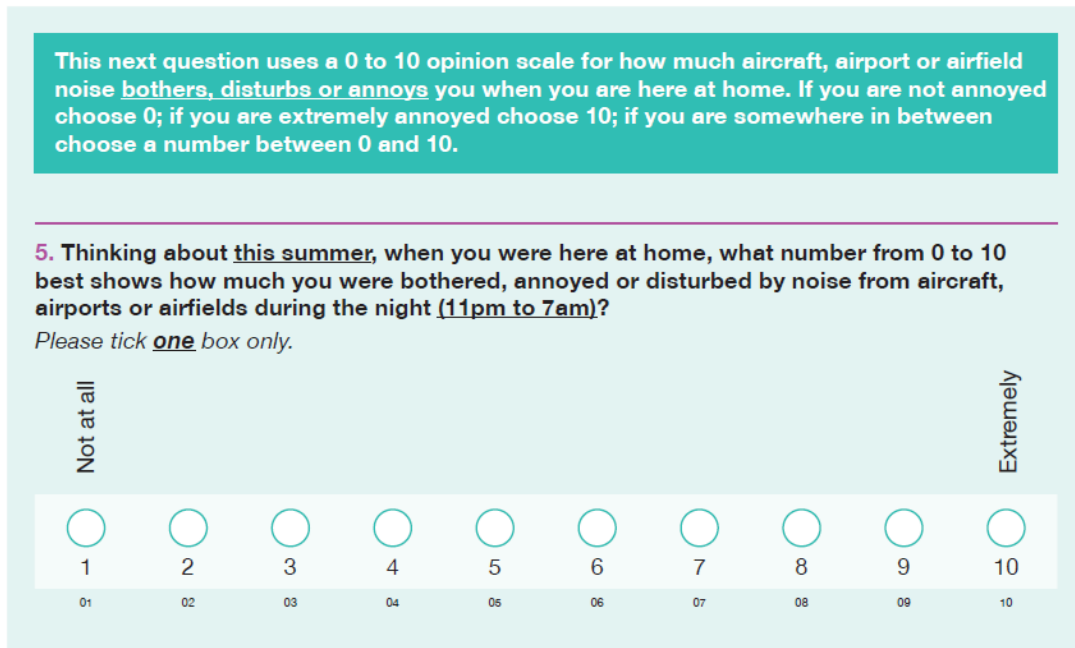


## Aviation Night Noise Effects (ANNE) study: report on error

### Summary of error

The ANNE study used both an online and paper questionnaire that were intended to be identical in terms of the questions asked, questionnaire wording and answer scales used. It was identified in October 2023 that the noise annoyance 11-point numerical scale question was of incorrect length in the paper questionnaire. The wording and the format of noise annoyance questions for use in social surveys are standardised by an ISO Technical Specification (ISO/TS15666:2021, 2021). In the paper questionnaire, the question was asked with a 10-point rather than an 11-point scale as required by the standard (see Figure 1 below).

**Figure 1: format of the 11-point annoyance question in the paper questionnaire**



This next question uses a 0 to 10 opinion scale for how much aircraft, airport or airfield noise bothers, disturbs or annoys you when you are here at home. If you are not annoyed choose 0; if you are extremely annoyed choose 10; if you are somewhere in between choose a number between 0 and 10.

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5. Thinking about this summer, when you were here at home, what number from 0 to 10 best shows how much you were bothered, annoyed or disturbed by noise from aircraft, airports or airfields during the night (11pm to 7am)?  
Please tick **one** box only.

Not at all Extremely

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5	6	7	8	9	10
01	02	03	04	05	06	07	08	09	10

As can be seen in Figure 1, the scale should start at '0' to mean 'not at all' but incorrectly started at '1'.

The 11-point numerical scale question was presented correctly in the online survey, so the error was isolated to the paper questionnaire. The error was unfortunately not spotted before the questionnaire went to print.

### Impact of error

The ANNE study consortium investigated the impact of the error on the scoring of the paper-based responses and presented potential options to rectify the

issue. These were written into a short document and the options were also discussed with two members of the ANNE steering group.

It was decided that the 11-point scale would not be included as part of the analysis for the main report because it is no longer compliant with the ISO standards.

### **Timeline of events**

A pilot of the ANNE study was conducted from June – August 2022, in order to test the survey procedures, participant materials, questionnaire content and length. The pilot questionnaire did not include the 11-point scale question due to concerns about questionnaire length.

After the pilot, it was decided to add the 11-point scale question because the questionnaire length was not over the limit of 20 minutes and traditionally both the 5-point verbal scale and 11-point numerical scale have been asked within the same survey (ISO/TS15666:2003, 2003).

Post-pilot, the specification for the online survey was updated and distributed amongst the consortium and DfT for sign off.

NatCen then made the approved updates to the equivalent paper questionnaire, to ensure that the paper questionnaire was identical to the online survey. The error was created at this point, when the scale began at '1' instead of '0'.

The paper questionnaire was checked by the NatCen Research team, but the error was not spotted before the questionnaires were printed.

The error was identified retrospectively by a DfT staff member whilst proofing the report.

### **NatCen review of error**

NatCen is accredited to ISO 20252, the international standard for market, opinion and social research. A key component of our implementation of the standard is our Quality Management System, which sets out for each stage of research how it should be carried out and how it should be quality assured. For the ANNE study, we applied the procedures relating to project management, sampling and weighting, preparing fieldwork documents, testing the questionnaires and data management. We followed all the required steps for specifying, checking and sign-off of each stage, so we are confident that the ANNE study data is of high quality and this error was an exception.

According to the NatCen quality procedures all types of errors must be raised as incidents, so that we can learn from them as an organisation. All incidents are reviewed by a senior team comprising of members of the leadership team and our quality and information security leads.

The team have reviewed the error, whether actions to resolve the issue have been appropriate and whether any of our existing procedures or processes need to change as a result.

This specific incident has highlighted that we need to further tighten our questionnaire checking procedure, particularly by adding further checking steps when testing an online and paper questionnaire in parallel.

As a result of the incident, we are updating the Quality Procedure for paper questionnaires so that multi-mode surveys are checked and tested for equivalence in different modes both in the Research team and the Data Processing team. This will ensure that an additional step of testing is added before anything is printed, to help with sign-off that the questionnaire is identical across modes.