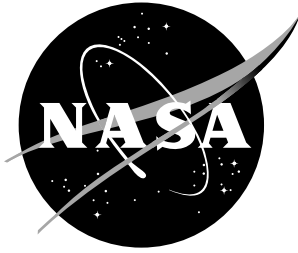


NASA/CR-2001-211257



# An Updated Catalog of 521 Social Surveys of Residents' Reactions to Environmental Noise (1943-2000)

*James M. Fields*  
*Wyle Laboratories, El Segundo, California*

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December 2001

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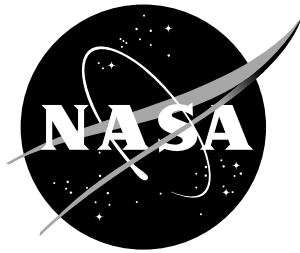
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National Aeronautics and  
Space Administration

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## SUMMARY

This report describes all social surveys of residents' reactions to environmental noise in residential areas that have been located in English language publications from 1943 to December of 2000. A total of 521 surveys are described. The surveys are indexed by country, noise source and date of survey. The publications and reports from each survey are listed in a bibliography.

## INTRODUCTION

Social surveys have been widely used since the early 1960's to assess the impact of environmental noise in residential areas. These surveys have usually measured impact on each surveyed individual (respondent) with some type of standardized questionnaire. These questionnaires have usually been personally administered by an interviewer in the home. In most studies, environmental noise levels have been either measured or estimated for each respondent's residence.

The results from these surveys have not been utilized to their full potential. The large number of surveys and publications may have contributed to their underutilization. Researchers find it difficult to locate relevant publications and, once located, find it difficult to determine which surveys are being referred to in the publications. This catalog of social surveys of environmental noise contributes to a fuller utilization by identifying the surveys and their publications.

This report attempts to identify all social surveys of residents' reactions to environmental noise in residential areas that have been described in English language publications through December of 2000. A total of 521 surveys are described. The catalog was compiled with the goal of providing readers with access to all English language information about residents' responses to environmental noise. An attempt has been made to include both well-known and obscure publications and reports. Foreign surveys are included even if the only English publication is an English language translation of a foreign language report. Some surveys from English-speaking countries have been included even though they have only appeared in unpublished reports. Despite the effort to be broadly inclusive some surveys from English-speaking countries are not included that have only appeared in theses or in reports that could not be located. Surveys from other countries have generally been excluded if they have not been described in an English language publication. Some surveys that have been briefly mentioned in publications are not included in the catalog if basic information about the sample size, study location or study design has not been published. Other surveys have been included when direct communication with the survey investigator could provide needed information.

A large number of published and unpublished sources were examined to identify surveys. Some of the most important sources are the following: Journal of Sound and Vibration (Vol. 1-238), Journal of the Acoustical Society of America (Vol. 1-108), Journal of the Acoustical Society of Japan (English edition) (Vol. 1-21) Noise Control (All issues), Sound (All issues), Noise Control Engineering (Vol. 1-48), Proceedings of International Commission on the Biological Effects of Noise (ICBEN)(1973-1998), Inter-noise Proceedings (through 2000), Noise-con Proceedings (through 2000), ICA Proceedings (through 1998) a Wyle report on social surveys (Wyle, 1977) and three articles reviewing surveys (Schultz 1978; Fidell, Barber, and Schultz 1991; Miedema and Vos 1998).

Although most surveys of reactions to noise in residential areas follow a common basic study design, other studies in this catalog have also explored a wide range of alternative data collection

methods. The majority of the studies are based on either self-administered or interviewer-administered, structured questionnaires that ask about long-term reactions to relatively stable noise environments. These studies obtain respondents' self-reported feelings about their noise environments. Other surveys in the catalog, however, have used such diverse methods as unstructured interviews, reports of behavioral changes, reports of disturbance during the immediately preceding hours, paper diaries of perceptions of noise events, real-time instantaneous responses recorded on computers, and mechanical monitoring of movements during sleep. Many studies have examined reactions to changing noise environments. Some studies have been based on longitudinal designs in which respondents are repeatedly interviewed.

The present catalog only concerns the residential environment. The catalog does not list the lesser number of social surveys that have measured reactions to noise in other settings such as recreational areas, school or places of work.

This catalog replaces and expands upon the first edition of the catalog that was issued for 200 surveys through 1980 (Fields 1981) and the subsequent revision for 318 surveys through 1989 (Fields 1991). The surveys from those earlier editions also appear in this catalog of 521 surveys although some of the information for the previous surveys, such as lists of publications, has been updated. The large number of additions (200) between the 1989 and 2000 catalogs is partly explained by the number of new surveys conducted in the 1990's. Other factors accounting for the 200 additions are the identification of more pre-1989 surveys (especially from Japan), the decision to include more studies with innovative data collection techniques for which the survey was a peripheral activity, and an intensive effort to upgrade insufficient published information through personal correspondence (usually via E-mail). This later effort resulted in the inclusion of information in the survey descriptions that has not appeared in publications.

The first section of this report consists of the descriptions of the 521 surveys. These descriptions are ordered alphabetically by country. Later sections consist of indices in which the studies are ordered by noise source, data of survey and survey identification number. The noise source index also sorts the studies by country with the result that all the surveys within one country of a single noise source are presented contiguously. A bibliography of all of the associated publications and reports is provided.

Complete noise-reaction survey data sets are available for some surveys in various national and international general social survey archives. The UK Data Archive (formerly ESRC Data Archive) at the University of Essex in England has more than 25 community noise study data sets (<http://www.data-archive.ac.uk>). Researchers at TNO in the Netherlands (Miedema and Vos 1998) have acquired more than 50 data sets that measure residents' reactions to noise.

## DESCRIPTION OF INFORMATION IN CATALOG

Each survey's entry in the catalog consists of a basic description and a list of the survey's



publications and reports. Although each description is brief, it provides enough information to positively identify the survey and the primary characteristics of the survey design. Although the statements about findings are sometimes included under the "Notes" heading, this catalog does not provide a systematic summary or review of study findings. Most studies have multiple findings. Any summary of these findings would have involved arbitrary judgements and have prohibitively increased the resources required for this catalog without relieving most readers of the necessity of consulting study reports.

Each study's entry consists of the following nine items of information:

Survey Identification Number: Each entry begins with a two-part alphanumeric code. The first part is a three-letter abbreviation for the country. The second part is a serial number from 001 to 521 that uniquely identifies the survey. (The initial three-letter country abbreviation is attached as an aid to locate the survey within the catalog).

Title: Each survey is identified with a unique, descriptive title. Any other widely used title for the survey follows in parentheses or is given under "Notes." The terms "pilot" or "preliminary" are used only when the authors used the terms. Some "pilot" surveys are larger than other "main" surveys.

Date: The dates given are the years and, if known, months in which the social survey data were obtained from respondents. If the date of a survey is unknown, then the date is the earliest publication date and is listed as "Publication (Survey date not reported)." Associated noise measurement programs, if any, may have been conducted during a different time period.

Source: The major sources of noise that are explored in the survey questionnaire are listed. All surveys are listed by their major noise sources in the noise source index. The four most often studied noise sources are aircraft, road traffic, railway, and community noise. Other less frequently studied sources are grouped under the headings of sonic boom, impulsive noise, interior noise, industrial noise, construction noise, and miscellaneous. The meaning of community noise and the distinctions between road traffic and community noise are not always clear. The "community" category is often not precisely defined and includes some studies that use a vague phrase such as "noise in this neighborhood" without clearly specifying the source. Some "community" studies have asked about each of a long list of noise sources without focusing either acoustical noise measurements or the questionnaire on one or two sources. The publications sometimes characterize a study as a "road traffic noise" study when road traffic is the dominant noise source, but unattended acoustical measurements included all noise sources. Some such "road traffic noise" studies are based on a noise annoyance question that only refers to noise in the neighborhood generally.

Location: The country and city or airport where the survey was conducted are named. Most studies are confined to only a few, specially selected study areas within the city or airport. For studies with noise measurements such clustering of respondents reduces study costs. In a few

instances that are noted, a probability sample of an entire area has been studied.

Sample size (N=): This is the number of questionnaires available for the survey analyses. This number does not always match the number found in specific publications that are based on only subsets of the data sets. For studies in which some respondents were reinterviewed, the number of respondents is reported separately. Sample size information is usually presented separately for any supplementary studies of special groups (eg. complainants).

Noise data: A "Yes" indicates that acoustical information about the respondent's noise exposure is available. The acoustical data may come from either noise measurements or some type of noise exposure model that estimates exposure from information about the noise source. No attempt has been made to evaluate the quality of the noise exposure information because published information is generally insufficient to evaluate the accuracy of the long-term average noise exposure about which respondents have been asked. A few studies are classified as not having noise data available even if both social survey and noise exposure data were collected but the investigators did not coordinate either the data collection or analysis of the two types of data.

Reference: The authors and dates of all known reports and publications are listed for each study. The complete reference for each publication is included in the bibliography section of this report. The availability of English translations is noted in the bibliography. Preliminary reports and short papers that appear in printed conference proceedings are included even though more complete reports are also listed for the same study. Papers that are presented in conferences, but not in published proceedings, are usually not listed. Publications that contain only secondary analyses or references to previously published data are not usually included.

Notes: Information is presented about any unusual aspects of the survey. A comment is included if the survey departs from the modal methodology in which the residents' opinions were obtained at a single point in time through face-to-face interviews using a fixed-format, interviewer-administered questionnaire. Any unusual aspects of the surveys are described. Close linkages with other studies are noted. The study's purpose or at least one study finding is briefly noted for most surveys.

## ACKNOWLEDGMENTS

More than 90 researchers generously contributed to this catalog by providing publications and study information that does not appear in widely-available English language publications. The completeness of this catalog owes much to their assistance. Thanks are also offered to Barry Reed who provided computer programming assistance at strategic points and to Helen Fields who searched for studies and entered studies into the bibliography and catalog data bases.

## SURVEY CATALOG

The surveys are ordered by the full six-character, alphanumeric identifier. As a result, surveys are ordered alphabetically by country. Multinational surveys are reported separately for each country. As a result some surveys that are sometimes considered to have been a single-coordinated study are listed as three separate surveys. The notes always identify such instances. The Scandinavian aircraft noise study that was listed as single survey in previous editions of this catalog (SWE-035) now appears as three surveys, one for each of the three participating countries (DEN-519, NOR-520, SWE-035).

<p><u>AUL-036</u> <u>1969 Sydney Airport Noise Survey</u>            Date: 1969            Source: Aircraft            Location: Australia: Sydney Airport            N=: 296 main sample (also sample of 20 complainants)            Noise data: Yes            Reference: Mather 1971            Notes: The study includes an additional sample of 20 complainants.</p>	<p style="text-align: center;"><u>Reactions</u></p> <p>Date: 1979 (June)            Source: Aircraft            Location: Australia: Sydney airport            N=: 100            Noise data: Yes            Reference: Hede 1980;Hede, Bullen, and Rose 1979            Notes: Annoyance is the main component in reaction to aircraft noise, but other reactions are also important.</p>
<p><u>AUL-209</u> <u>1979 Hornsby Rifle Range Survey</u>            Date: 1979 (November)            Source: Rifle range            Location: Australia: Hornsby (Suburb of Sydney)            N=: 201            Noise data: Yes            Reference: Bullen and Hede 1982;Bullen and Hede 1983a;Hede and Bullen 1981;Hede and Bullen 1982b            Notes: Alternative noise indices for assessing residents' responses to shooting ranges are evaluated.</p>	<p><u>AUL-214</u> <u>1978 Leichhardt Municipality Complaint Comparison Survey</u>            Date: 1978 (October, November)            Source: Community            Location: Australia: Leichhardt Municipality in Sydney            N=: 148            Noise data: No            Reference: Avery 1982            Notes: The sample survey data are compared with telephone complaints from the same area. The complaints underestimated the annoyance rates and do not correctly rank order the annoyance from different noise sources.</p>
<p><u>AUL-210</u> <u>1980 Australian Five-Airport Survey</u>            Date: 1980 (February to August)            Source: Aircraft            Location: Australia: Five airports (Sydney, Adelaide, Perth, Melbourne, Richmond Air base)            N=: 3,575            Noise data: Yes            Reference: Bullen and Hede 1983a;Bullen and Hede 1983b;Bullen and Hede 1986;Bullen, Hede, and Kyriacos 1986;Fidell, Barber, and Schultz 1991;Hede and Bullen 1982a            Notes: Noise indices are assessed. Personal, demographic, and attitudinal factors that affect annoyance are identified.</p>	<p><u>AUL-226</u> <u>1974 Brisbane S-E Freeway Study</u>            Date: 1974 (August, September)            Source: Expressway traffic            Location: Australia: Residents near a 2 km section of a freeway            N=: 288            Noise data: Yes (for 142 respondents)            Reference: Brown 1980b;Brown and Law 1976;Brown and Law 1978            Notes: Only a narrow range of low noise levels (52 to 65 dB(A) LAeq) are included.</p>
<p><u>AUL-211</u> <u>1979 Sydney Airport Study of Type of Noise</u></p>	<p><u>AUL-227</u> <u>1975-76 Australian Three-City Roadway Study</u></p>

## SURVEY DESCRIPTION (Continued)

- Date: 1975 (October to December), 1976 (April, May)  
 Source: Road traffic  
 Location: Australia: 19 areas near roads in Brisbane, Sydney, and Melbourne  
 N=: 818  
 Noise data: Yes  
 Reference: Brown 1978;Brown 1980a  
 Notes: None
- AUL-244 1979 Sydney Airport Pilot Survey  
 Date: 1979  
 Source: Aircraft  
 Location: Australia: Sydney airport  
 N=: 160  
 Noise data: Yes  
 Reference: Hede 1980  
 Notes: This was a pilot survey for the 1980 Australia Five-Airport Survey (AUL-210).
- AUL-247 Victoria Australia Entertainment Center Study  
 Date: 1984 Publication (Survey date not reported)  
 Source: Entertainment noise  
 Location: Australia: Victoria (residents near hotels, large music venues, restaurant, roller skating rink, reception center, recording studio)  
 N=: 27  
 Noise data: Yes: inside and outside  
 Reference: Parris 1984  
 Notes: Residents also rated the noise during ten minutes of their interviews.
- AUL-248 1983 Melbourne Australia Simon and Garfunkel Concert  
 Date: 1983 (February)  
 Source: Outdoor concert by Simon and Garfunkel  
 Location: Australia: Melbourne  
 N=: 442  
 Noise data: Yes  
 Reference: Parris 1984  
 Notes: Residents of the area were interviewed by telephone in the three evenings following the concert.
- AUL-249 1983 Melbourne Australia David Bowie Concert  
 Date: 1983 (November)  
 Source: Outdoor concert by David Bowie  
 Location: Australia: Melbourne  
 N=: 402  
 Noise data: Yes  
 Reference: Parris 1984  
 Notes: Residents of the area were interviewed by telephone in the three evenings following the concert.
- AUL-264 1980 Brisbane Traffic Noise Reduction Survey  
 Date: 1980 (November) to 1981 (April)  
 Source: Road traffic  
 Location: Australia: Three locations in Brisbane  
 N=: 152 (Most analyses exclude 11 new in-migrants.)  
 Noise data: Yes  
 Reference: Brown, Hall, and Kyle-Little 1985  
 Notes: Residents who experience a reduction in noise from a road bypass are compared to other residents with similar noise exposures. This was part of a broader study of all environmental forces associated with living near a roadway. Part of each questionnaire was interviewer-administered and part was left for respondents to answer.
- AUL-265 1980 Brisbane Traffic Noise Increase Survey  
 Date: 1980 (October), 1981 (May), 1982 (June)  
 Source: Road traffic  
 Location: Australia: One roadway in Brisbane  
 N=: 20 (60 interviews)  
 Noise data: Yes  
 Reference: Brown 1987  
 Notes: All 20 respondents were interviewed two weeks before the traffic increased and at 7 and 19 months after the increase.
- AUL-285 1986 Australian National Noise Survey  
 Date: 1986 (February)  
 Source: Community  
 Location: Australia: National survey  
 N=: 2,332  
 Noise data: No  
 Reference: Australian Government Publishing Service 1988  
 Notes: The six noise questions in this general-purpose, national omnibus survey found that noise is one of the most serious pollution problems in residential communities. Traffic noise and domestic noise are the biggest problems.
- AUL-286 1986 Brisbane Noise Survey  
 Date: 1986 (March to May)  
 Source: Community, Road traffic, Aircraft  
 Location: Australia: Brisbane (27 sites spread over 6 noise area categories)  
 N=: 1,350  
 Noise data: No (Sites are classified by type of noise area using density of transportation and extent of commerce and industry.)  
 Reference: Duhs, Eddington, and Renew 1988  
 Notes: Road traffic noise is the most often mentioned noise problem. The study is based on a probability sample.
- AUL-287 1986 Toowoomba Community Noise Survey

## SURVEY DESCRIPTION (Continued)

- Date: 1986 (May to December), 1987  
 Source: Community  
 Location: Australia: Toowoomba  
 N=: 600 (Approximate)  
 Noise data: No (Sites are classified by type of noise area using density of transportation and extent of commerce and industry.)  
 Reference: Eddington and Eddington 1988  
 Notes: Road traffic noise is the most annoying noise in all types of noise areas.
- AUL-306 1988 New South Wales Power Station Survey  
 Date: 1988 (Winter)  
 Source: Power station  
 Location: Australia: Two power station sites in New South Wales  
 N=: 301 respondents in 12 areas  
 Noise data: Yes  
 Reference: Job and Hede 1989  
 Notes: The response to power plant noise was similar to the response to aircraft noise at the same noise level found in a previous survey (AUL-210).
- AUL-307 1986 Sydney Aircraft/Road Traffic Survey  
 Date: 1986 (November, December), 1987 (January, February)  
 Source: Aircraft, Road traffic  
 Location: Australia: Sydney airport  
 N=: 426  
 Noise data: Yes  
 Reference: Lawrence and Putra 1989;Putra 1990;Putra and Lawrence 1991  
 Notes: Aircraft noise annoyance is affected by road traffic noise levels. The data come from 314 mail questionnaires and 112 face-to-face interviews.
- AUL-321 1983 Sydney Artillery Range Survey  
 Date: 1983  
 Source: Artillery  
 Location: Australia: areas near Holsworthy Artillery Range (Sydney)  
 N=: 1,626  
 Noise data: Yes  
 Reference: Bullen, Hede, and Job 1991;Job, Bullen, and Hede 1991  
 Notes: Artillery noise is more annoying than intermittent, non-impulsive noise of the same noise level.
- AUL-332 1991 Brisbane Traffic Noise Survey  
 Date: 1991  
 Source: Road traffic  
 Location: Australia: Brisbane  
 N=: 1,038  
 Noise data: Yes
- Reference: Renew 1993;Renew 2000  
 Notes: The study was designed for comparison with previous Australian road traffic noise studies.
- AUL-383 1994-95 Sydney Airport Noise Change Survey  
 Date: 1994 - 1995 (Early 1994 for before-change survey. December 1994 - February 1995 for after-change survey)  
 Source: Aircraft  
 Location: Australia: Sydney (4 areas near Kingsford Smith airport)  
 N=: 1,332 (1,015 before the change , 97 repeated before the change, 220 after the change).  
 Noise data: Yes  
 Reference: Carter, Job, Taylor, Peplow, and Morell 1996;Hatfield, Job, Carter, Peplow, Taylor, and Morell 1998;Hatfield, Job, Carter, Peplow, Taylor, and Morell 1999;Job, Topple, Carter, Peplow, Taylor, and Morell 1996a;Job, Topple, Carter, Peplow, Taylor, and Morell 1996b Hatfield, Job, Carter, Peplow, Taylor, and Morell 2000;Job, Cuthbert, and Hatfield 2000;Job, Hatfield, Carter, Peplow, Taylor, and Morell 1998b;Job, Hatfield, Carter, Peplow, Taylor, and Morell 1999a;Job, Hatfield, Carter, Peplow, Taylor, and Morell 1999b;Job, Hatfield, Carter, Peplow, Taylor, and Morell 2000a;Job, Hatfield, Carter, Peplow, Taylor, and Morell 2000b;Job, Hatfield, Peplow, Carter, Taylor, and Morell 1998a  
 Notes: Respondents answered a face-to-face, structured interview, then completed self-administered questionnaires (Grossarth-Matticeck health risk questionnaire and POMS Depression, Anxiety, and Anger scale) while the interviewer waited.
- AUL-384 1992 Sydney Aircraft Noise Amelioration Attitudes Survey  
 Date: 1992 (March to June)  
 Source: Aircraft  
 Location: Australia: Sydney (Kingsford Smith Airport)  
 N=: 431 (about 100 from each of the four cells of a design based on noise exposure)  
 Noise data: Yes  
 Reference: Burgess and Zehner 1993;Burgess and Zehner 1994a;Burgess and Zehner 1994b  
 Notes: The study found that most residents preferred noise amelioration options that allowed them to stay in their homes. Most residents did not realize that noise insulation schemes would require the use of air conditioning.
- AUL-456 1995 Sydney Airport Ku-ring-gai Noise Survey  
 Date: 1995 (August to October: Follows a change in operations in November 1994)

## SURVEY DESCRIPTION (Continued)

- Source: Aircraft  
 Location: Australia: Ku-ring-gai ( low-density housing areas 15 and 30 km north of Sydney airport)  
 N=: 1,138 (Some analyses use 1,018 responses)  
 Noise data: Yes  
 Reference: Bray 1996;Gross and Sim 1995;Gross and Sim 1997;Gross and Sim 1998  
 Notes: Responses were obtained through a mail questionnaire. A larger number of people are affected at low aircraft noise levels because more people live at low noise levels.
- AUL-461 1995-96 Four-Phase Sydney Road Traffic Noise Survey  
 Date: 1995, 1996 (intervals of 4-6 months for a period of two years)  
 Source: Road traffic  
 Location: Australia: Sydney (several suburbs)  
 N=: 48 responses from 12 respondents  
 Noise data: No  
 Reference: Jeon 1996;Jeon and Fricke 1995;Jeon and Fricke 1998  
 Notes: Respondents answered a mail survey at four times over the two-year period. The noise exposure appeared to not change and the respondents' reactions did not change.
- AUS-014 1964 Vienna Road Traffic Noise Survey  
 Date: 1964  
 Source: Road traffic, Aircraft, Railway, Trolleys  
 Location: Austria: Vienna  
 N=: 400 (265 residents, 100 office workers, 35 teachers)  
 Noise data: Yes  
 Reference: Bruckmayer and Lang 1967;Fidell, Barber, and Schultz 1991;Schultz 1978  
 Notes: Annoyance was the same in residences and offices at the same noise levels and thus the two types of ratings are not separated in the published tables. All respondents were employees or otherwise associated with the Vienna Technological Industrial Museum.
- AUS-093 1973 Vienna Road Traffic Noise Survey  
 Date: 1973  
 Source: Road traffic  
 Location: Austria: Vienna  
 N=: 2,624  
 Noise data: Yes  
 Reference: Fidell, Barber, and Schultz 1991;Lang 1975;Lang 1976;Lang 1977;Lang 1978;Schultz 1978  
 Notes: Respondents are more annoyed if their most important rooms are on the noisy side of the house.
- AUS-178 1977 Austrian Road Traffic Survey  
 Date: 1977  
 Source: Road traffic  
 Location: Austria: 49 measurement points in both rural and urban areas  
 N=: 462  
 Noise data: Yes  
 Reference: Lang 1978;Lang 1980  
 Notes: Respondents in rural areas were more likely to be in single family homes, to have gardens, to be along highways, and to be less annoyed by noise than urban respondents at the same noise levels.
- AUS-329 1989 Austrian Alps Road Traffic Noise Survey  
 Date: 1989  
 Source: Road traffic (may be other sources)  
 Location: Austria: 5 communities in an area designated as sensitive to environmental pollution  
 N=: 1,989  
 Noise data: Yes  
 Reference: Lercher 1992;Lercher 1996;Lercher 1998;Lercher and Widmann 1993  
 Notes: Perceived air pollution, noise sensitivity, and home ownership were related to noise annoyance.
- AUS-487 1998 Inn Valley Road/Railway Noise Survey  
 Date: 1998 (July)  
 Source: Road traffic, Railway  
 Location: Austria: rural areas in the Tyrol Alps  
 N=: 2,007  
 Noise data: Yes  
 Reference: Botteldooren, Verkeyn, and Lercher 2000a;Botteldooren, Verkeyn, and Lercher 2000b;Lercher 2001;Lercher, Brauchle, and Widmann 1999;Sölder 1998  
 Notes: Interviews were conducted via telephone. The study was conducted to identify recommendations for a health impact assessment study.
- AUS-488 1998 Tyrol Children/Mothers Noise Survey  
 Date: 1998 (June)  
 Source: Road traffic, Railway  
 Location: Austria: the Inn Valley (rural alpine area east of Innsbruck)  
 N=: 1,280 children (number mailed to mothers is not reported)  
 Noise data: Yes  
 Reference: Lercher 2001;Lercher, Brauchle, Kofler, Widmann, and Meis 2000;Roner 1999;Roner and Roitner-Grabher 1998;Sölder 1998  
 Notes: The study compared children's and mothers' reactions to the same residential noise environments. The self-administered questionnaires were completed by children in a

## SURVEY DESCRIPTION (Continued)

classroom and by mothers at home.

AUS-521 Austrian Transportation Noise and Blood Pressure Survey

Date: 1998 (September to November)  
 Source: Road traffic, Railway  
 Location: Austria: the Inn Valley (rural alpine area east of Innsbruck)  
 N=: 807  
 Noise data: Yes  
 Reference: Lercher 2001;Lercher, Widmann, and Kofler 2000;Sölder 1998  
 Notes: This study used many of the same questions that were used in AUS-487 and AUS-488. Only about 10 of the same people were in the other studies. The study took blood pressure readings and analyzed the relationship between noise level and blood pressure.

BEL-107 Preliminary Leuven Traffic Noise Survey

Date: 1976 Publication (Survey date not reported)  
 Source: Road traffic  
 Location: Belgium: Leuven  
 N=: 247  
 Noise data: Yes  
 Reference: Gambart, Myncke, and Cops 1976  
 Notes: The survey was conducted to design two traffic noise surveys (BEL-122, BEL-137).

BEL-122 1975 Antwerp Traffic Noise Survey

Date: 1975 (May to October)  
 Source: Road traffic  
 Location: Belgium: Antwerp  
 N=: 1,319  
 Noise data: Yes  
 Reference: Cops, Myncke, Gambart, and Steenackers 1978;Fidell, Barber, and Schultz 1991;Myncke, Cops, and Gambart 1977;Myncke, Cops, Gambart, and Steenackers 1979;Myncke, Cops, and Steenackers 1977;Myncke, Cops, Steenackers, Bruyninckx, Gambart, and Verleysen 1977;Schultz 1978  
 Notes: Respondents who volunteered to take part on the basis of a request letter (about 14% response rate) filled out a self-administered questionnaire. The study is quite similar to the 1976 Brussels study (BEL-137). Some questions were different in the two questionnaires.

BEL-137 1976 Brussels Traffic Noise Survey

Date: 1976 (May to October)  
 Source: Road traffic  
 Location: Belgium: Brussels  
 N=: 495

Noise data: Yes

Reference: Fidell, Barber, and Schultz 1991;Myncke, Cops, and Gambart 1977;Myncke, Cops, Gambart, and Steenackers 1979;Myncke, Cops, and Steenackers 1977;Myncke, Cops, Steenackers, Bruyninckx, Gambart, and Verleysen 1977;Schultz 1978

Notes: Respondents who volunteered to take part on the basis of a request letter (9% response rate) filled out a self-administered questionnaire. The study is quite similar to the 1975 Antwerp study (BEL-122). Some questions were different in the two questionnaires.

BEL-151 1977-78 Belgium Four-Airport Noise Survey

Date: 1977, 1978  
 Source: Aircraft  
 Location: Belgium: Four airports (Helchteren, Grimbergen, Deurne, Middelkerke)  
 N=: 150  
 Noise data: Yes  
 Reference: Myncke and Cops 1978  
 Notes: The four airports include one military airfield, one general aviation airport and two airports with both commercial and general aviation movements.

BEL-288 1980s Brussels International Airport Noise Survey

Date: 1980 (June to November), 1984 (January to May), 1985 (January to May)  
 Source: Aircraft  
 Location: Belgium: Brussels (residents near 11 measurement locations)  
 N=: 677 (1,400 were asked to participate)  
 Noise data: Yes  
 Reference: Jonckheere 1984;Jonckheere 1987;Jonckheere 1988;Jonckheere 1989;Jonckheere and Swalens 1981  
 Notes: In 1980, 540 residents from the 1,000 sampled addresses participated. Residents at rural sites are somewhat less likely to be affected.

BRA-474 1994 Porto Alegre Noise Survey

Date: 1994 (September to December)  
 Source: Road traffic  
 Location: Brazil: Porto Alegre (southernmost capital city)  
 N=: 321  
 Noise data: Yes  
 Reference: Rott 1995;Sattler 1999;Sattler and Rott 1996  
 Notes: Road traffic is a major source of annoyance for the population. Busses were the most annoying source of road traffic noise.

CAN-055 1971 Dorval Aircraft Noise Survey

Date: 1971 (June to August)  
 Source: Aircraft

## SURVEY DESCRIPTION (Continued)

- Location: Canada: Dorval Airport in Montreal  
 N=: 1,000  
 Noise data: Yes  
 Reference: Canada Ministry of Transport 1972  
 Notes: Interviews were conducted with approximately 800 randomly selected residents and with subsamples of approximately 150 specially identified complainants and 150 anti-noise organization members.
- CAN-076 1972 London/Woodstock Community Noise Survey  
 Date: 1972-1973  
 Source: Community  
 Location: Canada: Ontario (London, Woodstock)  
 N=: 800  
 Noise data: Yes  
 Reference: Foreman and Dickinson 1973;Foreman and Dickinson 1974;Foreman, Emmerson, and Dickinson 1974  
 Notes: Two forms of the questionnaire were administered to study methodological issues.
- CAN-077 1972 Edmonton Community Noise Survey  
 Date: 1972 (Summer and early Fall)  
 Source: Community  
 Location: Canada: Edmonton  
 N=: 4,214  
 Noise data: No (No noise data are analyzed with interviews.)  
 Reference: Bolstad Engineering Associates 1973  
 Notes: The questionnaires were divided between 1201 face-to-face interviews and 3013 self-administered questionnaires.
- CAN-078 1972 Calgary Noise Survey  
 Date: 1972 (February to October)  
 Source: Community, Aircraft, Railway  
 Location: Canada: Calgary  
 N=: 1081  
 Noise data: Yes  
 Reference: Dunn, Hanington, Wilk, Wilson, and Dunn 1985;Dunn and Jones 1975;Dunn and Posey 1974;Jones, Li, and McKee 1973  
 Notes: Self-administered questionnaires were used for the "winter" (N504) and "summer" surveys (N226). A different questionnaire was used for the personal, face-to-face interviews (N351). In addition to the residential data, information was collected in hospitals, nursing homes, schools and shopping areas.
- CAN-079 1972 Toronto Community Noise Survey  
 Date: 1972 (March, April)  
 Source: Community  
 Location: Canada: Toronto  
 N=: 2,454  
 Noise data: Yes  
 Reference: Bremner 1973  
 Notes: Interviews were completed near the noise monitoring sites with both residents and some nearby workers who lived elsewhere.
- CAN-120 1975 Western Ontario University Traffic Noise Survey  
 Date: 1975 (Summer and Fall), 1976 (May to September)  
 Source: Road traffic  
 Location: Canada: 47 sites in four cities (London, Toronto, Tillsonburg, Ingersoll)  
 N=: 1,216 interviews with 1150 respondents  
 Noise data: Yes  
 Reference: Bradley 1976;Bradley 1979;Bradley 1980;Bradley and Jonah 1977;Bradley and Jonah 1979a;Bradley and Jonah 1979b;Bradley and Jonah 1979c;Fields and Hall 1987;Jonah, Bradley, and Dawson 1981  
 Notes: Sixty-six respondents were interviewed twice. The same interview form was administered in two years in four locations to study five types of area characteristics.
- CAN-121 1975-76 Southern Ontario Community Survey  
 Date: 1975 (May to July), 1976 (Summer)  
 Source: Community (especially road traffic)  
 Location: Canada: Toronto area (Hamilton, Burlington, Mississauga)  
 N=: 1,786  
 Noise data: Yes  
 Reference: Fidell, Barber, and Schultz 1991;Hall 1979;Hall, Birnie, and Taylor 1978b;Hall, Birnie, and Taylor 1978a;Hall, Palmer, and Taylor 1983;Hall and Taylor 1976a;Hall and Taylor 1976b;Hall and Taylor 1977;Hall, Taylor, and Birnie 1977;Hall, Taylor, Birnie, Breston, Gertler, and Moreau 1977;Schultz 1978;Taylor, Birnie, and Hall 1978;Taylor, Gertler, and Hall 1978;Taylor and Hall 1977;Uptegrove, Hall, Taylor, and Goulden 1977  
 Notes: The questionnaire in the second year obtained more information about road traffic. Some sites had noise barriers.
- CAN-126 Toronto Railway Noise Survey  
 Date: 1975 Publication (Survey date not reported)  
 Source: Railway  
 Location: Canada: Toronto  
 N=: 170 (approximately)  
 Noise data: Yes  
 Reference: Hemingway 1975;Hemingway 1976  
 Notes: Ambient noise levels did not affect ratings of railway noise.



## SURVEY DESCRIPTION (Continued)

- CAN-136 1976 Canada Impulse Noise Survey  
 Date: 1976 (June to October)  
 Source: Impulse noise from drop forging industrial plants  
 Location: Canada: Welland, Port Colborne, Windsor  
 N=: 607  
 Noise data: Yes  
 Reference: Seshagiri 1979;Seshagiri 1981  
 Notes: Residents rated industrial noise that could be heard from their homes. The annoyance with drop forge noise is greater than with road traffic noise of an equivalent noise level.
- CAN-168 1978 Canadian Four-Airport Survey  
 Date: 1978 (Summer), 1979 (Summer)  
 Source: Aircraft  
 Location: Canada: Four airports (Toronto, Buttonville, Waterloo-Wellington, Oshawa)  
 N=: 965 original interviews (212 repeated interviews in 1979)  
 Noise data: Yes  
 Reference: Birnie, Hall, and Taylor 1980a;Birnie, Hall, and Taylor 1980b;Fidell, Barber, and Schultz 1991;Hall, Birnie, and Taylor 1979;Hall, Birnie, Taylor, and Palmer 1981;Hall, Dixit, and Taylor 1980;Hall, Palmer, and Taylor 1983;Hall and Taylor 1982;Hall, Taylor, and Birnie 1980;Taylor 1982;Taylor 1984;Taylor, Hall, and Birnie 1979;Taylor, Hall, and Birnie 1980;Taylor, Hall, and Birnie 1981;Taylor, Hall, and Birnie 1987  
 Notes: In 1979, 212 respondents were reinterviewed in Toronto. Three of the airports were general aviation airports. Conclusions about the relative degree of annoyance at Toronto and a smaller airport differed for different noise impact indicators.
- CAN-169 1978-79 Canadian Five Railway Yard Survey  
 Date: 1978-1979  
 Source: Railway  
 Location: Canada: Five railway yards in Ontario  
 N=: 544  
 Noise data: Yes  
 Reference: Dixit and Reburn 1980;Hall, Dixit, and Taylor 1980  
 Notes: Annoyance with railway yard noise is greater than with road traffic or aircraft noise at the same noise levels.
- CAN-174 1978 Canadian National Community Noise Survey  
 Date: 1978 (June to September)  
 Source: Community, Aircraft, Railway  
 Location: Canada: National sample as well as special samples near two airports (St. Hubert in Quebec: Waterville in Nova Scotia) and four railway sites
- (Truro in Nova Scotia; Grand Falls, St. Leonard, and Edmunston in New Brunswick).  
 N=: 8,838  
 Noise data: Yes (for 150 respondents)  
 Reference: Peat Marwick and Partners 1979  
 Notes: These data have not been analyzed but are fully documented. The survey is sometimes labeled the "National Household Survey of Noise Exposure."
- CAN-181 1979 Canadian Three Airport General Aviation Study  
 Date: 1979 (July)  
 Source: Aircraft  
 Location: Canada: Three general aviation airports (Oshawa, Buttonville, Maple)  
 N=: 30  
 Noise data: Yes  
 Reference: Taylor, Birnie, and Hall 1980  
 Notes: Some residents had also been interviewed in 1978 (CAN-168). A major study objective is to contrast three study methods: in-depth interview, diary, and field experiment.
- CAN-236 1981 Southern Ontario Community Survey  
 Date: 1981 (Summer)  
 Source: Road traffic, Railway, Aircraft  
 Location: Canada: Southern Ontario  
 N=: 406 (57 study sites)  
 Noise data: Yes  
 Reference: Hall, Taylor, and Birnie 1983;Hall, Taylor, and Birnie 1985;Taylor, Hall, and Birnie 1984  
 Notes: The probability of annoyance is predicted as a function of self-reported activity interference in a logit analysis.
- CAN-262 Canadian Party Wall Insulation Pilot Survey  
 Date: 1982 Publication (Survey date not reported)  
 Source: Interior noise  
 Location: Canada  
 N=: 98 (49 pairs of adjacent neighbors)  
 Noise data: Yes  
 Reference: Bradley 1982;Bradley 1983a;Bradley 1983b  
 Notes: Annoyance with neighbors' noise is less in residences with greater transmission loss for the party walls.
- CAN-279 1976 Toronto Freeway 401 Privacy Fence Survey  
 Date: 1976 (Spring and Autumn)  
 Source: Freeway traffic  
 Location: Canada: Four areas along the 401 freeway in Toronto  
 N=: 251  
 Noise data: No noise data described  
 Reference: Andrew and Sharratt 1976

## SURVEY DESCRIPTION (Continued)

- Notes: Residents were interviewed about a privacy fence that had been erected in November 1974. No interviews were conducted before the installation of the fence. The survey was conducted at two times to contrast reactions to freeway conditions at two times of year.
- CAN-280 1978 Etobicoke/Ottawa Noise Barrier Study  
 Date: 1976, 1978 (Autumn in both years)  
 Source: Freeway traffic  
 Location: Canada: Etobicoke (2 areas on Route 401 near Toronto) and Ottawa (near Queensway)  
 N=: 1,194  
 Noise data: Yes (for some locations near barriers)  
 Reference: Schliwinsky and Adams 1979  
 Notes: Interviews were conducted before and after a barrier was installed in areas near the barrier and in nearby control areas. Some respondents were reinterviewed. Noise levels decreased by 6 decibels in some locations. Results are not analyzed by noise level.
- CAN-322 1990 Toronto Air Conditioner Survey  
 Date: 1990 (Summer)  
 Source: Residential air conditioners, Heat pumps  
 Location: Canada: Toronto  
 N=: 550 with both survey and noise data  
 Noise data: Yes  
 Reference: Bradley 1991; Bradley 1993  
 Notes: Annoyance with air conditioners decreases as ambient noise levels increase. The interpretation is uncertain because the air conditioner noise level indicator includes ambient noise in some locations.
- CAN-385 1990s Vancouver Airport Noise Change Survey  
 Date: 1995 (August 17-20), 1998 (August 20-24)  
 Source: Aircraft  
 Location: Canada: Vancouver International Airport (10 areas)  
 N=: 2,067 (1,000 in the year 1995, 1,067 in 1998)  
 Noise data: Yes  
 Reference: Fidell and Silvati 1998; Fidell, Silvati, and Fletcher 1995; Grigg, Haboly, and Cheng 2000  
 Notes: Telephone interviews were conducted in the same area before and after a change in noise exposure.
- CHI-230 1975 Beijing Traffic Noise Survey  
 Date: 1975  
 Source: Road traffic  
 Location: China: 20 streets in Beijing  
 N=: Not known  
 Noise data: Yes  
 Reference: Chang 1981  
 Notes: Residents answered a self-administered questionnaire.
- CHI-386 1986-1989 Chinese Five-City Road Traffic Noise Survey  
 Date: 1986 to 1989 (Year may differ by city)  
 Source: Road traffic  
 Location: China: 5 cities (Harbin, Tianjin, Shanghai, Shijiazhuang, Fuzhou)  
 N=: 2,969  
 Noise data: Yes  
 Reference: Zhao and Chen 1992  
 Notes: There was no obvious difference in the reactions of respondents of different genders or ages to similar noise levels.
- CHI-457 1986 Beijing City (Nagoya Comparison) Survey  
 Date: 1986 (Spring)  
 Source: Community, Road traffic  
 Location: China: Beijing  
 N=: 353  
 Noise data: Yes  
 Reference: Kuno *et al.* 1987; Kuno, Oishi, Mishina, Hayashi, Zheng, Cai, and Chen 1992; Kuno, Oishi, Mishina, Hayashi, Zheng, Cai, and Chen 1993; Oishi, Mishina, Hayashi, Okumura, and Kuno 1989  
 Notes: Reactions to noise in Beijing, China were similar to those in a Nagoya, Japan study (JPN-294).
- CHI-514 1985 Student Noise Attitudes Study (Beijing/Tsinghua)  
 Date: 1985 (September)  
 Source: Community  
 Location: China: Beijing  
 N=: 402  
 Noise data: No  
 Reference: Zheng, Cai, and Chen 1986  
 Notes: University students answered this written questionnaire's general statements about neighbors' noise. There are some differences between perceptions and attitudes toward neighbors' noise in England, Germany and Japan. The questionnaire is nearly identical to questionnaires administered in Japan (JPN-510), England (UKD-512), Germany (GER-511), and the United States (USA-513).
- CZE-109 Bratislava Traffic Noise Survey  
 Date: 1974 Publication (Survey date not reported)  
 Source: Road traffic  
 Location: Czechoslovakia: 12 streets in Bratislava  
 N=: The survey was carried out for 340 apartments  
 Noise data: No noise data described  
 Reference: Radulov 1974  
 Notes: Annoyance is affected by the height of the

## SURVEY DESCRIPTION (Continued)

<p>apartment.</p> <p><u>CZE-402 1995-97 Czech Noise/Public Health Survey</u>            Date: 1995, 1997 (April in 1997)            Source: Community            Location: Czech Republic: (21 cities)            N=: 24,277            Noise data: Yes            Reference: Sisma 1998;Sisma 2000            Notes: The study reports a relationship between noise and some types of diseases.</p> <p><u>DEN-075 1972 Copenhagen Traffic Noise Survey</u>            Date: 1972 (August, September)            Source: Road traffic            Location: Denmark: Copenhagen (28 study areas)            N=: 960            Noise data: Yes            Reference: Fidell, Barber, and Schultz 1991;Kragh 1977;Relster 1975;Relster 1981;Schultz 1978            Notes: The study was designed to test the effect of housing type (apartments compared to other types) on response to traffic noise.</p> <p><u>DEN-200 1979 Danish Railway Noise Survey</u>            Date: 1979 (August, September)            Source: Railway            Location: Denmark            N=: 615            Noise data: Yes            Reference: Andersen, Köhl, and Relster 1980;Andersen, Köhl, and Relster 1983;Andersen, Köhl, and Relster 1988;Fidell, Barber, and Schultz 1991;Köhl 1980;Miljøstyrelsen 1982            Notes: More than half reported that goods trains are a special problem.</p> <p><u>DEN-333 1992 CEC Wind Turbine Noise Study (Denmark)</u>            Date: 1992 (November)            Source: Wind Turbine            Location: Denmark            N=: 199            Noise data: Yes            Reference: Wolsink and Sprengers 1993            Notes: Two similar studies were conducted in Germany (GER-335) and the Netherlands (NET-334).</p> <p><u>DEN-380 1983 Copenhagen Kastrup Airport Survey</u>            Date: 1983 (September)            Source: Aircraft            Location: Denmark: Kastrup Airport            N=: At least 570 (total is uncertain)            Noise data: Yes            Reference: Socialforskningsintitutet 1987</p>	<p>Notes: None</p> <p><u>DEN-381 1986 Copenhagen Kastrup Airport Followup Survey</u>            Date: 1986 (September 19 to 30)            Source: Aircraft            Location: Denmark: Kastrup Airport            N=: At least 570 (total is uncertain)            Noise data: Yes            Reference: Socialforskningsintitutet 1987            Notes: None</p> <p><u>DEN-387 1999-2000 Øster Søgade Copenhagen Porous Asphalt Survey</u>            Date: 1999 (March, before study), 2000 (March, after study)            Source: Road traffic            Location: Denmark: Copenhagen (Øster Søgade)            N=: 329 (173 before change, 156 after change )            Noise data: Yes            Reference: Larsen and Bendtsen 2001            Notes: A questionnaire was left in the mailbox with a self-addressed return envelope. The study examined reactions before and seven months after a road was rebuilt with a quieter road surface, porous asphalt.</p> <p><u>DEN-388 1998 Danish Speed Bump Noise Survey</u>            Date: 1998 (April)            Source: Road traffic (near speed bumps)            Location: Denmark            N=: 262            Noise data: Yes            Reference: Bendtsen and Larsen 2000            Notes: None</p> <p><u>DEN-389 1998 Danish Road Traffic Noise Barrier Study</u>            Date: 1998 (April)            Source: Major roads            Location: Denmark: 5 areas, two without barriers and three with barriers            N=: 261            Noise data: No            Reference: Bendtsen and Larsen 2001            Notes: A questionnaire was left in the mailbox with a self-addressed return envelope. This was a pilot survey to learn about reactions to noise barriers.</p> <p><u>DEN-390 1999 Aarhus Road Traffic Noise Survey</u>            Date: 1999 (May, June)            Source: Road traffic            Location: Denmark: Aarhus Municipality, including the second largest city (Aarhus), small communities, and rural areas            N=: 3,378</p>
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## SURVEY DESCRIPTION (Continued)

- Noise data: Yes  
 Reference: Bendtsen, Larsen, and Mikkelsen 2000  
 Notes: A postal questionnaire was distributed.
- DEN-519 Scandinavian Nine-Airport Noise Study (Denmark)  
 Date: 1971  
 Source: Aircraft  
 Location: Denmark: Copenhagen and Billund airports  
 N=: 1,119 from 12 areas (10 at Copenhagen and 2 at Billund)  
 Noise data: Yes  
 Reference: Åhrlin 1988;Åhrlin and Rylander 1979;Berglund, Berglund, Jonsson, and Lindvall 1977;Berglund, Berglund, and Lindvall 1975;Berglund, Berglund, and Lindvall 1987;Fidell, Barber, and Schultz 1991;Rylander, Björkman, Åhrlin, Sörensen, and Berglund 1980;Rylander, Björkman, and Sörensen 1993;Rylander and Sörensen 1973;Rylander, Sörensen, Alexandre, and Gilbert 1973;Rylander, Sörensen, and Berglund 1974;Rylander, Sörensen, and Kajland 1972;Schultz 1978;Sörensen, Berglund, and Rylander 1973  
 Notes: The 3,746 interviews from this and two other studies (DEN-519, NOR-520, SWE-035) have been analyzed as a single data set. (They were represented as a single study, SWE-035, in the 1981 and 1991 editions of this catalog.) The face-to-face interview was modified somewhat between the first and last interviews (from 1969 to 1976) in the three countries. The reports state that annoyance is less closely related to energy-based noise indices such as LAeq and FBN than to indices based on peak noise levels and numbers of aircraft.
- EGY-357 Alexandria Tram Noise Study  
 Date: 1993 Publication (Survey date not reported)  
 Source: Tramway  
 Location: Egypt: Alexandria  
 N=: 85  
 Noise data: Yes  
 Reference: Alim and Zaki 1993a;Alim and Zaki 1993b;Alim and Zaki 1994  
 Notes: Annoyance with noise and vibration was studied at 10 sites.
- FRA-016 1965 French Four-Airport Noise Study  
 Date: 1965 (November) to 1966 (April)  
 Source: Aircraft  
 Location: France: Four airports (Le Bourget (Paris), Orly (Paris), Marseilles, Lyon)  
 N=: Approximately 2,000  
 Noise data: Yes
- Reference: Alexandre 1970;Association d'Anthropologie Appliquée 1967;Centre Scientifique et Technique du Bâtiment 1968;Fidell, Barber, and Schultz 1991;Josse 1969;Rylander, Sörensen, Alexandre, and Gilbert 1973;Rylander, Sörensen, and Berglund 1974;Schultz 1978  
 Notes: None
- FRA-017 1965 French Regional Sonic Boom Survey  
 Date: 1965  
 Source: Sonic booms  
 Location: France: both eastern and southwestern regions of France  
 N=: 2,296  
 Noise data: No  
 Reference: de Brisson 1966  
 Notes: The study included a subsample of residents who had complained about sonic booms.
- FRA-019 1965 Paris Expressway Noise Survey  
 Date: 1965  
 Source: Expressway traffic  
 Location: France: Paris area  
 N=: 420 (370 were used in the analysis)  
 Noise data: Yes  
 Reference: Fidell, Barber, and Schultz 1991;Lamure and Bachelon 1967;Schultz 1978  
 Notes: None
- FRA-041 1969 Paris Road Traffic Noise Study  
 Date: 1969  
 Source: Road traffic  
 Location: France: Paris area  
 N=: 700  
 Noise data: Yes (for 500 interviews)  
 Reference: Aubree, Auzou, and Rapin 1971;Fidell, Barber, and Schultz 1991;Schultz 1978  
 Notes: Noise annoyance is related to other evaluations of neighborhoods.
- FRA-045 1970 French Sonic Boom Survey  
 Date: 1970 (November 11 to 16)  
 Source: Sonic booms  
 Location: France  
 N=: 2,848 main study interviews, also 283 complainants  
 Noise data: No (Only the number of booms is known.)  
 Reference: Bremond 1974;Centre d'Etudes et Recherches Psychologiques Air 1971  
 Notes: The study includes a subsample of 283 complainants.
- FRA-056 1971 Orly Aircraft Noise Survey  
 Date: 1971 (April 18 to May 17 for main study)

## SURVEY DESCRIPTION (Continued)

- Source: Aircraft  
 Location: France: Orly airport (Paris)  
 N=: 4,998 in main study. In-depth interviews were conducted with 39 respondents  
 Noise data: Yes  
 Reference: Francois 1972;Francois 1975a;Francois 1979b;Francois and Roche 1973  
 Notes: The in-depth interviews are described in one publication (Francois, 1972).
- FRA-063 1972 Paris Area Railway Noise Survey  
 Date: 1972 (April)  
 Source: Railway  
 Location: France: Paris area  
 N=: 350  
 Noise data: Yes  
 Reference: Aubree 1973;Aubree 1975;Fidell, Barber, and Schultz 1991;Gilbert 1973;Schultz 1978  
 Notes: None
- FRA-087 1973 St Cyr L'Ecole General Aviation Noise Survey  
 Date: 1973 (October)  
 Source: General aviation  
 Location: France: Six areas around St. Cyr L'Ecole Airport  
 N=: 401  
 Noise data: Yes  
 Reference: Francois 1975b  
 Notes: The study was designed for comparison with the 1971 Orly Study (FRA-056).
- FRA-092 1973 French Ten-City Traffic Noise Survey  
 Date: 1973 (September, October), 1974 (January), 1975 (September)  
 Source: Road traffic  
 Location: France: 10 cities  
 N=: 1,200  
 Noise data: Yes  
 Reference: IRT-CERN 1976;Vallet, Maurin, Page, Favre, and Pachiaudi 1978  
 Notes: After the first set of interviews (in 1973 for nine sites and January 1974 for Lyon Villeurbanne) two of the sites (Nimes and Bourg) were revisited for 200 additional interviews (September 1975). Interviews were not necessarily conducted with the same respondents.
- FRA-098 1974-75 Roissy Airport Before/After Opening Noise Survey  
 Date: 1974 (February 19 to 25), 1975 (March 17 to April 3)  
 Source: Aircraft  
 Location: France: Charles de Gaulle airport (Roissy area near Paris)  
 N=: 1,174 interviews from 690 respondents  
 Noise data: Yes  
 Reference: Francois 1975d;Francois 1977a;Francois 1979b  
 Notes: Interviews were conducted with the same 484 residents just before and one year after opening the opening of Charles de Gaulle airport on March 8, 1974. The study was especially designed for comparison to a 1975 Orly survey (FRA-113) and 1974 French National Aircraft survey (FRA-099). Information is available on 80 respondents leaving the area in the first year of the airport's operation.
- FRA-099 1974 French National Aircraft Noise Survey  
 Date: 1974 (December 9 to 20)  
 Source: Aircraft  
 Location: France: Probability sample of France  
 N=: 1,000  
 Noise data: No  
 Reference: Francois 1975d;Francois 1980  
 Notes: This study was designed for comparison with the 1975 Orly (FRA-113) and 1974-75 Roissy studies (FRA-098)
- FRA-113 1975 Orly Airport Noise Study  
 Date: 1975 (March 3 to 15)  
 Source: Aircraft  
 Location: France: Orly Airport (Paris)  
 N=: 997  
 Noise data: Yes  
 Reference: Francois 1975d;Francois 1977a;Francois 1977b;Francois 1979b;Francois 1980  
 Notes: The study was designed for comparison with the 1974 French National Aircraft Noise Survey (FRA-099) and the Roissy Airport Before-After Opening Noise Survey (FRA-098).
- FRA-124 1975-76 l'Hay les Roses Barrier Survey  
 Date: 1975-76 (October)  
 Source: Motorway traffic  
 Location: France: l'Hay les Roses (South of Paris)  
 N=: 700  
 Noise data: Yes  
 Reference: Vallet, Abramowitch, and Lambert 1977;Vallet, Abramowitch, and Lambert 1979  
 Notes: Residents were interviewed six months after the barrier was built about their evaluation of the noise before and after the barrier was built.
- FRA-131 1976 Orly Medical Effects Pilot Study  
 Date: 1976 (June)  
 Source: Aircraft  
 Location: France: One high noise area around Orly and two comparative samples from low noise areas  
 N=: 150

## SURVEY DESCRIPTION (Continued)

- Noise data: No  
 Reference: Francois 1977c  
 Notes: The standard interview is supplemented by a self-administered questionnaire and by a medical examination. The study was designed to test the methodology for a medical effects survey. The study examined the possibility that some of the variation in attitudes could be related to physical characteristics of respondents.
- FRA-146 1977 French Light Aircraft Study  
 Date: 1977 (May 25 to June 22)  
 Source: Light aircraft  
 Location: France: Four Paris-area airports (Chavenay, Guyancourt, St-Cyr-l'Ecole, Chelles-le-Pin)  
 N=: 800  
 Noise data: Yes  
 Reference: Bremond 1979b;Centre d'Etudes et Recherches Psychologiques Air 1978  
 Notes: Aircraft noise annoyance is greatest on weekends.
- FRA-150 1977 Roissy Airport Survey  
 Date: 1977 (October 24 to November 21)  
 Source: Aircraft  
 Location: France: Roissy  
 N=: 943  
 Noise data: Yes  
 Reference: Francois 1979a  
 Notes: Of the 943 respondents, 218 had also been interviewed in 1974 and 1975. The study was designed for comparison with an earlier Roissy study (FRA-098).
- FRA-189 1971 French Concorde Sonic Boom Study  
 Date: 1971 (May)  
 Source: Sonic booms from Concorde  
 Location: France: Three areas from previous sonic boom study (FRA-045)  
 N=: 1,202  
 Noise data: No (Only the number of booms is known.)  
 Reference: Bremond 1971  
 Notes: Concorde flights generated three booms in the week preceding the interview. Respondents regularly heard other sonic booms. Respondents compared reactions to booms in the previous week to the booms normally heard.
- FRA-197 1979 French Behavioral Effects of Road Noise Study  
 Date: 1979  
 Source: Road traffic  
 Location: France: 15 areas in Lyon and Marseilles  
 N=: 1,486  
 Noise data: Yes
- Reference: Lambert and Plouhinec 1985;Lambert and Simonnet 1980;Lambert, Simonnet, and Vallet 1983;Lambert, Simonnet, and Vallet 1984  
 Notes: The study measured behavioral reactions (e.g.. closing windows, location of activities in the home and use of out-of-doors space) at different noise levels. In-depth interviews and observations were completed with 40 respondents in five of the sites after the main survey.
- FRA-218 1975 Strasbourg Airport Noise Survey  
 Date: 1975  
 Source: Aircraft  
 Location: France: Strasbourg airport  
 N=: 405 interviews (9 other in-depth interviews)  
 Noise data: Yes  
 Reference: Francois 1974;Francois 1975c  
 Notes: The study was designed for comparison with an earlier study at Orly (FRA-056). Detailed information is available for nine in-depth exploratory interviews conducted in December 1974.
- FRA-239 1984-1986 French Combined Aircraft/Road Traffic Survey  
 Date: 1984 (September) to 1986 (May)  
 Source: Aircraft, Road traffic  
 Location: France: around Orly, Roissy, Nice, and Antibes airports  
 N=: 1,032 (570, Orly; 281, Roissy; 101, Nice; 80 Antibes)  
 Noise data: Yes  
 Reference: Diamond and Walker 1986a;Diamond and Walker 1986b;Vallet *et al.* 1986;Vallet, Pachiaudi, Depitre, Tanguy, and Francois 1988  
 Notes: This survey was jointly designed under Commission of European Communities auspices for comparison with a Glasgow Survey (UKD-238) and a Schiphol Survey (NET-240).
- FRA-252 1982-83 CEC Impulse Noise Field Study (France)  
 Date: 1982 (December), 1983 (January to March)  
 Source: Impulse noise (Shooting range, Shunting Yard, Building Site), Road traffic  
 Location: France: Athis-Mons, Antibes, Saint-Denis  
 N=: 451  
 Noise data: Yes  
 Reference: de Jong and Commins 1983;Groeneveld 1986;Groeneveld and de Jong 1984;Groeneveld and de Jong 1985b;Groeneveld and de Jong 1985a;Miedema 1987;Rabrait 1984  
 Notes: This is part of a coordinated Commission of European Communities joint study in Germany (GER-253), Ireland (IRE-254) and the Netherlands

## SURVEY DESCRIPTION (Continued)

(NET- 355). The study results support at least a 15-decibel penalty for impulse noise.

FRA-289 1986-87 French National Transportation Noise Survey

Date: 1986, 1987  
 Source: Community, Road traffic  
 Location: France: Probability sample of the French population  
 N=: 2,010  
 Noise data: Yes (for 375 respondents)  
 Reference: Lambert, Maurin, Boscher, and Lebart 1988;Maurin and Lambert 1990;Maurin, Lambert, and Alauzet 1988;Maurin, Lambert, Alauzet, and Chapuy 1988  
 Notes: Noise is the nuisance that is most often mentioned in this national study.

FRA-323 1976 Nationwide Noise Survey of France

Date: 1976  
 Source: Community, Road traffic  
 Location: France: National random sample of France  
 N=: 1,000  
 Noise data: Yes  
 Reference: Maurin and Lambert 1990;Maurin, Lambert, and Alauzet 1988  
 Notes: Many aspects of the study were repeated in a 1986 survey (FRA-289). Road traffic is the most often mentioned noise nuisance.

FRA-336 1991 TGV High Speed Train Pilot Survey

Date: 1991 (September)  
 Source: Railway  
 Location: France: 4 sites  
 N=: 39  
 Noise data: Yes  
 Reference: Lambert, Champelovier, and Vernet 1993  
 Notes: The interviews were tape recorded, and conducted with open questions to aid in the development of the questionnaire for a large scale survey. TGV operations were begun one to two years before the study.

FRA-342 1992 French Home Insulation Survey

Date: 1992 (July-September)  
 Source: Community, Interior noise from other dwellings.  
 Location: France: three regions  
 N=: 453  
 Noise data: Yes: sound insulation information  
 Reference: Aubree 1993  
 Notes: Acoustic properties were found to have improved during a 20-year period but a large minority of the owners were still not satisfied.

FRA-346 1991 French Before/After Noise Abatement Survey

Date: 1991 (January and March--before), (June and September--after)  
 Source: Motorway  
 Location: France  
 N=: 75  
 Noise data: Yes  
 Reference: Vallet, Vincent, Champelovier, Vernet, Annequin, Olivier, and Baez 1992;Vernet, Vallet, Vincent, Champelovier, Annequin, Baez, and Olivier 1992;Vincent and Champelovier 1992;Vincent and Champelovier 1993  
 Notes: Road traffic noise was reduced through barriers and a low noise surface at two locations, but annoyance did not decrease as much as expected.

FRA-364 1993-94 French 18-Site Time-Of-Day Study

Date: 1993 (September) - 1994 (June)  
 Source: Road traffic  
 Location: France: (18 sites)  
 N=: 895 analyzed responses (Of the 1,018 collected, the 66 with no noise data and 57 with incomplete or inconsistent annoyance data were not analyzed)  
 Noise data: Yes  
 Reference: Maurin 1996;Vallet, Vernet, Champelovier, and Maurin 1996  
 Notes: Annoyance was assessed at different times of day and for dwellings with and without all windows facing on the main road.

FRA-391 1998-99 Orly Airport Contingent Valuation Noise Survey

Date: 1998 (October), 1999 (April)  
 Source: Aircraft  
 Location: France: Orly airport (6 districts of Val-de-Marne: Ablon, Boissy-St-Léger, Limeil-Brévannes, Orly, Valenton, Villeneuve-le-Roi)  
 N=: 607 (It is not clear whether this includes some pretests)  
 Noise data: Yes  
 Reference: Faburel and Luchini 2000  
 Notes: The exposure to aircraft noise and degree of aircraft noise annoyance affect the willingness to pay for aircraft noise reduction.

FRA-392 1998 Paris "Zone 30" Noise Survey

Date: 1998 (May, June, September)  
 Source: Many community sounds ( Some may be generally be positively evaluated)  
 Location: France: Two roads in Paris (Buttes-aux-Cailles-13<sup>é</sup>A and Nationale 13<sup>é</sup>A)  
 N=: 400  
 Noise data: No  
 Reference: Rozec and Moch 2000;Rozec and Rumeau 2000

## SURVEY DESCRIPTION (Continued)

- Notes: Respondents were interviewed on the street, but were asked about their reactions in their local homes as well as other locations. The study examined reactions in specially protected noise zones (zones 30).
- FRA-393 1997 France Road/Railway Noise Survey  
 Date: 1997 (October, November)  
 Source: Road traffic, Railway  
 Location: France: (62 sites along railway lines)  
 N=: 700  
 Noise data: Yes  
 Reference: Joncour, Cailhau, Gautier, Champelovier, and Lambert 2000  
 Notes: The purpose of the study was to determine the effects of combined noise sources.
- FRA-394 1997 Besançon Road Traffic Noise Survey  
 Date: 1997 (October)  
 Source: Road traffic  
 Location: France: Besançon  
 N=: 1,910 (total of 2,702 responses but analyzed only the 1,910 from types of areas with more than 30 responses)  
 Noise data: Yes  
 Reference: Houot 1999a;Houot 1999b;Houot 2000  
 Notes: The self-administered questionnaires were left in each respondent's postbox. The study is part of a project to link annoyance levels to information available from geographical GIS data bases.
- FRA-395 1998 Orly/Roissy Airport Noise Survey  
 Date: 1998 (Autumn) - 1999 (January)  
 Source: Aircraft  
 Location: France: Orly and Roissy airports (42 locations in 32 communities)  
 N=: 1,473  
 Noise data: Yes  
 Reference: Vincent, Vallet, Olivier, and Paque 2000  
 Notes: The study was planned to test the French IP index and to measure reactions where the noise levels had increased at Roissy Airport.
- FRA-396 1993 TGV High Speed Train Survey  
 Date: 1993  
 Source: High speed railway (TGV Atlantique railway line)  
 Location: France: (25 rural sites)  
 N=: 260  
 Noise data: Yes  
 Reference: Lambert, Champelovier, and Vernet 1996;Lambert, Champelovier, Vernet, Annequin, and Baez 1994;Lambert, Champelovier, Vernet, Annequin, and Baez 1995  
 Notes: The purpose of the study is to determine whether
- existing noise limit guidelines are suitable for high speed railways.
- GER-034 1969 Munich Airport Noise (DFG Aircraft Noise Study)  
 Date: 1969 (February to June)  
 Source: Aircraft  
 Location: Germany: Munich Airport  
 N=: 660 main social survey interviews (also 115 repeated interviews, 152 migrant interviews)  
 Noise data: Yes  
 Reference: Deutsche Forschungsgemeinschaft 1974;Fidell, Barber, and Schultz 1991;Finke and Martin 1974;Finke, Martin, Guski, Rohrmann, Schümer, and Schümer-Kohrs 1975;Martin, Rohrmann, and Finke 1973;Rohrmann, Schümer, Schümer-Kohrs, Guski, and Finke 1973;Schultz 1978  
 Notes: This survey was one part of a multi-disciplinary study. In addition to 660 main interviews, 152 migrants were interviewed, 115 retests were performed, 375 respondents had special psychological and physiological tests, and 392 had medical tests.
- GER-037 1969 Meppen Sonic Boom Field Experiment  
 Date: 1969 (September)  
 Source: Sonic booms  
 Location: Germany: Meppen  
 N=: 39  
 Noise data: Yes  
 Reference: May 1971b;May 1971a;May 1972  
 Notes: Respondents rated every sonic boom that they heard as they went about their normal activities.
- GER-114 1975 German General Aviation Survey  
 Date: 1975 (April)  
 Source: Aircraft  
 Location: Germany: Four airports (Egelsbach, Bonn-Hangelar, Karlsruhe-Forchheim, Braunschweig)  
 N=: 398  
 Noise data: No  
 Reference: Rohrmann 1975;Rohrmann 1976  
 Notes: It is concluded that disturbance is greater (for the same noise level) at small airports than at large airports.
- GER-134 1976 Hamburg Urban Noise Survey  
 Date: 1976 (August, September)  
 Source: Road traffic, Railway, Industrial, Aircraft, Construction  
 Location: Germany: Hamburg  
 N=: 643  
 Noise data: Yes  
 Reference: Finke, Guski, and Rohrmann 1980;Guski



## SURVEY DESCRIPTION (Continued)

- 1985;Guski, Wichmann, Rohrmann, and Finke 1978;Rohrmann 1978;Rohrmann, Finke, and Guski 1980;Rohrmann and Scharnberg 1981;Rylander, Sörensen, and Berglund 1974  
 Notes: This is part of an interdisciplinary study that included several other data collection techniques.
- GER-135 1976 Stuttgart Railway/Road Noise Survey  
 Date: 1976 (Summer)  
 Source: Railway, Road traffic  
 Location: Germany: Stuttgart  
 N=: 1,125  
 Noise data: Yes  
 Reference: Heimerl and Holzmann 1978  
 Notes: Railway noise is less annoying than road traffic noise at the same noise level.
- GER-164 1973 Düsseldorf Traffic Noise Survey  
 Date: 1973  
 Source: Road traffic  
 Location: Germany: Düsseldorf (8 streets)  
 N=: 274  
 Noise data: Yes  
 Reference: Buchta and Kastka 1977a;Buchta and Kastka 1977b;Kastka 1983;Kastka and Buchta 1977;Kastka, Buchta, Paulsen, and Ritterstaedt 1984  
 Notes: The study examined the different sources of annoyance.
- GER-192 1977-83 German Road/Railway Noise Comparison Study  
 Date: 1977-1978 1983 (Winter, 1977 or Summer, 1978 for most sites. Some sites added in 1983.)  
 Source: Road traffic, Railway  
 Location: Germany: 26 areas  
 N=: 1,651  
 Noise data: Yes  
 Reference: Knall and Schümer 1983;Möhler 1988;Möhler and Knall 1983;Möhler, Schümer, Knall, and Schümer-Kohrs 1986;Planungsbüro Obermeyer 1983;Schümer, Kasubek, Knall, and Schümer-Kohrs 1981;Schümer and Schümer-Kohrs 1983;Schümer and Zeichart 1989a;Schümer and Zeichart 1989b;Schümer, Zeichart, and Schümer-Kohrs 1988  
 Notes: Road traffic is generally more annoying than railway noise at the same noise level. Since the initial 1977-78 survey at 14 sites, additional sites have been added.
- GER-231 1981 Blast Furnace and Road Noise Study  
 Date: 1981  
 Source: Road traffic
- Location: Germany: 2 areas  
 N=: Approximately 35  
 Noise data: Yes  
 Reference: Ritterstaedt and Kastka 1981  
 Notes: The study compared reactions to road traffic noise and to less variable noise from a blast furnace.
- GER-246 1977-78 German Six-City Traffic Change Panel Study  
 Date: 1977-1978 (Autumn both years)  
 Source: Road traffic  
 Location: Germany: residential areas in 6 cities  
 N=: 3,405 interviews (1,709 before and 1,696 after a change.)  
 Noise data: Yes  
 Reference: Kastka 1980;Kastka 1981  
 Notes: Residents were surveyed both before and after changes had been made in traffic patterns for safety reasons. The mean change in noise level between the two phases was about one decibel (with accompanying changes in numbers and speed of vehicles) but there was a disproportionately large change in annoyance.
- GER-253 1982-83 CEC Impulse Noise Field Study (Germany)  
 Date: 1983 (January to March)  
 Source: Impulse noise (Drop forges, Shooting range), Road traffic  
 Location: Germany: Resse, Haan, Solingen, Plettenberg  
 N=: 334  
 Noise data: Yes  
 Reference: de Jong and Commins 1983;Groeneveld 1986;Groeneveld and de Jong 1984;Groeneveld and de Jong 1985a;Groeneveld and de Jong 1985b;Kastka and Langdon 1985;Kastka and Ritterstaedt 1984;Miedema 1987;Ritterstaedt and Kastka 1985  
 Notes: This is part of a Commission of European Communities coordinated joint study in France (FRA-252), Germany (GER-253), Ireland (IRE-254) and the Netherlands (NET- 355). The study results support at least a 10-decibel penalty for impulse noise.
- GER-256 Berlin Nighttime Noise Survey  
 Date: 1985 Publication (Survey date not reported)  
 Source: Road traffic  
 Location: Germany: 222 residential areas in West Berlin  
 N=: 683  
 Noise data: Yes  
 Reference: Guski 1985;Scharnberg 1985;Scharnberg and Wühler 1982;Scharnberg, Wühler, Finke, and Guski 1982

## SURVEY DESCRIPTION (Continued)

- Notes: Daytime disturbance levels are related to annoyance. Window closing behavior and the location of sleeping rooms appear to explain the low relation between noise level and sleep response.
- GER-275 1986-87 Darmstadt Movers Survey  
 Date: 1986 (August) to 1987 (about November)  
 Source: Community  
 Location: Germany: Urban and suburban areas in Darmstadt  
 N=: 163 respondents providing approximately 400 responses  
 Noise data: No noise data described  
 Reference: Paechter, Rohrmann, Wertenbroch, and Wetzel 1988  
 Notes: The sample consisted of 92 movers who were looking for new homes and a control group of 71 residents who were not looking. Both groups received an initial face-to-face interview and a final telephone interview. Movers evaluated the noise at their new residence less favorably four months after moving in than they did before moving in.
- GER-278 1980 German Shooting Range Survey  
 Date: 1980 (May to October), 1981 (April)  
 Source: Small firearms, Road traffic  
 Location: Germany: two military shooting ranges (Resse, Schepsdorf) and three civil shooting ranges (Bottrop, Datteln, Troisdorf)  
 N=: 392 (about 80 from each site)  
 Noise data: Yes  
 Reference: Buchta 1984;Buchta 1988;Buchta 1990;Buchta, Buchta, Koslowsky, and Rohland 1982;Vos and Buchta 2000  
 Notes: Results from this field survey indicate that shooting range noise is the equivalent of about 15 decibels more annoying than road traffic noise. These findings are compared to a laboratory study that found a difference in reactions equivalent to approximately 6 decibels.
- GER-281 1976-77 German Highway Noise Study  
 Date: 1980 (May to October), 1981 (April)  
 Source: Expressway traffic  
 Location: Germany: (4 towns with 5 sites with 2 to 4 study zones at each site)  
 N=: 359  
 Noise data: Yes  
 Reference: Kastka 1983;Kastka, Buchta, Paulsen, and Ritterstaedt 1984;Kastka, Hall, and Noack 1983  
 Notes: Distance from the highway has only a small effect on noise annoyance after controlling for noise level. Some of these sites were resurveyed in a later survey (GER-282).
- GER-282 1979 Wuppertal/Düsseldorf Traffic Noise Barriers Study  
 Date: 1979  
 Source: Road traffic  
 Location: Germany: Wuppertal and Düsseldorf  
 N=: 138  
 Noise data: Yes  
 Reference: Kastka, Buchta, Paulsen, and Ritterstaedt 1984;Kastka and Paulsen 1979;Langdon and Griffiths 1982  
 Notes: The interviews were conducted after barriers had been erected in some areas where interviews had previously been conducted in 1976 or 1977 (GER-281).
- GER-290 1981 German Military Training Area Survey  
 Date: 1981  
 Source: Cannon fire, Aircraft, Rifle fire  
 Location: Germany: 21 communities near five military training areas (Munster, Senne, Grafenwöhr, Bergen, Hohenfels)  
 N=: 427  
 Noise data: Yes  
 Reference: Buchta 1988;Buchta, Buchta, and Loosen 1986  
 Notes: C-weighted indices of the noise environment correlated only slightly better with the annoyance scores than A-weighted indices. This study was designed for comparison to a road traffic and impulse noise study (GER-278).
- GER-291 1984 Visual Context of Noise Survey (Germany)  
 Date: 1984  
 Source: Road traffic  
 Location: Germany: Ratingen  
 N=: 240 (approximately) surveyed but fewer are used for many analyses  
 Noise data: Yes  
 Reference: Kastka and Noack 1987;Kastka, Noack, Mau, Maas, Conrad, Ritterstaedt, and Hangartner 1986  
 Notes: This is the German part of a German/Swiss survey (SWI-312). Both mail and face-to-face questionnaires were used in Germany. The streets of the Swiss town were judged to be more attractive. At the same noise exposure, the Swiss respondents were less annoyed than the German respondents.
- GER-335 1992 CEC Wind Turbine Noise Study (Germany)  
 Date: 1992 (September, November)  
 Source: Wind Turbine  
 Location: Germany  
 N=: 216

## SURVEY DESCRIPTION (Continued)

- Noise data: Yes  
 Reference: Wolsink and Sprengers 1993  
 Notes: Similar studies were conducted at the same time in Denmark (DEN-333) and the Netherlands (NET-334).
- GER-363 1988 German Noise Barrier Evaluation Survey  
 Date: 1988  
 Source: Road traffic  
 Location: Germany: Düsseldorf, Wuppertal, Krefeld, Neuss  
 N=: 293  
 Noise data: Yes  
 Reference: Kastka, Buchta, Ritterstaedt, Paulsen, and Mau 1995  
 Notes: Interviews were conducted after barriers had been erected in some areas where interviews had previously been conducted in 1976 (GER-281). Many, but not all, respondents were interviewed both times.
- GER-372 1985-86 Ratingen Düsseldorf Road Traffic/Aircraft Survey  
 Date: 1985 (December), 1986 (January)  
 Source: Aircraft, Road traffic  
 Location: Germany: Düsseldorf, Ratingen  
 N=: 564  
 Noise data: Yes  
 Reference: Kastka, Borsch-Galetke, Guski, Krauth, Paulsen, Schümer, and Oliva 1995;Paulsen, Mau, and Kastka 1986  
 Notes: None
- GER-373 1987 Düsseldorf/Ratingen Aircraft/ Road Traffic Survey  
 Date: 1987 (November, December)  
 Source: Aircraft, Road traffic  
 Location: Germany: Ratingen  
 N=: 516  
 Noise data: Yes  
 Reference: Kastka, Borsch-Galetke, Guski, Krauth, Paulsen, Schümer, and Oliva 1995;Kastka, Mau, Muth, and Siegmann 1996  
 Notes: None
- GER-374 1993 Greifswald Traffic Noise Survey  
 Date: 1993 ( June to August )  
 Source: Aircraft, Road traffic  
 Location: Germany: Greifswald  
 N=: 578 (61 streets)  
 Noise data: Yes  
 Reference: Schomer 1996  
 Notes: The study was conducted in Griefswald, a city in the former German Democratic Republic, that experienced substantial changes in road traffic after reunification with the German Federal Republic.
- GER-454 1991 German Artillery and Road Traffic Noise Survey  
 Date: 1991 (Summer)  
 Source: Large firearms, Road traffic  
 Location: Germany: 2 military training fields (17 residential areas near Bergen and Munster)  
 N=: 433  
 Noise data: Yes  
 Reference: Buchta and Vos 1998;Buchta and Vos 1999;Schomer 1999;Vos and Buchta 2000  
 Notes: Face-to-face interviews were conducted to compare the reactions to artillery and road traffic noise.
- GER-463 1993-94 Berlin Women Environmental Health Survey  
 Date: 1993-1994 (Winter)  
 Source: Road traffic  
 Location: Germany: Berlin (2 inner city districts)  
 N=: 801  
 Noise data: Yes  
 Reference: Babisch, Fromme, Beyer, and Ising 1996  
 Notes: Data were gathered through face-to-face interviews and various physiological measurements. There was some evidence in an analysis of a random subsample that noise is related to neuroendocrine physiological reactions.
- GER-464 Oldenburg Noise Situation Investigation  
 Date: 1996 Publication (Survey date not reported)  
 Source: Road traffic, Railway, Aircraft (mainly in one area)  
 Location: Germany: Oldenburg (2 areas)  
 N=: 40 (approximate)  
 Noise data: Yes  
 Reference: Nitsch and Schulte-Fortkamp 1997;Schulte-Fortkamp 1994;Schulte-Fortkamp 1995;Schulte-Fortkamp 1996;Schulte-Fortkamp 2000  
 Notes: Semi-structured face-to-face interviews included some closed questions but primarily open-ended questions for unstructured descriptions of experiences with noise. It was concluded that people form their impressions of noise within particular contexts defined by activities, location and particular types of noise events.
- GER-465 1996-97 German Sleep Disturbance Survey  
 Date: 1996 (Spring and Autumn), 1997 (Spring and Autumn)  
 Source: Railway, Road traffic  
 Location: Germany: 8 locations within Northrhein-Westfalia and Hessen (i.e. two Bundeslanders)  
 N=: 383 (377 used in the analyses)

## SURVEY DESCRIPTION (Continued)

- Noise data: Yes  
Reference: Griefahn, Deppe, Mehnert, Moog, Möhler, and Schümer-Kohrs 1998;Griefahn, Deppe, Mehnert, Moog, Möhler, and Schümer 1998;Griefahn, Schümer-Kohrs, Schümer, Möhler, and Mehnert 2000  
Notes: The participants were recruited using a screening questionnaire that had been administered to 1703 respondents. The 383 study participants answered short self-administered questionnaires each evening and morning for 10 weekday study nights. No relationship was found between objectively measured road and railway noise and body movements except for the self-identified sensitive residents living near roads.
- GER-466 1998 Düsseldorf/Dortmund Airport Noise Information Survey  
Date: 1998 (February to July), 1999 (May to June for some reinterviews)  
Source: Aircraft  
Location: Germany: Düsseldorf International Airport and Dortmund Regional Airport  
N=: 223 responses from 180 respondents (43 were reinterviewed in 1999)  
Noise data: Yes  
Reference: Vogt and Kastner 1999;Vogt and Kastner 2000  
Notes: The initial 180 interviews were conducted in person. Respondents were then informed about the airport noise information service. After a year, 43 respondents were reinterviewed via telephone. There was not evidence that the existence of the information service reduced annoyance.
- GER-467 1997 ICE High-Speed Railway Noise Survey  
Date: 1997 (mid-October to November)  
Source: Railway  
Location: Germany: along 2 sections of a new high-speed railway line between Hannover and Wuerzburg (8 small rural communities)  
N=: 315  
Noise data: Yes  
Reference: Zeichart 1999;Zeichart, Kilcher, Herrmann, Hils, and Gawlik 2000  
Notes: Reactions to high speed railway noise are consistent with that found for standard railway lines at the same noise exposure.
- GER-470 1996-97 German Road/Rail Traffic Noise Survey  
Date: 1996 (Spring) to 1997 (Autumn)  
Source: Railway, Road traffic  
Location: Germany: 8 areas (Kreuztal/Hilchenbach, Herborn-Seelbach/Herborn-Burg, Bottrop, Langenfeld, Rheda, Oelde, Bönen, Essen)  
N=: 1,600 interviews from 1,121 respondents  
Noise data: Yes  
Reference: Griefahn, Möhler, and Schümer 1999;Möhler and Liepert 2000;Möhler, Liepert, Schümer, and Griefahn 2000;Möhler, Liepert, Schümer, Schümer-Kohrs, Schreckenber, Mehnert, and Griefahn 2000;Schümer-Kohrs, Schümer, Schreckenber, Griefahn, and Möhler 1998  
Notes: Some 479 of the 1,121 respondents were interviewed a second time. Some 377 respondents participated in a later sleep study (GER-480). Rail traffic is less annoying than road traffic at the same noise exposure as measured in LAeq.
- GER-471 1995-96 Germany Rail-Grinding Noise Reduction Study (Pilot)  
Date: 1995 (early summer-before grinding), 1995 (Autumn - after grinding), 1996 (repeated in summer in one location)  
Source: Railway (before and after rail grinding to smooth the rail surface)  
Location: Germany: 3 areas along the Munich-Rosenheim-Salzburg railway line (Vaterstetten, Bernau, Übersee)  
N=: 443 interviews from approximately 194 respondents  
Noise data: Yes  
Reference: Hegner, Möhler, Prestele, and Schümer-Kohrs 1996;Hegner, Möhler, Prestele, and Schümer-Kohrs 1997;Möhler, Hegner, Schümer, and Schümer-Kohrs 1997;Schümer and Schreckenber 2000  
Notes: Annoyance was reduced by the reduction in noise level due to rail grinding. The effect was still present a year after the change. This study served as a pilot study for a 1997-98 study (GER-479),
- GER-472 1994 1996 Düsseldorf Activity Disturbance Study  
Date: 1994, 1996 (part of sample reinterviewed in 1996)  
Source: Aircraft, Road traffic  
Location: Germany: Düsseldorf (4 areas: high and low exposure areas for both aircraft and road traffic)  
N=: 3,530 responses from 230 respondents  
Noise data: Yes  
Reference: Felscher-Suhr 1997;Felscher-Suhr, Guski, Hunecke, Kastka, Paulsen, and Schümer 1996;Felscher-Suhr, Guski, Hunecke, Kastka, Paulsen, Schümer, and Vogt 1996;Guski 1996  
Notes: The study examined the relation between immediate annoyance and the activity and noise level during the activity. During the main study, respondents were called on mobile telephones up to ten times a day on eight different days over a six-week period to ask for their location, current

## SURVEY DESCRIPTION (Continued)

activity, and degree of disturbance. The primary study period was preceded by one face-to-face interview. Two years after the main study, a structured telephone interview was conducted as well as a semi-structured face-to-face interview that was tape recorded and then analyzed.

GER-473 1995 Düsseldorf Airport Noise Survey

Date: 1995 (July to September)  
 Source: Aircraft  
 Location: Germany: 25 areas in communities near Düsseldorf airport (Ratingen, Hösel, Lintorf, Homberg, Breitscheid)  
 N=: 750 (25 areas)  
 Noise data: Yes  
 Reference: Kastka, Borsch-Galetke, Guski, Krauth, Paulsen, Schümer, and Oliva 1995;Kastka, Mau, Muth, and Siegmann 1996  
 Notes: This survey's results have been compared with those from the 1987 Düsseldorf Airport Noise Survey (GER-373).

GER-479 1997-98 Germany Rail-Grinding Noise Reduction Study (Primary)

Date: 1997 (November, December), 1998 (March, April)  
 Source: Railway (before and after rail grinding to smooth the rail surface)  
 Location: Germany: 3 sites in two areas along the Munich-Rosenheim-Salzburg railway line (Burlafingen/Unterfahlheim, Uhingen)  
 N=: 751 (398 before rail grinding and 353 after)  
 Noise data: Yes  
 Reference: Liepert, Hegner, Möhler, Schreckenberger, Schümer-Kohrs, and Schümer 1999  
 Notes: Annoyance was reduced by the reduction in noise level due to rail grinding. The methods for this study had been tested in a pilot survey (GER-471).

GER-480 1996-97 German Road/Rail Sleep Study

Date: 1996 (Spring and Autumn), 1997 (Spring and Autumn)  
 Source: Railway, Road traffic  
 Location: Germany: 8 areas (Kreuztal / Hilchenbach, Herborn-Seelbach /Herborn-Burg , Bottrop, Langenfeld, Rheda, Oelde, Bönen, Essen)  
 N=: 377  
 Noise data: Yes  
 Reference: Griefahn, Möhler, and Schümer 1999;Möhler and Liepert 2000;Möhler, Liepert, Schümer, and Griefahn 2000;Möhler, Liepert, Schümer, Schümer-Kohrs, Schreckenberger, Mehnert, and Griefahn 2000  
 Notes: All 377 respondents had been interviewed in a previous study (GER-470). A questionnaire was answered after each night that sleep was

monitored. Rail traffic is less annoying than road traffic at the same noise exposure as measured in LAeq.

GER-502 German Noise Change Part of CEC Sleep Study

Date: 1986 Publication (Study date not reported)  
 Source: Road traffic  
 Location: Germany  
 N=: 20 sleep study participants drawn from a screening survey of 240 respondents  
 Noise data: Yes  
 Reference: Griefahn 1988;Griefahn and Gros 1983;Griefahn and Gros 1985;Griefahn and Gros 1986;Griefahn, Gros, Kauth, and Rehm 1980;Gros and Griefahn 1985b;Gros and Griefahn 1985a  
 Notes: On the basis of replies on 240 mail questionnaires, 20 subjects were selected to participate in a 12-night study in their homes. The 20 participants filled out short questionnaires on each of the 12 mornings and evenings of the test. A reaction time test was administered each morning and evening. One electroencephalogram (EEG) and two electrooculograms (EOG) were recorded each night. Latent effects of noise were found for the noisy, window-open nights. Only the females, however, reported a change in sleep quality.

GER-511 1980 Student Noise Attitudes Study (Germany)

Date: 1980  
 Source: Community  
 Location: Germany  
 N=: 457  
 Noise data: No  
 Reference: Namba and Kuwano 1986;Namba, Kuwano, and Schick 1986;Thomas, Namba, Schick, and Kuwano 1983  
 Notes: University students answered this written questionnaire's general statements about neighbors' noise without direct reference to their present residence. There are some differences between perceptions and attitudes toward neighbors' noise in England, Germany and Japan. The questionnaire is nearly identical to questionnaires administered in Japan (JPN-510), England (UKD-512), China (CHI-514), and the United States (USA-513).

GER-516 1983 Apartment Noise Attitudes Study (Germany)

Date: 1983  
 Source: General community noise including noise from neighbors in apartments  
 Location: Germany  
 N=: 296  
 Noise data: No

## SURVEY DESCRIPTION (Continued)

- Reference: Namba, Kuwano, and Schick 1986;Schick, Kuwano, and Namba 1984;Schick, Zheng, Müller-Andritzky, Namba, Kuwano, and Chassein 1992  
 Notes: The study's purpose was to compare Japanese and German's attitudes toward neighborhood noise problems. When annoyed by noise from neighboring apartments, this planned comparison with a Japanese survey found that Germans are more likely than Japanese to contact those neighbors (JPN-516). Data were collected from university students using a self-administered questionnaire.
- GRE-331 1992 Rhodes Residential Noise Survey  
 Date: 1992 (Summer)  
 Source: Community  
 Location: Greece: Rhodes  
 N=: 232  
 Noise data: Yes  
 Reference: Psichas, Vallet, and Vogiatzis 1993  
 Notes: Tourists were interviewed with a similar questionnaire in a non-residential survey.
- HKG-125 1975 Hong Kong Fireman Environmental Noise Survey  
 Date: 1975 (April to October)  
 Source: Aircraft, Road traffic  
 Location: Hong Kong: 12 fire stations (10 are near Kai Tak airport)  
 N=: 522  
 Noise data: Yes for inside the fire stations  
 Reference: Ko, Chan, and Kwan 1977;Ko, Kwan, and Chan 1976  
 Notes: Firemen answered a self-administered questionnaire. Reactions to both home and fire station environments were obtained but noise measures are only available at the fire station. Firemen live at the station on alternate days.
- HKG-187 Hong Kong Socio-Economic Area Road Traffic Survey  
 Date: 1980 Publication (Survey date not reported)  
 Source: Road traffic  
 Location: Hong Kong: Two neighborhoods  
 N=: 180  
 Noise data: Yes  
 Reference: Ko and Wong 1980  
 Notes: Residents in the higher socio-economic neighborhood are more annoyed by noise at the same noise level.
- HKG-208 Preliminary Hong Kong Fireman Noise Survey  
 Date: 1975 Publication (Survey date not reported)  
 Source: Road traffic, Aircraft
- Location: Hong Kong: Two fire stations  
 N=: 68  
 Noise data: Yes  
 Reference: Ko 1975  
 Notes: The interviewer translated the questions from English into Chinese during the interview. A comparison of these responses with some European data suggested greater annoyance for these firemen. The firemen live at the station on alternate days. This study preceded a larger scale study (HKG-125).
- HUN-458 1995 Hungary Road Traffic Noise Survey  
 Date: 1995 (July to November), 1999 (November) (Additional data collection was planned.)  
 Source: Road traffic  
 Location: Hungary: 300 locations in 100 towns  
 N=: 860 (approximate number of responses processed by 2,000.)  
 Noise data: Yes  
 Reference: Demeter and Berndt 1996  
 Notes: The purposes of the study were to determine that areas were most affected by noise and to aid in identifying areas for noise insulation.
- IRE-254 1982-83 CEC Impulse Noise Field Study (Ireland)  
 Date: 1982 (December), 1983 (January to March)  
 Source: Impulse noise (Shooting range, Shipyard, Scrapyard, Dairy), Road traffic  
 Location: Ireland: Kileek, Rushbroke, Ringsend, Blackpool, Churchtown  
 N=: 454  
 Noise data: Yes  
 Reference: de Jong and Commins 1983;Groeneveld 1986;Groeneveld and de Jong 1984;Groeneveld and de Jong 1985a;Groeneveld and de Jong 1985b;Hayden, Whelan, and Dillon 1984;Miedema 1987  
 Notes: This is part of a Commission of European Communities coordinated joint study in France (FRA-252), Germany (GER-253), and the Netherlands (NET-355). The study results support at least a 10-decibel penalty for impulse noise.
- IRN-459 1977 Tehran Community Noise Survey  
 Date: 1977 (February)  
 Source: Road traffic  
 Location: Iran: Tehran (23 sites)  
 N=: 608 (some households had multiple respondents)  
 Noise data: Yes  
 Reference: Bertlin Cooper McDonald 1977  
 Notes: Face-to-face interviews were conducted at the door over a range of noise levels and residential conditions in Tehran. Residents were bothered by

## SURVEY DESCRIPTION (Continued)

noise in many of the highest and moderate noise exposure areas.

- IRQ-229 1980 Baghdad Street Noise Survey  
 Date: 1980 (Summer)  
 Source: Road traffic  
 Location: Iraq: Baghdad  
 N=: 329 residents and shopkeepers and 360 pedestrians were interviewed  
 Noise data: Yes  
 Reference: Al-Samarrai and Al-Jawadi 1981  
 Notes: One type of interview was administered to pedestrians on the streets. Another type was used for residents and shopkeepers.
- ITL-318 1967 Ferrara Comparative Traffic Noise Study  
 Date: 1967  
 Source: Road traffic  
 Location: Italy: Ferrara  
 N=: 166  
 Noise data: Yes  
 Reference: Jonsson, Kajland, Paccagnella, and Sørensen 1969  
 Notes: This study was designed for comparison to the 1967 Stockholm Comparative Traffic Noise Study (SWE-025). In spite of a higher traffic noise level (measured indoors) in the Ferrara sample, those in the Stockholm sample were more annoyed. The sample consisted of residents living one story above street level.
- ITL-350 1990 Modena Traffic Noise Survey  
 Date: 1990 (June)  
 Source: Road traffic  
 Location: Italy: Modena  
 N=: 908  
 Noise data: Yes  
 Reference: Bertoni, Franchini, Lambert, Magnoni, Tartoni, and Vallet 1994; Bertoni, Franchini, Magnoni, Tartoni, and Vallet 1993  
 Notes: A series of behavioral effects were found to be present above 60 dB(A) DNL.
- JPN-005 1953 Osaka/Amagasaki Industrial Noise Survey  
 Date: 1953  
 Source: Industry  
 Location: Japan: Osaka, Amagasaki  
 N=: 136  
 Noise data: Yes  
 Reference: Osada 1971; Shoji, Kitamura, Takeuchi, Kitamura, Hiwatari, Tsuji, and Horiuchi 1953; Yamamoto, Takagi, Hashimoto, and Yoneda 1970  
 Notes: Housewives were interviewed.
- JPN-018 1965 Osaka Aircraft Noise Survey  
 Date: 1965  
 Source: Aircraft  
 Location: Japan: 27 sites near Osaka airport  
 N=: 2,700  
 Noise data: Yes  
 Reference: Kansai Toshi Soon Talsaku Iinkai 1965; Osada 1971  
 Notes: Most respondents were housewives.
- JPN-046 1970 Yokota Air Base Study  
 Date: 1970 (July)  
 Source: Aircraft  
 Location: Japan: Yokota air base  
 N=: 991 interviews (from 1,000 households)  
 Noise data: Yes  
 Reference: Kodama 1971; Osada 1971; Rylander, Sørensen, and Berglund 1974; Tokyo Kogai Kenkyujo 1971; Tokyo Kogai Kenkyujo 1972  
 Notes: Housewives were interviewed.
- JPN-062 1972 Akishima City Aircraft Noise Survey  
 Date: 1972 (September)  
 Source: Aircraft  
 Location: Japan: Ten areas in Akishima City near Yokota air base  
 N=: Approximately 1,000  
 Noise data: Yes  
 Reference: Hayashi, Hayashi, Kodama, and Kondo 1973; Hayashi, Kondo, and Kodama 1974; Hayashi, Kondo, and Kodama 1978; Kondo, Hayashi, and Kodama 1975; Kondo, Hayashi, and Kodama 1978  
 Notes: The Psychological Assessment of Aircraft Noise Index (PANNI) is described.
- JPN-064 1972 Environmental Agency of Japan Shinkansen Noise Survey  
 Date: 1972 (November)  
 Source: High speed railway  
 Location: Japan: The New Tokaido Shinkansen Line  
 N=: 968  
 Noise data: Yes  
 Reference: Environmental Agency of Japan 1973; Kumagai, Kono, Sone, and Nimura 1975; Nimura, Sone, and Kono 1981  
 Notes: Residents are the equivalent of five decibels more annoyed near the high-speed Shinkansen lines than near four regular railway lines (JPN-101).
- JPN-065 1972 New Tokaido and New Sanyo Shinkansen Railway Noise  
 Date: 1972 (July)  
 Source: High speed railway  
 Location: Japan: The New Tokaido and New Sanyo Shinkansen railway routes  
 N=: 424

## SURVEY DESCRIPTION (Continued)

- Noise data: Yes  
 Reference: Kaku 1994;Nimura, Sone, Ebata, and Matsumoto 1975;Nimura, Sone, and Kono 1973;Nimura, Sone, and Kono 1981;Sone, Kono, Nimura, Kameyama, and Kumagai 1973;Takeshita 1984  
 Notes: The study compares reactions to a newly opened route (four months old) and a more established route (eight years old).
- JPN-094 1973-74 Sendai Road Traffic Noise Survey  
 Date: 1973 (December), 1974 (January)  
 Source: Road traffic  
 Location: Japan: Sendai City (20 areas)  
 N=: 939  
 Noise data: Yes  
 Reference: Shibuya, Tanno, Sone, and Nimura 1975  
 Notes: Demographic and neighborhood characteristics that affect road traffic noise annoyance are studied.
- JPN-101 1974 Sendai City Regular Railway Noise Survey  
 Date: 1974  
 Source: Railway  
 Location: Japan: Sendai City  
 N=: 717  
 Noise data: Yes  
 Reference: Kumagai, Kono, Sone, and Nimura 1975;Nimura, Sone, and Kono 1981  
 Notes: Residents are the equivalent of five-decibels less annoyed near four regular railways than at similar noise levels in a high-speed Shinkansen noise study (JPN-064).
- JPN-123 1975 Yokohama Road/Railway Noise Survey  
 Date: 1975 (October to December)  
 Source: Railway, Road traffic  
 Location: Japan: Yokohama  
 N=: 356 (1975)  
 Noise data: Yes  
 Reference: Tamura 1978;Tamura and Gotoh 1977  
 Notes: Another survey was carried out in this area in 1976.
- JPN-138 1976 Kanagawa Ward Community Noise Survey  
 Date: 1976 (October, November)  
 Source: Community  
 Location: Japan: Kanagawa Ward in Yokohama  
 N=: 427  
 Noise data: No noise data described in available English publication  
 Reference: Tamura and Gotoh 1980  
 Notes: None
- JPN-139 1976 Japanese Road/Railway Noise Study  
 Date: 1976 (December)
- Source: Road traffic, Railway  
 Location: Japan  
 N=: 372  
 Noise data: No noise data described in available English publication  
 Reference: Tamura and Gotoh 1980  
 Notes: None
- JPN-140 1977 Camp Fuji Noise Survey  
 Date: 1977 (October, November)  
 Source: Road traffic, Community, Artillery  
 Location: Japan: Area around Camp Fuji  
 N=: 342  
 Noise data: No noise data described in available English publication  
 Reference: Tamura and Gotoh 1980  
 Notes: None
- JPN-152 1977 Atugi Military Aircraft Noise Study  
 Date: 1977 (November, December)  
 Source: Aircraft  
 Location: Japan: Residential areas surrounding Atugi Base  
 N=: 345  
 Noise data: No noise data described in available English publication  
 Reference: Tamura and Gotoh 1980  
 Notes: None
- JPN-163 1972 Itami City Osaka Airport Noise Study  
 Date: 1972 (November) to 1973 (January)  
 Source: Aircraft  
 Location: Japan: Osaka Airport  
 N=: 1,209  
 Noise data: Yes  
 Reference: Aircraft Nuisance Prevention Assoc. 1973;Itami City Airport Noise Pollution Abatement Agency 1973  
 Notes: None
- JPN-177 1978 Kanagawa Ward Community Noise Survey  
 Date: 1978 (October, November)  
 Source: Community  
 Location: Japan: Kanagawa Ward in Yokohama  
 N=: 387  
 Noise data: No noise data described  
 Reference: Tamura and Gotoh 1980  
 Notes: None
- JPN-190 1956 Kyoto Traffic Noise Survey  
 Date: 1956  
 Source: Road traffic  
 Location: Japan: Kyoto  
 N=: 956  
 Noise data: Yes



## SURVEY DESCRIPTION (Continued)

- Reference: Aoki 1959;Osada 1971  
Notes: Questionnaires were left at households and later collected.
- JPN-201 1975 Shinkansen Railway Survey  
Date: 1975 (March)  
Source: Railway  
Location: Japan: Shinkansen line in Nagoya City  
N=: 1,187  
Noise data: Yes  
Reference: Yamanaka 1982  
Notes: Self-administered questionnaires were used. Questions concerned only health. Community noise was not explicitly rated. Some of the 190 indicators of poor health were related to noise and vibration levels.
- JPN-271 Japan Three-Site Construction Noise Survey  
Date: 1984 Publication (Survey date not reported)  
Source: Construction  
Location: Japan: Abiko City, Tuchiura City, Misato City  
N=: 689  
Noise data: Yes  
Reference: Sakai 1984  
Notes: Construction noise annoyance was less in the area with a higher ambient noise level.
- JPN-292 1984 Sapporo City Traffic Noise and Vibration Survey  
Date: 1984 (September, October)  
Source: Road traffic  
Location: Japan: Sapporo City (8 high vibration areas, 5 low vibration areas)  
N=: 219  
Noise data: Yes: noise and vibration data  
Reference: Sato 1988;Sato 1993;Sato 1994  
Notes: Respondents are more annoyed by the same level of traffic noise in areas where there is greater vibration. The measured vibration levels are correlated with vibration annoyance. These data are combined in some publications with data from two other surveys (JPN-341, JPN-447).
- JPN-293 Osaka Aircraft and Environmental Noise Survey  
Date: 1987 Publication (Survey date not reported)  
Source: Aircraft, Community  
Location: Japan: Areas near Osaka International Airport including Northern Osaka, Sennan, Wakayama, and Awaji  
N=: 6,080 from 58 areas  
Noise data: Yes  
Reference: Hiramatsu, Takagi, Yamamoto, and Yano 1987  
Notes: Both aircraft noise and environmental noise affect ratings of aircraft noise.
- JPN-294 Nagoya City 1980s Cumulative Noise Survey  
Date: 1982, 1983, 1984, 1985, 1987, 1988  
Source: Community, Road traffic  
Location: Japan: Nagoya City  
N=: over 2,000 responses (as of 1998 publication)  
Noise data: Yes  
Reference: Hayashi 1987;Hayashi 2000;Hayashi, Kuno, Mishina, and Ikegaya 1987;Hayashi, Kuno, Oishi, Mishina, and Ikegaya 1988;Izumi 1988;Kuno *et al.* 1987;Kuno, Hayashi, Oishi, and Mishina 1988;Kuno, Noro, Oishi, Mishina, and Hayashi 1997;Kuno, Ohara, Takeda, and Mishina 1986;Kuno, Oishi, Hayashi, Mishina, and Ikegaya 1985 Kuno, Oishi, Mishina, Hayashi, Zheng, Cai, and Chen 1992;Kuno, Oishi, Mishina, Hayashi, Zheng, Cai, and Chen 1993;Kuno, Omiya, Mishina, Oishi, and Hayashi 1996;Kuno, Omiya, Okumura, Hayashi, Mishina, and Oishi 2000;Kuno, Zheng, Takeda, Ikegaya, and Mishina 1984;Oishi, Mishina, Hayashi, Okumura, and Kuno 1989;Omiya, Kuno, Mishina, Oishi, Hayashi, and Okumura 1998;Omiya, Kuno, Mishina, Oishi, and Hayashi 1997  
Notes: Additional noise measurement locations and interviews were added at several times since the first survey in 1982. Residents in residential areas are slightly more annoyed by the same noise level than are residents in predominant industrial or commercial areas.
- JPN-319 1989 Muroran Road/Railway Noise Survey  
Date: 1989 (June 28 to July 24), 1990 (July 9-19)  
Source: Road traffic, Railway  
Location: Japan: Muroran City  
N=: 204 in 1989, 166 in 1990  
Noise data: Yes  
Reference: Izumi and Yano 1990;Takahashi 1991  
Notes: Road traffic annoyance is affected by the presence of railway noise but railway noise annoyance is not affected by the presence of road traffic noise. The 1990 questionnaire was answered by 166 of the 204 respondents from 1989. In both years, questionnaires were mailed to respondents who subsequently provided their answers in telephone interviews.
- JPN-326 1991 Muroran Traffic Noise Survey  
Date: 1991 (September, October)  
Source: Road traffic  
Location: Japan: Muroran City  
N=: 96  
Noise data: Yes  
Reference: Dankittikul, Izumi, Yano, Kurosawa, and Yamashita 1993

## SURVEY DESCRIPTION (Continued)

- Notes: A self-administered questionnaire was delivered by staff who later collected it. A comparison with a Thai survey (THA-327) found strong cross-cultural similarities.
- JPN-340 1983 Tokyo Railway Noise Survey  
 Date: 1983 (November)  
 Source: Railway  
 Location: Japan: 15 sites in Tokyo along 10 railway lines  
 N=: 830  
 Noise data: Yes  
 Reference: Nakamura 1985; Nakamura, Uehara, and Imaizumi 1985; Nakamura and Yoshida 1990; Yoshida and Nakamura 1988b; Yoshida and Nakamura 1988a; Yoshida and Nakamura 1994; Yoshida and Nakamura 1989; Yoshida, Tokuyama, and Nakamura 1994  
 Notes: The residents' annoyance is compared to the annoyance in four other railway noise surveys.
- JPN-341 1989 Sapporo Traffic Noise/Vibration Survey  
 Date: 1989 (September to November)  
 Source: Road traffic  
 Location: Japan: Sapporo  
 N=: 99  
 Noise data: Yes  
 Reference: Sato 1993; Sato 1994  
 Notes: These data are combined in some publications with data from two other surveys (JPN-292, JPN-447). The effect on noise annoyance of about 10 decibels in vibration exposure (dBVL) is equal to about 3.5 dB(A) LAeq in noise exposure.
- JPN-343 1990-93 Tokyo Five-Area Traffic Noise Survey  
 Date: 1990 (October, 1st area), 1992 (August; 2nd, 3rd areas), 1993 (August-October; 4th, 5th areas)  
 Source: Road traffic  
 Location: Japan: Tokyo (five areas in and around Tokyo)  
 N=: 1,181  
 Noise data: Yes  
 Reference: Ishiyama 1993; Ishiyama 1995  
 Notes: Road noise was the most serious environmental problem for residents near main roads.
- JPN-353 1992 Chatan Town Kadena Air Base Survey  
 Date: 1993 Publication (Survey date not reported)  
 Source: Military airport  
 Location: Japan: area near a U.S. air base on Okinawa (Chatan Town)  
 N=: 1,053  
 Noise data: Yes  
 Reference: Hiramatsu, Minoura, Matsui, Miyakita, Osada, and Yamamoto 2000; Hiramatsu, Yamamoto, Taira, Ito, and Nakasone 1993; Ito, Hiramatsu, Taira,
- Nakasone, and Yamamoto 1994; Miyakita *et al.* 1998a; Yamamoto 1999
- Notes: A self-administered health survey was collected from respondents.
- JPN-358 Central Tokyo Combined Residential and Personal Noise Survey  
 Date: 1988 Publication (Survey date not reported)  
 Source: Neighborhood  
 Location: Japan: Central Tokyo  
 N=: 147  
 Noise data: Yes  
 Reference: Kono and Sone 1988  
 Notes: Noise was measured outdoors at the residence and on the person of the respondent by a personal device for 24 hours a day. All respondents were either housewives or worked at home. General road traffic annoyance and speech and conversation interference were predicted better by the environmental noise than by the personal noise exposures.
- JPN-369 1996 Kumamoto Road Traffic Survey  
 Date: 1996 (May-July)  
 Source: Road traffic  
 Location: Japan: Kumamoto City (15 areas)  
 N=: 837 (378 in detached houses; 459 in apartments)  
 Noise data: Yes  
 Reference: Sato, Yano, Björkman, and Rylander 2000; Sato, Yano, Yamashita, Kawai, Rylander, Björkman, and Öhrström 1998a; Sato, Yano, Yamashita, Kawai, Rylander, Björkman, and Öhrström 1998b; Yano, Murakami, Kawai, and Sato 1998; Yano, Sato, Björkman, and Rylander 2000; Yano, Sato, Kawai, and Kurosawa 1997  
 Notes: Self-administered questionnaires were completed. Indoor activity disturbance was similar in Kumamoto, Japan and Gothenburg, Sweden (SWE-368) for similar noise exposures, but outdoor activity disturbance was greater in Gothenburg (SWE-368). Exhaust fume evaluations are related to noise evaluations.
- JPN-370 1994-95 Kyushu Railway Survey  
 Date: 1994 (May, June, September, January), 1995 (May)  
 Source: Railway  
 Location: Japan: Kyushu Prefecture (including Kumamoto and Fukuoka)  
 N=: 1,828  
 Noise data: Yes  
 Reference: Yano, Izumi, Yamashita, and Tabata 1997; Yano, Murakami, Kawai, and Sato 1998; Yano, Sato, Kawai, and Kurosawa 1997; Yano, Yamashita, and

## SURVEY DESCRIPTION (Continued)

- Notes: Izumi 1996;Yano, Yamashita, and Izumi 1997  
Self-administered questionnaires were completed. A comparison with methodologically similar Japanese road traffic surveys found that reactions to railway noise and road traffic noise were similar at the same noise levels. Responses were measured and compared for four types of annoyance scales.
- JPN-376 1971-77 Chiba Multi-Family Dwelling Survey  
Date: 1971, 1974 to 1977  
Source: Interior (apartment buildings)  
Location: Japan: Chiba area near Tokyo (Multiple buildings in 17 housing developments)  
N=: 3,765  
Noise data: Yes: Some information about neighbor noise measured in 13 vacant apartments  
Reference: Mitsuda and Kimura 1980  
Notes: TNEL is recommended as a noise exposure measure for noise from neighbors. Most of the noise annoyance was directed at the apartment above the respondent.
- JPN-377 1992-95 Tokyo Multi-Family Dwelling Study  
Date: 1992-1995  
Source: Interior (apartment buildings)  
Location: Japan: Tokyo, Saitama and Chiba Prefectures  
N=: 3,294  
Noise data: Yes: attenuation to overhead apartment estimated  
Reference: Kimura, Inoue, So, and Fujisawa 1994;So and Kimura 1998;So, Kimura, and Inoue 1995;So, Kimura, and Inoue 1996;So, Kimura, and Kaji 1998;So, Kimura, Kaji, and Suzuki 1996;So, Kimura, Suzuki, and Kaji 1997  
Notes: A self-administered questionnaire was left at homes where attempts were made to contact inhabitants. Inhabitants of both public and private housing participated. Reactions were related to the estimated attenuation of the floor above an apartment and to the size of the family in the overhead apartment.
- JPN-382 1997-98 Sapporo Road Traffic Noise Survey  
Date: 1997 (October) - 1998 (October)  
Source: Road traffic  
Location: Japan: Sapporo  
N=: 780  
Noise data: Yes  
Reference: Murase, Sato, Yano, Björkman, Rylander, and Dankittikul 2000;Sato, Murase, Yano, Björkman, Rylander, and Dankittikul 2000;Sato, Yano, Björkman, and Rylander 2000;Yano, Sato, Björkman, and Rylander 2000  
Notes: Self-administered questionnaires were distributed and then collected from each address. Respondents
- living in the colder Sapporo area and the warmer Kumamoto area (JPN-369) are equally annoyed by road traffic at the same noise level. Respondents in detached houses in Sweden (SWE-368) are more annoyed.
- JPN-438 1991 Fukuoka Green Areas Noise Survey  
Date: 1991 (June)  
Source: Community  
Location: Japan: Fukuoka City (8 residential areas that include 18 parks)  
N=: 624 used in reported analyses  
Noise data: No noise data described  
Reference: Fujimoto 1991;Fujimoto 1993;Fujimoto 1994;Imamura, Fujimoto, Kim, and Nakamura 1991;Kim, Fujimoto, Imamura, and Nakamura 1991  
Notes: The study primarily focused on residents' feelings about a park in the residential area but also asked about reactions to noise at their home. The self-administered questionnaire was mailed but then personally collected.
- JPN-439 1992 Fukuoka Green Areas Survey  
Date: 1992 (November)  
Source: Natural sounds heard in daily life  
Location: Japan: Fukuoka City (8 neighborhoods)  
N=: 711  
Noise data: No  
Reference: Kim and Fujimoto 1994  
Notes: Respondents answered a self-administered questionnaire to describe their evaluation of the residential environment and green spaces in the neighborhood.
- JPN-440 1984 Fukuoka Road Traffic Noise Survey  
Date: 1984 (September)  
Source: Road traffic  
Location: Japan: Fukuoka city (27 sites along main roads and 3 sites in other residential areas)  
N=: 1,286 used in analyses  
Noise data: Yes  
Reference: Fujimoto 1991;Fujimoto 1994;Fujimoto, Haruta, and Sakata 1986;Izumi 1988  
Notes: The Japanese respondents appear to give a more negative response to road traffic noise than would be expected from studies in other countries.
- JPN-441 1987 Fukuoka Railway Crossing Noise Survey  
Date: 1987 (October)  
Source: Railway trains, Railway crossing alarms  
Location: Japan: Fukuoka City (30 areas)  
N=: 571 (555 used in some analyses)  
Noise data: No

## SURVEY DESCRIPTION (Continued)

- Reference: Fujimoto 1991;Fujimoto 1994;Fujimoto and Haruta 1988;Haruta and Fujimoto 1988  
 Notes: The self-administered questionnaires were hand-delivered to residents living near railway crossings. Respondents disliked the sound of railway crossing alarms.
- JPN-442 1987 Fukuoka 19-Area Community Noise Survey  
 Date: 1987 (December)  
 Source: Community  
 Location: Japan: Fukuoka city  
 N=: 1,034 (parents of students in 19 elementary schools)  
 Noise data: No  
 Reference: Fujimoto 1991;Fujimoto 1994  
 Notes: Parents of fifth grade students were given self-administered questionnaires to report their impressions of sounds heard in daily life at their residences.
- JPN-443 1993 Fukuoka 12-Area Community Noise Survey  
 Date: 1993 (May)  
 Source: Community  
 Location: Japan: Fukuoka City (12 areas)  
 N=: 1,248 (1,074 used in some analyses)  
 Noise data: No noise data described  
 Reference: Furuya, Fujimoto, and Haruta 1994  
 Notes: This self-administered questionnaire was used to investigate respondents' feelings about their residential environments.
- JPN-444 1996-97 Kadena/Futenma Military Aircraft Noise Survey  
 Date: 1996 (November) - 1997 (March)  
 Source: Aircraft (Conventional aircraft at Kadena with more helicopters at Futenma)  
 Location: Japan: Okinawa (municipalities in the vicinity of Kadena and Futenma U.S. airfields, control area in Shimajiri district)  
 N=: 5,693 (3,560 from Kadena, 1,448 from Futenma, 685 from Shimajiri)  
 Noise data: Yes  
 Reference: Hiramatsu, Minoura, Matsui, Miyakita, Taira, Osada, and Yamamoto 1998a;Hiramatsu, Minoura, Matsui, Miyakita, Taira, Osada, and Yamamoto 1998b;Matsui, Nakada, Hiramatsu, Taira, Osada, and Yamamoto 1998;Minoura, Matsui, Miyakita, Taira, Hiramatsu, Osada, and Yamamoto 1998;Miyakita *et al.* 1998b;Tokuyama *et al.* 1998;Yamamoto 1999  
 Notes: The self-administered questionnaire was left at residences and later picked up by the researchers. Most of the respondents had participated in an earlier health survey (JPN-445).
- JPN-445 1995-96 Kadena General Health Questionnaire Survey  
 Date: 1995 (November) - 1996 (September)  
 Source: Aircraft  
 Location: Japan: Okinawa (municipalities in the vicinity of Kadena and Futenma U.S. airfields, control area in Shimajiri district)  
 N=: 6,480 (combined with an additional 615 from study JPN-353 in some analyses)  
 Noise data: Yes  
 Reference: Hiramatsu *et al.* 1998;Hiramatsu, Minoura, Matsui, Miyakita, Taira, Osada, and Yamamoto 1998b;Hiramatsu, Minoura, Matsui, Miyakita, Taira, Osada, and Yamamoto 1998a;Matsui, Nakada, Hiramatsu, Taira, Osada, and Yamamoto 1998;Miyakita *et al.* 1998a;Yamamoto 1999  
 Notes: The self-administered questionnaire primarily addressed health issues. Some of the respondents were later included in a standard noise annoyance survey (JPN-444). It was left at residences and later picked up by the researchers. The study concluded that residents near the airfield may experience both physical and mental effects from aircraft noise.
- JPN-446 1994 Sapporo Traffic Noise Survey  
 Date: 1994 (April - October)  
 Source: Road traffic  
 Location: Japan: Sapporo (4 residential areas)  
 N=: 260  
 Noise data: Yes  
 Reference: Sato, Yamashita, Yano, and Kurosawa 1997  
 Notes: Respondents in detached houses were more annoyed by the same noise than those in apartment houses. Respondents completed self-administered questionnaires.
- JPN-447 1990 Sapporo Traffic Noise and Vibration Survey  
 Date: 1990 (September - November)  
 Source: Road traffic  
 Location: Japan: Sapporo  
 N=: 266  
 Noise data: Yes  
 Reference: Sato 1993;Sato 1994  
 Notes: These data are combined in some publications with data from two other surveys (JPN-292, JPN-341). A 10-decibel difference in vibration exposure (dBVL) has about the same effect on annoyance as a 3.5 LAeq, dB(A) difference in noise exposure.
- JPN-448 1987 Sapporo Railway Noise and Vibration Survey  
 Date: 1987 (September to November)  
 Source: Railway  
 Location: Japan: Sapporo (This and a related survey (JPN-

## SURVEY DESCRIPTION (Continued)

- 449) together covered 37 blocks in 13 areas along 3 railways.)  
 N=: 154 (combined with 96 from survey JPN-449 in some analyses)  
 Noise data: Yes  
 Reference: Sato 1994  
 Notes: This interview is similar to that used in another railway survey (JPN-449).
- JPN-449 1991 Sapporo Railway Noise and Vibration Survey  
 Date: 1991 (September - November)  
 Source: Railway  
 Location: Japan: Sapporo (This and a related survey (JNP-448) together covered 37 blocks in 13 areas along 3 railways.)  
 N=: 96 (combined with 154 from survey JPN-448 in some analyses)  
 Noise data: Yes  
 Reference: Sato 1994  
 Notes: This interview is similar to that used in another railway survey (JPN-448).
- JPN-450 1995-96 Kyushu Expressway Survey  
 Date: 1995 (June) - 1996 (October)  
 Source: Expressway (Kyushu Highway)  
 Location: Japan: Kumamoto Prefecture (Kumamoto City, Kikuyo, Mishigoshi, Ueki, Kikusui)  
 N=: 387 (212 from sites with noise barriers, 175 without barriers)  
 Noise data: Yes  
 Reference: Yano, Kurosawa, and Kawai 1997  
 Notes: Annoyance was lower at noise-barrier sites than at non-barrier sites with the same noise exposure. The self-administered questionnaires were distributed and collected at respondents' homes by the researchers.
- JPN-451 1993 Kumamoto Road Traffic Noise Survey  
 Date: 1993 (September, October)  
 Source: Road traffic  
 Location: Japan: Kumamoto (3 sites)  
 N=: 155  
 Noise data: Yes  
 Reference: Yano, Izumi, Rylander, and Bjorkman 1994  
 Notes: The annoyance reactions were similar for all self-administered questionnaires whether distributed by mail or by hand with personal collection. Annoyance was lower at the same noise exposure than that previously observed in a Gothenburg, Sweden survey (SWE-420).
- JPN-452 1993 Tomakomai Road Traffic Noise Survey  
 Date: 1993 (July)  
 Source: Road traffic
- Location: Japan: A major road in Tomokomai (Hokkaido district)  
 N=: 268 (184 were screened by a belt of trees)  
 Noise data: Yes  
 Reference: Izumi, Dankittikul, Yamashita, and Yano 1994; Yamashita, Yano, and Izumi 1996  
 Notes: Reactions to noise for the same noise exposure were less when the road was screened by trees. Comparisons with a Thai survey (THA-327) found strong cross-cultural similarities. Self-administered questionnaires were completed.
- JPN-453 1988-1990 Hokkaido/Kyushu Traffic Noise Survey  
 Date: 1988 (September, October), 1989 (September, October), 1990 (March to May, October, November)  
 Source: Road traffic  
 Location: Japan: Hokkaido District (Muroran, Asahikawa, Noboribetsu) and Kumamoto  
 N=: 348  
 Noise data: Yes  
 Reference: Izumi and Yano 1991; Izumi, Yano, and Yamashita 1992; Yano, Izumi, Yamashita, Dankittikul, and Kurosawa 1993; Yano, Yamashita, and Izumi 1991a; Yano, Yamashita, and Izumi 1991b  
 Notes: This survey was planned for a comparison to a Gothenburg survey (SWE-420) that has not yet been reported and another Muroran Japan survey (JPN-319). Reactions are about the same to at similar noise levels in warm and cold areas of Japan.
- JPN-491 1996 Osaka International Airport Noise Survey  
 Date: 1996 (January)  
 Source: Aircraft  
 Location: Japan: Osaka International Airport (10 areas)  
 N=: 215 (148 questionnaires under takeoff paths and 67 under landing paths)  
 Noise data: Yes  
 Reference: Yamada 2000; Yamada and Kaku 1996  
 Notes: The amount of annoyance with aircraft noise was reported to be similar to 25 years earlier, even after a decrease in noise exposure. Questionnaires were distributed by mail.
- JPN-492 1991 Yokohama Sound Environment Survey  
 Date: 1991 (October - December)  
 Source: Overall sound environment  
 Location: Japan: Yokohama City  
 N=: 1,240  
 Noise data: No  
 Reference: Kashima, Tamura, Shima, and Sawada 1994; Tamura 1998  
 Notes: Residents like to hear natural sounds. Mail

## SURVEY DESCRIPTION (Continued)

questionnaires were used with two follow up mailings.

level with annoyance, but not with illness. The questionnaire was mailed and then collected by appointment at homes.

- JPN-493 1985-86 Shinkansen/Conventional Rail Noise Survey  
 Date: 1985 to 1986  
 Source: High speed and standard railway  
 Location: Japan: Kanagawa Prefecture (12 areas)  
 N=: 613  
 Noise data: Yes  
 Reference: Tamura 1994  
 Notes: The Shinkansen (high speed train) is viewed more negatively than ordinary railways. Respondents completed self-administered questionnaires. In the following year, 55 of the respondents were interviewed at length with open-ended questions.
- JPN-494 1987 Odawara Sound Environment Survey  
 Date: 1987 (September)  
 Source: Overall sound environment  
 Location: Japan: 8 areas in Odawara city (Kanagawa Prefecture)  
 N=: 136  
 Noise data: No  
 Reference: Shima and Tamura 1993  
 Notes: Most of the self-administered questionnaire focused on sounds, including positive sounds. Road traffic was often mentioned as a sound heard at home.
- JPN-495 1984 Nagoya Neighborhood Noise Survey  
 Date: 1985  
 Source: Neighborhood  
 Location: Japan: Nagoya city  
 N=: 1,200  
 Noise data: No noise data described  
 Reference: Oishi, Mishina, Hayashi, Okumura, and Kuno 1989  
 Notes: The study examined the awareness of noise in neighborhoods of Nagoya with face-to-face interviews.
- JPN-496 1994-96 Tokyo Trunk Road Noise Survey  
 Date: 1994 to 1996  
 Source: Road traffic  
 Location: Japan: Tokyo (5 areas along 3 trunk roads)  
 N=: 1,880  
 Noise data: Yes  
 Reference: Hoshiyama, Kawaguchi, Yoshida, Yamamoto, Chiba, and Osada 1998; Osada, Yoshida, Yoshida, Kawaguchi, Hoshiyama, and Yamamoto 1997; Yoshida, Osada, Kawaguchi, Hoshiyama, Yoshida, and Yamamoto 1997  
 Notes: A dose-response relationship was found for noise
- JPN-497 1992 Itabashi Tokyo Environmental Complaints Survey  
 Date: 1992 (Began in April, end date not reported)  
 Source: Industry  
 Location: Japan: Itabashi City (Tokyo area) a city with a high concentration of industry  
 N=: 150 (approximate)  
 Noise data: No  
 Reference: Oi, Suga, and Kondoh 1994  
 Notes: A postal questionnaire that included open-ended questions was sent to residents, including new residents, who had complained about noise in an area that is changing from a predominant industrial area to a mixed residential-industrial area. For 80 complaints, the case was discussed with the government official who processed the complaint.
- JPN-498 1988-91 Setagaya Tokyo Environmental Complaints Survey  
 Date: 1988 (October) to 1991 (April)  
 Source: Community  
 Location: Japan: Setagaya City (Tokyo area)  
 N=: 136  
 Noise data: No  
 Reference: Suga, Oi, Kondoh, and Miyamoto 1994  
 Notes: Respondents completed a postal questionnaire that included open-ended questions. A cluster analysis was conducted of the words that 118 of the respondents used to describe their problems.
- JPN-499 Tokyo Four-Area Nighttime Road Traffic Survey  
 Date: 1994 Publication (Survey date not reported)  
 Source: Road traffic (nighttime)  
 Location: Japan: Tokyo (4 areas)  
 N=: 1,145 (1,037 questionnaires were used in analysis because 117 respondents reported hearing problems)  
 Noise data: Yes  
 Reference: Kabuto and Kageyama 1994  
 Notes: The study inquired about sleep quality with a postal questionnaire. Some 198 respondents wore a sound exposure meter for 24 hours.
- JPN-500 1999 Osaka Aircraft Noise and Health Survey  
 Date: 1999 (April-June)  
 Source: Aircraft  
 Location: Japan: Osaka (areas at 3 noise levels under landing operations)  
 N=: 390

## SURVEY DESCRIPTION (Continued)

- Noise data: Yes  
Reference: Goto, Kaneko, and Tokita 2000  
Notes: None
- JPN-501 1985 Kawasaki Life-Related Noise Survey  
Date: 1985 (October)  
Source: Neighbors' equipment or voices  
Location: Japan: Kawasaki City (Tokyo area)  
N=: 2,000 (approximate)  
Noise data: No  
Reference: Suzuki 1994  
Notes: About half the respondents reported that they had experienced some annoyance from neighbors' appliances, audio equipment, vehicles or other neighbor noises. Respondents were often aware that their audio equipment could be annoying but relatively unaware that their car or pet's sound could be annoying. The type of questionnaire is not identified in the report.
- JPN-503 1986 Tokyo Main-Road Traffic Survey  
Date: 1986 (November 6-23)  
Source: Road traffic  
Location: Japan: Tokyo  
N=: 176 (an additional 5 responses were not analyzed)  
Noise data: Yes  
Reference: Yoshida 1987;Yoshida 1991;Yoshida and Nakamura 1994;Yoshida, Tokuyama, and Nakamura 1994  
Notes: Face-to-face interviews were conducted
- JPN-504 1987 Tokyo Side Streets Noise Survey  
Date: 1987 (October, November)  
Source: Road traffic in narrow roads  
Location: Japan: Tokyo  
N=: 1,000 (Subsets of 376 or 885 have been used in some publications)  
Noise data: No noise data described  
Reference: Kuga 1989;Nakamura and Yoshida 1990;Yoshida 1991;Yoshida and Nakamura 1994;Yoshida, Tokuyama, and Nakamura 1994  
Notes: Some mixed evidence suggests a relationship between noise and mental health problems. Face-to-face interviews were conducted.
- JPN-505 1993 Osaka Free-Response Industrial Noise Survey  
Date: 1993 (August)  
Source: All sources of sounds or noise  
Location: Japan: Sakai city (Osaka area)  
N=: 308  
Noise data: No  
Reference: Minoura and Hiramatsu 2000;Minoura, Hiramatsu, Matsui, Takagi, and Oi 1997  
Notes: Respondents were asked to write a free response to
- an open question about sounds in their house and neighborhood.
- JPN-506 1980s Yomahoko Community Noise Survey  
Date: 1988 and five other years (Most data from the months of July and August)  
Source: Road traffic, Festivals and other community noise  
Location: Japan: Kyoto (8 areas in Yamohoko-cho)  
N=: 223  
Noise data: No  
Reference: Hiramatsu and Minoura 2000  
Notes: The study examined how residents' responses varied with their connection to the sound source. The self-administered questionnaires were left at the home and later picked up by the research team.
- JPN-507 1996 Nishijin Textile Neighborhood Noise Survey  
Date: 1996 (August, September)  
Source: Community  
Location: Japan: Nishijin area of Kyoto  
N=: 208  
Noise data: Yes  
Reference: Minoura and Hiramatsu 1998;Minoura and Hiramatsu 2000  
Notes: Respondents answered free-response, self-administered questionnaires that asked for their description of the present and past sound environments in a traditional textile production area in Kyoto, Japan. Residents with experience in textiles more often mention textile industry sounds.
- JPN-508 Toyonaka City Free-Response Noise Survey  
Date: 2000 Publication (Survey date not reported)  
Source: Any community sounds  
Location: Japan: Toyonaka City  
N=: 176  
Noise data: Yes  
Reference: Minoura and Hiramatsu 2000  
Notes: Residents in apartments were asked to describe their sound environment with unstructured questions in a self-administered questionnaire.
- JPN-509 1972-81 Kyushu Airport Opening Survey  
Date: 1972 to 1981(Cooler months from October to March)  
Source: Aircraft  
Location: Japan: 3 airports in Kyushu (Nagasaki, Kagoshima, Oita)  
N=: 9,819 (Kagoshima, 6,654; Oita, 1,539; Nagasaki, 1,626)  
Noise data: Yes  
Reference: Miyahara 1988  
Notes: Questionnaire surveys were conducted in two or three different years at each airport at intervals of

## SURVEY DESCRIPTION (Continued)

one to 11 years after the airports had opened. All respondents had lived in the areas before the airports opened. The purpose was to determine if reactions changed over time after introducing aircraft. Questionnaires were distributed to residents and then personally collected.

Noise data: No  
Reference: Kuwano, Namba, and Florentine 1996  
Notes: This questionnaire was developed for broad use by the Acoustical society of Japan and administered on a test basis in this study and one study in the United States (USA-518).

JPN-510 1980s Student Noise Attitudes Study (Japan)  
Date: 1980, (also 5 data collection periods between 1981 to 1985 and/or 1986)  
Source: Community  
Location: Japan: Osaka area  
N=: 894 (434 in first year)  
Noise data: No  
Reference: Florentine, Namba, and Kuwano 1986; Izumi 1988; Namba and Kuwano 1986; Thomas, Namba, Schick, and Kuwano 1983  
Notes: University students answered this written questionnaire's general statements about neighbors' noise without direct reference to their present residence. There are some differences between perceptions and attitudes toward neighbors' noise in England, Germany and Japan. The questionnaire is nearly identical to questionnaires administered in England (UKD-512), Germany (GER-511), China (CHI-514), and the United States (USA-513).

KOR-295 1987 Seoul Traffic Noise Survey  
Date: 1987 (February)  
Source: Road Traffic  
Location: Korea: Seoul  
N=: 351 (144 industrial area, 207 residential area)  
Noise data: Yes  
Reference: Yu 1987; Yu 1988  
Notes: Interviews were conducted with residents in both a residential and an industrial area.

JPN-515 1983 Apartment Noise Attitudes Study (Japan)  
Date: 1983  
Source: General community noise including noise from neighbors in apartments  
Location: Japan: Osaka area  
N=: 375  
Noise data: No  
Reference: Namba, Kuwano, and Schick 1986; Schick, Kuwano, and Namba 1984; Schick, Zheng, Müller-Andritzky, Namba, Kuwano, and Chassein 1992  
Notes: The study's purpose was to compare Japanese and German's attitudes toward neighborhood noise problems. When annoyed by noise from neighboring apartments, this planned comparison with a German survey found that Japanese are less likely than Germans to contact those neighbors (GER-515). Data were collected from university students using a self-administered questionnaire.

KOR-475 1980s Seoul Multiple-Source Noise Survey  
Date: 1985 Publication (Survey date not reported)  
Source: Aircraft, Road traffic, Railway  
Location: Korea: Seoul (3 residential areas.)  
N=: 646 (only 197 used in some reports)  
Noise data: Yes  
Reference: Lee 1985; Lee, Lee, and Cha 1985  
Notes: Responses are affected more by noise level than by the measured personal variables.

NET-002 1950 Netherlands Sound Insulation Effects Study  
Date: 1950 (April to July)  
Source: Neighbors in apartment buildings  
Location: Netherlands: Rotterdam, The Hague  
N=: Approximately 1,215  
Noise data: Yes: sound insulation information  
Reference: Bitter and Horch 1958; Bitter and van Weeren 1955; van den Eijk, Kasteleijn, and Kosten 1956  
Notes: None

NET-013 1963 Schiphol Airport Survey  
Date: 1963 (August, September)  
Source: Aircraft  
Location: Netherlands: Eight areas around Schiphol airport  
N=: 1,000  
Noise data: Yes  
Reference: Bitter 1970; Bitter 1972; Bitter and Schwager 1964; de Jong 1981f; de Jong 1981d; de Jong 1983a; Kosten, de Zwaan, Steenberg, Falkenhagen, de Jonge, and van Os 1967; Rylander, Sörensen, and Berglund 1974  
Notes: This survey supported early Dutch aircraft noise regulations.

JPN-517 1990, 1995 Japanese/English Questionnaire Testing Study (Osaka)  
Date: 1990, 1995 (February, November)  
Source: community  
Location: Japan: Kansai region  
N=: 621

NET-106 1974 Dordrecht Home Sound Insulation Study  
Date: 1974 (April) and 1976 (April)  
Source: Highway Traffic



## SURVEY DESCRIPTION (Continued)

- Location: Netherlands: Dordrecht (Highway 16)  
 N=: 383 (before insulation), and 376 (after insulation)  
 Noise data: Yes  
 Reference: Bitter 1979b;Bitter 1979a;Bitter, Kaper, and Pinkse 1978;de Jong 1983b;van Dongen 1981a;van Dongen 1982  
 Notes: The study compares two sound insulation situations: one before noise abatement; the second, two years after noise insulation measures were installed in the homes as a result of residents' strong opposition to changes in nearby road traffic. The study was designed for comparison with a similar later study (NET-238).
- NET-115 1975 Schiphol/Marssum Aircraft Noise Insulation Survey  
 Date: 1975 (September)  
 Source: Aircraft  
 Location: Netherlands: Five areas around Schiphol and one area (Marssum) near Leeuwarden Military Airfield  
 N=: 434 (376,Schiphol) (58, Marssum)  
 Noise data: Yes  
 Reference: Bitter 1980;Bitter and Willigers 1979;de Jong 1981d;de Jong 1981f;de Jong 1983a;Lingen and Voorn 1979;Willigers 1979  
 Notes: The noise annoyance relationship had not changed since the 1963 Schiphol survey (NET-013). The survey preceded sound insulation installation and can be compared with a post-insulation survey (NET-149). The survey occurred during an unusually warm summer.
- NET-149 1977 Schiphol/Marssum Sound Insulation Survey  
 Date: 1977 (September)  
 Source: Aircraft  
 Location: Netherlands: Five areas around Schiphol and one area (Marssum) around Leeuwarden Military Airfield  
 N=: 353 (304, Schiphol) (49, Marssum)  
 Noise data: Yes  
 Reference: Bitter 1980;Bitter and Willigers 1979;de Jong 1981f;de Jong 1981d;Lingen and Voorn 1979;Willigers 1979  
 Notes: Interviews followed the installation of sound insulation in the same areas as a 1975 study (NET-115).
- NET-153 1977 Netherlands Railway Noise Survey  
 Date: 1977 (October)  
 Source: Railway  
 Location: Netherlands: (12 locations)  
 N=: 671  
 Noise data: Yes: inside and outside  
 Reference: de Jong 1979a;de Jong 1983b;de Jong and Miedema 1996;de Jong and Peeters 1983;de Jong and Tukker 1983;Peeters 1981;Peeters, de Jong, Kaper, and Tukker 1984  
 Notes: Inside noise measurements were made as well as outside measurements but did not correlate more highly with annoyance.
- NET-193 1976 Netherlands Military Airfields Noise Study  
 Date: 1976 (August, September)  
 Source: Aircraft  
 Location: Netherlands: areas near three military airfields (Soesterberg, Twente, Volkel)  
 N=: 867  
 Noise data: Yes  
 Reference: de Jong 1980a;de Jong 1981f;de Jong 1983a;de Jong and Beers 1980c;de Jong and Groeneveld 1983  
 Notes: This study is designed for comparison to three other studies: Schiphol, 1963 (NET-013); Schiphol/Marssum, 1975 (NET-115); Schiphol/Marssum, 1977 (NET-149).
- NET-194 1976 Netherlands Railway Noise Survey  
 Date: 1976 (October)  
 Source: Railway  
 Location: Netherlands: 9 locations (5 near railways, 2 near tramways, and 2 near metro-tramways)  
 N=: 65 (45 near railways, 10 near tramways, 10 near metro-tramways)  
 Noise data: Yes  
 Reference: de Jong 1977a;de Jong 1977b  
 Notes: Open, unstructured interviews were conducted as part of the planning for a larger railway survey (NET-153).
- NET-195 1977-78 Netherlands New Railway Line Survey  
 Date: 1977 (March, September), 1978 (September)  
 Source: Railway  
 Location: Netherlands: Zoetermeer  
 N=: 960: 425 (before railway opened), 299 (4 months after opened), 221 (16 months after opened), 15 (new residents moving in between 4 and 16 months after opening)  
 Noise data: Yes  
 Reference: de Jong 1983b;van Dongen and van den Berg 1980  
 Notes: Respondents were interviewed several times.
- NET-196 1978 Dutch Homes for the Aged Environmental Noise Study  
 Date: 1978 (September)  
 Source: Road traffic, Airports, Railways, Industry  
 Location: Netherlands: 57 locations (37 near roads and 20 near airports, industries or railway tracks)  
 N=: 345 (228 road traffic, 117 other sources)

## SURVEY DESCRIPTION (Continued)

- Noise data: Yes  
Reference: van Dongen 1980b;van Dongen 1980a;van Dongen 1981b  
Notes: Residents of homes for the aged were interviewed.
- NET-232 1980 Netherlands Industrial Noise Survey  
Date: 1980 (January)  
Source: Industry (include railway shunting yards)  
Location: Netherlands: 20 industrial and 6 railway shunting yard areas  
N=: 695  
Noise data: Yes (for 297 respondents)  
Reference: Groeneveld 1981;Groeneveld and Gerretsen 1984;Groeneveld and Verboom 1981;Vos 1985  
Notes: None
- NET-240 1984 Schiphol Combined Aircraft/Road Traffic Survey  
Date: 1984 (Autumn)  
Source: Aircraft, Road traffic  
Location: Netherlands: Schiphol airport  
N=: 581  
Noise data: Yes  
Reference: Diamond and Walker 1986b;Diamond and Walker 1986a;Miedema 1987  
Notes: This survey was jointly designed under Commission of European Communities auspices for comparison with an Orly Survey (FRA-239) and Glasgow Survey (UKD-238).
- NET-255 1982-83 CEC Impulse Noise Field Study (Netherlands)  
Date: 1982 (September, October)  
Source: Impulse noise (Shooting range, Shipyard, Scrapyard, Metal Working), Road traffic  
Location: Netherlands: Bussum, Driebergen, Vught, Bolnes/Ridderkerk, H.I.Ambacht/Zwijndrecht, Sittard, Lekkerkerk, Raamsdonksveer  
N=: 389  
Noise data: Yes  
Reference: de Jong and Commins 1983;Groeneveld 1984;Groeneveld 1986;Groeneveld and de Jong 1984;Groeneveld and de Jong 1985b;Groeneveld and de Jong 1985a;Groeneveld, van den Berg, and de Jong 1985;Miedema 1987  
Notes: This is part of a Commission of European Communities coordinated joint study in France (FRA-252), Germany (GER-253), and Ireland (IRE-254). The study results support at least a 10-decibel penalty for impulse noise.
- NET-257 1979 Netherlands Industrial Noise Pilot Survey  
Date: 1979 (Summer)  
Source: Industrial (includes railway shunting yards)
- Location: Netherlands: 50 locations  
N=: 308  
Noise data: No  
Reference: Groeneveld 1980  
Notes: Interviews were conducted by telephone. This study was used as a pilot survey and as a basis for sample selection for the 1980 Netherlands Industrial Noise Survey (NET-232).
- NET-258 1975 Amsterdam Home Sound Insulation Study  
Date: 1975 (March), 1978 (November)  
Source: Expressway traffic  
Location: Netherlands: the Einsteinweg area (along National Road 10) in Amsterdam  
N=: 622 (before insulation installed), 347 (after installed)  
Noise data: Yes  
Reference: Bitter, Holst, and Kandelaar 1982;de Jong 1981f;de Jong 1981a;van Dongen 1981a;van Dongen 1982  
Notes: This study was planned for comparison to a similar earlier study (NET-106).
- NET-259 1977 Netherlands Industrial Noise Pilot Survey  
Date: 1977 (October, November)  
Source: Industrial  
Location: Netherlands: Eerbeek, Geleen/Stein, Hoogvliet, Wormerveer  
N=: 40  
Noise data: Yes  
Reference: Hentenaar 1978  
Notes: A variable format, unstructured interview was administered. This is a qualitative pilot study for the 1980 Netherlands Industrial Noise Survey (NET-232).
- NET-260 1980-81 Netherlands Pile Driver Impulse Noise Survey  
Date: 1980-1981  
Source: Industrial (Impulse noise from a pile driver)  
Location: Netherlands: The Hague Wormerveer  
N=: 56  
Noise data: Yes  
Reference: de Jong, van den Berg, and Stolk 1981e  
Notes: This is a pilot study initiated by the European Economic Community.
- NET-261 1977 Netherlands National Noise Survey  
Date: 1977 (August 14 to September 14)  
Source: Community  
Location: Netherlands: Representative national sample  
N=: 3,974  
Noise data: No  
Reference: de Jong 1980b;de Jong 1981b

## SURVEY DESCRIPTION (Continued)

- Notes: The study measures the extent of noise annoyance from a national probability sample. A follow-up study (NET-356) was also conducted.
- NET-263 1982-1983 Netherlands New Dwelling Survey  
 Date: 1982-1983  
 Source: Equipment in homes  
 Location: Netherlands  
 N=: 193 (dwellings)  
 Noise data: Yes (some dwellings)  
 Reference: van Dongen 1984;van Dongen 1985  
 Notes: None
- NET-269 1986 Netherlands Low-Level Military Aircraft Study  
 Date: 1986 (June)  
 Source: Military aircraft  
 Location: Netherlands: Overijssel Province  
 N=: 625  
 Noise data: Yes  
 Reference: de Jong 1986b;de Jong 1986a;de Jong and Kok 1987  
 Notes: Respondents were interviewed via telephone. The study compares the reactions of those living under low-level military flying routes with those at various distances from the routes and those living near a military airfield. Some 43% living under the routes are "very" annoyed. This is unsatisfactory according to Netherlands noise criteria.
- NET-276 1983 Netherlands Tram/Road Traffic Noise Survey  
 Date: 1983 (Summer)  
 Source: Trams, Road traffic  
 Location: Netherlands: Rotterdam, The Hague, Amsterdam  
 N=: 798  
 Noise data: Yes  
 Reference: Miedema 1987;Miedema and van den Berg 1985;Miedema and van den Berg 1988  
 Notes: Noise annoyance is lower near straight track than near curves or junctions at the same noise level.
- NET-334 1992 CEC Wind Turbine Noise Study (Netherlands)  
 Date: 1992 (June)  
 Source: Wind turbine  
 Location: Netherlands  
 N=: 159  
 Noise data: Yes  
 Reference: Wolsink and Sprengers 1993  
 Notes: Similar studies were conducted at the same time in Germany (GER-335) and Denmark (DEN-333).
- NET-354 1990 Marnewaard Shooting Range Residential Survey  
 Date: 1990 (October)  
 Source: Shooting range  
 Location: Netherlands: Marnewaard  
 N=: 95  
 Noise data: Yes  
 Reference: van den Berg 1993;van Dongen 1991  
 Notes: About 40% of the respondents who reported hearing shooting noise were annoyed by it. Holiday makers were interviewed in a separate survey.
- NET-356 1987 Netherlands National Noise Survey  
 Date: 1987  
 Source: Community  
 Location: Netherlands: Nationally representative survey  
 N=: 4,062  
 Noise data: Yes (for those respondents reporting regularly hearing noise from highways/motorways)  
 Reference: De Jong, Groeneveld, and Halkes 1990;de Jong 1988a;de Jong 1988b;de Jong and Groeneveld 1990  
 Notes: This study was created for comparison to a 1977 study (NET-261). Traffic noise is less annoying in areas that are otherwise quiet.
- NET-361 1993 Netherlands National Environmental Survey  
 Date: 1993 (June, July, September, October)  
 Source: Community  
 Location: Netherlands  
 N=: 4,038  
 Noise data: No  
 Reference: de Jong, Opmeer, and Miedema 1994;de Jong, Opmeer, and Miedema 1995  
 Notes: This is the third in a series of national probability surveys conducted in the Netherlands (NET-261). Noise is the most annoying of all surveyed environmental pollutants. Road traffic is the greatest source of annoyance.
- NET-362 1984-85 Arnhem Trolley Bus Introduction Survey  
 Date: 1984 (May, June), 1995 (May, June)  
 Source: Road traffic (special focus on busses)  
 Location: Netherlands: Arnhem on 35 streets in 3 areas  
 N=: 1,322 (Interviews were attempted at 550 residences.)  
 Noise data: Yes (For 220 respondents who were interviewed in all three study waves.)  
 Reference: Ericz, Noordam, and Schoonderbeek 1986;Miedema 1992;Schoonderbeek 1986  
 Notes: Interviews were conducted just before, one month after, and one year after electric trolley buses replaced diesel buses on one bus route. Annoyance was reduced after the introduction of the trolley

## SURVEY DESCRIPTION (Continued)

- buses.
- NET-371 1996-97 Schiphol Airport GES Survey  
 Date: 1996 (November) to 1997 (February)  
 Source: Aircraft  
 Location: Netherlands: within 25 kilometers of Schiphol  
 N=: 11,812  
 Noise data: Yes  
 Reference: Franssen *et al.* 1998;Franssen *et al.* 1999;Franssen, Lebret, and Staatsen 1999;Franssen, Van Kamp, and de Jong 2000;Franssen, van Wiechen, van Poll, Kruize, de Jong, Miedema, and Lebret 1998  
 Notes: The mail survey with a 39% response rate was supplemented by a telephone survey of about 500 respondents that provided a basis for adjustments to mail survey results. Noise was related to noise annoyance, sleep disturbance, perceived health, the use of medication, and perception of quality of life.
- NET-378 1998 Rotterdam-Ruhrgebiet Freight Railway Pilot Study  
 Date: 1998  
 Source: Aircraft  
 Location: Netherlands: near a planned heavy-goods railway line in the Netherlands that connects Rotterdam (Netherlands) and Ruhrgebiet (Germany)  
 N=: 55 (approximate)  
 Noise data: Yes  
 Reference: Claassen, Katteler, Steenbekkers, and de Jong 1999  
 Notes: The study tested the questionnaire for a main study among residents living in the vicinity of the so-called 'Betuwe-spoorlijn', a projected heavy-goods-only line connecting Rotterdam port with the Ruhrgebiet in Germany.
- NET-379 1998 Groningen Eelde Airport Survey  
 Date: 1998 (Spring, Autumn)  
 Source: Aircraft  
 Location: Netherlands  
 N=: 407 residents  
 Noise data: Yes  
 Reference: van Dongen, Steenbekkers, and Vos 1999  
 Notes: Other residents using recreation facilities near the airport were interviewed with a different questionnaire as part of the same project.
- NET-460 1993 Dutch Artillery Range Noise Annoyance and Startle Survey  
 Date: 1993 (Autumn)  
 Source: Artillery (bangs from large and moderately large artillery: 25 mm guns, 81 and 120 mm mortars, 155 mm howitzers)  
 Location: Netherlands: 't Harde military artillery range.  
 N=: 300 (divided evenly between areas near and far from the artillery range)  
 Noise data: Yes  
 Reference: Vos 1999a;Vos 1999b  
 Notes: Since annoyance and startle responses were highly correlated, it was concluded that only annoyance responses are needed for rating criteria.
- NET-462 1997 Netherlands Home Insulation Survey  
 Date: 1997 (February, March, May, June)  
 Source: Neighbors in adjacent dwellings  
 Location: Netherlands: 23 municipalities (Both urban and rural areas)  
 N=: 660  
 Noise data: Yes: sound insulation data were obtained  
 Reference: van Dongen, Vos, van Luxemburg, and Raijmakers 1998  
 Notes: About 10 percent of those surveyed are very annoyed by the noise from adjacent dwellings. The annoying noises are of both mechanical and human origin.
- NET-468 1998 Schiphol Sleep Disturbance Pilot Survey  
 Date: 1998  
 Source: Aircraft  
 Location: Netherlands: 2 areas near Schiphol airport (Rijsenhout, Spaarndam)  
 N=: 22 respondents, including one couple, participated for 27 consecutive nights  
 Noise data: Yes: exterior measurements and, for some nights, interior measurements  
 Reference: Passchier-Vermeer, van Gils, Vos, Miedema, de Roo, Verhoeff, and Middelkoop 1999  
 Notes: A self-administered questionnaire was completed in the evening and morning of each of the 27 study nights. In addition, a face-to-face interview was conducted before the study and a self-administered questionnaire was completed after the study. Based on this pilot study, it was concluded that a study of 300 subjects for 12 nights would be sufficient to estimate dose/response relationships.
- NIG-485 Nigeria Eight-City Noise Survey  
 Date: 1996 Publication (July to November survey but year not reported)  
 Source: Noise in the neighborhood  
 Location: Nigeria: 8 large cities (Benin, Omitsha, Port Harcourt, Ilorin, Lagos, Ibadan, Kano, Kaduna)  
 N=: 577  
 Noise data: No (Measurements were not linked to respondents' addresses.)  
 Reference: Saadu, Onyeonwu, Ayorinde, and Ogisi 1996;Saadu, Onyeonwu, Ayorinde, and Ogisi 1998

## SURVEY DESCRIPTION (Continued)

- Notes: Self-administered questionnaires were distributed to workers, traders and adult pedestrians who then completed questions about their home environments. Road traffic and conversations of others are the most important sources of annoyance.
- NIG-486 South-Eastern Nigeria Eight-City Road Traffic Survey  
 Date: 2000 Publication (Survey date not reported)  
 Source: Road traffic  
 Location: Nigeria: 60 sites in 8 cities (Aba, Calabar, Enugu, Ikot Ekpene, Onitsha, Owerri, Port-Harcourt, Uyo)  
 N=: 2,892  
 Noise data: Yes  
 Reference: Onuu 2000  
 Notes: Road traffic noise is a major environmental problem in South-Eastern Nigeria. The method of administering the questionnaire is not described.
- NOR-311 1989 Oslo Airport Survey  
 Date: 1989 (April, September)  
 Source: Aircraft  
 Location: Norway: Oslo (15 areas)  
 N=: 3,337  
 Noise data: Yes  
 Reference: Aas, Kolbenstvedt, Bakketeig, Larssen, Clench-Aas, Solberg, and Klæboe 1991;Gjestland, Liasjø, and Bøhn 1990;Gjestland, Liasjø, Granøien, Bøhn, and Gaustad 1990;Gjestland, Liasjø, Granøien, and Fields 1990  
 Notes: Residents were surveyed before and after a change in air traffic. The effect of flight-path location on annoyance is studied.
- NOR-328 1992-93 Bodö Aircraft Military Exercise Survey  
 Date: 1992 (5 periods), 1993 (February)  
 Source: Military aircraft  
 Location: Norway: Bodö  
 N=: 4,303  
 Noise data: Yes  
 Reference: Bugge 1994;Gjestland, Granøien, and Liasjø 1995;Gjestland, Granøien, Liasjø, and Bugge 1993;Gjestland, Liasjø, and Granøien 1994;Gjestland, Liasjø, and Granøien 1995  
 Notes: Respondents were approached before (February), during the first short-term military exercise (March), after the first exercise (April, August), or at two times after a September exercise (October 1992, February 1993). An identical questionnaire was used in a similar study at Værnes airport (NOR-366).
- NOR-366 1990-91 Værnes Aircraft Military Exercise Survey  
 Date: 1990 (3 periods), 1991 (August)  
 Source: Military aircraft  
 Location: Norway: Værnes airport (Trondheim)  
 N=: 1,424 responses from approximately 1,233 respondents  
 Noise data: Yes  
 Reference: Bugge 1994;Bugge, Gjestland, Liasjø, and Granøien 1991;Gjestland, Liasjø, and Granøien 1994  
 Notes: Respondents were interviewed by telephone before (August 1990), during (September 1990), immediately after (October 1990), and one year later (August 1991). Some respondents were interviewed more than once. An identical questionnaire was used in a similar study at Bodö airport (NOR-328).
- NOR-397 1999 Oslo Contingent Valuation Noise Survey  
 Date: 1999 (June, July)  
 Source: Road traffic (406 selected based on only road traffic noise, railway, aircraft, or rifle range: 204 selected based on one or more of road, rail, aircraft, rifle range)  
 Location: Norway: Oslo and Ullensaker (new Oslo airport)  
 N=: 610 (Oslo, 406; Ullensaker, 204)  
 Noise data: Yes  
 Reference: Navrud 2000  
 Notes: The study used the contingent valuation method (CV) to estimate that the reported willingness-to-pay (WTP) for noise reduction was about 120 Euro per household per year.
- NOR-398 1987 Vålerenga/Gamlebyen Road Traffic Survey  
 Date: 1987 (September)  
 Source: Road traffic (before change in exposure)  
 Location: Norway: Oslo (8 areas in Vålerenga/Gamlebyen area)  
 N=: 1,028  
 Noise data: Yes  
 Reference: Aas, Kolbenstvedt, Bakketeig, Larssen, Clench-Aas, Solberg, and Klæboe 1991;Bartonova, Clench-Aas, Walker, Tønnesen, and Larssen 1999;Clench-Aas, Bartonova, Klæboe, and Kolbenstvedt 1999;Clench-Aas, Bartonova, Klæboe, and Kolbenstvedt 2000;Klæboe 1998;Klæboe 2000;Klæboe, Kolbenstvedt, Clench-Aas, and Bartonova 1999;Klæboe, Kolbenstvedt, Clench-Aas, and Bartonova 2000;Klæboe, Kolbenstvedt, Lercher, and Solberg 1998;Kolbenstvedt 1998b;Kolbenstvedt, Klæboe, Clench-Aas, and Bartonova 1999  
 Notes: Reactions were measured in the area before a change in exposure that was examined in two later surveys (NOR-400, NOR-401).

## SURVEY DESCRIPTION (Continued)

- NOR-399** 1990 Vålerenga/Gamlebyen Road Traffic Survey  
 Date: 1990 (early Summer)  
 Source: Road traffic (change due to construction of a tunnel that reduced traffic in the area)  
 Location: Norway: Oslo (Vålerenga/Gamlebyen area)  
 N=: 500 (approximate)  
 Noise data: No noise data described  
 Reference: Aas, Kolbenstvedt, Bakketeig, Larssen, Clench-Aas, Solberg, and Klæboe 1991  
 Notes: Telephone interviews were conducted to study changes due to the construction of a tunnel that reduced traffic in the area.
- NOR-400** 1994 Vålerenga/Gamlebyen Road Traffic Survey  
 Date: 1994 (Autumn)  
 Source: Road traffic (change due to construction of a tunnel that reduced traffic in the area)  
 Location: Norway: Oslo (14 areas in Vålerenga/Gamlebyen area)  
 N=: 1,078  
 Noise data: Yes  
 Reference: Bartonova, Clench-Aas, Walker, Tønnesen, and Larssen 1999; Clench-Aas, Bartonova, Klæboe, and Kolbenstvedt 1999; Clench-Aas, Bartonova, Klæboe, and Kolbenstvedt 2000; Klæboe 1998; Klæboe 2000; Klæboe, Kolbenstvedt, Clench-Aas, and Bartonova 1999; Klæboe, Kolbenstvedt, Clench-Aas, and Bartonova 2000; Klæboe, Kolbenstvedt, Lercher, and Solberg 1998; Kolbenstvedt 1998b; Kolbenstvedt, Klæboe, Clench-Aas, and Bartonova 1999  
 Notes: Telephone interviews were conducted to study changes due to construction of a tunnel that reduced traffic in the area.
- NOR-401** 1996 Vålerenga/Gamlebyen Road Traffic Survey  
 Date: 1996 (November)  
 Source: Road traffic (change due to construction of new main road in neighborhood)  
 Location: Norway: Oslo (14 areas in Vålerenga/Gamlebyen area)  
 N=: 1,079  
 Noise data: Yes  
 Reference: Bartonova, Clench-Aas, Walker, Tønnesen, and Larssen 1999; Clench-Aas, Bartonova, Klæboe, and Kolbenstvedt 1999; Clench-Aas, Bartonova, Klæboe, and Kolbenstvedt 2000; Klæboe 1998; Klæboe 2000; Klæboe and Fyhri 1997; Klæboe, Kolbenstvedt, Clench-Aas, and Bartonova 1999; Klæboe, Kolbenstvedt, Clench-Aas, and Bartonova 2000; Klæboe, Kolbenstvedt, Lercher, and Solberg 1998; Kolbenstvedt 1998b; Kolbenstvedt, Klæboe, Clench-Aas, and Bartonova 1999
- NOR-399** Notes: Telephone interviews were conducted to study the reactions after changes due to construction of a new main road in the neighborhood.
- NOR-403** 1989 Horton Road Traffic Noise Survey  
 Date: 1989 (August)  
 Source: Road traffic (before change in exposure)  
 Location: Norway: Oslo (Horten area)  
 N=: 500 (approximate)  
 Noise data: No  
 Reference: Aas, Kolbenstvedt, Bakketeig, Larssen, Clench-Aas, Solberg, and Klæboe 1991  
 Notes: The study examined reactions to noise before a change in noise exposure.
- NOR-404** 1986 Drammen Road Traffic Noise survey  
 Date: 1986 (January)  
 Source: Road traffic  
 Location: Norway: Oslo (Drammen area)  
 N=: 1,000 (approximate)  
 Noise data: Yes  
 Reference: Aas, Kolbenstvedt, Bakketeig, Larssen, Clench-Aas, Solberg, and Klæboe 1991  
 Notes: This was a preparatory study for three later Vålerenga/Gamlebyen Road Traffic Noise studies (NOR-398, NOR-400, NOR-401). Information was also collected about air pollution.
- NOR-405** 1997 Norwegian Survey of Living Conditions  
 Date: 1997 (September 22) to 1998 (January 9)  
 Source: Road traffic, Aircraft, Railway, Industry  
 Location: Norway: National probability sample  
 N=: 3,663  
 Noise data: No  
 Reference: Kolbenstvedt 1998a; Kolbenstvedt and Klæboe 1999; Sundvoll A. and Teigum M. 1998  
 Notes: The survey obtained views from a nationally representative sample. Road traffic noise is the environmental problem that affects the greatest number of Norwegians.
- NOR-520** Scandinavian Nine-Airport Noise Study (Norway)  
 Date: 1971  
 Source: Aircraft  
 Location: Norway: Oslo airport (6 areas)  
 N=: 598 (6 areas)  
 Noise data: Yes  
 Reference: Åhrlin 1988; Åhrlin and Rylander 1979; Berglund, Berglund, Jonsson, and Lindvall 1977; Berglund, Berglund, and Lindvall 1975; Berglund, Berglund, and Lindvall 1987; Fidell, Barber, and Schultz 1991; Rylander, Björkman, Åhrlin, Sörensen, and Berglund 1980; Rylander, Björkman, and Sörensen 1993; Rylander and Sörensen 1973; Rylander,

## SURVEY DESCRIPTION (Continued)

Sörensen, Alexandre, and Gilbert  
1973; Rylander, Sörensen, and Berglund  
1974; Rylander, Sörensen, and Kajland  
1972; Schultz 1978; Sörensen, Berglund, and  
Rylander 1973

Notes: The 3,746 interviews from this and two other studies (DEN-519, NOR-520, SWE-035) have been analyzed as a single data set. (They were represented as a single study, SWE-035, in the 1981 and 1991 editions of this catalog.) The face-to-face interview was modified somewhat between the first and last interviews (from 1969 to 1976) in the three countries. The reports state that annoyance is less closely related to energy-based noise indices such as LAeq and FBN than to indices based on peak noise levels and numbers of aircraft.

OMA-476 1996-98 Oman Sound Environment Survey  
Date: 1996 (April for Muscat), 1998 (October for Ibra and Jibbal)  
Source: Overall sound environment  
Location: Oman: 7 areas (5 in Muscat City, 2 in the villages of Ibra and Jibbal)  
N=: 647  
Noise data: Measurements were made to characterize large areas  
Reference: Al-harthy 2000; Al-harthy and Tamura 1997b; Al-harthy and Tamura 1997a; Al-harthy and Tamura 1997c; Al-harthy and Tamura 1999a; Al-harthy and Tamura 1999b  
Notes: Self-administered questionnaires were personally delivered to each study household. The primary noise problem in Muscat is road traffic.

POL-184 Polish Railway Noise Survey  
Date: 1979 Publication (Survey date not reported)  
Source: Railway  
Location: Poland  
N=: 837  
Noise data: Yes  
Reference: Koszarny, Szata, and Gorynski 1979; Koszarny, Szata, and Gorynski 1980  
Notes: None

POL-198 1974 Warsaw Aircraft Noise Survey  
Date: 1974-75 (Winter)  
Source: Aircraft  
Location: Poland: Warszawa-Okecie Airport  
N=: 511  
Noise data: Yes  
Reference: Koszarny and Maziarka 1975; Koszarny, Maziarka, and Szata 1976  
Notes: Some indications of links between health and noise

are reported.

POL-477 1997 Warsaw Low-Frequency Interior Noise Study  
Date: 1997 (April to September)  
Source: Low frequency noise (mechanical sources either inside or outside building)  
Location: Poland: Warsaw (9 blocks of flats)  
N=: 47 (at least 27 had complained about low frequency noise to the authorities)  
Noise data: Yes  
Reference: Mirowska 2000; Mirowska and Mróz 1999; Mirowska and Mróz 2000; Mirowska, Mróz, and Nidzinska-Mróz 1998; Mróz, Nidzinska-Mróz, Nejno-Borkowska, and Mularczyk-Bal 1998  
Notes: All adults in each flat were personally interviewed. Low frequency noise that is near the hearing threshold can be annoying.

POR-478 1999 Lisbon Contingent Valuation Road Traffic Noise Survey  
Date: 1999 (June, July, September, October, November)  
Source: Road traffic  
Location: Portugal: Lisbon metropolitan area  
N=: 412  
Noise data: Yes: inside and outside  
Reference: Arsenio, Bristow, and Wardman 2000; Arsenio, Patricio, Bristow, Pinelo, Silva, and Wardman 2000  
Notes: Computer-assisted, face-to-face interviews were conducted. A single answer was agreed upon by all participants from a household. A contingent valuation method was applied in which participants attached an economic value to their apartment relative to that of other apartments at other noise levels and positions within the same apartment building.

PUR-188 San Juan Community Noise Survey  
Date: 1970's (Year of survey not determined)  
Source: Community  
Location: Puerto Rico: San Juan  
N=: 642  
Noise data: No  
Reference: Snyder 1977  
Notes: Both English and Spanish versions of the questionnaire were administered.

SAF-028 1968 South Africa Preliminary Aircraft Noise Survey  
Date: 1968 (April)  
Source: Aircraft  
Location: South Africa: Jan Smuts airport  
N=: 120  
Noise data: Yes

## SURVEY DESCRIPTION (Continued)

Reference: Mauer 1968;van Niekerk and Muller 1969  
Notes: None

SLO-406 1989 Bratislava Medical Student Survey

Date: 1989 (March to June)  
Source: Road traffic  
Location: Slovakia: Bratislava (one noisy dormitory and one quiet residential area)  
N=: 511 (166 in noisy dormitory area, 346 in quiet area)  
Noise data: Yes  
Reference: Ághová, Voleková, and Jurkovicová 1990;Ághová, Voleková, Jurkovicová, and Sitár 1992;Jurkovicová, Sobotová, Aghova, and Voleková 2000;Sobotová, Ághová, Jurkovicová, and Voleková 2000b;Sobotová, Ághová, Jurkovicová, and Voleková 2000a;Sobotová, Ághová, Voleková, and Jurkovicová 1997;Sobotová, Jurkovicová, Voleková, and Ághová 2000  
Notes: A face-to-face interview was conducted with these medical students during their training. The survey was the first of two surveys that were separated by ten years (SLO-407).

SLO-407 1999 Bratislava Medical Student Survey

Date: 1999 (March to June)  
Source: Road traffic  
Location: Slovakia: Bratislava (one noisy dormitory and one quiet residential area)  
N=: 857 (374 in noisy dormitory area, 483 in quiet area)  
Noise data: Yes  
Reference: Sobotová, Ághová, Jurkovicová, and Voleková 2000c;Sobotová, Ághová, Jurkovicová, and Voleková 2000a;Sobotová, Ághová, Jurkovicová, and Voleková 2000b  
Notes: A face-to-face interview was conducted with these medical students during their training. The survey was conducted ten years after a previous study (SLO-406) and found that noise annoyance had increased.

SPA-272 1981 Valencia City-Wide Survey

Date: 1981 (January to July)  
Source: Road traffic  
Location: Spain: Valencia  
N=: 400  
Noise data: No  
Reference: García 1983;García and Fajari 1982;García and Fajari 1983;García, Romero, and Alamar 1988  
Notes: Self-administered questionnaires were distributed through personal channels available to the investigators.

SPA-273 1982 Valencia Five-Site Survey

Date: 1982 (March to June)  
Source: Road traffic  
Location: Spain: Valencia (five sites)  
N=: 490  
Noise data: Yes  
Reference: García 1983;García and Fajari 1982;García, Romero, and Alamar 1988  
Notes: Respondents completed a self-administered questionnaire. The survey was designed to estimate the relationship between noise level and annoyance.

SPA-274 1982 Valencia Single-Site Survey

Date: 1982 (October to December)  
Source: Road traffic  
Location: Spain: Valencia (one site)  
N=: 200  
Noise data: Yes  
Reference: García 1983;García and Fajari 1982;García, Romero, and Alamar 1988  
Notes: Respondents completed a self-administered questionnaire. The survey was planned to study socio-economic and demographic differences in annoyance.

SPA-302 1986 Valencia Five-Site Survey

Date: 1986 (December) to 1987 (March)  
Source: Community  
Location: Spain: Valencia (five sites)  
N=: 263  
Noise data: Yes  
Reference: Arana and García 1997;García, Miralles, García, and Sempere 1988;García, Miralles, García, and Sempere 1990;García, Romero, and Alamar 1988;García, Romero, García, and Arana 1989  
Notes: Satisfaction with the neighborhood is greater in the quieter than the noisier areas.

SPA-313 1984-85 Ganda Three-Site Traffic Noise Survey

Date: 1984 (Summer), 1984-85 (Winter), 1985 (Summer)  
Source: Road traffic  
Location: Spain: Ganda  
N=: 543  
Noise data: Yes  
Reference: García, Romero, and Alamar 1988;García, Romero, García, and Arana 1989;García and Romero 1987b;García and Romero 1987a;Romero-Faus 1987  
Notes: Residents completed a self-administered questionnaire. The season of the survey does not affect response, even though there is more traffic and residents are more likely to have windows



## SURVEY DESCRIPTION (Continued)

- open in the summer.
- SPA-314 1987-91 Gandía Beach Resort Traffic Noise Survey  
 Date: 1987, 1988, and 1991 (Summers)  
 Source: Road traffic  
 Location: Spain: Gandía (a beach resort)  
 N=: 400  
 Noise data: Yes  
 Reference: Romero and García 1992;Romero, García, and García 1989  
 Notes: Vacationers completed a self-administered questionnaire. Road traffic noise is the most important source of annoyance in this beach resort.
- SPA-315 1988 Pamplona Five-Site Noise Survey  
 Date: 1988 (Spring)  
 Source: Road traffic  
 Location: Spain: Pamplona (five sites)  
 N=: 496  
 Noise data: Yes  
 Reference: Arana and García 1989;Arana and García 1997;García, Romero, García, and Arana 1989  
 Notes: Road traffic was the most annoying noise source in some areas. Bars, pubs and discotheques were most annoying in other areas.
- SPA-316 1983 Valencia Traffic Noise Survey  
 Date: 1983 (October, November)  
 Source: Road traffic  
 Location: Spain: Valencia (26 streets)  
 N=: 600 (725 were distributed)  
 Noise data: Yes  
 Reference: Daz, Quiros, Ibñez, Belenguer, Pérez, and Sanchis 1987;Manglano, Gaja, Estellés, and Belmar 1984  
 Notes: Residents were contacted who lived above the fourth floor of their buildings.
- SPA-317 1984 Gandía City-Wide Traffic Noise Survey  
 Date: 1984 (April) - 1985 (February)  
 Source: Road traffic  
 Location: Spain: Gandía (a beach resort)  
 N=: 600  
 Noise data: No  
 Reference: García, Romero, and Alamar 1988;García and Romero 1986;García and Romero 1987a;Romero and García 1992  
 Notes: Self-administered questionnaires were distributed to permanent residents through personal channels available to the investigators. This is a first of several studies in this coastal resort.
- SPA-320 Zaragoza City Noise Survey  
 Date: 1993 Publication (Survey date not reported)  
 Source: Community
- Location: Spain: Zaragoza  
 N=: 700  
 Noise data: No  
 Reference: Aguerri Sanchez and Celma Celma 1993  
 Notes: Residents ranked noise fifth in a list of 18 general social problems.
- SPA-330 Madrid Two-Site Traffic Noise Survey  
 Date: 1993 Publication (Survey date not reported)  
 Source: Road traffic  
 Location: Spain: Madrid (2 areas of subsidized housing)  
 N=: 800  
 Noise data: Yes  
 Reference: Lopez Barrio and Carles 1993  
 Notes: Self-reported noise sensitivity was strongly related to road traffic noise annoyance.
- SPA-348 1989-90 Spanish Airport Survey  
 Date: 1989 (December) to 1990 (March)  
 Source: Aircraft  
 Location: Spain: Madrid, Palma, Barcelona, Sevilla, Valencia, Zaragoza  
 N=: 1800  
 Noise data: Yes  
 Reference: García, Faus, and García 1993  
 Notes: Some important differences were found between reactions at around different airports.
- SPA-408 1994-95 Spanish Underground Railway Noise Survey  
 Date: 1994 - 1995  
 Source: Structurally radiated sound from underground railway traffic  
 Location: Spain: Basque  
 N=: 24  
 Noise data: Yes  
 Reference: Vadillo, Herreros, and Walker 1996  
 Notes: Residents exposed to the lowest noise levels (below 32 dB(A)) were not bothered by noise from the railway even though they could sometimes feel vibrations from a train passage.
- SPA-409 Pozuelo de Alarcón Two-Area Acoustical Environment Survey  
 Date: 1996 Publication (Survey date not reported) ( noise measurements in December 1994, January 1995)  
 Source: No information  
 Location: Spain: Pozuelo de Alarcón, a small city on the outskirts of Madrid ( 2 areas)  
 N=: 354 (214 respondents in the "center" area and 140 in the "station" area)  
 Noise data: Yes  
 Reference: Recuero, Blanco-Martin, and Grundman 1996  
 Notes: Noise sources that annoyed residents included road

## SURVEY DESCRIPTION (Continued)

traffic, railway, aircraft, and neighbors.

SPA-410 1999 Pamplona Contingent Valuation Noise Survey

Date: 1998 (December) - 1999 (December)  
 Source: Community  
 Location: Spain: Pamplona  
 N=: 600  
 Noise data: No  
 Reference: Barreiro, Sanchez, and Viladrich-Grau 2000  
 Notes: Interviews were conducted via telephone. The contingent valuation method provides estimates of residents' willingness to pay for noise reduction.

SPA-411 1998 Altet-Alicante Airport Noise Survey

Date: 1998 (May, June)  
 Source: Aircraft  
 Location: Spain: Altet-Alicante Airport (3 areas)  
 N=: 107  
 Noise data: No noise data described  
 Reference: Mallebrera, Romero, Giminez, Marin, and Sanchis 2000  
 Notes: A related study was conducted of 28 workers in nearby areas.

SWE-011 1963 Linköping Airport Noise Study

Date: 1963 (Spring), 1964 (September)  
 Source: Aircraft  
 Location: Sweden: Linköping Airfield  
 N=: 448 interviews from more than 272 respondents  
 Noise data: No  
 Reference: Berlin, Jonsson, and Kajland 1964;Cederlöf, Jonsson, and Sörensen 1967;Jonsson and Sörensen 1970;Jonsson, Sörensen, Arvidsson, and Berglund 1975  
 Notes: Some of the original 272 respondents were among the 176 respondents interviewed in 1964 as part of an experiment on changing residents' attitudes toward noise. An experimental group receiving positive information about the aircraft was less annoyed than other residents. The area was later resurveyed as the Linköping I site in the Scandinavian Nine-Airport survey (SWE-035).

SWE-015 1964-70 Karlstad Artillery Range Noise Study

Date: 1964-1970  
 Source: Artillery firing  
 Location: Sweden: Karlstad  
 N=: 427  
 Noise data: No  
 Reference: Jonsson, Sörensen, Arvidsson, and Berglund 1975  
 Notes: The original 1964 study (334 interviews) was repeated in 1970 (93 interviews).

SWE-021 1966-67 Stockholm/Gothenburg Traffic Study

Date: 1966 (October, December), 1967 (August, September)  
 Source: Road traffic  
 Location: Sweden: Stockholm, Gothenburg  
 N=: 443 (1966), 221 (1967)  
 Noise data: Yes  
 Reference: Fog and Jonsson 1968;Kajland 1970;Schultz 1978  
 Notes: The 1967 results are included as a non-clustering survey in the review by Schultz (1978: 395).

SWE-025 1967 Stockholm Comparative Traffic Noise Study

Date: 1967  
 Source: Road traffic  
 Location: Sweden: Stockholm  
 N=: 200  
 Noise data: Yes  
 Reference: Jonsson, Kajland, Paccagnella, and Sörensen 1969  
 Notes: This study was designed for comparison to the 1967 Ferrara Comparative Traffic Noise Study (ITL-318). Despite a higher traffic noise level (measured indoors) in the Ferrara sample, those in the Stockholm sample were more annoyed. Residents living one story above street level were interviewed.

SWE-026 1967 Huddinge New Motorway Study

Date: 1967, 1968  
 Source: Motorway traffic  
 Location: Sweden: The Stockholm suburb of Huddinge  
 N=: 144 interviews from 84 respondents  
 Noise data: Yes  
 Reference: Jonsson and Sörensen 1973;Jonsson, Sörensen, Arvidsson, and Berglund 1975  
 Notes: Annoyance did not decrease between the initial interview with 84 residents (six months after a new motorway opened) and the reinterview with 60 of the same residents one year later. Respondents who moved from the area during the year were no more annoyed than those remaining.

SWE-035 Scandinavian Nine-Airport Noise Study (Sweden)

Date: 1969, 1970, 1971, 1972, 1974, 1976  
 Source: Aircraft  
 Location: Sweden, Norway, and Denmark: 38 Areas around 9 Airports  
 N=: 3,746  
 Noise data: Yes  
 Reference: Åhrlin 1988;Åhrlin and Rylander 1979;Berglund, Berglund, Jonsson, and Lindvall 1977;Berglund, Berglund, and Lindvall 1975;Berglund, Berglund, and Lindvall 1987;Fidell, Barber, and Schultz 1991;Rylander, Björkman, Åhrlin, Sörensen, and Berglund 1980;Rylander, Björkman, and Sörensen

## SURVEY DESCRIPTION (Continued)

1993; Rylander and Sörensen 1973; Rylander, Sörensen, Alexandre, and Gilbert 1973; Rylander, Sörensen, and Berglund 1974; Rylander, Sörensen, and Kajland 1972; Schultz 1978; Sörensen, Berglund, and Rylander 1973

Notes: The 3,746 interviews from this and two other studies (DEN-519, NOR-520, SWE-035) have been analyzed as a single data set. (They were represented as a single study, SWE-035, in the 1981 and 1991 editions of this catalog.) The face-to-face interview was modified somewhat between the first and last interviews (from 1969 to 1976) in the three countries. The reports state that annoyance is less closely related to energy-based noise indices such as LAeq and FBN than to indices based on peak noise levels and numbers of aircraft.

SWE-054 1971 Trängslet Sonic Boom Study

Date: 1971 (June, July)  
 Source: Sonic booms from military aircraft  
 Location: Sweden: Trängslet  
 N=: 391  
 Noise data: Yes (for the military sample)  
 Reference: Rylander, Sörensen, and Berglund 1972  
 Notes: The 179 questionnaires filled out by soldiers were self-administered. The 212 civilian questionnaires are from a mail survey. All booms occurred at night. Some of the military subjects indicated nighttime disturbance by pushing buttons. There was also a "bed-indicator" that showed movements during sleep.

SWE-100 1970s Kungälv Noise Barrier Study

Date: 1972, 1975  
 Source: Road traffic, Expressway  
 Location: Sweden: The Kungälv area of Gothenburg  
 N=: 161 (83 in Phase I and 78 in Phase II)  
 Noise data: No  
 Reference: Holmquist, Claesson, and Tuvegran 1975  
 Notes: Interviews were carried out in 1972 before, and in 1975 after a barrier was erected.

SWE-108 1972 Burgsvik Sonic Boom Study

Date: 1972 (May, June)  
 Source: Sonic booms  
 Location: Sweden: Burgsvik on the island of Gotland  
 N=: Approximately 346 interviews from approximately 200 people  
 Noise data: Yes  
 Reference: Rylander, Sörensen, Andrae, Chatelier, Espmark, Larsson, and Thackray 1974  
 Notes: After the main study period, 146 respondents were

reinterviewed. This was part of a coordinated laboratory/field study.

SWE-142 1976 Stockholm Visby Gothenburg Traffic Noise Study

Date: 1976 (April, May)  
 Source: Road traffic  
 Location: Sweden: Stockholm, Visby, Gothenburg  
 N=: 1,377  
 Noise data: Yes  
 Reference: Åhrlin 1988; Åhrlin and Rylander 1979; Rylander 1977; Rylander, Åhrlin, and Björkman 1977; Rylander, Sörensen, and Kajland 1976  
 Notes: Peak noise levels from heavy vehicles are especially closely related to annoyance. Gothenburg results are not included in the 1976 publication.

SWE-165 1976 Gothenburg Tramway Noise Survey

Date: 1976 (April, May)  
 Source: Tramway, Road traffic  
 Location: Sweden: Gothenburg (6 areas)  
 N=: 464  
 Noise data: Yes  
 Reference: Åhrlin and Rylander 1979; Fidell, Barber, and Schultz 1991; Rylander, Björkman, Åhrlin, and Sörensen 1977  
 Notes: None

SWE-185 1975 Gothenburg Rifle Range Survey

Date: 1975 (April, May)  
 Source: Civilian rifle range  
 Location: Sweden: Gothenburg (9 sites in 4 areas)  
 N=: 323  
 Noise data: Yes  
 Reference: Sörensen and Magnusson 1979  
 Notes: The relationship between peak noise levels and annoyance is studied.

SWE-222 Nausta Research Camp Sonic Boom Study

Date: 1970 Publication (Survey date not reported)  
 Source: Sonic booms from military aircraft  
 Location: Sweden: Research camp in Nausta within a Swedish military testing area  
 N=: 198  
 Noise data: Yes  
 Reference: Rylander, Sörensen, Berglund, and Brodin 1972  
 Notes: The sample consists of 33 women from a testing program and 165 military recruits in road construction camps.

SWE-223 1981 Swedish Sleep Disturbance and Sound Insulation Study

Date: 1981

## SURVEY DESCRIPTION (Continued)

Source: Road traffic  
 Location: Sweden  
 N=: 3 (annoyance was measured on 8 nights)  
 Noise data: Yes  
 Reference: Öhrström and Björkman 1983  
 Notes: Respondents were first interviewed in June before insulation was installed and then reinterviewed ten months later on seven consecutive nights. Bed movements were measured on four nights.

SWE-228 1978-80 Swedish Railway Study  
 Date: 1978 (April), 1980 (May)  
 Source: Railway  
 Location: Sweden: 15 areas in Stockholm and Malmö  
 N=: 877  
 Noise data: Yes  
 Reference: Åhrlin 1988;Åhrlin and Rylander 1979;Fidell, Barber, and Schultz 1991;Möhler 1988;Rylander, Björkman, and Sörensen 1993;Sörensen and Hammar 1983b;Sörensen and Hammar 1983a  
 Notes: Face-to-face interviews were conducted with residents.

SWE-303 1986 Gothenburg Sleep Disturbance Pilot Survey  
 Date: 1986 (February, March)  
 Source: Road traffic  
 Location: Sweden: Gothenburg  
 N=: 106 (69 at high noise site, 37 at control site)  
 Noise data: Yes  
 Reference: Björkman, Levein, Rylander, and Öhrström 1988;Öhrström 1988;Öhrström 1989;Öhrström, Björkman, and Rylander 1990;Öhrström, Rylander, and Björkman 1988  
 Notes: After the initial interview, more detailed information was collected from the 63 respondents who also completed a "sleep and mood" questionnaire for three days. Reports of sleep quality and mood were lower in the noisy area than in the control area.

SWE-337 Swedish Low Frequency Heat Pump Noise Study  
 Date: 1993 Publication (Survey date not determined.)  
 Source: Low frequency heat pump noise  
 Location: Sweden  
 N=: 93  
 Noise data: Yes  
 Reference: Persson and Rylander 1993  
 Notes: This pilot survey presents some information about the relationship between long-term exposure to low frequency noise and annoyance.

SWE-344 1988 Gothenburg Psycho-Social Wellbeing Traffic Survey (Pilot)  
 Date: 1988 (May, June)

Source: Road traffic  
 Location: Sweden: 2 areas in central Gothenburg  
 N=: 248  
 Noise data: Yes  
 Reference: Öhrström 1991;Öhrström 1993;Öhrström and Rylander 1989;Öhrström and Rylander 1990  
 Notes: Residents in two areas completed mail questionnaires about annoyance, sleep, and depression.

SWE-345 1990 Gothenburg Psycho-Social Wellbeing Traffic Survey (Main)  
 Date: 1990  
 Source: Road traffic  
 Location: Sweden: Gothenburg  
 N=: 529  
 Noise data: Yes  
 Reference: Öhrström 1993  
 Notes: Mail questionnaires were used. Psycho-social well-being and self-reported sleep disturbance were related to annoyance but not to noise level.

SWE-359 Gothenburg 12-Area Traffic Noise Survey  
 Date: 1990 Publication (Survey date not reported)  
 Source: Road traffic  
 Location: Sweden: 12 areas in Gothenburg  
 N=: 785  
 Noise data: Yes  
 Reference: Björkman 1991;Björkman and Rylander 1990;Rylander, Björkman, and Sörensen 1993  
 Notes: Respondents completed a mail questionnaire.

SWE-360 Swedish Four-Site Shooting Range Noise Annoyance Survey  
 Date: 1988 Publication (Survey date not reported)  
 Source: Light and heavy caliber weapons  
 Location: Sweden: within 2 km of any of four shooting ranges  
 N=: 299 residents provided 455 responses  
 Noise data: Yes  
 Reference: Levein and Åhrlin 1988  
 Notes: Respondents completed a mail questionnaire. Of the initial 299 respondents receiving a general environmental questionnaire, 156 also responded to the second stage questionnaire that was sent to only those who indicated that they were annoyed by noise from shooting ranges on the first questionnaire.

SWE-365 1989-93 Swedish Railway Survey  
 Date: 1989 to 1993  
 Source: Railway  
 Location: Sweden: (15 areas)  
 N=: 3,216 (2,883 from first round: 333 from follow-up)

## SURVEY DESCRIPTION (Continued)

- Noise data: Yes  
Reference: Öhrström 1996a;Öhrström 1997b;Öhrström and Skånberg 1993;Öhrström and Skånberg 1995;Öhrström and Skånberg 1996  
Notes: A main postal questionnaire (2,883 respondents) with a disguised question was followed by a second detailed postal questionnaire to those who were "rather" or "very" annoyed (338 respondents). Train noise is more annoying when there is also vibration.
- SWE-368 1996 Gothenburg Road Traffic Survey  
Date: 1996 (January-June )  
Source: Road traffic  
Location: Sweden: Gothenburg (15 areas)  
N=: 1,316  
Noise data: Yes  
Reference: Björkman, Sato, Yano, and Rylander 1998;Murase, Sato, Yano, Björkman, Rylander, and Dankittikul 2000;Sato, Murase, Yano, Björkman, Rylander, and Dankittikul 2000;Sato, Yano, Björkman, and Rylander 1999;Sato, Yano, Björkman, and Rylander 2000;Sato, Yano, Yamashita, Kawai, Rylander, Björkman, and Öhrström 1998a;Sato, Yano, Yamashita, Kawai, Rylander, Björkman, and Öhrström 1998b;Yano, Sato, Björkman, and Rylander 2000  
Notes: Respondents completed a mail questionnaire about noise and environmental conditions. Noise level was represented by both LAeq and the highest noise event in one hour of observation. Respondents in apartments were less annoyed at the same noise exposure than those in detached or row houses. Comparable surveys were conducted in Japan (JPN-369, JPN-382).
- SWE-412 1997 Sollentuna Road/Rail Noise Survey  
Date: 1997 (April: questionnaire distribution date)  
Source: Road traffic, Railway  
Location: Sweden: Sollentuna municipality ten miles north of Stockholm  
N=: 759  
Noise data: Yes  
Reference: Bluhm and Nordling 2000;Bluhm, Rosenlund, and Berglind 1998  
Notes: Respondents completed a postal questionnaire. Hypertension was related to road traffic noise exposure among women but not among men.
- SWE-413 1996 Kungsbacka Railway Noise Countermeasures Study  
Date: 1996  
Source: Railway  
Location: Sweden: Kungsbacka  
N=: 512  
Noise data: Yes  
Reference: Öhrström 1997a  
Notes: Respondents completed a postal questionnaire. Countermeasures against vibration were found to reduce annoyance with vibration. Some 36 persons in this study also participated in a 1990 study (SWE-365). Some 330 respondents had been living in the house before the countermeasures introduced a change in exposure.
- SWE-414 1995-96 Lund Railway Noise Barrier Survey  
Date: 1995, 1996 (all were about two years after new noise barrier)  
Source: Railway  
Location: Sweden: Lund  
N=: 127  
Noise data: Yes  
Reference: Öhrström 1996b  
Notes: A postal questionnaire was completed. The study was conducted about two years after noise barriers had been installed near the railway. A study had previously been conducted in the same area (SWE-365).
- SWE-415 1997 Västre Bräcke vägen Change Survey (Before)  
Date: 1997 (October - December-- before the tunnel opening in January 1998)  
Source: Road traffic  
Location: Sweden: Gothenburg (2 areas on Västre Bräcke vägen island)  
N=: 142: a 3-day sleep questionnaire was completed by 116 people, 26 participated in a sleep-actimeter study  
Noise data: Yes  
Reference: Öhrström, Agge, and Björkman 1998;Öhrström and Skånberg 2000  
Notes: The self-administered questionnaire was personally delivered to one or two residents in each household. This is the first of three 1997-1998 studies in the area (SWE-416 SWE-417).
- SWE-416 1998 Västre Bräcke vägen Change Survey (After, Preliminary)  
Date: 1998 (May, June -- Minor follow-up study on sleep after January 1998 tunnel opening)  
Source: Road traffic  
Location: Sweden: Gothenburg (Västre Bräcke vägen island)  
N=: 24 respondents (from among the 26 who had completed a 1997 sleep-actimeter study)  
Noise data: Yes  
Reference: Öhrström, Agge, and Björkman 1998;Öhrström and Skånberg 2000  
Notes: This is a small follow-up study on sleep issues that

## SURVEY DESCRIPTION (Continued)

was conducted after the opening of the road traffic tunnel in January 1998. Two other studies were conducted in the same area before and after the opening (SWE-415, SWE-417). The self-administered questionnaires were personally delivered to one or two residents in each house.

- SWE-417 1999 Västres Bräckevägen Change Survey (After, Primary)  
 Date: 1999 (April, May for this main study after January 1998 tunnel opening)  
 Source: Road traffic  
 Location: Sweden: Gothenburg (2 areas on Västres Bräckevägen island)  
 N=: 120 respondents who previously participated in a 1997 study  
 Noise data: Yes  
 Reference: Öhrström and Skånberg 2000  
 Notes: The self-administered questionnaire was delivered to one or two residents in each household. This was the main study that followed the opening of a new traffic tunnel and is related to two studies conducted before the tunnel opened (SWE-415, SWE-416).
- SWE-418 1999 Stockholm Noise Barrier Traffic Survey  
 Date: 1999 (May, June)  
 Source: Road traffic  
 Location: Sweden: Stockholm  
 N=: 741 respondents from 459 households  
 Noise data: No  
 Reference: Berglund and Nilsson 2000  
 Notes: Self-administered questionnaires were personally delivered to each household and later personally collected. All adults in the household were asked to respond.
- SWE-419 1988-93 Swedish Small Airport Noise Survey  
 Date: 1988 (May, Landvetter airport), 1989 (October, Säve airport), 1993 (May, Everöd airport)  
 Source: Aircraft  
 Location: Sweden: Three small airports (Landvetter, Säve, and Everöd (8 areas))  
 N=: 513  
 Noise data: Yes  
 Reference: Rylander and Björkman 1997  
 Notes: The data were collected using a postal questionnaire.
- SWE-420 1992 Gothenburg Road Traffic Survey  
 Date: 1992 (November, December)  
 Source: Road traffic  
 Location: Sweden: Gothenburg (2 sites)

- N=: 115 (two sites)  
 Noise data: Yes  
 Reference: Yano, Izumi, Rylander, and Björkman 1994  
 Notes: The data were collected using a postal questionnaire.
- SWE-437 Swedish Eight-Range Heavy Weapons Noise Survey  
 Date: 1996 Publication (Survey date not reported)  
 Source: Artillery  
 Location: Sweden: 29 areas near 8 shooting ranges  
 N=: 1,483 (approximate)  
 Noise data: Yes  
 Reference: Rylander, Åhrlin, and Lundquist 1993; Rylander, Åhrlin, and Lundquist 1994; Rylander and Lundquist 1996  
 Notes: All respondents completed an initial postal questionnaire. Those indicating annoyance with heavy weapons noise were sent a second questionnaire with detailed questions about heavy weapons noise effects.
- SWI-053 1971 Swiss Three-City Noise Survey  
 Date: 1971 (April), 1972 (June)  
 Source: Aircraft (all three cities), Road traffic (Basel)  
 Location: Switzerland: Zurich, Geneva, Basel  
 N=: 3,939  
 Noise data: Yes  
 Reference: Fidell, Barber, and Schultz 1991; Graf, Meier, and Müller 1974; Graf, Müller, and Meier 1974; Grandjean, Graf, Lauber, Meier, and Mueller 1973; Grandjean, Graf, Lauber, Meier, and Mueller 1976; Nemecek, Wehrli, and Turrian 1981; Schultz 1978; Wehrli and Nemecek 1979  
 Notes: None
- SWI-133 1976 Zurich Street Traffic Noise (Apartments) Survey  
 Date: 1976  
 Source: Road traffic  
 Location: Switzerland: Zurich  
 N=: 800  
 Noise data: Yes  
 Reference: Bakke, Wehrli, Wanner, Nemecek, Turrian, and Grandjean 1977; Nemecek, Wehrli, and Turrian 1981; Wanner, Wehrli, Bakke, Nemecek, Turrian, and Grandjean 1977; Wehrli, Huser, Egli, Bakke, and Grandjean 1976; Wehrli and Nemecek 1979  
 Notes: Women were interviewed who lived in apartments built after 1962.
- SWI-158 1977 Zurich Pilot Traffic Noise Survey  
 Date: 1977  
 Source: Road traffic

## SURVEY DESCRIPTION (Continued)

- Location: Switzerland: Four areas in Zurich  
 N=: 1,297  
 Noise data: Yes  
 Reference: Bakke, Wehrli, Wanner, Nemecek, Turrian, and Grandjean 1977; Nemecek, Wehrli, and Turrian 1981; Wanner, Wehrli, Bakke, Nemecek, Turrian, and Grandjean 1977; Wanner, Wehrli, Nemecek, and Turrian 1977; Wehrli and Nemecek 1979  
 Notes: A mail questionnaire was used. Air quality was also assessed.
- SWI-159 1977 Swiss N-3 Motorway Study  
 Date: 1977 (September)  
 Source: Motorway traffic  
 Location: Switzerland: N-3 motorway in the vicinity of Sargans  
 N=: 150  
 Noise data: Yes  
 Reference: Nemecek, Grandjean, Baumgartner, Müller, and Roth 1979; Nemecek, Grandjean, Baumgartner, Roth, and Müller 1978  
 Notes: A self-administered questionnaire was used. Special attention was directed at the costs of noise and at evaluating alternatives for alleviating the effects of noise.
- SWI-173 1978 Zurich Time-of-Day Survey  
 Date: 1978  
 Source: Road traffic  
 Location: Switzerland: Zurich and vicinity (18 study sites)  
 N=: 1607  
 Noise data: Yes  
 Reference: Nemecek, Wehrli, and Turrian 1981; Wehrli and Grandjean 1979; Wehrli and Nemecek 1979; Wehrli, Nemecek, Turrian, Hofmann, and Wanner 1978; Wehrli, Nemecek, Turrian, Wanner, and Hofmann 1978  
 Notes: Respondents completed a mail questionnaire.
- SWI-180 1979 Swiss General Aviation Survey  
 Date: 1979 (Late Summer)  
 Source: Aircraft  
 Location: Switzerland: Six general aviation airports (Bern-Belp, Birrfeld, Buttwil, Gruyeres, La Chaux-de-Fonds, Lugano-Agno)  
 N=: 1,428  
 Noise data: Yes  
 Reference: Institut für Praxisorientierte Sozialforschung 1980  
 Notes: Noise from general aviation was not perceived to be the dominating noise problem except in the areas immediately surrounding airports.
- SWI-304 1986 Swiss Multi-Story Building Sound Insulation Study  
 Date: 1986 (April, May)  
 Source: Community, Interior noise  
 Location: Switzerland: 11 groups of buildings  
 N=: 447  
 Noise data: Yes: inside and outside  
 Reference: Rabinowitz, Bakonyi, Bocquet, Meyer, Olivetti, and Rey 1988  
 Notes: Mail questionnaires were used. Respondents' ratings of exterior noise, facade sound reduction and indoor sound reduction are all related to the respective measured acoustical criteria.
- SWI-312 1984 Visual Context of Noise Survey (Switzerland)  
 Date: 1984  
 Source: Road traffic  
 Location: Switzerland: Zug  
 N=: 240 (approximately) surveyed but fewer are used for many analyses  
 Noise data: Yes  
 Reference: Kastka and Noack 1987; Kastka, Noack, Mau, Maas, Conrad, Ritterstaedt, and Hangartner 1986  
 Notes: This is part of a German/Swiss survey (GER-291). Mail questionnaires were used in Switzerland. The streets of the Swiss town were judged to be more attractive. At the same noise level, there was less annoyance for residents in the Swiss than the German town.
- SWI-469 1999 Swiss Noise Barrier Survey  
 Date: 1999 (June, July)  
 Source: Road traffic  
 Location: Switzerland: 17 locations in 12 cities  
 N=: 509  
 Noise data: Yes  
 Reference: Meloni and Fischer 2000  
 Notes: Computer-assisted telephone interviews were conducted. Traffic noise annoyance is less with a barrier than at a similar noise level without a barrier.
- THA-327 1992 Songkhla Traffic Noise Survey  
 Date: 1992 (July, August)  
 Source: Road traffic  
 Location: Thailand: two sites in Songkhla. One site is a recently developed suburban area with low housing density, and one a densely populated urban area.  
 N=: 232 (138 at urban site, 94 at suburban site)  
 Noise data: Yes  
 Reference: Dankittikul, Izumi, Yano, Kurosawa, and Yamashita 1993; Izumi, Dankittikul, Yamashita, and Yano 1994  
 Notes: A comparison with a Japanese survey (JPN-326) found strong cross-cultural similarities. A self-administered questionnaire was used.

## SURVEY DESCRIPTION (Continued)

- THA-421 1997-98 Bangkok Road Traffic Noise Survey  
 Date: 1997 (July, August) - 1998 (August)  
 Source: Road traffic  
 Location: Thailand: Bangkok (2 areas in 1997 and 4 areas in 1998)  
 N=: 373 (approximate: 183 from detached and about 190 from attached row houses)  
 Noise data: Yes  
 Reference: Murase, Sato, Yano, Björkman, Rylander, and Dankittikul 2000;Sato, Murase, Yano, Björkman, Rylander, and Dankittikul 2000  
 Notes: Questionnaires were distributed at homes and then collected from each address. Residents in Bangkok were more annoyed at the same noise level than were respondents in Japanese surveys (JPN-369, JPN-382). The study was also designed for comparison to a Swedish survey (SWE-368).  
 Source: Community, Interior noise inside dwellings  
 Location: U.K.: 40 cities in Great Britain  
 N=: 2,017  
 Noise data: No  
 Reference: Chapman 1948  
 Notes: None
- THA-455 1990-91 Bangkok Personal Noise Exposure Survey  
 Date: 1990 (November) - 1991 (October)  
 Source: Community  
 Location: Thailand: Bangkok (36 districts)  
 N=: 198  
 Noise data: Yes  
 Reference: Phothiphichitr 1994  
 Notes: Respondents carried exposure meters for 24 hours during all of their work and home activities and then answered questions about their reaction to each noise environment.
- TRK-283 1980-84 Istanbul Noise Survey  
 Date: 1980 (10 sites), 1983-1984 (7 sites)  
 Source: Road traffic, Aircraft, Railway  
 Location: Turkey: Istanbul (17 sites)  
 N=: 3,179 (1,460 traffic, 721 aircraft, 998 railway)  
 Noise data: Yes  
 Reference: Kurra 1983;Kurra 1988  
 Notes: Considerable annoyance with noise is found in this city in a developing country.
- TRK-367 Istanbul Trans-European Motorway Survey  
 Date: 1995 Publication (Survey date not reported)  
 Source: Motorway traffic  
 Location: Turkey: Istanbul (19 sites in one area)  
 N=: 154  
 Noise data: Yes  
 Reference: Kurra, Tamer, and Rice 1995  
 Notes: A random sample of residents from ages 18 to 65 were interviewed who had lived in the area at least 6 months. Annoyance was found to increase with increasing noise level.
- UKD-001 1943 British Home Noise Survey  
 Date: 1943 (November)  
 Source: Community, Interior noise inside dwellings  
 Location: U.K.: 40 cities in Great Britain  
 N=: 2,017  
 Noise data: No  
 Reference: Chapman 1948  
 Notes: None
- UKD-003 1952 Sound Insulation in Flats Survey  
 Date: 1952 (December), 1953 (March)  
 Source: Interior  
 Location: U.K.: London, Glasgow  
 N=: 1,491  
 Noise data: Yes: sound insulation of floors data  
 Reference: Gray 1956;Gray, Cartwright, and Parkin 1958;Pickles 1956  
 Notes: All respondents were housewives. Both airborne and impact noises from adjacent flats are disturbing.
- UKD-008 1961 Heathrow Aircraft Noise Survey (First Heathrow Survey)  
 Date: 1961 (September)  
 Source: Aircraft  
 Location: U.K.: London Heathrow Airport  
 N=: 1,731 Main study, (also a special sample of 178 complainants)  
 Noise data: Yes  
 Reference: Fidell, Barber, and Schultz 1991;McKinnell 1963;McKinnell 1965;McKinnell 1969;McKinnell 1970;McKinnell 1973;Schultz 1978;Wilson 1963  
 Notes: The NNI (Noise and Number Index) was derived from the analysis. The study includes a subsample of complainants.
- UKD-009 1961 Central London Traffic Noise Survey  
 Date: 1961 (July, August)  
 Source: Road traffic  
 Location: U.K.: Central London  
 N=: 1,377  
 Noise data: Yes  
 Reference: McKinnell and Hunt 1966  
 Notes: Traffic noise is the most important noise heard by and bothering residents.
- UKD-010 1963 Welsh Village Impulse Noise (Exercise Yellow Hammer)  
 Date: 1963 (June to September)  
 Source: Explosive charges at height of 500 feet (simulating sonic booms from aircraft)  
 Location: U.K.: One small Welsh village  
 N=: Several thousand interviews from approximately 220 respondents  
 Noise data: Yes



## SURVEY DESCRIPTION (Continued)

- Reference: Webb and Warren 1967  
 Notes: Four panels of respondents were repeatedly interviewed. The level of annoyance decreased somewhat over the fourteen-week study period
- UKD-024 1967 Heathrow Aircraft Noise Study (Second Heathrow Survey)  
 Date: 1967 (September)  
 Source: Aircraft  
 Location: U.K.: London Heathrow Airport  
 N=: 4,699 main sample  
 Noise data: Yes  
 Reference: Directorate of Operational Research and Analysis 1971;Fidell, Barber, and Schultz 1991;Knowler 1971;MIL Research 1971;Schultz 1978  
 Notes: The study was designed for comparison with the 1961 Heathrow study (UKD-008). The study includes a subsample of noise-insulated homes.
- UKD-029 1968 Coventry Pilot Railway Noise Survey  
 Date: 1968  
 Source: Railway  
 Location: U.K.: Coventry  
 N=: 85  
 Noise data: No  
 Reference: Walters 1970  
 Notes: Two different questionnaires were used.
- UKD-030 1967 B.R.S. London Traffic Noise Survey  
 Date: 1967  
 Source: Road traffic  
 Location: U.K.: London Area (11 sites)  
 N=: 1,200  
 Noise data: Yes  
 Reference: Griffiths 1968;Griffiths and Langdon 1968;Langdon 1980  
 Notes: The Traffic Noise Index (TNI) was derived from the survey's results.
- UKD-033 1969 Mixed Road/Aircraft Noise Survey  
 Date: 1969-1970 (Winter)  
 Source: Aircraft, Road traffic  
 Location: U.K.: London Heathrow Airport  
 N=: 315 (approximately)  
 Noise data: Yes  
 Reference: Bottom 1971a;Bottom 1971b;Bottom and Waters 1971;Bottom and Waters 1972;Waters and Bottom 1971  
 Notes: Residents in high road traffic noise environments are less annoyed by aircraft noise.
- UKD-038 1969 Central England Railway Survey  
 Date: 1969  
 Source: Railway
- Location: U.K.: Central England  
 N=: 258  
 Noise data: No  
 Reference: Hall 1969;Walters 1970  
 Notes: None
- UKD-050 1970-71 Heston Noise Barrier Study  
 Date: 1970 (September) to 1971 (September)  
 Source: Road traffic  
 Location: U.K.: one site along the M14 motorway near Heston  
 N=: 458 interviews (142 before barrier, 316 after)  
 Noise data: Yes  
 Reference: Scholes 1977;Scholes, Mackie, Vulkan, and Harland 1974  
 Notes: Residents were first interviewed when a relatively ineffective wooden fence was in place and later interviewed after an acoustical barrier was erected. Annoyance was reduced by more than would be expected from previous studies of steady-state noise conditions.
- UKD-052 1971 Gatwick Airport Noise Survey  
 Date: 1971 (August)  
 Source: Aircraft  
 Location: U.K.: Gatwick Airport  
 N=: 1,030  
 Noise data: Yes  
 Reference: Ollerhead and Cousins 1975  
 Notes: This study was designed for comparison with the 1961 and 1967 Heathrow surveys (UKD-008, UKD-024). Reactions were similar in the three surveys.
- UKD-061 1972 Heathrow Airport Noise Pilot Survey  
 Date: 1972  
 Source: Aircraft  
 Location: U.K.: London Heathrow Airport  
 N=: 600  
 Noise data: Yes  
 Reference: Ollerhead 1973;Ollerhead 1977b;Ollerhead 1977c;Ollerhead 1978;Ollerhead 1980;Ollerhead and Edwards 1974;Ollerhead and Edwards 1977  
 Notes: Nighttime annoyance was a major topic of this survey.
- UKD-071 1972 B.R.S. London Traffic Noise Survey  
 Date: 1972 (May to July)  
 Source: Road traffic  
 Location: U.K.: London Area (53 sites)  
 N=: 2,933  
 Noise data: Yes  
 Reference: Berry 1983;Fidell, Barber, and Schultz 1991;Hood 1977;Langdon 1975;Langdon 1976b;Langdon

## SURVEY DESCRIPTION (Continued)

1976a;Langdon 1977b;Langdon  
1977a;Langdon 1978a;Langdon  
1978b;Langdon and Buller 1977b;Langdon and  
Buller 1977a;Schultz 1978

Notes: This investigation is similar in some respects to the Building Research Station's earlier 1967 B.R.S. London Traffic Survey (UKD-030). Reactions were different for free-flowing and congested traffic.

### UKD-072 1972 English Road Traffic Survey

Date: 1972  
Source: Road traffic  
Location: U.K.: Probability sample of England  
N=: 6017  
Noise data: Yes (for 1,235 interviews)  
Reference: Hapuarachchi 1980;Harland 1977a;Harland 1977b;Harland and Abbott 1977;Hedges 1973;Morton-Williams, Hedges, and Fernando 1978;Sando and Batty 1975  
Notes: Noise is the most important disturbance from traffic after pedestrian danger. Road traffic noise bothers more people in England than any other noise source.

### UKD-073 1972 Birmingham New Motorway Study

Date: 1972 (April), 1973 (March)  
Source: Motorway traffic  
Location: U.K.: Bromford Bridge and Firs Estate in Birmingham  
N=: 363 interviews (189 in first wave, 174 in second wave)  
Noise data: Yes  
Reference: Lawson and Walters 1973  
Notes: Residents were interviewed both before and after the motorway was opened in May of 1972.

### UKD-074 1972 London Construction Site Survey

Date: 1972  
Source: Construction  
Location: U.K.: One construction site in London  
N=: 535  
Noise data: Yes for construction and road traffic  
Reference: Large and Ludlow 1975;Large and Ludlow 1976;Ludlow 1973;Ludlow 1976  
Notes: This postal survey achieved a 55% response rate with two reminder letters. The questionnaires asked about many noise sources. Construction noise was more annoying than road traffic noise of the same noise level.

### UKD-080 1972 Loughborough Interrupted Traffic Flow Survey

Date: 1972

Source: Road traffic  
Location: U.K.: 12 sites in England  
N=: Approximately 250

Noise data: Yes  
Reference: Jones and Waters 1974  
Notes: Residents completed a postal questionnaire. Annoyance was slightly greater at the 6 interrupted-flow traffic sites than at the 6 free-flow traffic sites.

### UKD-086 1973 Kew Aircraft Noise Survey

Date: 1973  
Source: Aircraft  
Location: U.K.: Kew London  
N=: 469 mail interviews, 28 face-to-face interviews  
Noise data: Yes  
Reference: Edwards 1975;Edwards and Ollerhead 1974;Ollerhead and Edwards 1974  
Notes: Respondents completed a mail questionnaire about reactions to aircraft noise on the previous evening.

### UKD-097 1974 English Aircraft Noise Postal Survey

Date: 1974  
Source: Aircraft  
Location: U.K.: Three cities (London-Heathrow, Manchester, Liverpool)  
N=: 725  
Noise data: Yes  
Reference: Ollerhead 1977a  
Notes: The mail questionnaire concerned annoyance with aircraft noise in the previous month. The response rate was about 24%. Reactions at the airports differed.

### UKD-111 1975-76 English Mental Health Pilot Survey

Date: 1975 (April, May), 1976  
Source: Aircraft  
Location: U.K.: Two locations near London Heathrow Airport  
N=: 245 interviews from 208 respondents  
Noise data: Yes  
Reference: Barker and Tarnopolsky 1978;Hede 1979;McLean and Tarnopolsky 1977;Tarnopolsky 1978;Tarnopolsky, Barker, Wiggins, and McLean 1978;Tarnopolsky and Morton-Williams 1980  
Notes: Noise annoyance was related to psychiatric measures, but an association between noise and psychiatric measures was not widespread. Experiments with question order were included. Of the 208 respondents in 1975, 137 were reinterviewed in 1976.

### UKD-112 1975 Luton In-migrants Aircraft Noise Survey

Date: 1975 (August)

## SURVEY DESCRIPTION (Continued)

- Source: Aircraft  
 Location: U.K.: Luton Airport  
 N=: 112  
 Noise data: Yes  
 Reference: Wrigley 1976a;Wrigley 1976b  
 Notes: This is a study of new residents in an airport area. Those living further from the airport are more likely to report that the noise is worst than expected.
- UKD-116 1975 British National Railway Noise Survey  
 Date: 1975 (October) to 1976 (January)  
 Source: Railway  
 Location: U.K.  
 N=: 1,453  
 Noise data: Yes  
 Reference: Berry 1983;de Jong and Miedema 1996;Fidell, Barber, and Schultz 1991;Fields 1977;Fields 1979;Fields 1983;Fields and Tomberlin 1978;Fields and Walker 1977a;Fields and Walker 1977b;Fields and Walker 1978;Fields and Walker 1980a;Fields and Walker 1980b;Fields and Walker 1980d;Fields and Walker 1980c;Fields and Walker 1980e Fields and Walker 1982b;Fields and Walker 1982a;Fields, Walker, and Large 1976;Garnsworthy 1977;Phillips 1978;Richardson 1976;Walker and Fields 1977;Walker and Fields 1978;Walker and Fields 1980;Windle 1977  
 Notes: The interview was administered in two slightly different forms to test question order and question wording effects. A comparison with previous surveys showed that railway noise is less annoying than road traffic and aircraft noise at the same noise levels.
- UKD-118 1975-76 London/Liverpool Panel Survey  
 Date: 1975 (November), 1976 (January, March)  
 Source: Road traffic  
 Location: U.K.: London, Liverpool  
 N=: 738 interviews from 413 respondents  
 Noise data: Yes  
 Reference: Griffiths and Delauzun 1977b;Griffiths and Delauzun 1977a  
 Notes: Of the 413 original respondents, 325 were reinterviewed one year later. Variation in individual annoyance scores is due more to random response measurement error than to individual differences in sensitivity. Twenty-five of the respondents were also given two self-administered personality tests that were found to not be related to annoyance.
- UKD-119 1975 Great Britain Interior Noise Survey  
 Date: 1975
- Source: Interior noise from adjacent dwellings  
 Location: U.K.: Great Britain  
 N=: 3122  
 Noise data: No  
 Reference: Langdon and Buller 1977a  
 Notes: Respondents lived in dwelling units sharing a common wall with another dwelling. Residents in newly constructed dwellings were not less annoyed than respondents in surveys from earlier periods.
- UKD-130 1976 Heathrow Concorde Noise Survey  
 Date: 1976  
 Source: Aircraft  
 Location: U.K.: London Heathrow Airport  
 N=: 2,631  
 Noise data: Yes  
 Reference: Large and Ludlow 1977;McKinnell 1977;McKinnell 1978;McKinnell 1980  
 Notes: Vibration is relatively annoying for Concorde noise. It was not possible to assess the effect of Concorde noise on overall aircraft noise annoyance. Residents found Concorde flights were less annoying than they had expected.
- UKD-132 1976 Darlington Quiet Town Survey  
 Date: 1976 (June)  
 Source: Community  
 Location: U.K.: Probability sample of Darlington  
 N=: 494  
 Noise data: No  
 Reference: Jupp and Sutton 1976;Landon 1976  
 Notes: This is the before-treatment survey for the Darlington Quiet Town Experiment. (Survey UKD-199 is the after-treatment survey.) About 20% were annoyed by road traffic noise at home (the most annoying source) but about 30% of those who work were annoyed by noise at work.
- UKD-147 1977 Heathrow Nighttime Pilot Survey  
 Date: 1977 (December), 1978 (January to April)  
 Source: Aircraft  
 Location: U.K.: London Heathrow Airport (7 sites)  
 N=: 1,055 (279 face-to-face interviews, 776 postal questionnaires)  
 Noise data: Yes  
 Reference: Directorate of Operational Research and Analysis 1978c;Directorate of Operational Research and Analysis 1978b;Directorate of Operational Research and Analysis 1978a;Directorate of Operational Research and Analysis 1979;Prescott-Clarke and Stowell 1983  
 Notes: Though there were some differences, broadly similar answers were found on postal and interviewer-administered surveys.

## SURVEY DESCRIPTION (Continued)

- UKD-148** 1977 West London (Heathrow) Psychiatric Morbidity Survey  
 Date: 1977 (April through Autumn)  
 Source: Aircraft  
 Location: U.K.: West London area near Heathrow airport  
 N=: 5,885  
 Noise data: Yes  
 Reference: Tarnopolsky, Hand, Barker, and Jenkins 1980;Tarnopolsky, Jenkins, Watkins, and Hand 1980;Tarnopolsky and Morton-Williams 1980;Tarnopolsky, Watkins, and Hand 1980;Watkins, Tarnopolsky, and Jenkins 1981  
 Notes: Reports of some psychiatric symptoms were related to annoyance within high noise level areas. Question order experiments were conducted. A detailed follow-up survey was conducted with 77 women (UKD-305).
- UKD-157** 1977 London Area Panel Survey  
 Date: 1977 (December), 1978 (September)  
 Source: Road traffic  
 Location: U.K.: London area (6 sites)  
 N=: 1,363 interviews from 507 respondents  
 Noise data: Yes  
 Reference: Atkins Research and Development 1979;Griffiths, Langdon, and Swan 1980;Langdon and Griffiths 1982  
 Notes: The same interview questions were asked of a panel of respondents at different times of the year. Some 364 respondents were interviewed four times. Alternative question wordings, question instructions, and question ordering were examined. The monetary evaluation of noise nuisance was examined.
- UKD-160** 1977 Hampshire Village Noise Study  
 Date: 1977 (October) to 1978 (January)  
 Source: Community, Road traffic  
 Location: U.K.: 10 villages in Hampshire and Wiltshire  
 N=: 756  
 Noise data: Yes  
 Reference: Hawkins 1979b;Hawkins 1979a;Hawkins 1980;McEntagart 1980;Prescott-Clarke 1978  
 Notes: Residents are no more annoyed by traffic noise of the same noise level in these rural areas than they were in an earlier survey of the general population of England (UKD-072). Respondents liked some sounds in their environment.
- UKD-161** 1977 Southampton Hovercraft Noise Survey  
 Date: 1977  
 Source: Hovercraft  
 Location: U.K.: Neighborhoods near Southampton Water  
 N=: 241
- Noise data: Yes  
 Reference: Samra 1978  
 Notes: In some areas hovercraft noise was as disturbing as road traffic noise.
- UKD-162** Greater Manchester Traffic Survey  
 Date: 1977 Publication (Survey date not reported)  
 Source: Road traffic  
 Location: U.K.: Greater Manchester area  
 N=: 846  
 Noise data: Yes  
 Reference: Berry 1983;Rossall 1978;Wilcox 1978;Yeowart, Wilcox, and Rossall 1977a  
 Notes: Nighttime noise from vehicles aided in predicting reactions to noise.
- UKD-175** 1978 Southampton Hovercraft Terminal Noise Survey  
 Date: 1978  
 Source: Hovercraft  
 Location: U.K.: Southampton area near Hovercraft Terminal  
 N=: 52  
 Noise data: Yes  
 Reference: Hutton 1978  
 Notes: Hovercraft noise is more annoying than other noise sources near the terminal area. The survey was designed for comparison with the 1977 Solent Hovercraft Survey (UKD-161).
- UKD-176** 1978 ISVR Lab/Field Comparison Survey  
 Date: 1978 (June, July)  
 Source: Road traffic  
 Location: U.K.: one neighborhood in Southampton, England  
 N=: 60  
 Noise data: Yes  
 Reference: Flindell 1979;Flindell 1982  
 Notes: As part of a laboratory/field comparison study, the residents were first interviewed at home and then brought into a simulated living room listening facility to rate recorded traffic noise. Annoyance in the laboratory was not affected by the home noise environment.
- UKD-182** 1979 Heathrow/Gatwick Sleep Study  
 Date: 1979 (June to October)  
 Source: Aircraft  
 Location: U.K.: Two airports (17 sites near Heathrow, 8 sites near Gatwick)  
 N=: 964 face-to-face, 3,188 postal  
 Noise data: Yes  
 Reference: Davies, Brooker, and Critchley 1987;Directorate of Operational Research and Analysis 1980b;Directorate of Operational Research and

## SURVEY DESCRIPTION (Continued)

- Analysis 1980a;Directorate of Operational Research and Analysis 1980c;Directorate of Operational Research and Analysis 1980e;Directorate of Operational Research and Analysis 1980d;Directorate of Operational Research and Analysis 1980f;Makinson 1979
- Notes: Both face-to-face interviews and postal questionnaires were used. The nighttime noise environment was measured. Some questions were asked about experiences on the previous night. In Great Britain this survey is known as the "Aircraft Noise and Sleep Disturbance" survey. A large scale preliminary study was also carried out (UKD-147).
- UKD-199 1978 Darlington Quiet Town Survey  
 Date: 1978 (June)  
 Source: Community  
 Location: U.K.: Probability sample of Darlington  
 N=: 488  
 Noise data: No  
 Reference: Jupp and Landon 1978  
 Notes: This follows an earlier study (UKD-132) of the Darlington Quiet Town Experiment. After two years, most respondents were aware of the quiet city campaign. Noise annoyance was not reduced in the neighborhoods.
- UKD-220 1978 British Interior Noise Survey  
 Date: 1978 (November)  
 Source: Interior noise from adjacent dwellings  
 Location: U.K.: Great Britain  
 N=: 917  
 Noise data: Yes: sound insulation information  
 Reference: Langdon, Buller, and Scholes 1981  
 Notes: None
- UKD-224 1982 Manchester Night Noise Survey  
 Date: 1982 (September 11 to September 26)  
 Source: Aircraft  
 Location: U.K.: Six sites around Manchester airport  
 N=: 595  
 Noise data: Yes  
 Reference: Brooker and Nurse 1983;Monkman 1983;Morton-Williams 1983;Nurse 1983  
 Notes: Respondents completed self-administered questionnaires on the morning following a night when noise data had been collected. The questionnaire included questions about that night's sleep experience. Findings about reports of sleep disturbance can be compared to an earlier study around Heathrow and Gatwick (UKD-182).
- UKD-225 1982 British Helicopter Disturbance Study  
 Date: 1982 (August 20 to September 13)  
 Source: Helicopters  
 Location: U.K.: Five areas affected by the Gatwick-Heathrow helicopter airlink and two areas near Aberdeen airport  
 N=: 438  
 Noise data: Yes  
 Reference: Atkins 1983;Atkins, Brooker, and Critchley 1983;Atkinson 1983;Prescott-Clarke 1983  
 Notes: None
- UKD-233 1980 British Flats' Sound Insulation Survey  
 Date: 1980 (August, September)  
 Source: Interior noise  
 Location: U.K.: 63 sites with multistory residential apartments (England and Wales)  
 N=: 709  
 Noise data: Yes: sound insulation information  
 Reference: Langdon, Buller, and Scholes 1983  
 Notes: The main interest was in the sound insulation from noise originating in other flats. Other sources of noise in the building were also found to be important. Respondents were more annoyed by impact sounds from overhead flats, than by airborne sound. Physical measures of the impact sound insulation were not related to occupants' experiences. Comparisons are made with an earlier survey of residents in other types of housing structures (UKD-220).
- UKD-237 1983-84 Southern England New Road Opening Survey  
 Date: 1983-1984  
 Source: Road traffic  
 Location: U.K.: Eight sites with noise level reductions (Bedfordshire, Essex, Kent, Suffolk) or increases (Surrey, Alderney (Dorset))  
 N=: 469 in "before" survey, 391 in "after" survey  
 Noise data: Yes  
 Reference: Griffiths and Raw 1984;Griffiths and Raw 1986;Griffiths and Raw 1989;Raw and Griffiths 1990  
 Notes: A total of 469 residents were interviewed from one to four months before the opening of a new road (one site was in the process of changes). Of these, 391 were reinterviewed two to three months after the opening of the new road. In a later study (UKD-297) 17 to 22 months later, 90 were reinterviewed.
- UKD-238 1984 Glasgow Combined Aircraft/Road Traffic Survey  
 Date: 1984 (May, June)  
 Source: Aircraft, Road traffic

## SURVEY DESCRIPTION (Continued)

- Location: U.K.: Glasgow airport  
N=: 608  
Noise data: Yes  
Reference: Atkinson, Critchley, and Devine 1985;Diamond and Rice 1987;Diamond and Walker 1986a;Diamond and Walker 1986b;Diamond, Walker, Critchley, and Richmond 1986;Richmond 1985;Walker 1986  
Notes: This survey was designed under Commission of European Communities auspices for comparison with an Orly Survey (FRA-239) and a Schiphol Survey (NET-240).
- UKD-241 1982 Heathrow Combined Aircraft/Road Traffic Survey  
Date: 1982 (July, September)  
Source: Aircraft, Road traffic  
Location: U.K.: London Heathrow Airport  
N=: 417  
Noise data: Yes  
Reference: Cooper, Diamond, Rice, and Walker 1984a  
Notes: The sample is located in five aircraft noise areas with a high and low ambient noise site in each. This study was conducted as an extension of the 1982 Aircraft Noise Index Study (UKD-242). Ambient noise does not consistently influence aircraft noise annoyance.
- UKD-242 1982 United Kingdom Aircraft Noise Index Study  
Date: 1982 (July to September)  
Source: Aircraft  
Location: U.K.: 5 airports (Heathrow, Gatwick, Luton, Manchester, Aberdeen)  
N=: 2,097  
Noise data: Yes  
Reference: Atkins, Nurse, and Richmond 1984;Brooker 1983;Brooker, Critchley, Monkman, and Richmond 1985;Brooker and Richmond 1985a;Brooker and Richmond 1985b;Prescott-Clarke 1983  
Notes: Results from a 1980 pilot survey were not reported. LAeq provides a better weighting of number of events than does NNI. A 1982 ambient noise survey (UKD-241) was conducted as an extension of this study. The survey is sometimes labeled the "ANIS" study.
- UKD-243 1981 United Kingdom General Aviation Airport Survey  
Date: 1981 (Summer, Early Autumn)  
Source: Aircraft  
Location: U.K.: Coventry, Kidlington, Leavesden, Shoreham, Staverton  
N=: 399
- Noise data: Yes  
Reference: Brooker 1982;Brooker and Davies 1983;Brooker and Davies 1984;Diamond, Walker, Ollerhead, Critchley, and Bradshaw 1987;Directorate of Operational Research and Analysis 1982b;Taylor Nelson & Associates 1982  
Notes: Noise annoyance at one general aviation airport (Leavesden) is similar to large airports. Residents at the other general aviation airports are less annoyed.
- UKD-266 1971-72 Alton By-pass Study (Residents)  
Date: 1971 (July), 1972 (July)  
Source: Road traffic  
Location: U.K.: Alton, Bentley (Hampshire)  
N=: 388 interviews (fewer respondents)  
Noise data: Yes  
Reference: Dawson 1973  
Notes: Some 225 respondents from 135 homes were interviewed in July 1971. After the September bypass opening, 163 respondents from 97 homes were interviewed in July of 1972. Some homes (48) were included in both studies. Some interviews came from areas unaffected by the bypass. A different interview was administered to a sample of pedestrians and people in shops and offices.
- UKD-267 1970s Lake District A66 Traffic Change Study (Residents)  
Date: 1973, 1977, 1978 (August and September in all years)  
Source: Road traffic  
Location: U.K.: Lake District (Vicinity of Cockermouth and Keswick)  
N=: 1,596 (794 in 1973, 775 in 1977/1978)  
Noise data: No (Information was only presented on numbers of vehicles.)  
Reference: Prescott-Clarke 1974;Prescott-Clarke 1977;Prescott-Clarke 1979;Prescott-Clarke 1980  
Notes: Different samples of residents were interviewed in 1973 (construction started in 1974) and in 1977 and 1978 shortly after construction was completed. The changes in the road were seen as improvements by both residents and visitors.
- UKD-268 TRRL Multiple-Site Road Traffic Flow Change Study (Residents)  
Date: 1975-1976 for at least some sites (Tring: June 1975, September 1975, around December 1976; Mere: May 1976, September 1976; Boughton, Bridge, and Dunkirk: 1976)  
Source: Road traffic  
Location: U.K.: Tring, Mere, Bridge, Lewes, East Grinstead,

## SURVEY DESCRIPTION (Continued)

- Ludlow, Leeds (2 locations), Boughton (Only surveyed after change)  
 N=: At least 832 interviews from at least 582 respondents. (Tring: 132 before change, 126 after change; Mere: 137 before, 123 after; Boughton: 165 after; Dunkirk 28 after; Bridge 113 [before and after combined];)  
 Noise data: Yes  
 Reference: Griffiths and Raw 1989;Langdon and Griffiths 1982;Mackie and Davies 1981;Mackie and Forster 1978;Mackie and Griffin 1977;Mackie and Griffin 1978b;Mackie and Griffin 1978a  
 Notes: At most study sites, residents were interviewed both before and after road traffic flows changed. Traffic was reduced at most sites by new bypasses. In Leeds, however, a lorry control scheme decreased noise levels at one site and increased noise at another. Five sites were reinterviewed 6 to 7 years later in another study (UKD-298).
- UKD-270 1983 English Road Traffic Vibration Survey  
 Date: 1983 (April)  
 Source: Road traffic  
 Location: U.K.: Southern England  
 N=: 1,625 over 50 sites  
 Noise data: Yes: noise and vibration data  
 Reference: Watts 1984;Watts 1985;Watts 1987  
 Notes: Measured noise levels are analyzed with respect to vibration annoyance. It was not possible to determine whether measured vibration levels are significantly related to vibration annoyance. Noise was more annoying than vibration at all surveyed sites.
- UKD-277 TRRL Four-Road Laboratory/Field Comparison Study  
 Date: 1980 Publication (Survey date not reported)  
 Source: Road traffic  
 Location: U.K.: Four roads in Berkshire and Surrey  
 N=: 173  
 Noise data: Yes  
 Reference: Rosman 1980  
 Notes: Respondents were recruited for a related laboratory study. After arriving at the laboratory they answered a self-administered questionnaire about their living experiences at home on their own road. They also rated the other roads during a visual and auditory presentation in the laboratory. Laboratory assessments were not affected by the subject's own home environment. The laboratory assessments were not substitutes for home assessments.
- UKD-284 1983 English 11-Site Gypsy Traffic Noise Survey  
 Date: 1983 (February, March)  
 Source: Road traffic  
 Location: U.K.:11 temporary gypsy camp sites in Surrey  
 N=: 149  
 Noise data: Yes  
 Reference: Griffiths, Raw, Hill, and Storrar 1985;Surrey County Council 1983  
 Notes: These gypsies lived in mobile homes and were not permanently settled at the sites. They reported less noise annoyance with the same noise exposure than had a stable population in a previous survey (UKD-157).
- UKD-296 1985 Great Britain Neighborhood Noise Survey  
 Date: 1985 (November)  
 Source: Community (especially noise from neighbors)  
 Location: U.K.: Representative probability sample  
 N=: 4,886 structured interviews (31 semi-structured, follow-up interviews)  
 Noise data: No  
 Reference: Utley and Keighley 1988  
 Notes: Noise from neighbors and other people nearby was the most widespread source of noise disturbance (i.e., even more annoying than traffic noise). Noise disturbance was measured on few questions included in a multi-purpose, national omnibus opinion survey.
- UKD-297 1985 Follow-up of 1983 New Road Opening Survey  
 Date: 1985 (March, April)  
 Source: Road traffic  
 Location: U.K.: Coggeshall, Ampthill, Beccles  
 N=: 90  
 Noise data: Yes  
 Reference: Griffiths and Raw 1989  
 Notes: Respondents had previously been interviewed before the reduction in noise environment and at two to three months after the change in noise environment (UKD-237). In the present survey, 17-22 months after the change, annoyance was still higher than predicted from some other surveys.
- UKD-298 1985 Follow-up of TRRL Multiple-Site Traffic Flow Change Study  
 Date: 1985  
 Source: Road traffic  
 Location: U.K.: Boughton, Bridge, Mere, Lewes, East Grinstead  
 N=: 430  
 Noise data: Yes  
 Reference: Griffiths and Raw 1989  
 Notes: After a gap of from seven to nine years, interviews were repeated in five of a previous survey's study areas both before and after changes in traffic noise

## SURVEY DESCRIPTION (Continued)

- environments (UKD-268). New residents are more annoyed than those who experienced the change.
- UKD-305** 1980-83 Noise Sensitivity Follow-up Survey  
 Date: 1980 (July-September), 1983 (November, December)  
 Source: Aircraft noise  
 Location: U.K.: West London areas near Heathrow airport  
 N=: 137 (77 respondents, 60 reinterviewed in 1983)  
 Noise data: Yes  
 Reference: Stansfeld 1983;Stansfeld 1988;Stansfeld 1992;Stansfeld, Clark, Jenkins, and Tarnopolsky 1985a;Stansfeld, Clark, Jenkins, and Tarnopolsky 1985b  
 Notes: A total of 77 women participants in a 1977 Heathrow survey (UKD-148) were interviewed in 1980. In 1983, 60 of the participants completed an additional self-administered questionnaire and provided psychological and physiological data. Some differences were found between high and low noise-sensitive subjects.
- UKD-309** 1977 Hamble Airfield Survey  
 Date: 1977 (October) to 1978 (January)  
 Source: Aircraft  
 Location: U.K.: Hamble  
 N=: 445 (probability sample within 3 miles of airport)  
 Noise data: Yes  
 Reference: Directorate of Operational Research and Analysis 1982a;Stowell and Makinson 1979  
 Notes: The airfield is almost entirely a training center for single and twin-piston engine aircraft. Annoyance is not related to 12-hour NNI. Most respondents were below 35 NNI. The amount of annoyance was similar to that below 35 NNI around London Heathrow airport.
- UKD-324** 1986 English General Aviation Survey  
 Date: 1986 (July to September)  
 Source: Aircraft  
 Location: U.K.: Wycombe, Elstree, Shoreham, Southampton, Biggin Hill  
 N=: 390  
 Noise data: Yes  
 Reference: Atkinson, Critchley, and Devine 1988;Diamond, Ollerhead, Bradshaw, Walker, and Critchley 1988;Diamond, Walker, Ollerhead, Critchley, and Bradshaw 1987  
 Notes: Some evidence suggests that general aviation noise is more annoying than scheduled air traffic noise.
- UKD-325** 1989-91 TRL 15-Site Traffic Change Study  
 Date: 1989 (February) to 1991 (January)
- Source: Road traffic  
 Location: U.K.  
 N=: 1,407  
 Noise data: Yes  
 Reference: Baughan and Huddart 1992;Baughan and Huddart 1993  
 Notes: Noise reactions were different from those found for steady-state conditions in another study (UKD-351).
- UKD-339** 1991 United Kingdom Four-Airport Sleep Survey  
 Date: 1991 (March to August)  
 Source: Aircraft  
 Location: U.K.  
 N=: 1,636  
 Noise data: Yes  
 Reference: Diamond, Reyner, Horne, and Brooks 2000;Jones and Ollerhead 1992;Ollerhead *et al.* 1992;Ollerhead and Diamond 1993;Ollerhead and Jones 1993;Pearsons, Tabachnick, and Fidell 2000;Porter, Kershaw, and Ollerhead 2000;Robertson, Flindell, Jiggins, Wright, and Turner 2000  
 Notes: This social survey was part of a more extensive series of nightly observation of indicators of sleep disturbance patterns.
- UKD-347** 1990 Manchester Airport Sleep Survey  
 Date: 1990 (May)  
 Source: Aircraft  
 Location: U.K.: 9 communities around Manchester Airport  
 N=: 900 households  
 Noise data: Yes  
 Reference: Hume and Thomas 1993  
 Notes: Responses were gathered using a computer-aided telephone interview.
- UKD-351** 1988 TRL 35-Site Traffic Noise Survey  
 Date: 1988 (October to December)  
 Source: Road traffic  
 Location: U.K.  
 N=: 1,646  
 Noise data: Yes  
 Reference: Baughan and Huddart 1992;Baughan and Huddart 1993;Huddart and Baughan 1993  
 Notes: This study's results provide a steady-state baseline for comparisons to changing noise environments in another study (UKD-325).
- UKD-355** 1990 East London Docklands Light Rail Survey  
 Date: 1990  
 Source: Light railway  
 Location: U.K.: East London  
 N=: 149



## SURVEY DESCRIPTION (Continued)

- Noise data: Yes  
 Reference: Shield 1992;Shield and Zhukov 1992;Shield and Zhukov 1993  
 Notes: Mail questionnaires were used at 16 sites. The effect of low frequency noise is investigated.
- UKD-422 1997 English Residential Soundproofing Survey  
 Date: 1997 (July, August)  
 Source: Interior (neighbors in flats)  
 Location: U.K.: many areas in England  
 N=: 147 (approximately 200 conducted, but only 147 analyzed due to uncertainty about insulation conditions)  
 Noise data: Yes: sound insulation information  
 Reference: Grimwood and Tinsdeall 1998  
 Notes: The study concluded that residents do not rate the noise insulation properties of their dwellings directly, but rather base their subjective impressions on the noises heard.
- UKD-423 1991 England/Wales Environmental Noise Survey  
 Date: 1991 (November)  
 Source: Many types of environmental noises  
 Location: U.K.: England and Wales  
 N=: 2,373  
 Noise data: No  
 Reference: Grimwood 1993;Grimwood, Ling, and Wright 1998  
 Notes: Respondents from a representative sample were asked about many noise sources. No noise information is available.
- UKD-424 1999 Bristol Community Noise Survey  
 Date: 1999 (July, August)  
 Source: Many community noise sources  
 Location: U.K.: Bristol  
 N=: 543  
 Noise data: No noise data described  
 Reference: Diamond *et al.* 2000;Hayward 1999;Smith, Hayward, and Rich 2000;Smith and Rich 2000  
 Notes: The study investigates relationships between noise exposure, noise sensitivity, noise disturbed sleep, and health using a postal survey. A second phase survey was conducted in 2000 but a report had not been issued by the end of 2000.
- UKD-425 1990s UK Road Resurfacing Survey  
 Date: 1994 (June), 1995 (June), 1998 (June) ( road resurfacing between first two surveys)  
 Source: Motorway traffic  
 Location: U.K.: 4 rural villages  
 N=: 728 interviews from 182 respondents over three survey years  
 Noise data: Yes
- Reference: Baughan, Chinn, Harris, and Stait 2000  
 Notes: The study examined the effect of resurfacing with porous asphalt on road traffic noise levels and on residents' perceptions of those noise levels.
- UKD-426 UK Road Traffic and Ischemic Heart Disease Study  
 Date: 1984 - 1988 (Caerphilly), 1982 - 85 (Speedwell)  
 Source: Road traffic  
 Location: U.K.: Caerphilly(South Wales) and Speedwell (England)  
 N=: 3,997,(3,930 with complete information) Analyses for 3,930 men for whom complete information was available.  
 Noise data: Yes  
 Reference: Babisch, Ising, Elwood, Sharp, and Bainton 1993;Babisch, Ising, and Gallacher 2000;Babisch, Ising, Gallacher, Sweetnam, and Elwood 1998;Babisch, Ising, Gallacher, Sweetnam, and Elwood 1999;Stansfeld, Gallacher, Babisch, and Elwood 1993;Stansfeld, Gallacher, Babisch, and Shipley 1996;Stansfeld, Gallacher, Sharp, and Babisch 1993  
 Notes: The primary objective is to study the relationship between road traffic noise and Ischemic heart disease in men more than 45 years of age. In the second phase of the study, face-to-face interviews were administered when men came to a clinic.
- UKD-427 1996-97 Heathrow Area Children Noise Survey  
 Date: 1996 ( baseline), 1997 (follow-up)  
 Source: Aircraft, limited information on other sources  
 Location: U.K.: 8 primary schools near London Heathrow Airport  
 N=: 615 from 340 children(340 primary school children in 1996: 275 were surveyed again in 1997)  
 Noise data: Yes  
 Reference: Haines and Stansfeld 2000;Haines, Stansfeld, Job, and Berglund 1998  
 Notes: School children provided information about their annoyance in their homes. The questions were read to the children as a class group. Of the 340 children surveyed in 1996, 275 were surveyed again in 1997.
- UKD-436 London/Birmingham Converted Flats Survey  
 Date: 1991 Publication (Survey date not reported)  
 Source: Interior noise, Exterior noise (limited information)  
 Location: U.K.: London, Birmingham  
 N=: 422 (additional interviews were obtained from 197 neighbors living above respondents) and 181 neighbors living below respondents)  
 Noise data: Noise measurements were being made at the time of the 1991 publication

## SURVEY DESCRIPTION (Continued)

- Reference: Raw and Oseland 1991  
 Notes: The study was conducted to determine what factors influence response to noise in houses converted to flats. About 50 percent of the respondents felt that the sound insulation between flats was poor.
- UKD-481 UK 30-Site Noise Insulation Treatment Evaluation Survey  
 Date: 1983 Publication (Survey date not reported)  
 Source: Road traffic  
 Location: U.K.: 30 sites in 10 cities  
 N=: 882  
 Noise data: Yes: measures of both exterior exposures and attenuation  
 Reference: Sargent 1984; Utley, Buller, Keighley, and Sargent 1986; Utley, Keighley, and Sargent 1983  
 Notes: Respondents gave their opinions about the sound insulation package that had been installed in their homes. Only about 8 percent reported that the sound insulation package as a whole was unsatisfactory, but many more disliked the ventilator part of the package. A separate pilot study was conducted with 94 respondents at three sites.
- UKD-482 1999-2000 UK 5-Airport Night Noise Perception Survey  
 Date: 1999 (November) - 2000 (January plus a few outside this period)  
 Source: Aircraft  
 Location: U.K.: 20 sites at 5 airports (Heathrow, East Midlands, Gatwick, Manchester, Stansted)  
 N=: 1,531  
 Noise data: No  
 Reference: Diamond *et al.* 2000; Diamond, Smith, Hayward, Heatherley, and Sheppard 2000  
 Notes: The study was designed to identify the nature and extent to which residents perceive their lives are impacted by noise at night. This is a face-to-face interview survey, but a related mail survey was also conducted (UKD-489).
- UKD-483 1999 Manchester Nighttime Aircraft Noise Trial Methodology Study  
 Date: 1999 (September)  
 Source: Aircraft  
 Location: U.K.: Manchester airport  
 N=: 18 respondents on several nights (9 respondents each from high and low noise areas)  
 Noise data: Yes: inside and outside  
 Reference: Flindell *et al.* 2000; Robertson, Flindell, Jiggins, Wright, and Turner 2000  
 Notes: This trial study was conducted for planning another study (UKD-339). The study tested alternative methods for measuring the effects of aircraft noise during sleeping periods. Subjects were instrumented each night and then slept at their home. Awakenings were measured with instruments and with a questionnaire completed the next morning.
- UKD-484 1992-94 Great Britain Insulation Complaint Survey  
 Date: 1992 (April) to 1994 (March)  
 Source: Neighbors, Any interior sounds from outside a flat  
 Location: U.K.: England and Wales  
 N=: 80 (one occupant and one neighbor for each of 40 flats)  
 Noise data: Yes  
 Reference: Grimwood 1997  
 Notes: Residents who had earlier complained to authorities about noise were interviewed. Many complainants live in dwellings with insulation below the generally accepted standard, but some are dissatisfied even when the noise insulation standards were met. In some cases this is due to types of noise that are not controlled by regulations.
- UKD-489 1999-2000 UK 4-Airport Night Noise Mail Survey  
 Date: 1999 (November, December) - 2000 (primarily in January)  
 Source: Aircraft  
 Location: U.K.: 19 sites at 4 airports (Heathrow, East Midlands, Manchester, Coventry)  
 N=: 672  
 Noise data: No  
 Reference: Diamond *et al.* 2000; Diamond, Smith, Hayward, Heatherley, and Sheppard 2000  
 Notes: A postal questionnaire was followed by two followup mailings. A related face-to-face survey was also conducted (UKD448).
- UKD-512 Student Noise Attitudes Study (Britain)  
 Date: 1980 or/and 1981  
 Source: Sounds from neighbors  
 Location: U.K.  
 N=: 110  
 Noise data: No  
 Reference: Florentine, Namba, and Kuwano 1986; Namba and Kuwano 1986; Namba, Kuwano, and Schick 1986; Thomas, Namba, Schick, and Kuwano 1983  
 Notes: University students answered this written questionnaire's general statements about neighbors' noise without direct reference to their present residence. There are some differences between perceptions and attitudes toward neighbors' noise in England, Germany and Japan. The

## SURVEY DESCRIPTION (Continued)

questionnaire is nearly identical to questionnaires administered in Japan (JPN-510), Germany (GER-511), China (CHI-514), and the United States (USA-513).

USA-004 1953 USA Eight-Airport Noise Survey

Date: 1953 (Spring and Fall)  
 Source: Aircraft  
 Location: U.S.A.: Eight airports in 7 cities (Atlanta, Chicago, Memphis, Miami, Minneapolis, Philadelphia, St. Louis, Idlewild (New York), La Guardia (New York))  
 N=: 3,635  
 Noise data: Yes  
 Reference: Borsky 1954;Borsky 1961a  
 Notes: Fear and aircraft noise annoyance are related.

USA-006 1957 USA Air Force Base Noise Survey

Date: 1957 (May to July), (Pilot in June, July 1956)  
 Source: Aircraft  
 Location: U.S.A.: One East coast and one West coast Tactical Air Command Base (Also a pilot study at a West coast Strategic Air Command base)  
 N=: 1,598 in main study, (732 in pilot study)  
 Noise data: Yes  
 Reference: Borsky 1961a;Borsky 1961b  
 Notes: This is one of the first studies of reactions to jet aircraft noise. Annoyance is increased by fear of aircraft crashes. One report presents results from several rounds of preliminary unstructured interviews (Borsky, 1961a).

USA-007 1961 St Louis Sonic Boom Study

Date: 1961 (November, December), 1962 (January)  
 Source: Sonic booms from military aircraft  
 Location: U.S.A.: St. Louis Area  
 N=: Approximately 2,200 interviews from approximately 1,157 respondents  
 Noise data: No  
 Reference: Borsky 1962;Nixon and Borsky 1966;Nixon and Hubbard 1965  
 Notes: A total of 1,043 respondents were reinterviewed. Both telephone and face-to-face interviews were used for the reinterview. Some interviews were carried out to test for reinterviewing effects and to test for differences between face-to-face and telephone interviewing.

USA-012 1964 Oklahoma City Sonic Boom Study

Date: 1964  
 Source: Sonic booms from military aircraft  
 Location: U.S.A.: Oklahoma City area  
 N=: 8,997 interviews from approximately 3,200 respondents

Noise data: No  
 Reference: Borsky 1965;Hilton, Huckel, Steiner, and Maglieri 1964;Maglieri and Sothcott 1990  
 Notes: Most original respondents were reinterviewed twice by telephone. Some interviews were conducted to test for reinterviewing effects and to test for differences between telephone and face-to-face interviews. Some changes occurred in the questionnaire between waves.

USA-020 1966 USA Three-City Community Noise Study

Date: 1966  
 Source: Community, Road traffic  
 Location: U.S.A.: Los Angeles, Boston, New York  
 N=: 259  
 Noise data: No  
 Reference: Bolt Beranek and Newman 1967  
 Notes: None

USA-022 1967 USA Four-Airport Survey (Phase I Tracor Survey)

Date: 1967 (May to August)  
 Source: Aircraft  
 Location: U.S.A.: 4 airports; Chicago, Dallas, Denver, Los Angeles  
 N=: 3,590  
 Noise data: Yes  
 Reference: Connor 1968;Connor and Patterson 1972;Connor and Patterson 1976;Fidell, Barber, and Schultz 1991;Hazard 1968;Hazard 1971;Patterson 1975;Patterson and Connor 1973;Schultz 1978;Tracor Inc 1971  
 Notes: This is the first of three surveys (USA-044, USA-032). This first survey's questionnaire differed substantially from the other two.

USA-023 1967-68 SR-71 Supersonic Aircraft Noise Study

Date: 1967-1968  
 Source: Sonic booms  
 Location: U.S.A.: Six metropolitan areas; Atlanta, Chicago Dallas, Denver, Los Angeles, Minneapolis  
 N=: 6,375 interviews (Some respondents were interviewed more than once.)  
 Noise data: No  
 Reference: Tracor Inc 1970  
 Notes: Some interviews were held before, during and after the supersonic overflights. The questionnaire was altered between interview phases. The study includes a subsample of complainants.

USA-027 1968 LAX Aircraft Noise Study

Date: 1968 (October)  
 Source: Aircraft  
 Location: U.S.A.: Los Angeles International Airport

## SURVEY DESCRIPTION (Continued)

- N=: 200  
 Noise data: No  
 Reference: Zamarin, Langdon, and Gabriel 1971  
 Notes: This was a qualitative planning study for the 1969 LAX study (USA-031).
- USA-031 1969 LAX Aircraft Noise Study  
 Date: 1969 (Autumn)  
 Source: Aircraft  
 Location: U.S.A.: Los Angeles International Airport  
 N=: 500  
 Noise data: No  
 Reference: Burrows and Zamarin 1972;Zamarin, Langdon, and Gabriel 1971  
 Notes: None
- USA-032 1969 USA Three-Airport Survey (Phase II Tracor Survey)  
 Date: 1969 (July to November)  
 Source: Aircraft  
 Location: U.S.A.: Three Airports; Boston, Miami, New York  
 N=: 2,912  
 Noise data: Yes  
 Reference: Connor and Patterson 1972;Connor and Patterson 1976;Edmiston 1972;Fidell, Barber, and Schultz 1991;Hazard 1971;Patterson 1975;Patterson and Connor 1973;Schultz 1978;Tracor Inc 1971  
 Notes: This is the second of a series of three surveys (USA-022, USA-044). The interview is almost identical to the third survey's interview (USA-044).
- USA-039 1969-70 San Francisco Three-Street Pilot Study  
 Date: 1969-1970  
 Source: Community  
 Location: U.S.A.: San Francisco  
 N=: 36  
 Noise data: Yes  
 Reference: Appleyard and Lintell 1972  
 Notes: This study explores a wide range of reactions and behavior associated with many aspects of traffic (including noise).
- USA-040 1969 Inglewood Community Noise Survey  
 Date: 1969 (December)  
 Source: Community  
 Location: U.S.A.: Inglewood (California)  
 N=: 13,000  
 Noise data: Yes for aircraft  
 Reference: Toward... 1972  
 Notes: The study is briefly described on pages 105 and 106 in the publication.
- USA-043 Los Angeles Freeway Five-Site Study  
 Date: 1969 Publication (Survey date not reported)
- Source: Freeway traffic  
 Location: U.S.A.: Los Angeles  
 N=: 325 (Five study sites)  
 Noise data: Yes  
 Reference: Galloway, Clark, and Kerrick 1969  
 Notes: The relationship between noise level and annoyance was very weak but statistically significant.
- USA-044 1970 USA Small City Airports (Small City Tracor survey)  
 Date: 1970 (October) to 1971 (January)  
 Source: Aircraft  
 Location: U.S.A.: Two airports; Chattanooga, Reno  
 N=: 1,,960  
 Noise data: Yes  
 Reference: Connor and Patterson 1972;Connor and Patterson 1976;Fidell, Barber, and Schultz 1991;Patterson 1975;Patterson and Connor 1973;Schultz 1978  
 Notes: This is the third of a series of three surveys (USA-022, USA-032). The interview is almost identical to the second survey's interview (USA-032).
- USA-047 1970 Minneapolis Freeway Noise Study  
 Date: 1970 (July, August)  
 Source: Expressway traffic  
 Location: U.S.A.: Interstate Highway I35W in Minneapolis, Minnesota  
 N=: 148  
 Noise data: No  
 Reference: Bouchard 1970;Lambert 1971;Minnesota Dept.of Transportation 1971  
 Notes: The 1972 Minneapolis Freeway Noise Barrier Study (USA-069) was also conducted in this area.
- USA-048 1970 C.R.P. Inglewood Community Noise Survey  
 Date: 1970 (January)  
 Source: Aircraft, Community  
 Location: U.S.A.: Inglewood (California)  
 N=: 5,500  
 Noise data: Yes  
 Reference: Toward... 1972  
 Notes: A mailed survey was used (13% response rate).
- USA-049 1970 Cedar Rock Drive Neighborhood Noise Investigation  
 Date: 1970  
 Source: Manufacturing plan  
 Location: U.S.A.: one neighborhood in Pickens, South Carolina  
 N=: 17  
 Noise data: Yes  
 Reference: Hart, Reiter, and Royster 1972  
 Notes: Two of the 17 respondents were in business

## SURVEY DESCRIPTION (Continued)

establishments. Only one question was asked of each person. The study was used in a court case.

Date: 1972 (November)

Source: Aircraft

Location: U.S.A.: Portland, Oregon

N=: 303

Noise data: No

Reference: Yaden and West 1972

Notes: None

USA-051 1971 J.F.K. Dynamic Preferential Runway System Survey

Date: 1971 (August, September)

Source: Aircraft

Location: U.S.A.: John F. Kennedy Airport (New York)

N=: 441

Noise data: No

Reference: Patterson, Edmiston, and Connor 1972

Notes: Study areas were chosen to provide a closely comparable sample to that from the 1969 Tracor study (USA-032) to study changes in reactions due to a new dynamic preferential runway system at J.F.K. The two-month trial period was too short a time for an adequate evaluation.

USA-066 1972 BART Residential Impact Survey

Date: 1972

Source: Suburban railway system (Bay Area Rapid Transit system)

Location: U.S.A.: San Francisco area

N=: 2,541

Noise data: No

Reference: Appleyard and Carp 1973;Carp and Carp 1982a;Carp and Carp 1982c;Carp and Carp 1982b;Carp, Zawadski, and Shokron 1976

Notes: The survey is part of a larger, multi-sample assessment project. Trains were running on a trial basis before the Bay Area Rapid Transit system (BART) opened to passengers. Noise annoyance is less for older respondents.

USA-057 USA Vehicle Noise Situation Survey

Date: 1971 Publication (Survey date not reported)

Source: Road traffic

Location: U.S.A.: Boston, Los Angeles, Detroit

N=: 1,201 (60 sites)

Noise data: Yes (for 20 sites)

Reference: Bolt Beranek and Newman 1971a;Bolt Beranek and Newman 1971b;Franken 1971;Jones 1971

Notes: These telephone interviews followed a loosely structured, conversational format. The survey explored the "vehicle noise situations that annoyed" respondents.

USA-067 1972 Boulder Community Noise Survey

Date: 1972 (March, April)

Source: Community

Location: U.S.A.: Boulder, Colorado

N=: 917

Noise data: No

Reference: Chanaud 1972

Notes: Motorcycles, road traffic, and barking dogs are the most important noise problems.

USA-058 Philadelphia Community Noise Survey

Date: 1969 Publication (Survey date not reported)

Source: Community

Location: U.S.A.: Philadelphia

N=: 500

Noise data: No

Reference: Bragdon 1969;Bragdon 1971

Notes: Length of residence does not affect annoyance.

USA-068 1972 College Park Community Noise Survey

Date: 1972

Source: Community

Location: U.S.A.: College Park (Georgia)

N=: 280

Noise data: Yes

Reference: Lambert *et al.* 1973

Notes: Annoyance is not correlated with noise level.

USA-059 1972 J.F.K. Airport Noise Survey

Date: 1972 (February, March, August, October)

Source: Aircraft

Location: U.S.A.: John F. Kennedy airport (New York)

N=: 2,930 interviews from 1465 respondents

Noise data: Yes

Reference: Borsky 1974b;Borsky 1975;Borsky 1976a;Borsky 1976b;Borsky and Leonard 1973;Leonard and Borsky 1973

Notes: The initial face-to-face interviews were followed by repeated interviews by telephone.

USA-069 1972 Minneapolis Freeway Noise Barrier Study

Date: 1972 (June to August), 1973 (July, August)

Source: Expressway traffic

Location: U.S.A.: Interstate Highway I-35W at Minnehaha Creek in Minneapolis, Minnesota

N=: 272 interviews (from about 205 respondents)

Noise data: Yes (for the first three rows of houses)

Reference: Lambert 1978;Lambert and Bouchard 1974

Notes: Residents were interviewed before and about seven months after a barrier was installed. The barrier reduced noise levels and annoyance. An earlier

USA-060 1972 Portland Northshore Aircraft Survey

## SURVEY DESCRIPTION (Continued)

study (USA-047) had been conducted in the same area.

USA-070 1972 Eastern USA Four-Community Highway Noise Survey

Date: 1972  
 Source: Freeway traffic  
 Location: U.S.A.: Four communities (Bogota (New Jersey), Towson (Maryland), North Springfield (Virginia), Rosedale (Maryland))  
 N=: 1,114  
 Noise data: Yes  
 Reference: Gamble, Langley, Pashek, Sauerlender, and Twark 1973;Gamble, Sauerlender, and Langley 1974;Humphrey 1973  
 Notes: The study examined both positive and negative effects of highways (including noise) on property values.

USA-081 Boulder Newspaper Community Noise Survey

Date: 1972 Publication (Survey date not reported)  
 Source: Community  
 Location: U.S.A.: Boulder (Colorado)  
 N=: 215  
 Noise data: No  
 Reference: Chanaud 1972  
 Notes: Readers selected themselves by mailing in a form printed in the Boulder Camera newspaper. Motorcycles, road traffic and barking dogs were the most significant noise problems.

USA-082 1973 Los Angeles Airport Night Study

Date: 1973 (April to June)  
 Source: Aircraft  
 Location: U.S.A.: Los Angeles International Airport  
 N=: 1,417 interviews, from 940 respondents  
 Noise data: Yes  
 Reference: Fidell, Barber, and Schultz 1991;Fidell and Jones 1975;Schultz 1978  
 Notes: Telephone interviews were conducted once before and twice after late night flights were reduced. Interviews were conducted in both English and Spanish. Annoyance was not reduced by the reduction in nighttime noise exposure.

USA-083 1973 LAX Airport Noise Study

Date: 1973 (December)  
 Source: Aircraft  
 Location: U.S.A.: Los Angeles International Airport  
 N=: 880  
 Noise data: No  
 Reference: Olson Laboratories 1976;Opinion Research of California 1975  
 Notes: None

USA-084 1973 J.F.K. Airport Noise Study

Date: 1973 (Autumn)  
 Source: Aircraft  
 Location: U.S.A.: John F. Kennedy Airport in New York City  
 N=: 1,059  
 Noise data: No  
 Reference: Borsky 1974a  
 Notes: The primary purpose of the field survey was to recruit laboratory subjects.

USA-085 1973 Seattle-Tacoma Airport Noise Study

Date: 1973 (May to July)  
 Source: Aircraft  
 Location: U.S.A.: Seattle-Tacoma International Airport (three community areas)  
 N=: 716  
 Noise data: Yes  
 Reference: Fiedler and Fiedler 1974;Fiedler and Fiedler 1975;Hughes and Mabry 1976  
 Notes: About half of the respondents (those in a control group) were interviewed by telephone. The number of open windows and presence of outdoor equipment were similar in high aircraft noise and other areas. Two of the three study areas were far from the airport and served as control groups.

USA-088 1973 U.S.C. Los Angeles Freeway Noise Study

Date: 1973 (July) to 1974 (January)  
 Source: Freeway traffic  
 Location: U.S.A.: Los Angeles  
 N=: 696 from main sample (An additional 59 interviews from new freeway sites were not analyzed.)  
 Noise data: Yes  
 Reference: Jenkins, Pahl, Carroll, Alyassini, and Heller 1974;Jenkins and Pahl 1975;Small and Jenkins 1982;Small, Jenkins, and Carroll 1976;Small, Jenkins, and Pahl 1974  
 Notes: Subjective feelings about noise are more closely correlated with response to noise than behavioral measures. Residents are annoyed by freeway noise even if they do not report activity interference.

USA-089 1973 Portland-Multnomah Community Noise Survey

Date: 1973 (September to November)  
 Source: Community  
 Location: U.S.A.: City of Portland and Multnomah County (Oregon)  
 N=: 59  
 Noise data: No  
 Reference: MAN-Acoustics and Noise 1975  
 Notes: Motor vehicle noise is the largest contributor to

## SURVEY DESCRIPTION (Continued)

- noise annoyance.
- USA-090 1973 E.P.A. Community Noise Questionnaire Pilot Study  
 Date: 1973  
 Source: Community, Aircraft  
 Location: U.S.A.: Los Angeles, New York  
 N=: 179  
 Noise data: Yes  
 Reference: Sutherland, Braden, and Colman 1973  
 Notes: The study was carried out in four diverse types of areas to test an interview intended for general use by the U.S. Environmental Protection Agency.
- USA-091 1973 Test of Real-Time Personal Annoyance Monitoring Devices  
 Date: 1973  
 Source: Community, Aircraft  
 Location: U.S.A.: Los Angeles  
 N=: 11  
 Noise data: Yes  
 Reference: Fidell, Jones, and Pearsons 1973  
 Notes: The primary data consisted of time-coded ratings of individual noise events that respondents sent using a wrist-worn F.M. transmitter. A summary questionnaire was also used. Some subjects also described each noise event using a portable microphone. The participants produced data that were consistent with detailed analyses.
- USA-095 U.S. Census Bureau Annual Housing Surveys  
 Date: 1976, 1977, 1979, 1981 1983  
 Source: Community, Aircraft  
 Location: U.S.A.: National sample and selected Standard Metropolitan Statistical Areas (SMSA)  
 N=: Approximately 70,000 national representative interviews per year and approximately 5,000 to 15,000 additional interviews in selected metropolitan areas.  
 Noise data: No  
 Reference: U.S. Department of Housing and Urban Development 1976  
 Notes: This national survey included two noise questions in 1976, 1977, 1979, 1981, and 1983. The noise question wordings were not the same each year. The national sample interviews were repeated in the same housing units each year.
- USA-096 1974 Fort Campbell Area Helicopter Noise Survey  
 Date: 1974  
 Source: Helicopters  
 Location: U.S.A.: Near Fort Campbell in Kentucky and Tennessee  
 N=: 213
- Noise data: No (Some helicopter noise levels were measured but not analyzed in publications.)  
 Reference: Broderon and Edwards 1976  
 Notes: The study evaluated proposed low-altitude flights for 2,500 square miles surrounding Fort Campbell.
- USA-102 1974 USA 24-Site Community Noise Survey  
 Date: 1974 (Spring)  
 Source: Community noise (neighborhood as well as road traffic)  
 Location: U.S.A.: 24 sites in seven cities  
 N=: 2,037  
 Noise data: Yes  
 Reference: Fidell 1977;Fidell 1978;Fidell, Barber, and Schultz 1991;Galloway 1977;Schultz 1978;Simpson, Pearsons, Fidell, and Muehlenbeck 1974  
 Notes: Interviews were conducted by telephone for 1834 respondents and in person for 203 respondents.
- USA-103 1974 Capital Beltway Survey  
 Date: 1974  
 Source: Freeway traffic  
 Location: U.S.A.: Suburb of Washington, D.C.  
 N=: 149  
 Noise data: No  
 Reference: Humphrey, Bradshaw, and Krout 1978  
 Notes: None
- USA-104 1974 Boston Economic Impact Pretest  
 Date: 1974  
 Source: Road traffic  
 Location: U.S.A.: Boston Metropolitan Area  
 N=: 60  
 Noise data: No  
 Reference: Thorpe and Holmes 1976  
 Notes: The questionnaire was tested for inclusion in a large study of the economic welfare effects of noise.
- USA-105 1974 San Francisco Livable Streets Survey  
 Date: 1974 (June)  
 Source: Road traffic  
 Location: U.S.A.: San Francisco  
 N=: 450  
 Noise data: No  
 Reference: Appleyard, Gerson, and Lintell 1980  
 Notes: None
- USA-110 1975 J.F.K. Airport Noise Survey  
 Date: 1975 (Autumn)  
 Source: Aircraft  
 Location: U.S.A.: John F. Kennedy Airport (New York)  
 N=: 1,294  
 Noise data: No

## SURVEY DESCRIPTION (Continued)

- Reference: Borsky 1977  
Notes: Interviews were conducted to support a laboratory study program.
- USA-117 1975 Boulder Noise Survey  
Date: 1975 (Summer)  
Source: Community  
Location: U.S.A.: Boulder (Colorado)  
N=: 184  
Noise data: Yes  
Reference: Gourdin 1975  
Notes: Motorcycles, road traffic, and barking dogs were the most significant noise problems.
- USA-127 1976-77 Dulles Concorde Noise Study  
Date: 1976 (May, December), 1977 (May)  
Source: Aircraft  
Location: U.S.A.: Dulles International Airport (Washington, D.C.)  
N=: 5,291 spread over three waves  
Noise data: No (Four noise impacted areas were characterized with the verbal labels: "high, medium, low, non-impacted")  
Reference: Bremond 1979a; Committee on Community Reactions to Concorde 1977; Federal Aviation Administration 1977; Kirschner Associates 1976  
Notes: Telephone interviewing was conducted once before and twice after Concorde began operations.
- USA-128 1976 Orange County Airport Noise Survey  
Date: 1976  
Source: Aircraft  
Location: U.S.A.: Orange County (California)  
N=: 666  
Noise data: Yes  
Reference: POS Associates 1976  
Notes: The 1976 study was prepared for the Orange County Board of Supervisors. Some of the questionnaire was used in a later 1977 survey (USA-145).
- USA-129 Albany/Louisville Aircraft Fear Study  
Date: 1975 (November, December: Louisville), 1976 (June, July: Albany)  
Source: Aircraft  
Location: U.S.A.: Albany (New York) and Louisville (Kentucky)  
N=: 200  
Noise data: Yes  
Reference: Loeb and Moran 1977; Moran, Gunn, and Loeb 1981  
Notes: Respondents were interviewed after aircraft crashes in sites near and distant from the crashes in Albany (51 months after crash) and Louisville (six months after crash). Respondents near crashes were more fearful and more annoyed.
- USA-143 1977-78 Three-Phase J.F.K. Concorde Noise Study  
Date: 1977 (October, November), 1978 (May, June), 1978 (August, September)  
Source: Aircraft  
Location: U.S.A.: John F. Kennedy Airport (New York)  
N=: 5,404 interviews from approximately 2,400 people  
Noise data: Yes  
Reference: Borsky 1978  
Notes: Respondents were less annoyed during the one winter interview than during the two summer interviews. "No substantial differences" were found between those reinterviewed and 400 new respondents.
- USA-144 1977-78 F.A.A. J.F.K. Concorde Noise Study  
Date: 1977 (January to April), 1978 (January, February)  
Source: Aircraft  
Location: U.S.A.: John F. Kennedy Airport (New York)  
N=: 2,020  
Noise data: Yes  
Reference: Federal Aviation Administration 1979  
Notes: Telephone interviews were conducted nine months before and three months after Concorde began operations. Respondents disapproved of the decision to admit Concorde more before than after operations began.
- USA-145 1977 Orange County Airport Noise Study  
Date: 1977 (January)  
Source: Aircraft  
Location: U.S.A.: Orange County California  
N=: 400  
Noise data: Yes (for 200 respondents)  
Reference: Opinion Research of California 1977  
Notes: The study was prepared for the City of Newport Beach. Some of the interview was designed for comparison with a 1976 study (USA-128).
- USA-154 1977 Youngmann Highway Noise Abatement Study  
Date: 1977 (August)  
Source: Expressway traffic  
Location: U.S.A.: Interstate Highway (I-290) in Amherst (Buffalo), New York  
N=: 160  
Noise data: Yes  
Reference: McColl 1979  
Notes: Interviews were conducted before construction of a noise barrier. The major noise problems were in the first two rows of houses.



## SURVEY DESCRIPTION (Continued)

- USA-155 1977 Minnesota Five-Site Freeway Noise Barrier Study  
 Date: 1977-1978  
 Source: Freeway traffic  
 Location: U.S.A.: 19 study areas in the Minneapolis-St. Paul vicinity  
 N=: 756 questionnaires in the follow up survey, a smaller number in the original survey  
 Noise data: No  
 Reference: Minnesota Dept.of Transportation 1980;Orlich 1979  
 Notes: Respondents complete a mail questionnaire both before and after barrier installation in four areas and only after installation in 15 areas. The barriers were generally evaluated positively.
- USA-156 1977 Ohio New Highway Survey  
 Date: 1977 (three months before January 1978 opening), 1978 (June), 1979(June)  
 Source: Road traffic  
 Location: U.S.A.: Ohio (a two-mile section along a new motorway)  
 N=: 483 interviews (113 people interviewed three times), 163 before opening, 163 for first follow-up and 160 for second follow-up  
 Noise data: Yes: Noise data for after the highway opened.  
 Reference: Weinstein 1980;Weinstein 1982  
 Notes: Residents were interviewed 3 months before and 4 months and 16 months after a new highway opened. Residents did not adapt between the time of the 4-month and 16-month interviews. A separate study of public protest and home modifications was made at the last interview, but no references for this study are in the publications.
- USA-166 1978 Salt Lake Airport Noise Study  
 Date: 1978 (May)  
 Source: Aircraft  
 Location: U.S.A.: Salt Lake City (4 areas)  
 N=: 353  
 Noise data: Yes  
 Reference: Systems Control 1978  
 Notes: Interviews were conducted by telephone. This was an Aircraft Noise Control and Land Use Compatibility study.
- USA-167 1978-79 USA Helicopter Survey of Selected Occupations  
 Date: 1978 (November), 1979 (February)  
 Source: Helicopters  
 Location: U.S.A.  
 N=: 272  
 Noise data: No  
 Reference: Edwards, Broderson, Barbour, McCoy, and Johnson 1979;Edwards, Broderson, and Johnson 1980
- USA-170 1978 U.S. Army Impulse Noise Survey  
 Date: 1978 (July to September)  
 Source: Artillery, Helicopters  
 Location: U.S.A.: Vicinity of Ft. Bragg  
 N=: 2,147  
 Noise data: Yes  
 Reference: Schomer 1979;Schomer 1981a;Schomer 1981b;Schomer 1982;Schomer 1983b  
 Notes: None
- USA-171 1978 Spokane Community Noise Survey  
 Date: 1978 (Summer)  
 Source: Community  
 Location: U.S.A.: Spokane County  
 N=: 761  
 Noise data: No  
 Reference: Perdue 1979;Perdue and Coates 1979  
 Notes: The study is based on a probability sample. The survey showed support for a community noise control program. The interview was adapted from the questionnaire developed for the U.S. Environmental Protection Agency.
- USA-172 1978 Kentucky Urban Noise Survey  
 Date: 1978  
 Source: Community  
 Location: U.S.A.: Kentucky (20 sites)  
 N=: 845  
 Noise data: No (Respondents' exposures are not estimated from the collected noise data.)  
 Reference: Broderson, Edwards, and Hauser 1979;Broderson, Edwards, McCoy, and Coakley 1981  
 Notes: Self-administered questionnaires were used. Surface transportation was the most annoying noise source.
- USA-179 1979 Oklahoma City Airport Noise Survey  
 Date: 1979 (February)  
 Source: Aircraft  
 Location: U.S.A.: Seven areas near Will Rogers World Airport (Oklahoma City)  
 N=: 406  
 Noise data: Yes  
 Reference: Systems Control 1979

## SURVEY DESCRIPTION (Continued)

- Notes: Interviews were conducted by telephone. This was an Airport Noise Control and Land Use Compatibility study.
- USA-183 1979 Salt Lake City Community Noise Survey  
 Date: 1979 (July, August)  
 Source: Community  
 Location: U.S.A.: Probability sample of Salt Lake City  
 N=: 451  
 Noise data: No  
 Reference: Fricks 1980  
 Notes: The interview was adapted from the questionnaire developed for the U.S. Environmental Protection Agency.
- USA-186 1980 Bradley International Airport Noise Survey  
 Date: 1980 (February)  
 Source: Aircraft  
 Location: U.S.A.: Connecticut around Bradley Airport  
 N=: 343  
 Noise data: Yes  
 Reference: CH2M Hill 1980  
 Notes: Randomly selected respondents were interviewed by telephone. This was an Aircraft Noise Control and Land Use Compatibility study.
- USA-191 1979 Philadelphia Aircraft Noise Survey  
 Date: 1979 (November, December)  
 Source: Aircraft, Community  
 Location: U.S.A.: Philadelphia International Airport  
 N=: 1,723  
 Noise data: No  
 Reference: FAA 1980  
 Notes: Telephone interviews were conducted.
- USA-202 1978-79 Time-of-Day Study with Annoyance Recording Device  
 Date: 1978  
 Source: Aircraft  
 Location: U.S.A.: Burbank (California), Atlanta (Georgia)  
 N=: 46  
 Noise data: Yes  
 Reference: Horonjeff and Teffeteller 1980  
 Notes: Respondents were asked to push a personal, portable counter each time they were bothered by aircraft noise as they went about their normal daily activities. They were also asked to report counter totals on a postcard four times a day. Brief pre-study and post-study questionnaires were also completed.
- USA-203 1979 Burbank Aircraft Noise Change Study  
 Date: 1979 (August) to 1980 (December)  
 Source: Aircraft
- Location: U.S.A.: Four areas around an airport in Burbank, California  
 N=: 5,041 interviews from more than 1,000 people  
 Noise data: Yes  
 Reference: Fidell, Barber, and Schultz 1991;Fidell, Horonjeff, Mills, Baldwin, Teffeteller, and Pearsons 1985;Fidell, Horonjeff, Teffeteller, and Pearsons 1981;Fidell and Pearsons 1985b;Fidell and Pearsons 1985a;Griffiths and Raw 1985a;Griffiths and Raw 1985b;Raw and Griffiths 1985  
 Notes: Interviews were carried out in four neighborhoods at five times: once before closing one runway for repairs, three times during the period the runway was closed, and once after the runway was reopened. Both telephone and face-to-face interviews were used.
- USA-204 1981 John Wayne Airport Operation Change Study  
 Date: 1981 (September to November)  
 Source: Aircraft  
 Location: U.S.A.: John Wayne Airport at Santa Ana, California  
 N=: 3,105 interviews from more than 800 people  
 Noise data: Yes  
 Reference: Fidell, Barber, and Schultz 1991;Fidell, Horonjeff, Mills, Baldwin, Teffeteller, and Pearsons 1985;Fidell, Mills, Teffeteller, and Pearsons 1982  
 Notes: Four rounds of telephone interviews were conducted. The second, third, and fourth rounds were each conducted after the introduction of new flight departure procedures. Most respondents were interviewed for only one round. Neither exposure nor annoyance changed appreciably during the study.
- USA-205 1980 Bellevue Airport Noise Study  
 Date: 1980 (May)  
 Source: Aircraft  
 Location: U.S.A.: Bellevue, Washington Airport  
 N=: 27  
 Noise data: No  
 Reference: Mabry 1982  
 Notes: Telephone interviews were conducted. This small survey was part of a larger study of general aviation noise at four airports. The larger study primarily focused on complaint data.
- USA-206 1981 Alabama Three-Site Blast Noise Survey  
 Date: 1981 (February)  
 Source: Blasting (two surface coal mines and one quarry)  
 Location: U.S.A.: Communities around 3 blasting sites in Alabama  
 N=: 1,042  
 Noise data: Yes: noise and vibration data

## SURVEY DESCRIPTION (Continued)

- Reference: Bullen and Job 1985;Fidell and Horonjeff 1982;Fidell and Horonjeff 1985;Fidell, Horonjeff, Schultz, and Teffeteller 1982;Fidell, Horonjeff, Schultz, and Teffeteller 1983;Kessler 1985  
Notes: Interviews were conducted either face-to-face or by telephone. Annoyance was related to ground vibration levels. An unsuccessful attempt was made to measure annoyance with individual blasts using postcards.
- USA-207 1980 John Wayne Airport (Orange County) Survey  
Date: 1980 (March)  
Source: Aircraft  
Location: U.S.A.: Communities around John Wayne (Orange County) Airport  
N=: 310  
Noise data: Yes  
Reference: VTN Consolidated 1980  
Notes: Both telephone (240) and face-to-face interviews (71) were conducted with a random sample of residents. This was an Aircraft Noise Control and Land Use Compatibility study.
- USA-212 1972 Minneapolis St Paul Airport Development Survey  
Date: 1972 (July)  
Source: Aircraft  
Location: U.S.A.: Minneapolis-St. Paul Airport  
N=: 400  
Noise data: No (Areas were characterized as "high impact noise area" and "other".)  
Reference: Mid-Continent Surveys 1972  
Notes: Though there were some questions on noise, the main subject of the survey was attitudes toward airport development.
- USA-213 1973 Chicago Construction Site Survey  
Date: 1973 (June, July)  
Source: Construction  
Location: U.S.A.: 14 construction sites in the Chicago area  
N=: 128  
Noise data: Yes  
Reference: Newman 1973  
Notes: None
- USA-215 1974 Los Angeles International Aircraft Noise Survey  
Date: 1974 (Winter and Spring)  
Source: Aircraft  
Location: U.S.A.: Los Angeles International Airport  
N=: 164  
Noise data: Yes  
Reference: Gabriel, Langdon, Creamer, and Kushner 1981  
Notes: None
- USA-216 1978 Electrical Power Line and Transformer Noise Survey  
Date: 1978 (Spring)  
Source: Electrical transformers and transmission lines  
Location: U.S.A.: 17 sites in Southern California  
N=: 133  
Noise data: Yes  
Reference: Fidell, Teffeteller, and Pearsons 1979  
Notes: Transmission line noise is less acceptable than transformer noise of the same level.
- USA-217 1980 Aircraft Rating Diary (Pilot) Study  
Date: 1980 (August to October)  
Source: Aircraft  
Location: U.S.A.: Torrance Municipal Airport (California)  
N=: 18 subjects provided over 920 aircraft noise ratings  
Noise data: Yes  
Reference: Stearns, Brown, and Neiswander 1983  
Notes: A face-to-face interview was used to recruit residents. The study evaluated a method for rating individual aircraft noise events. Respondents kept a diary for five days by noting some information about every aircraft noise event that bothered them when they were at home. Both indoor and outdoor noise measurements were made.
- USA-219 1980 Salt Lake City In-Home Aircraft Rating Study  
Date: 1980 (Nov.)  
Source: Aircraft  
Location: U.S.A.: Salt Lake City Airport  
N=: 100 people provided 1164 ratings of individual aircraft flyovers  
Noise data: Yes for the individually rated noise events  
Reference: Dempsey, Stephens, Fields, and Shepherd 1983  
Notes: A self-administered questionnaire on the long-term noise environment was answered by respondents at the beginning of the rating session. The purpose of the study was to rate individual aircraft flyovers that occurred during the one-hour rating sessions.
- USA-221 1977 Allentown Community Noise Survey  
Date: 1977  
Source: Community  
Location: U.S.A.: Allentown (Pennsylvania)  
N=: 467  
Noise data: No  
Reference: Levine 1981  
Notes: The study was used to develop community noise study procedures for the U.S. Environmental Protection Agency. A final report on the study's findings was not published.
- USA-235 1983 Controlled Exposure Helicopter Noise Study

## SURVEY DESCRIPTION (Continued)

- Date: 1983 (August to November)  
Source: Military helicopters  
Location: U.S.A.: Newport News (Virginia)  
N=: 338 people provided a total of 6345 interviews  
Noise data: Yes (for the controlled noise exposure test days)  
Reference: Fields and Powell 1985;Fields and Powell 1987;Powell and Fields 1984  
Notes: The initial face-to-face interview was conducted with 338 respondents. These respondents were reinterviewed with a short interview on daily noise reactions on up to 22 additional days. The helicopter noise exposure was controlled and measured on 17 of the 22 follow-up study days.
- USA-245 1970s LAX Six-Community Noise Survey  
Date: 1972 (August)  
Source: Aircraft  
Location: U.S.A.: Los Angeles International Airport (Inglewood, El Segundo, Westchester, Emerson Manor, West Westchester, Lennox)  
N=: 239  
Noise data: Yes  
Reference: Clary 1974;Goodman and Clary 1976  
Notes: This telephone survey examines factors that explain political activism with respect to noise.
- USA-250 1982 Decatur General Aviation Airport Survey  
Date: 1982 (March)  
Source: Aircraft  
Location: U.S.A.: Decatur (Illinois)  
N=: 234  
Noise data: Yes  
Reference: Fidell, Barber, and Schultz 1991;Schomer 1983a  
Notes: Interviews were obtained with both telephone and face-to-face techniques.
- USA-251 Two-Neighborhood San Francisco Airport Survey  
Date: 1974 Publication (Survey date not reported)  
Source: Aircraft  
Location: U.S.A.: Foster City and Fremont (San Francisco area)  
N=: 552  
Noise data: Yes  
Reference: Graeven 1974  
Notes: Self-administered questionnaires were personally distributed to female residents. Numbers of reported health problems are related to aircraft noise annoyance but only weakly, if at all, to aircraft noise levels.
- USA-299 1966 Edwards Air Force Base Resident Sonic Boom Survey  
Date: 1966 (July)  
Source: Sonic booms from military aircraft  
Location: U.S.A.: Edwards Air Force Base (California)  
N=: 783  
Noise data: Yes  
Reference: Kryter, Johnson, and Young 1968  
Notes: On-base residents returned a mail questionnaire to rate sonic booms and other noise environments for June (approximately 10 booms per day, 1.7 p.s.f. median nominal peak overpressure) and for prior months. Some 26% reported that the June sonic boom environment was unacceptable.
- USA-300 1975 Rutgers Freshmen Dormitory Noise Sensitivity Study  
Date: 1975 (August), 1976 (April)  
Source: Noise inside college dormitory  
Location: U.S.A.: A dormitory at Rutgers State University (New Jersey)  
N=: 155 (55 participated in full study)  
Noise data: No  
Reference: Weinstein 1978  
Notes: A mail questionnaire on noise sensitivity was returned by 155 entering freshmen before beginning the school year. Later in the school year 24 high-sensitive and 31 low-sensitive students in one dormitory rated their disturbance from noise in the dormitory. Disturbance increased for the sensitive but remained the same for the low-sensitive students.
- USA-301 1982 Westchester Airport Nighttime Noise Change Study  
Date: 1982 (May 1-3, "before" phase; June 26-28, "after" phase)  
Source: Aircraft  
Location: U.S.A.: Four areas around Westchester Country Airport (New York)  
N=: 1,465 (725, "before round; 740, "after round")  
Noise data: Yes  
Reference: Baldwin and Fidell 1982;Fidell, Barber, and Schultz 1991;Fidell, Horonjeff, Mills, Baldwin, Teffeteller, and Pearsons 1985  
Notes: Telephone interviews were conducted before and about seven weeks after nighttime flight restrictions were changed. There was no unusual observed change in nighttime flights and, correspondingly, no observed change in noise reactions.
- USA-308 1979 Salt Lake City Stationary Noise Source Survey  
Date: 1979 (June, July)  
Source: Stationary neighborhood noises (dogs, sirens, people, etc.)  
Location: U.S.A.: Salt Lake City

## SURVEY DESCRIPTION (Continued)

- N=: 63  
Noise data: No  
Reference: Alvord 1988  
Notes: Residents were re interviewed who had indicated in a 1979 survey (USA-183) that they were most annoyed by a common neighborhood noise such as dogs, sirens, garbage trucks, or people. The most annoying aspects of these sounds were reported to be loudness, quality of sound and time and frequency of occurrence.
- USA-310 1972 Los Angeles Airport Relocated Residents Survey  
Date: 1972 (September, October)  
Source: Aircraft  
Location: U.S.A.: Los Angeles  
N=: 50  
Noise data: Yes  
Reference: Clary 1974; Goodman and Clary 1976  
Notes: Telephone interviews were conducted with respondents whose homes had been purchased by the airport. Some had moved away from the airport area and others remained in their homes.
- USA-338 1981 USA Air Force Base Study  
Date: 1981 (Some interviews may have been in 1982.)  
Source: Aircraft  
Location: U.S.A.: 7 air bases (Dover, Mather, George, March, Marana, Carswell, Pope)  
N=: 942  
Noise data: Yes  
Reference: Borsky 1983  
Notes: Interviews were conducted near seven US Air Force bases.
- USA-349 Atlanta Airport Acoustical Insulation Survey  
Date: 1991 Publication (Survey date not reported)  
Source: Aircraft  
Location: U.S.A: Atlanta  
N=: 937  
Noise data: Yes  
Reference: Fidell and Silvati 1991  
Notes: Telephone interviews were conducted with residents of both treated and untreated homes. Treated residences had been noise-insulated at least eight months before the survey. Annoyance was not lower in the noise insulated homes.
- USA-375 1993-95 Western USA Sonic Boom Study  
Date: 1993 (April, May, December), 1995 (November)  
Source: Sonic booms  
Location: U.S.A.: Nevada (6 communities), California (8 communities)  
N=: 1,573 interviews with 1,356 residents
- Noise data: Yes  
Reference: Fields 1996; Fields 1997; Fields, Moulton, Baumgartner, and Thomas 1994  
Notes: Interviews were conducted with residents in areas with long-term exposure to sonic booms. Some respondents were interviewed twice. Reactions were more severe in one area than the other. Reactions were generally more severe to sonic booms than would be expected from conventional aircraft with the same exposure as measured in LAeq.
- USA-428 1996 Minneapolis-St Paul Aircraft Mitigation Preference Survey  
Date: 1996 (May 15 to June 1)  
Source: Aircraft  
Location: U.S.A.: Minneapolis-St. Paul International Airport (19 geographical areas in 9 communities)  
N=: 2,880 (19 areas)  
Noise data: Yes  
Reference: Fidell, Silvati, and Howe 1996  
Notes: Interviews were conducted by telephone. Residents were asked about their preferences for future noise mitigation strategies.
- USA-429 1999 Minneapolis-St Paul Airport Noise Survey  
Date: 1999 (June)  
Source: Aircraft  
Location: U.S.A.: Minneapolis-St. Paul International Airport  
N=: 495 respondents  
Noise data: Yes  
Reference: Fidell 2000; Fidell, Silvati, Pearsons, Howe, and Sneddon 2000  
Notes: Interviews were conducted by telephone.
- USA-430 1994-95 Denver Airport Opening Sleep Disturbance Study  
Date: 1994 (February - May), 1995 (February - April)  
Source: Aircraft on test nights.  
Location: U.S.A.: Denver (2 neighborhoods near Stapleton International Airport and one near the new Denver international airport)  
N=: 2,717 nights of information about sleep from 77 subjects in 37 households  
Noise data: Yes: inside and outside  
Reference: Fidell, Howe, Tabachnick, Pearsons, and Sneddon 1995; Fidell, Tabachnick, Pearsons, and Howe 2000; Pearsons, Tabachnick, and Fidell 2000  
Notes: Test participants answered morning and evening questionnaires on a palm top computer that also registered reported behavioral awakenings during the night. Actimeters were also used. There was not a marked change in noise-induced sleep

## SURVEY DESCRIPTION (Continued)

disturbance at either airport although aircraft noise decreased greatly at subjects' residences at one airport and increased slightly at the other airport.

disturbance was related to the noise level of the individual events measured within the homes.

USA-431 1995 Seattle-Tacoma Airport Noise Survey

Date: 1995 ( February 16 - 19)  
 Source: Aircraft (following a period when noise levels gradually reduced)  
 Location: U.S.A.: Seattle-Tacoma International Airport (6 areas)  
 N=: 1,444 (1,236 from respondents with noise data from five communities)  
 Noise data: Yes  
 Reference: Fidell, Silvati, and Pearsons 1995;Fidell, Silvati, and Pearsons 1996  
 Notes: Telephone interviews were conducted. Despite an approximate 1.5 dB(A) DNL decrease in aircraft noise exposure more residents believed there had been an increase than a decrease in aircraft noise.

USA-432 1997 LAX Low-Frequency Noise Survey

Date: 1997 (August)  
 Source: Aircraft (LAX)  
 Location: U.S.A.: El Segundo, California (1000 to 5000 feet south of LAX runway)  
 N=: 644 respondents from among the 1,262 household with listed telephone numbers in the area  
 Noise data: Yes  
 Reference: Fidell 2000;Fidell, Silvati, Pearsons, Howe, and Sneddon 2000;Fidell, Silvati, Pearsons, Lind, and Howe 1999  
 Notes: Telephone interviews were conducted. A dose response relationship for the relationship between annoyance and low frequency noise is presented.

USA-433 1993 LAX/Castle AFB Behavioral Awakening Study

Date: 1993 (May to October)  
 Source: Aircraft on test nights.  
 Location: U.S.A.: Castle Air Force Base (Merced, California) and Los Angeles International Airport and other sites "Lacking appreciable nighttime aircraft noise"  
 N=: 1,823 nights of information from 86 subjects (82 were analyzed) in 45 households  
 Noise data: Yes: inside and outside  
 Reference: Fidell, Pearsons, Howe, Tabachnick, Silvati, and Barber 1994;Fidell, Pearsons, Tabachnick, Howe, Silvati, and Barber 1995;Pearsons, Tabachnick, and Fidell 2000  
 Notes: This study measured sleep disturbance with nine variables. Seven were obtained from a morning-after questionnaire and two from pushing a button when there was a behavioral awakening. Sleep

USA-435 1996 Olympic Games Aircraft Noise Sleep Study

Date: 1996 (July 2 to August 11)  
 Source: Aircraft  
 Location: U.S.A.: Atlanta (a neighborhood near Georgia DeKalb-Peachtree Airport that experienced an increase in aircraft traffic during the 1996 Olympic games)  
 N=: 686 nights of sleep information from 25 people in 12 dwellings  
 Noise data: Yes: Noise data were available for inside the sleeping room and outside the house.  
 Reference: Fidell, Howe, Tabachnick, Pearsons, Silvati, Sneddon, and Fletcher 1998  
 Notes: Respondents answered self-administered questionnaires about each night in the evening and morning. They wore a wrist movement detection device (motility measurement) and were instructed to press a button each time they woke up. Behavioral awakening and arousal were found to be related to aircraft noise level, but motility was not related to noise level.

USA-490 1993-94 USA Individual Sound Noticeability Study

Date: 1993 (May to October for CAFB & LAX), 1994 (Summer for APG)  
 Source: Aircraft  
 Location: USA: Castle Air Force Base (CAFB), California; Los Angeles Airport (LAX); and Aberdeen Proving Ground (APG), Maryland.  
 N=: 25 (There were 11 subjects at CAFB and 8 at LAX, where 9 and 5, respectively, were useful. 11 subjects at APG were analyzed.)  
 Noise data: Yes

Reference: Schomer 1996;Schomer and Wagner 1996  
 Notes: The noticeability of sounds was studied by asking subjects to record their response to individual aircraft events on a hand-held computer as they went about their activities at home. The subjects at CAFB and LAX were all of the participants in a nighttime study (USA-433) who were home during the day and willing to cooperate in this study as well.

USA-513 1985 Student Noise Attitudes Study (Boston)

Date: 1985  
 Source: Community  
 Location: U.S.A.: Boston  
 N=: 53  
 Noise data: No  
 Reference: Florentine, Namba, and Kuwano 1986  
 Notes: University students answered this written

## SURVEY DESCRIPTION (Continued)

questionnaire's general statements about neighbors' noise without direct reference to their present residence. There are some differences between perceptions and attitudes toward neighbors' noise in England, Germany and Japan. The questionnaire is nearly identical to questionnaires administered in Japan (JPN-510), England (UKD-512), Germany (GER-511), and China (CHI-514).

Notes: None

### YUG-352 Pancevo Noise and Air Pollution Health Survey

Date: 1993 Publication (Survey date not reported)

Source: Road traffic

Location: Yugoslavia: Pancevo

N=: 224 (165 from center, 59 from industrial zone)

Noise data: Yes

Reference: Pjerotic and Nikolic 1993

Notes: Road traffic was reported to be the predominant source of nervousness by respondents.

### USA-518 1995 Japanese/English Questionnaire Testing Study (Boston)

Date: 1995

Source: Community

Location: U.S.A.: Boston

N=: 100

Noise data: No

Reference: Kuwano, Namba, and Florentine 1996

Notes: This questionnaire was developed for broad use by the Acoustical society of Japan and administered on a test basis in this study and one study in Japan (JPN-517).

### YUG-434 1994 Central Belgrade Traffic Noise Survey

Date: 1994 (October, November)

Source: Road traffic

Location: Yugoslavia: Belgrade (a noise central area)

N=: 409 (252 in noisy area, 157 in control area)

Noise data: Yes

Reference: Belojevic and Jakovljevic 1998; Belojevic, Jakovljevic, and Aleksic 1997; Belojevic, Jakovljevic, and Santric-Milicevic 1997

Notes: Reports of general sleep quality and specific sleep disturbances were greater in the noisy (>65 dB(A) LAeq) than the quiet area (<55 dB(A) LAeq). Behavioral reactions to traffic noise were affected by personality traits of subjective noise sensitivity and neuroticism.

### USR-042 USSR 22-Settlement Aircraft Noise Survey

Date: 1969 Publication (Survey date not reported)

Source: Aircraft

Location: U.S.S.R.: 22 settlements around 9 airports

N=: Over 2,000

Noise data: No (Noise data are not analyzed with responses.)

Reference: Karagodina, Soldatkina, Vinokur, and Klimukhin 1969

Notes: Disturbance with aircraft noise is related to distance from airports.

### YUG-141 Two-Area Belgrade Aircraft Noise Study

Date: 1976 Publication (Survey date not reported)

Source: Aircraft

Location: Yugoslavia: Two settlements near Belgrade airport

N=: (Not known)

Noise data: Yes

Reference: Pravica 1976

Notes: The method of administering the questionnaire to residents is not known. An abbreviated version of the Cornell Medical Index showed more neurosis near the airport.

### YUG-234 1981 Split, Yugoslavia Airport Survey

Date: 1981 (April)

Source: Aircraft

Location: Yugoslavia: Split Airport

N=: 252

Noise data: Yes

Reference: Institut Saobracajnog Fakulteta 1981; Zoric, Lukic, and Gvozdencovic 1982; Zoric and Miroslav 1981

## NOISE SOURCE INDEX

In this index each survey is listed under each of the primary noise sources studied in the survey. The noise source classification is based on the extent of information available about both the noise reactions and the noise environment for the particular source. As a result, a survey is listed under only a single noise heading when the standard survey approach is followed of focusing many questions on only a single noise source while including a single short question about each other possible noise source. If several noise sources are studied in detail, there are multiple entries for the survey in this index.

The index is ordered alphabetically by noise source and, within noise source, by country and survey identification number. The ten noise sources are Aircraft, Community, Construction, Impulse, Industry, Interior (primarily noise from attached dwelling units), Railway (including all tracked transit systems), Road Traffic, Sonic Boom, and Miscellaneous. The survey identification number precedes each survey's title.

### AIRCRAFT

AUL-036	1969 Sydney Airport Noise Survey	FRA-045	1970 French Sonic Boom Survey
AUL-210	1980 Australian Five-Airport Survey	FRA-056	1971 Orly Aircraft Noise Survey
AUL-211	1979 Sydney Airport Study of Type of Noise Reactions	FRA-087	1973 St Cyr L'Ecole General Aviation Noise Survey
AUL-244	1979 Sydney Airport Pilot Survey	FRA-098	1974-75 Roissy Airport Before/After Opening Noise Survey
AUL-307	1986 Sydney Aircraft/Road Traffic Survey	FRA-099	1974 French National Aircraft Noise Survey
AUL-383	1994-95 Sydney Airport Noise Change Survey	FRA-113	1975 Orly Airport Noise Study
AUL-384	1992 Sydney Aircraft Noise Amelioration Attitudes Survey	FRA-131	1976 Orly Medical Effects Pilot Study
AUL-456	1995 Sydney Airport Ku-ring-gai Noise Survey	FRA-146	1977 French Light Aircraft Study
BEL-151	1977-78 Belgium Four-Airport Noise Survey	FRA-150	1977 Roissy Airport Survey
BEL-288	1980s Brussels International Airport Noise Survey	FRA-189	1971 French Concorde Sonic Boom Study
CAN-055	1971 Dorval Aircraft Noise Survey	FRA-218	1975 Strasbourg Airport Noise Survey
CAN-078	1972 Calgary Noise Survey	FRA-239	1984-1986 French Combined Aircraft/Road Traffic Survey
CAN-168	1978 Canadian Four-Airport Survey	FRA-391	1998-99 Orly Airport Contingent Valuation Noise Survey
CAN-174	1978 Canadian National Community Noise Survey	FRA-395	1998 Orly/Roissy Airport Noise Survey
CAN-181	1979 Canadian Three Airport General Aviation Study	GER-034	1969 Munich Airport Noise (DFG Aircraft Noise Study)
CAN-236	1981 Southern Ontario Community Survey	GER-037	1969 Meppen Sonic Boom Field Experiment
CAN-385	1990s Vancouver Airport Noise Change Survey	GER-114	1975 German General Aviation Survey
DEN-380	1983 Copenhagen Kastrup Airport Survey	GER-134	1976 Hamburg Urban Noise Survey
DEN-381	1986 Copenhagen Kastrup Airport Followup Survey	GER-372	1985-86 Ratingen Düsseldorf Road Traffic/Aircraft Survey
DEN-519	Scandinavian Nine-Airport Noise Study (Denmark)	GER-373	1987 Düsseldorf/Ratingen Aircraft/ Road Traffic Survey
FRA-016	1965 French Four-Airport Noise Study	GER-374	1993 Greifswald Traffic Noise Survey
FRA-017	1965 French Regional Sonic Boom Survey	GER-464	Oldenburg Noise Situation Investigation
		GER-466	1998 Düsseldorf/Dortmund Airport Noise



## NOISE SOURCE INDEX (Continued)

	Information Survey	SWE-035	Scandinavian Nine-Airport Noise Study (Sweden)
GER-472	1994 1996 Düsseldorf Activity Disturbance Study	SWE-054	1971 Trängslet Sonic Boom Study
GER-473	1995 Düsseldorf Airport Noise Survey	SWE-108	1972 Burgsvik Sonic Boom Study
HKG-125	1975 Hong Kong Fireman Environmental Noise Survey	SWE-222	Nausta Research Camp Sonic Boom Study
HKG-208	Preliminary Hong Kong Fireman Noise Survey	SWE-419	1988-93 Swedish Small Airport Noise Survey
JPN-018	1965 Osaka Aircraft Noise Survey	SWI-053	1971 Swiss Three-City Noise Survey
JPN-046	1970 Yokota Air Base Study	SWI-180	1979 Swiss General Aviation Survey
JPN-062	1972 Akishima City Aircraft Noise Survey	TRK-283	1980-84 Istanbul Noise Survey
JPN-152	1977 Atugi Military Aircraft Noise Study	UKD-008	1961 Heathrow Aircraft Noise Survey (First Heathrow Survey)
JPN-163	1972 Itami City Osaka Airport Noise Study	UKD-024	1967 Heathrow Aircraft Noise Study (Second Heathrow Survey)
JPN-293	Osaka Aircraft and Environmental Noise Survey	UKD-033	1969 Mixed Road/Aircraft Noise Survey
JPN-353	1992 Chatan Town Kadena Air Base Survey	UKD-052	1971 Gatwick Airport Noise Survey
JPN-444	1996-97 Kadena/Futenma Military Aircraft Noise Survey	UKD-061	1972 Heathrow Airport Noise Pilot Survey
JPN-445	1995-96 Kadena General Health Questionnaire Survey	UKD-086	1973 Kew Aircraft Noise Survey
JPN-446	1994 Sapporo Traffic Noise Survey	UKD-097	1974 English Aircraft Noise Postal Survey
JPN-491	1996 Osaka International Airport Noise Survey	UKD-111	1975-76 English Mental Health Pilot Survey
JPN-500	1999 Osaka Aircraft Noise and Health Survey	UKD-112	1975 Luton In-migrants Aircraft Noise Survey
JPN-509	1972-81 Kyushu Airport Opening Survey	UKD-130	1976 Heathrow Concorde Noise Survey
KOR-475	1980s Seoul Multiple-Source Noise Survey	UKD-147	1977 Heathrow Nighttime Pilot Survey
NET-013	1963 Schiphol Airport Survey	UKD-148	1977 West London (Heathrow) Psychiatric Morbidity Survey
NET-115	1975 Schiphol/Marssum Aircraft Noise Insulation Survey	UKD-182	1979 Heathrow/Gatwick Sleep Study
NET-149	1977 Schiphol/Marssum Sound Insulation Survey	UKD-224	1982 Manchester Night Noise Survey
NET-193	1976 Netherlands Military Airfields Noise Study	UKD-225	1982 British Helicopter Disturbance Study
NET-196	1978 Dutch Homes for the Aged Environmental Noise Study	UKD-238	1984 Glasgow Combined Aircraft/Road Traffic Survey
NET-240	1984 Schiphol Combined Aircraft/Road Traffic Survey	UKD-241	1982 Heathrow Combined Aircraft/Road Traffic Survey
NET-269	1986 Netherlands Low-Level Military Aircraft Study	UKD-242	1982 United Kingdom Aircraft Noise Index Study
NET-371	1996-97 Schiphol Airport GES Survey	UKD-243	1981 United Kingdom General Aviation Airport Survey
NET-379	1998 Groningen Eelde Airport Survey	UKD-305	1980-83 Noise Sensitivity Follow-up Survey
NET-468	1998 Schiphol Sleep Disturbance Pilot Survey	UKD-309	1977 Hamble Airfield Survey
NOR-311	1989 Oslo Airport Survey	UKD-324	1986 English General Aviation Survey
NOR-328	1992-93 Bodö Aircraft Military Exercise Survey	UKD-339	1991 United Kingdom Four-Airport Sleep Survey
NOR-366	1990-91 Værnes Aircraft Military Exercise Survey	UKD-347	1990 Manchester Airport Sleep Survey
NOR-397	1999 Oslo Contingent Valuation Noise Survey	UKD-427	1996-97 Heathrow Area Children Noise Survey
NOR-520	Scandinavian Nine-Airport Noise Study (Norway)	UKD-482	1999-2000 UK 5-Airport Night Noise Perception Survey
POL-198	1974 Warsaw Aircraft Noise Survey	UKD-483	1999 Manchester Nighttime Aircraft Noise Trial Methodology Study
SAF-028	1968 South Africa Preliminary Aircraft Noise Survey	UKD-489	1999-2000 UK 4-Airport Night Noise Mail Survey
SPA-348	1989-90 Spanish Airport Survey	USA-004	1953 USA Eight-Airport Noise Survey
SPA-411	1998 Altet-Alicante Airport Noise Survey	USA-006	1957 USA Air Force Base Noise Survey
SWE-011	1963 Linköping Airport Noise Study	USA-007	1961 St Louis Sonic Boom Study
		USA-012	1964 Oklahoma City Sonic Boom Study
		USA-022	1967 USA Four-Airport Survey (Phase I Tracor Survey)





## NOISE SOURCE INDEX (Continued)

IRE-254	1982-83 CEC Impulse Noise Field Study (Ireland)	UKD-003	1952 Sound Insulation in Flats Survey
JPN-140	1977 Camp Fuji Noise Survey	UKD-119	1975 Great Britain Interior Noise Survey
NET-255	1982-83 CEC Impulse Noise Field Study (Netherlands)	UKD-220	1978 British Interior Noise Survey
NET-260	1980-81 Netherlands Pile Driver Impulse Noise Survey	UKD-233	1980 British Flats' Sound Insulation Survey
NET-354	1990 Marnewaard Shooting Range Residential Survey	UKD-422	1997 English Residential Soundproofing Survey
NET-460	1993 Dutch Artillery Range Noise Annoyance and Startle Survey	UKD-436	London/Birmingham Converted Flats Survey
NOR-397	1999 Oslo Contingent Valuation Noise Survey	UKD-484	1992-94 Great Britain Insulation Complaint Survey
SWE-015	1964-70 Karlstad Artillery Range Noise Study	USA-300	1975 Rutgers Freshmen Dormitory Noise Sensitivity Study
SWE-185	1975 Gothenburg Rifle Range Survey	<b>MISCELLANEOUS</b>	
SWE-360	Swedish Four-Site Shooting Range Noise Annoyance Survey	AUL-247	Victoria Australia Entertainment Center Study
SWE-437	Swedish Eight-Range Heavy Weapons Noise Survey	AUL-248	1983 Melbourne Australia Simon and Garfunkel Concerts
UKD-010	1963 Welsh Village Impulse Noise (Exercise Yellow Hammer)	AUL-249	1983 Melbourne Australia David Bowie Concert
USA-170	1978 U.S. Army Impulse Noise Survey	AUL-306	1988 New South Wales Power Station Survey
USA-206	1981 Alabama Three-Site Blast Noise Survey	CAN-322	1990 Toronto Air Conditioner Survey
<b>INDUSTRY</b>		DEN-333	1992 CEC Wind Turbine Noise Study (Denmark)
CAN-136	1976 Canada Impulse Noise Survey	GER-290	1981 German Military Training Area Survey
CAN-169	1978-79 Canadian Five Railway Yard Survey	GER-335	1992 CEC Wind Turbine Noise Study (Germany)
GER-134	1976 Hamburg Urban Noise Survey	JPN-439	1992 Fukuoka Green Areas Survey
GER-231	1981 Blast Furnace and Road Noise Study	JPN-443	1993 Fukuoka 12-Area Community Noise Survey
JPN-005	1953 Osaka/Amagasaki Industrial Noise Survey	JPN-501	1985 Kawasaki Life-Related Noise Survey
JPN-497	1992 Itabashi Tokyo Environmental Complaints Survey	JPN-505	1993 Osaka Free-Response Industrial Noise Survey
NET-196	1978 Dutch Homes for the Aged Environmental Noise Study	JPN-508	Toyonaka City Free-Response Noise Survey
NET-232	1980 Netherlands Industrial Noise Survey	NET-334	1992 CEC Wind Turbine Noise Study (Netherlands)
NET-257	1979 Netherlands Industrial Noise Pilot Survey	SWE-337	Swedish Low Frequency Heat Pump Noise Study
NET-259	1977 Netherlands Industrial Noise Pilot Survey	UKD-161	1977 Southampton Hovercraft Noise Survey
NET-260	1980-81 Netherlands Pile Driver Impulse Noise Survey	UKD-175	1978 Southampton Hovercraft Terminal Noise Survey
USA-049	1970 Cedar Rock Drive Neighborhood Noise Investigation	USA-216	1978 Electrical Power Line and Transformer Noise Survey
<b>INTERIOR</b>		<b>RAILWAY</b>	
CAN-262	Canadian Party Wall Insulation Pilot Survey	AUS-487	1998 Inn Valley Road/Railway Noise Survey
FRA-342	1992 French Home Insulation Survey	AUS-488	1998 Tyrol Children/Mothers Noise Survey
JPN-376	1971-77 Chiba Multi-Family Dwelling Survey	AUS-521	Austrian Transportation Noise and Blood Pressure Survey
JPN-377	1992-95 Tokyo Multi-Family Dwelling Study	CAN-078	1972 Calgary Noise Survey
NET-002	1950 Netherlands Sound Insulation Effects Study	CAN-126	Toronto Railway Noise Survey
NET-263	1982-1983 Netherlands New Dwelling Survey	CAN-169	1978-79 Canadian Five Railway Yard Survey
NET-462	1997 Netherlands Home Insulation Survey	CAN-174	1978 Canadian National Community Noise Survey
POL-477	1997 Warsaw Low-Frequency Interior Noise Study	CAN-236	1981 Southern Ontario Community Survey
SWI-304	1986 Swiss Multi-Story Building Sound Insulation Study	DEN-200	1979 Danish Railway Noise Survey
UKD-001	1943 British Home Noise Survey	EGY-357	Alexandria Tram Noise Study
		FRA-063	1972 Paris Area Railway Noise Survey

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FRA-336	1991 TGV High Speed Train Pilot Survey		Countermeasures Study
FRA-393	1997 France Road/Railway Noise Survey	SWE-414	1995-96 Lund Railway Noise Barrier Survey
FRA-396	1993 TGV High Speed Train Survey	TRK-283	1980-84 Istanbul Noise Survey
GER-134	1976 Hamburg Urban Noise Survey	UKD-029	1968 Coventry Pilot Railway Noise Survey
GER-135	1976 Stuttgart Railway/Road Noise Survey	UKD-038	1969 Central England Railway Survey
GER-192	1977-83 German Road/Railway Noise Comparison Study	UKD-116	1975 British National Railway Noise Survey
GER-464	Oldenburg Noise Situation Investigation	UKD-355	1990 East London Docklands Light Rail Survey
GER-465	1996-97 German Sleep Disturbance Survey	USA-066	1972 BART Residential Impact Survey
GER-467	1997 ICE High-Speed Railway Noise Survey		
GER-470	1996-97 German Road/Rail Traffic Noise Survey	<b>ROAD TRAFFIC</b>	
GER-471	1995-96 Germany Rail-Grinding Noise Reduction Study (Pilot)	AUL-226	1974 Brisbane S-E Freeway Study
GER-479	1997-98 Germany Rail-Grinding Noise Reduction Study (Primary)	AUL-227	1975-76 Australian Three-City Roadway Study
GER-480	1996-97 German Road/Rail Sleep Study	AUL-264	1980 Brisbane Traffic Noise Reduction Survey
JPN-064	1972 Environmental Agency of Japan Shinkansen Noise Survey	AUL-265	1980 Brisbane Traffic Noise Increase Survey
JPN-065	1972 New Tokaido and New Sanyo Shinkansen Railway Noise	AUL-285	1986 Australian National Noise Survey
JPN-101	1974 Sendai City Regular Railway Noise Survey	AUL-307	1986 Sydney Aircraft/Road Traffic Survey
JPN-123	1975 Yokohama Road/Railway Noise Survey	AUL-332	1991 Brisbane Traffic Noise Survey
JPN-139	1976 Japanese Road/Railway Noise Study	AUL-461	1995-96 Four-Phase Sydney Road Traffic Noise Survey
JPN-201	1975 Shinkansen Railway Survey	AUS-014	1964 Vienna Road Traffic Noise Survey
JPN-319	1989 Muroran Road/Railway Noise Survey	AUS-093	1973 Vienna Road Traffic Noise Survey
JPN-340	1983 Tokyo Railway Noise Survey	AUS-178	1977 Austrian Road Traffic Survey
JPN-370	1994-95 Kyushu Railway Survey	AUS-329	1989 Austrian Alps Road Traffic Noise Survey
JPN-441	1987 Fukuoka Railway Crossing Noise Survey	AUS-487	1998 Inn Valley Road/Railway Noise Survey
JPN-448	1987 Sapporo Railway Noise and Vibration Survey	AUS-488	1998 Tyrol Children/Mothers Noise Survey
JPN-449	1991 Sapporo Railway Noise and Vibration Survey	AUS-521	Austrian Transportation Noise and Blood Pressure Survey
JPN-493	1985-86 Shinkansen/Conventional Rail Noise Survey	BEL-107	Preliminary Leuven Traffic Noise Survey
KOR-475	1980s Seoul Multiple-Source Noise Survey	BEL-122	1975 Antwerp Traffic Noise Survey
NET-153	1977 Netherlands Railway Noise Survey	BEL-137	1976 Brussels Traffic Noise Survey
NET-194	1976 Netherlands Railway Noise Survey	BRA-474	1994 Porto Alegre Noise Survey
NET-195	1977-78 Netherlands New Railway Line Survey	CAN-120	1975 Western Ontario University Traffic Noise Survey
NET-196	1978 Dutch Homes for the Aged Environmental Noise Study	CAN-121	1975-76 Southern Ontario Community Survey
NET-276	1983 Netherlands Tram/Road Traffic Noise Survey	CAN-236	1981 Southern Ontario Community Survey
NET-378	1998 Rotterdam-Ruhrgebiet Freight Railway Pilot Study	CAN-279	1976 Toronto Freeway 401 Privacy Fence Survey
POL-184	Polish Railway Noise Survey	CAN-280	1978 Etobicoke/Ottawa Noise Barrier Study
SPA-408	1994-95 Spanish Underground Railway Noise Survey	CHI-230	1975 Beijing Traffic Noise Survey
SWE-165	1976 Gothenburg Tramway Noise Survey	CHI-386	1986-1989 Chinese Five-City Road Traffic Noise Survey
SWE-228	1978-80 Swedish Railway Study	CHI-457	1986 Beijing City (Nagoya Comparison) Survey
SWE-365	1989-93 Swedish Railway Survey	CZE-109	Bratislava Traffic Noise Survey
SWE-412	1997 Sollentuna Road/Rail Noise Survey	DEN-075	1972 Copenhagen Traffic Noise Survey
SWE-413	1996 Kungsbacka Railway Noise	DEN-387	1999-2000 Øster Søgade Copenhagen Porous Asphalt Survey
		DEN-388	1998 Danish Speed Bump Noise Survey
		DEN-389	1998 Danish Road Traffic Noise Barrier Study
		DEN-390	1999 Aarhus Road Traffic Noise Survey
		FRA-019	1965 Paris Expressway Noise Survey
		FRA-041	1969 Paris Road Traffic Noise Study
		FRA-092	1973 French Ten-City Traffic Noise Survey
		FRA-124	1975-76 l'Hay les Roses Barrier Survey
		FRA-197	1979 French Behavioral Effects of Road Noise

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	Study	IRE-254	1982-83 CEC Impulse Noise Field Study (Ireland)
FRA-239	1984-1986 French Combined Aircraft/Road Traffic Survey	IRN-459	1977 Tehran Community Noise Survey
FRA-252	1982-83 CEC Impulse Noise Field Study (France)	IRQ-229	1980 Baghdad Street Noise Survey
FRA-289	1986-87 French National Transportation Noise Survey	ITL-318	1967 Ferrara Comparative Traffic Noise Study
FRA-346	1991 French Before/After Noise Abatement Survey	ITL-350	1990 Modena Traffic Noise Survey
FRA-364	1993-94 French 18-Site Time-Of-Day Study	JPN-094	1973-74 Sendai Road Traffic Noise Survey
FRA-393	1997 France Road/Railway Noise Survey	JPN-123	1975 Yokohama Road/Railway Noise Survey
FRA-394	1997 Besançon Road Traffic Noise Survey	JPN-139	1976 Japanese Road/Railway Noise Study
GER-134	1976 Hamburg Urban Noise Survey	JPN-140	1977 Camp Fuji Noise Survey
GER-135	1976 Stuttgart Railway/Road Noise Survey	JPN-190	1956 Kyoto Traffic Noise Survey
GER-164	1973 Düsseldorf Traffic Noise Survey	JPN-292	1984 Sapporo City Traffic Noise and Vibration Survey
GER-192	1977-83 German Road/Railway Noise Comparison Study	JPN-294	Nagoya City 1980s Cumulative Noise Survey
GER-231	1981 Blast Furnace and Road Noise Study	JPN-319	1989 Muroran Road/Railway Noise Survey
GER-246	1977-78 German Six-City Traffic Change Panel Study	JPN-326	1991 Muroran Traffic Noise Survey
GER-253	1982-83 CEC Impulse Noise Field Study (Germany)	JPN-341	1989 Sapporo Traffic Noise/Vibration Survey
GER-256	Berlin Nighttime Noise Survey	JPN-343	1990-93 Tokyo Five-Area Traffic Noise Survey
GER-278	1980 German Shooting Range Survey	JPN-369	1996 Kumamoto Road Traffic Survey
GER-281	1976-77 German Highway Noise Study	JPN-382	1997-98 Sapporo Road Traffic Noise Survey
GER-282	1979 Wuppertal/Düsseldorf Traffic Noise Barriers Study	JPN-440	1984 Fukuoka Road Traffic Noise Survey
GER-291	1984 Visual Context of Noise Survey (Germany)	JPN-447	1990 Sapporo Traffic Noise and Vibration Survey
GER-363	1988 German Noise Barrier Evaluation Survey	JPN-450	1995-96 Kyushu Expressway Survey
GER-372	1985-86 Ratingen Düsseldorf Road Traffic/Aircraft Survey	JPN-451	1993 Kumamoto Road Traffic Noise Survey
GER-373	1987 Düsseldorf/Ratingen Aircraft/ Road Traffic Survey	JPN-452	1993 Tomakomai Road Traffic Noise Survey
GER-374	1993 Greifswald Traffic Noise Survey	JPN-453	1988-1990 Hokkaido/Kyushu Traffic Noise Survey
GER-454	1991 German Artillery and Road Traffic Noise Survey	JPN-496	1994-96 Tokyo Trunk Road Noise Survey
GER-463	1993-94 Berlin Women Environmental Health Survey	JPN-499	Tokyo Four-Area Nighttime Road Traffic Survey
GER-464	Oldenburg Noise Situation Investigation	JPN-503	1986 Tokyo Main-Road Traffic Survey
GER-465	1996-97 German Sleep Disturbance Survey	JPN-504	1987 Tokyo Side Streets Noise Survey
GER-470	1996-97 German Road/Rail Traffic Noise Survey	KOR-295	1987 Seoul Traffic Noise Survey
GER-472	1994 1996 Düsseldorf Activity Disturbance Study	KOR-475	1980s Seoul Multiple-Source Noise Survey
GER-480	1996-97 German Road/Rail Sleep Study	NET-106	1974 Dordrecht Home Sound Insulation Study
GER-502	German Noise Change Part of CEC Sleep Study	NET-196	1978 Dutch Homes for the Aged Environmental Noise Study
HKG-125	1975 Hong Kong Fireman Environmental Noise Survey	NET-240	1984 Schiphol Combined Aircraft/Road Traffic Survey
HKG-187	Hong Kong Socio-Economic Area Road Traffic Survey	NET-255	1982-83 CEC Impulse Noise Field Study (Netherlands)
HKG-208	Preliminary Hong Kong Fireman Noise Survey	NET-258	1975 Amsterdam Home Sound Insulation Study
HUN-458	1995 Hungary Road Traffic Noise Survey	NET-276	1983 Netherlands Tram/Road Traffic Noise Survey
		NET-362	1984-85 Arnhem Trolley Bus Introduction Survey
		NIG-486	South-Eastern Nigeria Eight-City Road Traffic Survey
		NOR-397	1999 Oslo Contingent Valuation Noise Survey
		NOR-398	1987 Vålerenga/Gamlebyen Road Traffic Survey
		NOR-399	1990 Vålerenga/Gamlebyen Road Traffic Survey

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NOR-400	1994 Vålerenga/Gamlebyen Road Traffic Survey	SWI-312	1984 Visual Context of Noise Survey (Switzerland)
NOR-401	1996 Vålerenga/Gamlebyen Road Traffic Survey	SWI-469	1999 Swiss Noise Barrier Survey
NOR-403	1989 Horton Road Traffic Noise Survey	THA-327	1992 Songkhla Traffic Noise Survey
NOR-404	1986 Drammen Road Traffic Noise survey	THA-421	1997-98 Bangkok Road Traffic Noise Survey
POR-478	1999 Lisbon Contingent Valuation Road Traffic Noise Survey	TRK-283	1980-84 Istanbul Noise Survey
SLO-406	1989 Bratislava Medical Student Survey	TRK-367	Istanbul Trans-European Motorway Survey
SLO-407	1999 Bratislava Medical Student Survey	UKD-009	1961 Central London Traffic Noise Survey
SPA-272	1981 Valencia City-Wide Survey	UKD-030	1967 B.R.S. London Traffic Noise Survey
SPA-273	1982 Valencia Five-Site Survey	UKD-033	1969 Mixed Road/Aircraft Noise Survey
SPA-274	1982 Valencia Single-Site Survey	UKD-050	1970-71 Heston Noise Barrier Study
SPA-313	1984-85 Ganda Three-Site Traffic Noise Survey	UKD-071	1972 B.R.S. London Traffic Noise Survey
SPA-314	1987-91 Gandía Beach Resort Traffic Noise Survey	UKD-072	1972 English Road Traffic Survey
SPA-315	1988 Pamplona Five-Site Noise Survey	UKD-073	1972 Birmingham New Motorway Study
SPA-316	1983 Valencia Traffic Noise Survey	UKD-080	1972 Loughborough Interrupted Traffic Flow Survey
SPA-317	1984 Gandía City-Wide Traffic Noise Survey	UKD-118	1975-76 London/Liverpool Panel Survey
SPA-330	Madrid Two-Site Traffic Noise Survey	UKD-157	1977 London Area Panel Survey
SWE-021	1966-67 Stockholm/Gothenburg Traffic Study	UKD-160	1977 Hampshire Village Noise Study
SWE-025	1967 Stockholm Comparative Traffic Noise Study	UKD-162	Greater Manchester Traffic Survey
SWE-026	1967 Huddinge New Motorway Study	UKD-176	1978 ISVR Lab/Field Comparison Survey
SWE-100	1970s Kungälv Noise Barrier Study	UKD-237	1983-84 Southern England New Road Opening Survey
SWE-142	1976 Stockholm Visby Gothenburg Traffic Noise Study	UKD-238	1984 Glasgow Combined Aircraft/Road Traffic Survey
SWE-165	1976 Gothenburg Tramway Noise Survey	UKD-241	1982 Heathrow Combined Aircraft/Road Traffic Survey
SWE-223	1981 Swedish Sleep Disturbance and Sound Insulation Study	UKD-266	1971-72 Alton By-pass Study (Residents)
SWE-303	1986 Gothenburg Sleep Disturbance Pilot Survey	UKD-267	1970s Lake District A66 Traffic Change Study (Residents)
SWE-344	1988 Gothenburg Psycho-Social Wellbeing Traffic Survey (Pilot)	UKD-268	TRRL Multiple-Site Road Traffic Flow Change Study (Residents)
SWE-345	1990 Gothenburg Psycho-Social Wellbeing Traffic Survey (Main)	UKD-270	1983 English Road Traffic Vibration Survey
SWE-359	Gothenburg 12-Area Traffic Noise Survey	UKD-277	TRRL Four-Road Laboratory/Field Comparison Study
SWE-368	1996 Gothenburg Road Traffic Survey	UKD-284	1983 English 11-Site Gypsy Traffic Noise Survey
SWE-412	1997 Sollentuna Road/Rail Noise Survey	UKD-297	1985 Follow-up of 1983 New Road Opening Survey
SWE-415	1997 Västre Bräckevägen Change Survey (Before)	UKD-298	1985 Follow-up of TRRL Multiple-Site Traffic Flow Change Study
SWE-416	1998 Västre Bräckevägen Change Survey (After, Preliminary)	UKD-325	1989-91 TRL 15-Site Traffic Change Study
SWE-417	1999 Västre Bräckevägen Change Survey (After, Primary)	UKD-351	1988 TRL 35-Site Traffic Noise Survey
SWE-418	1999 Stockholm Noise Barrier Traffic Survey	UKD-425	1990s UK Road Resurfacing Survey
SWE-420	1992 Gothenburg Road Traffic Survey	UKD-426	UK Road Traffic and Ischemic Heart Disease Study
SWI-053	1971 Swiss Three-City Noise Survey	UKD-481	UK 30-Site Noise Insulation Treatment Evaluation Survey
SWI-133	1976 Zurich Street Traffic Noise (Apartments) Survey	USA-020	1966 USA Three-City Community Noise Study
SWI-158	1977 Zurich Pilot Traffic Noise Survey	USA-043	Los Angeles Freeway Five-Site Study
SWI-159	1977 Swiss N-3 Motorway Study	USA-047	1970 Minneapolis Freeway Noise Study
SWI-173	1978 Zurich Time-of-Day Survey	USA-057	USA Vehicle Noise Situation Survey
		USA-069	1972 Minneapolis Freeway Noise Barrier Study
		USA-070	1972 Eastern USA Four-Community Highway

Noise Survey

USA-088 1973 U.S.C. Los Angeles Freeway Noise Study

USA-102 1974 USA 24-Site Community Noise Survey

USA-103 1974 Capital Beltway Survey

USA-104 1974 Boston Economic Impact Pretest

USA-105 1974 San Francisco Livable Streets Survey

USA-154 1977 Youngmann Highway Noise Abatement Study

USA-155 1977 Minnesota Five-Site Freeway Noise Barrier Study

USA-156 1977 Ohio New Highway Survey

YUG-352 Pancevo Noise and Air Pollution Health Survey

YUG-434 1994 Central Belgrade Traffic Noise Survey

### **SONIC BOOM**

FRA-017 1965 French Regional Sonic Boom Survey

FRA-045 1970 French Sonic Boom Survey

FRA-189 1971 French Concorde Sonic Boom Study

GER-037 1969 Meppen Sonic Boom Field Experiment

SWE-054 1971 Trängslet Sonic Boom Study

SWE-108 1972 Burgsvik Sonic Boom Study

SWE-222 Nausta Research Camp Sonic Boom Study

UKD-010 1963 Welsh Village Impulse Noise (Exercise Yellow Hammer)

USA-007 1961 St Louis Sonic Boom Study

USA-012 1964 Oklahoma City Sonic Boom Study

USA-023 1967-68 SR-71 Supersonic Aircraft Noise Study

USA-299 1966 Edwards Air Force Base Resident Sonic Boom Survey

USA-375 1993-95 Western USA Sonic Boom Study



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The index is ordered by the year in which the social survey was begun. If the year of the social survey is not known, the year of the first publication is used. Within year, studies are ordered by country (indicated by the country identification code) and survey identification number.

### Survey

#### 1943 Surveys

UKD-001 1943 British Home Noise Survey

#### 1950 Surveys

NET-002 1950 Netherlands Sound Insulation Effects Study

#### 1952 Surveys

UKD-003 1952 Sound Insulation in Flats Survey

#### 1953 Surveys

JPN-005 1953 Osaka/Amagasaki Industrial Noise Survey

USA-004 1953 USA Eight-Airport Noise Survey

#### 1956 Surveys

JPN-190 1956 Kyoto Traffic Noise Survey

#### 1957 Surveys

USA-006 1957 USA Air Force Base Noise Survey

#### 1961 Surveys

UKD-008 1961 Heathrow Aircraft Noise Survey (First Heathrow Survey)

UKD-009 1961 Central London Traffic Noise Survey

USA-007 1961 St Louis Sonic Boom Study

#### 1963 Surveys

NET-013 1963 Schiphol Airport Survey

SWE-011 1963 Linköping Airport Noise Study

UKD-010 1963 Welsh Village Impulse Noise (Exercise Yellow Hammer)

#### 1964 Surveys

AUS-014 1964 Vienna Road Traffic Noise Survey

SWE-015 1964-70 Karlstad Artillery Range Noise Study

USA-012 1964 Oklahoma City Sonic Boom Study

#### 1965 Surveys

FRA-016 1965 French Four-Airport Noise Study

FRA-017 1965 French Regional Sonic Boom Survey

FRA-019 1965 Paris Expressway Noise Survey

JPN-018 1965 Osaka Aircraft Noise Survey

#### 1966 Surveys

SWE-021 1966-67 Stockholm/Gothenburg Traffic Study

USA-020 1966 USA Three-City Community Noise Study

USA-299 1966 Edwards Air Force Base Resident Sonic Boom

#### 1967 Surveys

ITL-318 1967 Ferrara Comparative Traffic Noise Study

SWE-025 1967 Stockholm Comparative Traffic Noise Study

SWE-026 1967 Huddinge New Motorway Study

UKD-024 1967 Heathrow Aircraft Noise Study (Second Heathrow Survey)

UKD-030 1967 B.R.S. London Traffic Noise Survey

USA-022 1967 USA Four-Airport Survey (Phase I Tracor Survey)

USA-023 1967-68 SR-71 Supersonic Aircraft Noise Study

#### 1968 Surveys

SAF-028 1968 South Africa Preliminary Aircraft Noise Survey

UKD-029 1968 Coventry Pilot Railway Noise Survey

USA-027 1968 LAX Aircraft Noise Study

#### 1969 Surveys

AUL-036 1969 Sydney Airport Noise Survey

FRA-041 1969 Paris Road Traffic Noise Study

GER-034 1969 Munich Airport Noise (DFG Aircraft Noise Study)

GER-037 1969 Meppen Sonic Boom Field Experiment

SWE-035 Scandinavian Nine-Airport Noise Study (Sweden)

UKD-033 1969 Mixed Road/Aircraft Noise Survey

UKD-038 1969 Central England Railway Survey

USA-031 1969 LAX Aircraft Noise Study

USA-032 1969 USA Three-Airport Survey (Phase II Tracor Survey)

USA-039 1969-70 San Francisco Three-Street Pilot Study

USA-040 1969 Inglewood Community Noise Survey

USA-043 Los Angeles Freeway Five-Site Study

USA-058 Philadelphia Community Noise Survey

USR-042 USSR 22-Settlement Aircraft Noise Survey

#### 1970 Surveys

FRA-045 1970 French Sonic Boom Survey

JPN-046 1970 Yokota Air Base Study

PUR-188 San Juan Community Noise Survey

SWE-222 Nausta Research Camp Sonic Boom Study

UKD-050 1970-71 Heston Noise Barrier Study

USA-044 1970 USA Small City Airports (Small City Tracor survey)

USA-047 1970 Minneapolis Freeway Noise Study

USA-048 1970 C.R.P. Inglewood Community Noise Survey

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- USA-049 1970 Cedar Rock Drive Neighborhood Noise Investigation Survey
- 1971 Surveys**
- CAN-055 1971 Dorval Aircraft Noise Survey  
DEN-519 Scandinavian Nine-Airport Noise Study (Denmark)  
FRA-056 1971 Orly Aircraft Noise Survey  
FRA-189 1971 French Concorde Sonic Boom Study  
JPN-376 1971-77 Chiba Multi-Family Dwelling Survey  
NOR-520 Scandinavian Nine-Airport Noise Study (Norway)  
SWE-054 1971 Trångslet Sonic Boom Study  
SWI-053 1971 Swiss Three-City Noise Survey  
UKD-052 1971 Gatwick Airport Noise Survey  
UKD-266 1971-72 Alton By-pass Study (Residents)  
USA-051 1971 J.F.K. Dynamic Preferential Runway System Survey  
USA-057 USA Vehicle Noise Situation Survey
- 1972 Surveys**
- CAN-076 1972 London/Woodstock Community Noise Survey  
CAN-077 1972 Edmonton Community Noise Survey  
CAN-078 1972 Calgary Noise Survey  
CAN-079 1972 Toronto Community Noise Survey  
DEN-075 1972 Copenhagen Traffic Noise Survey  
FRA-063 1972 Paris Area Railway Noise Survey  
JPN-062 1972 Akishima City Aircraft Noise Survey  
JPN-064 1972 Environmental Agency of Japan Shinkansen Noise Survey  
JPN-065 1972 New Tokaido and New Sanyo Shinkansen Railway Noise  
JPN-163 1972 Itami City Osaka Airport Noise Study  
JPN-509 1972-81 Kyushu Airport Opening Survey  
SWE-100 1970s Kungälv Noise Barrier Study  
SWE-108 1972 Burgsvik Sonic Boom Study  
UKD-061 1972 Heathrow Airport Noise Pilot Survey  
UKD-071 1972 B.R.S. London Traffic Noise Survey  
UKD-072 1972 English Road Traffic Survey  
UKD-073 1972 Birmingham New Motorway Study  
UKD-074 1972 London Construction Site Survey  
UKD-080 1972 Loughborough Interrupted Traffic Flow Survey  
USA-059 1972 J.F.K. Airport Noise Survey  
USA-060 1972 Portland Northshore Aircraft Survey  
USA-066 1972 BART Residential Impact Survey  
USA-067 1972 Boulder Community Noise Survey  
USA-068 1972 College Park Community Noise Survey  
USA-069 1972 Minneapolis Freeway Noise Barrier Study  
USA-070 1972 Eastern USA Four-Community Highway Noise Survey  
USA-081 Boulder Newspaper Community Noise Survey  
USA-212 1972 Minneapolis St Paul Airport Development Survey  
USA-245 1970s LAX Six-Community Noise Survey  
USA-310 1972 Los Angeles Airport Relocated Residents
- 1973 Surveys**
- AUS-093 1973 Vienna Road Traffic Noise Survey  
FRA-087 1973 St Cyr L'Ecole General Aviation Noise Survey  
FRA-092 1973 French Ten-City Traffic Noise Survey  
GER-164 1973 Düsseldorf Traffic Noise Survey  
JPN-094 1973-74 Sendai Road Traffic Noise Survey  
UKD-086 1973 Kew Aircraft Noise Survey  
UKD-267 1970s Lake District A66 Traffic Change Study (Residents)  
USA-082 1973 Los Angeles Airport Night Study  
USA-083 1973 LAX Airport Noise Study  
USA-084 1973 J.F.K. Airport Noise Study  
USA-085 1973 Seattle-Tacoma Airport Noise Study  
USA-088 1973 U.S.C. Los Angeles Freeway Noise Study  
USA-089 1973 Portland-Multnomah Community Noise Survey  
USA-090 1973 E.P.A. Community Noise Questionnaire Pilot Study  
USA-091 1973 Test of Real-Time Personal Annoyance Monitoring Devices  
USA-213 1973 Chicago Construction Site Survey
- 1974 Surveys**
- AUL-226 1974 Brisbane S-E Freeway Study  
CZE-109 Bratislava Traffic Noise Survey  
FRA-098 1974-75 Roissy Airport Before/After Opening Noise Survey  
FRA-099 1974 French National Aircraft Noise Survey  
JPN-101 1974 Sendai City Regular Railway Noise Survey  
NET-106 1974 Dordrecht Home Sound Insulation Study  
POL-198 1974 Warsaw Aircraft Noise Survey  
UKD-097 1974 English Aircraft Noise Postal Survey  
USA-096 1974 Fort Campbell Area Helicopter Noise Survey  
USA-102 1974 USA 24-Site Community Noise Survey  
USA-103 1974 Capital Beltway Survey  
USA-104 1974 Boston Economic Impact Pretest  
USA-105 1974 San Francisco Livable Streets Survey  
USA-215 1974 Los Angeles International Aircraft Noise Survey  
USA-251 Two-Neighborhood San Francisco Airport Survey
- 1975 Surveys**
- AUL-227 1975-76 Australian Three-City Roadway Study  
BEL-122 1975 Antwerp Traffic Noise Survey  
CAN-120 1975 Western Ontario University Traffic Noise Survey  
CAN-121 1975-76 Southern Ontario Community Survey  
CAN-126 Toronto Railway Noise Survey  
CHI-230 1975 Beijing Traffic Noise Survey  
FRA-113 1975 Orly Airport Noise Study  
FRA-124 1975-76 l'Hay les Roses Barrier Survey  
FRA-218 1975 Strasbourg Airport Noise Survey

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- GER-114 1975 German General Aviation Survey  
HKG-125 1975 Hong Kong Fireman Environmental Noise Survey  
HKG-208 Preliminary Hong Kong Fireman Noise Survey  
JPN-123 1975 Yokohama Road/Railway Noise Survey  
JPN-201 1975 Shinkansen Railway Survey  
NET-115 1975 Schiphol/Marssum Aircraft Noise Insulation Survey  
NET-258 1975 Amsterdam Home Sound Insulation Study  
SWE-185 1975 Gothenburg Rifle Range Survey  
UKD-111 1975-76 English Mental Health Pilot Survey  
UKD-112 1975 Luton In-migrants Aircraft Noise Survey  
UKD-116 1975 British National Railway Noise Survey  
UKD-118 1975-76 London/Liverpool Panel Survey  
UKD-119 1975 Great Britain Interior Noise Survey  
UKD-268 TRRL Multiple-Site Road Traffic Flow Change Study (Residents)  
USA-110 1975 J.F.K. Airport Noise Survey  
USA-117 1975 Boulder Noise Survey  
USA-129 Albany/Louisville Aircraft Fear Study  
USA-300 1975 Rutgers Freshmen Dormitory Noise Sensitivity Study
- 1976 Surveys**  
BEL-107 Preliminary Leuven Traffic Noise Survey  
BEL-137 1976 Brussels Traffic Noise Survey  
CAN-136 1976 Canada Impulse Noise Survey  
CAN-279 1976 Toronto Freeway 401 Privacy Fence Survey  
CAN-280 1978 Etobicoke/Ottawa Noise Barrier Study  
FRA-131 1976 Orly Medical Effects Pilot Study  
FRA-323 1976 Nationwide Noise Survey of France  
GER-134 1976 Hamburg Urban Noise Survey  
GER-135 1976 Stuttgart Railway/Road Noise Survey  
JPN-138 1976 Kanagawa Ward Community Noise Survey  
JPN-139 1976 Japanese Road/Railway Noise Study  
NET-193 1976 Netherlands Military Airfields Noise Study  
NET-194 1976 Netherlands Railway Noise Survey  
SWE-142 1976 Stockholm Visby Gothenburg Traffic Noise Study  
SWE-165 1976 Gothenburg Tramway Noise Survey  
SWI-133 1976 Zurich Street Traffic Noise (Apartments) Survey  
UKD-130 1976 Heathrow Concorde Noise Survey  
UKD-132 1976 Darlington Quiet Town Survey  
USA-095 U.S. Census Bureau Annual Housing Surveys  
USA-127 1976-77 Dulles Concorde Noise Study  
USA-128 1976 Orange County Airport Noise Survey  
YUG-141 Two-Area Belgrade Aircraft Noise Survey
- 1977 Surveys**  
AUS-178 1977 Austrian Road Traffic Survey  
BEL-151 1977-78 Belgium Four-Airport Noise Survey  
FRA-146 1977 French Light Aircraft Study  
FRA-150 1977 Roissy Airport Survey  
GER-192 1977-83 German Road/Railway Noise Comparison Study  
GER-246 1977-78 German Six-City Traffic Change Panel Study  
IRN-459 1977 Tehran Community Noise Survey  
JPN-140 1977 Camp Fuji Noise Survey  
JPN-152 1977 Atugi Military Aircraft Noise Study  
NET-149 1977 Schiphol/Marssum Sound Insulation Survey  
NET-153 1977 Netherlands Railway Noise Survey  
NET-195 1977-78 Netherlands New Railway Line Survey  
NET-259 1977 Netherlands Industrial Noise Pilot Survey  
NET-261 1977 Netherlands National Noise Survey  
SWI-158 1977 Zurich Pilot Traffic Noise Survey  
SWI-159 1977 Swiss N-3 Motorway Study  
UKD-147 1977 Heathrow Nighttime Pilot Survey  
UKD-148 1977 West London (Heathrow) Psychiatric Morbidity Survey  
UKD-157 1977 London Area Panel Survey  
UKD-160 1977 Hampshire Village Noise Study  
UKD-161 1977 Southampton Hovercraft Noise Survey  
UKD-162 Greater Manchester Traffic Survey  
UKD-309 1977 Hamble Airfield Survey  
USA-143 1977-78 Three-Phase J.F.K. Concorde Noise Study  
USA-144 1977-78 F.A.A. J.F.K. Concorde Noise Study  
USA-145 1977 Orange County Airport Noise Study  
USA-154 1977 Youngmann Highway Noise Abatement Study  
USA-155 1977 Minnesota Five-Site Freeway Noise Barrier Study  
USA-156 1977 Ohio New Highway Survey  
USA-221 1977 Allentown Community Noise Survey
- 1978 Surveys**  
AUL-214 1978 Leichhardt Municipality Complaint Comparison Survey  
CAN-168 1978 Canadian Four-Airport Survey  
CAN-169 1978-79 Canadian Five Railway Yard Survey  
CAN-174 1978 Canadian National Community Noise Survey  
JPN-177 1978 Kanagawa Ward Community Noise Survey  
NET-196 1978 Dutch Homes for the Aged Environmental Noise Study  
SWE-228 1978-80 Swedish Railway Study  
SWI-173 1978 Zurich Time-of-Day Survey  
UKD-175 1978 Southampton Hovercraft Terminal Noise Survey  
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UKD-199 1978 Darlington Quiet Town Survey  
UKD-220 1978 British Interior Noise Survey  
USA-166 1978 Salt Lake Airport Noise Study  
USA-167 1978-79 USA Helicopter Survey of Selected Occupations  
USA-170 1978 U.S. Army Impulse Noise Survey  
USA-171 1978 Spokane Community Noise Survey  
USA-172 1978 Kentucky Urban Noise Survey  
USA-202 1978-79 Time-of-Day Study with Annoyance

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- USA-216 1978 Electrical Power Line and Transformer Noise Survey
- 1979 Surveys**
- AUL-209 1979 Hornsby Rifle Range Survey
- AUL-211 1979 Sydney Airport Study of Type of Noise Reactions
- AUL-244 1979 Sydney Airport Pilot Survey
- CAN-181 1979 Canadian Three Airport General Aviation Study
- DEN-200 1979 Danish Railway Noise Survey
- FRA-197 1979 French Behavioral Effects of Road Noise Study
- GER-282 1979 Wuppertal/Düsseldorf Traffic Noise Barriers Study
- NET-257 1979 Netherlands Industrial Noise Pilot Survey
- POL-184 Polish Railway Noise Survey
- SWI-180 1979 Swiss General Aviation Survey
- UKD-182 1979 Heathrow/Gatwick Sleep Study
- USA-179 1979 Oklahoma City Airport Noise Survey
- USA-183 1979 Salt Lake City Community Noise Survey
- USA-191 1979 Philadelphia Aircraft Noise Survey
- USA-203 1979 Burbank Aircraft Noise Change Study
- USA-308 1979 Salt Lake City Stationary Noise Source Survey
- 1980 Surveys**
- AUL-210 1980 Australian Five-Airport Survey
- AUL-264 1980 Brisbane Traffic Noise Reduction Survey
- AUL-265 1980 Brisbane Traffic Noise Increase Survey
- BEL-288 1980s Brussels International Airport Noise Survey
- GER-278 1980 German Shooting Range Survey
- GER-281 1976-77 German Highway Noise Study
- GER-511 1980 Student Noise Attitudes Study (Germany)
- HKG-187 Hong Kong Socio-Economic Area Road Traffic Survey
- IRQ-229 1980 Baghdad Street Noise Survey
- JPN-506 1980s Yamahoko Community Noise Survey
- JPN-510 1980s Student Noise Attitudes Study (Japan)
- NET-232 1980 Netherlands Industrial Noise Survey
- NET-260 1980-81 Netherlands Pile Driver Impulse Noise Survey
- TRK-283 1980-84 Istanbul Noise Survey
- UKD-233 1980 British Flats' Sound Insulation Survey
- UKD-277 TRRL Four-Road Laboratory/Field Comparison Study
- UKD-305 1980-83 Noise Sensitivity Follow-up Survey
- UKD-512 Student Noise Attitudes Study (Britain)
- USA-186 1980 Bradley International Airport Noise Survey
- USA-205 1980 Bellevue Airport Noise Study
- USA-207 1980 John Wayne Airport (Orange County) Survey
- USA-217 1980 Aircraft Rating Diary (Pilot) Study
- USA-219 1980 Salt Lake City In-Home Aircraft Rating Study
- 1981 Surveys**
- CAN-236 1981 Southern Ontario Community Survey
- GER-231 1981 Blast Furnace and Road Noise Study
- GER-290 1981 German Military Training Area Survey
- SPA-272 1981 Valencia City-Wide Survey
- SWE-223 1981 Swedish Sleep Disturbance and Sound Insulation Study
- UKD-243 1981 United Kingdom General Aviation Airport Survey
- USA-204 1981 John Wayne Airport Operation Change Study
- USA-206 1981 Alabama Three-Site Blast Noise Survey
- USA-338 1981 USA Air Force Base Study
- YUG-234 1981 Split, Yugoslavia Airport Survey
- 1982 Surveys**
- CAN-262 Canadian Party Wall Insulation Pilot Survey
- FRA-252 1982-83 CEC Impulse Noise Field Study (France)
- IRE-254 1982-83 CEC Impulse Noise Field Study (Ireland)
- JPN-294 Nagoya City 1980s Cumulative Noise Survey
- NET-255 1982-83 CEC Impulse Noise Field Study (Netherlands)
- NET-263 1982-1983 Netherlands New Dwelling Survey
- SPA-273 1982 Valencia Five-Site Survey
- SPA-274 1982 Valencia Single-Site Survey
- UKD-224 1982 Manchester Night Noise Survey
- UKD-225 1982 British Helicopter Disturbance Study
- UKD-241 1982 Heathrow Combined Aircraft/Road Traffic Survey
- UKD-242 1982 United Kingdom Aircraft Noise Index Study
- UKD-426 UK Road Traffic and Ischemic Heart Disease Study
- USA-250 1982 Decatur General Aviation Airport Survey
- USA-301 1982 Westchester Airport Nighttime Noise Change Study
- 1983 Surveys**
- AUL-248 1983 Melbourne Australia Simon and Garfunkel Concerts
- AUL-249 1983 Melbourne Australia David Bowie Concert
- AUL-321 1983 Sydney Artillery Range Survey
- DEN-380 1983 Copenhagen Kastrup Airport Survey
- GER-253 1982-83 CEC Impulse Noise Field Study (Germany)
- GER-516 1983 Apartment Noise Attitudes Study (Germany)
- JPN-340 1983 Tokyo Railway Noise Survey
- JPN-515 1983 Apartment Noise Attitudes Study (Japan)
- NET-276 1983 Netherlands Tram/Road Traffic Noise Survey
- SPA-316 1983 Valencia Traffic Noise Survey
- UKD-237 1983-84 Southern England New Road Opening Survey
- UKD-270 1983 English Road Traffic Vibration Survey
- UKD-284 1983 English 11-Site Gypsy Traffic Noise Survey
- UKD-481 UK 30-Site Noise Insulation Treatment Evaluation Survey
- USA-235 1983 Controlled Exposure Helicopter Noise Study

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- AUL-247 Victoria Australia Entertainment Center Study
- FRA-239 1984-1986 French Combined Aircraft/Road Traffic Survey
- GER-291 1984 Visual Context of Noise Survey (Germany)
- JPN-271 Japan Three-Site Construction Noise Survey
- JPN-292 1984 Sapporo City Traffic Noise and Vibration Survey
- JPN-440 1984 Fukuoka Road Traffic Noise Survey
- NET-240 1984 Schiphol Combined Aircraft/Road Traffic Survey
- NET-362 1984-85 Arnhem Trolley Bus Introduction Survey
- SPA-313 1984-85 Ganda Three-Site Traffic Noise Survey
- SPA-317 1984 Gandía City-Wide Traffic Noise Survey
- SWI-312 1984 Visual Context of Noise Survey (Switzerland)
- UKD-238 1984 Glasgow Combined Aircraft/Road Traffic Survey

### 1985 Surveys

- CHI-514 1985 Student Noise Attitudes Study (Beijing/Tsinghua)
- GER-256 Berlin Nighttime Noise Survey
- GER-372 1985-86 Ratingen Düsseldorf Road Traffic/Aircraft Survey
- JPN-493 1985-86 Shinkansen/Conventional Rail Noise Survey
- JPN-495 1984 Nagoya Neighborhood Noise Survey
- JPN-501 1985 Kawasaki Life-Related Noise Survey
- KOR-475 1980s Seoul Multiple-Source Noise Survey
- UKD-296 1985 Great Britain Neighborhood Noise Survey
- UKD-297 1985 Follow-up of 1983 New Road Opening Survey
- UKD-298 1985 Follow-up of TRRL Multiple-Site Traffic Flow Change Study
- USA-513 1985 Student Noise Attitudes Study (Boston)

### 1986 Surveys

- AUL-285 1986 Australian National Noise Survey
- AUL-286 1986 Brisbane Noise Survey
- AUL-287 1986 Toowoomba Community Noise Survey
- AUL-307 1986 Sydney Aircraft/Road Traffic Survey
- CHI-386 1986-1989 Chinese Five-City Road Traffic Noise Survey
- CHI-457 1986 Beijing City (Nagoya Comparison) Survey
- DEN-381 1986 Copenhagen Kastrup Airport Followup Survey
- FRA-289 1986-87 French National Transportation Noise Survey
- GER-275 1986-87 Darmstadt Movers Survey
- GER-502 German Noise Change Part of CEC Sleep Study
- JPN-503 1986 Tokyo Main-Road Traffic Survey
- NET-269 1986 Netherlands Low-Level Military Aircraft Study
- NOR-404 1986 Drammen Road Traffic Noise survey
- SPA-302 1986 Valencia Five-Site Survey
- SWE-303 1986 Gothenburg Sleep Disturbance Pilot Survey

- SWI-304 1986 Swiss Multi-Story Building Sound Insulation Study

- UKD-324 1986 English General Aviation Survey

### 1987 Surveys

- GER-373 1987 Düsseldorf/Ratingen Aircraft/ Road Traffic Survey
- JPN-293 Osaka Aircraft and Environmental Noise Survey
- JPN-441 1987 Fukuoka Railway Crossing Noise Survey
- JPN-442 1987 Fukuoka 19-Area Community Noise Survey
- JPN-448 1987 Sapporo Railway Noise and Vibration Survey
- JPN-494 1987 Odawara Sound Environment Survey
- JPN-504 1987 Tokyo Side Streets Noise Survey
- KOR-295 1987 Seoul Traffic Noise Survey
- NET-356 1987 Netherlands National Noise Survey
- NOR-398 1987 Vålerenga/Gamlebyen Road Traffic Survey
- SPA-314 1987-91 Gandía Beach Resort Traffic Noise Survey

### 1988 Surveys

- AUL-306 1988 New South Wales Power Station Survey
- GER-363 1988 German Noise Barrier Evaluation Survey
- JPN-358 Central Tokyo Combined Residential and Personal Noise Survey
- JPN-453 1988-1990 Hokkaido/Kyushu Traffic Noise Survey
- JPN-498 1988-91 Setagaya Tokyo Environmental Complaints Survey
- SPA-315 1988 Pamplona Five-Site Noise Survey
- SWE-344 1988 Gothenburg Psycho-Social Wellbeing Traffic Survey (Pilot)
- SWE-360 Swedish Four-Site Shooting Range Noise Annoyance Survey
- SWE-419 1988-93 Swedish Small Airport Noise Survey
- UKD-351 1988 TRL 35-Site Traffic Noise Survey

### 1989 Surveys

- AUS-329 1989 Austrian Alps Road Traffic Noise Survey
- JPN-319 1989 Muroran Road/Railway Noise Survey
- JPN-341 1989 Sapporo Traffic Noise/Vibration Survey
- NOR-311 1989 Oslo Airport Survey
- NOR-403 1989 Horton Road Traffic Noise Survey
- SLO-406 1989 Bratislava Medical Student Survey
- SPA-348 1989-90 Spanish Airport Survey
- SWE-365 1989-93 Swedish Railway Survey
- UKD-325 1989-91 TRL 15-Site Traffic Change Study

### 1990 Surveys

- CAN-322 1990 Toronto Air Conditioner Survey
- ITL-350 1990 Modena Traffic Noise Survey
- JPN-343 1990-93 Tokyo Five-Area Traffic Noise Survey
- JPN-447 1990 Sapporo Traffic Noise and Vibration Survey
- JPN-517 1990, 1995 Japanese/English Questionnaire Testing Study (Osaka)
- NET-354 1990 Marnewaard Shooting Range Residential Survey

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- NOR-366 1990-91 Værnes Aircraft Military Exercise Survey  
 NOR-399 1990 Vålerenga/Gamlebyen Road Traffic Survey  
 SWE-345 1990 Gothenburg Psycho-Social Wellbeing Traffic Survey (Main)  
 SWE-359 Gothenburg 12-Area Traffic Noise Survey  
 THA-455 1990-91 Bangkok Personal Noise Exposure Survey  
 UKD-347 1990 Manchester Airport Sleep Survey  
 UKD-355 1990 East London Docklands Light Rail Survey
- 1991 Surveys**  
 AUL-332 1991 Brisbane Traffic Noise Survey  
 FRA-336 1991 TGV High Speed Train Pilot Survey  
 FRA-346 1991 French Before/After Noise Abatement Survey  
 GER-454 1991 German Artillery and Road Traffic Noise Survey  
 JPN-326 1991 Muroran Traffic Noise Survey  
 JPN-438 1991 Fukuoka Green Areas Noise Survey  
 JPN-449 1991 Sapporo Railway Noise and Vibration Survey  
 JPN-492 1991 Yokohama Sound Environment Survey  
 UKD-339 1991 United Kingdom Four-Airport Sleep Survey  
 UKD-423 1991 England/Wales Environmental Noise Survey  
 UKD-436 London/Birmingham Converted Flats Survey  
 USA-349 Atlanta Airport Acoustical Insulation Survey
- 1992 Surveys**  
 AUL-384 1992 Sydney Aircraft Noise Amelioration Attitudes Survey  
 DEN-333 1992 CEC Wind Turbine Noise Study (Denmark)  
 FRA-342 1992 French Home Insulation Survey  
 GER-335 1992 CEC Wind Turbine Noise Study (Germany)  
 GRE-331 1992 Rhodes Residential Noise Survey  
 JPN-377 1992-95 Tokyo Multi-Family Dwelling Study  
 JPN-439 1992 Fukuoka Green Areas Survey  
 JPN-497 1992 Itabashi Tokyo Environmental Complaints Survey  
 NET-334 1992 CEC Wind Turbine Noise Study (Netherlands)  
 NOR-328 1992-93 Bodø Aircraft Military Exercise Survey  
 SWE-420 1992 Gothenburg Road Traffic Survey  
 THA-327 1992 Songkhla Traffic Noise Survey  
 UKD-484 1992-94 Great Britain Insulation Complaint Survey
- 1993 Surveys**  
 EGY-357 Alexandria Tram Noise Study  
 FRA-364 1993-94 French 18-Site Time-Of-Day Study  
 FRA-396 1993 TGV High Speed Train Survey  
 GER-374 1993 Greifswald Traffic Noise Survey  
 GER-463 1993-94 Berlin Women Environmental Health Survey  
 JPN-353 1992 Chatan Town Kadena Air Base Survey  
 JPN-443 1993 Fukuoka 12-Area Community Noise Survey  
 JPN-451 1993 Kumamoto Road Traffic Noise Survey  
 JPN-452 1993 Tomakomai Road Traffic Noise Survey  
 JPN-505 1993 Osaka Free-Response Industrial Noise Survey  
 NET-361 1993 Netherlands National Environmental Survey
- SPA-320 Zaragoza City Noise Survey  
 SPA-330 Madrid Two-Site Traffic Noise Survey  
 SWE-337 Swedish Low Frequency Heat Pump Noise Study  
 USA-375 1993-95 Western USA Sonic Boom Study  
 USA-433 1993 LAX/Castle AFB Behavioral Awakening Study  
 USA-490 1993-94 USA Individual Sound Noticeability Study  
 YUG-352 Pancevo Noise and Air Pollution Health Survey
- 1994 Surveys**  
 AUL-383 1994-95 Sydney Airport Noise Change Survey  
 GER-472 1994 1996 Düsseldorf Activity Disturbance Study  
 JPN-370 1994-95 Kyushu Railway Survey  
 JPN-446 1994 Sapporo Traffic Noise Survey  
 JPN-496 1994-96 Tokyo Trunk Road Noise Survey  
 JPN-499 Tokyo Four-Area Nighttime Road Traffic Survey  
 NOR-400 1994 Vålerenga/Gamlebyen Road Traffic Survey  
 SPA-408 1994-95 Spanish Underground Railway Noise Survey  
 UKD-425 1990s UK Road Resurfacing Survey  
 USA-430 1994-95 Denver Airport Opening Sleep Disturbance Study  
 YUG-434 1994 Central Belgrade Traffic Noise Survey
- 1995 Surveys**  
 AUL-456 1995 Sydney Airport Ku-ring-gai Noise Survey  
 AUL-461 1995-96 Four-Phase Sydney Road Traffic Noise Survey  
 CAN-385 1990s Vancouver Airport Noise Change Survey  
 CZE-402 1995-97 Czech Noise/Public Health Survey  
 GER-471 1995-96 Germany Rail-Grinding Noise Reduction Study (Pilot)  
 GER-473 1995 Düsseldorf Airport Noise Survey  
 HUN-458 1995 Hungary Road Traffic Noise Survey  
 JPN-445 1995-96 Kadena General Health Questionnaire Survey  
 JPN-450 1995-96 Kyushu Expressway Survey  
 SWE-414 1995-96 Lund Railway Noise Barrier Survey  
 TRK-367 Istanbul Trans-European Motorway Survey  
 USA-431 1995 Seattle-Tacoma Airport Noise Survey  
 USA-518 1995 Japanese/English Questionnaire Testing Study (Boston)
- 1996 Surveys**  
 BRA-474 1994 Porto Alegre Noise Survey  
 GER-464 Oldenburg Noise Situation Investigation  
 GER-465 1996-97 German Sleep Disturbance Survey  
 GER-470 1996-97 German Road/Rail Traffic Noise Survey  
 GER-480 1996-97 German Road/Rail Sleep Study  
 JPN-369 1996 Kumamoto Road Traffic Survey  
 JPN-444 1996-97 Kadena/Futenma Military Aircraft Noise Survey  
 JPN-491 1996 Osaka International Airport Noise Survey  
 JPN-507 1996 Nishijin Textile Neighborhood Noise Survey

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- NET-371 1996-97 Schiphol Airport GES Survey  
NIG-485 Nigeria Eight-City Noise Survey  
NOR-401 1996 Vålerenga/Gamlebyen Road Traffic Survey  
OMA-476 1996-98 Oman Sound Environment Survey  
SPA-409 Pozuelo de Alarcón Two-Area Acoustical Environment Survey  
SWE-368 1996 Gothenburg Road Traffic Survey  
SWE-413 1996 Kungsbacka Railway Noise Countermeasures Study  
SWE-437 Swedish Eight-Range Heavy Weapons Noise Survey  
UKD-427 1996-97 Heathrow Area Children Noise Survey  
USA-428 1996 Minneapolis-St Paul Aircraft Mitigation Preference Survey  
USA-435 1996 Olympic Games Aircraft Noise Sleep Study
- 1997 Surveys**  
FRA-393 1997 France Road/Railway Noise Survey  
FRA-394 1997 Besançon Road Traffic Noise Survey  
GER-467 1997 ICE High-Speed Railway Noise Survey  
GER-479 1997-98 Germany Rail-Grinding Noise Reduction Study (Primary)  
JPN-382 1997-98 Sapporo Road Traffic Noise Survey  
NET-462 1997 Netherlands Home Insulation Survey  
NOR-405 1997 Norwegian Survey of Living Conditions  
POL-477 1997 Warsaw Low-Frequency Interior Noise Study  
SWE-412 1997 Sollentuna Road/Rail Noise Survey  
SWE-415 1997 Västre Bräcke­vägen Change Survey (Before)  
THA-421 1997-98 Bangkok Road Traffic Noise Survey  
UKD-422 1997 English Residential Soundproofing Survey  
USA-432 1997 LAX Low-Frequency Noise Survey
- 1998 Surveys**  
AUS-488 1998 Tyrol Children/Mothers Noise Survey  
AUS-521 Austrian Transportation Noise and Blood Pressure Survey  
DEN-388 1998 Danish Speed Bump Noise Survey  
DEN-389 1998 Danish Road Traffic Noise Barrier Study  
FRA-391 1998-99 Orly Airport Contingent Valuation Noise Survey  
FRA-392 1998 Paris "Zone 30" Noise Survey  
FRA-395 1998 Orly/Roissy Airport Noise Survey  
GER-466 1998 Düsseldorf/Dortmund Airport Noise Information Survey  
NET-378 1998 Rotterdam-Ruhrgebiet Freight Railway Pilot Study  
NET-379 1998 Groningen Eelde Airport Survey  
NET-468 1998 Schiphol Sleep Disturbance Pilot Survey  
SPA-410 1999 Pamplona Contingent Valuation Noise Survey  
SPA-411 1998 Altet-Alicante Airport Noise Survey  
SWE-416 1998 Västre Bräcke­vägen Change Survey (After, Preliminary)
- 1999 Surveys**  
AUS-487 1998 Inn Valley Road/Railway Noise Survey  
DEN-387 1999-2000 Øster Søgade Copenhagen Porous Asphalt Survey  
DEN-390 1999 Aarhus Road Traffic Noise Survey  
JPN-500 1999 Osaka Aircraft Noise and Health Survey  
NET-460 1993 Dutch Artillery Range Noise Annoyance and Startle Survey  
NOR-397 1999 Oslo Contingent Valuation Noise Survey  
POR-478 1999 Lisbon Contingent Valuation Road Traffic Noise Survey  
SLO-407 1999 Bratislava Medical Student Survey  
SWE-417 1999 Västre Bräcke­vägen Change Survey (After, Primary)  
SWE-418 1999 Stockholm Noise Barrier Traffic Survey  
SWI-469 1999 Swiss Noise Barrier Survey  
UKD-424 1999 Bristol Community Noise Survey  
UKD-482 1999-2000 UK 5-Airport Night Noise Perception Survey  
UKD-483 1999 Manchester Nighttime Aircraft Noise Trial Methodology Study  
UKD-489 1999-2000 UK 4-Airport Night Noise Mail Survey  
USA-429 1999 Minneapolis-St Paul Airport Noise Survey
- 2000 Surveys**  
JPN-508 Toyonaka City Free-Response Noise Survey  
NIG-486 South-Eastern Nigeria Eight-City Road Traffic Survey

## SERIAL NUMBER INDEX

This index is ordered by the unique, three-digit, numeric serial number which forms the second part of the survey identification number. Most serial numbers from 001 to 187 were assigned in ascending order by year of the social survey.

UKD-001	1943 British Home Noise Survey	USA-039	1969-70 San Francisco Three-Street Pilot Study
NET-002	1950 Netherlands Sound Insulation Effects Study	USA-040	1969 Inglewood Community Noise Survey
UKD-003	1952 Sound Insulation in Flats Survey	FRA-041	1969 Paris Road Traffic Noise Study
USA-004	1953 USA Eight-Airport Noise Survey	USR-042	USSR 22-Settlement Aircraft Noise Survey
JPN-005	1953 Osaka/Amagasaki Industrial Noise Survey	USA-043	Los Angeles Freeway Five-Site Study
USA-006	1957 USA Air Force Base Noise Survey	USA-044	1970 USA Small City Airports (Small City Tracor survey)
USA-007	1961 St Louis Sonic Boom Study	FRA-045	1970 French Sonic Boom Survey
UKD-008	1961 Heathrow Aircraft Noise Survey (First Heathrow Survey)	JPN-046	1970 Yokota Air Base Study
UKD-009	1961 Central London Traffic Noise Survey	USA-047	1970 Minneapolis Freeway Noise Study
UKD-010	1963 Welsh Village Impulse Noise (Exercise Yellow Hammer)	USA-048	1970 C.R.P. Inglewood Community Noise Survey
SWE-011	1963 Linköping Airport Noise Study	USA-049	1970 Cedar Rock Drive Neighborhood Noise Investigation
USA-012	1964 Oklahoma City Sonic Boom Study	UKD-050	1970-71 Heston Noise Barrier Study
NET-013	1963 Schiphol Airport Survey	USA-051	1971 J.F.K. Dynamic Preferential Runway System Survey
AUS-014	1964 Vienna Road Traffic Noise Survey	UKD-052	1971 Gatwick Airport Noise Survey
SWE-015	1964-70 Karlstad Artillery Range Noise Study	SWI-053	1971 Swiss Three-City Noise Survey
FRA-016	1965 French Four-Airport Noise Study	SWE-054	1971 Trängslet Sonic Boom Study
FRA-017	1965 French Regional Sonic Boom Survey	CAN-055	1971 Dorval Aircraft Noise Survey
JPN-018	1965 Osaka Aircraft Noise Survey	FRA-056	1971 Orly Aircraft Noise Survey
FRA-019	1965 Paris Expressway Noise Survey	USA-057	USA Vehicle Noise Situation Survey
USA-020	1966 USA Three-City Community Noise Study	USA-058	Philadelphia Community Noise Survey
SWE-021	1966-67 Stockholm/Göteborg Traffic Study	USA-059	1972 J.F.K. Airport Noise Survey
USA-022	1967 USA Four-Airport Survey (Phase I Tracor Survey)	USA-060	1972 Portland Northshore Aircraft Survey
USA-023	1967-68 SR-71 Supersonic Aircraft Noise Study	UKD-061	1972 Heathrow Airport Noise Pilot Survey
UKD-024	1967 Heathrow Aircraft Noise Study (Second Heathrow Survey)	JPN-062	1972 Akishima City Aircraft Noise Survey
SWE-025	1967 Stockholm Comparative Traffic Noise Study	FRA-063	1972 Paris Area Railway Noise Survey
SWE-026	1967 Huddinge New Motorway Study	JPN-064	1972 Environmental Agency of Japan Shinkansen Noise Survey
USA-027	1968 LAX Aircraft Noise Study	JPN-065	1972 New Tokaido and New Sanyo Shinkansen Railway Noise
SAF-028	1968 South Africa Preliminary Aircraft Noise Survey	USA-066	1972 BART Residential Impact Survey
UKD-029	1968 Coventry Pilot Railway Noise Survey	USA-067	1972 Boulder Community Noise Survey
UKD-030	1967 B.R.S. London Traffic Noise Survey	USA-068	1972 College Park Community Noise Survey
USA-031	1969 LAX Aircraft Noise Study	USA-069	1972 Minneapolis Freeway Noise Barrier Study
USA-032	1969 USA Three-Airport Survey (Phase II Tracor Survey)	USA-070	1972 Eastern USA Four-Community Highway Noise Survey
UKD-033	1969 Mixed Road/Aircraft Noise Survey	UKD-071	1972 B.R.S. London Traffic Noise Survey
GER-034	1969 Munich Airport Noise (DFG Aircraft Noise Study)	UKD-072	1972 English Road Traffic Survey
SWE-035	Scandinavian Nine-Airport Noise Study (Sweden)	UKD-073	1972 Birmingham New Motorway Study
AUL-036	1969 Sydney Airport Noise Survey	UKD-074	1972 London Construction Site Survey
GER-037	1969 Meppen Sonic Boom Field Experiment	DEN-075	1972 Copenhagen Traffic Noise Survey
UKD-038	1969 Central England Railway Survey	CAN-076	1972 London/Woodstock Community Noise Survey



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- CAN-077 1972 Edmonton Community Noise Survey  
 CAN-078 1972 Calgary Noise Survey  
 CAN-079 1972 Toronto Community Noise Survey  
 UKD-080 1972 Loughborough Interrupted Traffic Flow Survey  
 USA-081 Boulder Newspaper Community Noise Survey  
 USA-082 1973 Los Angeles Airport Night Study  
 USA-083 1973 LAX Airport Noise Study  
 USA-084 1973 J.F.K. Airport Noise Study  
 USA-085 1973 Seattle-Tacoma Airport Noise Study  
 UKD-086 1973 Kew Aircraft Noise Survey  
 FRA-087 1973 St Cyr L'Ecole General Aviation Noise Survey  
 USA-088 1973 U.S.C. Los Angeles Freeway Noise Study  
 USA-089 1973 Portland-Multnomah Community Noise Survey  
 USA-090 1973 E.P.A. Community Noise Questionnaire Pilot Study  
 USA-091 1973 Test of Real-Time Personal Annoyance Monitoring Devices  
 FRA-092 1973 French Ten-City Traffic Noise Survey  
 AUS-093 1973 Vienna Road Traffic Noise Survey  
 JPN-094 1973-74 Sendai Road Traffic Noise Survey  
 USA-095 U.S. Census Bureau Annual Housing Surveys  
 USA-096 1974 Fort Campbell Area Helicopter Noise Survey  
 UKD-097 1974 English Aircraft Noise Postal Survey  
 FRA-098 1974-75 Roissy Airport Before/After Opening Noise Survey  
 FRA-099 1974 French National Aircraft Noise Survey  
 SWE-100 1970s Kungälv Noise Barrier Study  
 JPN-101 1974 Sendai City Regular Railway Noise Survey  
 USA-102 1974 USA 24-Site Community Noise Survey  
 USA-103 1974 Capital Beltway Survey  
 USA-104 1974 Boston Economic Impact Pretest  
 USA-105 1974 San Francisco Livable Streets Survey  
 NET-106 1974 Dordrecht Home Sound Insulation Study  
 BEL-107 Preliminary Leuven Traffic Noise Survey  
 SWE-108 1972 Burgsvik Sonic Boom Study  
 CZE-109 Bratislava Traffic Noise Survey  
 USA-110 1975 J.F.K. Airport Noise Survey  
 UKD-111 1975-76 English Mental Health Pilot Survey  
 UKD-112 1975 Luton In-migrants Aircraft Noise Survey  
 FRA-113 1975 Orly Airport Noise Study  
 GER-114 1975 German General Aviation Survey  
 NET-115 1975 Schiphol/Marssum Aircraft Noise Insulation Survey  
 UKD-116 1975 British National Railway Noise Survey  
 USA-117 1975 Boulder Noise Survey  
 UKD-118 1975-76 London/Liverpool Panel Survey  
 UKD-119 1975 Great Britain Interior Noise Survey  
 CAN-120 1975 Western Ontario University Traffic Noise Survey  
 CAN-121 1975-76 Southern Ontario Community Survey  
 BEL-122 1975 Antwerp Traffic Noise Survey  
 JPN-123 1975 Yokohama Road/Railway Noise Survey  
 FRA-124 1975-76 l'Hay les Roses Barrier Survey  
 HKG-125 1975 Hong Kong Fireman Environmental Noise Survey  
 CAN-126 Toronto Railway Noise Survey  
 USA-127 1976-77 Dulles Concorde Noise Study  
 USA-128 1976 Orange County Airport Noise Survey  
 USA-129 Albany/Louisville Aircraft Fear Study  
 UKD-130 1976 Heathrow Concorde Noise Survey  
 FRA-131 1976 Orly Medical Effects Pilot Study  
 UKD-132 1976 Darlington Quiet Town Survey  
 SWI-133 1976 Zurich Street Traffic Noise (Apartments) Survey  
 GER-134 1976 Hamburg Urban Noise Survey  
 GER-135 1976 Stuttgart Railway/Road Noise Survey  
 CAN-136 1976 Canada Impulse Noise Survey  
 BEL-137 1976 Brussels Traffic Noise Survey  
 JPN-138 1976 Kanagawa Ward Community Noise Survey  
 JPN-139 1976 Japanese Road/Railway Noise Study  
 JPN-140 1977 Camp Fuji Noise Survey  
 YUG-141 Two-Area Belgrade Aircraft Noise Study  
 SWE-142 1976 Stockholm Visby Gothenburg Traffic Noise Study  
 USA-143 1977-78 Three-Phase J.F.K. Concorde Noise Study  
 USA-144 1977-78 F.A.A. J.F.K. Concorde Noise Study  
 USA-145 1977 Orange County Airport Noise Study  
 FRA-146 1977 French Light Aircraft Study  
 UKD-147 1977 Heathrow Nighttime Pilot Survey  
 UKD-148 1977 West London (Heathrow) Psychiatric Morbidity Survey  
 NET-149 1977 Schiphol/Marssum Sound Insulation Survey  
 FRA-150 1977 Roissy Airport Survey  
 BEL-151 1977-78 Belgium Four-Airport Noise Survey  
 JPN-152 1977 Atugi Military Aircraft Noise Study  
 NET-153 1977 Netherlands Railway Noise Survey  
 USA-154 1977 Youngmann Highway Noise Abatement Study  
 USA-155 1977 Minnesota Five-Site Freeway Noise Barrier Study  
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 SWI-158 1977 Zurich Pilot Traffic Noise Survey  
 SWI-159 1977 Swiss N-3 Motorway Study  
 UKD-160 1977 Hampshire Village Noise Study  
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 JPN-163 1972 Itami City Osaka Airport Noise Study  
 GER-164 1973 Düsseldorf Traffic Noise Survey  
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- UKD-175 1978 Southampton Hovercraft Terminal Noise Survey  
 UKD-176 1978 ISVR Lab/Field Comparison Survey  
 JPN-177 1978 Kanagawa Ward Community Noise Survey  
 AUS-178 1977 Austrian Road Traffic Survey  
 USA-179 1979 Oklahoma City Airport Noise Survey  
 SWI-180 1979 Swiss General Aviation Survey  
 CAN-181 1979 Canadian Three Airport General Aviation Study  
 UKD-182 1979 Heathrow/Gatwick Sleep Study  
 USA-183 1979 Salt Lake City Community Noise Survey  
 POL-184 Polish Railway Noise Survey  
 SWE-185 1975 Gothenburg Rifle Range Survey  
 USA-186 1980 Bradley International Airport Noise Survey  
 HKG-187 Hong Kong Socio-Economic Area Road Traffic Survey  
 PUR-188 San Juan Community Noise Survey  
 FRA-189 1971 French Concorde Sonic Boom Study  
 JPN-190 1956 Kyoto Traffic Noise Survey  
 USA-191 1979 Philadelphia Aircraft Noise Survey  
 GER-192 1977-83 German Road/Railway Noise Comparison Study  
 NET-193 1976 Netherlands Military Airfields Noise Study  
 NET-194 1976 Netherlands Railway Noise Survey  
 NET-195 1977-78 Netherlands New Railway Line Survey  
 NET-196 1978 Dutch Homes for the Aged Environmental Noise Study  
 FRA-197 1979 French Behavioral Effects of Road Noise Study  
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