Farnborough Noise Group evaluation of the PIR response submitted to the CAA

31st May 2023

Version 1.0

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Part 1 - Summary review of (PIR) report

The PIR report provided to the CAA by Farnborough Airport in response to the airspace change is a large document (417 pages). While it includes a lot of information, there are significant areas that have been omitted. The high-level points are noted below and a more detailed analysis provided in parts 2 - 4. First though, it is worth remembering that the airspace change is for the benefit of only about 2,000 individuals who choose to fly by private jet. The majority are flying for convenience and a significant number of flights are for leisure rather than business. It is also worth remembering that 99% of destinations are served by regular commercial flights, so the use of private jets that cause noise disturbance, pollution and emissions are a convenience.

It must also be remembered that the PIR process is a process conducted by the aviation industry for the aviation industry. There are no independent checks and balances and there is no way to validate the data in the PIR report. The scope of analysis is set by the CAA in discussion with Farnborough Airport and does not include the issues raised by many stakeholders. It is akin to setting the exam questions then marking your own responses.

1) The CAA states the PIR is a "*rigorous assessment of whether the anticipated impacts and benefits, set out in the original airspace change proposal and decision, have been delivered and if not to ascertain why and to determine the most appropriate course of action*". The report does not achieve this because it largely focusses on Farnborough aircraft while the PIR is supposed to assess the full impact of the airspace change on all aircraft (commercial jets, light aircraft, helicopters, etc) and in all areas (not just close to the airport) and on all stakeholders (including the public on the ground, under the changed airspace).

2) The PIR is an opportunity to identify issues and suggest ways to mitigate them. There have been no proposals to mitigate any issues in the report. For example, it is well known that two aircraft (Bombardier Challenger 350 and Piaggio Avanti) cause the most noise complaints. A proposal could have been put forward to restrict their access or specify engine modifications as is required in the USA.

3) There has been no measurement of noise during the PIR period other than at Farnborough airport. Since the airport has not provided access to the noise monitoring equipment that it is required to provide in the 2010 planning consent, we are unable to validated the data presented. Furthermore, the CAA committed, in writing, to include recording of all aircraft noise up to 7,000ft and 20 miles from the airport but this has not been included in the PIR report (appendix a).

4) The scope of the PIR data collection should have been provided in 2018 (as defined in CAP 1678) but it was provided the day before the PIR started. This is why Farnborough Noise Group tried to discuss the scope of the PIR before the PIR started. For example, the 2014 consultation included movements up to 20,000ft that included the impact of Heathrow and Gatwick aircraft which also generate noise disturbance to the community. The data presented in the PIR report is only to 7,000ft so it is not comparable with the baseline data and excludes a large number of aircraft that contribute to the total noise experienced by the public.

5) Any valid analysis of data and conclusions drawn from that data must be able to withstand scrutiny and be statistically significant. It is good practice to minimise the number of variables when analysing data. The 2014 baseline data was taken in the month of September. The pre-airspace change data in the PIR was taken in the month of June and the post-airspace change

data was taken in the month of August. Some data is during summer holidays and other data isn't. It would be unfounded to draw conclusions from inconsistent sets of data.

6) Another flaw in the whole airspace change and evaluation process is the belief that routing flights over quiet rural areas is a "good thing" as it reduces the number of people overflown. This completely undermines the nature of rural areas that are supposed to be protected under national legislation as quiet rural areas, otherwise they cease to be quiet rural areas that are for the benefit of the nation. It also ignores the fact that rural areas have very low background noise so the noise from aircraft is much more disruptive compared to the same noise in urban areas where the background noise level is higher. Just pushing the "noise issue" of aircraft over rural areas is akin to dumping waste in rural areas "because it affects fewer people". That is not an acceptable solution.

7) The way that people experience noise disturbance for aircraft is very different to noise experienced from say a road. Road noise is generally constant and has a high average noise level over a day. Aircraft noise is "point" noise for a short period of time. It has a much lower average noise level but is considerably more disruptive. This is why night-flights are such an issue.

8) The CAA is well aware of the public health impact of aircraft noise and reports the medical research on its website. It is well known that very low levels of aircraft noise cause significant health impacts. The CAA is therefore deliberately and knowingly impacting the health of hundreds of thousands of people for the benefit of a couple of thousand wealthy individuals. This is morally unacceptable.

9) Finally, the PIR report relies heavily on "average data" such as the average number of flights a day. This approach smooths out the issues that people are experiencing. For example, people are at home most at weekends. This is when there are most flights (e.g. Farnborough flights, recreational light aircraft and commercial flights). The public therefore experience a higher degree of disturbance at a time when they are most susceptible to it. The PIR report averages everything over a month so the impact of those disturbance events is lost. There is no analysis in the PIR report to look at and understand peak disturbance. Some people who previously experienced 5 – 10 flights a day pre-ACP are now experiencing 80 – 100 a day post ACP at a height that makes aircraft noise four times louder.

What we believe needs to happen now is that the PIR should be extended to collect the data needed to complete a "*rigorous assessment of whether the anticipated impacts and benefits, set out in the original airspace change proposal and decision, have been delivered and if not to ascertain why and to determine the most appropriate course of action"*. This should include:

1) Collection of noise data as this is the only way to reliably assess the audible impact aviation is having on people close to and further from the airport. Appropriates noise data should be collected.

2) The safety of Class G (uncontrolled) airspace must be evaluated as a result of the airspace change. At the moment only controlled airspace (Class D) has been considered.

3) Pollution from aviation is a significant health risk that is being better understood as more research is carried out. The CAA has a responsibility to ensure that Farnborough Airport's operations are not harming the health of the public. This could and should be done at any time but the PIR is an appropriate point to make this assessment.

4) A positive economic assessment was used to justify the expected harm resulting from the airspace change. This report was only made available in March 2023 and was two years late. It has not yet been fully reviewed by Rushmoor Borough Council's Overview and Scrutiny Committee and it does not show a strong business case to support the harm caused by the airspace change.

5) The CAA and FAL should engage with the Farnborough Noise Group to ensure that the data fully addresses the valid concerns of the public. This must be done for the public to accept the conclusions of the PIR.

6) Farnborough Noise Group should be provided with the analytical tools (or people to conduct the analysis) in order to validate or challenge the claims made by FAL in the report presented to the CAA.

7) The airspace changes have resulted in specific population areas bearing a disproportionate amount of aircraft noise. Many of these areas were not previously overflown or very lightly overflown. This has caused significant loss of amenity to people who chose to live in quiet areas. Flightpaths should be re-designed to address this issue or financial compensation should be provided.

Part 2 - Detailed review of PIR Documents

Section 3 – General Observations

3.1.2.a An objective of the ACP stated in CAP 1678 was "*To increase predictability and efficiency of departure routes*". Many flights do not follow the new flightpaths and there is more circling of aircraft at low altitude now than before - so this objective has not been met.

3.1.2.d An objective of the ACP stated in CAP 1678 was "*To encourage the general aviation community to use the Change Sponsor's air traffic services*". This has not happened as the majority of GA avoid using the controlled airspace and those who do are allowed or directed to fly at low altitude by Farnborough Air Traffic Control (e.g. 1,000ft – 1,500ft AGL) which creates significantly more noise than before for people on the ground under and near to controlled airspace. This objective has not been met.

Additional shortfalls in the PIR response vs CAP 1678 are covered in Part 4.

Section 4 – Safety.

The focus of the analysis is on safety within Class D controlled airspace which has no doubt improved since there are fewer aircraft using it. The airspace change has resulted in more aircraft compressed to a lower altitude with less experienced pilots and less safety equipment in uncontrolled Class G airspace. There is specific compression south of CTR 1 as aircraft have been displaced from what is now controlled airspace. There is also compression between Southampton's airspace and the new Farnborough airspace that impacts Lasham's operations and GA more widely. The issues of compression and funnelling were raised in CAP 1678 by many respondees (see sect 54 – 58) but the PIR report does not include a safety evaluation for Class G airspace nor propose how to address these risks. The assessment of safety by just reviewing ASR or AIRPROX events over a short period of time is not valid. This is because many GA pilots do not report events and because risk may have increased from 1 in 10,000 movements to 1 in 5,000 movements. This is a significant change but would not necessarily be identified unless an accident or near miss occurred during the data collection period. This is why an objective view of safety using a recognised aviation risk methodology is needed for Glass G as well as Class D controlled airspace. It should be noted that 2Excel Aviation based at Lasham stated in their response in Annex b P16 "*When transiting to uncontrolled airspace near Lasham the airspace is busier which increases risk*". This is exactly the point above and why assessment of uncontrolled airspace after the airspace change is needed.

Section 5 – Refusals of Service.

Measuring refusal of service is not a relevant measure of controlled airspace usage and accessibility. There is evidence from the 2014 baseline data that only 1/5 of GA pilots request access to controlled airspace and this should have been measured in the PIR. Many pilots, including the King's Flight, all Castle Air helicopters and most GA pilots do not request access to controlled airspace and fly around it or under it, making the noise and safety situation worse. Observations from pilots say that NATS staff are difficult to talk to and are unhelpful. The significant increase in "rat running" around the edges of controlled airspace (e.g. CTR 1) shows that many aircraft avoid controlled airspace.

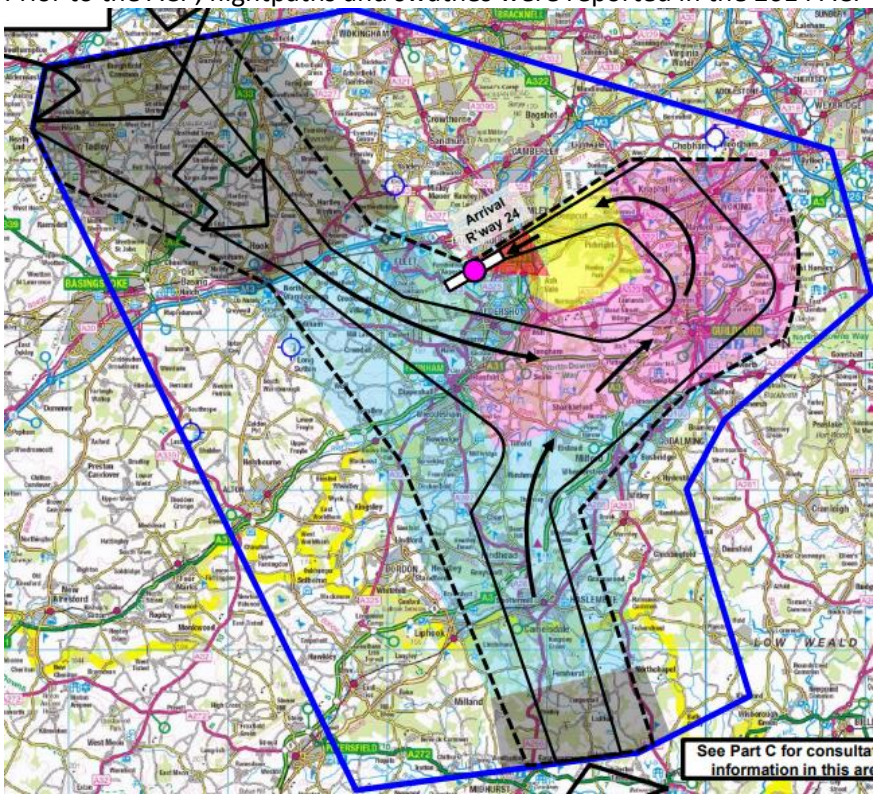
Section 7 – Traffic Figures.

This section focusses on Farnborough movements only. But Farnborough traffic is only a subset of all aircraft movements and it is all aircraft movements resulting from the ACP that should be considered in the PIR evaluation. For example, table 7.1.2 includes FAL movements. It does not include government/excluded flights to Farnborough. Nor does it include the Blackbushe and Fairoaks flights that use new Farnborough flightpaths. Nor does is consider the number of Farnborough aircraft circling nor the new calibration flights for the airport's navigation systems that can generate more than 30 additional movements in a day. These calibration flights are sometimes during the night which has introduced new noise disturbance that was not mentioned in CAP 1678. The public do not differentiate between the types of flights that generate noise, they just experience disturbance from all flights. It is therefore misleading to include only a limited number of Farnborough movements (about 32,000 per year) when the PIR is to assess the **full** impact of the change in airspace (about 80,000 overflights a year).

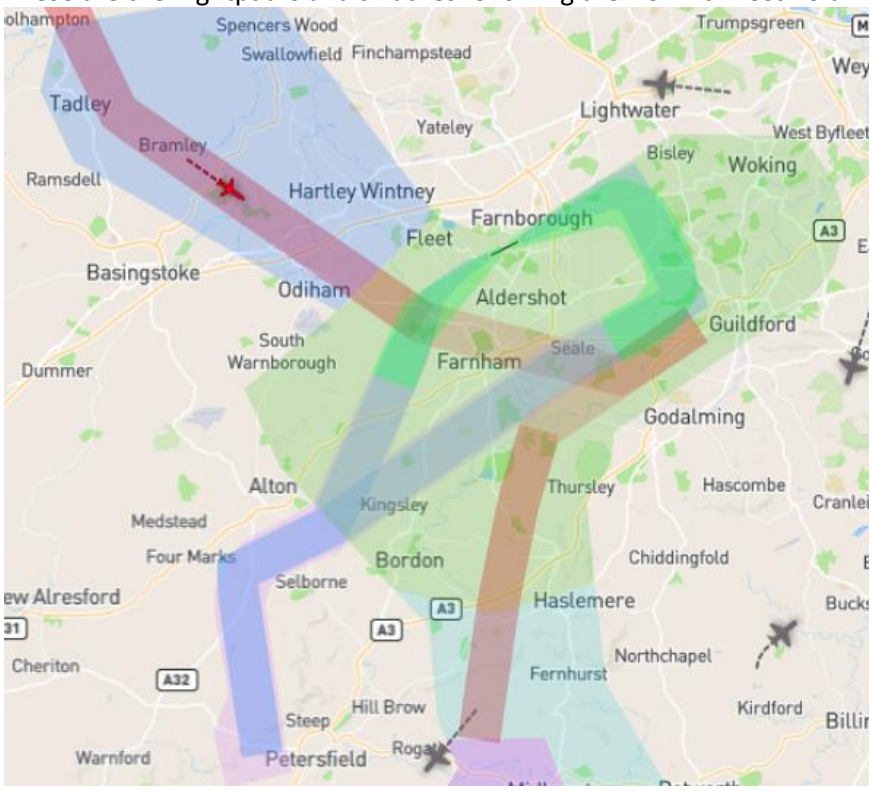
Section 8 – Traffic Dispersion Comparisons.

CAP 1678 justified the ACP in part due to the projected reduction in the number of people overflown. It claimed that 200,000 fewer people would be overflown below 4,000ft. If anything, the swathes have increased and there is no evidence that fewer people are overflown. What has happened is that many flights are now concentrated in a very narrow band so, while the same number people experience overflying, a sub-set of those people now experience a very large increase in overflying. The other fundamental, failing in the PIR data as presented is that it only considers Farnborough aircraft. The ACP has had a much more extensive impact on GA in some areas (Such as the area between Frensham and Shackleford) that have seen the typical number of aircraft overflying increase from 5 – 10 a day pre-ACP to 80 – 100 a day post-ACP. The purpose of the PIR is to evaluate the full impact of the ACP, not just the impact on Farnborough aircraft.

Prior to the ACP, flightpaths and swathes were reported in the 2014 ACP document Part B



These are the flightpaths and swathes following the ACP – almost no difference



Furthermore, since many aircraft do not follow the defined flightpaths or swathes (as seen in charts in Section 8), the perceived benefit of the number of people overflown cannot be claimed. The claims of reduced number of people overflown are therefore invalid and the CAA itself advises that caution should be used in interpreting the data. The large grey areas stating "typically less than one overflight per day" can still be 5-10 flights in a day but averaged over a month become less than 1. This would not be an experience of "reduced overflying" by people on the ground and indeed the report concluded that no members of the public have reported reduced overflying (Annex D Feedback 6.1.8).

Detailed evaluation of Annex A – Traffic Dispersion

The information is extremely difficult to follow and is not consistent in the description between charts (e.g. Figure 4 vs Figure 15). For example, it appears there is no chart for pre and post-arrivals up to 4,000ft which is one of the key comparisons. What is needed is to present the data in the way that the public look at it, not the way that FAL wants to present it.
The charts in Annex A present a picture that is not relevant to people on the ground. A comparison between Figure 1 and 2 for example suggests that fewer people are impacted by aircraft because they are climbing faster. However, faster climbing aircraft, particularly when turning (as in Figure 2) make more noise. This is why actual noise measurements must be taken rather than relying on flight numbers, tracks and estimations. It is noise that people experience on the ground more than the height of an aircraft. Indeed, the CAA has stated in writing that "*It should also be noted that the assessment of overflight does not illustrate noise impact*". It is therefore very hard to explain why the CAA has not required noise measurement in the PIR when is stated in writing that it would.

In any evaluation, it is important to minimise the number of variables so that conclusions may be drawn. The month of September was used as the baseline in the original 2014 ACP consultation. The

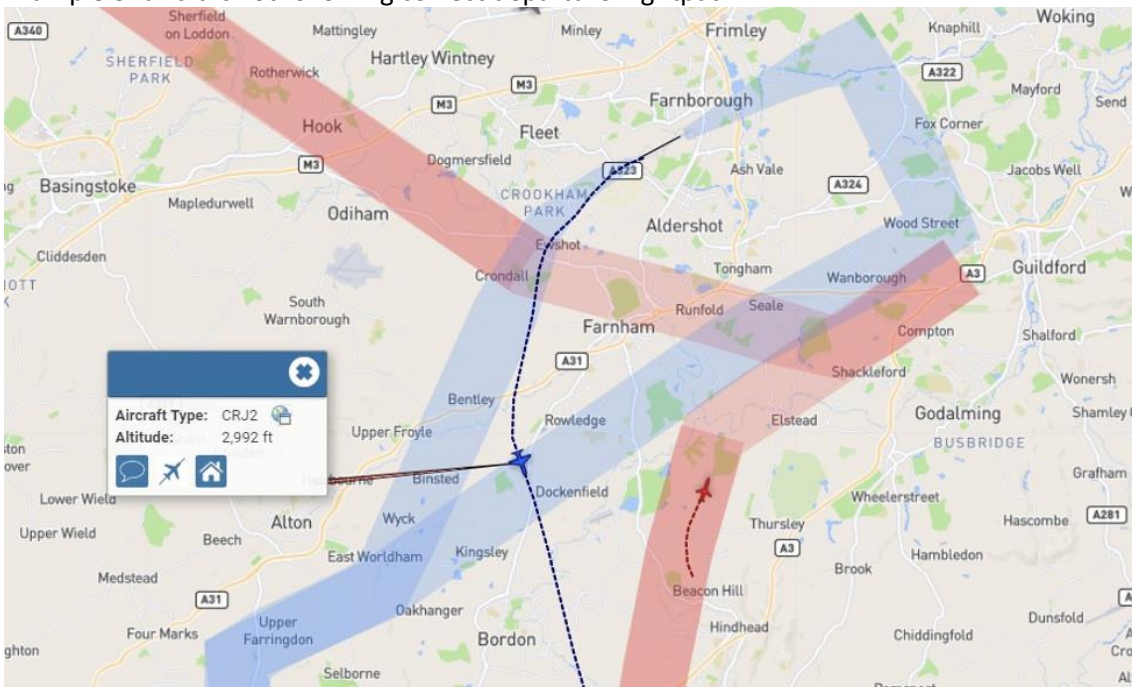
PIR review has used June 2019 (pre-ACP) and August 2022 (post-ACP) for data collection. Farnborough has clear patterns of non-business use. Winter is predominantly flights to the Alpes for skiing. Summer it is to the Mediterranean for holidays and access to second homes. Changing the months that data is compared undermines its redibility. The same month must be used to draw valid conclusions. This is why the scope of the PIR should have been confirmed in 2018 as required in CAP 1678, so relevant and comparable data could be planned for collection.

Another shortcoming in the data and its presentation is the use of averages. While these may be useful for comparisons, they do not reflect the situation experienced by the public on the ground. The public may experience 15 movements an hour for four hours on a sunny Sunday afternoon but when averaged over a 24-hour period, it becomes a small number. This does not accurately reflect what is actually happening.

The colours in the various charts in this annex appear to set a false situation in the eye of a reader. There are almost the same number of movements pre and post-ACP. Aircraft must be aligned with the runway when landing and taking off. This means that 2km from the end of the runway, the same number of flights must have overflown pre and post-ACP. With the implementation of flightpaths and Performance Based Navigation (GPS tracking), aircraft fly in a tighter track than before the ACP. However, the colouring in the charts suggests a lower density of flights post ACP (e.g. less purple area within 2km of the runway in figure 9 vs figure 8). This is not possible.

While the majority of flights follow the flight tracks, not all do. Most but not all departures follow the correct departure flightpath (SID).

Example of aircraft not following correct departure flightpath



Between 10% and 30% of flights do not follow the correct arrivals flightpath (STAR) and effectively there is a “block” of airspace between Farnborough to the north, Haslemere to the south, Godalming to the east and Alton to the west where aircraft fly anywhere. There are hundreds of examples of aircraft not following these flightpaths. Either there are flightpaths or there aren’t. It can’t be both when it suits NATS or pilots. Now that FAL has included the “swathes” in Webtrak (see below), the area that aircraft fly is considerably larger than the flightpaths in the 2014 consultation

(NOTE: The general consensus from the public is that aircraft should not fly tight routes over the same people all the time but they should fly a wider range of flightpaths to spread the noise burden. However, that changes the claim of “reduced number of people overflown”).

Example of two aircraft not following the correct arrival flightpath (STAR) or swathe

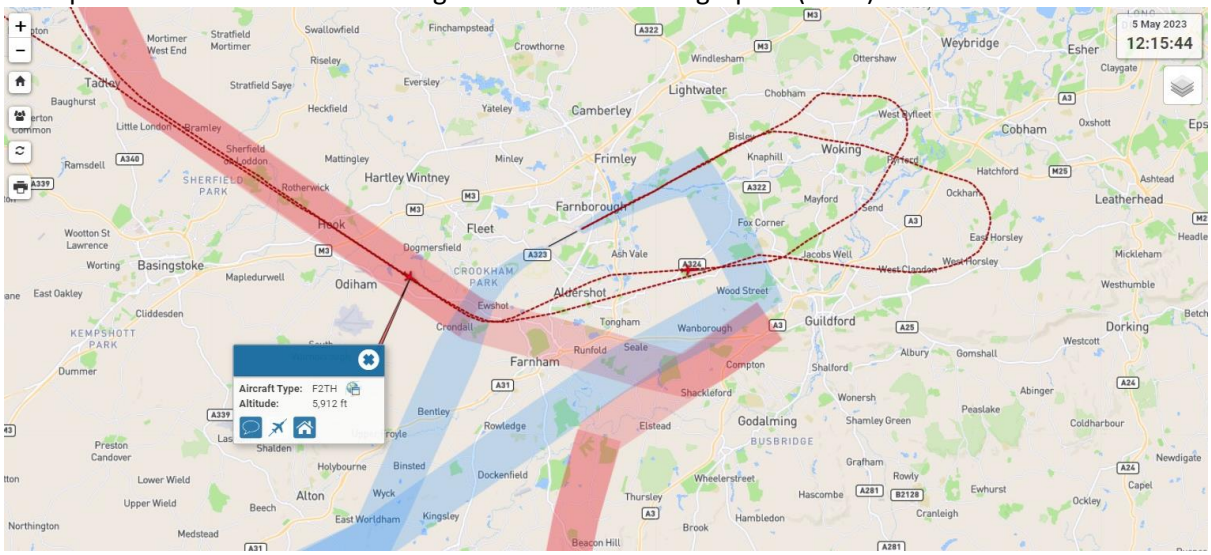


Figure 2 in section 2.3 suggests that most aircraft are achieving an altitude of 4,000ft by the time they cross the A31 following a runway 06 departure. This is generally not correct and it undermines the validity of data presented. The majority of runway 06 departures do not reach an altitude of 4,000ft until south of Farnham. Statements 2.3.4, 2.3.6 are patently incorrect. Evidence to support this can be provided.

Example of aircraft not achieving 4,000ft by A31 following Runway 06 departure

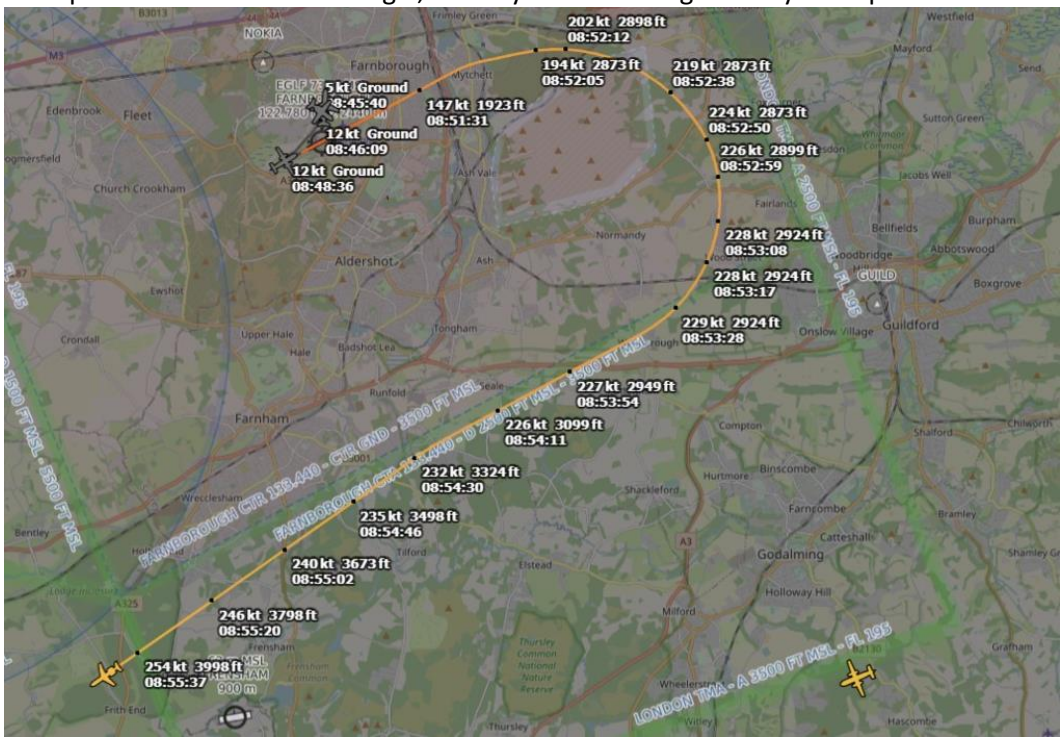


Figure 4 in section 2.4 shows that prior to the ACP, half of runway 24 departures turned north. Now all departures turn south. This has increased the number of flights experienced by people south and

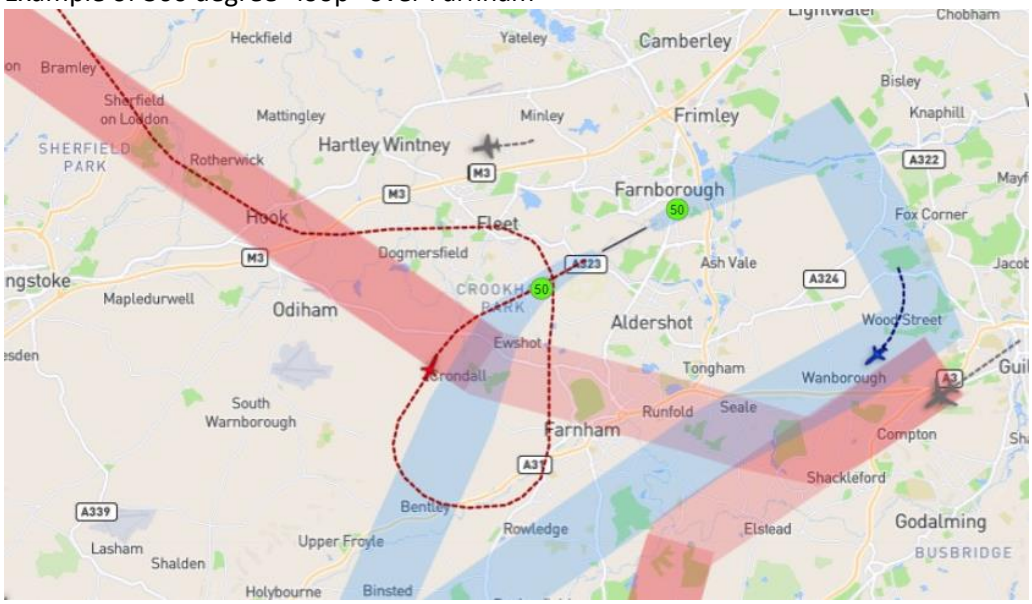
west of Farnborough. This may have pleased people north west of Farnborough as they now only have runway 06 and 24 northerly arrivals passing over them. However, people south west of Farnborough now have all southerly departures and arrivals flying over them and northerly departures and because they do a 360-degree loop, they are sometimes overflown twice by the same aircraft. This is in addition to all the General Aviation rat-running around the south of Farnborough to avoid CTR 1. This is an unfair and disproportionate burden of noise for people south of Farnborough and it coincides with the greatest increase in complaints from the public. Again, it is a reason to measure the actual noise impact for people on the ground rather than relying on estimates and averages.

The comment in section 2.9.5 that "*National Parks and AONBs are valued by some for their tranquillity*" is an unacceptable comment. Hundreds of thousands of people benefit from the nation's National Parks and AONBs while only a few thousand people choose to fly by private jet and cause a huge amount of noise, pollution and emission to everyone else. That is not a reflection of a just society or a responsible way to value the nation's natural environment.

Section 2.9.5 also suggests that AONB and National Parks have benefitted from the airspace change. However, it fails to recognise that the area south of Farnborough that is not currently AONB is in the process of being designated as AONB and the AONB and National Parks are merging to one authority. Therefore, all the areas south of Farnborough, where the new flightpaths have been installed, will all be over AONB/National Park.

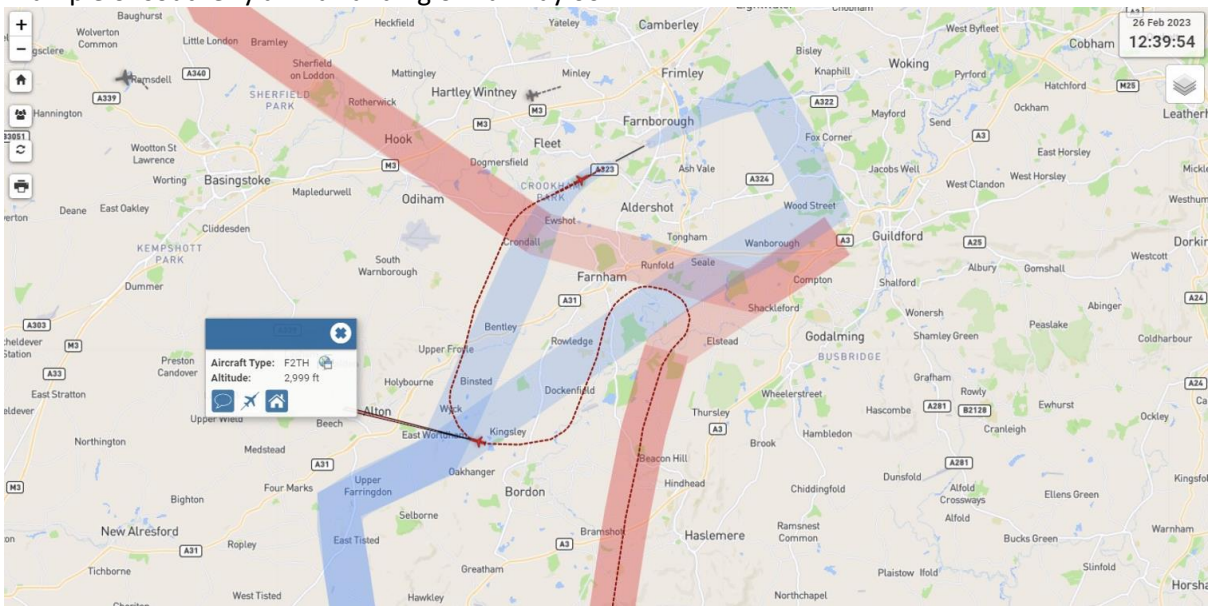
Figure 16 and Section 3.5.4 are a completely untrue representation of flightpaths. The reality is that post ACP, every arrival from the north to runway 06 now flies twice over the same people west/south west of Farnborough. This is not shown in any of the charts in this annex.

Example of 360 degree "loop" over Farnham



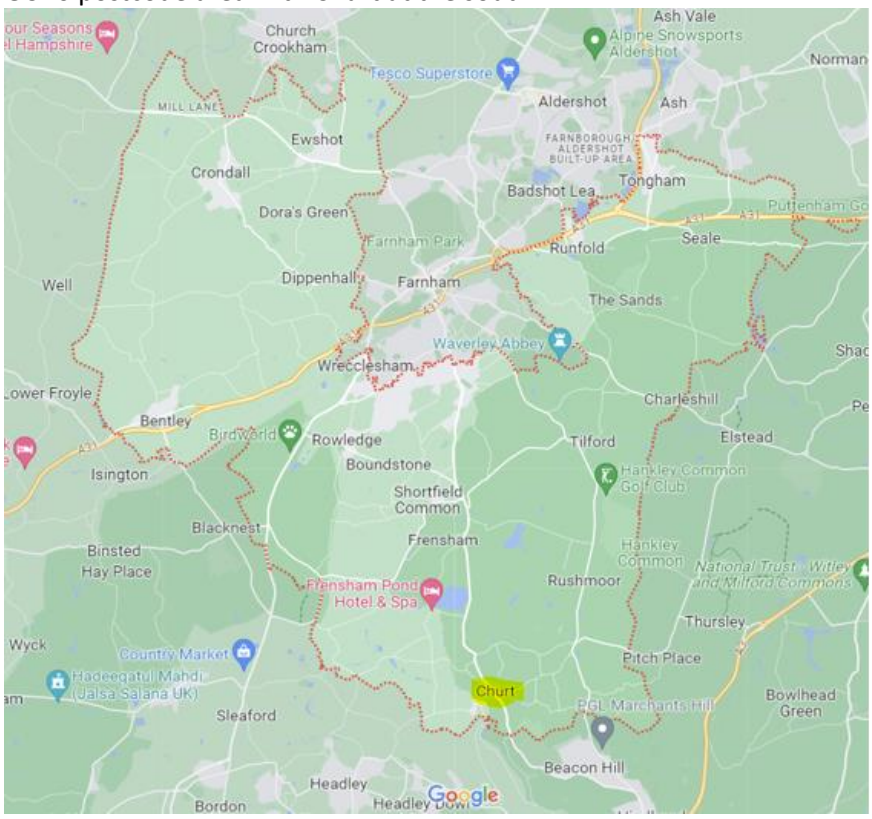
Equally, southerly arrivals to runway 06 frequently do not fly the route described in 3.5.4. They fly a route as shown in the figure below which results in multiple noise disruption.

Example of southerly arrival landing on runway 06



Section 3.9 purports to be an analysis of the GU10 area and references Churt. However, Churt is at the very south of GU10 and the commentary in this section is not correct for most of GU10. The areas of Bentley, Rowledge, Tilford and Charles Hill are much more impacted than Churt because they experience Farnborough aircraft at lower altitude, more flightpaths over them and experience much more General Aviation rat-running south of CTR 1. These villages also experience the northerly arrivals for runways 06 and 24. It is therefore biased to select one particular village in GU10 furthest away from the airport. In order to assess the true impact in GU10, detailed analysis of Frensham or Tilford would be a much more appropriate location.

GU10 postcode area with Churt at the south



3.9.4 states that the GU10 area was consulted in 2014. Most of the villages south of Farnborough that are most impacted by the airspace changes were not consulted or the information provided was not sufficient for the public to understand the impact. Some flightpaths were also changed during the consultation period but the public were not informed. We have seen many letters from councils (e.g. Surrey and Waverley) asking for more information that were unanswered. The consultation did not therefore properly follow the "Gunning Principles".

The description in 3.9.8 states the heights are in feet above mean sea level, but the heights in Figure 22 are in feet above ground level. Since the topography of the area is between 300ft and 700ft, the two sets of data are not comparable and no conclusions can be drawn from it. If one were to form an opinion from it, it would be that the majority of aircraft pre-ACP flew at 1,500ft – 3,000ft above ground level whereas post-ACP the majority fly between 1,000ft and 2,000ft above ground level. Half the height creates four times the noise so this would go a long way to explain the increase in noise that the public are experiencing.

The methodology used to measure "number of people overflown" in the 2014 consultation and subsequent CAP 1678 was designed by FAL, not the CAA. The CAA's Safety and Airspace Regulations Group produced a document called the "Environmental Assessment document Annex E". It acknowledged the limitations in the methodology and the reporting of net impacts and therefore treated the results as a 'broad indicator of impact' and caveated the results acknowledging the methodology does not account for frequency of being overflown. It advised in writing that "*caution should be applied in their interpretation for environmental assessment*".

To address this issue, in 2017, the CAA published a methodology "CAP1498 - Definition of Overflight". The methodology covers how overflying is calculated and the noise generated from those aircraft as overflying aircraft generate a "cone" of noise down to the ground. The cone is smaller but louder at lower altitudes so both the number of aircraft, the height they are at, and the noise generated by each type aircraft needs to be considered. FAL has used part of this methodology in Section 5 – only the overflown element. The figures are very difficult to interpret because they are so small. The information in sections 5.2 and 5.3 is difficult to believe and undermines conclusions that could be drawn. It cannot be possible that pre-ACP there were 2,668 people overflown 60-80 times a day but post-ACP it is 4,221 as people overflown that frequently are a mile from each end of the runway. Aircraft cannot deviate from the flightpath that close to the runway so how can the difference be explained?

Section 5.5 demonstrates the shortcoming of drawing conclusions from pre-selected data. There are a significant number of large commercial aircraft operating between 4,000ft and 7,000ft. By only selecting data for Farnborough aircraft in this section it results in an inaccurate conclusion being drawn.

As stated previously, the PIR must consider the impact of the ACP on <u>all</u> aircraft and it does not. The CAA recognised that overflying data does not and cannot be used to determine the noise experienced by people on the ground. There is therefore a major part of the analysis missing that needs to be completed.

Detailed evaluation of Annex b – Operational Feedback Engagement

The stakeholders contacted in Table 1 to provide feedback on the airspace changes all have "Letters of Agreement" with Farnborough Airport regarding how their operations work together. They are in constant dialogue with FAL and they are not representative of all stakeholders. There are no

submissions from GA pilots or operators that do not have LOAs with the airport. From speaking over several years to hundreds of pilots, operators such as Castle Air at Biggin Hill and even the King's Flight, the comments made over and over again are that NATS staff are unhelpful and slow and they show distinct preference to Farnborough Aircraft. This is why so many pilots avoid requesting access to Farnborough's controlled airspace. This information has been previously shared with NATS, FAL and the FACC. What the PIR should assess is why so few pilots are requesting access to controlled airspace. Only about 20% of GA aircraft request access to controlled airspace - far fewer than predicted in the ACP consultation in 2014.

The statement in section 2.1.8 is untrue. It is well known that there is a great deal of frustration from the public regarding the way the CAA, NATS, FAL and the FACC have operated during recent years. Many technical questions and submissions have been submitted which is contrary to the statement in 2.1.8. The public and representative bodies such as Farnborough Noise Group have been repeatedly ignored and non-FACC members are excluded from FACC meetings. The situation has resulted in MPs becomig involved and formal complaints have been submitted to Rushmoor Borough Council and the DfT. This situation is not a surprise as it is common with many groups and members of the public trying to engage with airports. The fact that the FACC is not compliant with the government's Airport Consultative Committee Guidelines means that there is no opportunity for these valid concerns from the public and other stakeholders to be addressed. As the chair of the FACC is appointed and paid for by Farnborough Airport and they have been in position for 15 years, the FACC is not going to address issues and the fact that the FACC declined to even discuss the PIR and respond to it confirms this. It is therefore a misrepresentation of the situation to provide minutes from the FACC meetings as they specifically exclude most of the questions and challenges relating to the PIR. Even simple questions such as "*are the maintenance flights for Gulfstream servicing included in the reported monthly number of flights*" have been ignored. The technical questions formally submitted to the CAA, FAL, NATS and the FACC by FNG should be included to provide a balanced and true representation of this section.

Section 10 – Denied Access

Measuring Denied Access is not an appropriate method to assess how often controlled airspace is being used by GA. Section 10.1.11 suggests that approximately 90% of access requests to controlled airspace are approved by NATS. This equates to between 250 and 600 requests a month (let's say 500 in June 2022). It seems to present a positive picture. However, the 2014 consultation measured 3,286 flights in the data month of June 2014 crossing what is now controlled airspace CTA 1[1]. This means that about 500 aircraft requested access to controlled airspace while 2,800 aircraft did not and therefore avoided it. This puts a completely different interpretation on the success of controlled airspace being available to all pilots. There is no recognition or investigation in the PIR as to why access requests are so low, and where they are now flying.

As stated previously (and supported by some comments included in Annex b), NATS is not easy to engage with and is not helpful to GA pilots which is one reason why so many avoid CAS.

Detailed evaluation of Annex e – General Aviation and Glider Study

The way that data in this annex has been presented is unnecessarily complex. Information is presented in the charts that covers such a large geographic area that it is not possible to identify detailed changes. Taking one area, the southerly edge of CTR 1 (Frensham – Guildford), there is

[1] Page B42. ACP Feedback Report Part B.

about ten times more traffic at lower altitude along a very narrow corridor post ACP compared to pre-ACP. This is unquestionably true and simple noise measurement would confirm this. Equally, presenting the chart data at a more detailed level would pick out these changes. Furthermore, the choice of months used to compare data is unreliable. For example, the most frequent and disruptive aircraft that avoid CTR 1 are Castle Air helicopters that fly 5 – 15 times a day (producing 85 dBs) between Biggin Hill and the South West. The pre-ACP month chosen is June. The post-ACP month chosen is August, a holiday month, when there will be far fewer Castle Air helicopters operating.

The way that NATS controls non-Farnborough traffic within controlled airspace has an impact both within and outside controlled airspace. This has been raised many times with NATS but the typical response is "*it is up to pilots who are flying VFR*". This is at odds with the statement in 2.1.5 that says "*Sometimes a participating aircraft outside CAS wishes to cross CAS; most of the time this will be rapidly coordinated between the two ATCOs, the aircraft is cleared to enter and becomes subject to mandatory ATC instructions rather than their own decisions*". Farnborough ATC is therefore determining the height aircraft are flying at, not pilots.

GA transiting controlled airspace usually fly at low altitude which creates more noise on the ground. This seems to be so that Farnborough Aircraft are able to operate above GA. GA aircraft continue at the same low altitude out of controlled airspace and into uncontrolled Class G airspace. This is at a lower altitude that they used to fly and it creates more noise disturbance to people on the ground, much of which is National Park/AONB. Prior to the airspace change, GA typically flew at 3,000ft above sea level (below the 3,500ft airspace ceiling). They are now typically flying at 1,300ft – 1,800ft above sea level (below the 2,500ft ceiling of CTA 4). Due to the way noise spreads, half the height results in four times the noise for someone on the ground, but it is worse than that. Since this is a hilly area, the topography of the land is between 150ft and 700ft so many aircraft are flying below the minimum legal height in the Rules of the Air. The way that GA is flying post-ACP and the noise they cause is a direct consequence of the airspace change yet FAL and NATS refuse to recognise this and advises that the public should submit complaints to the CAA if there are low flying aircraft. This is unreasonable as NATS has access to radar data and can easily identify and communicate with pilots breaching height regulations. Where aircraft are so low that they aren't visible by radar, it can only be the CAA or NATS who request information from aircraft flight logging systems. It should not be down to the public to identify, report and pursue low flying aircraft. Government guidance, such as the Air Navigation Guidance 2017 and the British Helicopter Association Guidelines state that aircraft should operate as high as possible, particularly over AONB/National Parks but this is not happening and FAL/NATS are turning a blind eye to it.

Section 3.10 for some reason evaluates the impact of GA on Churt. Churt is not especially impacted by GA because GA is flying further north in a track east/west around the southern edge of CTR 1 and a track north/south, further east of Churt. The whole area of west Hampshire and east Surrey was previously and continues to be used as a practice area by light aircraft pilots and training schools. It is unclear why analysis of GA has been conducted on Churt rather than Tilford that is at the confluence of GA flightpaths.

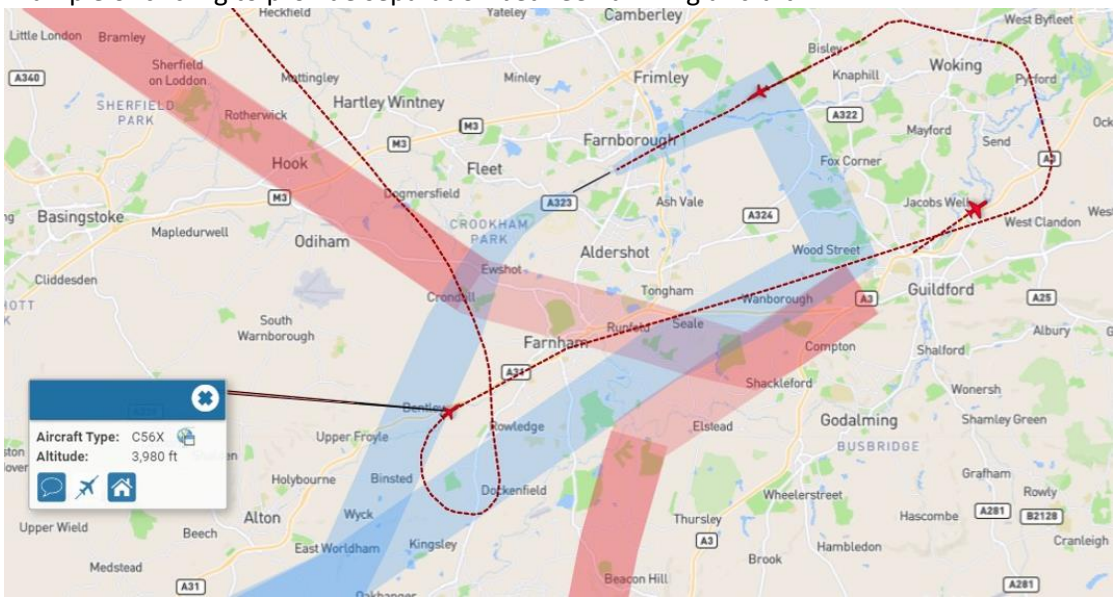
For a reader of this section, the clear conclusion is that the data is poorly presented and it is difficult to draw conclusions from it. The data could be better presented to understand the ACP impact on GA.

Section 11 – Uilisation of SIDs and STARs

There are issues with the presentation of this section. First, descriptions such as “HAZEL” and “SOKDU” are used for flightpaths but there is no explanation or location for them. Second, the data in Table 7 does not explain what height this data is for. For example, post-ACP there are no northerly departures as all departures turn south. It is only at higher altitudes (e.g. 7,000ft) that aircraft turn north, when they are outside a SID. Table 7 suggests 41.6% of SIDs are northerly which is misleading.

What is needed is an assessment of how many aircraft fly the flightpaths that were set in CAP 1678, how many do not, and the reasons why. Our analysis of daily flight tracks is that most departures are compliant with SIDS but between 10% and 30% of flights do not follow STARs. The situation quickly deteriorates when there are more than 10 arrivals per hour and this results in a significant amount of circling, non-STAR flightpaths and even go-arounds. This is not even recognised in this section and it must be because it results in more noise disturbance, pollution, emissions and risk. Avoiding these situations was one of the main reasons for implementing controlled airspace.

Example of circling to provide separation between arriving aircraft



Section 13 – Impact on Environmental Factors

13. 1 Environmental - Local Air Quality

The PIR excludes any consideration of the impact of the ACP on local air quality. This is incorrect as the ACP has had an impact on Farnborough aircraft and all other aircraft. They in turn have had an impact on air quality in different areas. The scope of the PIR should have included an assessment on air quality because aircraft are flying lower and are flying over different areas with different populations and environmental/ecological situations.

The only pollution measured and reported by Rushmoor Borough Council is Nitrogen Dioxide. The World Health Organisation has set a “safe level” of 10 ug/m3 year average. 19 of the 20 monitoring stations in Rushmoor exceeded this in 2021 when pollution levels were lower due to Covid. Rushmoor Borough Council’s “target” is 40ug/m3 year average[2]. Measuring just Nitrogen Dioxide is

[2] 2022 Air Quality Annual Status Report

not sufficient as other pollutants such as particulates (PM 10, PM 2.5 and ultrafine particles) are a significant health issue and are caused by jet engines. The PIR should measure these pollutants and assess if there is a health impact or not, especially as the Environment Act has now come into force. The 2010 S106 planning consent for the airport included a section called the "Air Quality Monitoring Scheme" it states that FAL must "*study the impacts of business aviation at the airport on local air quality*". This has not happened and the PIR is the opportunity to assess this.

13.2 Environmental - Noise

This is a topic that has run for 18 months and has involved the CAA, DfT and MPs. The CAA, in the PIR scope, originally intended to just assess noise close to the airport and only for Farnborough aircraft. This was challenged and the CAA committed, in a letter from the CEO of the CAA to Jeremy Hunt MP on 15th July 2022, that noise would be included. An excerpt is below and the full letter is in appendix a.

> We cannot establish where the understanding that the PIR will only consider noise within three miles of the airport has come from and are sorry if the cause of that misunderstanding originated from a statement made by the CAA. In fact, the PIR will consider the noise impact of implementing the new airspace design of all affected aircraft below 7000ft. In terms of distance from the airport, this will include areas much further than three miles from Farnborough. In respect to aircraft landing at Farnborough for example, this extends to over 20 miles from the airport.

The height for data collection should be up to 20,000ft to be comparable with data in the 2014 consultation that was used to produce CAP 1678. The only noise data in the PIR is section 13.2 that only covers average noise contours in close proximity to the airport and only relates to Farnborough aircraft. It does not cover the most important issue raised by the public which is the increase in noise from ALL aircraft resulting from the ACP. This section needs to be addressed to properly measure noise from all aircraft.

13.3 Environmental – Overflight and Operational Diagrams

This section is covered in the review of Annex A.

13.4 Environmental – Fuel and CO2 Emissions

The information in 13.4 includes so many variables (not least a different month has been used again to compare pre and post-ACP information). We agree that it is almost impossible to compare fuel usage data pre and post-ACP because there are so many variables. However, a better analysis would be to look at average fuel/emissions by passenger as that gives a much more relevant comparison of environmental impact. This is possible using the CAA's data from NEMo as explained in section 13.4.3.

Previously, Farnborough aircraft were frequently diverted because of the proximity of non-Farnborough aircraft. This caused more emissions. One of the projected benefits of controlled airspace was to improve reliability and consistency of flightpaths. It is apparent that many aircraft are still circling or flying inefficient routes which increases emissions and risk. The reasons for this need to be understood. It seems that there is a difficulty in NATS managing space between the

arrival of Farnborough aircraft into CAS which results in more circling and deviations in flightpath to provide separation between aircraft on the arrival flightpath (STAR).

13.5 Environmental – Tranquillity and Visual Intrusion

The Air Navigation Guidance 2017 requires the CAA to consider National Parks and AONB when designing airspace. It is recognised that it is hard to achieve this with the geography and other blocks of controlled airspace for Gatwick and Heathrow. However, the CAA has taken the view to specifically put flightpaths over these areas to reduce the number of people overflown. That is not the protection they should be afforded from a noise or visual intrusion perspective. The majority of aircraft (FAL and GA) are flying below or significantly below the maximum height they could fly at in breach of the Air Navigation Guidance 2017. This is further harming the tranquillity and visual intrusion of the area.

13.6 Environmental – Biodiversity

The PIR response takes a very narrow evaluation of the impact of the ACP. In order to provide information to support the statements made in section 13.6, an environmental and ecological assessment study would be needed. For example, birds of prey fly at 2,000ft – 3,000ft and migrating birds fly through this area at different heights. The area is AONB/National Park with several RSPB reserves. The new southerly flightpaths transect these RSPB reserves. The noise and pollution impact on wildlife should be considered and the risk of a bird strike from a large raptor at 2,500ft should also be considered. All aircraft should be considered in this evaluation as there are many more GA aircraft flying lower in the area south of Farnborough.

There is no consideration of the visual impact of so many aircraft now concentrated over AONB/National Park.

Section 15 - Stakeholder Feedback

Detailed evaluation of Annex d – Stakeholder feedback

FAL has been at pains to diminish the importance of the huge increase in complaints during the PIR data collection period (2,074% increase). The number of complaints received will be only a small fraction of the number of disturbance events to the public as most people will not report them for the reasons below. Every complaint is valid as it is an event that has irritated a member of the public enough to spend their time in making a complaint. FAL suggests that because there was “only” a 117% increase in the number of complainants, the data is distorted. The correct way to interpret this data is that a lot of people now under new flightpaths are extremely disturbed by aircraft. The number of complaints as a percentage of flights is considerably more than Gatwick and Heathrow. FAL has excluded complaints data from aircraft using the new flightpaths to Fairoaks and Blackbushe (they should be included as they are a consequence of the ACP). It has also excluded complaints relating to large commercial aircraft that are more frequent and noisier than before the ACP (this should also be included where it is a result of the ACP).

The were numerous shortcomings in the complaints process during the PIR data collection period:

- Webtrak, one of the main tools used by the public to report aircraft complaints didn't show all the flightpaths and "swathes" until after the close of the PIR data collection period. There were various times when the application wasn't working and people couldn't submit complaints.
- The 30 mins delay period makes it difficult for people to identify and report an aircraft. There is no reason (such as security) to delay data as all other aircraft reporting applications, such as FlightRadar24, are near real-time.
- There were periods of up to two months where complaints were not responded to (a breach of the S106 planning agreement).
- The information provided in response to complaints was unclear and insufficient. Compare a complaint response from nearby airports such as Heathrow, Gatwick or even Blackbushe (again, a breach of the S106 planning agreement). FAL should have staffed up appropriately as the number of complaints increased dramatically, before the PIR data collection period started.
- It must be considered that many people do not submit complaints because they would have to declare the aircraft disturbance issue when selling their house and it would impact the property value.
- A number of people have said that they gave up submitting complaints (before and during the PIR data collection period) because of the poor response and no action by FAL (note comment 3.4.8 which is an incorrect interpretation. Many complainants stopped complaining as no action was taken by FAL).
- Webtrack does not include helicopter flights so people could not use the tool to report them (note comment 3.1.1 last bullet in Annex d – Stakeholder Feedback).

Several statements made in this annex are misleading. For example, section 5.2.4 concludes that only 1.7% of the 2,000 people in Churt complained. You would not expect the children in Churt to complain and you would not expect each member of a household to complain. There are 500 residences in Churt, about 450 are primary residences (the remainder being second homes or holiday lets). There were over 700 complaints submitted by people from Churt, not 34 as stated in section 5.2.3. To claim "*a response rate of about 1.7% of the population in Churt*" in section 5.2.4 is incorrect.

FAL has tried to undermine the Farnborough Noise Group. It knows perfectly well that FNG is a large group communicating with more than 2,000 members of the public, 80 parish and borough councils and 8 regional MPs in east Hampshire and west Surrey. It is also affiliated with various national and international aviation groups. The group provides monthly newsletters and Facebook updates. FAL and the FACC could have engaged with FNG to disseminate information and engage with communities. Instead, they have excluded the group from FACC meetings and have refused to answer questions summitted (breach of Civil Aviation Act 1982 Sect 35(2)c). Farnborough Noise Group is not the Churt noise group and has not put information on another organisation's website.

The airport is breaching "Civil Aviation Act 1982 Sect 35" by not engaging openly and effectively with communities e.g. not answering questions from the public.

The most obvious conclusion from the complaints data is that the largest number of complaints and complainants are under the new flightpaths. That is hardly a surprise. But the most important point here is that no action has been taken by FAL in response to any complaint as every complaint

submitted has been rejected on the grounds that the flight is compliant. Complaints data is a source of information for FAL to make improvements rather than to reject.

The report in 5.2.2 highlights a response from a member of the public that contains a number of errors. This is inappropriate and demeaning of the public for a topic that requires significant technical knowledge. The challenge back to FAL is that it has clearly not explained the airspace changes and noise impacts to the public in language people can understand.

The conclusion in Section 6 effectively says "*We knew the ACP would impact people under the flightpaths and cause a lot of noise complaints, it has, we've done nothing about it, its just tough on those people impacted*".

Part 3 - Comparison of PIR response vs CAP 1678

The objectives of the Farnborough ACP, as stated in CAP 1678 are:

> 2. The Change Sponsor justifies the ACP on the basis that it will:
>
> a. Bring benefits to the Change Sponsor's ATC operation and to other airspace users in the region.
>
> b. Enhance aviation safety.
>
> c. Reduce noise impact on the local population.

In summary, the ACP has not achieved these objectives because:

a) There have been no benefits to other airspace users in the region. There have been disadvantages such as reduced access to airspace, having to fly longer routes and delays in accessing controlled airspace.

b) While safety in controlled airspace will have improved because there are fewer aircraft in it, safety in uncontrolled airspace has deteriorated with less experienced pilots with less safety equipment flying in closer proximity to each other and to the ground.

c) There has been an increase in noise impact on the local population. There have been more noise complaints since the ACP because the flightpaths have been put over people who were not previously disturbed by aircraft noise. Nobody, even in areas now overflown less, has recognised a reduction in noise. The PIR has not measured noise in the areas that are now impacted by the ACP so cannot claim a reduction in noise impact.

d) Efforts to encourage the GA community to use the Change Sponsor's air traffic services have not happened or have not been successful with only 1 in 5 GA pilots requesting access to CAS.

e) CAP 1678 section 31 states that 24 parish councils were contacted – yet there are more than 85 parishes in the areas affected by the ACP. Furthermore, section 29 states "*The CAA has reviewed the documentation, and the CAA is content that someone reading the initial consultation would have been able to understand the anticipated impact of the proposal on them*". It is evident during the PIR that the majority of the public impacted by the ACP were not aware of it nor the potential impact on them. It is not for the CAA to determine if the

CAA understands the documentation, that should have been assessed by the public receiving it. There were only 231 members of the public who commented out of 48,000 households impacted by the ACP under 4,000ft which clearly shows that the public were not aware of the impact of the proposed changes[3].

f) The issue of GA "funnelling" and "compression" around and under CAS was identified in CAP 1678 section 54. The actions taken by the CAA/FAL/NATS have not addressed this and the PIR does not properly assess the situation or propose ways to address the increase in funnelling.

g) CAP 1678 states in section 59 that "*The CAA is required to secure the most efficient use of the airspace consistent with the safe operation of aircraft and the expeditious flow of air traffic*" and quotes the Transport Act 2000, Section 70(2)(a). However, Section 70(2)(c) of the Act requires the CAA to "*take account of the interests of any person (other than an operator or owner of an aircraft) in relation to the use of any particular airspace or the use of airspace generally*". The CAA should not prioritise subsection (a) at the expense of subsection (c).

h) The Transport Act 2000 Section 70(2)(d) states the CAA must "*take account of any guidance on environmental objectives given to the CAA by the Secretary of State after the coming into force of this section*". The Climate Change Act 2008 came into force after the Transport Act 2000 and it requires the CAA to establish actions to reduce greenhouse gasses. Various emissions reductions milestones are set in the journey to Net Zero by 2050. FAL's objectives, supported by the CAA, is to increase emissions. The CAA has not provided any assessment or plan in CAP 1678 or in the current PIR to meet this legal requirement under the Climate Change Act 2008.

i) CAP 1678 states in Annex C, section C22 "*The Government has made it clear therefore that it wants to strike a fair balance between the negative impacts of noise and the economic benefits derived from the aviation industry*". This is very clear. The "economic benefits" of the airport's flight operations are used as a justification for the increase in noise the public will experience. The PIR does not consider the economic benefits. Indeed, the economic impact assessment report only just submitted by FAL to Rushmoor Borough Council does not show significant economic benefits of flight operations at the airport. The report is currently being evaluated by the Overview and Scrutiny Committee.

j) CAP 1678 states in Annex C, section C26 *"…any local authority and any organisation representing the interests of person in the locality have been consulted*". CAP 1678 was published in 2018 and the airspace changes were implemented in February 2020. FAL and the CAA have not engaged with the public and have not consulted with organisations like FNG that represents a large number of people and communities in the locality.

k) CAP 1678 states in Annex C, section C27 that the Aviation Policy Framework 2013 must be applied. Section 3.19 of the Aviation Policy Framework 2013 states "*Average noise exposure contours are a well-established measure of annoyance and are important to show historic trends in total noise around airports. However, the Government recognises that people do not experience noise in an averaged manner and that the value of the LAeq indicator does not necessarily reflect all aspects of the perception of aircraft noise.* ***For this reason we recommend that average noise contours should not be the only measure used when airports seek to explain how locations under flight paths are affected by aircraft noise.***

[3] Consultation Feedback Report Part A 2014

Instead the Government encourages airport operators to use alternative measures which better reflect how aircraft noise is experienced in different localities, developing these measures in consultation with their consultative committee and local communities*. The objective should be to ensure a better understanding of noise impacts and to inform the development of targeted noise mitigation measures".* The PIR (and FAL historically) has not recognised this legislation and has only relied on average noise contours and LAeq16.

Part 4 - Actions to address shortcomings in PIR

The following actions should be taken to ensure that the PIR is a "*rigorous assessment of whether the anticipated impacts and benefits, set out in the original airspace change proposal and decision"*:

a) Measure actual noise in the surrounding areas (20 miles up to 7,000ft) as committed to by the CAA

b) Identify the primary causes of aircraft noise and propose solutions to mitigate it (e.g. consider banning the most complained about aircraft)

c) Engage with FNG and re-present the data and charts in Appendix A in a way that the public can understand that shows a more accurate representation of the issues pre and post-ACP

d) Engage with FNG and re-present the data and charts in Appendix E so that they accurately reflect the changes to GA post-ACP

e) Understand why so many GA pilots are avoiding using controlled airspace and identify ways to address this

f) Track and engage with pilots not complying with aviation law (Rules of the Air) and guidelines (Air Navigation Guidance, British Helicopter Association Guidelines)

g) Include helicopters in WebTrak so they can be identified and reported

Part 5 – Glossary

Acronym	Term	Explanation
2Excel	Aviation maintenance	Company based at Lasham that provides aircraft maintenance for large commercial jets
AONB	Area of Outstanding Natural Beauty	Designation of an area, equivalent to National Park
ACP	Airspace Change Proposal	The CAA's process to change airspace (uses CAP1616)
AIRPROX	Aircraft Proximity	Aircraft near-miss
AMS	Airspace Modernisation Strategy	Government's plan to re-design the UK's airspace. FASI-S or FASI-N (South and North) are part of this
ATC	Air Traffic Control	The group controlling aircraft movements (NATS)
CAA	Civil Aviation Authority	UK's aviation regulator
CAS	Controlled Airspace	Airspace under the control of ATC/NATS
CCC	Climate Change Committee	Independent UK body formed by government to advise policymakers
CAP 1616	CAP 1616	The process the CAA must follow when considering a change in airspace
CAP 1678	CAP 1678	The report produced by the CAA in 2018 following the 2014 consultation that set out the changes to Farnborough's airspace
CTR/CTA	CTR/CTA	Different types of controlled airspace

DfT	Department of Transport	Government body responsible for the CAA and aviation in the UK
FACC	Farnborough Aerodrome Consultative Committee	The formal consultative body to engage with Farnborough Airport
FAL	Farnborough Airport Limited	The owner of the airport (previously TAG). Ultimate owner is Macquarie
FNG	Farnborough Noise Group	Aviation group communicating with the public, councils and MPs in east Hampshire and west Surrey
ICCAN	Independent Commission on Civil Aviation Noise	Now abolished independent group established to investigate aircraft noise
IPCC	Intergovernmental Panel on Climate Change	UN global body advising governments on climate change
GA	General Aviation	Any non-commercial aircraft such as helicopters and light aircraft. Includes some jets
LAeq	LAeq	A standardised measurement of average noise over a time period
LGW	London Gatwick	London Gatwick
LHR	London Heathrow	London Heathrow
MIRA	Macquarie Infrastructure and Real Assets	Australian venture capital business that owns Farnborough Airport
NATS	National Air Traffic Services	The group controlling aircraft movements
NERL	NATS en Route Ltd	The NATS business at Farnborough
NEMo	NEMo	Tool used by NATS to measure actual fuel burn for a flight
PIR	Post Implementation Review	The 7th stage of the ACP to determine if the anticipated benefits have been achieved (deadline for comments is Monday 26th June)
RBC	Rushmoor Borough Council	The Local Authority for Farnborough Airport
S106	S106	Part of a planning consent agreement
SID/STAR	Standard Instrument Departure/Standard Terminal Arrival Route	Departure and arrival flightpath

Part 6 - Appendix

a) Letter from CEO of CAA on 15th July 2022 confirming that noise measurement would be included.