Consultation on Definition of Category D for Minimum Standards for Noise Modelling

CAP 1875b

Contents

Chapter 1
Introduction

Background

1.1   On 8 January 2020, the CAA published CAP 1875, a Consultation on CAA
        Minimum Requirements for Noise Modelling. The consultation closed on 4
        March 2020 and we had expected to respond and publish our final policy by
        Easter 2020. However, with the onset of the COVID-19 pandemic (preceded by
        the demise of FlyBe), we decided to defer any response for at least six months.
        Having taken account of the consultation responses, we have published four
        documents:

        ▪ CAP 1875a, an interim assessment of the consultation responses to CAP
          1875

        ▪ CAP 2091, our Policy on Minimum Noise Modelling Requirements

        ▪ CAP 1875b, a consultation on the definition of Category D for our Minimum
          Noise Modelling Requirements (this document)

        ▪ CAP 2092, our Policy on the Secretary of State's Call In Process

1.2   In this document, we set out options for defining Category D for our Minimum
        Noise Modelling Requirements, indicate our preferred option and request
        responses from stakeholders on our proposal. This document should be read in
        conjunction with CAP 1875a, our interim assessment of the consultation
        responses to CAP 1875, and CAP 2091, our Policy on Minimum Noise Modelling
        Requirements, which will come into effect on 8 February 2021.

What we are not consulting on in CAP 1875b

1.3   CAP 1875b is not consulting on any of the issues already consulted on in CAP
        1875 apart from the definition of Category D. For example, we are not consulting
        on the need to set minimum noise modelling requirements, the thresholds used
        to define which airports should provide which noise modelling to which Category,
        nor the requirements for noise modelling needed for different of the CAA's
        duties.

1.4   CAP 1875b is not consulting on whether the current noise produced by aviation
        is acceptable, nor about whether changes to aircraft flight paths or volumes
        should be approved, or the means by which such decisions are made. For
        example, although our policy on minimum noise modelling requirements refers to

the Government's Lowest Observable Adverse Exposure Levels, or the criteria for the Secretary of State's Call In, we are not consulting on the definitions of these concepts (these examples are anyway set by Government, and not the CAA).

1.5   Instead, CAP 1875b is consulting only on the definition, for a specific subset of airports, of a minimum standard for the way they model noise when applying for permissions from us, such as those to change airspace design.

Structure of this consultation

1.6   The relevant material for this consultation can be found in the following sources:

- CAP 1875a describes how we have amended our policy, proposed in CAP 1875, in light of the consultation responses we have received.

- CAP 2091 sets out the CAA's policy on minimum standards for noise modelling.

- Chapter 2 describes our proposals for the definition of Category D of noise modelling upon which we are consulting.

- Chapter 3 describes how to respond to this consultation.

Chapter 2
Consultation on Category D

2.1   CAP 2091 sets out the CAA's policy on minimum standards for noise modelling. In particular, paragraph 1.3 of that document explains the need for the proposals set out in that policy and that we propose to amend through this consultation and paragraph 1.4 sets out the proportionality principle which we use to set out minimum requirements. Chapter 2 of CAP 2091 describes the Categories of noise modelling which the CAA has defined, and Chapter 4 describes our requirements (and, in some cases, recommendations) for the appropriate Category of noise modelling which individual stakeholders or change sponsors should use to provide noise calculations to the CAA for each of our relevant duties.

Original definition for Category D

2.2   In CAP 1875, our original proposal for the definition of Category D was

"The noise model is adapted based on data from other, similar (in terms of fleet mix, size or range of destinations) airports which meet the Category B or Category A standard (or Category C where applicable – i.e. where sufficient appropriate data exists). Data on flight profiles, noise data and dispersion from these other airports is used, whilst data reported from the Category D airport (rather than track-keeping data) is used to identify the arrival and departure routes and their usage for a typical day."

2.3   Respondents to our consultation queried the definition of similar airports and how data for them would be made available to stakeholders or their noise modellers. It was suggested that the CAA might manage a database of noise contours which could be used for noise modelling of Category D airports. Whilst this suggestion would provide a useful resource for stakeholders, it would incur some resource costs for the CAA which would need to be passed on to charge payers. There may also be a question of ownership of the data and whether permission from or payment to the similar airport or its noise modellers would be required before the data could be used.

2.4   Since publishing CAP 1875, the CAA has looked further into what makes noise results from one airport a good representation of those of another (ie what makes a 'similar' airport). We have found that the key characteristic of a similar airport is one which has a similar runway length. In order for the data to be useful, there also needs to be a similar range of aircraft types at the two airports. It is not clear to us that there is a sufficient range of such airports with available

noise data to make the use of similar airports in noise modelling a feasible exercise.

2.5   We have therefore decided to look for other ways to improve the noise modelling above using standard ICAO data as a basis (i.e Category E), but short of requiring the installation of a noise and track-keeping system (i.e. Categories C-A).

Options for a new definition of Category D

2.6   Notwithstanding some stakeholders questioned why expense was a consideration in defining minimum standards for noise modelling, suggesting that all airports should be required to work at the highest standard to give the most accurate data to their local communities, it remains our view that in order to give effect to our **proportionality principle**[1] Category D should contain requirements that do not require an airport to install a full track-keeping system but do require an airport to incorporate some local effects into its noise modelling. Some respondents to our consultation suggested airports could use ADS-B data or positioning data from commercial sources (such as FlightRadar24) instead of a track-keeping system.

2.7   Most aircraft are now equipped with ADS-B, such that they continuously broadcast, amongst other things, information on aircraft type, their lateral position, height above mean sea-level and groundspeed. To use such data for noise modelling, an airport would need to collect and record the data in real time and therefore would only be able to use it once it had collected sufficient data over, say, a summer season. The hardware required to collect it is relatively very cheap (for example, an ADS-B receiver can cost much less than £100 and can be connected to a computer via a USB port), although some resource would be needed to collate and monitor the data collection.

2.8   Commercial sources collect ADS-B and other data to monitor flights around the world and there are also open source databases, though these may have limited coverage and may have licence limitations. Because third party ADS-B data is predominantly crowd-sourced, there may be gaps in the data coverage that are filled in using algorithms to predict flight tracks. Data from third party sources therefore needs to be carefully quality checked and any incomplete tracks rejected before it is used for noise modelling. There may have to be acceptance that a certain proportion of the data gathered is rejected.

2.9   In all cases, ADS-B height data is output relative to international standard pressure, 1013.25 millibar, and thus it is necessary to systematically correct the height of every aircraft using the local pressure at the time of each flight, in order

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[1]   See paragraph 1.4 CAP 2091

to get the true height above mean sea level and to then take account of airfield elevation above mean sea level, in order to obtain height above the airfield.

2.10   Notwithstanding all these factors and adjustments that may be necessary to make use of the data we consider that a Category based on the use of ADB-S data is worthy of consideration for defining a Category D.

2.11   We consider the following three options to be credible approaches to replace our original Category D.

Option 1: Remove Category D and have all airports below Category C conform to Category E criteria

2.12   This option would mean all airports which did not meet the threshold for Category C would only require a minimum noise modelling standard currently represented by Category E. That is, flight profiles and aircraft dispersion around the departure or arrival centrelines would be taken from standard ICAO and ECAC databases rather than be informed by data from actual operations at the airport.

2.13   The advantage of this option is that it doesn't require anything more from airports than our original proposal.

2.14   The disadvantages of this option are that it would leave a lot of airports (all those that would have been in the old Category D) not using local data which might have made their noise modelling more accurate, and there would be no incentive from the minimum standards to change this until the noise effects of the airport became significant (affecting over 25,000 residents). It is therefore our preliminary view, subject to the outcome of this consultation, that this Option would not meet our proportionality principle.

Option 2: Remove Category D and lower the threshold for Category C

2.15   As with Option 1 above, this option would mean all airports which did not meet the threshold for Category C would only require a minimum noise modelling standard currently represented by Category E. However (remembering that the Thresholds are based on the likely number of residents in the 51 dB $L_{Aeq,16h}$ or 45 dB $L_{Aeq,8h}$ contours[2]) the threshold for Category C would be lowered so that more airports fell into this Category than in our original proposal.

2.16   However, for airports without a track-keeping system, there is a significant investment required to meet the minimum standards for Category C. Therefore, we do not consider it meets our proportionality principle that all airports which would have fallen into Category D should now be treated as Category C. So, if we were to pursue this option, the lower threshold for Category C would be

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[2]   See paragraphs 4.4-4.5 CAP 2091

lowered and the upper threshold for Category E would be raised and set somewhere between 1,000 and 25,000 residents.

2.17   The advantage of this option is that there would be more airports than in Option 1 using local data to improve their noise modelling.

2.18   The disadvantages of this option are that more airports would be required to install expensive track-keeping systems than in the original proposal; given the CAA's policy to allow an extended transition period for such a significant investment[3], these airport's stakeholders would not be benefitting from improved noise modelling for up to three years; and there would be some airports which fell into the old Category D which would now fall into Category E which will have no requirement to use local data to improve their noise modelling. It is therefore our preliminary view, subject to the outcome of this consultation, that this Option would not meet our proportionality principle.

Option 3: Redefine Category D to use other sources of local information

2.19   This option retains a Category D along with the previously defined thresholds but requires airports in Category D to use local data on the position of aircraft either collected from ADS-B signals or from some other commercially available source.

2.20   ADS-B data would need to be collected by the airport in real time, so unless an external source could be found, this Option would also require there to be a transition period[4] before Category D requirements came into force. (Note whilst this consultation is ongoing, Category E applies to Category D airports)

2.21   Commercially available data can come from a variety of sources (one such is FlightRadar24), but often this data includes assumptions and interpolations for aircraft tracks when actual positional data has not been available or collected. Such data would require cleaning before it could be used for noise modelling.

2.22   The CAA would provide guidance and define standards on which ADS-B data would need to be collected, how the data should be cleaned, and for how long it should be retained. This would be published as soon as possible following this consultation, and at the same time as the requirements of this Option come into force.

2.23   The advantages of this option are that it does not require any airports other than those identified in our original proposal to invest in expensive track-keeping systems, whilst ensuring that all airports in Category D use some local data to mean their noise modelling is more representative of local noise impacts.

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[3]   See paragraph 5.29 CAP 2091

[4]   Sufficient time to record data for at least one modelling period, typically a summer (16 June to 15 September) where operations and aircraft types are likely to be representative of future years.

2.24   The disadvantages of this option are that it requires some outlay from airports in either setting up ADS-B collection or in buying and cleaning commercially available data (although we note that our original proposal for Category D similarly had modest cost implications and we consider that such outcomes can still meet our proportionality objective); furthermore airports not already collecting ADS-B data would need to be given time to do so, and there would be a delay in the requirement coming into force in order for the CAA to provide full guidance on how airports should use suitably cleaned ADS-B or commercially available data for noise modelling.

Consideration of Options and proposed approach.

2.25   The CAA considers that the use of local flight profiles and dispersion data provides significant improvement to noise modelling and, as a minimum standard, this benefit should not be restricted only to airports which fall into Category C (with more than 25,000 residents affected by noise). Therefore, we do not support Option 1.

2.26   However, we also consider that the lowering of the Category C threshold, which may expose more airports to the significant expenditure of installing an track-keeping system, is not proportionate. Also, because of our amendment of the transition period for such expenditure in the light of the COVID-19 pandemic, any benefits arising from this action would be likely to be deferred for a number of years. Therefore, we do not support Option 2.

2.27   Therefore, **it is our preliminary view (subject to the outcome of this consultation) that these revised Category D proposals – Option 3 – meet our proportionality principle**. Whilst this may incur some expense to airports, it need not be immediate (if an airport chooses to use using commercially available data, it only needs to buy it when preparing an ACP or PPR). And, for an airport to begin to collect ADS-B data requires only a very small outlay. We understand that the CAA must issue guidance before airports can begin to use these methods and, until that is done, we would propose that airports which fall into Category D use their current noise modelling methods with a minimum standard of Category E.

Question 1: what are your views on the CAA's proposal to replace the definition of Category D with our consultation Option 3?

Strongly Agree

Agree

No strong feelings either way

Disagree

Strongly Disagree

Don't know

Please explain your answer and provide any other general comments.

Chapter 3
How to respond and next steps

How to respond to this consultation

3.1   We have sought to make this consultation as accessible as possible by presenting the key points on our dedicated consultation website. The longer document you are reading is for stakeholders wanting more detail. The questions in each case are the same.

3.2   The consultation will close at 23.59 on 8 March 2021 and we cannot commit to taking into account comments received after this date. Please let us have your comments by answering the questions online: https://consultations.caa.co.uk/policy-development/definition-of-category-d-for-minimum-standards-for. Our strong preference is that you complete the online consultation. We understand that some stakeholders prefer not to be constrained by the questions alone and will want to send a self-contained response. While we will accept these submissions, we ask that they are structured around our questions. Otherwise we will not be able to analyse the submissions in the same way that we analyse the online responses.

3.3   We will assume that all responses can be published on our website. When you complete the online consultation, there will be an option for you to hide your identity or refuse publication. (In any event, your email address will not be published.) In the interests of transparency, we hope people will not refuse publication. If you do send us a separate submission and it includes any material that you do not want us to publish, please also send us a redacted version that we can publish. You should be aware that information sent to and therefore held by the CAA is subject to legislation that may require us to disclose it, even if you have asked us not to (such as the Freedom of Information Act and Environmental Information Regulations). Therefore, if you do decide to send information to the CAA but ask that this be withheld from publication via redacted material, please explain why, as this will help us to consider our obligations to disclose or withhold this information should the need arise.

3.4   If you would like to discuss anything about how to respond to the consultation, please email noise@caa.co.uk.

Next steps

3.5   Once the deadline for consultation responses has passed, we will assess all the responses we have received and, in the light of these, make any amendments to

our proposals which seem justified. We will publish a summary of the responses we receive.

3.6   We will then amend our policy document on minimum sophistication for noise modelling in line with the result of the consultation. We intend to have undertaken these steps by the end of April 2021.