



## TR020002 - Manston Airport

Thanet Green Party submission to PINs - reference: 20014332

The Thanet Green Party strongly objects to the proposal by RSP to re-open Manston Airport as a Cargo Hub, as we fear it would cause severe damage to the area and its population if implemented. To quote from the *documentation of RiverOak Strategic Partners (RSP)* "There is health evidence drawn from the scientific literature that allows potential impacts on mortality and rates of certain diseases due to changes in noise and air pollutant exposure to be predicted quantitatively (in numerical terms). The scientific evidence shows that, depending on the level of noise or air pollution concentration, these may affect diseases of the heart, lungs and circulation system, mental health and wellbeing, and the overall risk of premature death."

### AIR POLLUTION

A recently published Unicef report entitled *Healthy Air for every Child* claims that pollution in the air has "lasting and devastating health impacts ..... impacts that will last their entire lives ..... from stunted lung growth to asthma to restricted brain development".

According to provisional Government figures, exposure to the most harmful elements of air pollution kill over 52,000 Britons a year: with 29,000 from the effects of **Particulate Matter**, and another 23,500 dying early from **Nitrogen Oxides**.

**Particulate matter (PM):** This is basically soot, and PM with a diameter of less than 2.5 micrometres (PM2.5) is particularly harmful. The particles are able to bypass the nose and throat and penetrate deep into the lungs and even enter the circulatory system. This leads to premature death from heart and lung disease and can trigger, or worsen, chronic diseases such as asthma, bronchitis and other respiratory problems; with children and older adults being especially vulnerable.

**Nitrogen Oxides (NOx):** This inflames the lining of the lungs and makes them more susceptible to illnesses such as bronchitis. It affects every single one of us, but the impact on people with asthma is particularly acute.

**Air Pollution and Airports** *The Guardian* 27<sup>th</sup> Aug 2018 discussed air pollution with reference to a report by Xin Zhang, Xi Chen, and Xiaobo Zhang entitled *The impact of exposure to air pollution on cognitive performance*: "A report on air pollution from China recounted that it was the cause of loss of intelligence and increased mental illness in children and damaged the intelligence of those over 64 years old. It concluded that pollution could have important consequences for students who have to take crucial entrance exams on polluted days". The Guardian article also referred to a *recent study by Columbia University and the University of California* on air pollution, which found that the incidence of asthma and respiratory diseases was on average 17% higher on those within 6.2 miles of an airport, and cardiac problems 9% higher, with the elderly and young being particularly at risk. Particulate matter can penetrate the body and cause asthma, bronchitis and damage the brain.

Pollution caused by road vehicles, and particularly those with diesel engines, has been well publicised recently and the British Government, amongst others, is phasing out internal combustion engines in response. Whilst eliminating jet engines remains technically impossible with aircraft, it is all the more important to instead mitigate against the damage they cause.

### Air Pollution and the Proposed Manston Cargo Airport

Any operator at Manston is most likely to use old Boeing 747-400F aircraft, which ceased production over 20 years ago so will be more polluting. Aircraft use kerosene fuel which is similar to the diesel fuel used in vehicles. Like car exhausts, aircraft exhaust gasses contain a variety of air pollutants: including Carbon Dioxide (CO<sub>2</sub>), Carbon Monoxide, Sulphur Dioxide, and the particularly dangerous PM and NOx (see above). According to Boeing's Web site, the 747

burns approximately 4.2 gallons of fuel per mile (12 litres per kilometre) or around 1 gallon of fuel every second. But it burns 1,200 gallons on take-off, which is equal to 48,000 miles in a family car or twice around the world.

PM2.5 is of special concern, since particulate emissions from jet exhausts are almost all in this fine fraction. *Thanet District Council does not currently undertake any monitoring of PM2.5* and consequently there are no measures in place to specifically address PM2.5 concentrations within the District. PM10 is only measured at 2 sites in Thanet (Birchington and Ramsgate), where both sites are under the annual mean. But worryingly, PM10 has been rising in both areas since 2014.

Monitors at Birchington, St. Lawrence and Ramsgate show NO<sub>2</sub> annual exceedance levels of 40ug/m<sup>3</sup>; whilst both Manston NO<sub>2</sub> monitors registered about 15ug/m<sup>3</sup>. Whilst this level remains low at present, it is also rising year-on-year. (*Thanet District Council 2017 Air Quality Annual Status Report (ASR) June 20*)

The EU has found that CO<sub>2</sub> emissions from aircraft have doubled since 1990, and predict NO<sub>x</sub> emissions will increase by 43% in the next 20 years. *The Alliance of Residents concerning O'Hare inc. (ARECO 2011)* reports that a single runway with light to medium traffic pollutes within a 6 mile radius and around 20 miles downwind – in other words, pollution from the conceived Manston project will reach the whole of the Island of Thanet and surrounding area.

## **NOISE POLLUTION AND AIRPORTS**

Night noise from aircraft increases the risk of heart attacks, strokes and dementia. The EU recognise levels of noise pollution of 55dB during the day and 55dB at night as being safe limits, whilst the British Government states that noise levels of 51dB during the day and 45dB at night are “noticeable and intrusive”. However, The World Health Organisation (WHO) has recommended since 1999 that night noise should not exceed 45 dB Leq. In 2009 WHO Europe updated this guidance to recommend a maximum level of just 40 dB Leq at night.

The WHO report ‘*Burden of disease from environmental noise 2011*’ looked at over 20 studies showing negative effects of noise (both chronic and acute) on reading and memory in children. Tasks affected are those involving central processing and language, such as reading comprehension, memory and attention. Exposure during critical periods of learning at school could potentially impair development and have a lifelong effect on educational attainment.

*The effects of chronic aircraft noise exposure on children's cognition and health: 3 field studies* by the University of London (2003) was carried out in schools close to Los Angeles, Munich and London Heathrow airports. Despite being carried out in different parts of the World, in different climatic and cultural conditions, and using methodologies which differed in certain respects (repeated measures, longitudinal and cross-sectional) these studies produced a number of consistent findings: “In terms of stress and health outcomes it would appear that children chronically exposed to high levels of aircraft noise consistently experience raised annoyance levels and raised blood pressure levels. There is some evidence from neuroendocrine indicators of raised stress response levels. There is also strong evidence from these studies that motivation may be impaired and that noise exposed children may experience a sense of helplessness. In terms of cognitive and performance outcomes, there is strong evidence from the results of these studies that chronic noise exposure affects reading and attention. This is consistent with the findings from other studies e.g. Bronzaft and McCarthy, 1975, Broadbent, 1971. These three studies also provide some evidence for effects on long-term episodic and also working memory”.

*The Munich Airport Noise Study – Effects of Chronic Aircraft Noise on Children's Perception and Cognition* published interesting results in 2000. When Munich Airport was moved to a new site in 1992, the study looked into the effect of noise upon children in schools situated under the old and new airport flight paths. Previously, students in the latter had scored significantly higher than their peers. But, once the airport had moved, the results were reversed: “Among the perceptual and cognitive tasks, long-term memory and mastery of a difficult German word list was impaired in the aircraft noise group at the new airport, and was improved in the formerly noise exposed group at the old airport”. *The Lancet* also found reading levels and comprehension fell in children when noise increased.

In *How Noise Pollution can affect your Health* (2016), Stephen Stansfeld at the University of London explained that an “important area of noise research is the effects on children's learning. About 20 studies have found effects of either aircraft or road traffic noise on children's reading abilities and long-term memory. One found that aircraft noise was associated with poorer reading comprehension and memory, after taking both the children's social position and the road traffic noise into account. In the UK, reading age was delayed by up to two months for a five-decibel average increase in aircraft noise exposure”.

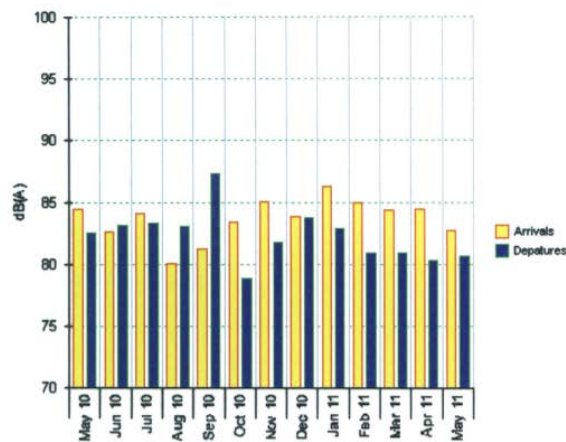
The two tables below show recordings of sound levels in the centre of Ramsgate near Clarendon House School.

**Manston - Kent's International Airport.**

Average Noise Level Report

May 2011

Monitor EMU2 28 - Chapel Place - Ramsgate



Period	Arrival/Departure	Avg. LMax dB(A)
May 2010	A	84.5
May 2010	D	82.6
June 2010	A	82.7
June 2010	D	83.2
July 2010	A	84.2
July 2010	D	83.4
August 2010	A	80.1
August 2010	D	83.1
September 2010	A	81.3
September 2010	D	87.4
October 2010	A	83.5
October 2010	D	78.9
November 2010	A	85.1
November 2010	D	81.8
December 2010	A	83.9
December 2010	D	83.8
January 2011	A	86.3
January 2011	D	83.0
February 2011	A	85.0
February 2011	D	81.0
March 2011	A	84.4
March 2011	D	81.0
April 2011	A	84.5
April 2011	D	80.4
May 2011	A	82.8
May 2011	D	80.7

**Manston - Kent's International Airport.**

Quarterly Noise Events - Top Twenty Movements

May 2011

Airline	Arr/Dep	Date	Time	Runway	A/C Type	A/C Reg	SEL	Lmax dB(A)	
STX		D	22/03/2011	18:42	10	DC86	ZSOSI	101.6	93.7
KZU	KUZU AIRLINES CARGO	D	05/05/2011	10:03	10	A30B	TCKZV	97.1	90.0
BEE	FLYBE	D	17/03/2011	12:17	28	DH8D	GECOO	96.5	88.7
CLX	Cargolux Airlines	A	17/03/2011	12:21	28	B744	LXZCV	96.5	88.7
CLX	Cargolux Airlines	A	26/04/2011	11:25	28	B744	LXWCV	95.2	88.6
CLX	Cargolux Airlines	A	26/04/2011	15:10	28	B744	LXVCV	95.4	88.5
CLX	Cargolux Airlines	A	11/03/2011	14:23	28	B742	TFAAA	95.6	88.3
CLX	Cargolux Airlines	A	08/03/2011	17:39	28	B742	TFAAA	95.5	88.0
ABD	AIR ATLANTA	A	08/05/2011	11:06	28	B742	TFATX	95.1	87.9
MON	Monarch Airlines	D	17/05/2011	20:23	28	A320	GMPCD	95.7	87.9
CLX	Cargolux Airlines	A	17/05/2011	20:27	28	B744	LXZCV	95.7	87.9
ABD	AIR ATLANTA	A	08/04/2011	15:12	28	B742	TFAAA	94.8	87.5
CLX	Cargolux Airlines	A	17/05/2011	17:50	28	B744	LXYCV	94.7	87.0
CLX	Cargolux Airlines	A	10/05/2011	16:22	28	B744	LXYCV	94.6	87.0
CV-		A	05/04/2011	09:51	28	B744	LXACV	94.7	86.7
CLX	Cargolux Airlines	A	12/04/2011	12:04	28	B744	LXRCV	95.2	86.6
ABD	AIR ATLANTA	A	20/03/2011	14:15	28	B742	TFATX	94.5	86.6
CLX	Cargolux Airlines	A	08/03/2011	16:44	28	B744	LXRCV	95.3	86.5
ABD	AIR ATLANTA	A	13/03/2011	12:05	28	B742	TFATX	94.8	86.4
CLX	Cargolux Airlines	A	25/03/2011	18:54	28	B742	TFAAA	95.0	86.4

**Note - the SELs (Sound Exposure Levels) are all over 94, with one reading of 101.4.**

There are approximately 2,250 pupils in 4 schools within 3.5km of the airfield and under the flightpath, where flight heights are near or below 200m.

*The table below illustrates how many children's education would be disrupted during the daytime alone by a 24/7 Cargo Hub Airport at Manston:*

Schools on Flightpath	Number of Pupils	Distance to Runway	Height of Aircraft Overhead
Chilton Primary School	422	1.8km	117m
Ellington Infant School	204	2.5km	135m
Christ Church Primary	253	2.75km	153m
Chatham & Clarendon Grammar Schools	1372	3.5km	212m

Many of the pupils represented above, and particularly in the primary schools, live in close vicinity to their school. They will therefore continue to suffer from noise pollution in the home environment during weekends, holidays and during the night. Numerous studies on the effects of aircraft noise have shown that noise at night disturbs sleep: causing stress hormones which can affect the immune and cardiovascular system, increase asthma, hypertension and strokes.

In *How Noise Pollution can affect your Health* (above) Stephen Stansfield wrote “Because people’s bodies still respond to noise during sleep (and it wakes you up), one suggested pathway to ill-health is through repeated sleep disturbance. Being exposed to sound while you’re asleep can particularly affect breathing, body movements, heart rate, and when you wake up. And you’re more likely to be affected if you’re elderly or a child, or you work shifts or have poor health. Research has also found that self-reported sleep disturbance is worse when it comes from aircraft noise than road traffic.”

A study published in *Occupational and Environmental Medicine* titled “Long term aircraft noise is linked to incidence of high blood pressure” followed 420 people living near an airport in Greece and found that each 10 decibels of aircraft noise at night led to a 69 percent increase in the incidence of hypertension. In 2014, researchers found that children living near Logan Airport in Boston had quadruple the normal rates of asthma, while adults in the same radius had twice the incidence of Chronic Obstructive Pulmonary Disease (COPD). An earlier study in the British Medical Journal entitled “*Aircraft noise and cardiovascular disease near Heathrow airport in London: small area study*” found a direct link between airport noise exposure and stroke and cardiovascular disease. Some studies concluded that airport noise raises nervous system and cardiovascular levels even among children. In fact, a 2005 study published in *The Lancet* found that for every 10 decibels of increased noise pollution in the surroundings, reading levels for children fell behind by two months, and comprehension faltered proportionately.

*The WHO report: Burden of disease from environmental noise* (2011) sought to clarify the relationship between the level of nocturnal noise and the effect of its disturbance, indicating its view that over 55dB is considered dangerous:

**Table 4.1. Ranges for the relationship between nocturnal noise exposure and health effects in the population**

<b>L<sub>night,outside</sub></b>	<b>Health effects observed in the population</b>
< 30 dB(A)	Although individual sensitivities and circumstances differ, it appears that up to this level no substantial biological effects are observed.
30 – 40 dB(A)	A number of effects are observed to increase: body movements, awakenings, self-reported sleep disturbance and arousals. The intensity of the effect depends on the nature of the source and the number of events. Vulnerable groups (for example, children and chronically ill and elderly people) are more susceptible. However, even in the worst cases, the effects seem modest.
40 – 55 dB(A)	Adverse health effects are observed among the exposed population. Many people have to adapt their lives to cope with the noise at night. Vulnerable groups are more severely affected.
> 55 dB(A)	The situation is considered increasingly dangerous for public health. Adverse health effects occur frequently, and a sizable proportion of the population is highly annoyed and sleep-disturbed. There is evidence that the risk of cardiovascular disease increases.

Yet, as indicated in the tables above, the sound levels around the Clarendon House area of Ramsgate regularly rose above 90dB and an L<sub>max</sub> dbA above 85, so that pupils living within the vicinity of the five schools included in the Table above can expect to be suffering dangerous levels of dBs throughout both day and night, in line with the rhythm of RSP’s planned 24/7 airport. Clearly all of the schools, and surrounding housing, should be included in a fairly, and sensitively, funded compulsory purchase order.

### **RSP’s planned Compensation**

Research has recorded a Boeing 747 as registering 90dB 1.6km away from a runway, and yet the monitor near Clarendon House some 3.5kms away has frequently peaked at 100dB. Yet, and despite the WHO recommendation that a maximum of 55dB is dangerous during the daytime (2011 above) and 40dB at night, RSP is not prepared to either replace the five schools in most dangerous locations to the airport, or rehouse any of those living in the vicinity. It has simply allocated a mere £4,000 to individual households for noise insulation, but destined only for houses subjected to over 63db. This



compensation is not only woefully inadequate in terms of mitigating against the high levels of noise which these homes, schools and businesses will suffer, but neither would it be sufficient for others living, working and studying with levels of noise between 40dB and 50dB. There are built-up areas from as close as 1.4km to the runway with 40,000 Ramsgate residents who would be affected. Including the surrounding villages, and 38,500 inhabitants in Herne Bay, there are therefore near to 100,000 people who will be directly subjected to extremities of both noise and pollution. If this project were to go ahead, RSP would need to adequately fund a package of compensation offers to these residents, ranging from Compulsory to Voluntary purchase and rehousing, to full insulation. An additional problem lies in the number of listed buildings in Ramsgate, close to the airport. Gaining permissions to add sound insulating a listed building in many cases is impossible, resulting in an intolerable situation for the owners.

## **SAFETY**

The Boeing 747-400F, the preferred workhorse for cargo, was introduced in 1993 and last delivered in 2008. So the youngest cargo aircraft will be over 20 years old, with none of the benefits of modern advances made in reduction of noise and pollution. Since the cost of replacing a 747-400F is high, and cargo operators typically fly them until they are ready for scrap, according to Boeing there are still about 300 noisy and polluting 747 freighters in operational service, carrying about half of the world's freighter air cargo. With the area around the airport, and beneath the runway, having a dense population in close proximity, and RSP proposing that 60% of its flights will take off over Ramsgate, the vulnerabilities of older aircraft in terms of accidents should be not be underestimated.

When Manston had only 435 flights a year it experienced many dangerous incidents, some of which nearly resulted in major loss of life. For example, in August 2010 the local press reported that a plane from an Afghan operator KAM Air "struck its tail on the runway and the grass surface beyond the runway before becoming airborne during take-off from Manston Airport. Investigations of this serious incident by the United Kingdom concluded that there were serious deficiencies with the operational control of the DC8 fleet of KAM Air." (*para 14, COMMISSION REGULATION (EU) No 1071/2010*). In Southwood Gardens some 2.5kms from the runway, a vortex incident in 2012 caused an entire roof to narrowly miss hitting a neighbour as it fell into her garden. And neighbours to Clarendon House School relate having witnessed planes coming in to land and, apparently having missed dumping fuel into the sea, instead dropped it on to the school whilst passing low overhead.

## **BASELINE HEALTH IN THANET – How well will the population stand up to these increased health threats?**

Thanet is the poorest area of a what is generally a wealthy county, with social deprivation of 28.47 as opposed to 10.49 in Sittingbourne (also a deprived area).

It is a highly populated area consisting of 40 square miles, with a population of approximately 126,000 people, and a density per hectare of 12.3 against the national average is 3.4

Thanet has the highest levels of socio-economic deprivation in Kent and the most limited life chances for its residents. It also has the highest proportion of children living in poverty in East Kent at 37%.

Thanet has higher than Kent average rates for all neurotic conditions and the highest number of eating disorders.

Thanet has a higher than the England average for serious mental illness, and the highest in Kent.

Thanet has the highest levels of hospital admissions for schizophrenia in Kent.

Thanet has more than double the rate of life limiting long-term illness when compared to the broad population of South East England. It has 21% higher life-limiting diseases than Canterbury, which is only situated around fifteen miles away.

In Cliftonville West the life expectancy is 69.2, which is 18 years lower than the best rates in the country.

The people of Thanet are 43% more likely to die prematurely than the community of Tonbridge or Malling in the same county.

## **CONCLUSION**

When compared with all other areas in Kent, or even Britain, Thanet residents are the worst prepared mentally and physically for a major assault of pollution and noise, and therefore the more susceptible to its influences. The RSP PEIR at 15.3.6 quoted the *Kent Director of Public Health*, who had highlighted that the area around Manston has "low life expectancy and high rates of all-age, all-cause mortality in comparison to the rest of Kent", and that "the local health economy is currently struggling to deliver sustainable health care facilities (15.3.7). Since it also accepts the health risks which the fulfilment of its plans will bring to this at-risk community (see Introduction above), RSP exposes itself as, at best, adopting a cavalier attitude towards the outcome of its plans. At worst, it could be seen to have cynically targeted this deprived area, with a view to callously exploiting the need for employment: hugely overstating the number of jobs to be created, whilst minimising the real long-term negative environmental effects. RSP has been less than honest in the outline of its plans, and promises to be less than fair to the population of Thanet in developing them. We ask the Planning Inspectorate to exhibit far greater concern and care for Thanet Residents by rejecting RSP's request for a DCO.