.9 Aircraft Size

It is not proposed that aviation aircraft up to 57,000kg would be used at Murrayfield. The runways have been designed so that they can only handle an aircraft up to 5,700kg. The largest aircraft owned or operated by the RACWA currently is 1,930kg and this type of aircraft is expected to be typical of larger aircraft that will operate regularly from Murrayfield in the future. Current development and design is such that future aircraft will be of lighter construction and make less noise than existing aircraft.

1.10 Aerodrome Use and the Adjacent Piggery

The proponent considers that the proposed airpark will not have an unacceptable noise impact on the piggery adjacent to the site. It has found no documentation indicating that noise from the airpark would upset pig behaviour and productivity. Officers of the RACWA have noted that buffer zones around aerodromes world wide are used for agricultural purposes. In the EPA assessment report of July 1992, it is stated that the Authority has found no evidence to substantiate that noise generated by the operation of the airpark would adversely affect the operation of the piggery.

1.11 Public Liaison

The proponent considers that sufficient effort has been made to liaise with the local community about potential noise issues and management. The proponent has made the following efforts to liaise with the public:

- Visited residents in the immediate vicinity prior to the preparation of the CER for the original proposal.
- Produced a CER on the proposal, advertised it in the local paper, and responded to submissions on the document.
- Provided a revised CER on the proposal and mailed this to all respondents to the initial CER.

- Communicated with local journalists to ensure that the proposal is presented in local papers and radio.
- Visited or attempted to visit most of the residents in the immediate area and a sample of residents within 3km of the airpark to seek their comment on the proposal.
- Invited all those who are interested in the proposal to visit the operating aerodrome with the objective of providing more information to residents regarding the proposal.

The above liaison is considered to be a more than adequate programme. The proponent considers that it has a good relationship with the majority of the members of the general public particularly in the Nambeelup Park area adjacent to the proposed development.

The proponent has made numerous commitments in the CER in addition to those presented in the original CER. It is expected that the Minister for the Environment will also attach Environmental Conditions to any approval for the development. These commitments and conditions are legally binding and enforceable by the Environmental Protection Act, 1986.

2. POLLUTION

Like automobiles, aircraft use fuels containing lead and thus their emissions will contain lead - AVGAS is a low lead fuel. The emissions produced by an aircraft are not considered to be excessive when the emissions produced by automobiles are considered. This is especially relevant when the proximity of the site to a major regional road is considered. The altitude of aircraft when operating in the area (which is a small percentage of total operating time) and the relatively strong winds above the ground will ensure that any emissions are well dispersed.

3. LAND VALUES

The proponent considers that the proposal to construct an airpark in the area will appreciate the value of land in the area rather than depreciate it. The RAC has committed to obtaining properties in Nambeelup Park for buffer purposes and as a consequence it has had an interest in the sale prices obtained for properties in the area over the last 36 months. The proponent has noted that a number of properties have been sold during this time for appreciably greater values than for which they were purchased. All purchasers in the Nambeelup Park area are required by the Shire of Murray to sign a statutory declaration stating that they have knowledge of the proposed adjacent airpark development. This suggests that properties are being sold for increased prices to people who are fully aware of the airpark proposal.

4. LAND USE

4.1 Planning and Land Zonings

The land use planning of the area is the responsibility of the relevant planning authorities. The planning approvals process is considered to be the appropriate forum to consider land zonings in the area.

4.2 Land Use within Adjacent Areas

The proponent considers that there is no rationale for people to be removed from the area as a consequence of the development. It considers all landuses currently in the area to be compatible with the proposed operation of the airpark.

4.3 Length of Runways

The runways proposed for the airpark are fully within the property held by the proponent. What is more, they are well inside the property boundaries. The proponent must conform to CAA obstacle clearance limitations and setbacks and this is reflected in the designs presented in the CER.

4.5 Adjacent Kennel Area

The proponent considers that the proposed development would not restrict in any way the designated kennel zone area and considers the area to be compatible with the operation of the airpark.

4.6 Adjacent Piggery

The proponent is aware that the piggery has potential to produce noise and odour. However, the decision to construct a resort complex in the proximity of the piggery is a commercial matter for the proponents and the proponents believe that such proximity would not restrict the operations of the airpark and resort or create any objection from guests.

5. ALTERNATIVE SITES

The revised CER provides details regarding the lack of viable alternative sites in the area. One of the most important factors is that the airpark is currently within the boundaries of the designated training area for Jandakot Airport.

6. IMPACT ON WETLANDS AND GROUNDWATER

The proponent has made a number of commitments relating to the control of nutrients within the golf course site. These include fertiliser management, soil amendment, irrigation management, drainage management, and monitoring. The groundwater within the site will be monitored to determine any fluctuations in groundwater levels and nutrient concentrations. This monitoring will be designed to determine any change to these parameters and to consider the need for further management to prevent any adverse effects on wetlands within the property.

7. SAFETY

The proponent does not believe that the issue of safety with regard to Lakes Road should be an issue of concern. The safety record of the Australian Aviation Industry is by world standards outstanding. In Australia major roads are often found in close proximity to airports as they are viewed as an effective use of land within airport buffer zones. Examples of this include Perth Airport with the Eastern Bypass and Tonkin Highways, and Pearce Airport where the Great Northern Highway crosses toward the end of one of the runways.

8. RESTRICTION ON THE SIZE OF AIRCRAFT

As stated in the original CER for the proposal, the aerodrome will provide general aviation facilities for light aircraft with a maximum take-off weight of up to 5700kg. The heaviest aircraft currently used at Jandakot by the proponent is 1930kg and it is considered that this will be typical of the type of aircraft that will be used at the Murrayfield site.

9. PUBLIC CONSULTATION

Refer to 1.11

10. CER DOCUMENTATION INACCURATE

10.1 South-West Corridor Development

The proponent was under the impression at the time of writing of the revised CER that the airpark was in accordance with the proposed strategies for planning and development of the South-West Corridor. The proponent now understands this has yet to be established. Accordingly the proponent has withdrawn this claim and amended as many documents as possible in the time available. To the proponents knowledge the vast majority of the CER's were altered so as to remove this claim. It is accepted, however, that some people may have inadvertently received a CER document with the claim included.

10.2 Previous Use of Runways

The proponent maintains that the existing runway has been used since 1980 by commercial and private aircraft. The runway has been used for a number of years for pilot training and general aviation operations.

10.3 Use of Aerodrome by Royal Flying Doctor

The proponent considers that the airpark will be used as necessary by the Royal Flying Doctor Service and other government authorities. The Flying Doctor has used the facility recently as has the Department of Health for spraying of mosquitoes with regard to Ross River virus. In addition police services and CALM have used the airport.

10.4 Applicability of Meteorological Records

The meteorological records presented in the CER are consistent with those taken at a CAA Monitoring Station at Serpentine. The records also agree with CAA records taken at a formerly proposed airport site in Baldivis. Consequently, the proponent is confident that the meteorological records taken from Mandurah are directly applicable to the Murrayfield site with minor variation.

11. GROUNDWATER

11.1 Drinking Supply

The proponent is aware that it will be required to gain a licence under the Rights in Water and Irrigation Act, (1914) before production wells can be drilled into the Leederville Formation. It is also aware that it is yet to fully evaluate the options available for the supply of potable water to the development. Consequently the proponent will be liaising with the Water Authority to ensure that an adequate supply of drinking water will be available to the development.

11.2 Nutrient Monitoring

It is proposed that the nutrients in the groundwater beneath the site will be monitored as part of an ongoing groundwater and wetland management programme. The proponent will liaise with the Water Authority to ensure that the operation of the sewerage treatment facility does not compromise the current or potential uses of the groundwater in the area.

Appendix 4

Proponent's list of environmental commitments

REVISED LIST OF COMMITMENTS

Commitments represent the proponents solutions to potential environmental problems posed by the development. Essentially they are promises by the proponent regarding the way in which certain aspects of the proposal will be carried out.

The RACWA and Hawkview Pty Ltd commit to carrying out the following commitments:

General

1. The proponents will ensure that all commitments and environmental conditions will be heeded and wherever necessary enforced by the lessees, management agencies and subcontractors involved in the construction and operation of the proposal.

Pre-Construction

2. The proponents will prepare a nutrient and irrigation management program prior to commencement of construction of the golf course and resort which will include the following:
 - fertiliser management types of fertiliser used, frequency of application (based on soil and tissue testing),
 - soil amendment details under fertilised and effluent irrigated area,
 - irrigation management (relating to the rational use of water for irrigation),
 - drainage management, and
 - monitoring and as a consequence of findings, changes in management activities.

The above will be implemented during the operation of the airpark and resort to the satisfaction of the EPA and the Waterways Commission.

3. The proponent will liaise with the Water Authority of Western Australia to evaluate the supply of potable water to the development.

Post Construction

4. Design and carry out a monitoring program to monitor groundwater levels, water levels in selected wetlands, and water quality parameter during the resorts operation to the satisfaction of the EPA and WAWA.
5. Install and operate a sewage treatment plant that will remove phosphorus from sewage to a concentration of 2mg/L. The resulting effluent will be used for

irrigation and solid waste will be disposed of off-site to the satisfaction of the EPA and the Health Department.

6. Operate a policy of priority use of runways to reduce the level of noise experienced by residents to the satisfaction of the Shire of Murray.
7. Perform any engine tests between the hours of 0700 and 1800 within a purpose build enclosure designed to reduce the noise generated to acceptable levels with regard to nearby residents to the satisfaction of the Shire of Murray.
8. Store aviation fuel in above ground tanks which are fully bunded with a capacity in excess of the quantity of fuel stores, to the satisfaction of the Department of Mines.

During Construction

9. The proponents will, during construction and operation of the resort, maintain the existing functions of all wetlands that are to be retained on site. This will be achieved by preventing physical interference with or destruction of the wetlands, by nutrient management, and by not permitting any surface drainage or effluents that originate from the aerodrome complex or resort discharging into any wetlands. This will be done to the satisfaction of the EPA.
10. Maintain wherever possible, the remnant vegetation on the site and embark on a planting program in which indigenous trees and shrubs together with other plants will be planted throughout the development area. This will be done to the satisfaction of the EPA.
11. Ensure that construction activities that have the potential to create unacceptable levels of noise at nearby residences will only be carried out between 0700 and 1800 hours Monday through Saturday. This will be done to the satisfaction of the Shire of Murray.
12. Control dust during and after the construction phase should it be determined that dust levels are high enough to cause inconvenience to neighbouring residents. Dust control will principally be controlled by the use of water carts and will be done to the satisfaction of the Shire of Murray.
13. Install structures such as interceptor pits and oil traps to prevent the spread of fuel that could be spilt from refuelling areas. This will be done to the satisfaction of the EPA.

ADDITIONAL COMMITMENTS

Noise Control During Operation of Aerodrome

Hours of operation

14. No aircraft involved in flying circuit training will land at, or take off from, Murrayfield Airpark between the hours of 10.00pm and 7.00am on any day.

15. Runway 27 will not be used for take offs except where such take offs are associated with the provision of emergency services such as Royal Flying Doctor Service or Police emergency flights and are made in weather conditions which preclude the use of other runways.
16. The RACWA will ensure that less than 1% of take offs from the Murrayfield Airpark occur between 10.00pm and 7.00am. The time base for the determination of this percentage will be any consecutive ninety days.

Training Circuits

17. Use of, and the impact caused by, flying training circuits where a turn to the west following a take off from runway 05 shall be reviewed by the RACWA following a request of the EPA. The Club anticipates such a request for review will only be made by the EPA where it has received, from residents of the Nambeelup area, sustainable complaints regarding noise emissions from aircraft.

Planning Considerations

18. The RACWA will negotiate to purchase all residential properties potentially effected (i.e. cannot comply with Commitments 18 and 19) by aircraft noise where the current owners wish to sell.

Noise Levels

19. Aircraft operations from Murrayfield Airpark will be managed by the RACWA such that noise emissions, as measured at any residential premises in occupation by any occupier who has not, in writing, indicated that higher noise levels are acceptable, do not exceed 60 dB LDN.
20. Aircraft operations from Murrayfield Airpark will be managed by the RACWA such that noise emissions due to the operation of any aircraft being used for training purposes, as measured at any residential premises in occupation by an occupier who has not, in writing, indicated that higher noise levels are acceptable, do not exceed 65 dB LA_(slow) maximum.

Monitoring

21. The RACWA will install, maintain in proper working order, and operate, a noise monitoring system which provides hourly statistical data, the data necessary to determine LDN levels and the ability to record, on magnetic tape, those noise sources which exceed 65 dB LA_(slow) for more than 15 seconds. This monitor will be established in the Nambeelup area at a residential premises acceptable to the owner of the premises, the RACWA and the EPA.

Community Liaison

22. The RACWA will form an advisory community group representative of residents and land owners in the Nambeelup-Murrayfield precinct to monitor community attitudes and expectations regarding operation of the aerodrome.

Appendix 5

**Basis for Aircraft Noise Assessment (prepared by the
Environmental Protection Authority during the assessment of this
proposal)**

BASIS FOR AIRCRAFT NOISE ASSESSMENT

Introduction

Assessment of aircraft noise at airstrips and airports catering for light general aviation is based on the approach outlined in this document. The Environmental Protection Act provides for the control of noise emissions from equipment, including the power to make regulations. Aircraft are defined as equipment for the purposes of the Act. At this stage no regulations covering noise emissions from aircraft have been introduced. A set of criteria, introduced as a policy, is considered a more appropriate approach.

Noise control regulations currently available are the Noise Abatement (Neighbourhood Annoyance) Regulations 1979. These regulations were made under the provisions of the Noise Abatement Act 1972, and do not sit well under the provisions of the Environmental Protection Act to which they were transferred in 1986 when this latter Act was introduced. Their application under the Environmental Protection Act is limited to provision of a set of guidelines for maximum acceptable noise levels. They can not be construed as prescribed standards for the purposes of sections such as 49, 51 and 65.

They are designed for control of steady, generally continuous noise emissions such as those from a large industrial complex. As the noise source deviates from this nature to one of short duration higher level noises such as is the case for aircraft landing at or taking off from an airstrip these regulations become less appropriate and more difficult to apply. The same is true of the Environmental Protection (Noise) Regulations currently being developed to replace the Noise Abatement (Neighbourhood Annoyance) Regulations

Thus, neither the Noise Abatement (Neighbourhood Annoyance) Regulations nor the proposed Environmental Protection (Noise) Regulations should be used as the criteria against which noise from aircraft is assessed. The environmental acceptability of noise associated with general aviation airstrips be based on the following criteria:

- Noise levels generated by individual aircraft
- Noise characteristics of aircraft noise emissions
- Number and duration of aircraft movements
- Time of day when aircraft movements may occur
- Location of the airstrip relative to the surrounding land uses
- History of the various developments in the area.

Available standards for assessment of aircraft noise

Traditionally, the most commonly adopted approach has been based on the Australian Noise Exposure Forecast model. This model works effectively for large airports catering for heavy commercial aircraft, this being the use for which it was developed. It does not perform as well for airports catering for light aviation, particularly where the aircraft activities include a high proportion of flying training.

Australian Standard AS 2021 "Acoustics - Aircraft Noise Intrusion - Building Siting and Construction" endorses the Australian Noise Exposure Forecast model which recommends that land used for residential purposes should be outside the 20 ANEF contour. This standard also provides an alternative approach which could be used. This approach is based on recommended indoor design levels of 50 dB(A) for relaxing and sleeping areas and 60 dB(A) for general domestic activities.

Comparisons can also be made with other standards not specifically intended for aircraft noise control.

The Noise Abatement (Neighbourhood Annoyance) Regulations 1979 specify a maximum allowable noise level of 50 dB(A) for not more than 5 minutes each hour Mondays to Fridays 7.00 am to 7.00 pm and 45 dB (A) for the same time period on Saturdays, Sundays and public holidays for an "A2" category neighbourhood with a 5 dB(A) tonal adjustment.

The proposed Environmental Protection (Noise) Regulations allow a maximum noise level of 70 dB(A) for not more than 6 minutes each hour during the time period 7.00 am to 7.00 pm Monday to Saturday inclusive 65 dB(A) in the same circumstances on Sundays and public holidays.

Road traffic noise is assessed in Australia on the basis of the level exceeded for 10% of the time during the period 6.00 am to 12 00 midnight. Less than 58 dB(A) L_{10} is considered fully acceptable, over 68 dB(A) L_{10} is considered not acceptable. 58 to 68 dB(A) L_{10} is an area of gradual deterioration. Perth roads such as Stirling Highway, Albany Highway, and Great Eastern Highway exceed 68 dB(A) L_{10} . The Department of Main Roads endeavours to design new highways to meet 63 dB(A) L_{10} .

Noise emissions from helicopters have been assessed in Western Australia using a maximum noise level for each helicopter movement, and an "average" (Leq) level to control the number of movements. Some years ago the EPA informally endorsed 75 dB(A) maximum for up to 15 movements per day, and 70 dB(A) maximum for more than 15 movements per day for residential areas impacted on by helicopter movements to and from a helicopter landing site, and 85 dB(A) maximum in non residential areas. This informal policy also allowed Leq increases of 2 to 5 dB(A) in residential areas.

A control strategy for light aircraft would be well founded if it followed this helicopter strategy. Lower noise levels than those specified for helicopters would be appropriate because of the higher number of events. Maximum levels of 60 to 65 dB(A) are seen as appropriate for existing light aircraft landing sites. For "green field" light aircraft landing site developments maximum levels of 55 to 60 dB(A) would be preferable. These maximum levels should be coupled with a specified maximum "average" noise level. The most appropriate parameter for this average value is L_{dn} . This parameter is the measured Leq over 24 hours with the measured overnight period levels increased by 10 dB(A).

Characteristics which increase the intrusiveness of a noise

Tones are one of the most significant of those characteristics which increase the intrusiveness of noise emissions. Aircraft noise is tonal in nature. Most technical and legislative standards allow for the adjustment of maximum allowable levels to compensate for the added intrusion due to the presence of tones. Australian Standard AS 1055-1989 "Acoustics - Description and Measurement of Environmental Noise" requires a typical adjustment to the measured level of noise from light aircraft of 6 dB(A). The Noise Abatement (Neighbourhood Annoyance) Regulations require an adjustment of 5 dB(A) to noise emissions from light aircraft.

Number and duration of events

Controlling the number and duration of events at an aircraft landing site poses some difficulties. It is not practicable to turn away approaching aircraft, for example, once a specified quota of aircraft movements has been reached. Duration can be controlled to some extent by requirements specifying the allowable operating hours for an aircraft landing site. However, provision must be made for aircraft to land and depart at any time of day or night. Use of a measurement parameter such as L_{dn} places a heavy weighting on those aircraft movements which occur outside those hours when the noise of aircraft is more acceptable. Hence this parameter is recommended.

As both ambient noise levels and noise levels due to typical residential activities change with time of day noise from aircraft activities will be more intrusive when ambient levels are low,

and residents are seeking quiet periods. Thus aircraft movements are undesirable, and should be minimised, during evening and overnight periods.

Location of airfields relative to surrounding land uses

Ambient noise levels are controlled by surrounding land uses and the extent of aircraft activity. The more the ambient level is dominated by other activities the less the aircraft noise will be intrusive. Thus, aircraft landing sites located in rural areas need to be further away from residences than sites which are located in urban, more densely populated areas.

The history of developments in the area

Where residential development has occurred in the presence of a pre-existing aircraft landing site the constraints placed on aircraft operations should not be as severe as they might be if a green field site located close to established residential areas is being assessed.