Ramsgate Town Council

Review of Manston Airport Airspace Change Proposal (ACP) – Options Appraisal

Consultant's report

May 2026

Contents

Document history

Version	Description	Author	Reviewer	Date
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1. Introduction

1.1 Background to the study

This report has been prepared by Alan Stratford and Associates Ltd (ASA) on behalf of Ramsgate Town Council. It provides a review of the consultation documents presented for an Airspace Change Proposal (ACP) consultation[1] for the possible reopening of Manston Airport in Kent. The review will be used by the Council to formulate a response to the consultation which closes on 22 June 2026.

The key areas of the report cover the background to the reopening of Manston Airport and the Airspace Change process (Section 1), the options presented (Section 2), the aircraft noise implications for Ramsgate residents including the potential health impacts (Section 3), the expected CO_2 emissions (Section 4), the proposed Air Traffic Zone (Section 5) and some comments regarding proposed night flights (Section 6). Our conclusions are shown in Section 7.

1.2 Manston Airport

Manston Airport is a former RAF airfield which subsequently operated as a commercial airport known as Kent International Airport and briefly as London Manston Airport. Following substantial financial losses, the airport closed in 2014. It was subsequently sold, initially to Manston Skyport Ltd, then to Stone Hill Park (SHP) who in turn sold it to Riveroak Strategic Partners (RSP), who plan to reopen the airport primarily as an air freight hub but with some passenger services. Following a planning inquiry, a Development Consent Order (DCO) to reopen the airport as a Major UK Infrastructure Project was granted by the Secretary of State for Transport in July 2020. Although this was initially quashed by the High Court, RSP reapplied for the DCO which was granted in 2022. A Judicial Review challenging this decision was rejected in May 2024.

We should state that, as specialist aviation consultants, we do not endorse the Secretary of State's decision. The Planning Inspectorate recommended that the project should not proceed following an extensive public inquiry. There is little, if any, interest from the air cargo industry and the majority of aviation experts do not believe that it could ever be commercially or financially viable. This is reinforced by the Government's proposals to go ahead with a third runway at London Heathrow airport,

[1] https://airspacechange.caa.co.uk/PublicProposalArea?pID=112

which would substantially increase UK capacity for both passenger bellyhold cargo and dedicated air freighter traffic.

The possible reopening of Manston Airport is subject to a number of planning conditions including the successful conclusion of the Airspace Change process in accordance with the terms of the DCO, the acquisition of a CAA Aerodrome Licence and agreement with the Ministry of Defence regarding the relocation of the RAF's High-Resolution Direction Finder (HRDF) currently based at the site.

1.3 CAP 1616 Airspace Change process

Riveroak Strategic Partners, the promoter of the reopening of Manston Airport, is in the process of an application to the CAA to establish the airspace and procedures required to enable safe and efficient operations to and from the airport in accordance with the Civil Aviation Publication (CAP) 1616 – Airspace Change Process and its associated guidance documents[1]. The CAA will ensure that any airspace and aviation proposals put forward are compliant with national, international and global aviation regulations and the DCO approval and will guide the airspace proposal.

The Airspace Change Proposal procedure is a seven stage process initially to develop the prioritised design principles and airspace options prior to detailed consultation with aviation and non-aviation stakeholders (Stage 3). The prioritised design principles, which were established at Stage 1 and accepted by the CAA, are shown in Table 1.1 below:

Table 1.1 ACP Prioritised Design Principles

1	Procedures must be designed to meet acceptable levels of flight safety
2	Design options must accord with the CAA's published Airspace Modernisation Strategy (CAP 1711) and any current or future plans associated with it
3	Procedures should be designed to minimise the impact of noise below 7,000 feet
4	Where practicable, designs should seek to minimise the impact of noise on particularly sensitive areas
5	Designs should minimise the impact on other airspace users in the local area
6	Procedures should be designed that minimise aircraft emissions to reduce air pollution
7	Designs should make provision for multiple routes that can be used to spread the noise burden more equitably
8	Procedures should be designed to minimise the number of track miles flown

[1] Further guidance is provided in CAP 16i6f

We agree with these design principles and with the priorities given to the evaluation process.

Although many aspects of the Airspace Change Proposal have been comprehensive, we have identified a number of flaws which we describe in more detail in Sections 2-7 of this report. We should also point out that, whilst some consultation with key stakeholders has already been undertaken to identify possible airspace options, it appears that there has been only minimal involvement of any cargo or passenger airlines and we note that no airlines attended the Design Options Workshop for Aviation and Technical Stakeholders held in July 2020. In accordance with CAP 1616i (Section 2.49), the views of airline operators (or least some typical industry representatives) should be taken into account, particularly in view of the level of traffic proposed at Year 10 of the project. In our view, this indicates the general lack of airline interest in the Manston project and it should be regarded as a weakness in this Airspace Change Proposal application.

2. Airspace options

2.1 Initial optioneering

The options considered at the initial optioneering stage included the design of the Instrument Flight Procedures (IFPs) for arrival and departure flights at Manston Airport, together with associated procedures eg for missed approaches etc. Further assessment was carried out on the nature of the surrounding controlled and uncontrolled airspace.

The flight tracks (Figure 2.1) were designed to minimise overflying land and resident populations although, in practice, all departures on R10 must inevitably fly straight ahead over Ramsgate prior to any turn over the English Channel. Similarly, arrivals on R28 must follow a straight in path over Ramsgate on the ILS glide slope from a Final Approach Fix over the English Channel approximately 17km from the runway threshold. There is more scope for minimising overflying land and resident populations on departures on R28 (eg by an early turn to the north) and on arrivals on R10, although these areas are significantly less populated than Ramsgate. No breakdown of the populations within the daytime and night-time noise contours resulting from these flight tracks is shown by the individual communities affected, although it is clear

that the vast majority of the estimated 26,224 people who would experience increased noise from the proposed flight paths live in Ramsgate[1].

Figure 2.1 Manston ACP – Proposed IFP flight tracks

The proposed departure climb rates have been designed to provide the optimal balance between reduced aircraft noise levels and fuel burn. Arrivals are assumed to follow a 3.0^0 glide slope. As indicated in Figures 2.2 and 2.3, these flight profiles result in aircraft overflying areas of Ramsgate such as Nethercourt, St Lawrence and Newington potentially at heights as low as 375 ft.

Figure 2.2 Manston Airport ACP – R10 departures
Aircraft heights overflying Ramsgate

[1] Population within the 51 LAeq,16h dB noise contour by Year 10

Figure 2.3 Manston Airport ACP – R28 arrivals Aircraft heights overflying Ramsgate

The implications of aircraft overflying Ramsgate in terms of exposure to aircraft noise and associated health impacts is discussed further in Section 3.

2.2 Other options

We note that whilst some other options and procedures have been assessed, there are ultimately few, if any, viable alternative options which would significantly reduce noise levels to residents living near Manston nor reduce the level of CO_2 emissions for flights using the airport. All departures to the east (off Runway R10) must inevitably fly over Ramsgate, irrespective of the IFP routing. Similarly all arrivals from the east must follow the ILS approach glide path over the town.

There may be other options which warrant further investigation. Some airports, including Leeds Bradford in the UK use a 3.5^0 rather than 3.0^0 approach, thereby increasing aircraft overflight height near the runway threshold. This steeper approach would technically slightly reduce the aircraft noise levels for those affected, although the increase in aircraft height is relatively modest and any improvement would be relatively minor as most of the noise impact arises from aircraft departures rather than arrivals.

There could be some benefit in the preferential use of the runway direction, depending on the wind and other weather conditions. This could potentially reduce the extent of

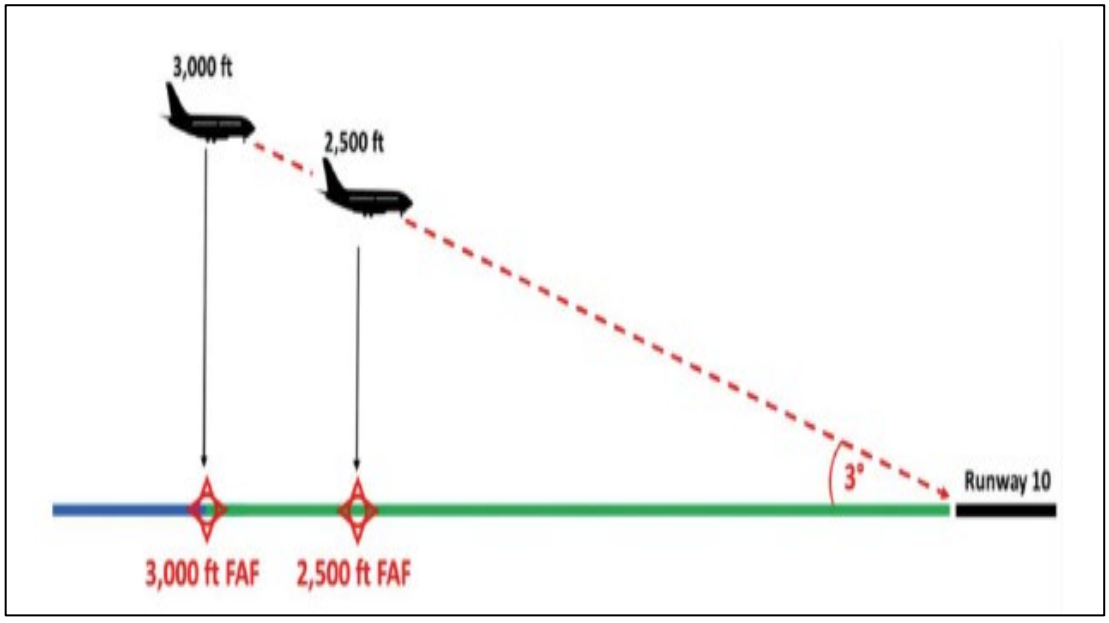
overflying over Manston, particularly during noise sensitive hours eg between 0600-0700, although this is subject to movement levels and would result in longer flight times and increased fuel burn and CO_2 emissions. This is discussed further in Section 6.

2.3 Options A v B

The consultation report puts forward two preferred options (Option A and Option B) for detailed consideration through the public consultation process. Both options are very similar and involve a minor difference in the airport approach procedure used.

The difference between the options relate only to aircraft arrivals from the west on R10 (ie not those overflying Ramsgate). Under Option A, the Initial Approach Fix (IAF) would be at 4,000 ft and would be some 29 km from the R!0 threshold, with a Final Approach Fix (FAF) at 2,500 ft, approximately 15 km from the threshold. In Option B, the IAF is at 4,000 ft, some 32 km from the threshold and the FAF at 3,000 ft, 17 km from the threshold. Aircraft therefore effectively stay higher for longer in Option A.

Figure 2.1 Manston ACP – Options A and B – Final Approach Fix (FAF)



Whilst both types of approach ultimately provide a path into the 3^0 glide slope, the steeper flight path between the IAF and the FAF in Option A requires less thrust and therefore results in a slightly lower fuel burn and CO_2 emissions in comparison to Option B, although the difference is very marginal. As indicated in Table 2.1 below,

due to the height of the flight paths there is no discernible difference in the numbers of residents exposed to day time noise levels above 51 $LA_{eq,16h}$ dB at Year 10 (26,224) and night time noise above 45 $LA_{e,8h}$ dB (2,055). The fuel burn and CO_2 emissions figures shown should be regarded as estimates only due to modelling uncertainties.. The consultation report also indicates that Option A is preferred as Option B could potentially impact on the flight paths for Southend Airport.

. Table 2.1 Manston ACP – Comparison of Options A and B[1]

	Option A	Option B	Difference
Individuals experiencing increased daytime noise in forecast year (2029)	26,224	26,224	-
Individuals experiencing increased daytime noise in forecast year (2029)	2,055	2,055	-
NPV of change in noise	£20.8m	£20.8m	-
NPV of CO2 equivalent emissions	£195.0m	£200.5m	£5.5m
Annual fuel burn in forecast year (2029)	37,164 tonnes	39,296 tonnes	2,132 tonnes

It should be noted that there are no advantages of Option B in terms of aircraft noise, fuel burn and CO_2 emissions and the possible impacts for aircraft using Southend Airport. As such, Option A must by definition be preferred to Option B. This suggests to us that the Optioneering exercise within the Stage 3 consultation has been presented purely to give an illusion of stakeholder choice between alternative options when there is ultimately no choice whatsoever.

3. Aircraft noise impacts

3.1 Baseline assumptions.

The potential aircraft noise impacts have been assessed in line with industry standards and show daytime and night-time noise contours using standard noise modelling software (FAA INM).

It should be pointed out that the noise contours are based on the aircraft movement forecasts at Year 1 and Year 10 of the project. In our view, these forecasts are highly optimistic so the number of individuals exposed to increased aircraft noise is likely to

[1] The fuel burn and CO_2 emissions figures appear to be under-estimates (see Section 4)

be over-estimated. As such, the noise impacts of the project as shown in the consultation report should be regarded as a worst-case scenario.

The noise contours indicate that nearly all those that might be impacted by the re-opening of Manston live in Ramsgate and, as such, they are more likely to experience the health impacts and the associated costs of increased aircraft noise.

3.2 Health implications

Chronic exposure to aircraft noise poses significant risks to both physical and mental health. Rather than being a mere nuisance, environmental noise acts as a physiological stressor that alters the autonomic nervous system and disrupts the body's natural restorative processes

We have summarised the primary health impacts of aircraft noise below

Cardiovascular Health[1]

The cardiovascular system is highly sensitive to noise pollution, with health risks beginning at relatively low exposure levels around 40 to 45 decibels (dB). The effects include

- Heart Structure Changes:
- Hypertension:
- Ischemic Heart Disease and Stroke

Sleep Disturbance[2]

Night-time aircraft noise is particularly damaging because the human brain continues to process environmental sounds even during deep sleep. Impacts include

- Altered Sleep Architecture: Noise events trigger structural changes in sleep, reducing critical Rapid Eye Movement (REM) and slow-wave (restorative) sleep stages
- Arousal Responses: Even if an individual does not fully wake up, sudden aircraft flyovers cause spikes in nocturnal blood pressure, heart rate elevation, and stress hormone release.
- Early Morning Disruptions: Research tracking airport noise footprints notes that the "morning shoulder period" (typically 06:00 to 07:00) is often the loudest, interrupting the final, vital cycles of sleep.

[1] Aviation Noise Impacts: State of the Science, M Basner et al, Noise and Health Journal

[2] CAP 3165 Aircraft Noise and Health Effects – a six-month update

Cognitive Impairment in Children[1]

Children raised under flight paths face distinct developmental and academic setbacks. Impacts include:

- Learning and Memory: Chronic aircraft noise impairs long-term memory, reading comprehension, and speech perception.
- Stress Amplification: Children exposed to excessive environmental noise display higher baseline psychological stress, elevated blood pressure, and a tendency for their bodies to overreact to future stressors]

Psychological Wellbeing & Metabolic Effects[2]

These impacts include:

- High Annoyance & Anxiety: Sustained noise triggers a psychological stress response known as "high annoyance". While sound levels in decibels don't always correlate linearly with mental illness, individual noise sensitivity and flight path annoyance are strongly associated with higher rates of anxiety, depression, and insomnia. [
- Metabolic Shifts: The chronic elevation of stress hormones (like cortisol) can disrupt metabolic function. Recent epidemiological studies have linked regular aircraft noise exposure above 45 dB to a higher Body Mass Index (BMI), obesity, and an increased risk of developing Type 2 diabetes.

3.3 Financial quantification

The sponsor has quantified the potential health and loss of amenity impacts from increased aircraft noise in terms of their (negative) NPV (Net Present Value) over the 10 year evaluation period (2029-2038) in accordance with standard Dept of Transport guidance (WebTAG).. This shows that either Option A or Option B would have a (negative) NPV of some £20.8 million, most of which would be attributed to Ramsgate residents.

[1] The effects of aircraft noise on psychosocial health, A Faiyetole, Journal of Transport and Health

[2] Impact of aeroplane noise on mental and physical health: a quasi-experimental analysis, S Wang et al, British Medical Journal

4. Fuel burn and CO_2 emissions

We believe that there are significant errors in the sponsor's calculations of the aircraft fuel burn and CO_2 emissions and their associated costs if the Manston Airport were to re-open as proposed.

Aircraft fuel burn

The sponsor has calculated the expected total annual fuel burn (in tonnes) attributable to aircraft using Manston.in Year 1 as 11,779 tonnes and Year 10 as 35,827 tonnes (Consultation Report – Table 6.3 – Option A).

We believe that these are under-estimates. In Year 10, Manston is forecasted to have some 18,354 Commercial Air Transport Movements (CATMs), mostly by dedicated freighters [1]. However, as these include both arrival and departure movements, only half of these should be attributed towards the fuel burn relating to flights at Manston to avoid double-counting on a global basis. Based on an estimated average fuel burn of say 12 tonnes per ATM[2], this would give a total fuel burn of approx 110,124 tonnes in Year 10, not 35,827 tonnes as shown. Based on the sponsor's fuel cost of £1,140 per tonne[3], this gives a total annual fuel burn cost of £125,541,360 at Year 10 not £40,842,788 (Section 6.6).

CO_2 emissions

Further errors appear to have been made in the CO_2 emissions calculations. The sponsor estimates these to be a total of 37,164 tonnes in Year 1, rising to 113,034 tonnes in Year 10 (Consultation Report – Table 6.4 – Option A). However, assuming an average fuel burn of 12 tonnes per CATM and CO_2 emissions of 3.16 tonnes per tonne of fuel burn[4], this gives total CO_2 emissions of some 348,000 tonnes at Year 10, which is considerably higher than the sponsor's estimate of 113,034 tonnes. There are similar under-estimates of the associated NPV costs involved.

[1] The fuel burn and CO_2 emissions due to non-commercial movements are relatively low and are excluded from our calculations.

[2] This estimate is based on the potential range of aircraft types and the average flight hours flown per ATM.

[3] Current Jet A-1 fuel prices in the UK range between £1,130 to £1,245 per tonne (May 2026), although these have been impacted by recent geo-political and supply chain disruptions

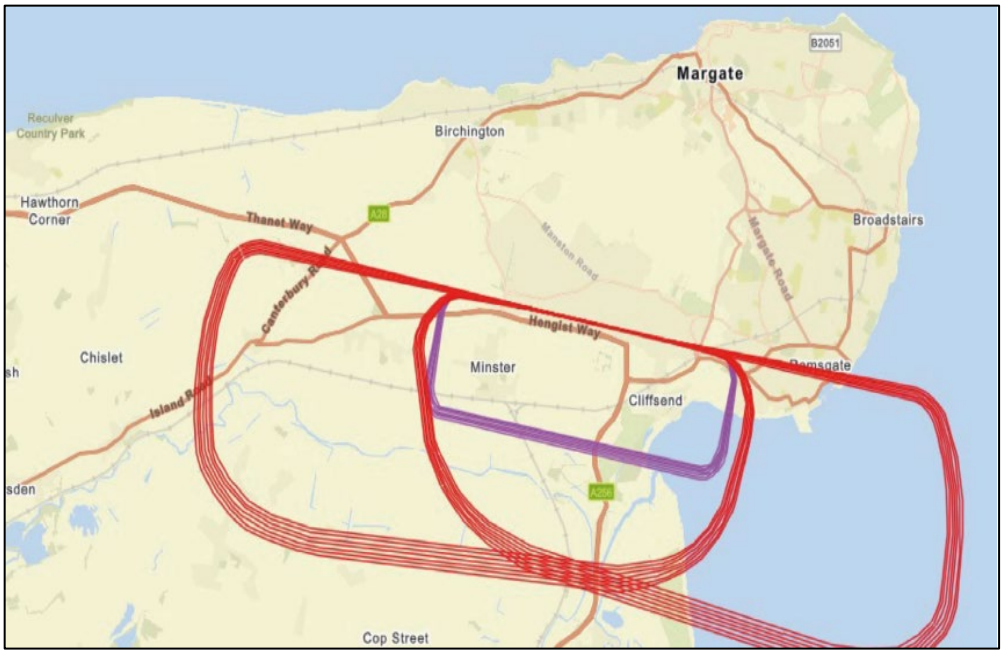
[4] CAA CAP 1524 - Information on aviation's environmental impact

5. Air Traffic Control Zone (ATZ)

The sponsor proposes that Manston has its own Air Traffic Control Zone (ATZ), rather than operating with surrounding Class D airspace eg a Control Area (CTA) and a Control Zone (CTR). We would question whether this is acceptable from a safety perspective, particularly in view of the forecasted number of commercial movements (18,354) and non-commercial movements (5,840) at the airport in Year 10. There is no other commercial airport in UK with these movement levels that operates with just an ATZ,

We also query whether the proposed jet circuits as illustrated in Figure 5.1 below are appropriate. This shows two jet circuits (in red) - one predominately to the east and the other to the west. The general aviation circuits are shown in purple. Our concern is that the jet circuit to the west (ie take-offs on R10) has a very short final approach segment prior to touchdown on R28. Whilst this may have been drawn to attempt to avoid overflying Ramsgate, this cannot be flown by a typical commercial jet aircraft which requires at least 5 km for this final approach segment. The jet circuits are normally only used for pilot training, which generally only provides minor revenue for the airport operator. In view of the need to regularly overfly Ramsgate during the circuit and in the interests of community relations, we question whether it is necessary for the sponsor to offer pilot training of this type.

Figure 5.1 Manston Airport ACP – Proposed jet and GA visual circuits



6. Night flights

Under the terms of the DCO, Manston will have no scheduled arrival or departure flights between 2300-0700, apart from a limited number of departures by passenger aircraft between 0600-0700. The sponsor suggests that the noise impacts over Ramsgate during this hour might be partially reduced by the preferential use of Runway 28 (ie take-offs to the west) provided the tailwind did not exceed 10 knots. The procedure is normally acceptable for low levels of runway movements, particularly where these are predominantly of one type ie mainly departures or arrivals. The sponsor suggests that this could potentially reduce night-noise levels over Ramsgate by up to 80%.

We agree with these proposals which, subject to further investigation, should be mandatory part of the airport's Noise Management Plan. We should also stress that the 'No Night Flights' condition in the DCO must be strictly enforced by the local planning authority[1], including penalties and the potential banning of operators responsible for any flights arriving or departing from the airport between 2300-0600, unless these are an operational emergency.

7. Conclusions

Our key conclusions from our review of the Manston ACP Stage 3 consultation report and associated documents can be summarised as follows:

(a) The ACP process has been undertaken in line with CAA CAP 1616 requirements and airspace design principles. It is generally comprehensive although we have identified certain defects and apparent errors.

(b) Whilst most stakeholders have been identified and have been consulted at an early stage (including local and town councils), the participation of cargo and passenger airlines appears to have been minimal. We believe this largely reflects their lack of interest in the re-opening of Manston Airport.

(c) Although the Instrument Flight Procedures (IFPs) for arrivals and departures at Manston have been designed to minimise overflying land and resident populations, all departures on Runway 10 and arrivals on Runway 29 would inevitably fly directly over residential properties in Ramsgate, with aircraft potentially as low as 375 ft in some locations.

[1] Thanet District Council

(d) Most of the 26,224 people estimated to be exposed to increased daytime noise and the 2,055 people exposed to increased night-time noise by Year 10 of the new cargo hub live in Ramsgate, although these figures are not broken down at the community level.

(e) There is potentially some scope for noise reduction over Ramsgate by preferential runway use ie departures on Runway 28 and arrivals on Runway 10 in tailwinds of up to 10 knots. This would only be feasible at low runway movement levels but it might be used to reduce night-time noise between 0600-0700 hours, potentially by up to 80%

(f) There could also be a reduction in noise levels over Ramsgate with a steeper ILS glide path (eg 3.5^0 rather than 3.0^0) for arrivals on Runway 28, although this is likely to be relatively minor.

(g) The two airspace design options presented for consultation (Options A and B) are very similar and both have the same aircraft noise impacts. Option A has slightly lower overall fuel burn impacts (-3.6%) at Year 10 and in terms of the Net Present Value (NPV) of the CO_2 emissions costs over the 10 year period (-2.7%). However, our own estimates suggest that there may be inaccuracies in the sponsor's fuel burn, CO_2.emissions and NPV figures, which we believe are significantly under-estimated for both options. A further consideration is that the flight paths for Option B could also impact Southend traffic.

(h) The assessment indicates that Option A is the same or is preferred to Option B on all relevant criteria.. This suggests to us that the Optioneering exercise within the Stage 3 consultation has been presented purely to give an illusion of stakeholder choice between alternative options when there is ultimately no choice whatsoever

(i) The sponsor proposes that Manston has its own Air Traffic Control Zone (ATZ), rather than operating with surrounding Class D airspace eg a Control Area (CTA) and a Control Zone (CTR). We would question whether this is acceptable from a safety perspective, particularly in view of the forecasted number of commercial movements (18,354) and non-commercial movements (5,840) at the airport in Year 10. There is no other commercial airport in UK with these movement levels that operates with just an ATZ

(j) The sponsor has drawn circuit pattens for jet pilot training, depending on the prevailing wind direction. Departures on Runway 10 would follow a circuit pattern overflying Ramsgate. For departures on Runway 28, the circuit

pattern drawn is truncated so that arrivals on Runway do not overfly Ramsgate. This however is not technically feasible as jet aircraft require a minimum of 5km for the final segment of the approach to touchdown. In any event, jet pilot training provides only minor revenue for the airport operator. In view of the need to regularly overfly Ramsgate during the circuit and in the interests of community relations, we question whether it is necessary for the sponsor to offer any pilot training of this type

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