SYDNEY AIRPORT COMMUNITY FORUM INC

CRITIQUE OF

SYDNEY AIRPORT CORPORATION LTD'S

"PRELIMINARY DRAFT MASTER PLAN 2013" June 2013

30 August 2013

Contributors:

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

SYDNEY AIRPORT COMMUNITY FORUM INC

Published by SYDNEY AIRPORT COMMUNITY FORUM INC
P.O. Box 154 Summer Hill NSW 2130, Australia

"Critique of Sydney Airport Corporation Ltd's Preliminary Draft Master Plan 2013"
August 30 2013

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ISBN 978-0-9751843-8-7 (cdrom)
ISBN 978-0-9751843-9-4 (pdf/online)

Printed in Australia

r/mplan13-7.sacfinc

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SYNOPSIS

The basis for airport Masterplan noise contour predictions for 2033 is the forecast passengers numbers . These in turn determine the number of aircraft takeoffs and landings (movements) which will occur. With a given passenger number the movement numbers are decided by the average size of aircraft to be employed.

The Airport predicts they will need to transport 74 million passengers per year in 2033 (a figure down from 79m in 2029) for which they expect to need 410,000 aircraft movements per annum (down from 427,000 in 2029) . Also the airport expects to carry 1 million tonnes of freight / annum , mainly in the holds. The key statistical parameter is the passenger per movement ratio (p/m). This depends on demand and travel sector distance . It is assumed that movements will fall due to increased use of wider passenger aircraft , such as the A380.

The Year 2012 p/m ratio of 102 passengers per movement (unchanged from 2009) would require a hypothetical 725000 aircraft movements for the forecast 74 million passengers per annum by 2033. This assumes the current mix of aircraft which includes A380s (the largest capacity in service). Even older 747s can take up to 400 passengers . So it seems the market must radically change to achieve the airport passenger target, and still claim movements will be down due to wider bodied aircraft.

Present international p/m ratios vary widely [Table 1] . Movements would be as forecast (ie 410000 by 2033) at a projected p/m ratio of 180 in 2033 (=74m/410000). The current world-wide average p/m is approx 134 (Table 1) with Sydney only 102. This is for an airport where only 19% of movements are currently international, and wide body aircraft only dominate for international traffic.

Also, 410000 movements is nominally beyond the practical capacity of KSA, given necessary environmental constraints foreseen at the time of the LTOP Reports in 1996. If the forecast 74 million passengers per year holds up in practice for Sydney Airport in 2033 , the environmental consequence for Sydney of maintaining the current passenger /per movement figure, with its projected 725000 movements, will be horrendous.

The acceptability of this plan will be determined by noise and pollution effects over residential areas. The difficulty with this plan like its predecessors, is that there is no effective communication to residential neighbours and property owners of the environmental consequences from either noise or pollution growth . In the Plan this is left to Local councils through the State S. 149 Certificate System, which only notifies owners when they buy a property or propose a DA in an area with an Australian Noise Exposure Forecast greater than 20 . Once notified by the S.149 process, any remedy is at the cost of the home or property owner, not the airport, airline or other perpetrator. Moreover the "N70" , ANEF and ANEI charts provided for PDMP2013 do not possess sufficiently clear street outline grids to enable people to visualise how they will be affected, and apart from Figure 14.5 (by Airservices Australia) , do not attribute authorship.

SACF Inc calculations in our 2009 Critique showed that the 2029 ANEF projections meant that an additional 2200 homes involving 5300 residents would be affected at the ANEF 30 level by 2029 compared to those in 2001 . Indeed, the 2001 data are not shown in this Master Plan. Instead we are given a 1976 purported ANEI (Figure 14.8), and the more recent 2011 ANEI. The 1976 ANEF is provided without citation, and is quantitatively and qualitatively invalid for comparison with current practice because its date is 20 years prior to the "Long Term Operating Plan (LTOP)" of 1996 when "noise sharing" was conceived. Also there was no "ANEF" metric, as such in 1976 , because at that time the American "Noise Exposure Forecast" (NEF) was used. The NEF was based on day-night weightings incompatible with current Australian practice.

Only the ANEF for 2033 (Figure 14.3) is provided with Airservices Australia Endorsement . The other ANEF's /ANEI's are not endorsed by a competent authority, and should be treated cautiously. There is no evidence Airservices Australia has signed off on the 2011 ANEI or the 2029 ANEF projection. Private

Noise Monitoring at Summer Hill , provided to Ashfield Council and submitted to the Aircraft Noise Ombudsman, shows that the ANEI for 2011 was already 20dB(A) [#1] , when nothing so large is predicted. As the airport grows, from now until 2029-33, the 2009 Master Plan continues. Our 2009 Submission[#2] showed that 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 [census data 2006; This Critique Para 5.7 , Table 3] .

By 2029 and by inference 2033 (because of similar ANEFs) the increase in dwellings affected at the 25 and 20 ANEF levels ranged from 7500 to 26000, respectively, making over 51,000 additional "newly affected" homes involving nearly 120,000 residents on 2006 census figures! On the 2029 ANEFs in PDMP 2009, we calculated that the additional insulation cost for new homes affected at the 30 ANEF level was around $300 million. For insulating all new homes affected above the 25 ANEF level the cost was in the region of $3.75 billion!

Unexpectedly, the presented figures for 2029 were close to HALF those for the July 2003 Draft Master Plan for 2004 to 2023 , and the 2033 results would be expected to follow this. The claimed reduction of ANEF contour coverage in 2009 was attributed by SACL to "quieter aircraft", producing an apparent 50% -less impact in 2029 than shown for the 2023 projections in the 2004 Master Plan. The 2033 projection continues this trend. This may reflect that with increased traffic and long periods at the capped rate of 80 movements per hour the airport will revert to PARALLEL FLOWS. Take-offs to the north should be minimised to avoid the unlikely event of a crash of aircraft with heavy loads of fuel.

For this 2033 PDMP we did not re-calculate the newly affected dwellings and people figures in our Table 3, because the 2033 ANEF closely approximates that for 2029. Even so, the interim environmental harm will be massive compared to the 1994 third runway effect , ie , 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 instead correct. Yet, SACL presents such significant environmental data without more than "formal" explanation.

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 [Airports Act S. 71(2)]. The PDMP does not assess the numbers of new dwellings or people affected at critical ANEFs , for example , nor the insulation cost to owners where medical needs or council requirements freshly demand it. Where is evidence that SACL has fulfilled its S. 71 (2) obligation to "assess and plan for" the consequences of the projected environmental impacts beyond publishing the ANEFs ? There is also no indication that the airport company is "planning for" counteracting the greater noise exposure of its neighbours other than possibly relying on the Commonwealth to reinstate the Insulation Grants Scheme for greater than ANEF 30 exposure. With the end of the Aircraft Noise Levy in 2007, it is the hapless public who pay if their homes now lie under the noisiest flight path and lowest departure ceiling of any since Sydney Airport began!

Beginning with the PDMP of 2004 the aircraft movement projections in these rolling master plans are a recipe for trashing of the human environment on a scale not seen since Sydney's third runway was opened in 1994. This progression must be rejected by the Minister, who in our view will be justified in seeking a full environmental impact audit (EIS) of the corrupted LTOP, with independent specialist review. When the true impacts are known there must be full opportunities for community consultation.

And importantly, all of the analysis is done on 'averages', with no consideration for disturbances /aberrations. With Sydney Airport already near peak capacity for extended morning and evening peak periods, any slight disruption from weather (fog, thunderstorms etc), runway maintenance, etc causes a 'flow-on shambles' for hours, due to peak operations being near maximum capacity. And if there was a true 'aviation incident' on a runway as happened recently at San Francisco International (SFO), Australian aviation would be 'a nightmare scenario' for many days. Indeed, all 'queuing theory' problems never rely upon 'average throughput', but rather model what happens in particular circumstances (distributions).

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 ¾ of a standard deviation above the mean. The truth is that Sydney Airport, as it continues to press hard against the throughput caps (both legislated and practical handling limits) will deliver an ever-increasing number of multi-hour delays to passengers as the years progress.

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1 Heinrich, J and Lingard , PS (2013) Community Noise Report Summer Hill (III) 2002-2013

2 Sydney Airport Community Forum Inc Submission on Sydney Airport Corporation Ltd's "Preliminary Draft Master Plan 2009" Dec 2008 ISBN 978-0-9751843-7-0 (pdf) ; 978-0-9751843-6-3 (cdrom).

Whether it is an airport operating at near capacity, or a freeway operating at near capacity, the result is always that the number of incidents of unacceptable outcomes (for customers, not investors) increases almost asymptotically as the limits are reached. Sydney Airport is already pushing against those limits, and as the morning peak grows to being 6:30am-11:30am and the evening peak from 3-7pm, very shortly a morning problem will feed directly into an 'all-day problem' as there is just not sufficient spare capacity to overcome the morning backlog before the afternoon peak commences.

Throughput 'averages', as cited in the draft masterplan never deal with the growing number of such 'service outages' or 'lengthy customer delays'. Sydney needs a full second airport, as a matter of urgency, given the delays inherent in commissioning a full-scale airport, and the inappropriate costs of trying to 'shoe-horn' demand into an under-capable facility, based on highly improbable changes in the aircraft mix.

The "LTOP - fair-share noise" Plan , on which SACL in part relies for environmental justification was redirected away from the original goals set by then Minister for Transport Sharp in 1997, so that movements over water using "high and wide" arrivals are not maximised as promised. Instead it maximises aircraft movements, takeoffs, noise and crash-risk over the most heavily populated residential areas of Sydney. It maximally disturbs residential areas, using ceiling-limited low-altitude high noise impact flight paths for departures in an unconscionable way. This LTOP is thus both harmful to Sydney residents and inefficient for airlines which use more fuel through failure to reach cruising altitude in optimal time.

The Minister will be ill-advised to approve this proposal. If it is approved, the cost to quiet enjoyment of affected Sydney Communities will be immense , as will the costs of necessary noise insulation . Given the minimal environmental assessment which is presented, the Government should consider making the airport lessee corporation and supporting agencies liable for the community harm which will result from the proposed expansion of Kingsford Smith Airport .

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1. Introduction:

Sacf Inc will confine its comments to the forecast Environmental Implications of continued operation of a major airport at Sydney Kingsford Smith. PDMP 2013 Chapters 4 to 9 appear to focus mainly on matters which should be the subjects of separate "Major Development Plans" under the Airports Act, not those of the Master Plan as Such, though it is appropriate they are mentioned. SACF Inc will not comment on these matters in the context of this 2013 Sydney Airport Master Plan. In the following we will first raise a few general matters then direct attention to the following :

Chapter 3 Air Traffic Forecasts (PDMP p. 38 ff)
Chapter 13 Sustainability, and Environmental Management (PDMP p. 148 ff)
Chapter 14 Noise Management (PDMP p 164 ff)
Chapter 11 Land Use Plan - Infrastructure Crowding (PDMP p. 111-112)
Chapter 12 Safety and Security -Airspace Protection and Air Safety in General (PDMP p. 138ff)
Chapter 15 Long Term Development of Aviation in the Sydney Region (PDMP p. 194)

2. General Matters:

2.1 Disclaimer (p. (i)):

We note with dismay that yet again SACL ***"accepts no liability whatsoever to any person who relies in any way on any information contained in the Preliminary Draft Master Plan".*** Furthermore the Airservices disclaimer on ANEF 2033 states : ***"The aircraft noise contours on this chart have been calculated using an appropriate modelling process. Airservices Australia has, in accordance with the approved manner of endorsement, considered the physical ultimate capacity of the existing or proposed runways in its endorsement process. The data input and assumptions made in that process are derived in part from external sources. Airservices Australia makes no warranty in respect of that information and excludes all liability for any loss arising from reliance on that information."***

Comment: As stated before this is a totally unacceptable introduction for documents prepared by a Public and semi-government Corporations in response to a regulatory requirement to submit statements of future plans with proposals for environmental mitigation . It is similarly unacceptable for Airservices to issue a disclaimer for its ANEF 2033 production or its ANEI 2011. Given that the human environmental impacts of the proposed expansion of usage at Sydney airport are immense, ***we request that these Disclaimers 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?

2.2 Executive Summary p. 10:

As is customary there is extensive Hype around the fantasy of airports management and the huge business opportunities they present to corporate owners and the advantages being taken of the airport site.

The airport forecasts that international, domestic and regional passengers numbers will rise from 36.9m in 2012 , through 78.9m in 2029 to 74.3 m in 2033 , representing a compound annual growth (CAG) of 3.4 % . Fixed wing aircraft movements are expected to rise from 321700 in 2012 through 427400 in 2029 and up to 409500 by 2033, a rise of 1.2% (CAG). Air freight tonnage is expected to rise from 615,000 in 2012 , through 1,007,000 in 2029 and up to 1,011,000 in 2033 , a rise of 2.4% (CAG). The Percentage of non-curfew slots used are projected to rise from 60% in 2012 through 86% in 2029 to a drop down to 82% in 2033 , a CAG of 1.5%.

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 3 (This critique) below.

It is said that Sydney Airport's development concept enables ***"the sustainable and flexible growth of air travel"*** for tourism and trade beyond the 2033 horizon of the PDMP. It is expected that "***New Generation"***, "quieter, cleaner aircraft" will reduce long term environmental and noise impacts of the airport.

Sydney Airport acknowledges there are aircraft noise impacts and claims commitment to working with the community, governments and the aviation industry to manage and mitigate them, especially in areas close to the airport or under flight paths.

It sees the role of Kingsford Smith as being the primary airport for Sydney and NSW for international, domestic and regional passengers and freight, which it aims to operate efficiently enabling growth to ***its maximum practical operational capacity***. It further wishes to ***protect and optimise*** the use of other existing airports serving the Sydney region and finally select a site for a "***supplementary airport***" , and ensure operations commence at "***the appropriate time***" in the future.

The Executive Summary concludes:
"Sydney Airport is able to accommodate forecast traffic demand beyond the 2033 planning period, within the current operating regulations. Importantly the development concept outlined in this PDMP can meet the future needs of the constantly evolving aviation industry because it has in-built flexibility and adaptability. Sydney Airport remains deeply committed to maintaining a safe and secure airport environment as well as remaining a sustainable business, a valued member of the community, and a key economic driver for Sydney, NSW and Australia. The airport continues to operate in an environmentally sustainable and responsible manner."

2.3 Executive Summary: -Reducing environmental and noise impacts. p. 13.

Whilst it is accepted that the corporation inherits 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.

Blind 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 the airport legally complicit in inflicting the resulting harm, and therefore potentially legally liable for damages. Moreover a serious question arises whether this 2013 Master Plan , with its forecast 2033 ANEFs *could in fact result from continued operation of existing flight paths.* This question arises from the "quantum leap" between the MP 2004 ANEF projections for 2023-4 and those for 2029 presented in PDMP 2009 , and repeated here for 2033. The promise to continue ***"noise sharing"***, for example , will by 2017 at the latest have been thrown out the window. During the The Sydney Olympics movement slots were saturated and noise sharing ceased at Annual Average movements between 328, 500 & 401, 500 (See reference 6).

The comparison with the ANEI for 1976 (Figure on page 14) is , frankly unscientific, given that the ANEI /ANEF system did not exist before 1982 , and the "A" (for Australian) Noise Exposure Forecast did not appear on aircraft noise forecasts before around 1985. Furthermore the Noise Exposure Forecast used in 1976 was likely to have been the American NEF which employs different day-night weightings to todays ANEF, and is not directly comparable.

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3. Air Traffic History and Forecasts (2013) Chapter 3 (p. 38 ff)

Preamble:

The Airport states that Sydney Airport is able to accommodate forecast traffic demand beyond the 2033 planning period, within the current operating regulations. It observes that the aviation industry has changed rapidly, frequently and profoundly over the past two decades including: (1) New airline entrants including low cost carriers; (2) Improved aircraft technology and capacity; and (3) Route Expansion.
It attributes the provided traffic forecasts to Tourism Futures International (TFI) which it says were independently reviewed by CAPA, in consultation with airlines and airline associations. It asserts that the passenger forecasts are consistent recent forecasts of the 2012 NSW Govt & Commonwealth "Joint Study" and by BITRE. It claims that a GFC-caused "baseline reset " explains the difference between this 2033 forecast and the 2029 forecast in the 2009 Master Plan . It asserts that the aircraft size forecasts are "consistent with past trends and comparable international airports", and expresses the hope that there will continue to be opportunities for "noise sharing" in 2033.

3.1 2013 SACL Predicted Movement and Passenger Growth Rates - Sections 3.3 - 3.4:

Sydney Airport's Movements in 2012 were 322000 for a passenger number of 36.9m. The airport forecasts that International, domestic and regional passengers numbers will rise from 36.9m in 2012 , through 78.9m in 2029 to 74.3 m in 2033 , representing a compound annual growth (CAG) of 3.4 % . It claims fixed wing aircraft movements are expected to rise from 321,700 in 2012 through 427, 400 in 2029 and up to 409,500 by 2033, an overall rise of 1.2% (CAG). Air freight tonnage is expected to rise from 615,000 in 2012 , through 1,007,000 in 2029 and up to 1,011,000 in 2033 , a rise of 2.4% (CAG).

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. Noise levels are determined as much by the altitude flown as by the engine characteristics of the aircraft. Even a "quiet " aircraft flown at 1000 ft is much louder than if it is flown at above 4000 ft, and there are no "noise-critical" altitudes set by Airservices for flights departing and arriving Sydney Airport.

In *Master Plan 2004* it was assumed that aviation movement and passenger throughputs would not recover from the "9/11" World Trade Centre effect . They did however, but dampened again in 2008 by the Global Financial Crisis (GFC) . However growth rates used by SACL in this DMP are somewhat less than those used in the 2009 Draft Master Plan .

PDMP 2009 stated 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*** showed there was a 32% increase in passenger movements form 2002 [PDMP 2009 Figure.5.1] which was over 6% per year, while the movement total actually plateaued at ca. 280000/annum [PDMP 2009 Fig.5.1]. Planning for passenger movement growth is now being projected to 2033 at 3.4% per annum (overall) compared with 4.2% in 2009.

The historic growth in movements from 1992/93 to 1999/2000 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 3.4% (CAGR) predicted here.

However, Department of Transport "whole of Sydney Basin" forecasts provided to PPK for the 1999 Badgerys Creek EIS to 2021-2 were for 480,000 +/- 60,000 movements , ie +/- 12.5% [# 3] . Corresponding passenger movements were stated to be 49.1 million by 2021-2 , compared to the 74 million for 2033 in Master Plan 2013.

The SACL movement forecast of 427,000 for 2029 reduces to 409,000 for 2033 in this 2013 PDMP. There is no explanation for the apparent reduction in the spread of noise affectation in the ANEFs of 2029 & 2033 . This could result from loss of "noise sharing" opportunities which will become inevitable as movement numbers rise . If lower-noise wider-bodied aircraft actually produce significantly less noise in current practice, then the ANEF levels may fall , but almost imperceptibly, unless movements also drop. This is possibly the reason for the changed ANEF distribution from 2023 to 2029 in the data of Figure. 14.5 of PDMP 2009, without a reversion to exclusively parallel operations. The ANEF conclusion is suspect because only the

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

international segment will be significantly affected by wider bodied aircraft , currently around 19 % of movements (2033 forecast 24%).

This Draft Master Plan provides no indication of the probable error on its growth predictions. To comply with the Master Plan environmental requirements of the Airports Act , the consequences of any such errors, (eg. "movements bulges" caused by growing pains), should be expressed in terms of their environmental impact costs to underlying home and property owners.

In the 2009 and this 2013 Master Plans a major assumption is that larger wider bodied aircraft such as the Airbus A380 and B787's (Extra Large Wide Bodied jets - "ELWB's ") will progressively replace the current fleet of passenger aircraft . It assumes this will significantly reduce both international and domestic movement numbers. . The assumption could be correct, but there is no analysis showing if , as previous generation aircraft approach capacity limits, there could be a movement bulge, followed by the transition to larger capacity aircraft. The reduced passenger demand with the economic downturn, has delayed some planned wide body introductions .

There are plenty of statements in the document that the commercial future of the airport is assured , but no analysis of whether the airport will have reached its "environment-limited" capacity before 2023 , let alone 2029 or 2033? . The environment-limited capacity was said to be ca. 360,000 movements in the LTOP Reports , Dec. 1996 - See also [#4] . If a movements figure of 360,000 applies, then the limit to airport capacity will occur in 2014 [MP 2009 PDMP Figure 5.6 - a mere year away! The Minister should be cautious in giving this plan the guernsey even to 2023, let alone 2029 or even 2033!

It is acknowledged that some apparent reduction with time of movements per million passengers is supported for some airports on recent international data (See Table 1, but not in all. Also the comparison for Sydney between 2007 and 2012 (Table 1) shows a reduction of passenger number per movement, rather than the increase expected by the "wide body" theory .

The uncertainty of such assumptions is further highlighted against contemporary world airport passenger / movement statistics as listed in Table 1 of this SACF Inc critique . This displays large variation in passenger and /or /freight-to-movement ratios among airports around the world (See Table 1) .

The predicted aircraft movement rate for Sydney in 2033 is 409,500 / annum. But the annualised ratio of passengers per movement varies widely [53 at Vancouver to 331 at Tokyo (Narita) in 2005] .

Based on passenger numbers similar airports today include Atlanta (717,001 movements; 89.33 m passengers) , Chicago (682,018 movements; 66.67 million passengers) , Los Angeles (433,452 movements; 58.91 million passengers) , London Heathrow (342,286 movements ; 65.88 million passengers) and Tokyo -Narita (156,000 movements; 63.3 million passengers) . Thus Heathrow LA and Narita are presently achieving comparable or better movement targets to Sydney's 2033 forecast, but Chicago and Atlanta do not.

So there are lesser and more efficiently performing airports. Sydney Airport needs to analyse to which group it belongs based on the characteristics of present and future usage . Perhaps most aircraft using LA London and Narita are of the current international high capacity wide body types. Narita certainly has the highest Passenger per movement ratio of 406 but is a predominantly international airport , which Sydney is not.

Perhaps Airports such as Atlanta and Chicago, display larger movement numbers for the same passenger throughput, than, say London Heathrow, because of the wider variety of aircraft types which use them (eg. General Aviation, Regional and Commuter). If Sydney belongs to the more heterogeneous aircraft type spectrum such as Atlanta , then movements could be significantly greater than expected .

Reported international freight tonnages per movement also vary widely, ie. from 0.6 (Manchester UK) to 11.8 (Hong Kong) tonnes/movement. The average tonnage per movement for the 30 airports in Table 1 is about twice the current tonnage moved by Sydney at 3.49, cf. 1.91 per movement for Sydney.

This analysis suggests that the goals of Sydney Airport , 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

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[4] 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

TABLE 1 - AIRPORT MOVEMENTS BY AIRCRAFT , PASSENGERS & FREIGHT CA. 2010

AIRPORT	**MOVEMENTS**	**PASSENGERS**	**FREIGHT**	**RATIOS**	**RATIOS**		
	AIRCRAFT	**MILLIONS**	**K-TONNES**	**PASS/Movt**	**FREIGHT Tonnes/movt**	**Curfew (Y/N)**	**Notes**
USA							
ATLANTA -Hartsfield-10	717,001	89.33	659	124.59	0.92	No	#1
BOSTON -Logan-12	354,869	29.3	235	82.62	0.66	No	#1
CHICAGO O'Hare-10	682,018	66.67	1,424	97.75	2.09	No	#1
LOS ANGELES-10	433,452	58.91	1,810	135.91	4.18	No	#1
MINNEAPOLIS-St Paul-09	432,395	32.38	NA	74.89	0	No	#1
NEW YORK (JFK)-10	298,463	46.5	1,343	155.8	4.5	No	#1
WASHINGTON -Balt-07	296,872	21.04	115.4	70.87	0.39	No	#1
WASHINGTON -Dulles-06	379,571	23.02	338	60.65	0.89	No	#1
CANADA							
MONTREAL PET-10	217,545	12.97	NA	59.62	NA	No	#1
VANCOUVER-10	293,877	16.78	228	57.1	0.78	No	#1
UK							
HEATHROW-10	342,286	65.88	1,551	192.47	4.53	No	#1
MANCHESTER-09	172,515	18.63	103	107.99	0.6	No	'#1
EUROPE							
BRUSSELS-12	223,431	18.97	459.27	84.9	2.06	No	#1
FRANKFURT-10	349,029	53	2,275	151.85	6.52	No	#1
MUNICH-10	292,145	34.72	NA	118.85	NA	No	#1
PARIS (cdg) -10	377,959	58.16	2,399	153.88	6.35	No	#1
PARIS (orly) -96	251,234	27.4	246	109.06	0.98	Yes	#1
PARIS (orly) -10		25.2				Yes	#1
ASIA							
BANGKOK-05	NA	38.98	1,140			No	
HONG KONG-09	288,169	45.6	3,400	158.24	11.8	No	#1
SHANGHAI -Pudong-10	328,132	40.6	3,228	123.73	9.84	No	#1
SHANGHAI -Hongqiao-08	185,304	22.88	416	123.47	2.24	No	#1
SINGAPORE-10	214,000	42.04	1,841	196.45	8.6	No	'# 1
TOKYO (NARITA)-06	156,000	63.3	799	405.77	5.12	No	#1
TOKYO (HANEDA)-10	252,430	64.07	805	253.81	3.19	??	#1
AUSTRALASIA							
SYDNEY-07	258,700	31.9	471	123.31	1.82	Yes	#3#4
SYDNEY-12	322,000	36.9	615	114.6	1.91	Yes	'#3
MELBOURNE Tull-08	193,826	24.89	NA	128.41	NA	No	#1
	MOVEMENTS -AIRCRAFT	**PASSENGERS MILLIONS**	**FREIGHT K-TONNES**	**RATIOS PASS/Movt**	**RATIOS FREIGHT**		
				Pass/Mvt	**Tonnes/Mvt**		
AVERAGES	321,555.62	39.1	1,165.89	133.79	3.49		
STANDARD DEVIATIONS	161,683.53	23.95	615.7	33.53	1.69		
RANGES -- MINIMUM	156,000	12.97	103	57.1	0		
- MAXIMUM	717,001	89.33	3,400	405.77	11.8		

#1 A-Z World Airports Online http://www.azworldairports.com/index.htm
#2 Individual Airport Website
#3 Sydney Airport PDMPs ; #4 no Current Data Available

dominance of domestic traffic at KSA (> 80%) , and the unlikelihood of the Australian population doubling in 20 years , the sought-for traffic growth could prove wishful. If SACL is right on passengers, but reaches today's movement rates for Chicago or Atlanta, then Sydney's skies will be black with aircraft, and the former horrendous predictions of ANEF- creep and increased noise affectation for 2023 in PDMP 2004 Figure 16.4 will become reality.

Similarly, the predicted movement of freight transport to and from KSA is limited due to the limited nature of Sydney's connecting road and rail corridors , every one of them thrombosed to stagnation during peak traffic hours, even after the construction of the M5- East.

It appears SACL is already banking on the building of the so-called "West-Connex" M4 East Tollway Extension (See PDMP pp. 15 & 78), at Commonwealth and NSW Government expense , to feed its appetite for growth . However the current Strategic Plan for Sydney shows West-Connex will probably result in the wholesale demolition of Sydney's immediate northwest residential hinterland north of the Railway from Canada Bay to Leichhardt, and public opposition to this is huge. It therefore seems improbable that the KSA will be able to achieve anything like the freight movement efficiency of 2.5 tonnes/ movement which is forecast in this 2013 PDMP [1011000 / 409500 = 2.46] . The lessee company must explain its solution to these problems before the Minister (s) approve this PDMP.

Another problem is that the PDMP does not reconcile its targets with what is compatible with maintenance of "noise sharing" (ie LTOP) when the LTOP Proponents Statement projected it as being good only up to 360,000 movements . Indeed, there is substantiated evidence for a practical slot-capacity limit at Sydney (Kingsford Smith) Airport of around 353, 000 movements. [# 5]

Close examination of the Passenger -to-Movement ratio worldwide shows the impossibility of achieving the predicted passenger numbers at KSA. This impossibility is strengthened when the issue of the essential curfew at KSA is also considered. International airports performing at SACLs sought-for passenger throughputs are all curfew-free.

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.

3.2 2033 Representative "Busy Day" Forecast Section 3.5- (PDMP Figs. 3.10 to 3.12 , p. 48)

The Figures show that the Statutory 80 movement per hour limitation will be reached in 2029 and 2033 for totals approaching up to five hours a day (3 in the morning & 2 in the afternoon). Figure 3.12 (p. 48) claims to be a comparison with "2009" MP forecasts, whereas the Key shows it to be compared with 2029! If it is a comparison with 2009 , then KSA is already at the movement saturation limit for five out of 17 hours per non-curfew day. The ALC should clarify this situation.

We make the point in forecasting approach to the 80 movement cap that this is an environmental effect and accept the statement by a former IMC Chairman that 1.3 movements per minute (80 movements per hour) is the practical limit for ATC to control . It is noted in Chapter 13 of this Master Plan (Sustainability) that S. 71(2) (e) to (f) of the Act obliges the airport company to detail its plans for amelioration and prevention of environmental effects , but there is no description of how the experience of 80 movements per hour for between four to 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" long before 2033, nor any real acknowledgement of the environmental limits to airport capacity. This is in fact an airport being "saved by" the aircraft manufacturers.

In 2004 the Govt SACF Airplan Review[#6] (Seeking Opportunities to Extend Noise-Sharing) , showed that the airport was even then practically out of time. The Sydney 2000 Olympic experience of 900 to 1100 movements per day completely saturated available slots with its effective annualised 328, 500 to 401, 500 movements / annum [#7] . However, Sydney's North West (now inundated daily with noisy departures) was spared the brunt of this during the Olympics by airspace restrictions for the games.

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5 G. Nero and J. Black (2000) ibid

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

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

The environmental impact for the residential hinterland of Sydney of the 2001 - 2033 traffic increase (shown in Table 2, below) would be horrendous if the originally forecast 2029 ANEFs (Fig. 14.5 of PDMP 2009) were to apply. Most of this will consist of aircraft flying over existing residential areas which will become progressively "newly-affected" as the "Plan" progresses. But the 20 dB(A) ANEFs shown in the 2029 data in Figure 14.6 have shifted East from the Western side of the CBD for the 2033 ANEF in PDMP 13. One really has to question whether this is real. The environmental impact liability consequences of the proposal must be honestly and accurately analysed and addressed by this airport lessee corporation for it to comply with s 71(2) of the Act.

The claim on PDMP 13 p. 38 that Sydney Airport can ***"sustainably"*** accommodate all likely growth for a further 20 years is either not supported by the facts, or one may ask : ***"sustainable for whom?"*** In 2033 aircraft takeoffs and landings are planned to operate at 80 per hour continuously from before 7:00 am right through to 10:30 am and from 17:00 to 19:00 in this PDMP 2013 [Figure 3.11].

Also, inexplicably, the morning peak in this Master Plan projection is at least two hours less than that portrayed for 2023-4 in PDMP 2004, where the absolute peak extended from before 06:30 through to at least 12:30 pm. Why is this so?

"Peaking" currently occurs from before 06:30 am through to 08:30 am and there is already a significant ***"curfew-breaching shoulder"*** period for part of the year between 05:00 and 06:00 am (ANAO Report 2006) .

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 ¾ 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 15 years.

If aviation were to grow even slightly faster than predicted, and 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 2001[#8] . 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 2033 , it is possible to foresee aereal log-jams of unprecedented proportions being created.

3.3 LTOP Movement Targets:

The approach to the LTOP Movement Targets achieved since 1997, with projection to 2033, is shown in PDMP 13 Table 14.3.

The Table confirms that this Airport Lessee Company has no chance of complying with the forecast LTOP Movement targets of 17% north, 55% south , 15% east & 13% west.

Table 14.3 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 which Airservices Australia is

[8] Government SACF Minutes , 15/6/2001; ANAO Report : Audit Report No. 29 , 2006 -7

responsible for. The public has a right to expect the 20 March 1996 Ministerial directive to be carried out or receive some justifiable explanation. ***There are advantages in maximising movements over water because this 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***[#9]!

Table 2 compares the various Master Plan-projected movements and percentage movements for 2023 through 2033 with those for the year 2000.

TABLE 2 COMPARISON OF DAILY MOVEMENTS & PERCENTAGES 2000 , 2023 , 2029 & 2033

			MOVEMENTS ACTUAL	**FORECAST MOVEMENTS**			**% Increase from 2000**
Flightpath	***Description***	***Type***	**2000 Actual**	**2023**	**2029**	**2033**	**2023/2029 /2033**
A (North)	Sydenham (B+C)	Both	126 (26%)	***284 (31%)***	***314 (33%)***	***302 (33%)***	**125/149/140%**
B (NW)	Burwood & NW	Dep	55 (11%)	***103 (11%)***	***115 (12%)***	***103 (11%)***	**87/109/ 87%**
C (North)	Hunters Hill & N	Arrival	72 (15%)	***181 (20%)***	***200 (21%)***	***199 (22%)***	**151/178/176%**
D (NE)	Double Bay	Dep	28 (6%)	***70 (8%)***	***46 (5%)***	***48 (5%)***	**150/77 /71%**
E (East)	Coogee	Both	17 (3%)	***26 (3%)***	***29 (3%)***	***26 (3%)***	**53/71 /53%**
F (East)	Maroubra	Dep	32 (7%)	***28 (3%)***	***50 (5%)***	***53 (6%)***	**-13/56 /66/%**
G (South)	La Perouse	Dep	26 (5%)	***56 (6%)***	***86 (9%)***	***84 (9%)***	**115/230/223%**
H (South)	Kurnell	Arrival	140 (29%)	***233 (26%)***	***244 (26%)***	***221 (24%)***	**66/74/58%**
I (South)	Wanda	Dep	87 (18%)	***150 (17%)***	***136 (14%)***	***141 (15%***	**72/56/62%**
K (West)	Rockdale	Both	33 (7%)	***56 (6%)***	***36 (3%)***	***42 (5%)***	**70/9/27 %**
	Total Movements		**616**	**1,187**	**1,256**	**1,219**	**98%**

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 percentages range from 26 % (year 2000) to 37% actual in 2011 to 38% (2029), projected at 33% for 2033 against the LTOP "target" of 17%.

However percentage movements for the "South" , which are almost entirely over water and notably affect few residents , decrease from 52% (2000) to 49% (2023 to 2033) against an LTOP "target" of 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.

Had SACL (or Airservices Australia) fulfilled their environmental obligations under their respective Acts, they might have concluded that the most environmentally suitable solution for Sydney was , as Minister Sharp first directed, ie. to maximise movements over water. ***Why can this not be?***

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"!

[9] DOT&RS Proponents Statement Para 3.6 at page 3-32.

4. "Sustainability", and Environmental Management (2013) Chapter 13 (p. 148 ff)

Excluding the aircraft Noise issue , the Airports Act environmental requirements are recited in this PDMP in Chapt. 13 . At PDMP Section 13.1 p. 150 the Airport Corporation lists its obligations under the Airports Act 1996 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 Exposure Noise Forecast (ANEF) levels ; and "assess environmental issues and the ALC's plans for managing these issues." (See Chapt 13 p 150 & Chapt. 14.1 p. 166). We deal with the aircraft noise issue fully in Section 5 of this Critique.

Miscellaneous Environment Issues:

The PDMP at page 150 states that the Airport Environment Strategy is attached. It is suggested that Environment Strategies are different from Master Plans and are required by S. 112 ff and the required Contents are listed in s. 116 . The Section of the Act dealing with Environment Strategies is elsewhere. A PDMP only requires the date of approval of the ***Environment Strategy*** to be specified: S. 71(2) (h).

The First Dot point on page 150 need therefore only read "The Environment Strategy for KSA was approved on [date]".

The PDMP at page 151 refers to SACLs Commitment to "Sustainability" , but this is not specifically required by the Airports Act. Table 13.1 at p. 152 lists *"within Airport emissions"*, which are required to be listed in the Environment Strategy, though are equally an environmental issue within the Airports Act .

Table 13.3 at p. 154 lists contributions to Sydney Airshed Emissions from "***the airport***" . There is an important environmental consequence associated with aircraft takeoffs and transit through Sydney's airspace, but this Master Plan does not make clear which emissions are caused by the aircraft themselves and where.

Section 13.5 page 156 confuses Major Development Plans MDPs (within airport lands) with the external impacts caused by aircraft and airport noise and emissions across the broader Sydney Area.

PDMP Section 13.6 p 159 Air Quality: Such dedication to improving local air quality is commendable, including the link between this and the "sustainability" issue and the airports broader impact on the wider Sydney residential Communities , but much hazardous pollution is spewed out by aircraft crossing Sydney's suburbs, and this includes Poly -cyclic Aromatic Hydrocarbons (PAHs) which are carcinogenic [#10] .

PDMP-09 produced purported ANEF contours for the years 2023 and 2029 and compared these with calculated ANEI's for the year 2007 [PDMP 09 Figures 14.5 to 14.8] . PDMP 13 similarly produces ANEF contours for 2029 and 2033 but compares them with the ANEI for 2012. They are unsatisfactory for the following reasons:

(a) The street and suburb layouts on the plans are barely visible in most of ANEF and related graphics (at least in the PDF versions). If the point is to inform so as to enable the community to judge the extent to which their areas will be affected by aircraft noise, then the street intersection data should be clear. These are usually available on Airservices ANEI & ANEF ***jpeg*** *charts. and*

(b) They provide no plans for ameliorating or preventing noise intrusion above both "significant" and "conditionally acceptable" ANEF levels, or evidence of having ***"assessed environmental issues and the Airport Lessee Corporation's plans for managing"*** *them.*

It does however state what is a "significant" ANEF levels according to the Airports Act (ie. ANEF >=30 dB(A) [ie the "Insulation subsidy critical level"]. Exposure at this level is, of course, totally unsatisfactory except for the totally deaf. However it effectively explains the Australian Standards system in AS 2021-2000 for assessing aircraft noise intrusion for insulation requirements, but this is in Table 14.4 of Chapt. 14 . The Airports Act in S. 71(2) (d) requires the provision of "forecasts relating to noise exposure levels" (generally) as well as those above ANEF 30 in S. 71(2) .

Further analysis of the Aircraft Noise problem is conducted in this critique at Paragraph 5 ff with reference to the data provided by SACL in Chapter 14 .

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[10] "The Sydney Airport Fiasco" (1998) , P. Fitzgerald, pp 94 - 98; ISBN 0 86806 672 9, Hale & Iremonger .

5. Noise Management (2013) Chapter 14 p 164 ff

5.1 Noise Management , Sharing and the "Long Term Operating Plan"

Under PDMP13 S.14.2.1 (Plans, actions and strategies undertaken by Sydney Airport) SACL states that

"Sydney Airport is committed to working with the organisations shown in Table 14.2 to effectively manage and mitigate the impacts of aircraft noise, especially in the vicinity of the airport or under flight paths, where these impacts can be greater than in other parts of Sydney." It says that Sydney Airport supports noise sharing, which it states Airservices Australia achieves by implementing the Long Term Operating Plan for Sydney Airport (the LTOP). It further states that the PDMP was developed on the basis that the LTOP will remain in force during the planning period. It also promises that to facilitate noise sharing, Sydney Airport will continue to provide and maintain the necessary on-airport infrastructure during the planning period and refers to the ten runway modes of operation (or modes) shown in PDMP Figure 14.1. It then goes on to list in S. 14.2.2, ***"Plans, actions and strategies undertaken by others"***.

Such actions are said to include ***Jet Noise Abatement (Airservices)*** , Quieter aircraft engines (Manufacturers) , and the ICAO "Chapter" class standards for aircraft engines, where it reports that a new aircraft noise standard was agreed by the ICAO - CAEP[#11] committee in February 2013 which aims to reduce engine noise at source to 7 dB below the Chapter 4 engine standard.

The term ***"noise sharing"*** was invented in 1996 and conjures up the grand scheme to implement the long term operating system [LTOP] as 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 (or could have been) a lot more than merely "***noise sharing***." With its ***"high and wide"*** component, it was supposed to be taking away the noise.

In citing "***supporting 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***). Some humorists have likened "noise sharing" to "disease sharing".

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 [#12]. It is the moral if not statutory environmental duty of SACL to ensure that environmental impact minimisation across the wide community 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."

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11 ICAO Committee on Aviation Environmental Protection (CAEP).

12 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.

There is evidence that the LTOP appears to have been diverted 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 [#13]. This issue was carefully analysed in SACF Inc's paper ***"The Way Foward for Aircraft Noise Sharing at Sydney (Kingsford Smith) Airport (2003) "*** , Vols. I & II [#14].

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) [#15] 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 [# 16] , reiterated by Minister Anderson in 1999 , and re-issued in September 2007, have yet to be implemented in any such optimal form [#17] . There is also an abundance of low-altitude close-in turn-requirements which create unnecessary noise nuisance for residents. Although these were, admittedly, part of the original LTOP (as published), an Airport concerned for its residential neighbours right to ***"quiet enjoyment"*** would try to persuade Airservices to abandon these. Jet Noise Abatement Procedures are mentioned in the PDMP at S. 14.2.2 p. 172 and it states that Airservices Australia ***"has published"*** jet noise abatement procedures to minimise noise impacts under flight paths around Sydney. The Airservices Web reference given to this shows that most abatement procedures currently used are less than optimal , and recent checking shows they have not changed since 1997 before LTOP[#18] .

5.2 Noise Sharing and Movement Targets MP 2013 14.2.1 ; Table 14.3

Even the hijacked goals of the defective LTOP embodied a directional movement target regime of 17% North, 55 % South 15% West and 13 % East # [19] . These targets were not achieved, and this requirement was dropped from its Master Plans by SACL in 2009 , a fact referred to in this 2033 Master Plan. [See PDMP Table 14.3] .

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 potentially have the capacity to enable as much as 85% movements over water [#20] , 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. However, the environmental clearance given (by Senator Hill as then Environment Minister) , was conditional on the achievement of strict monitoring and surveillance and in particular :

> ***(4). permanent noise monitors should be added to the present noise and flight path monitoring system where appropriate to allow monitoring of aircraft noise in areas affected by changes to flight paths made as a result of the Long-term Operating Plan. Additional mobile noise monitors should be purchased to improve the effectiveness of responses to noise complaints and improve the coverage of monitoring information.*** *and*
>
> ***(7) "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]*

The additional permanent noise monitoring required by Hill was never provided by Airservices. The Aircraft Noise Levy collection (for insulation of homes above 30 ANEF) was ended in July 2007 by the Howard government, despite both this organisation (SACF Inc) and the NSW Government having pointed out in their responses to the previous Master Plans that new areas were becoming affected, and some severely . The reversion to predominately Parallel Runway Operations , demonstrated by the difference between the 2029 and 2033 ANEFs in Figure 14.6, supports this claim.

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

14 Sydney Airport Community Forum Incorporated (2003), ISBN 0-9751843-4-2 (pbk); ISBN 0-9751843-5-0 (pdf)

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

16 Vaile - 28 August 1998 ; T159/98.

17 Govt SACF Doc. 2007-022,*"Supporting Data for SACF Noise Abatement Departure Protocol Discussion."* PS Lingard March 2006.

18 http://www.airservicesaustralia.com/aip/current/dap/AeroProcChartsTOC.htm

19 Sharp - 29 May 1997, TR 72/97

20 The Way Forward for Aircraft Noise Sharing at Sydney (Kingsford Smith) Airport, SACF Inc. (2004)

SACL acknowledges that there is now no scheme for the provision of noise insulation for newly affected residences under LTOP as the Noise contours spread inexorably further inland across residential Sydney, stating this is a Federal matter. It does, however, now better detail the role of Local Councils through S. 149 Certificate Notices in making new home buyers aware of ***an area's potential noise affectation.*** This does not benefit existing owners trapped in post 1997 aircraft noise corridors and creates additional costs for home renovators and builders.

Apart from expensive legal action against Airservices Australia, there is nothing that such owners can do . From the ***Disclaimers*** referred to in Section 2.1 (This Critique), it must be concluded that SACL and Airservices Australia are not taking responsibility for any errors in the Plan while seeking tort immunity for nuisance created by increasing aircraft noise. It seems there is in practice NO protection for residents exposed to increasing noise and that ONLY THEY must bear the costs. ***Surely this cannot be correct***?

5.3 Environmental Management of Noise :

5.3.1 Section 14.1- 14.3 Aircraft Noise and Mitigation Strategies pp. 165 ff :-

(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*** [Act S. 5 -Definitions] . This is a noise exposure level to which AS2021-2000 describes as being "unacceptable" for human habitation without significant noise insulation [PDMP Table 14.4].

The Airport is to be commended on dealing with the description of these matters more effectively here than in previous Master Plans. However, the airport appears to believe that the express responsibility for managing aircraft noise above "significant ANEFs" in Section 71(2) (e) precludes it from taking any responsibility for other aircraft noise covered by the "***environmental issues***" mentioned in S. 71(2)(d) & f) . This makes no-one currently responsible for aircraft noise below ANEF 30 , which makes no sense. We submit that may not be the case in practice , and that responsibility for sub-ANEF -30 noise IS in fact made the responsibility of the airport. Whilst the airport agrees in this PDMP to provide information about sub-ANEF-30 noise ***"to inform the community"*** (page 166) , it actually does this by diverting responsibility for noise management to the host of other organisations listed in Table 14.2.

If there really is an *unstated definition* confining the scope of S. 71(2) (f) to "environmental issues" other than aircraft noise, then Parliament should ensure that limitation is not in fact the intention of the Act. Otherwise it is open to Courts to embrace the broader definition implied in the common meaning of "environmental issue".

(ii) Noise - What has the Airport done?

At page 168 the Master Plan 2013 states that aircraft noise has been a longstanding issue for most world airports . It also states 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) ." We submit that use of the word "and" in linking of all these sub-clauses means that the intention is to include responsibility for management of all environmental issues (including noise below significant ANEF) .

If the ANEF forecast for two successive 4 years periods (2029 and 2033) can be so different in terms of predicting side-line ANEF 20 levels, then Airservices Systems need to be put under AUDIT by a delegation to the ANAO, as occurred with the Slot Management system in 2006.

5.4 Aircraft Noise Critique Summary and Conclusions:

In summary, like its predecessors, this PDMP is a plan for continued environmental degradation on a scale that has become commonplace from Sydney Airport since the opening of the third runway. This and the previous Master Plans show that the period between 2023 and 2029 will be one of immense noise spreading across the north east and north west corridors. This should not be tolerated and the 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 approve this proposal without conditions. Otherwise the social and environmental costs for the affected Sydney Communities will be immense.

The Government in turn , through parliament, should set critical aircraft noise levels for flying aircraft to comply with crossing residential areas, such as apply at America's Boston Logan and Washington Reagan , and many European airports. This should make airport lessee corporations, Airservices Australia and Aircraft Owners liable in tort for the community harm that results from the proposed expansion of Kingsford Smith Airport , given the manner, and with the minimal environmental assessment which has been presented.

There are airports in Europe and the USA where pilots of aircraft producing noise greater than stated threshold levels (around 70 dB(A)) can be heavily fined for breaching stated conditions. Is Australia really so backward that it simply cannot rationalise its aviation noise regulations in a community amicable manner? It is acknowledged this is not the airports "fault". It is the failure of governments and corporations to act in a civilised manner.

The "LTOP - noise share" plan behind which the airport lessee company adopts for environmental justification was 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. 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 inefficient for airlines which use more fuel through failure to reach cruising altitude in optimal time .

The Airport relies extensively on the introduction (by others) of newer, quieter aircraft (Section 14.2.2 , p. 172 ff.). This includes the newest , largest and potentially the most noisy behemoth ever to use the airport, ***the Airbus A 380*** , which it has extensively facilitated through runway and accommodation modifications at KSA. It proclaims the benefits (data attributed to ***Airservices Australia*** Table 14.5 p. 174) of the allegedly lower noise levels of the Ultra-Wide Body A380 than the B747 . ***However, it fails to observe that such design benefits are entirely wasted if A380's continue to be flown at the same unseemingly low altitudes over residents as the current Boeing 747s , which is the experience over Summer Hill !***

One should be suspicious of data such as in Table 14.5, unless the aircraft position and altitude is also stated. Measuring the noise produced by an aircraft which is said to be immediately over Moonbie Street , Summer Hill are meaningless if the closest Noise Monitor is at Croydon , for example; or in the case of Leichhardt , over Hawthorne Canal! This highlights another problem with LTOP: Although the then Environment Minister (Senator Hill) ordered Airservices to provide new Monitoring Stations for the areas newly affected under LTOP[#] [21] , this was never carried out.

What is the benefit of the much heralded 3dB(A) Aircraft EPNL noise reduction for A380s if an aircraft flying over houses at 1400 ft [as at Summer Hill or Bexley] is generating 100 dB(A) at ground level. Further at these noise levels Tinnitus sufferers will experience ringing in the ears, which causes severe head pain. Also sufferers of Meniere's Disease which affects the balance centre in the head can fall over when exposed to high noise

[21] Environment Minister, Robert Hill : Media Release 24/7/1997 (TR88/87) Item 4.

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 it is far worse if a victim falls and breaks a hip. And people like this are walking on the streets.

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

The PDMP in Chapter 14 repeats the principles said to underlie the Noise Sharing Flight Paths and from page 168 the so-called ***"mitigation strategies"*** used by [the airport and its associates] are listed and include several previous government initiatives.

It states that Sydney Airport "supports" all the noise mitigation initiatives introduced by the Australian Government such as the curfew, provision of acoustic insulation [p. 175 - a program now extinct], aircraft type controls, the movement cap, and hours of airport operation, including "noise sharing" [p. 168ff , Table 14.1], compliance with AS2021-2000 [p. 172], and providing Local Government with "significant" ANEFs [p. 171] .

It repeats that it does not "propose" to change any ***"noise sharing"*** flight paths [p. 164 -165ff] . 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 Table 13.2 [p. 167] it states that Flight Path Management is determined by Airservices Australia and that Sydney Airport Community Forum (government SACF) is responsible for "addressing noise impacts" . It states SACL is a member of the LTOP Implementation and Monitoring Committee [IMC].

It says that ***Airservices*** "operates" noise monitoring equipment (placed 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 "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. However, to give it credit it has gone further in this Master Plan towards explaining the complex filtering down through Local Government of the implications of the ANEF values for local residents , though it does not offer them any remedies.

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:

(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 diverted LTOP movement targets of 17% north, 55% south, 13% east & 15% west.

If the airport lessee company had addressed these crucial primary issues it might have considered it unwise to propose no new or altered flight paths in PDMP Chapt 14, because it would have recognised that the present situation is environmentally unworkable , unacceptable, unsatisfactory and potentially unsafe (Para 7, This Critique). The identification of flight path changes needed to conform to the original LTOP principles is central to addressing the current environmental and safety problems.

SACL has not addressed these crucial and important defects in the LTOP it inherited . 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 (74 m passengers, 410,000 aircraft and 1 m tonnes of freight by 2033) without putting forward any means of ameliorating and preventing adverse human impacts which will inevitably result.

5.5 Section 14.4 Aircraft Noise Descriptors - The ANEF Metric .

The Australian Noise Exposures Forecasts (ANEF) are described in this PDMP using Figures 14.5 to 14.8.

Figure 14.5 shows the ANEF for 2033 as endorsed by Airservices Australia using the Airports Movement assumptions . Figure 14.6 compares this ANEF with the previous PDMP (2009) forecast for 2029 . It shows that the proposed ANEF for 2033 covers a lesser area of Sydney at the ANEF 20 Level than the previous prediction for 2029. This suggests that from 2029, fewer dwellings can be expected to be affected by aircraft noise at the same intensity as time goes by , except for values above ANEF 25. Figure 14.7 compares the ANEF for 2033 with the apparent Australian Noise Exposure Index (ANEI) as purportedly calculated by Airservices during 2011. This ANEI are not ***"measured data"*** and presumably represent the cumulative theoretical effect of noise emitted from aircraft on flight-tracks from radar records at the time. We use the qualifier "presumably" because of the Airservices Disclaimer that states it relies on a third party for the result. The forecast 2033 impacts appear little different from those claimed to have occurred by Airservices Australia in 2011. ANEI can be calculated in two ways: (1) From knowledge of the aircraft positions overhead , using a computer model called the Integrated Noise Model (or INM); and (2) from Measurements at ground label at a target location using a Metric formula provided by Australian Standard AS2021-2000 . However continuous noise measurements carried out at a Moonbie Street Summer Hill residence from 2002 -2012 reveal a local ANEI for 2011 already close to ANEI 20 dB(A)[#22] , when the predicted boundary is around two km away. Furthermore, this monitor is logging 60% of Runway 34 L departures indicating flight concentration in the nature of a "flight corridor" when Minister Sharp was supposed to have abolished flight corridors in 1996 , and the Air Navigation (Flight Corridors) Regulations (1994) do not currently refer to them .

5.6 "Noise Descriptors" ANEI/ ANEF Distributions - PDMP S. 14.4, Figs. 14.5 - 14.8:

In PDMP 2013 Figure 14.6 -14.7, the Airport Lessee Company presents cumulative noise distribution charts for 2029 and 2033 [ANEF]. Then in Figure 14.7 there is a comparison of the 2033 purported ANEF with the 2011 (purported actual) ANEI . We submit that referral to an ANEI closer to the start of LTOP (eg. 2001) would provide a better basis for comparison.

Thus , for completeness, the comparison should be with the 2001 ANEI (as used in PDMP 2004) , because unrecognised noise affectations continue to accumulate with time, 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.

The SACF Inc Critique of 2009 showed that 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 PDMP 09 Figures 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 off colliding with crossing arrivals.

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[22] *Heinrich J. & Lingard PS (2013) Community Noise Report Summer Hill III (2002 - 2012)*

5.7 Noise Affectation Analysis - The Cost of ANEF Creep 2023 cf. 2029:

In Table 3 (below) SACF Inc compares dwelling noise affectation estimates for 2029 against the PDMP - 2004 -represented 2001 ANEI as baseline.

This organisation's assessment from its 2009 Master Plan Critique[#23] shows that under the proposed ANEF regimes for 2023 to 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 3).

TABLE 3 - INCREASED AIRCRAFT NOISE AFFECTATION - 2001 to 2023 & 2029 :

[PDMP 2004 CF 2009 - Reference Year ANEI 2001 refer Appendix "A" of SACF Inc Critique of MP 2009 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" of our Critique for the 2009 Master Plan for details

We assume that from the proximity of the 2029 and 2033 ANEFs shown in PDMP 2013 (Figure 14.6) , there will not be a significant change from the number of buildings affected compared to 2029.

By 2023 Table 3 reveals that approximately an additional 5000 homes involving 12000 residents will have 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, which probably reflects the increased period during the day when the full slot-quota approaching 80 movements / hour is expected to be realised.

There is also a high probability that with increased movement numbers , ***"noise sharing"*** will have been long abandoned and the system will have reverted to full parallel operations [Note the decreased east and west movement quotas for 2029 in PDMP 09 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).

Remarkably, the 2033 data in PDMP 13 Figures 14.6 & &14.7 suggest that the ANEF for 2033 will not have a significantly worse effect that shown by the ANEI for 2011. The airport lessee company continues to present the significant environmental data of PDMP Figures 14.6-14.9 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 obligations created by S. 71(2) of the Airports Act. Such results are inconsistent to say the least. The Democratic Transparency Principle demands that people and councils should be informed in advance if their property ***appears likely to come within an increased ANEF*** **boundary.**

Note that between 2009 and 2029 a significant ***"bulge"*** is expected in aircraft noise affectation, due to the continuance of ***"noise sharing"*** in the forecasts from 2001 through to around 2023.

[23] See "Sydney Airport Community Forum Inc Submission on Sydney Airport Corporation Ltd's "Preliminary Draft Master Plan 2009" August 2008" ISBN 978-0-9751843-7-0 (pdf); 978-0-9751843-6-3 (cdrom).

Table 3 also shows the cost of insulating the above homes at two nominal cost levels of $50,000 - $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, and is now defunct.

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!

5.8 Section 14.2.2 Environmental Management - Noise Insulation p. 175:

Noise impacts from aircraft operations can be ameliorated by flight path improvements and noise insulation.

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. Therefore this Airport 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 "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 [#24] . Since that time SANIP has been wound up, and has not been applied to newly-affected homes under the "noise sharing" LTOP flight paths [#25] [#26] .

In the PDMP the ***"airport lessee company***" states that insulation is under continual review by "DIT" (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 (p. 175)! May we ask how this is being monitored and by whom?

The ***Australian National Audit Office*** found in 1998 that the SANIP noise insulation project was unworkable and mostly non-compliant with AS2021-2000, due to the lack of any quantifiable noise reduction target for residential insulation making it difficult for program management to assess its own effectiveness and hold contractors accountable for the achievement of noise reduction standards [#27] .

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 up to 2023 , followed by a significant apparent contraction through to 2029 and plateauing in 2033 [PDMP Figures 14.5 -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 ! Table 14.2 shows that SACL expects Local Councils to undertake the information program to local home owners, with the cost being borne by taxpayers , residents and communities affected by aircraft noise of Sydney.

The ANEF description in MP 2013 is marginally better dealt with than in MP 2004 and MP2009. It states on p. 171 , the conditions requiring noise insulation for building siting and construction near Airports are specified in Australian Standard AS 2021-2000 [#28]. AS 2021-2000 states that noise insulation is desirable if the noise levels in residential relaxing and sleeping areas exceed 50- dB(A) [#29] . 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 [#30].

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

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

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

27 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

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

29 ibid Table 3.3

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

"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][#31].

5.9 Section 14.4 Aircraft Noise Descriptors other than Metrics -Pictorial

The PDMP Figures 14.9 & 14.10 shows the "average daily movements" for each of the LTOP flight path-spreading zones employed today , and so-called Respite Periods achieved (Figure 14.10) . 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 [# 32] . 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.

5.10 Section 14.4 Aircraft Noise Descriptors- The "N70"

These are presented in PDMP 13 Figure 14.11 . The meaning of "N70" is better presented here than in Master Plan 2004. 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 N70 is explained briefly at PDMP 13 p. 184 .

However, most of the graphics data showing street location and /or suburb outlines in this PDMP are lacking clarity. 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 should demand that Sydney Airport Corporation redraft all noise-related data in PDMP 2013 to show the usual outline of local government boundaries, and residential street locations as was managed for the 2004 PDMP .

The Airport Company should 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. Even with the information presented, PDMP Figure 14.11 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 2003 three month acoustic survey on an inner west property ***by Airservices Australia*** [# 33] , 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) [# 34] . 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 . Also this home has been shown to be enduring noise from 60% of jet takeoffs from Runway 34L at KSA. ***If they were in fact using effective Noise Abatement Takeoff procedures and flying higher, they would be much quieter. Failing this, 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) , though the Federal Department of Transport has made strenuous efforts to have it adopted as such. The explanation in PDMP 2013 for the use of 70 dB(A) as the criterion in such charts (Frequency-based Aircraft Noise Charts , p. 184) ***is only true for external sound level maxima of exactly 70 dB(A) at the outer edge of the contour.***

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31 "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].

32 "Falling on Deaf Ears" - November 1995 - The Parer Committee Report, ISBN 0 642 24416 2, AGPS

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

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

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" [#35] (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.

6 Land Use Zoning - PDMP 13 Chapt. 11 pp. 111-112: - 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 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 could 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 13 p171 Table 14.4 that AS 2021 -2000 states (Note 5) : ***"In no case should new development take place in greenfield sites deemed unacceptable because such development may impact airport operations."***

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[35] An "actual affected period" is a period during which aircraft are actually flying overhead.

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 13 (p.152) , but the implications for human resources need to be spelt out.

It is well recognised that aircraft exhaust include toxic by-products 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.

In Chapters 8 & 9 SACL implies that airfreight handling capability is nearing on-site capacity (PDMP Section 8.1 p. 91 ff) and proposes to deal with this by shuffling terminals and on site storage around (PDMP Section 11) . This suggests that the existing airport in this location is having difficulties handling the freight requirements up to 2.5 tonnes/ movement planned by SACL through 2033 [Table 1 shows the most recent tonnage is 1.9 tons/movement] .

7 Airspace Protection and Air Safety in General - PDMP Chapt 12 , p. 138 :

We feel compelled to draw attention to this again because of the significant public interest involved . Although the PDMP in S. 12 describes in detail the organisations responsible for various safety aspects of airport operation, including CASA, Airservices Australia (Crash Tender System) and Airspace Protection through OLS (Obstacle Limitation) Specification, it cannot control what happens to aircraft off-site should the inevitable disaster happen. Under present conditions with at least half takeoffs happening over residential areas this will necessarily be extremely bloody!

The PDMP Section 12 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 [# 36] . 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 departure flight paths [# 37] . 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"*** [# 38] were reported before the investigation and a further three such occurrences took place while it was being carried out. An obvious reason why steeper Noise Abatement Procedures (NADPs) are not employed over the northwest and the northeast is the danger of takeoffs approaching the 6000ft ceiling created by the arrivals heading south to land at Botany Bay during northerly winds . This is illustrated in the ***Community Noise Report Summer Hill III 2002-2012*** (at Figure 1) referred to previously[#39]

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 straight-on parallel operations[# 40] . 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."*** [# 41] .

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

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

37 BASI Investigation Report B98/90, August 1998.

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

39 ***Community Noise Report Summer Hill III (2002-12) (J. Heinrich & PS Lingard) August 2013 .***

40 BASI Investigation Report B98/90, August 1998, S. 1.3.5 & 1..4.3.

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

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 # [42] .

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. Long Term Development of Aviation in the Sydney Region PDMP Chapter 15

SACL Proposes to limit second airport to Supplementary Status. SACF Inc proposes that there should be a replacement and/or new primary airport outside the Sydney Basin Airshed , preferably located in an elevated position such as the near Southern Highlands , on one of the sites considered in that area for a possible alternative to Badgerys Creek in the Kinhill Stearnes 1985 comprehensive second airport study. There is a need for a full 24 hour airport which does not require a curfew , but it should not be at KSA. This would really promote future development in New South Wales by facilitating freight exports , and the near Southern Highlands is one location an airport could be built and a curfew would not yet be required. On the contrary , the Badgerys Creek site would have required a curfew according to the 1999 PPK EIS. Such an out-of-airshed airport could be serviced from Sydney with a very fast rail link, projecting through to Canberra and the south, and potentially looping round back to Sydney via Wollongong and the Dombarton Gap. This would further give Wollongong and the Illawarra access to International travel opportunities and facilitate faster freight connections. It is the view of SACF Inc that an airport at Badgerys Creek would only replicate the problems currently apparent at KSA . An airport at Badgerys Creek would also exacerbate existing problems with noise and airspace management over Sydney.

9. Aircraft Noise Critique Summary and Conclusions:

In summary, this Preliminary Drat Master Plan (PDMP) 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 approve this Master Plan proposal without conditions. If he does so the social and environmental costs for the affected Sydney Communities will be immense .

The Government in turn should face the responsibility to define who may be made liable in tort for the community harm (of specific types) resulting from the proposed expansion of Kingsford Smith Airport given the minimal environmental impact assessment which has been presented. The "LTOP - noise share" plan behind which this airport lessee company adopts for environmental justification has been 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 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 . 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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[42] LTOP Summary Report , Dec. 1996, p. 89-90.