

SYDNEY AIRPORT COMMUNITY FORUM INC
CRITIQUE OF

SYDNEY AIRPORT CORPORATION LTD'S

"PRELIMINARY DRAFT MASTER PLAN 2009" SEPT 2008

15 December 2008

Contributors:

P.S. Lingard , H.P. Richard, G.P. Harrison & R.J. Tanner

SYDNEY AIRPORT COMMUNITY FORUM INC

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"Critique of Sydney Airport Corporation Ltd's Preliminary Draft Master Plan 2009 Sept. 2008"

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CONTENTS:

	<i>Page</i>
SYNOPSIS	1
1. Re. Disclaimer (p. (i):	3
2 Summary:	3
2.1 Summary: - Regulatory and Policy Settings (p. 2)	
2.2 Summary: - Forecasts (p. 2)	
2.3. Summary: - Environment Management (p. 3)	
3. Introduction :	4
3.1 Section 1.4 Introduction - Vision	
3.2 Section 1.6 Introduction - Development Objectives	
3.3 Section 1.8 Statutory Requirements Introduction -Airports Act:	
4 Statutory and Policy Framework :	5
4.1 Section 3.4 (3.3 in Index) Statutory and Policy Framework - "Noise Sharing"	
4.2 Section 3.7 Statutory and Policy Framework - "Second Sydney Airport":	6
5. Aviation Activity Forecasts :	6
5.1 SACL Predicted Movement and Passenger Growth Rates - Sections 5.1 - 5.6:	6
5.2 2029 Representative "Busy Day" Forecast Section 5.7 - (PDMP Figure.5.7 , p. 52)	8
6 Land Use Zoning - S. 12 pp. 99 - 107:	10
6.1 Infrastructure Crowding:	
7 AIRSPACE PROTECTION (And Safety in General) :	11
7.1 Airspace Protection and Air Safety in General - Section 13 , p. 117 :	
8 Environmental Management :	12
8.1 Section 14 .1 Environmental Management - Environment Strategy	12
8.2 Section 14.2.1 Aircraft Noise and Mitigation Strategies pp. 135 - 140:	
(i) Regulatory Background:	
(ii) Noise - What has the Airport done?	13
8.3 Section 14.2.1 Aircraft Noise Descriptors other than Metrics - Pictorial -	15
8.4 Section 14.2.1 Aircraft Noise Descriptors other than Metrics - The "N70"	17
8.5 Section 14.2.1 "Noise Descriptors" - ANEI/ ANEF Distributions - PDMP S. 14.2.1, Figures. 14.5 - 14.9:	18
8.6 Noise Affection Analysis - The Cost of ANEF Creep 2023 cf. 2029:	18
8.7 Section 14.2.1 Environmental Management - Insulation p. 138 :	19
8.8 A Proposed Better Noise Descriptor than "N70" - The Equivalent Fiduciary LA max	20
9. Aircraft Noise Critique Summary and Conclusions:	22

APPENDICES

- A. The Cost of Sydney Airport's Master Plan

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SYNOPSIS

The prediction of 427000 aircraft movements per annum to service 79 million passengers and 1 million tonnes of freight is RARELY supported by the present international ratios [See Section 5] . The Year 2007 ratio of 102 passengers per movement would require a hypothetical 774510 aircraft movements to produce 79 million passengers per annum.

This is totally beyond the practical capacity of KSA, given necessary environmental constraints. If the forecast 79 million passengers per year holds up in practice for Sydney Airport , the environmental consequence for Sydney of 774510 movements - a number consistent with current overseas experience - should the assumption of continually rising passengers per movement prove unjustified, will only worsen the current environmental nightmare for the residents of Sydney . Such an achievement would likely be possible only with twenty-four hour operations, or a radical rethink of the traffic mix between international and domestic flows.

The biggest problem with both this and the 2004 master plans is that there is no effective attempt in either plan to communicate to residential neighbours and property owners the magnitude of the likely environmental consequences from either noise or pollution growth . Even the "N70" , ANEF and ANEI charts provided for MP2009 do not possess street outline grids enabling the community to visualise how they will be affected.

This critique reveals that with the ANEF projections for 2029 put forward by this airport lessee company (ALC), approximately an additional 2200 homes involving 5300 residents will become affected at the ANEF 30 level by 2029 compared to that in 2001. In between times, from now until 2023-4 , the 2004 Master Plan continues for which the number of additional homes becoming "transiently " affected at the ANEF 30 level will rise to over 5000 , with up to 14000 newly affected at ANEF 25 and 52000 newly affected at ANEF 20 [See Para 8.6] .

Similarly by 2029 the increased numbers of dwellings affected at the 25 and 20 ANEF levels will range from 7500 to 26000, respectively, making a total of over 51,000 additional "newly affected" homes involving nearly 120,000 residents! On the ANEFs provided , the total additional insulation cost for new homes affected at the 30 ANEF level would be around \$300 million. For insulation of all new homes affected above the 25 ANEF level the cost would be in the region of \$3.75 billion!

The presented figures for 2029 are close to HALF what they were for the July 2003 Draft Master Plan for the period to 2023. The reductions of ANEF contour coverage, as claimed , are attributable to "*quieter aircraft*" and an unstated but necessary "epiphany" on the part of that well-known supporter of aviation interests, Airservices Australia [ASA] . Perhaps , uncharacteristically, ASA has finally agreed to get its head around and promised to introduce remarkably people-friendly noise abatement departures takeoffs over residents, with a lead time of another 20 years, and despite opposition from well-known airlines. It must be hoped so, or the ANEFs currently cited by the ALC will be blown away. Some of the ANEFs in the figures appear hand-drawn, and appear certainly carefully, yet craftily calculated to produce the promoted 50% -less impact than shown for the 2023 projections in the 2004 Master Plan. Of course this does not reflect the coming to pass of any forelorn hope one may have had that ultimately Airservices Australia had become a kindly , benign partner with the airport's residential neighbours in noise mitigation, more probably it reflects that with increased traffic flows and endless periods at 80 movements per hour the airport will be reverting to **PARALLEL FLOWS**.

Even so, the environmental harm is massive compared to, say , the impact of the third runway (an additional 2200 homes at ANEF 30 and 75000 at ANEF 25 compared to the 2001 ANEI - and double those figures if the 2023 ANEF is proven to be right). Yet, the airport lessee company presents these significant environmental data (Derived from their own and ASA's ANEFs) without other than "formal" explanation, and without regard to its obligations to "**assess and plan for**" the consequences of the projected environmental impacts as required under the planning obligations created by S. 71(2) of the Airports Act. There is no indication of what the airport company is doing "**to plan for**" the increased noise exposure of its neighbours other than to rely on the intermittent good offices of the Federal Government for the provision of noise insulation, which in turn can be a mixed blessing for many.

For a Master Plan , the Airports Act requires a statement as to what "the airport lessee company" intends to do about impact amelioration and prevention [S. 71(2)]. Instead we are again presented with SACF's expectation that Sydney Airport will be given a free ride at the flying -public and taxpayer's expense to ride roughshod over the environmental interests of the ground-bound public, whose homes all across Sydney at present lie under the noisiest and lowest departure flight path ceiling of any since Sydney Airport began !

This is a plan for environmental urban vandalism on a scale not seen from Sydney Airport since the opening of the third runway, and publication of Master Plan version 2004. It should not be tolerated by the Minister or Ministers responsible , who in this view would be justified in seeking a full environmental impact statement (EIS) with fully independent specialist review, and full opportunities for community consultation at public venues once the true impacts are made known.

The Minister(s) would be ill-advised to provide a mere perfunctory assessment and kindly nod to this proposal. If either or both fail in this regard, the eventual cost to the affected Sydney Communities will be immense . The Government in turn should make airport lessee corporations and supporting agencies liable in tort for the community harm which will result from the proposed expansion of Kingsford Smith Airport given the minimal environmental assessment which is presented.

The **"LTOP - noise share" Plan** behind which this airport lessee company hides for environmental justification has been hijacked and misdirected away from the original goals set by then Minister for Transport Sharp. As evolved the LTOP is not a plan which maximises movements over water as promised. It is a plan which instead maximises aircraft movements, takeoffs, noise and crash-risk over the most heavily populated residential areas of Sydney. Not only does it maximise movements and takeoffs over residential areas, but it maximises the use of low-altitude high noise impact flight path trajectories for both arrivals and departures in the most unconscionable way. Yet this has never been the LTOP plan as promised by Aiservices Australia and approved by Sharp. This is both harmful to Sydney residents and inconvenient for airlines which use more fuel through failure to reach cruising altitude in optimal time.

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1. Re. Disclaimer (p. (i)):

We note with irony that once again SACL "*accepts no liability whatsoever to any person who relies in any way on any information contained in the Master Plan*".

Comment: This is a totally unacceptable introduction for a document prepared by a Public Corporation in response to a regulatory requirement to submit its statement of future plans with statements concerning environmental mitigation. Given that the human environmental impacts of the proposed expansion of airport use are impliedly immense, though inadequately presented in the document, we suggest that this Disclaimer be removed in the final Master Plan for submission to the Minister, otherwise the Minister (s) should seek legal advice as to whether it would be advisable for them to grant approval. If the man-in-the-street cannot "rely" on the information provided, how can a Minister of the Crown be honestly expected to do so?

2 Summary:

2.1 Summary: - Regulatory and Policy Settings (p. 2)

Whilst it is accepted that the corporation comes to its task lumbered with a set of flight path plans which *do not comply* with the Minister for Transport's Directive to Airservices Australia of March 1996, viz. "to maximise movement over water and non-residential areas" [John Sharp 20 March 1996], this does not absolve it from the responsibility to ensure that its proposed growth does not lead it to breach common-law requirements not to harm its neighbours.

Blindly continuing to consent to use of existing flight paths, when these are known to be causing increasing harm to the health and welfare of its community stakeholders, makes it legally complicit in inflicting the resulting harm, and therefore potentially legally liable for damages. Moreover a serious question arises whether this 2009 Master Plan, with its forecast ANEFs, and ANEF bulge, could in fact result from continued operation of existing flight paths. This question arises from the very significant difference between the MP 2004 ANEF projections for 2023-4 and those for 2029 presented here. The promise to continue "**noise sharing**", for example, will by 2014 at the latest have been thrown out the window.

2.2 Summary: - Forecasts (p. 2)

These aircraft movement forecasts fall below the "**whole of Sydney Basin**" forecasts from the Department of Transport as provided to PPK for the Badgerys Creek EIS, ie 480,000 +/- 60,000 movements and 49m +/- 9m passengers. But see also comments as to uncertainty of predictions at Para 5 below.

2.3. Summary: - Environment Management (p. 3)

This area is perhaps better covered than in the 2004 Master Plan, but it is interesting how the environmental emphasis can be quietly shifted to a semblance of concern for the amelioration of climate change, while the most immediate human environment factor for most surrounding residents is "NOISE", and for some airborne chemical and particulate pollution. This is not to say that invisible effects are not important, and some emphasis on quantifying and reducing "invisible" pollutants such as NOx and Particulates is to be applauded.

3. Introduction :

3.1 Section 1.4 Introduction - Vision

It is observed that *"to be a world-class airport management company"*^{#1} is not necessarily consistent with earlier "Strategy"-stated objectives of *"acting as a good neighbour and [undertaking] reasonable and practicable actions to prevent or minimise environmental impacts from the Airport"* and "to become world class in managing airport environmental issues"^{#2}. The PDMP does not properly address the essential and probably unresolvable conflict between the goal of *"creating long-term value for SACL and its stakeholders"* [para 1] and *"strike the right balance between the economic and employment benefits of the airport and the environmental impacts of the airport."* [dot-point 4]. Notably the latter phraseology has been "distilled" from the more succinct but only quasi-achievable:

"achieving an equitable balance between the economic benefits of growth, and the social and environmental impacts of growth." [Author's emphasis]

existing in the 2004 Master Plan.

3.2 Section 1.6 Introduction - Development Objectives

The PDMP does not adequately address the inherent conflict between *"being a business, accepted as a responsible and valued member of the community"* [dot point 2] and *"operating the airport in a an environmentally and responsible manner which addresses climate change and aircraft noise impacts."* [dot point 3].

SACF Inc believes that Sydney Airport *has not been* an environmentally responsible airport for at least a decade now, and therefore cannot *"continue to be"*. If the airport cannot, because of government legislation, take ultimate responsibility for the environmental consequences of its growth, then its environmental conscience is shackled, and SACL will fail in achieving these stated objectives.

3.3 Section 1.8 Statutory Requirements Introduction -Airports Act:

The Corporation dutifully recites that the plan must *"include forecasts relating to noise exposure levels and the "ALC's" plans following consultation, for managing aircraft noise intrusion above significant Australian [sic] Exposure Noise Forecast (ANEF) levels* [dot point 6]; and *"assess environmental issues and the ALC's plans for managing these issues."* [dot point 7].

Whilst PDMP-09 produces purported ANEF contours for the years 2023 and 2029 and compares these with calculated ANEI's for the year 2007 [PDMP Figure 14.5 -14.6], it fails as follows:

- (a) There are no street and suburb layouts on the plans to enable the community to judge the extent to which their areas will be affected by aircraft noise. These are usually available on Airservices ANEI & ANEF charts.
- (b) It provides no plans whatsoever for ameliorating or preventing noise intrusion above significant or conditionally acceptable ANEF levels, or evidence of having *"assessed environmental issues and the ALC's plans for managing"* them. Nor does it state what it considers to be "significant" ANEF levels. A further analysis of this problem is conducted in this critique at Paragraph 8 ff with reference to the example *Noise Affection Analysis submitted by SACF Inc* in para 8.6 and Appendix "A" [This Critique].

¹ PDMP p. 16
² "Strategy - 1999" p. F-i

4 Statutory and Policy Framework :

4.1 Section 3.4 (3.3 in Index) Statutory and Policy Framework - "Noise Sharing"

The term **"noise sharing"** may conjure up what was put forward as a grand scheme to implement the long term operating system [LTOP] as the key to mitigating the impacts of both the third runway and airport future growth up to 360,000 aircraft movements per annum. LTOP was in fact a lot more than merely "noise sharing." With its **"high and wide"** component, it was supposed to be taking away the noise.

Whilst citing the maintaining "Noise Sharing" as a key element of the proposed Master Plan, SACL is entrenching the environmental health and welfare detriments of Sydney Airport in the worst possible way , by ignoring the failure of Airservices Long Term Operating Plan for Sydney (Kingsford Smith) Airport, 1996 the **LTOP**.

As ultimate driver for traffic capacity maximisation at KSA, SACL must investigate and justify why important environmental goals enshrined in LTOP were rejected by Airservices Australia ^{#3}. It is the moral if not statutory environmental duty of SACL to ensure that environmental impact minimisation is achieved by Airservices Australia, because SACL benefits most from the commercial advantages extracted from airport expansion at the expense of Sydney's residents.

As implemented to-date the LTOP **has utterly failed** in two of it most important and ministerially ordained goals:

- (a) **"maximum use is to be made of flightpaths over water and non-residential areas" and**
[Minister Sharp 20/3/1996] ;
- (b) **"that noise abatement procedures for runway selection be optimised to facilitate the equitable distribution of the noise generated by the Airport ..."**
[Minister Sharp 24/5/1996]

The latter (b) was summarised in the LTOP Summary report in the following terms :

- (c) **"Where it is not possible for flight paths to be over water, the objective is to operate the airport to ensure that the overflight of residential areas is minimised and that noise arising from such flights is fairly shared"**
[LTOP Summary Report Dec. 1996 , p. 10]

The full set of LTOP goals are not as stated in this section of the "Master Plan."

The LTOP was hijacked early on from its original goals and movements never were and are not now proposed to be maximised over water, nor were noise-minimised flight paths designed for residential areas so as to share **only the unavoidable overland noise** over residents equitably ^{#4}.

The use of Runway 34R for takeoffs to the north with dangerous acute right turns over the east have been continued even since the **Government SACF 's Airplan Review of LTOP** (2004) ^{#5} made the point that they were dangerous due to wind -shear (velocity gradient effects) from Coogee escarpment.

Moreover, Low-Noise-Optimised Noise Abatement Departure Protocols [NADP's - Steep Takeoffs type] , ministerially requested for takeoffs over residential areas in August 1998 ^{#6} , and repeated in September 2007, have yet to be implemented in optimal form ^{#7} . There is also an abundance of low-altitude turn-requirements close-in which create unnecessary noise nuisance for residents - some of which, admittedly, were part of the original LTOP.

³ Airservices Australia formally renounced the goals of achieving LTOP according to the "The LTOP Reports 1996" in a submission to then Transport Minister Anderson in a document not tabled at the Government SACF which culminated from meetings of a so-called "Task Force 2". While it stated that "LTOP" with its "High and Wide" approach and departure tracks could be achieved, it claimed that "increased fuel costs to airlines" would negate any benefits achieved environmentally. Meanwhile it has intermittently pursued the design of revised flight paths for Sydney in programs being developed by a so-called "Task Force 3": See "Implementation of the Sydney Long Term Operating Plan (LTOP H & W) High and Wide Flight Paths." Airservices Australia SY DOC No. 125_TC_R_N_1 Feb. 2003, SACF Doc 2006-046.

⁴ LTOP Summary Report Dec. 1996, p. 104 Airservices Australia.

⁵ Airplan Review of LTOP (2004), s. 5.7 p. 42.

⁶ Vaile - 28 August 1998 ; T159/98.

⁷ Govt SACF Doc. 2007-022, "Supporting Data for SACF Noise Abatement Departure Protocol Discussion." P.S. Lingard March 2006.

Even the hijacked goals of the defective LTOP embodied a directional movement target regime of 17% North, 55 % South 15% West and 13 % East ^{#8}. Even these targets were not achieved, and this requirement was dropped from its Master Plans by SACL since the 2004 [See Table 3, this SACF Inc Critique].

In no LTOP planning was the Ministerial Directive to maximise movements over water given sufficient consideration by the LTOP Task Force (s) or since then by the government SACF, so as to ensure that the original LTOP Modes 2 and 3, which have the capacity to enable as much as 85% movements over water, were retained in the Proponent Statement.

No remedy is suggested for these failures to comply with the LTOP principles in this Preliminary Draft Master Plan.

Moreover, the LTOP was not subjected to the rigours of undergoing an Environmental Impact Statement, as would be required today under the Environmental Impact (Biodiversity and Conservation) Act. The environmental clearance given (by Senator Hill as then Environment Minister), was conditional on the achievement of strict monitoring and surveillance and in particular:

"noise insulation should be provided for households and institutions which will be affected through the implementation of the Long-term Operating Plan and fall within the criteria for financial assistance."

[Hill Media Release, 24 July 1997, 88/97]

Noise Levy collection was ended in July 2007 by the previous government, despite both this organisation (SACF Inc) and the NSW Government having pointed out in their responses to the 2004 Master Plan that new areas were becoming affected, and some severely.

Where is the SACL's proposals for the implementation and/or continuation of the provision of noise insulation for affected residences as the Noise contours spread inexorably further inland across residential Sydney? Can SACL continue to hide behind the veil of government tort immunity?

4.2 Section 3.7 Statutory and Policy Framework - "Second Sydney Airport":

The discussion is incomplete as there is no reference to alternative airport sites apart from Badgerys Creek and Richmond. Relevant important sites considered in the Kinhill-Stearnes 1985 EIS, which achieved higher human-impact environmental clearance than Badgerys Creek, and which with more modern transport systems are now potentially within 30 minutes of Sydney CBD include Wilton, and Darkes Forest.

- (a) *SACF Inc does not believe that Sydney Basin air-traffic can be catered for in an environmentally responsible way, having regard to the health and welfare of the citizens of Sydney without an additional primary airport at all. SACF Inc believes that it would be detrimental to the human environment to place any additional airport "in the Sydney Basin", and that there should be a "new and/or replacement airport outside the Sydney basin" ^{#9}.*

5. Aviation Activity Forecasts :

5.1 SACL Predicted Movement and Passenger Growth Rates - Sections 5.1 - 5.6:

Passengers: 4.2% per annum ; Movements: 2.% per annum

Of particular concern to the communities surrounding the Airport is the growth in aircraft movements, the manner they fly, and the noise level they make.

Growth rates used by SACL in this DMP are only slightly greater than those used in the 2004 Master Plan.

A major assumption was made in **Master Plan 2004** that aviation movement and passenger throughputs would not recover from the "9/11" World Trade Centre effect. Well, it has.

The historic growth in passengers from 1992/93 to 1999/2000 was 5.9 % per year for seven years. Including the Sydney Olympic year (2000/01) resulted in an annual average growth of around 7.35% over 8 years. **Master Plan 2009** shows there has been a 32% increase in passenger movements since 2002 [PDMP Figure.5.1] which is over 6% per year, while the movement total appears plateaued at ca. 280000/annum [PDMP Fig.5.1]. Yet planning for passenger movement growth is only being projected at 4.2%!

⁸ Sharp - 29 May 1997, TR 72/97

⁹ "The Way Forward from Sydney's Airports Quagmire," SACF Inc July 1999.

Another assumption is that of this plan is that larger wider bodied aircraft such as the Airbus A 380 will replace the current fleet of passenger aircraft progressively over time between now and 2029.

One may agree with this conclusion, but there is no analysis showing if, as current aircraft are approaching capacity, there will be a movement bulge, or an immediate transition to larger capacity aircraft. Given current passenger demand and the economic downturn, extensive wider body introduction may be delayed, leading to a significant **"movement bulge"** after the end of the current "economic crisis."

There is also no analysis of whether the airport will have reached its ultimate environment-limited capacity [said to have been ca. 360,000 movements in the LTOP Reports, Dec. 1996 - See also ^{#10}] before 2023, or 2029? If a movements figure of 360,000 applies, then airport capacity will be reached by 2014 [MP 2009 PDMP Figure 5.6 - a mere five years away! The Minister should therefore be ultra-cautious in giving this un plan the guernsey to 2029, or even 2023!

The historic growth in movements from 1992/93 to 1999/00 was 3.0 % per year for seven years. Including the Olympic year (2000/01) resulted in annual average growth in movements of around 4.5% over 8 years. Nevertheless, the annual average growth with 2001/02 [the "9/11" year] was only 0.95% over 9 years as against the 2% predicted here.

Department of Transport "whole of Sydney Basin" forecasts provided to PPK for the 1998 Badgerys Creek EIS to 2021-2 were for 480,000 +/- 60,000 movements, ie +/- 12.5% ^{#11}. Corresponding passenger movements were stated to be 49.1 million as against a figure of 68 million for 2023 in Master Plan 2004.

This Draft Master Plan provides no indication of the error margin on its growth predictions. To comply with the Master Plan requirements of the Airports Act, the consequences of such errors, and any projected **"movement bulge"**, caused by growing pains, must be expressed in terms of the environmental and health and welfare and noise insulation cost for affected Sydney residents.

Whilst the SACL movement forecast of 427,000 *may be* correct for 2029, there is explanation provided for the apparent reduction in noise affectation in the stated ANEFS is the movement to lower-noise wider-bodied aircraft - and the geographic spread of movements. This is indicated by the changing ANEF between 2023 to 2029 in the ANEF data of PDMP Figure. 14.5. This conclusion is probably suspect because only the international segment is likely to be greatly affected by the introduction of the A380. Also there is VERY WIDE variation in passenger/freight -movement ratios among airports around the world (See Table 1).

The major assumption of the Master Plan is that penetration of Extra Large Wide Bodied jets - "ELWB's" will significantly reduce, both international and domestic movements. At this time (December 2008), ELWB's - are only barely "creeping" into service after several years of delay. Moreover, the existing fleet will not disappear overnight. It is therefore misleading to employ ELWB passenger capacity for the entire projection to 2029. In any event the predicted capacity of a current model A380's is only around 550 ^{#12}. On current aircraft specifications this value is only 6.6 % greater than the largest capacity B747 available today ^{#13}.

The uncertainty of the assumptions behind the targets is further highlighted by comparison with contemporary world airport passenger / movement statistics as listed in Table 1 of this SACF Inc critique.

All airports currently operating with an annual passenger movement number comparable to Sydney airports company 's 2029 goal of around 79 million passengers per annum show aircraft movements currently exceeding the Sydney 2023 and 2029 predictions [Range 477,000 (Heathrow) to 976,000 (Atlanta)]. The annualised ratio of passengers per movement varies widely [53 at Vancouver to 331 at Tokyo (Narita) in 2005].

The predicted aircraft movement rate for Sydney in 2029 is 427,000 / annum. Similar airports include Atlanta (976447 movements; 85 m passengers), Chicago (958643 movements; 77 million passengers), Los Angeles

¹⁰ G. Nero and J. Black (2000) A critical examination of an airport noise and an aircraft noise charge, Transportation Research Part D5, 433-461, at 441, Table 9

¹¹ Environmental Impact Statement (1999), Second Sydney Airport, Supplement to Draft Vol. 3, Chapt 4.3.3, p. 4-5, DOTRS July 1998, PPK

¹² Clayton, G. (1997) "Battle for the airways", New Scientist, 17 May, p. 43.

¹³ Janes Aircraft Recognition Guide (1995) Harper Collins, p. 235 - B747 Passenger Capacity 516.

(656842 movements; 61 million passengers) and London Heathrow (477,000 movements; 67 million passengers). The major international hub of Tokyo -Narita already achieves passenger movement rates (31.3 million) comparable to those now at KSA with significantly fewer aircraft (95,000) , but without "new larger aircraft" . However, this may be because most aircraft using Narita are of the current international high capacity wide body types. Narita has the highest Passenger per movement ratio of 331 as a *predominantly* international airport , which Sydney is not.

Airports such as Atlanta, Chicago and Los Angeles (which have a wide variety of traffic), show larger aircraft movement numbers for the same passenger throughput, than , say Heathrow, because of the wider variety of aircraft types (eg. General Aviation, Regional and Commuter) which use them . For example, when Military, General Aviation and Air Taxi traffic is subtracted from the Los Angeles figures (where this data is readily available) the number of large transport movements reduces to 524,014. This, however, is still much greater than that expected by the Sydney airport lessee company for comparable passenger movements in either 2023 or 2029.

Reported freight tonnages per movement also vary widely, ie. from 0.69 (Vancouver) to 12.89 (Hong Kong) tonnes/movement. The average tonnage per movement for the 20 airports is about twice the current tonnage moved by Sydney [3.5, cf. 1.69 per movement].

This analysis suggests that the goals of Sydney Aiport , with its landlocked status on all sides but one and, surrounded as it is by heavily populated residential areas on every other, seem over ambitious . Given the predominance of essentially domestic traffic at KSA, and the likelihood that the Australian population is unlikely to double in 20 years , the sought-for traffic growth may not materialise. If it does, however, or reach today's movement rates for Chicago and Los Angeles, Sydney's skies will be swamped and the already horrendous predictions of ANEF- creep and increased movement affectation in Section. 14.2.1 , p. 135 Figures 14.5-9) .

Similarly, the predicted movement of freight transport to and from KSA is limited due to the limited nature of its connecting road and rail corridors , every one of them thrombosed to stagnation during peak traffic hours, even after the construction of the M5- East. Without wholesale demolition of Sydney's residential hinterland it seems unlikely that the KSA will be able to achieve anything like the freight movement efficiency of 2.5 tonnes/movement which is forecast in this PDMP [$1077000 / 427000 = 2.52$] . The lessee company must explain its solution to these problems before the Minister (s) approve this PDMP.

This PDMP does not reconcile its targets with what is compatible with maintenance of "noise sharing" (ie LTOP) when the LTOP proponents statement projects it as being good only up to 360,000 movements . Indeed, there is substantiated evidence for a slot-capacity practical capacity limit at Sydney (Kingsford Smith) Airport of around 353, 000 movements. # 14

Hence SACL needs to rethink its return on investment calculations, although this will not reduce the environmental danger of permitting it to test the limits.

5.2 2029 Representative "Busy Day" Forecast Section 5.7 - (PDMP Fig.5.7 , p. 52)

S. 71(2) (e) to (f) of the Act obliges the airport company's plans for amelioration and prevention of such environmental effects, although none are stated anywhere in this defective "master plan".

There is no description of how the experience of 80 movements per hour for between four and six hours at a time will affect hapless residents under the flight paths ; and no admission of the cessation of "noise sharing" and reversion to " parallels" by 2029 or its projected human impacts , nor any real acknowledgment the environmental limits to airport capacity. .

The 2004 *Govt SACF Airplan Review*^{#15} (seeking opportunities to extend noise-sharing) , showed that the airport was then practically out of time. The Sydney 2000 Olympic experience of 900 -1100 movements per day completely saturated available slots with its effective annualised 328, 500 - 401, 500 movements/annum^{#16} [Sydney's North West was spared the brunt of this during the Olympics by airspace restrictions for the games].

¹⁴ G. Nero and J. Black (2000) *ibid*

¹⁵ SACF Long Term Operating Plan "Review of LTOP Performance Report", Airplan, March 2005.

¹⁶ Govt SACF Meeting Notes 7/7/2000, per J. Alroe, SACL

TABLE 1 - AIRPORT MOVEMENTS BY AIRCRAFT , PASSENGERS & FREIGHT CA. 2006

AIRPORT	MOVEMENTS	PASSENGERS	FREIGHT	RATIOS	RATIOS	
	AIRCRAFT	MILLIONS	KILOTONNES	PASS/MOVT	FREIGHT Tonnes /movement	
				P/Mvt	Tonnes/Mvt	Notes
ATLANTA (O6)	976,447	84.8	746.5	86.85	0.76	#1
CHICAGO (06)	958,643	77	1,546.1	80.32	1.61	#1
LOS ANGELES (06)	656,842	61	1,907.5	92.87	2.9	
LOS ANGELES (01)	738,433	61.6	2,064	83.42	2.8	#2
LOS ANGELES (97)	781,492	60.1	2,064	76.9	2.64	#1
HEATHROW (06)	477,000	67.3	263.1	141.09	0.55	#1
FRANKFURT (06)	489,406	52.8	2,127.7	107.89	4.35	#1
PARIS (cdg) -97	402,713	35.3	954	87.66	2.37	#1
PARIS (cdg) -06	541,566	56.9	2,130.7	105.07	3.93	#1
PARIS (orly) -96	251,234	27.4	246	109.06	0.98	#1
HONG KONG	280,000	43.9	3,610	156.79	12.89	#1
BANGKOK (00)	280,216	29.6	865	105.63	3.09	#1
NEW YORK (JFK)	378,389	43.8	1,636	115.75	4.32	#2
SINGAPORE (01)	179,359	28.1	1,637	156.67	9.13	#1
SINGAPORE (06)	214,000	35	1,911	163.55	8.93	#1
TOKYO (NARITA) -01	129,000	25.4	1,604	196.9	12.43	#1
TOKYO (NARITA) -05	94,548	31.29	2,291	330.94	24.23	#1
SYDNEY -07	258,700	31.9	471	123.31	1.82	#3#4
MUNICH (01)	411,335	30.8	NA	74.88	NA	#1
BRUSSELS (00)	326,050	21.6	687	66.25	2.11	#1
MANCHESTER (00)	181,000	19.6	113	108.29	0.62	#1#4
MELBOURNE (01)	180,200	22.5	356.5	124.86	1.98	#2
VANCOUVER (99)	367,249	15.8	290	43.02	0.79	#1
VANCOUVER (02)	296,626	15.1	235	50.91	0.79	#1
VANCOUVER (07)	328,563	17.5	226	53.26	0.69	#1
AVERAGES	407,160.44	39.84	1,199.28	113.69	4.27	
STANDARD DEVIATIONS	240,263.83	19.57	914.12	57.64	5.39	
#1 A~Z World Airports Online http://www.azworldairports.com/index.htm #2 Individual Airport Data #3 Sydney Airport Preliminary Draft Master Plan #4 No Current Data Readily Available						

The environmental impact of the resulting traffic increase (shown in Table 2, below) for the residential hinterland of Sydney would be horrendous. Most of this will consist of aircraft flying over existing residential areas which will become progressively "newly-affected" as the "Plan" advances and the environmental impact liability consequences of the proposal must be honestly and accurately analysed and addressed by this airport lessee corporation (or its aviation backers) for it to comply with s 71(2) of the Act.

The claim on PDMP p. 47 and elsewhere that Sydney Airport can "*sustainably*" accommodate all likely growth for a further 20 years is not supported by the facts, or one may ask : "*for whom?*" Aircraft takeoffs and landings are planned to operate at 80 per hour continuously from before 8am right through to 10:30 am noon on this PDMP 2009 [PDMP Figure 5.7].

Inexplicably, the morning peak in this Master Plan projection is at least two hours shorter than that portrayed for 2023-4 in PDMP 2004 where the absolute peak extended from before 08:00 through to at least 12:30 am.

"*Peaking*" currently occurs from before 06:30 am through to 08:30 am and there is already a significant potential "curfew-breaching shoulder" period for part of the year between 05:00 and 06:00 am.

Queuing theory shows that even with well-regulated slot allocations, there will be both terminal and arrival delays, with resultant "*bunching*" causing traffic-flow plugs, and the "distributions" in fact represent a notional rather than absolute cap. The closer planned movements are to the movement cap, the worse this will become. This is because the normal problems that occur every day or month will cause unacceptable delays due to the terminal- and in-flight- queuing space being insufficient for more than twenty planes to maintain the cap over the continuous 4 hour period. Planes simply cannot routinely queue for hours on end to gain access to a runway!

The cost of *insufficient* airport capacity is about ten times the cost of having a little extra capacity which is underutilised. Such planning is normally done with scenarios which reflect about $\frac{3}{4}$ of a standard deviation above the mean. In some cases this is done by having high, low and mean volume projections, and doing the capacity planning for the higher end of the range of estimates. All that the PDMP shows is that, if airports ran like clockwork, AND aircraft flew on railway lines, AND growth in aviation is only very moderate over the coming decades, AND airlines all move to larger capacity planes, then KSA would be precisely choking in 20 years.

If aviation grows even slightly faster than predicted, airlines do not upgrade uniformly to larger planes or there is a day busier than the 95% percentile, the one additional plane approaching the airport at 8am will cause a backlog through to noon, and any hiccup in operations will cause waiting times to blow out to such an extent that planes will have to be diverted to Canberra to land before running out of fuel.

It has already been observed that "movement cap" exceedances can occur due to mis-scheduling of long-haul arrivals due to overnight delays in the early morning period which result in carry-overs to subsequent slot hours. These exceedances resulted in "actual movements" reaching as much as 90 /hour between March and May 2001¹⁷. Unless accommodated, such carry-overs cause resulting queuing problems in later hours which result in later exceedances etc. With the ambitious slot-scheduling forecast for 2029 and 2023, it is possible to foresee areal log-jams being created of unprecedented proportions._

6 Land Use Zoning - S. 12 pp. 99 - 107:

6.1 Infrastructure Crowding:

There is too much "Crowding In" of the runways at KSA, as if every square metre must generate a return. Yet a fundamental safety mantra for airports is that planes overshooting runways should not encounter any significant obstacles (especially building containing people), and even veering off a runway should not create a major crash opportunity.

The Southern Cross Drive overpass already encroaches the safety zone for the East-West runway's eastern end. The proposed "mixed-use" business areas Mixed Uses 1 & 2 also increase the crash accident damage risk for third parties and business operators, not to mention the occupants of overrunning aircraft at the north end of

¹⁷

Government SACF Minutes, 15/6/2001

runway 16L/34R. The airport lessee company's proposal to abandon such 'safety-first' principles in favour of 'commerce first' priorities, will be to the detriment of safety when measured over any reasonable period.

Similarly, the building of a new high-density freight facility right on the runway end of the main long north-south runway 16R/34L shows a gross lack of concern for safety and on-site worker health. If even an existing long haul plane failed to gain altitude, instead of finding open land immediately across the Alexandria canal, it will in future crash into a multi-storey super-market, carpark or freight complex built on land which was previously clear because it is right under final approach and just after runway clearance on takeoff.

Moreover, it is simply hypocritical for SACL to seek to build in such super-high ANEF zones, when all manner of neighbours for kilometres around are prevented from building the types of structures they would like to build on their own land, simply because of the airport's activities. The airport lessee company refers to the possibility of being required to meet state planning laws, though not currently required due to the Airports Act [PDMP S. 12.1], but SACL is required to comply with normal EP+A Act and Council requirements in respect of its proposals on the privately-owned land outside the airport perimeter.

Accordingly, local Councils and the Land and Environment Court would be advised to refuse permission for large-scale airport-related developments close to the airport site. There is a **'duty of care'** that both SACL and the Councils owe to SACL's employees, SACL's tenant's and freight lessees' employees, contractors etc, as well as invitees who will attend as freight forwarders, truck drivers, tradespeople, customs staff, quarantine staff, art gallery staff, and all the other manner of people who presently visit the freight facility.

None of these people ever agreed to take on additional risks from death through to deafness due to relocation of the SACL freight facility to the very end of the longest runway. Given the projected growth in air traffic and ANEF for the site this is madness. The Local Councils' role as consent authorities for such developments should be to protect the public interest, per the NSW EP+A act. The existing freight facility is a mix of commercial offices with light industrial use (ie no heavy forges or stamping equipment) - clearly the 120dB+ events of 747s taking off just metres over workers and their invitees will be the noisiest events they will encounter in the working day creating a potential Workcover issue.

So new freight facilities should not be allowed near runway ends. Indeed, the point is made well on PDMP p139 that AS 2021-2000 states: *"In no case should new development take place in greenfield sites deemed unacceptable because such development may impact airport operations."*

Further, the above deals only with the noise aspects. The fact that 747s taking off just metres above the heads of such workers and guests also means that this site would be the most dangerous for airborne hydrocarbons, including NOx and SOx with 5% of Sydney Basin's generation of such substances. It would be grossly irresponsible to permit people to work or visit for work purposes a site just metres below flying 'kerosene sprinklers' because of its effect on human health. These are now more appropriately dealt with in Section 14.2.3 (p.142), but the implications for human resources need to be spelt out.

It is well recognised that aircraft exhaust include toxic byproducts and known carcinogens. Thus if additional freight and/or business centre construction is permitted, the airport lessee company and Local Councils might be subject to expensive law suits for one bad planning decision.

SACL now admits that airfreight handling capability is nearing capacity (PDMP Section 8.5, p. 74) which should foreshadow the nemesis of the Master Plan. It shows that the existing airport in this location cannot handle the freight requirements up to 2.5 tonnes/ movement planned by SACL through 2029.

7 AIRSPACE PROTECTION (And Safety in General) :

7.1 Airspace Protection and Air Safety in General - Section 13, p. 117 :

The PDMP Section 13 deals with safety aspects of airspace protection from penetrating obstacles (ie tall buildings) surrounding Sydney Airport. However, it fails to point out that CASA has never carried out the Safety Audit for the flight paths required in the LTOP Proponent Statement^{#18}. Both the Design and the Audit of the LTOP were carried out solely by Airservices Australia, when heavily influenced in execution by "community" and "political" pressures. In August 1998 the Bureau of Air Safety Investigation [BASI] criticised the high dependence of LTOP (as implemented) on crossing low-altitude, minimal-separation arrival and

¹⁸ LTOP Proponents Statement Para 3.6, p. 3-32.

departure flight paths ^{# 19} . Since then there has been minimal consideration of flight path safety from a design perspective.

The 1998 BASI investigation revealed safety deficiencies due to "separation assurance" problems which it claimed were caused by defective management of change, and the rate and complexity of change since 1994 . Three such **"separation occurrences"** ^{# 20} were reported before the investigation and a further three such occurrences took place while it was being carried out.

BASI emphasised the higher level of controller skills required for a "highly structured" airspace environment (such as LTOP in the inner west, north-west and -east) compared with operating in straight-on parallel modes ^{# 21} . It said more controller activity is required to keep aircraft within their respective departure and arrival strata when these cross frequently than when departures can be instructed to climb to cruising altitude as soon as possible, and arrivals can go straight to terminus. It concluded that putting the onus entirely on **".....[air traffic controller management practices] ... in order to effectively reduce the level of risk of an identified hazard to an acceptable level, are not considered to be acceptable mitigation strategies in the light of known human performance limitations."** ^{# 22} .

Although Airservices claimed to have resolved these problems through subsequent organisational change, the inherent hazard of the low-altitude, low-separation crossing flight paths still remains. This is because the originally proposed LTOP "high and wide" , and oceanic-corridor arrival-routes, designed to avoid collision possibilities between departing and arriving aircraft crossing Sydney, have not been implemented ^{# 23} .

Given that Sydney Airport is the largest airport for which CASA has responsibility , one cannot but suspect that CASA has not undertaken the audit promised with LTOP, because its safety shortcomings would be highlighted by a review. The resulting inherent conflict of interest in the past of Airservices role as both designer and auditor of the plan , not to mention having the principal environmental monitoring role , is not what the proponent statement envisaged, nor what the **"Falling on Deaf Ears"** (Parer Review) expected or the community was promised.

This failure to perform its required function means Australia is contravening its international obligations under The Chicago Convention, whereby supposedly independent bodies for air safety are required to prevent the government of the day compromising safety. Apart from the noise impact question being worsened by low-flying, frequently- crossing flight tracks across the Sydney Basin, **this is an important safety issue which must be resolved** as soon as possible. The airport lessee company standing to benefit from air traffic growth at Sydney Airport is now on notice that its plan to maintain the status quo of the LTOP flight paths may also be unsafe.

8 Environmental Management :

8.1 Section 14.1 Environmental Management - Environment Strategy

Sydney Airport's **"Airport Environment Strategies"** ^{# 24} make no undertaking whatsoever for the "management" (whatever that may mean) of downstream aircraft noise impacts, and neither does this Master Plan. A major defect of such Strategies, highlighted by the 1999 Schiphol Benchmarking Study [Appendix "D" of the 1999 AES], was the failure of the airport environmental regulatory system.

This failure is because the aviation/airport regulatory system does not make the promoters of increased traffic flows (SACL) directly responsible for the human health and welfare consequences of the environmental impacts of increased aircraft movements over neighbouring residential zones. Instead it is **Airservices Australia** which is given that responsibility by the Airservices Act Cth. (1995)^{# 25} . This breaks the chain of responsibility. It also means the taxpayer picks up the cost of noise insulation and land acquisitions , where these occur, when it is the polluter who should pay!

¹⁹ BASI Investigation Report B98/90, August 1998.

²⁰ A "Separation Occurrence" is when two aircraft approach closer than 1000 ft vertically or 3NM horizontally.

²¹ BASI Investigation Report B98/90, August 1998, S. 1.3.5 & 1.4.3.

²² BASI Investigation Report B98/90, August 1998, S. 2.4.

²³ LTOP Summary Report , Dec. 1996, p. 89-90.

²⁴ Henceforth "Strategy"

²⁵ Airservices Act Cth. (1995) S. 9(2); s. 8(1) (d) .

Schiphol concluded its report by saying that some of the more important aspects, involving the neighbouring populations, lay outside the airport boundaries, and were poorly addressed, including operational aircraft noise, air pollution from aircraft, external safety risks for third parties and recognition and compensation of environmental damage. It finished stating:

"These subjects would need to be addressed equally well if one aims at becoming the airport with "the worlds best environment management system"."

In neither Master Plans 2004 or 2009, there is no reference to the Schiphol recommendations, nor to the vexed issue of responsibility for downstream aircraft environmental impacts, or any claim to responsibility whatsoever (as cited in the p. (i) Disclaimer)!

Instead the "Strategy" is summarised as if dealing mainly with the consequences of airport operations within the airport boundaries [Section 14.2], whilst presenting down-stream aviation noise data as an incidental bundle of statistics, over which SACL has no control, and cannot accept responsibility.

8.2 Section 14.2.1 Aircraft Noise and Mitigation Strategies pp. 135 - 140:-

(i) Regulatory Background:

The requirements for the Master Plan in connection with Aircraft noise are specified in Section 71 (2) (d) to (g) of Part 5 Division 3 of the Airports Act (1996) Cth., ie:

"(d) forecasts relating to noise exposure levels; and

(e) the airport-lessee company's plans, developed following consultations with the airlines that use the airport and local government bodies in the vicinity of the airport, for managing aircraft noise intrusion in areas forecast to be subject to exposure above the significant ANEF levels; and

(f) the airport-lessee company's assessment of environmental issues that might reasonably be expected to be associated with the implementation of the plan; and

(g) the airport-lessee company's plans for dealing with the environmental issues mentioned in paragraph (f) (including plans for ameliorating or preventing environmental impacts); ..." [S. 71(2) (d) -(g) AA Act 96]

[Author's emphases]

Note: "**Significant ANEF levels**" are defined in the Airports Act (1996) as **ANEF's greater than 30** [S. 5 -Definitions] .

(ii) Noise - What has the Airport done?

At page 135 the Master Plan 2009 begins by stating that aircraft noise has been a longstanding issue, and that it does not make any changes to, *inter alia*, the existing airport curfew, the existing movement cap, or existing aircraft flight paths. By inference it does not even consider any possible changes to flight paths or operating conditions (eg. Noise-Abatement Downwind Condition to favour operations over Botany Bay which might benefit aviation-affected residential populations north of the airport without harming others). Yet by S. 71(2) (d) - (g) SACL must "make forecasts" (d); "make plans for managing aircraft noise in areas above 30 ANEF (e); "make its own assessments of environmental issues which may be associated with the plan" (f); and "make plans for dealing with issues" in subsection (f), including **its plans for ameliorating or preventing environmental impacts (g)**."

Rather SACL prefers to extol the virtues of the newest, largest and potentially the most noisy behemoth ever to use the airport, **the Airbus A 380!** It proclaims the benefits (data attributed to *Airservices Australia* p. 135) of the allegedly lower noise levels of the Ultra-Wide Body A380 than the B747. **However, it fails to observe that such benefits are entirely wasted if A380's continue to be flown at as low or altitudes over residents as the current Boeing 747s!**

What is the benefit of the much heralded 3dB(A) noise reduction if the aircraft flying over houses at 1400 ft [as at Summer Hill or Bexley] is generating 100 dB(A) at ground level and one suffers from Tinnitus [ringing in the ears] which causes severe head pain, and one cannot run fast enough to get away. Or perhaps one suffers from Meniere's Disease [a condition causing pathology of the semicircular canals (The Balance Centre) in the head], which can result in loss of balance, and precipitate falls on exposure to high noise levels! It is one thing

to say (as have staff from Airservices Australia) , such noise levels cannot make you deaf! They're wrong, of course, but what does that matter when it can make one fall and break ones hip!

In achieving aviation outcomes , the interests of the Airport , Airservices Australia and the Airlines are as one, ie to maximise airport throughputs ! SACL is therefore utterly conflicted . There is no independence, and therefore there can be no community trust of any predicted outcomes promoted by it .

The PDMP in Section 3.4 (p. 32) earlier repeated the principles said to underlie the Noise Sharing Flight Paths and at page 136 the so-called "mitigation strategies" used by [the airport] are listed and include several previous government initiatives.

It then states that Sydney Airport "supports" all the above noise mitigation initiatives introduced by the Australian Government such as the curfew, movement cap , property acquisitions (!!!) , provision of acoustic insulation, aircraft type controls, the movement cap, and hours of airport operation [p. 136], compliance with AS2021-2000, and providing Local Government with "significant" ANEFs .

It repeats that it does not "propose" to change any **"noise sharing"** flight paths [p. 137] . Much emphasis is placed on "newer quieter aircraft types" as being the potential saviour of the people from aircraft noise, if not the airport from extinction. In Section 3.4 [p. 32] it states, in the context of Flight Path Management , that these are managed by Airservices Australia and the Sydney Airport Community Forum (government SACF) and the Implementation and Monitoring Committee [IMC].

It says that **Airservices** carries out noise monitoring (which take place mainly on the old north south axis) and runs the Noise and Flight Path Monitoring System (NFPMS). **It has not considered whether the above measures are a success; and moreover has nothing to do with planning or implementing them .**

All this is presented as part of the "milieu" within which Australia's airports operate.

But SACL displays "no ownership" of the so-called "mitigations" and reveals no "assessment" of the environmental impacts , management , amelioration and prevention plans as required by the Airports Act, which S. 71(2) states is "the airport lessee company's" responsibility.

The primary means put in place by Government in 1996-97 for the ameliorating of aircraft noise was LTOP . Whilst laudable in apparent intent ("putting people first" and "fair share noise") , the LTOP "Noise Share" plan has manifestly failed to conform to several of the Minister's principal directives, viz:

- Maximising movements over water;
- Minimising and fairly sharing the unavoidable overland noise; and
- Implementing optimised noise abatement protocols for takeoffs over residents.

As stated earlier (para. 4.1 above) , the LTOP appears to have been hijacked for unstated reasons and deflected from its originally -stated purpose of maximising movements over water, and may be intrinsically unsafe (para 7.1, above).

If the airport lessee company had addressed these crucial primary issues it might not have stated that it proposes no new or altered flight paths in PDMP S. 14.1.2, because it would have recognised that the present situation is environmentally unworkable , unacceptable, unsatisfactory and potentially unsafe.

The identification of flight path changes needed to conform to the original LTOP principles is central to addressing the current environmental and safety problems. Flight path changes are needed which :

- (a) Maximise movements over water and non-residential land;
- (b) Minimise noise over residential areas where overflight is absolutely necessary;
- (c) More fairly share the inevitable (minimised) noise distribution;
- (d) Implement noise-level optimised Noise Abatement Departure Protocols for all residential takeoffs &
- (e) (at minimum) comply with the hijacked LTOP movement targets of 17% north, 55% south, 13% east & 15% west

Minister Sharp's actual prescription was to **maximise movements over water**. This has never been seriously attempted in the "fair share" noise plan.

SACL has not addressed these crucial and important defects in the LTOP . Neither has Airservices Australia , the government SACF or the IMC. This airport corporation relies entirely on third parties and committees for the solution to these problems, when under the Master Plan specification it is the **"airport lessee company's "** responsibility to :

- (i) **assess the environmental issues flowing from implementation of the (master) plan [S. 71(2)(f); &**
- (ii) **deal with these assessed environmental issues in such a way as to ameliorate or prevent their impacts [S. 71(2)(g)]**

[paraphrased]

As the primary commercial driver for airport growth, SACL should therefore assume the primary responsibility for community friendly environmental amelioration and prevention .

It is not sufficient for SACL to set out its long term annual movement targets (79 m passengers, 427,000 aircraft and 1 m tonnes of freight by 2029) without putting forward any means of ameliorating and prevent adverse human impacts which will inevitably result.

8.3 Section 14.2.1 Aircraft Noise Descriptors other than Metrics -Pictorial

The PDMP Figure 14.2 shows the "average daily movements" for each of the LTOP flight path-spreading zones employed today . Using "average days" in such presentations has the same problem for which the ANEF system was criticised by the Senate Select Committee Enquiry into the Third Runway EIS # 26 . It underestimates the effective impacts during actual operational periods. It should be made clear that an "average day" does not represent a "typical day of affectation" when the movements per day which can be from 2 to 4 times the levels indicated depending on runway selection options available the time.

PDMP Figure 14.2 confirms that this Airport Lessee Company has neither intention nor power to comply with the LTOP Movement targets of 17% north, 55% south , 15% east & 13% west.

In PDMP 2004 the movement proportions projected for 2023 show 31% north, 49% south, 6% west and 14% east. These are far from the promised targets of the "fair share" noise plan, yet this airport lessee company provides no comment justification or apology for this whatsoever! The present PDMP 2009 projects movements of 38% north, 49% south, 8% east and 5% west.

Table 2 compares the projected movements and percentage movements for 2023 and 2029 with those for the year 2000.

PDMP Figure 14.2 also illustrates that the original goal of maximising movements over water has not been achieved, and cannot be achieved without some change to flight path availabilities at KSA. Although Airservices Australia is responsible for this debacle , the public has a right to expect the 20 March 1996 Ministerial directive to be carried out!

After all maximising movements over water also minimises potential cost from the need for noise insulation. It also minimises crash risk damage in the manner proposed in the LTOP Proponent Statement, but long since forgotten^{#27}!

²⁶ "Falling on Deaf Ears" - November 1995 - The Parer Committee Report, ISBN 0 642 24416 2, AGPS
²⁷ DOT&RS Proponents Statement Para 3.6 at page 3-32.

TABLE 2 COMPARISON OF MOVEMENTS & PERCENTAGES 2000 , 2023 and 2029

			MOVEMENTS	MOVEMENTS	MOVEMENTS	
<i>Flightpath</i>	<i>Direction Description</i>	<i>Arrivals/Dep or Both</i>	2000 Actual	2023 Forecast	2029 Forecast	% Increase 2023 / 2029
A (North)	Sydenham (B+C)	Both	126 (26%)	284 (31%)	314 (33%)	225 / 249%
B (NW)	Burwood & NW	Dep	55 (11%)	103 (11%)	115 (12%)	87 / 209%
C (North)	Hunters Hill & N	Arrivals	72 (15%)	181 (20%)	200 (21%)	151 / 278%
D (NE)	Double Bay	Dep	28 (6%)	70 (8%)	46 (5%)	150 / 164%
E (East)	Coogee	Both	17 (3%)	26 (3%)	29 (3%)	53 / 171%
F (East)	Maroubra	Dep	32 (7%)	28 (3%)	50 (5%)	-13 / 156%
G (South)	La Perouse	Dep	26 (5%)	56 (6%)	86 (9%)	115 / 330%
H (South)	Kurnell	Arrivals	140 (29%)	233 (26%)	244 (26%)	66 / 174%
I (South)	Wanda	Dep	87 (18%)	150 (17%)	136 (14%)	72 / 156%
K (West)	Rockdale	Both	33 (7%)	56 (6%)	36 (3%)	70 / 212%
	Total Movements		616	1,187	1,256	93%

Table 3 shows the approach to the LTOP Movement Targets achieved since 1997, with projection to 2023 & 2029 from PDMP Figure. 14.2

TABLE 3 APPROACH TO LTOP MOVEMENT TARGETS

	NORTH	SOUTH	EAST	WEST
LTOP "TARGETS"	17%	55%	13%	15%
2000	26%	52%	16%	7%
2023	31%	49%	14%	6%
2029	38%	49%	8%	5%

Note that instead of approaching the "targets" more closely as time goes by , as might be expected from "fine tuning" of a professionally-designed successful "noise share" system, the disparity between targets and achievements becomes even greater - especially over the north - where the movement percentage increases from 26 % (year 2000) to 31% (2023) and 38% (2029) against a "target" of only 17%.

Similarly percentage movements for the "South" , which are almost entirely over water and notably affect few residents , decreases from 52% (2000) to 49% (2023 & 2029) when the LTOP "target" was 55%. Incidentally 55% has never been achieved in the history of this LTOP, yet all the while the movement targets north have been exceeded , and those east and west often not quite reached.

This critique concludes that had a competent environmentally responsible Airport Lessee Company properly carried out its environmental impact assessment and planning functions under S. 71 (2) of the Act it would have highlighted and explained these failures and, at the minimum , explored what could be done to achieve the "noise share targets"!

Had it been even moderately concerned to fulfil its environmental obligations, it should have noted that the obvious and most environmentally suitable solution for Sydney was , as the Minister first directed, ie. to maximise movements over water. Why is this not so?

8.4 Section 14.2.1 Aircraft Noise Descriptors- The "N70"

These are presented in PDMP Figure 14.4 . The meaning of "N70" is better presented here than in Master Plan 2004. **However, in none of the graphics data in this PDMP are there street location and /or suburb outlines in the plots.**

This makes the graphics virtually worthless to both residents, councils and politicians trying to evaluate how the noise boundaries will shift around their homes.

The Minister (s) should demand that Sydney Airport Corporation re-draft all noise-related data in PDMP 2009 to show the usual outline of local government boundaries, and residential street locations as was managed for the 2004 PDMP .

The N70 parameter was first used in the LTOP Reports (Dec. 1996) and then in the Badgerys Creek EIS [PPK 1997-98] , where it was used with some explanation of the significance of the parameter in terms of how individual homes might be affected by the resulting exposure. N70 is not a Standards Australia -sanctioned official noise metric.

The Airport Company should be required to include a sufficiently detailed explanation to enable the lay person unfamiliar with acoustic terminology, or the architectural acoustic standard (AS2021-2000), to understand the information provided. As presented, PDMP Figure 14.4 is misleading. Many people taking only a cursory look at an "N70" contour might assume that the only noise people were subjected to within the contours was at the level of 70 dB(A), and it was only the number of events which varied. Yet the fact is that **any level above 70 dB(A) may occur within each contour**. This results in there being many occasions when speech will be drowned out and sleep or concentration will be disturbed by the resulting noise .

In a relatively recent (2003) three month survey on an inner west property **by Airservices Australia** ^{#28} , no jet aircraft produced noise levels below 70db(A). The majority of 747 -400's (**and more recently Airbus 380's**) departing over that location produced an average maximum noise of 80.3 dB(A) +/- 4.1 (Standard Deviation) ^{#29} . This means that 95% of the data fall within the range of 72.1 - 88.5 dB(A) and 99% within the 68 - 92.6 dB(A) .

Ongoing private monitoring by **a Community Monitoring Station** at Summer Hill shows this continues to be the case. Summer Hill is approx. 9 km from takeoff roll on Runway 34L . The high noise levels are produced because the aircraft are mostly very low (only 1200 -2500ft), Large long-haul jet aircraft actually could be much higher (and less noisy) if they climbed at 15 degrees for the first 3 kilometers from takeoff roll to 4000 or 5000 ft and then levelled out . **Better still, they should be forced to takeoff out to sea.**

The N70 is not a **Standards Australia** - approved means of representing sound level affectation in connection with aircraft noise (ie a noise metric) . The explanation in PDMP 2004 for the use of 70 dB(A) as the criterion in such charts **is only true for external sound level maxima of exactly 70 dB(A) at the outer edge of the contour.**

Moreover, the N70 contours underestimate the frequency of exposure in a typical impact period , because of averaging over a typical year. With LTOP "noise sharing" this results in approximately 2 to 4 times the number per day in any actual "impact period" ^{#30} (ie when prevailing winds cause aircraft to be directed over that location).

Thus a home within an N70 (20 movement) contour will experience from 40 - 80 intrusions of at least 70 dB(A) per day in any impact period. This is why N70 contours can be highly misleading to the lay observer.

The standard explanation for the using the N70 representation will mislead because most places within an N70 boundary will experience noise levels well exceeding of 70 dB(A), the talking has to stop, and people get annoyed.

By 2023 this master plan proposes to extend the N70 (20) contour from Haberfield to Ermington in the north west (a distance of 10 kilometres) , from Boronia Park to Gordon in the north (7.7 km). In the immediate east

²⁸ At a residence in Summer Hill, near the 20 per day N70 contour boundary.

²⁹ Environment Services Branch Canberra, Report No. 1360, 30/7/2003, Table 2.

³⁰ An "actual affected period" is a period during which aircraft are actually flying overhead.

the N70 bands retreat somewhat, while in the north east [Paddington/ Woollahra] the N70(20) band advances from Alexandria/Zetland to Point Piper. Then by 2029 there is a forecast contraction - due to the unstated reversion to parallels with larger jets and movement cap saturated operation.

8.5 "Noise Descriptors" ANEI/ ANEF Distributions - PDMP S. 14.2.1, Figs. 14.5 - 14.9:

In PDMP Figure 14.5 of PDMP Section 14.2.1, the Airport Lessee Company presents cumulative noise distribution charts for 2023 and 2029 [ANEF]. Then one has to go to Figure 14.8 to find a comparison of (only) the 2029 purported ANEF with the 2007 (actual) ANEI.

These should be compared with the 2001 ANEI (as used in PDMP 2004) for completeness, because unrecognised noise affectations continue to accumulate, and for the purposes of assessing changes at properties becoming newly affected one needs to evaluate the position from the point when the noise insulation program effectively ceased, not from a more recent time.

SACF Inc has made this assumption in the increment estimates provided in Table 4 which uses the PDMP - 2004 -represented 2001 ANEI as baseline.

Between 2001 and 2023 the 20 ANEF zone moves out from the vicinity of Lewisham Hospital to beyond Croydon in the northwest, and in the north east it moves from near Mascot to Kensington, with somewhat lesser affectation in the west and east. In the immediate north [Bennelong] the 20 ANEF zone shifts north from Drummoyne to Boronia Park (north of the Lane Cove River!). Similarly the 30 ANEF zone moves out from Stanmore to Lilyfield (north). However, its movement in the east and west appears marginal. But none of this is explained by SACL.

The 2029 ANEFs show contractions both from the north and in the east and west (See Figure 14.8 -9) suggesting some change in flight paths from those represented for 2023. SACL attributed these to the new wider-bodied aircraft, with 3dB(A) -quieter engines, but this would not explain the effect! One could achieve significant contraction today, with the current fleet, if sustained steeper take-offs were employed to an interim 4-5000 foot ceiling, or the aircraft could continue to climb out to cruising altitude without danger of colliding with crossing arrivals.

8.6 Noise Affection Analysis - The Cost of ANEF Creep 2023 cf. 2029:

This organisation's assessment shows that under the proposed ANEF regimes for 2023 2029 the following numbers of people and dwellings will have become affected at the stated ANEF levels since the ANEI was produced in 2001 (See Table 4).

TABLE 4 - INCREASED AIRCRAFT NOISE AFFECTATION - 2001-2023 & 2029 :

[PDMP 2004 CF 2009 - Reference Year ANEI 2001 refer Appendix "A" for details]

	AFFECTED BY ANEF 20 Ex 2001^{#1} to 2023 /2029	AFFECTED BY ANEF 25 Ex 2001 to 2023 / 2029	AFFECTED BY ANEF 30 Ex 2001 to 2023 / 2029
PEOPLE ^{#2}	128,284.14 / 62,771	50,186.25 / 18,006	12,222.85 / 5,304
DWELLINGS ^{#2}	52,085.22 / 26,195	20,376.34 / 7,514	4,962.66 / 2,214
COST OF INSULATION (\$millions)			
AT Nom \$50,000 DWELLING	2,604.26 / 1309.77	1,018.82 / 375.72	248.13 / 110.67
AT Nom \$100,000 / DWELLING	5,208.52 / 2619.54	2,037.63 / 751.43	496.27 / 221.35
¹ Reference Year 2001			
² Calculated from the Australian Bureau of Statistics Census data 2001 & 2006. See Appendix "A" for details			

By 2023 Table 4 reveals that approximately an additional 5000 homes involving 12000 residents will become affected at the ANEF 30 level. Similarly the increased numbers of dwellings affected at the 25 and 20 ANEF

levels will be in a range from 20,000 to 52000, respectively, making a total of over 70,000 additional affected homes involving nearly 200,000 residents!

By 2029 , however, these numbers are projected to decline, due to the contraction of the forecast contours produced by Airservices Australia, and which probably reflects the massively increased period during the day when the full slot-quota of 80 movements / hour is expected to be realised.

There is also the fact that with such increased movement numbers , **"noise sharing"** will have been abandoned and the system will revert to full parallel operations [Note the decreased east and west movement quotas for 2029 in PDMP Figure.14.2] . Indeed **"noise sharing"** will practically cease once movements reach the level of those experienced at the Sydney-2000 Olympics (around 365000 movements / annum).

The airport lessee company continues to present the significant environmental data of PDMP Figures 14.5-14.8 in a "take-it-or leave-it" fashion, without due explanation, and no regard to its obligations to **"assess and plan for"** the consequences of the projected environmental impacts as required under the planning obligations created by S. 71(2) of the Airports Act. People and councils should be informed if their property **appears likely to come within an increased ANEF boundary**.

Note that between today and 2029 there is expected to be a significant **"bulge"** in aircraft noise affectation, due to the continuance of **"noise sharing"** in the forecasts from 2001 through to around 2023.

Table 4 also shows the cost of insulating the above homes at two nominal cost levels of \$50- \$100,000 . These data should be considered in light of the fact that the Federal Government Grant for noise insulation in Third Runway Affected areas from 1994 was only \$47,000.

On the above estimates, the total additional insulation cost for new homes affected at the 30 ANEF level would be from \$250 - \$500 million. For insulation of all new homes affected above the 25 ANEF level the cost would be in the region of \$2.5 billion!

8.7 Section 14.2.1 Environmental Management - Insulation p. 138 :

Apart from flight path changes, noise insulation can ameliorate noise impacts from aircraft operations.

The inadequacy of past noise insulation programs is referred to below . There are many experts who will testify that a proper insulation requirement for aircraft noise affected residential homes is 25 ANEF, and some will even venture to say that for newly-affected homes a 12 ANEF level is more appropriate in particular cases of extreme affectation.

Therefore this Airport Lessee Company must be required to detail its plans for dealing with potential insulation and resulting medical damages claims from progressively newly exposed residents under its proposed growth plan.

The statement at p. 138 that the Sydney Airport Noise Amelioration Program provided a mechanism for the insulation of homes ... etc., is misleading and should be either removed , qualified or properly explained.

The "third runway" noise insulation program [Sydney Airport Noise Insulation Program - or SANIP] for original third runway impacts had not been completed by June 2001, and was then expected to be completed by June 2002^{# 31} . Since that time it has either been wound up, and has not been applied as yet to newly-affected homes under the "noise sharing" LTOP flight paths^{# 32 # 33} .

In the PDMP the **"airport lessee company"** states that insulation is administered by DITRLG" (ie the Federal Government 's Department of Infrastructure and Transport etc) and further recites that the current and future status of the SANIP is a matter for the Australian Government!

³¹ Minutes, Government SACF, 15/6/2001;

³² House of Representatives Notice Paper No. 41, 16/9/2002, Q 667, p. 1208

³³ Minutes, Government SACF, 31/3/2003, AI 6

By implication the home noise insulation program is thus "in limbo". In the 2004 MP it was stated that funds are raised from a noise levy applied to passenger tickets and that **"more than \$400 million has been spent on this program."**

There are many reports that the SANIP noise insulation was unworkable and of non-compliance with AS2021-2000. The **Australian National Audit Office** found in 1998 that the lack of any quantifiable noise reduction target for residential insulation made it difficult for the program management to assess its own effectiveness and hold contractors accountable for the achievement of noise reduction standards ^{# 34} .

The Master Planning process demands evidence of the **"airport lessee company's" PLANS** for continuing amelioration and prevention. As will be seen below , this will be more significant than ever before as LTOP continues its inexorable plague-like spread across Sydney's most heavily populated residential suburbs in the manner projected by this airport company up to 2023 , followed by a significant contraction through to 2029 [PDMP Figures 14.2 -14.8].

Instead of the evidence of amelioration and prevention required by S. 71(2) (f) and (g) of the Act , SACL's expectation is that Sydney Airport will be given a free ride at taxpayer's expense ! The taxpayer , residents and communities affected by aircraft noise of Sydney want to know who is going to take responsibility for what is generally accepted is an inadequate noise insulation program ^{# 35} .

This ANEF description in MP 2009 is marginally better dealt with than in the MP 2004. As stated on p. 138ff , the conditions requiring noise insulation for building siting and construction near Airports are specified in Australian Standard AS 2021-2000 ^{# 36} .

AS 2021-2000 states that noise insulation is desirable if the noise levels in residential relaxing and sleeping areas exceed 50- dB(A) ^{# 37} . It also defines the Australian Noise Exposure Forecast (ANEF) system which is employed as a so-called "land-planning" tool around Australia's airports. The ANEF parameter is obtained mathematically by summing all predicted noise exposures due to aircraft over a year ^{# 38} .

"Significant ANEF levels" as defined in the Airports Act (1996) are ANEF values greater than 30 (See para 8.2). An ANEF level of 30 corresponds to around 2000 70 dB(A) -equivalent flyovers per day [ie 110 per hr] ^{#39} .

8.8 A Proposed Better Noise Descriptor than "N70" - The Equivalent Fiduciary LA max:

It is submitted that representation by the number of equivalent 70 dB(A) LAmax flyovers more meaningfully displays the effect of different ANEF bands than the N70 contours presently used, because it illustrates the annoyance factor in terms of an LA max which people can relate to. . A typical set of such values is offered in TABLE 5 .

Australian Standard AS 2021-2000 ranks an ANEF = 30 as very definitely **"unacceptable"** for residential home construction and even **unacceptable** for "public buildings". Yet it is only with reference to **"significant ANEF's"** (ie above 30) that the airport lessee company need be concerned for the purposes of noise insulation with the aid of government grants: S. 71(2) (e) . **This is a factor of legislation which the government needs urgently to remedy.**

The "significant ANEF" criterion in the Airports Act is remarkably ungenerous considering the enormity of the affectation at ANEF = 30. TABLE 5 shows calculated numbers of aircraft flyover events each of exactly 70 dB(A) max which would result in various ANEF levels. An ANEF value of 30 is seen to correspond to nearly two 70 dB(A) events per minute, although fewer louder events will achieve the value.

³⁴ Audit Report - Sydney Airport Noise Amelioration Program, The Auditor-General Audit Report No.17 Department of Transport & Regional Development 1998 ISSN 1036-7632 ; ISBN 0 644 39016 6

³⁵ Minutes, Government SACF, 7/7/2000; ibid 31/3/2003 .

³⁶ Acoustics - Aircraft noise Intrusion- Building siting and construction, AS2021-2000

³⁷ ibid Table 3.3

³⁸ Acoustics - Aircraft Noise Intrusion- Building siting and construction, AS2021-2000, Appendix B

³⁹ "The Way Forward for Aircraft Noise Sharing at Sydney (Kingsford-Smith) Airport" , May 2004, Chapt 8, Table 8.1.4.1, p. 113; Sydney Airport Community Forum Incorporated [SACF Inc].

However, S. 71(2) (f) and (g) impose an wider environmental impact responsibility on the airport lessee company , in addition to merely informing on the insulation-significant ANEF. Without qualification, **it is required to assess environmental issues that might reasonably be expected to be associated with implementation of the master plan, and put forward plans for dealing with , ameliorating and preventing them.**

Arguably S. 71(2) (f) and (g) could also apply to noise impact ANEFs of less than the statutory "significant level" of 30 , but which are still of significant objective nuisance value to residents in their homes.

The Airport Lessee Company should therefore detail its proposals for the implementation and/or continuation of the provision of noise insulation for affected residences as the Noise contours bulge inexorably further inland across residential Sydney, for whom successive previous governments have denied liability .

At common law a public corporation creating an objectionable noise would normally be liable for damages in nuisance just like any other person manufacturing toxic and noxious substances, eg tobacco, or creating hearing loss or inducing falls through loss of balance in people, as are employers under Workcover provisions in NSW. **SACL needs to address these issues of future liability in its Master Plan. If SACL has received government indemnity for this liability under the terms of its lease, then that should be stated.**

TABLE 5. COMPARISON OF NOISE DESCRIPTORS - 70 dB(A) max events

[Reprinted by permission from "The Way Forward for Aircraft Noise Sharing at Sydney (Kingsford Smith) Airport, Sydney Airport Community Forum Incorporated (SACF Inc) May 2004, Table 8.2.4, Chapt. 8 , p. 122; Ed. P.S. Lingard].

				Calculated for 0.5 min events	Calculated for 0.5 min events	Calculated for 0.5 min events
	70 dB(A) max MOVEMENTS PER DAY	ANEF dB(A)	N70 PER DAY	DNL *** N> 65	CNEL N>65	LA eq [1, 24 hrs]
70 dB(A) EVENTS PER HR				US EPA (1974)		NSW EPA
2	34	13.06	34	52.41	52.76	50.77
4	68	16.07	68	55.42	55.77	53.78
6	102	17.83	102	57.18	57.53	55.54
8	136	19.08	136	58.43	58.78	56.79
10	170	20.05	170	59.4	59.75	57.76
20	340	23.06	340	62.41	62.76	60.77
30	510	24.82	510	64.17	64.52	62.53
40	680	26.07	680	65.42	65.77	63.78
50	850	27.04	850	66.39	66.74	64.75
60	1,020	27.83	1,020	67.18	67.53	65.54
80	1,360	29.08	1,360	68.43	68.78	66.79
120	2,040	30.84	2,040	70.19	70.54	68.55

9 *Aircraft Noise Critique Summary and Conclusions:*

In summary, this is a plan for environmental urban vandalism on a scale not seen from Sydney Airport since the opening of the third runway. It is one which should not be tolerated, and one for which the Minister or Ministers responsible would be justified in seeking a full environmental impact statement (EIS) , a fully independent specialist review, and full opportunities for community consultation with public meetings at major affected venues.

The Minister would be ill-advised to give a mere perfunctory assessment and kindly nod to this proposal . If he does so the social and environmental costs for the affected Sydney Communities will be immense .

The Government in turn should face the fact that its airport lessee corporation must be made liable in tort for the community harm which will result from the proposed expansion of Kingsford Smith Airport given the manner, and with the minimal environmental assessment which has been presented. The "LTOP - noise share" plan behind which this airport lessee company hides for environmental justification has been hijacked and misdirected away from the high and laudable goals set by then Minister for Transport Sharp in 1996.

It is not a plan which maximises movements over water as promised . It is a plan which instead maximises aircraft movements, takeoffs, noise and crashrisk over the most heavily populated residential areas of Sydney . Not only does it maximise movements and takeoffs over residential areas, but it maximises the use of low-altitude high noise impact flight path trajectories for both arrivals and departures in the most unconscionable way . This is both harmful to Sydney residents and inconvenient for airlines which use more fuel through failure to reach cruising altitude in optimal time .

SYDNEY AIRPORT COMMUNITY FORUM INC
CRITIQUE OF
SYDNEY AIRPORT CORPORATION LTD'S
"PRELIMINARY DRAFT MASTER PLAN 2009 " SEPT 2008

**APPENDIX "A" THE COST OF SYDNEY AIRPORT'S MASTER PLAN:
THE SPREAD OF AIRCRAFT NOISE AFFECTATION BY
POPULATION AND DWELLING**

THE COST OF SYDNEY AIRPORT'S MASTER PLAN: THE SPREAD OF AIRCRAFT NOISE AFFECTATION BY POPULATION AND DWELLING

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Synopsis:

In its Preliminary Draft "Master Plan" Sydney Airport Corporation Limited (SACL) proposes to increase passenger movements by 4.2% per annum and aircraft movements by 2.4% per annum between 2001 and 2023 with the result that passenger movements in 2023 will reach 68.3 million (2001 data ca. 24 million) and aircraft movements will reach 412,000 per annum (254,729 in 2001-2) .

Airservices Australia was contracted by SACL to produced an "Aircraft Noise Exposure Forecast" (ANEF) chart for the airport in 2023, and an "Aircraft Noise Exposure Index" (ANEI) for the year 2001 as a basis for comparing the resulting impact increase on affected Sydney residential communities. The results are provided in Figure 16.5 of the Preliminary Draft Master Plan (PDMP) document.

Given that this increase in traffic movements is convenient for SACL to offer its shareholders as an incentive for investment, is it surprising that the PDMP provides no assessment of the resulting noise impact on its neighbouring residents other than to present the data? No cost benefit analysis is provided by which the community can assess the degree to which the benefit to the airport corporation from its proposed expansion can be offset against the damage to the community caused by the extension of the predicted noise contours overland.

This brief paper takes the ANEF/ANEI charts from the PDMP with the Australian Bureau of Statistics Census statistics for 2001 and calculates the increased numbers of people and existing dwellings which will become moderately- to severely- noise affected by aircraft in accordance with the terms of Australian Standard AS 2021-2000 . It also estimates the cost of various levels of noise insulation which will inevitably be required for dwelling protection, assuming that somebody can be made liable for the resulting environmental harm .

The paper concludes that the number of people to be transferred into the zone that AS 2021-2000 describes as **"unacceptable"** for residential home construction will be in the order of 52000 . The corresponding number of dwellings is around 25000 and the additional cost of noise insulation to satisfy the Australian Standard would be ca \$2.5 billion dollars at an average cost per dwelling of \$100,000.

Similarly the number of people to be transferred from the zone below 20 ANEF which is currently defined as **"acceptable"** for residential dwelling construction to one which is only **"conditionally acceptable"** (ie between 20 and 25 ANEF) will be around 128, 000 representing around 52000 dwellings. Within this zone the Australia Standard says that up to 45% of people will be moderately to severely affected by the resulting aircraft noise, and that *"land use authorities may consider that the incorporation of noise control features in the construction of residences and schools is appropriate."* Should this be found to be the case then the cost of insulating all existing dwellings in these areas would be in the region of an additional \$5.2 billion at an estimated cost per dwelling of \$100,000 .

Note : The Federal Government only ever allowed a grant of \$47000 for the worst - affected zones (> 30 ANEF) under the defective "Sydney Airport Noise Insulation Program" (SANIP), implemented only reluctantly by government after opening of the Third Runway.

Introduction:

In its Preliminary Draft "Master Plan" Sydney Airport Corporation Limited (SACL) proposes to increase passenger movements by 4.2% per annum and aircraft movements by 2.4% per annum between 2001 and 2023 with the result that passenger movements in 2023 will reach 68.3 million (2001 data ca. 24 m) and aircraft movements will reach 412,000 per annum (254,729 in 2001-2) . Airservices Australia was contracted by SACL to produced an "Aircraft Noise Exposure Forecast" (ANEF) chart for the airport in 2023, and an "Aircraft Noise Exposure Index" (ANEI) for the year 2001 as a basis for comparing the resulting impact increase on affected Sydney residential communities. The results are provided in Figure 16.5 of the Preliminary Draft Master Plan (PDMP) document.

Given that this increase in traffic movements is convenient for SACL to offer its shareholders as an incentive for investment, it is hardly surprising that the PDMP provides no assessment of the resulting noise impact on its neighbouring residents other than to present the ANEF/ANEI comparison data. No cost benefit analysis is provided by which Sydney Community can assess the damage to it caused by the extension of noise affectation, for offset against the degree to which the airport corporation benefits from its proposed expansion.

This brief paper takes the ANEF/ANEI charts from the PDMP with the Australian Bureau of Statistics Census statistics for 2001 and calculates the increased numbers of people and existing dwellings which will become moderately- to severely- noise affected by aircraft in accordance with the terms of Australian Standard AS 2021 -2000 . It also estimates the cost of two monetary levels of noise insulation which be required for their protection assuming that somebody anyone can be held liable for the resulting environmental harm.

Methods:

The ANEF/ANEI comparison chart from Figure 16.5 of Sydney Airport Corporation's Preliminary Draft Master Plan (PDMP) was scanned into a computer. An Adobe Photodeluxe^R Business Edition multilayered photo-file was created from it . The section of the ANEF/ANEI chart built into the photo-deluxe (*.pdd) file is shown herein as Figure 1.

A scanned image of Sydney Local Government Areas (LGA) map^{# 1} , corresponding to those in existence at the time of the 2001 Census , was then superimposed as a separate layer onto the ANEF/ANEI chart and its scale adjusted to match the latter. The portion of the Sydney LGA map employed is reproduced in Figure 2.

¹ Sydney , Newcastle , Wollongong Local Government Areas , NSW Dept. Land & Water Conservation, October 1993 [Inset]

Figure 1: The Sydney Airport Draft 2023/24 ANEF and 2001 ANEI:

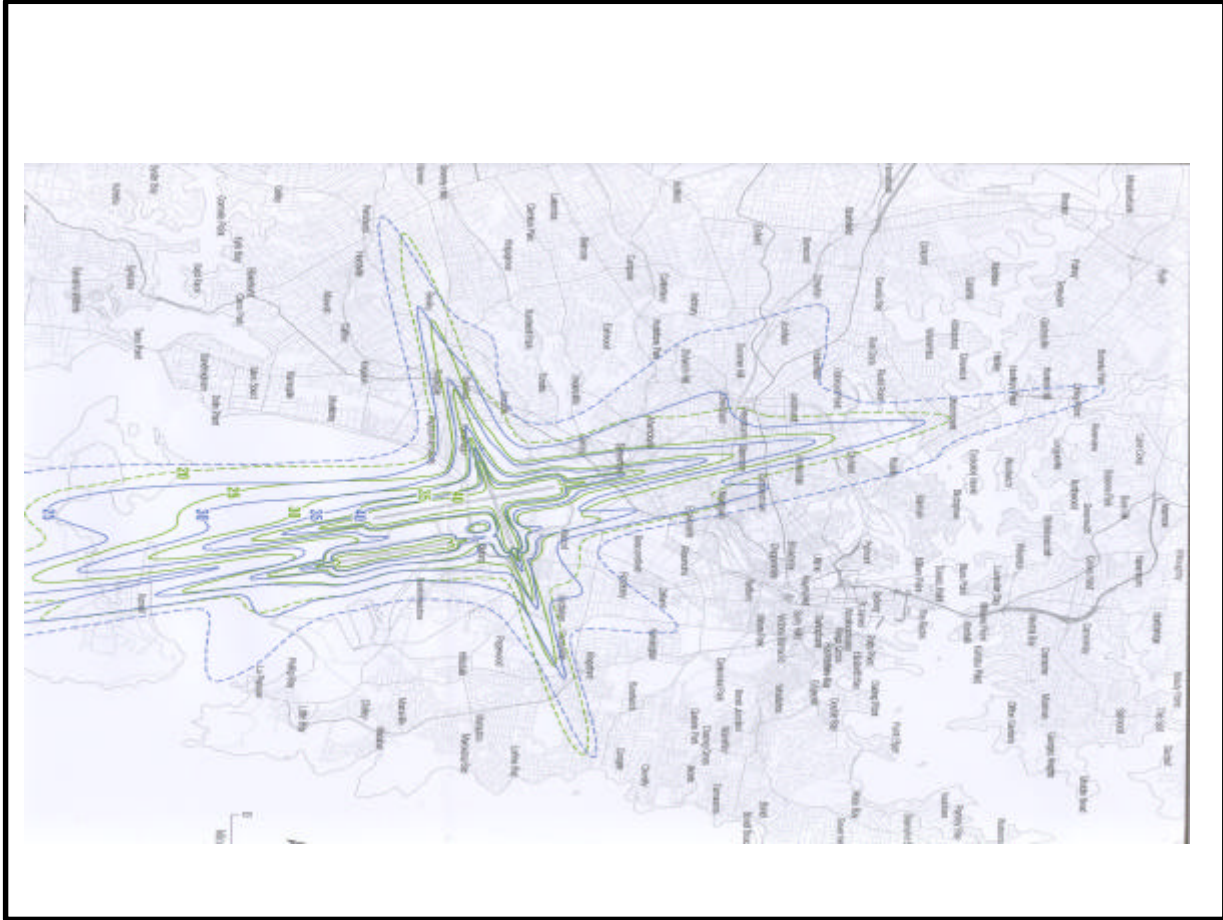
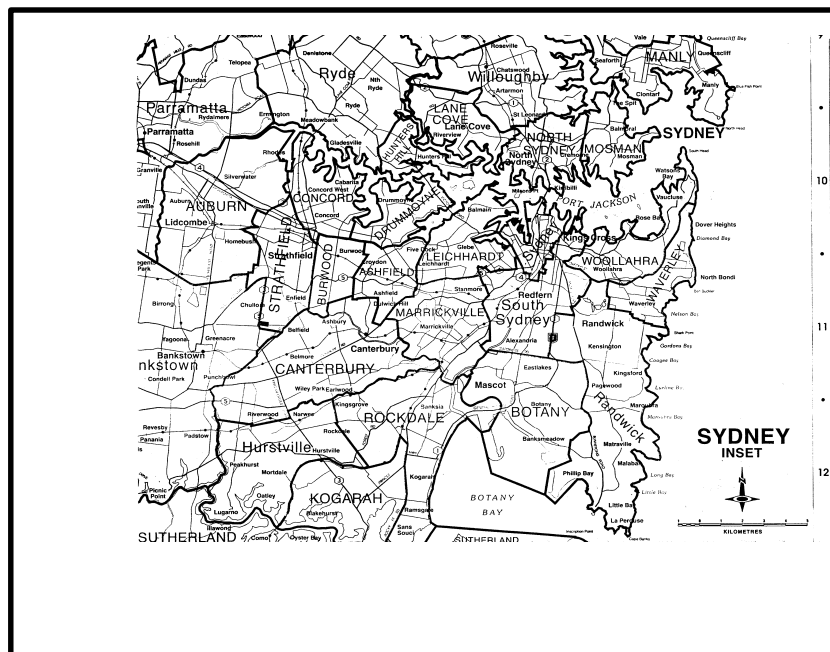


Figure 2 Local Government Area Boundaries October 1993 - Sydney Area



The images were made transparent, blended and contrast-adjusted using the facilities available in the Photodeluxe^R software package. Finally, an image of a graph paper grid was added as a third layer and similarly blended so that the data on all three images could be seen together. The dimensions of the grid squares on the screen were calibrated using the LGA map scale and the fiduciary distance between Stanmore and Redfern CitiRail Stations (2.326km). Each grid square was found to correspond to an area of 0.119 square kilometres. The resulting graphic is reproduced in Figure 3.

Data were obtained from the Australian Bureau of Statistics internet web site for Census 2001^{#2} for the then existing populations and numbers of dwellings in the Local Government Areas most severely affected by aircraft noise. The LGAs included were Ashfield, Drummoyne, Leichhardt, Marrickville, South Sydney, Randwick, Rockdale and Botany. These data are reproduced in Table 1.

The total numbers of grid squares were then counted within each Local Government Area and between the 20, 25 and 30 ANE* contours for the 2001 ANEI and the 2023 ANEF. This estimate was made to the nearest 0.05 grid square and is accurate to approximately 0.1 square. Only grid squares corresponding to areas on the map which were residential in nature were counted. Water and open land areas were specifically excluded from the counts. Where the 2023 ANEF had retreated from the corresponding 2001 ANEI position the grid square area was subtracted from instead of being added to the total.

² <http://www.abs.gov.au> - Look for Census 2001, Free data

Figure 3: Superimposition of Figures 1 and 2 as scaled and overlain with Fiduciary Grid

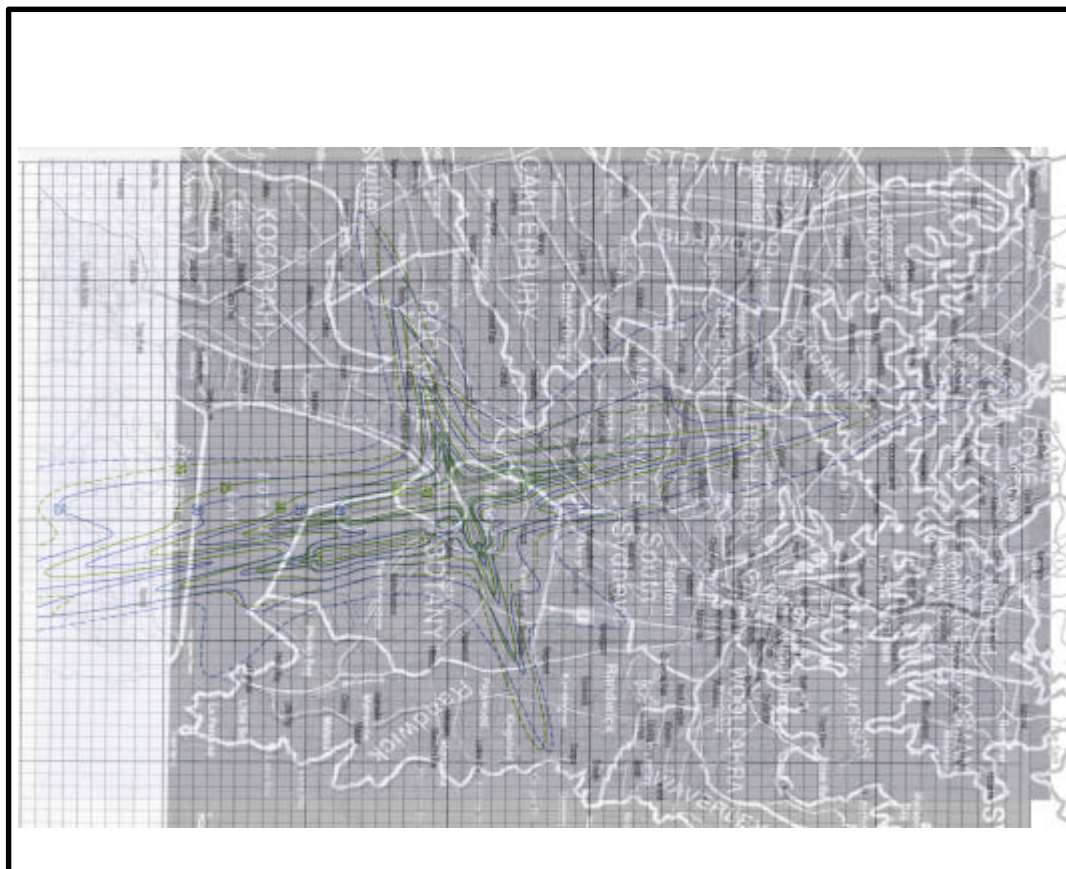


TABLE 1 Local Government Area Statistics - ABS Census 2001

SUBURB	POPULATION	DWELLINGS SINGLE	DWELLINGS SEMI OR TERRACE	DWELLINGS FLAT/UNIT	DWELLINGS OTHER
<i>ASHFIELD</i>	39,494	5,794	1,882	7,206	162
<i>DRUMMOYNE</i>	32,972	6,623	1,736	5,328	116
<i>LEICHHARDT</i>	62,452	8,417	10,475	8,437	344
<i>MARRICKVILLE</i>	73,431	10,057	8,144	10,752	778
<i>S. SYDNEY</i>	92,249	1,533	12,492	27,907	457
<i>RANDWICK</i>	121,497	14,448	7,577	24,737	503
<i>ROCKDALE</i>	88,523	17,503	4,024	11,118	327
<i>BOTANY</i>	35,897	5,590	2,021	5,297	108
<u>TOTALS</u>					
POPULATION	546,515	69,965	48,351	100,782	2,795
DWELLINGS		221,893			

The numbers of grid squares counted for the representative local government areas for which populations and dwelling counts were obtained from Australian Census 2001 data , and for the shift in position of the ANEI/ANEF contours, are shown in Table 2.

TABLE 2 GRID COUNTS CORRESPONDING TO LOCAL GOVERNMENT AREA AND ANEF SHIFT

(1) BY LGA	GRID SQUARES
<i>ASHFIELD</i>	67.7
<i>DRUMMOYNE</i>	159.2
<i>LEICHHARDT</i>	53
<i>MARRICKVILLE</i>	123.4
<i>S. SYDNEY</i>	151.7
<i>RANDWICK</i>	179.4
<i>ROCKDALE</i>	55.4
<i>BOTANY</i>	189.5
<u>TOTAL GRID SQUARES</u>	<u>979.2</u>
(2) BY ANEI/ANEF	GRID SQUARES
<i>ANEF 20</i>	229.9
<i>ANEF 25</i>	89.9
<i>ANEF 30</i>	21.9

The average number of dwellings was then calculated per representative grid square, which is 226.81.

The assumption employed is that each dwelling , whether single house, semi, terrace or apartment carries the same weight, as far as insulation cost is concerned. For a provisional analysis this assumption is reasonable, since it is the duty of Sydney Airport Corporation to carry out this study anyway, had its concerns for its so-called community "stakeholders" been great as those for its shareholders.

Results:

Using the Dwelling count per grid square the number of dwellings affected by each shift in ANEF/ANEI zone was calculated as shown in Table 3 and the effective cost of noise insulation calculated for two cost assumptions of \$50,000 and \$100,000 per dwelling. The former amount is approximately that allowed by government as a grant for insulation of homes in the 30-40 ANEF area Sydenham ^{# 3}.

³ Fitzgerald, P. (1998) The Sydney Airport Fiasco, Hale and Iremonger, p. 143.

Table 3 Number of Dwellings in Areas affected by Projected Shift of ANEF by Year 2023

	AFFECTED BY ANEF 20	AFFECTED BY ANEF 25	AFFECTED BY ANEF 30
No GRID SQUARES	229.85	89.92	21.9
PEOPLE	128,284.14	50,186.25	12,222.85
DWELLINGS	52,085.22	20,376.34	4,962.66
COST OF INSULATION (\$millions)			
AT \$50,000 PER DWELLING	2,604.26	1,018.82	248.13
AT \$100,000 PER DWELLING	5,208.52	2,037.63	496.27

The Table lists only those dwellings affected by the proposed shift in the position of the ANEF contours as predicted between 2001 and 2023. It does not include those already adversely affected by the introduction of LTOP in areas where there was not previously any aircraft noise.

In order to assess whether it is reasonable for persons whose dwellings are thus affected to make a claim for noise insulation on their dwelling it is necessary to consider the guidelines in Australian Standard AS 2021-2000 ^{# 4}.

Table 2.1 of the above Standard prescribes that only building sites where the ANEF is less than 20 are **"Acceptable"** for the construction of houses, home units, flats or caravan parks, without special provision being made for noise insulation according to the Standard. If the ANEF is between 20 and 25 then construction becomes **"Conditionally Acceptable"**, ie :

"some people may find that the land is not compatible with residential or educational uses. Land use authorities may consider that the incorporation of noise control features in the construction of residences or schools is appropriate" ^{# 5}

If the ANEF is greater than 25, then according to the Standard the siting of residential constructions becomes **"Unacceptable"**, and the Standard does not recommend development in unacceptable areas. If however a planning authority determines that a development is necessary, the Standard recommends that specific "noise reduction" levels [ANRs ^{# 6}] be achieved to bring the indoor level to that specified by Table 3.3 of the Standard. For residential relaxing and sleeping areas AS 2021-2000 Table 3.3 requires this level to be 50 dB(A). At the time of the "Third Runway" debacle, the Community Advisory Committee (CAC), the NSW Environmental Protection Agency (EPA) and the then Commonwealth Environment Protection Agency all recommended that on human health and welfare grounds all residences and schools within the 25 ANEF contour should be insulated ^{# 7}. However, the government never complied with this recommendation. Only some homes in the 30 ANEF zone were ever offered insulation, and then at a rate which could never compensate the residents for the gross nuisance they were obliged to suffer ^{# 8}.

Conclusions:

The paper concludes that the number of people to be shifted into the zone that AS 2021-2000 described as **"unacceptable"** for residential home construction is significant and, without assuming any population growth or increased housing density, will be in the order of 62000. The corresponding number of dwellings at 2001 census levels is around 25000. For these dwellings the additional cost of noise insulation to satisfy the Australian Standard would be around \$2.5 billion dollars at an average cost per dwelling of \$100,000 ^{# 9}.

⁴ Acoustics - Aircraft noise Intrusion- Building siting and construction, AS2021-2000

⁵ ibid AS 2021-2000 Table 2.1

⁶ ANR = Aircraft Noise Reduction

⁷ Fitzgerald, P. (1998) The Sydney Airport Fiasco, Hale and Iremonger, p. 134-135.

⁸ ibid Fitzgerald

Similarly the number of people to be shifted from the zone below 20 ANEF which is currently defined as **"acceptable"** for residential dwelling construction to one which is only **"conditionally acceptable"** (ie between 20 and 25 ANEF) will be around 138, 000 representing around 52000 dwellings. Within this zone the Australian Standard AS2021-2000 states that up to 45% of people will be moderately to severely affected by the resulting aircraft noise, and that:

"land use authorities may consider that the incorporation of noise control features in the construction of residences and schools is appropriate." # ¹⁰

Should this be found to be the case then the cost of insulating all existing dwellings in these areas would be in the region of an additional \$5.2 billion at an estimated cost of \$100,000 per dwelling.

This should be considered in light of the fact that successive Federal Governments have only ever allowed a grant of \$47000 for the worst - affected zones (> 30 ANEF) under the defective "Sydney Airport Noise Insulation Program" (SANIP) implemented only reluctantly by government following opening of the Third Runway; and then only after intolerable delays. Who then is going to pay for the noise disruption caused by the airport expansion now proposed by Sydney Airport Corporation in its Preliminary Draft Master Plan ?

⁹ The \$47,000 offered by government for Third Runway insulation was only a "grant" and did not represent the full cost of noise insulation to the requirements of the Australian Standard .

¹⁰ AS2021-2000, Table 2.1, Note 2