



Acoustics—Aircraft noise intrusion— Building siting and construction



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 - Aircraft Noise Ombudsman
 - Australian Acoustical Society
 - Australian Airports Association
 - Australian Association of Acoustical Consultants
 - Australian Helicopter Industry Association
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 - Master Builders Australia
 - National Acoustic Laboratories
 - Northern Territory Planning Commission
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-

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Australian Standard[®]

Acoustics—Aircraft noise intrusion— Building siting and construction

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PREFACE

This Standard was prepared by the Standards Australia Committee EV-011, Aircraft and Helicopter Noise, to supersede AS 2021—2000.

This Standard provides guidance on the siting and construction of buildings in the vicinity of airports to minimize aircraft noise intrusion. The assessment of potential aircraft noise exposure at a given site is based on the Australian Noise Exposure Forecast (ANEF) system (for processes and details of this system refer to Appendices A and B).

This edition provides expanded aircraft noise tables and incorporates various associated amendments to the text. A new Appendix has been added to describe the process that should be followed in producing an Australian Noise Exposure Forecast (ANEF) chart for use in applying this Standard.

The term ‘informative’ has been used in this Standard to define the application of the appendix to which it applies. An ‘informative’ appendix is only for information and guidance.

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FOREWORD

Aircraft noise intrusion within a building depends substantially on—

- (a) the location, orientation and elevation of the site relative to the aircraft flight paths;
- (b) the types and frequency of aircraft operating from the aerodrome;
- (c) meteorological conditions;
- (d) the types of activity (including sleep) to be, or being, accommodated in the building;
- (e) the type of layout, construction and ventilation used; and
- (f) the internal acoustic environment.

The data contained in the aircraft Noise Level Tables (Tables 3.4 to 3.58) are based on modelling, which in turn is based on actual measurements and are estimates of the noise levels emitted by the aircraft currently operating. These data will be amended as new aircraft are commissioned and as otherwise necessary.

Exposure prediction below 25 ANEF may be significantly inaccurate, and therefore caution should be exercised in the evaluation of locations outside the 25 ANEF contour. In addition, the extent of noise reduction required for a building may depend in part on the amount of noise from sources other than aircraft. Because of these factors and of the special acoustic requirements of certain types of building, it will sometimes be necessary to undertake supplementary noise measurements so that a sufficiently representative prediction of the noise exposure at the site under evaluation can be obtained. This is also true for aerodromes at which a significant number of training circuits occur. Such measurements should be performed only by personnel appropriately qualified in acoustics.

Human reaction to aircraft noise is known to depend not only on the amount of noise, but also on psychosocial factors such as personal sensitivity to noise, fear of aircraft crashing and attitudes towards aviation. Thus some individuals will be seriously disturbed by aircraft noise even when the building is sited and constructed according to this Standard.

This Standard has been developed to assist in building construction and land use planning in the vicinity of airports. It is not intended as a guide to the presentation of information about aircraft noise to the general public. A Handbook that is in preparation at the time of releasing this Standard will be developed by Standards Australia describing ways in which such information should be provided.

Some experience has shown that communities that are newly-exposed to aircraft noise (e.g. as a result of the construction of new runways, or the redesign of flight paths near an aerodrome) tend to be more sensitive to such noise than communities that are accustomed to it. Land use planning must by necessity use a long-term horizon, and the building siting acceptability recommendations in this Standard are based on the reactions of noise-accustomed communities. Regulatory authorities are cautioned that a transient heightened reaction could result from substantial new noise exposure.

STANDARDS AUSTRALIA

Australian Standard

Acoustics—Aircraft noise intrusion—Building siting and construction

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard, together with the relevant Australian Noise Exposure Forecast (ANEF) chart or locality map available for the aerodrome under consideration, provides guidelines for determining—

- (a) whether the extent of aircraft noise intrusion makes building sites ‘acceptable’, ‘unacceptable’ or ‘conditionally acceptable’ for the types of activity to be, or being, undertaken (Clause 2.3);
- (b) for ‘conditionally acceptable’ sites, the extent of noise reduction required to provide acceptable noise levels indoors for the types of activity to be, or being, undertaken; and
- (c) the type of building construction necessary to provide a given noise reduction, provided that external windows and doors are closed (see Note 1).

This Standard deals specifically with noise from take-off, landing and circuit training operations at civil aerodromes or military airfields.

The acceptability of outdoor spaces is not covered by this Standard.

NOTES:

- 1 The recommendations for building construction are based on the assumption that external windows and doors are shut. If external windows or doors are opened for ventilation or other purposes, the noise attenuation values for various components given in Clause 3.3 will not be achieved. Item (c) above implies that mechanical ventilation will need to be installed when external windows and doors are shut to provide adequate protection against aircraft noise intrusion. Whether or not sufficient ventilation can be achieved by mechanical or other means should be considered before the selection of building components described in Clause 3.3.
- 2 There may be a significant increase in costs incurred in buildings designed to provide higher than normal noise attenuation for their type.

1.2 OBJECTIVE

This Standard is concerned with land use planning and building treatments in the vicinity of an airport. The objective is to provide guidance to regional and local authorities, organizations, communities and others associated with urban and regional planning and building development on the siting and construction of new buildings against aircraft noise intrusion and on the acoustical adequacy of existing buildings in areas near aerodromes.

This Standard is not intended to be applied for the purposes of assessing the effects of noise from aircraft. However, it should be noted that the effects of noise from aircraft are not confined to areas where the noise exposure exceeds 20 ANEF and may occur at or below 20 ANEF (see Appendix A for a description of the ANEF system).

1.3 APPLICATION

Application of this Standard should be considered when a building site may be affected by aircraft noise.

Reference to the appropriate ANEF chart will be necessary to determine the applicability of the recommendations of this Standard.

Section 2 of this Standard gives guidelines for determining the acoustical acceptability of a particular site.

Section 3, used in sequence with Section 2, gives guidelines for determining the extent of noise reduction and type(s) of construction required for a particular building.

A high level of skill is required to comply with many of the provisions of this Standard. Unsuccessful designs may be difficult and expensive to remedy. Inferior aircraft noise attenuation performance resulting from unsatisfactory design and construction will detract from the value and usefulness of a building throughout its life. It is expected that the provisions of this Standard will be interpreted by a qualified acoustician experienced in the characteristics of aircraft noise.

NOTES:

- 1 A flow chart setting out the various steps contained in this Standard is shown in Figure 1.1.
- 2 A worked example of the application of the Standard is given in Appendix C.

1.4 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

- | | |
|--------|--|
| 1170 | Structural design actions |
| 1170.4 | Part 4: Earthquake actions in Australia |
| 1668 | The use of mechanical ventilation and airconditioning in buildings |
| 1668.2 | Part 2: Mechanical ventilation in buildings |
| 2047 | Windows in buildings—Selection and installation |
| 3826 | Strengthening existing buildings for earthquake |

AS IEC

- | | |
|---------|-------------------------------------|
| 61672 | Electroacoustics—Sound level meters |
| 61672.1 | Part 1: Specifications |
| 61672.2 | Part 2: Pattern evaluation tests |

AS/NZS

- | | |
|------|--|
| 2107 | Acoustics—Recommended design sound levels and reverberation times for building interiors |
| 3000 | Electrical installations (known as the Australian/New Zealand Wiring Rules) |

AS/NZS/ISO

- | | |
|-------|--|
| 717 | Acoustics—Rating of sound insulation in buildings and of building elements |
| 717.1 | Part 1: Airborne sound insulation |

Australian Building Codes Board (ABCB)
National Construction Code (NCC)

1.5 DEFINITIONS

For the purpose of this Standard, the definitions below apply.

1.5.1 Aerodrome

An area of land or water (including any buildings, installations and equipment)—

- (a) established as an aerodrome under Air Navigation Regulations; or

- (b) the use of which as an aerodrome is authorized under the regulations made under the *Civil Aviation Act 1988*; and

being such an area intended for use wholly or partly for the arrival, departure or movement of aircraft.

NOTE: The Department of Defence often refers to an aerodrome as an airfield.

1.5.2 Aircraft noise level

The arithmetic average of the maximum sound levels occurring during a series of flyovers by a specific aircraft type and load conditions measured in A-weighted decibels [dB(A)] using the S time-weighting of a sound level meter.

NOTES:

- 1 Derivation of the aircraft noise levels in Tables 3.4 to 3.58 is covered in Notes to Tables 3.1(A) and 3.1(B).
- 2 Internationally, aircraft noise is measured using slow (S) time-weighting, and the extensive databases and programming algorithms used in determining aircraft noise exposure levels use data based on S time-weighted measurements. Consistent with these practices, aircraft noise measurements and assessments in Australia use S time-weighting and an average of the maximum noise levels.
- 3 Maximum noise levels will vary from time to time depending on the prevailing meteorological conditions.
- 4 Throughout this Standard the notation dB(A) is used to describe A-weighted sound pressure level, whether this expresses a maximum sound pressure level, an average of maximum sound pressure levels, or a logarithmic average of A-weighted sound pressure levels as in the unit L_{Aeq} . Although this is not consistent with recommendations from the International Standards Organisation, which recommends the use of the notation dB in circumstances where the frequency weighting is clear, the notation dB(A) is used consistently in Australia, including in previous versions of this Standard, and it is believed that a change in notation would lead to unnecessary confusion and uncertainty.

1.5.3 Aircraft noise reduction (ANR)

A calculated or measured value. For design purposes, the arithmetic difference between the aircraft noise level at a site and the indoor design level, as described in Clause 3.2.2. For measurement purposes, the difference between the exterior and indoor sound levels as determined in accordance with Appendix D.

1.5.4 Airfield

An area of land or water (including any buildings, installations and equipment) established in accordance with military standards and requirements and intended for use wholly or partly for the arrival, departure or movement of aircraft.

1.5.5 Airport

An aerodrome with significant facilities.

1.5.6 Australian Noise Exposure Forecast (ANEF)

A single number index for predicting the cumulative exposure to aircraft noise in communities near aerodromes during a specified time period (normally one year).

NOTE: The computation of this index includes—

- (a) measurements of aircraft noise (expressed in Effective Perceived Noise Decibels, EPNdB), which take account of the spectral, temporal and spatial aspects of the noise;
- (b) estimates and generalizations of aircraft type groups and mix, number of operations, runway utilization, flight paths and operational procedures; and
- (c) time of day, i.e. whether daytime (0700 hours to 1900 hours) or evening/night-time (1900 hours to 0700 hours).

This single number index is useful for rating the compatibility of various land uses with respect to aircraft noise. For this purpose, equivalent ANEF values at individual positions around an aerodrome are combined on a map to form ANEF contours. (See Appendices A and B for a description of the ANEF system and the method for its determination.)

1.5.7 Building site

The location of a proposed or existing building not associated with the aerodrome.

1.5.8 Indoor design sound level

The recommended maximum level in dB(A) inside a building from an aircraft flyover.

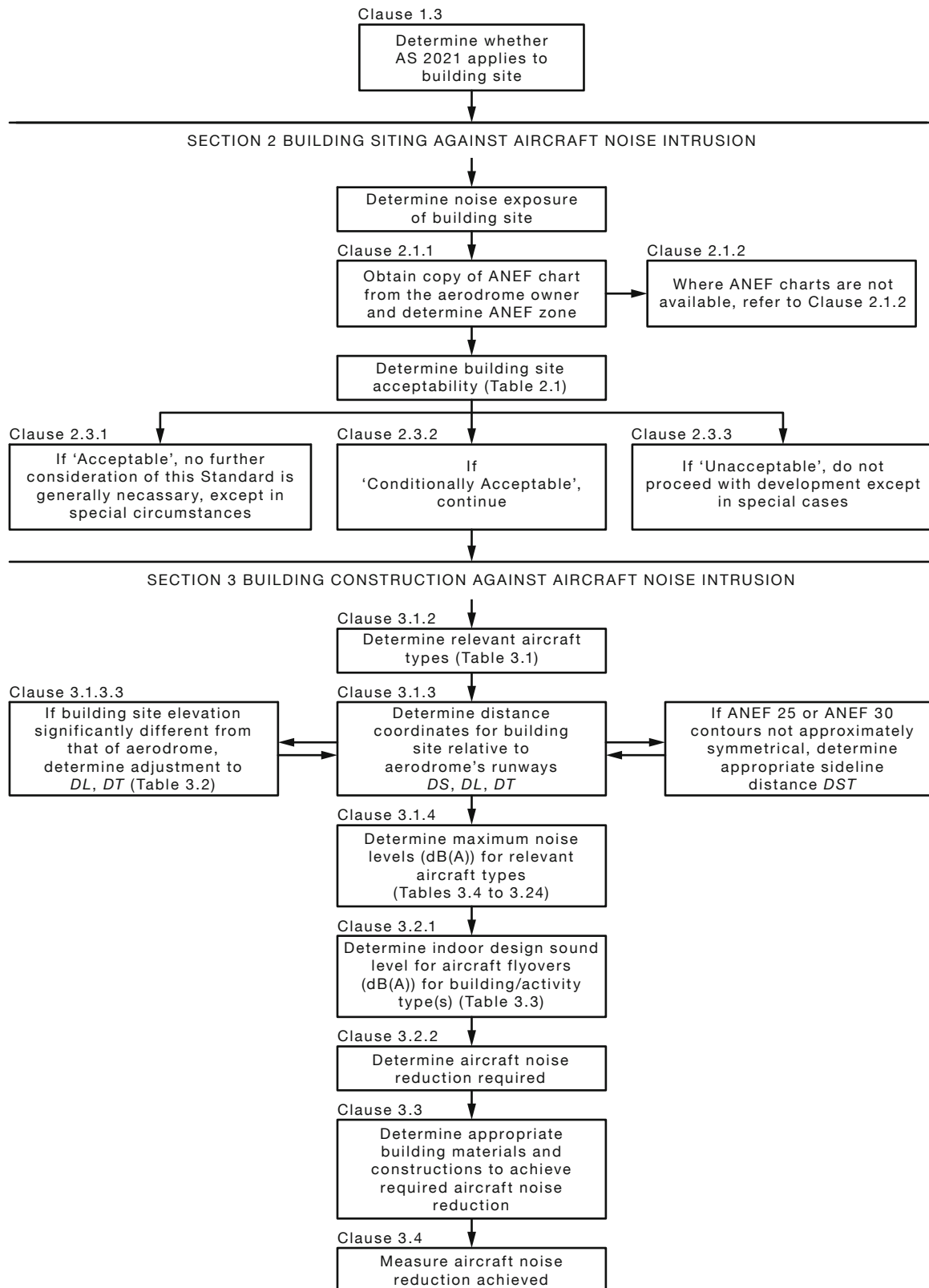


FIGURE 1.1 FLOW CHART

SECTION 2 BUILDING SITING AGAINST AIRCRAFT NOISE INTRUSION

2.1 DETERMINATION OF NOISE EXPOSURE OF BUILDING SITE

2.1.1 Aerodromes with ANEF charts

ANEF charts for the major Australian city airports, military aerodromes and for many of the country aerodromes are available from the appropriate authorities. All or some of the noise exposure contours of 20, 25, 30, 35 and 40 ANEF are shown on these charts.

These contours indicate land areas around aerodromes which are forecast to be exposed to aircraft noise of certain levels as defined in Clause 1.5.6; the higher the ANEF value the greater is the noise exposure.

Locate the position of the building site on the ANEF chart and determine the highest value ANEF contour which crosses the building site.

If the building site is outside the 20 ANEF contour, noise from sources other than aircraft may dominate; therefore, there is usually no need to proceed further in this Standard as the construction of the building need not specifically be designed to provide protection against aircraft noise intrusion. Nevertheless, if it is desired that premises be insulated against aircraft noise, the procedures of this Standard may be followed.

NOTES:

- 1 The individual aerodrome operators should be approached regarding the availability of ANEF charts.
- 2 For certain highly specialized building types such as auditoria or recording studios, specialist acoustic advice should always be sought.

2.1.2 Aerodromes without ANEF charts

The ANEF system takes account of noise levels, frequency and time of day of aircraft noise events. Therefore it is always preferable to use an ANEF chart to predict aircraft noise exposure at a site. If one does not exist, the preparation of an ANEF chart for the particular aerodrome should be requested through the aerodrome owner.

Where aerodrome usage is confined to a small number of civil, non-jet aircraft movements the production of an ANEF chart may not be justified and is unlikely to occur. In these cases refer to Appendix E.

2.2 DETERMINATION OF BUILDING SITE ACCEPTABILITY

2.2.1 General

The acceptability of the building site is dependent on the type of building proposed and on the ANEF zone in which it is to be located.

2.2.2 Determination of acceptability

For the particular building type under consideration, determine from Table 2.1 the building site acceptability, i.e. acceptable, conditionally acceptable or unacceptable, for the ANEF zone in which it is to be located.

2.3 ACTION RESULTING FROM ACCEPTABILITY DETERMINATION

2.3.1 Acceptable

If from Table 2.1, the building site is classified as ‘acceptable’, there is usually no need for the building construction to provide protection specifically against aircraft noise. However, it should not be inferred that aircraft noise will be unnoticeable in areas outside the ANEF 20 contour. (See Notes 1, 2 and 3 of Table 2.1.)

2.3.2 Conditionally acceptable

If from Table 2.1, the building site is classified as ‘conditionally acceptable’, the maximum aircraft noise levels for the relevant aircraft and the required noise reduction should be determined from the procedure of Clauses 3.1 and 3.2, and the aircraft noise attenuation to be expected from the proposed construction should be determined in accordance with Clause 3.3 (see Notes 1 and 3 of Table 2.1).

2.3.3 Unacceptable

If, from Table 2.1 the building site is classified as ‘unacceptable’, construction of the proposed building should not normally be considered. Where in the community interest redevelopment is to occur in such areas, e.g. a hotel in the immediate vicinity of an aerodrome, refer to the notes to Table 2.1.

TABLE 2.1
BUILDING SITE ACCEPTABILITY BASED ON ANEF ZONES
(To be used in conjunction with Table 3.3)

Building type	ANEF zone of site		
	Acceptable	Conditionally acceptable	Unacceptable
House, home unit, flat, caravan park	Less than 20 ANEF (Note 1)	20 to 25 ANEF (Note 2)	Greater than 25 ANEF
Hotel, motel, hostel	Less than 25 ANEF	25 to 30 ANEF	Greater than 30 ANEF
School, university	Less than 20 ANEF (Note 1)	20 to 25 ANEF (Note 2)	Greater than 25 ANEF
Hospital, nursing home	Less than 20 ANEF (Note 1)	20 to 25 ANEF	Greater than 25 ANEF
Public building	Less than 20 ANEF (Note 1)	20 to 30 ANEF	Greater than 30 ANEF
Commercial building	Less than 25 ANEF	25 to 35 ANEF	Greater than 35 ANEF
Light industrial	Less than 30 ANEF	30 to 40 ANEF	Greater than 40 ANEF
Other industrial	Acceptable in all ANEF zones		

NOTES:

- 1 The actual location of the 20 ANEF contour is difficult to define accurately, mainly because of variation in aircraft flight paths. Because of this, the procedure of Clause 2.3.2 may be followed for building sites outside but near to the 20 ANEF contour.
- 2 Within 20 ANEF to 25 ANEF, some people may find that the land is not compatible with residential or educational uses. Land use authorities may consider that the incorporation of noise control features in the construction of residences or schools is appropriate (see also Figure A1 of Appendix A).
- 3 There will be cases where a building of a particular type will contain spaces used for activities which would generally be found in a different type of building (e.g. an office in an industrial building). In these cases Table 2.1 should be used to determine site acceptability, but internal design noise levels within the specific spaces should be determined by Table 3.3.
- 4 This Standard does not recommend development in unacceptable areas. However, where the relevant planning authority determines that any development may be necessary within existing built-up areas designated as unacceptable, it is recommended that such development should achieve the required ANR determined according to Clause 3.2. For residences, schools, etc., the effect of aircraft noise on outdoor areas associated with the buildings should be considered.
- 5 In no case should new development take place in greenfield sites deemed unacceptable because such development may impact airport operations.

SECTION 3 BUILDING CONSTRUCTION AGAINST AIRCRAFT NOISE INTRUSION

3.1 AIRCRAFT NOISE LEVEL

3.1.1 General

The procedure for estimating the aircraft noise level likely to be experienced at the building site involves—

- (a) the determination of the aircraft types forecast to be operating at the aerodrome near the building site;
- (b) the graphical determination of a set of distance coordinates which describe the position of the building site relative to the aerodrome, and thus are an estimate of the position of the building with respect to that of aircraft during take-off, landing and circuit training operations; and
- (c) the prediction of the aircraft noise level to which the building site will be exposed.

3.1.2 Determine aircraft types

Refer to Column 1 of Table 3.1(A) and Table 3.1(B). Identify all those aircraft types and operations (take-offs, landings and training circuits) forecast in the ANEF to occur on each runway and the times of operation. The aircraft types forecast to operate are given in the aircraft type tabulations included on ANEF charts. Where the aerodrome does not have an ANEF chart, refer to the aerodrome operator to determine appropriate aircraft types.

3.1.3 Determine distance coordinates for building site relative to aerodrome runways

3.1.3.1 *Aircraft using straight approach and departure flight paths*

The distance coordinates are determined as follows:

- (a) On the appropriate ANEF chart or locality map, extend the centre-line of each runway to a point beyond the building site.
All runways should be taken as relevant and the procedures given carried out to determine the noise levels from aircraft movements on all runways.
- (b) As shown in Figure 3.1, draw a line perpendicular to the extended runway centre-line and passing through the building site, known as ‘sideline projection’.
- (c) Determine for each runway—
 - (i) DS , the distance in metres from the building site to the extended runway centre-line along the line drawn in Item (b);
 - (ii) DL , the distance in metres from the closer end of the runway to the intersection of the extended runway centre-line and the line drawn in Item (b); and
 - (iii) DT , the distance in metres from the further end of the runway to the intersection of the runway centre-line and the line drawn in Item (b).

3.1.3.2 *Aircraft using curved approach and departure tracks*

Where curved flight paths occur, the combined effects of aircraft altitude (as it proceeds along the curved flight path), site elevation, and sideline distance need careful consideration. It is recommended that a series of computations should be performed for a number of positions along the curved segment of the flight path with respect to the building site, and not just for the position closest to the building site.

See Figure 3.2. The distance coordinates are determined as follows:

NOTE: The following procedure should be adopted only if the details used to describe the curved flight paths for the production of the ANEF are known. The individual aerodrome operators should be approached regarding the availability of flight track information.

- (a) On the appropriate ANEF chart or locality map, plot the closest relevant curved flight paths for each runway to a point beyond the building site. All runways should be taken as relevant and the procedures given carried out to determine the noise levels from aircraft movements on all runways.
- (b) As shown in Figure 3.2, draw a line perpendicular to the flight path or its tangent and passing through the building site, known as 'sideline projection'.
- (c) Determine *DST* and *DSL*. *DST* and *DSL* are the parts of the flight path which follow the centre-line from the end of the runway (see Figure 3.2).
- (d) Determine *DC*. *DC* is that part of the flight path which is curved (see Figure 3.2). *DC* can be calculated using the following equation:

$$DC = \frac{2\pi RA}{360} \quad \dots 3.1$$

where

A = the angle shown in Figure 3.2, in degrees

R = the radius shown in Figure 3.2, in metres

- (e) Determine for each runway—
 - (i) *DS*, the distance in metres from the building site to the curved flight path along the line drawn in Step (b);
 - (ii) *DL*, the distance in metres obtained by adding *DSL* and *DC*; and
 - (iii) *DT*, the distance in metres obtained by adding *DST* and *DC*.

3.1.3.3 Land height correction

If the elevation of the building site differs from that of the aerodrome by ± 10 m or more, the distance coordinates *DL* and *DT* must be corrected in accordance with Table 3.2 to take account of this difference.

Site elevations above or below that of the aerodrome are listed in Column 1 of Table 3.2 and the corresponding values to be subtracted from, or added to, *DL* and *DT* are given in the Columns 2 to 5. If the elevation of the aerodrome is greater than that of the site, the values given in Table 3.2 are to be added to *DL* and *DT* and if it is less they are to be subtracted from *DL* and *DT*.

NOTE: ANEF charts will include the effect of topography. To determine difference of elevation between the aerodrome and building site refer to a survey map of the area.

3.1.4 Determine aircraft noise levels [dB(A)]

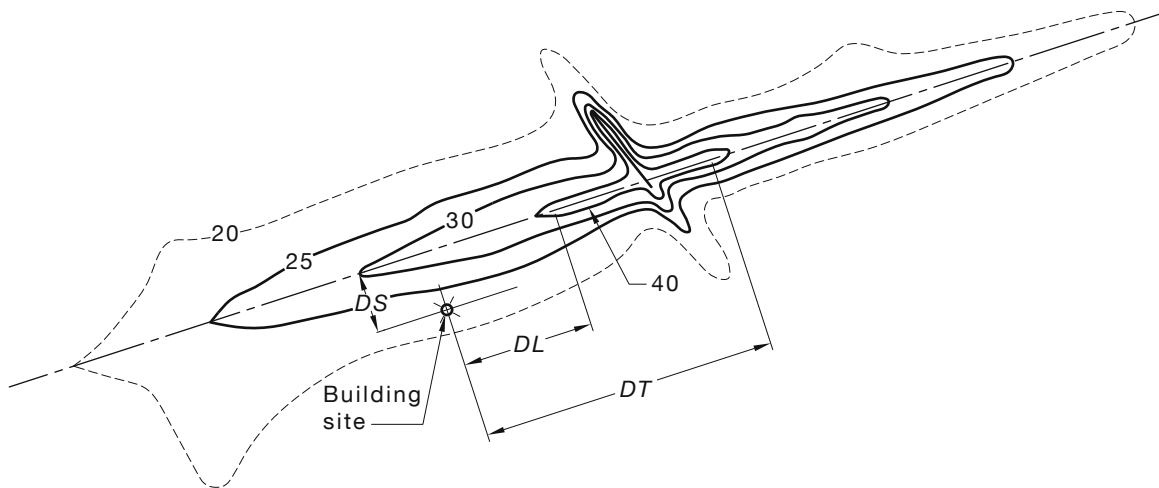
The aircraft noise levels are determined as follows:

- (a) For each relevant aircraft type listed in Table 3.1(A) and Table 3.1(B), identify the associated noise level table in the series Tables 3.4 to 3.58. The set of tables should be listed.
- (b) For each noise level table in the set, and for each relevant aircraft operation, read off a corresponding noise level for the appropriate centre-line and sideline distance coordinate as follows:
 - (i) For take-off noise level tables, use *DT* and *DS* distance coordinates.
 - (ii) For landing noise level tables, use *DL* and *DS* distance coordinates.

- (c) List the set of noise levels, and from the set select the highest value. This is the aircraft noise level to be used to determine the aircraft noise reduction required (see Clause 3.2.2). The only exception is where there is evidence that the particular aircraft type and movement which produced that noise level do not constitute a typical operation. In this case, select the next highest value from the noise tables.

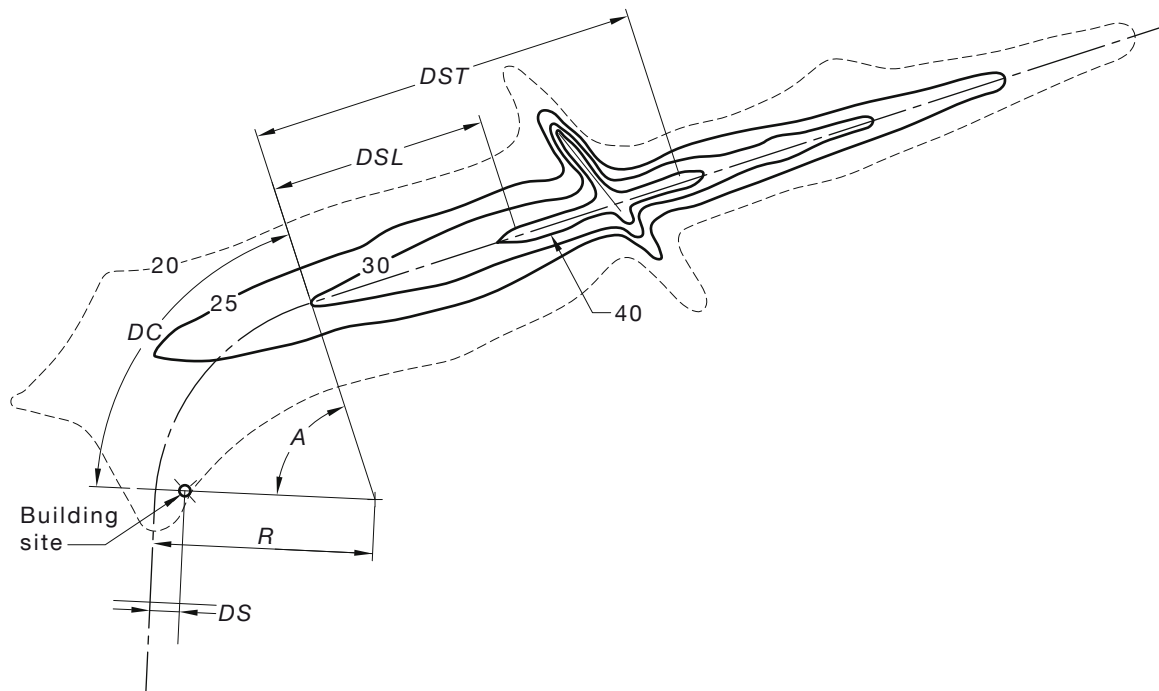
NOTES:

- 1 To establish that particular ANR values have been achieved, testing may be required. In these circumstances, the aircraft noise levels used for the design of the building construction should be taken as the higher of measurements taken at the site by an acoustic specialist, using procedures described in Appendix D, and tabulated levels given in this Standard.
- 2 The noise levels in Tables 3.4 to 3.58 are based on modelling and measurements. The tabulated values are estimates of the aircraft noise levels emitted by typical aircraft operating in Australia. Uncertainties in the data increase as the distances DT , DL , and DS increase.
- 3 For some building sites, an aircraft noise level table may not include a value for a particular pair of distance coordinates determined in accordance with Clause 3.1.3. If this is the case, it indicates that the take-off or landing noise for the aircraft type being considered will not generally be of significance in terms of noise reduction requirements at that site.
- 4 Noise levels from helicopters are more difficult to determine than those from fixed wing aircraft, because their flight tracks and operating parameters depend significantly on local conditions. For this reason it is not considered possible to use tables such as Tables 3.4 to 3.58 to determine external noise levels from helicopters at a building site. The indoor design sound levels in Table 3.3 are applicable to noise from helicopter operations. However, where helicopters may possibly contribute the loudest noise events at a building site, expert advice should be sought to determine their maximum external noise levels before applying the remaining procedures in Clauses 3.2 to 3.4 of this Standard.



DIMENSIONS IN ANEF UNITS

FIGURE 3.1 DETERMINATION OF DS , DL AND DT FOR STRAIGHT FLIGHT PATHS



DIMENSIONS IN ANEF UNITS

FIGURE 3.2 DETERMINATION OF DS , DL AND DT FOR CURVED FLIGHT PATHS

3.2 NOISE REDUCTION REQUIREMENTS

3.2.1 Determine indoor design sound level for aircraft flyovers

From Table 3.3, select the indoor design sound level appropriate for the activity or building type under consideration.

3.2.2 Determine aircraft noise reduction (ANR) required

Subtract the level obtained in Clause 3.2.1 from the aircraft noise level determined in accordance with Clause 3.1.4. The resulting value is an estimate of the extent of aircraft noise reduction (ANR), in decibels, to be incorporated in the building's envelope.

NOTES:

- 1 In any one building, several different activity and space types may be accommodated, necessitating the selection of several indoor design sound levels and noise reductions, as appropriate. See also notes to Table 3.3.
- 2 For building sites that require an ANR in excess of 30 it is recommended that for the purpose of noise control the assessment be evaluated in terms of the spectral components of the aircraft noise rather than a $dB(A)$ value, so as to take account of low frequency components of the aircraft overflight that may influence the internal $dB(A)$ level.

3.3 CONSTRUCTION GUIDELINES

Buildings on sites determined to be 'conditionally acceptable' under Clause 2.2 should be designed such that the ANR values determined under Clause 3.2.2 are achieved for all internal spaces. In general, this will require that external windows and doors be kept closed, since if these are opened for ventilation purposes the aircraft noise reduction of the building envelope will be significantly reduced. If it is necessary to close windows and doors to comply with this Standard, building ventilation should be in accordance with the National Construction Code on the assumption that windows and doors are not openable. Mechanical ventilation or airconditioning systems complying with AS 1668.2 should be installed.

Various rooms in a building may require different indoor design sound levels and consequently different ANR values (see Clause 3.2). In addition, the areas of external building components may differ between rooms. For this reason, determination of appropriate building components should be performed separately for each room within a building. In some cases, an external perimeter approach to design may be appropriate (see Note 6 to Table 3.3).

NOTE: Appendix F provides guidance on achieving high levels of acoustic insulation against aircraft noise.

If internal doors within a building need to be opened for functional reasons, then noise transmission from other internal spaces should also be taken into account in determining the overall ANR for each room.

In general, specialist acoustic advice will need to be sought to ensure that the sound transmission loss of all individual building components is appropriate to achieve the required ANR values. Possible sound transmission through vents and other openings should also be considered in the design.

Appendix G provides one method for determining appropriate building materials and constructions to achieve a required ANR value. Appendix G is intended to serve as a guide to the types of construction which would be necessary in any instance. Other specific building materials may also be suitable, and alternative building designs which optimize noise attenuation may also be developed to achieve the required performance.

3.4 COMPLIANCE TEST

In situations where measurement of noise attenuation is required following construction, testing by an acoustics specialist following the method described in Appendix D, is recommended.

If the measured ANR is equal to or greater than the design ANR determined in accordance with Clause 3.2 the building as constructed complies with this Standard [see Appendix D, Paragraph D4(m)].

TABLE 3.1(A)
SELECTION OF AIRCRAFT NOISE LEVEL TABLES JET AIRCRAFT

Manufacturer	Model	Table for noise information	
		Number	Representative aircraft
Airbus Industrie	A319-115	3.4	Airbus A319-131
Airbus Industrie	A320-231	3.5	Airbus A320-232
Airbus Industrie	A321-231	3.6	Airbus A321-232
Airbus Industrie	A330-202	3.7	Airbus A330-301
Airbus Industrie	A330-303	3.7	Airbus A330-301
Airbus Industrie	A340-642	3.8	Airbus A340-642
Airbus Industrie	A380-842	3.9	Airbus A380-841
Beech	390	3.22	Cessna CIT 2
Beech	400A	3.35	Hawker 400
Beech	HAWKER 900XP	3.27	Dassault Falcon 20
Boeing	717-200	3.11	Boeing 717-200
Boeing	737-3YO	3.12	Boeing 737-300
Boeing	737-476	3.13	Boeing 737-400
Boeing	737-7FE	3.14	Boeing 737-700

(continued)



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TABLE 3.1(A) (continued)

Manufacturer	Model	Table for noise information	
		Number	Representative aircraft
Boeing	737-8FE	3.15	Boeing 737-800
Boeing	747-438	3.16	Boeing 747-400
Boeing	757-236	3.17	Boeing 757-200
Boeing	767-338	3.18	Boeing 767-300
Boeing	777-3ZGER	3.19	Boeing 777-300
Boeing	787-8	3.20	Boeing 787-8
Bombardier	BD-700-1A11	3.34	Gulfstream GV
Bombardier	CL-600-2B16	3.21	Bombardier CL600
British Aerospace	AVRO 146-RJ100	3.10	BAE146-200
British Aerospace	BAE 146-100A	3.10	BAE146-200
British Aerospace	BAE 146-200	3.10	BAE146-200
British Aerospace	BAE 146-300	3.10	BAE146-200
British Aerospace	BAE-125-1000B	3.10	BAE146-200
Cessna	500	3.22	Cessna CIT 2
Cessna	501	3.22	Cessna CIT 2
Cessna	510	3.26	Cessna Mustang 510
Cessna	525B	3.22	Cessna CIT 2
Cessna	550	3.22	Cessna CIT 2
Cessna	650	3.23	Cessna CIT 3
Cessna	680	3.24	Cessna Citation 680
Cessna	750	3.25	Cessna Citation X
Dassault	FALCON 2000EX	3.27	Dassault Falcon 20
Dassault	FALCON 7X	3.30	Fokker 100
Dassault	FALCON 900	3.30	Fokker 100
Dassault	MYSTERE - FALCON 50	3.30	Fokker 100
Embraer	EMB-135LR	3.28	Embraer 145 ER
Embraer	EMB-500	3.36	Learjet 35
Embraer	ERJ 170-100 LR	3.29	Embraer ERJ190
Embraer	ERJ 190-100 IGW	3.29	Embraer ERJ190
Fokker	F28 MK 0070	3.32	Fokker F28-4000
Fokker	F28 MK 0100	3.31	Fokker F28-2000
Gulfstream	G150	3.47	Hawker Siddeley HS748
Gulfstream	G-IV	3.33	Gulfstream GIV
Gulfstream	GV	3.34	Gulfstream GV
Israel Aircraft Industries	1124	3.27	Dassault Falcon 20
Learjet	35A	3.36	Learjet 35
Learjet	36A	3.36	Learjet 35
Learjet	45	3.36	Learjet 35
Raytheon	HAWKER 800XP	3.27	Dassault Falcon 20
Raytheon	HAWKER 850XP	3.27	Dassault Falcon 20

TABLE 3.1(B)
SELECTION OF AIRCRAFT NOISE LEVEL
TABLES—NON-JET FIXED-WING AIRCRAFT

Manufacturer	Model	Table for noise information	
		Number	Representative aircraft
Aero Commander	500-U	3.51	Beech BARON 58P
Aero Commander	690-A	3.51	Beech BARON 58P
Air Tractor	AT-400	3.56	Generic 1-engine VP prop
Air Tractor	AT-502	3.55	Generic 1-engine FP prop
Air Tractor	AT-602	3.56	Generic 1-engine VP prop
Air Tractor	AT-802A	3.56	Generic 1-engine VP prop
Avions de Transport Regional	ATR72-212A	3.45	Dornier 328-100
Beech	1900D	3.37	Beech 1900D
Beech	58	3.51	Beech BARON 58P
Beech	76	3.51	Beech BARON 58P
Beech	B100	3.51	Beech BARON 58P
Beech	B200C	3.42	Cessna CONQUEST II
Beech	B300	3.44	Dornier 228-202
Beech	B50	3.51	Beech BARON 58P
Beech	B60	3.58	Piper PA-31
Beech	C90	3.42	Cessna CONQUEST II
Beech	D95A	3.51	Beech BARON 58P
Bombardier	DHC-8-202	3.40	Bombardier Dash 8-300
Bombardier	DHC-8-315	3.40	Bombardier Dash 8-300
Bombardier	DHC-8-402	3.40	Bombardier Dash 8-300
Cessna	172N	3.52	Cessna 172R
Cessna	182S	3.53	Cessna 182H
Cessna	208B	3.41	Cessna 208
Cessna	210E	3.54	Cessna 206H
Cessna	210N	3.54	Cessna 206H
Cessna	310R	3.54	Cessna 206H
Cessna	337B	3.51	Beech BARON 58P
Cessna	402C	3.51	Beech BARON 58P
Cessna	404	3.51	Beech BARON 58P
Cessna	421B	3.51	Beech BARON 58P
Cessna	425	3.42	Cessna CONQUEST II
Cessna	441	3.42	Cessna CONQUEST II
Cessna	U206F	3.54	Cessna 206H
Construccion Aeronauticas	C-212-CC	3.45	Dornier 328-100
Convair	340	3.43	Convair 580
De Havilland	DHC-6 SERIES 300	3.38	Bombardier Dash 6

TABLE 3.1(B) (continued)

Manufacturer	Model	Table for noise information	
		Number	Representative aircraft
De Havilland	DHC-8-102	3.39	Bombardier Dash 8-100
Diamond	DA 42	3.51	Beech BARON 58P
Dornier	328-100	3.45	Dornier 328-100
Dornier	DO 228-202 K	3.44	Dornier 228-202
Embraer	EMB-110P1	3.38	Bombardier Dash 6
Embraer	EMB-120 ER	3.46	Embraer 120 ER
Fairchild	SA226-TC	3.38	Bombardier Dash 6
Fairchild	SA227-DC	3.38	Bombardier Dash 6
Fokker	F27 MK 50	3.47	Hawker Siddeley HS748
Gippsland Aeronautics	GA10	3.55	Generic 1-engine FP prop
Gippsland Aeronautics	GA-8	3.55	Generic 1-engine FP prop
Grob	G520T	3.55	Generic 1-engine FP prop
Gulfstream	695-A	3.44	Dornier 228-202
Jetstream	3206	3.37	Beech 1900D
Jetstream	4101	3.27	Dassault Falcon 20
Mitsubishi Aircraft	MU-2B-20	3.42	Cessna CONQUEST II
Pilatus	PC-12/47E	3.41	Cessna 208
Piper	PA-28R-201	3.57	Piper PA-28
Piper	PA-31-350	3.58	Piper PA-31
Piper	PA-31T	3.58	Piper PA-31
Piper	PA-32-300	3.48	Piper PA-42
Piper	PA-34-200T	3.51	Beech BARON 58P
Piper	PA-36-285	3.51	Beech BARON 58P
Piper	PA-38-112	3.55	Generic 1-engine FP prop
Piper	PA-42-1000	3.48	Piper PA-42
Piper	PA-44-180	3.51	Beech BARON 58P
Piper	PA-46-310P	3.56	Generic 1-engine VP prop
Piper	PA-60-600	3.51	Beech BARON 58P
S.A.A.B.	340B	3.49	Saab 340
Short Bros	SD3-30	3.50	Short 330

NOTES TO TABLES 3.1(A) and 3.1(B):

- 1 The aircraft types given in Tables 3.1(A) and 3.1(B) represent the civil aircraft types flying in Australia at the time of preparation of this Standard. For types not given, an aircraft type of similar size and configuration may be selected.
- 2 For civil aircraft that are not similar in size and configuration to those listed, the appropriate noise levels may be obtained by contacting Air Services Australia.
- 3 For military aircraft, the appropriate noise levels should be obtained by contacting the Department of Defence.
- 4 Where a single table is used to represent a number of aircraft types, noise levels shown in the relevant table represent the highest value in each case.
- 5 As the climb rate, and hence the spread of noise levels, is affected significantly by the aircraft take-off weight, data have been included for international aircraft for long (>8000 km) and short (900 to 1800 km) haul take-offs. For any given set of site coordinates, both take-off tables should be checked, and the higher of the two noise levels used for design purposes, provided that this corresponds to an operation that is relevant at that point.
- 6 The noise levels given in Tables 3.4 to 3.58 represent average maximum levels. Therefore there may be individual flights that produce higher or lower levels than those tabulated.
- 7 The noise levels shown in Tables 3.4 to 3.58 were calculated using the INM modelling program, version 7.0d. Calculations were for straight approach and departure tracks, with standard profiles. The runway was of an adequate length for the relevant aircraft operation, flat topography was used, and meteorological conditions were 15°C, 760 mm-Hg and 14.8 km/h headwind (INM defaults). They represent maximum A-weighted noise levels (using 'Slow' speed rectification) as estimated by the INM program.

TABLE 3.2
LAND HEIGHT CORRECTIONS

metres

Difference in elevation between site and aerodrome	Distance in metres to be added to <i>DT</i> and <i>DL</i> , if site is below the aerodrome, or subtracted from <i>DT</i> and <i>DL</i> , if site is above the aerodrome			
	Landing (correction to <i>DL</i>)	Take-off (correction to <i>DT</i>)		
	All aircraft type groups	Domestic jet aircraft types	International aircraft types	Domestic propeller-driven aircraft and light aircraft types
10	190	60	80	110
15	290	90	110	170
20	380	120	150	220
25	480	150	190	280
30	570	180	230	330
35	670	210	260	390
40	760	240	300	450
45	860	270	340	500
50	950	300	380	560
55	1 040	320	410	610
60	1 140	350	450	670
65	1 230	380	500	730
70	1 330	410	530	780
75	1 420	440	570	840
80	1 520	470	600	890
85	1 610	500	640	950
90	1 710	530	680	1 000
95	1 800	560	720	1 060
100	1 900	590	750	1 120

NOTES:

- 1 This Table is based on a 3° glide slope for landing, and an average climb gradient has been assumed for take-off.
- 2 Interpolation between values is permissible.

TABLE 3.3
INDOOR DESIGN SOUND LEVELS* FOR
DETERMINATION OF AIRCRAFT NOISE REDUCTION

Building type and activity	Indoor design sound level*, dB(A)
Houses, home units, flats, caravan parks	
Sleeping areas, dedicated lounges	50
Other habitable spaces	55
Bathrooms, toilets, laundries	60
Hotels, motels, hostels	
Relaxing, sleeping	55
Social activities	70
Service activities	75
Schools, universities	
Libraries, study areas	50
Teaching areas, assembly areas (see Note 5)	55
Workshops, gymnasias	75
Hospitals, nursing homes	
Wards, theatres, treatment and consulting rooms	50
Laboratories	65
Service areas	75
Public buildings	
Churches, religious activities	50
Theatres, cinemas, recording studios (see Note 4)	40
Court houses, libraries, galleries	50
Commercial buildings, offices and shops	
Private offices, conference rooms	55
Drafting, open offices	65
Typing, data processing	70
Shops, supermarkets, showrooms	75
Industrial	
Inspection, analysis, precision work	75
Light machinery, assembly, bench work	80

* These indoor design sound levels are not intended to be used for measurement of adequacy of construction. For measurement of the adequacy of construction against aircraft noise intrusion see Appendix D.

NOTES TO TABLE 3.3:

- 1 The indoor design sound levels in Column 2 are hypothesized values based on Australian experience. A design sound level is the maximum level (dB(A)) from an aircraft flyover which, when heard inside a building by the average listener, will be judged as not intrusive or annoying by that listener while carrying out the specified activity. Owing to the variability of subjective responses to aircraft noise, these figures will not provide sufficiently low interior noise levels for occupants who have a particular sensitivity to aircraft noise.
- 2 Some of these levels, because of the short duration of individual aircraft flyovers, exceed some other criteria published by Standards Australia for indoor background noise levels (see AS/NZS 2107).
- 3 The indoor design sound levels are intended for the sole purpose of designing adequate construction against aircraft noise intrusion and are not intended to be used for assessing the effects of noise. Land use planning authorities may have their own internal noise level requirements which may be used in place of the levels above.
- 4 For opera and concert halls and theatres, and for recording, broadcast and television studios and similar buildings where noise intrusion is unacceptable, specialist acoustic advice should always be obtained.
- 5 Certain activities in schools may be considered particularly noise sensitive and 50 dB(A) may be a more desirable indoor sound level to select for any teaching areas used for such activities. However, the effect of other noise sources should be considered.
- 6 The provisions of this Standard relating to different internal design sound levels for different indoor spaces could result in the use of different construction and materials in contiguous spaces, and require the construction of substantial barriers between habitable spaces, e.g. heavy self-closing internal doors, detracting from the amenity of the building. Therefore consideration should be given to a uniform perimeter insulation approach.

TABLE 3.4(A)
NOISE LEVELS FOR AIRBUS A319-131 ARRIVALS

Centre-line distance (DL), m	Noise levels, dB(A)																				
	Sideline distance (DS), m																				
	0	50	100	150	200	250	300	350	400	450	500	550	600	700	800	900	1000	1100	1200	1300	1400
0	***	***	***	***	***	***	***	***	***	***	62	60	59	56	54	52	50	49	48	47	46
250	***	***	***	***	***	***	***	***	***	***	63	61	60	57	55	53	51	49	48	47	46
500	92	89	85	81	78	75	72	70	68	66	64	62	61	58	56	53	52	50	49	47	46
750	90	88	85	81	78	75	72	70	68	66	65	63	61	59	56	54	52	51	49	48	47
1000	88	87	84	81	78	75	73	71	69	67	65	64	62	59	57	55	53	51	50	49	47
1250	87	86	84	81	78	75	73	71	69	67	66	64	63	60	57	55	54	52	51	49	48
1500	86	85	83	80	78	75	73	71	69	67	66	64	63	60	58	56	54	52	51	50	48
1750	85	84	82	80	77	75	73	71	69	68	66	65	63	61	58	56	55	53	51	50	49
2000	83	83	82	79	77	75	73	71	69	68	66	65	64	61	59	57	55	53	52	50	49
2250	82	82	81	79	77	75	73	71	70	68	67	65	64	61	59	57	55	54	52	51	49
2500	82	81	80	79	77	75	73	71	70	68	67	65	64	62	59	57	56	54	53	51	50
2750	81	81	80	78	76	75	73	71	70	68	67	66	64	62	60	58	56	54	53	51	50
3000	80	80	79	78	76	74	73	71	70	68	67	66	64	62	60	58	56	55	53	52	50
3250	79	79	78	77	76	74	73	71	70	68	67	66	64	62	60	58	56	55	53	52	51
3500	79	78	78	77	76	74	72	71	70	68	67	66	65	62	60	58	57	55	54	52	51
3750	78	78	77	76	75	74	72	71	70	68	67	66	65	62	60	58	57	55	54	52	51
4000	77	77	77	76	75	74	72	71	69	68	67	66	65	62	60	59	57	55	54	53	51
4250	77	77	76	75	74	73	72	71	69	68	67	66	65	63	61	59	57	56	54	53	51
4500	76	76	76	75	74	73	72	70	69	68	67	66	65	63	61	59	57	56	54	53	52
4750	76	76	75	75	74	73	72	70	69	68	67	66	65	63	61	59	57	56	55	53	52
5000	75	75	75	74	73	72	71	70	69	68	67	66	65	63	61	59	57	56	55	53	52
5500	74	74	74	73	73	72	71	70	69	68	67	66	65	63	61	59	58	56	55	54	52
6000	73	73	73	73	72	71	70	69	68	67	67	66	65	63	61	59	58	56	55	54	52
6500	72	72	72	72	71	71	70	69	68	67	66	65	64	63	61	59	58	57	55	54	53
7000	72	72	71	71	71	70	69	69	68	67	66	65	64	63	61	59	58	57	55	54	53
7500	71	71	71	70	70	70	69	68	68	67	66	65	64	62	61	59	58	57	55	54	53
8000	70	70	70	70	69	69	68	68	67	66	66	65	64	62	61	59	58	57	55	54	53
8500	70	70	69	69	69	68	68	67	67	66	65	65	64	62	61	59	58	57	56	54	53
9000	69	69	69	69	68	68	68	67	66	66	65	64	64	62	61	59	58	57	56	54	53
9500	68	68	68	68	68	67	67	67	66	65	65	64	63	62	61	59	58	57	56	54	53
10 000	68	68	68	68	67	67	67	66	66	65	64	64	63	62	60	59	58	57	56	54	53
10 500	67	67	67	67	67	66	66	66	65	65	64	64	63	62	60	59	58	57	56	54	53
11 000	65	65	65	65	65	65	64	64	64	63	63	62	61	60	59	58	57	55	54	53	52
11 500	65	65	65	65	64	64	64	64	63	63	62	62	61	60	59	58	56	55	54	53	52
12 000	64	64	64	64	64	64	63	63	63	62	62	61	61	60	59	57	56	55	54	53	52
12 500	64	64	64	64	63	63	63	63	62	62	62	61	61	60	58	57	56	55	54	53	52
13 000	63	63	63	63	63	63	63	62	62	62	61	61	60	59	58	57	56	55	54	53	52
13 500	63	63	63	63	63	62	62	62	62	61	61	60	60	59	58	57	56	55	54	53	52
14 000	62	62	62	62	62	62	62	62	61	61	61	60	60	59	58	57	56	55	54	53	52
14 500	62	62	62	62	62	62	61	61	61	61	60	60	59	59	58	57	56	55	54	53	52
15 000	62	62	62	61	61	61	61	61	61	60	60	60	59	58	58	57	56	55	54	53	52
15 500	61	61	61	61	61	61	61	60	60	60	60	59	59	58	57	56	56	55	54	53	52
16 000	61	61	61	61	61	60	60	60	60	60	59	59	59	58	57	56	55	54	54	53	52
16 500	60	60	60	60	60	60	60	60	59	59	59	59	58	58	57	56	55	54	54	53	52
17 000	60	60	60	60	60	60	60	59	59	59	59	58	58	58	57	56	55	54	53	53	52
17 500	60	60	60	60	60	60	60	59	59	59	59	58	58	58	57	56	55	54	53	53	52
18 000	60	60	60	60	60	60	60	59	59	59	59	58	58	58	57	56	55	54	53	53	52
18 500	60	60	60	60	60	60	60	59	59	59	59	58	58	58	57	56	55	54	53	53	52
19 000	60	60	60	60	60	60	60	59	59	59	59	58	58	58	57	56	55	54	53	53	52
19 500	60	60	60	60	60	60	60	59	59	59	59	58	58	58	57	56	55	54	53	53	52
20 000	60	60	60	60	60	60	60	59	59	59	59	58	58	57	57	56	55	54	53	53	52

TABLE 3.4(B)
NOISE LEVELS FOR AIRBUS A319-131 DEPARTURES

Centre-line distance (DT), m	Noise levels, dB(A)																		
	Sideline distance (DS), m																		
	0	100	200	300	400	500	600	700	800	900	1000	1200	1400	1600	1800	2000	2200	2400	2600
0	***	***	***	***	***	71	68	66	64	62	61	58	56	54	53	51	50	49	47
250	***	***	***	***	***	70	67	65	63	61	60	58	56	54	52	51	49	48	47
500	***	***	***	***	***	70	67	65	62	61	59	57	55	53	52	51	49	48	47
750	***	***	***	***	***	70	67	64	62	60	59	57	55	53	51	50	49	48	47
1000	***	***	***	***	***	69	67	64	62	60	59	57	55	53	52	50	49	48	47
1250	***	***	***	***	***	69	67	65	63	62	60	58	56	55	53	51	50	49	48
1500	***	***	***	***	***	72	70	67	65	64	62	60	58	56	54	52	51	49	48
1750	***	***	***	***	***	74	72	69	67	65	64	61	59	57	55	53	52	50	49
2000	***	***	***	***	***	76	73	71	69	67	65	62	60	58	56	54	52	51	50
2250	***	***	***	***	***	77	74	72	69	68	66	63	61	58	56	55	53	52	50
2500	91	89	86	83	80	77	75	73	70	69	67	64	61	59	57	55	54	52	51
2750	88	88	85	83	80	77	75	73	71	69	67	64	62	60	58	56	54	53	51
3000	86	86	84	82	80	77	75	73	71	69	68	65	63	60	58	56	55	53	51
3250	85	85	83	81	79	77	75	73	71	70	68	65	63	61	58	57	55	53	51
3500	84	84	83	81	79	77	75	73	71	70	68	65	63	61	59	57	55	53	52
3750	84	84	82	81	79	77	75	73	71	70	68	65	63	61	59	57	55	53	52
4000	83	83	82	81	79	77	75	73	71	70	68	65	63	61	59	57	55	53	52
4250	83	83	82	80	78	77	75	73	71	70	68	65	63	61	59	57	55	53	52
4500	82	82	81	80	78	76	75	73	71	70	68	65	63	61	59	57	55	53	52
4750	82	82	81	80	78	76	74	73	71	69	68	65	63	61	59	57	55	53	52
5000	81	81	80	79	78	76	74	72	71	69	68	65	63	61	59	57	55	53	52
5500	80	80	80	79	77	75	74	72	70	69	68	65	63	60	59	57	55	53	52
6000	80	79	79	78	77	75	73	72	70	69	67	65	63	60	58	57	55	53	52
6500	77	77	77	76	75	73	72	71	69	68	67	64	62	60	58	56	55	53	51
7000	74	74	74	73	72	71	70	68	67	66	65	62	60	58	57	55	54	52	51
7500	73	73	73	72	71	70	69	68	67	66	64	62	60	58	56	55	53	51	50
8000	72	72	71	71	70	70	69	68	66	65	64	62	60	58	57	55	53	52	50
8500	71	71	70	70	69	69	68	67	66	65	64	62	60	58	57	55	53	52	51
9000	70	70	69	69	69	68	67	67	66	65	64	62	60	58	57	55	54	52	51
9500	69	69	69	68	68	67	67	66	65	64	64	62	60	58	57	55	54	52	51
10 000	68	68	68	68	67	67	66	66	65	64	63	62	60	58	57	55	54	53	51
10 500	68	68	68	68	67	67	66	66	65	64	64	62	60	59	57	56	54	53	51
11 000	68	68	68	68	67	67	66	66	65	64	64	62	60	59	57	56	54	53	52
11 500	68	68	68	68	67	67	66	66	65	64	64	62	60	59	57	56	55	53	52
12 000	68	68	68	68	67	67	66	66	65	64	64	62	61	59	58	56	55	53	52
12 500	68	68	68	67	67	67	66	66	65	64	64	62	61	59	58	56	55	54	52
13 000	67	67	67	67	67	66	66	65	65	64	63	62	61	59	58	56	55	54	52
13 500	67	67	66	66	66	66	65	65	64	64	63	62	60	59	57	56	55	54	52
14 000	66	66	66	66	65	65	65	64	64	63	63	61	60	59	57	56	55	54	52
14 500	65	65	65	65	65	64	64	64	63	63	62	61	60	59	57	56	55	54	52
15 000	65	65	64	64	64	64	64	63	63	62	62	61	60	58	57	56	55	54	52
15 500	64	64	64	64	64	63	63	63	62	62	62	61	59	58	57	56	55	53	52
16 000	63	63	63	63	63	63	63	62	62	62	61	60	59	58	57	56	55	53	52
16 500	63	63	63	63	63	62	62	62	61	61	61	60	59	58	57	56	54	53	52
17 000	62	62	62	62	62	62	62	61	61	61	60	60	59	58	56	55	54	53	52
17 500	62	62	62	62	62	61	61	61	61	60	60	59	58	57	56	55	54	53	52
18 000	61	61	61	61	61	61	61	61	60	60	60	59	58	57	56	55	54	53	52
18 500	61	61	61	61	61	61	60	60	60	60	59	59	58	57	56	55	54	53	52
19 000	61	61	60	60	60	60	60	60	59	59	59	58	57	57	56	55	54	53	52
19 500	60	60	60	60	60	60	60	60	59	59	59	58	57	56	56	55	54	53	52
20 000	60	60	60	60	59	59	59	59	59	58	58	58	57	56	55	54	54	53	52

TABLE 3.5(A)
NOISE LEVELS FOR AIRBUS A320-232 ARRIVALS

Centre-line distance (DL), m	Noise levels, dB(A)																				
	Sideline distance (DS), m																				
	0	50	100	150	200	250	300	350	400	450	500	550	600	700	800	900	1000	1100	1200	1300	1400
0	***	***	***	***	***	***	***	***	***	***	62	60	59	56	55	54	53	52	51	50	49
250	***	***	***	***	***	***	***	***	***	***	63	61	60	57	55	53	52	51	50	49	48
500	91	89	85	81	77	74	72	69	67	65	64	62	61	58	56	54	52	51	49	48	47
750	90	88	84	81	77	75	72	70	68	66	64	63	62	59	57	55	53	51	50	49	48
1000	88	87	84	80	77	75	72	70	68	67	65	64	62	60	57	55	53	52	51	49	48
1250	87	86	83	80	77	75	73	71	69	67	65	64	63	60	58	56	54	53	51	50	49
1500	85	85	83	80	77	75	73	71	69	67	66	64	63	61	58	56	55	53	52	50	49
1750	84	84	82	79	77	75	73	71	69	68	66	65	63	61	59	57	55	53	52	51	49
2000	83	83	81	79	77	75	73	71	69	68	66	65	64	61	59	57	55	54	52	51	50
2250	82	82	81	79	77	75	73	71	69	68	67	65	64	62	59	57	56	54	53	51	50
2500	81	81	80	78	76	75	73	71	70	68	67	65	64	62	60	58	56	55	53	52	51
2750	80	80	79	78	76	74	73	71	70	68	67	66	64	62	60	58	56	55	53	52	51
3000	80	79	79	77	76	74	73	71	70	68	67	66	64	62	60	58	57	55	54	52	51
3250	79	79	78	77	75	74	72	71	70	68	67	66	65	62	60	59	57	55	54	53	51
3500	78	78	77	76	75	74	72	71	69	68	67	66	65	63	61	59	57	56	54	53	52
3750	78	77	77	76	75	73	72	71	69	68	67	66	65	63	61	59	57	56	54	53	52
4000	77	77	76	76	75	73	72	71	69	68	67	66	65	63	61	59	57	56	55	53	52
4250	76	76	76	75	74	73	72	70	69	68	67	66	65	63	61	59	58	56	55	54	52
4500	76	76	75	75	74	73	72	70	69	68	67	66	65	63	61	59	58	56	55	54	52
4750	75	75	75	74	73	72	71	70	69	68	67	66	65	63	61	59	58	56	55	54	53
5000	75	75	74	74	73	72	71	70	69	68	67	66	65	63	61	59	58	57	55	54	53
5500	74	74	74	73	72	72	71	70	69	68	67	66	65	63	61	60	58	57	56	54	53
6000	73	73	73	72	72	71	70	69	68	68	67	66	65	63	61	60	58	57	56	54	53
6500	72	72	72	72	71	71	70	69	68	67	66	66	65	63	61	60	58	57	56	55	53
7000	71	71	71	71	71	70	69	69	68	67	66	65	64	63	61	60	58	57	56	55	54
7500	71	71	71	70	70	69	69	68	68	67	66	65	64	63	61	60	59	57	56	55	54
8000	70	70	70	70	69	69	68	68	67	67	66	65	64	63	61	60	59	57	56	55	54
8500	69	69	69	69	69	68	68	67	67	66	65	65	64	63	61	60	59	57	56	55	54
9000	69	69	69	69	68	68	68	67	67	66	65	65	64	62	61	60	59	57	56	55	54
9500	68	68	68	68	68	68	67	67	66	66	65	64	64	62	61	60	59	57	56	55	54
10 000	67	67	67	67	67	67	66	66	65	65	64	64	63	62	60	59	58	57	56	55	54
10 500	67	67	67	67	66	66	66	65	65	64	64	63	63	62	60	59	58	57	56	55	54
11 000	66	66	66	66	66	66	65	65	65	64	64	63	63	61	60	59	58	57	56	55	54
11 500	66	66	66	66	65	65	65	65	64	64	63	63	62	61	60	59	58	57	56	55	54
12 000	65	65	65	65	65	65	65	64	64	63	63	63	62	61	60	59	58	57	56	55	54
12 500	65	65	65	65	65	64	64	64	64	63	63	62	62	61	60	59	58	57	56	55	54
13 000	64	64	64	64	64	64	64	63	63	63	62	62	62	61	60	59	58	57	56	55	54
13 500	64	64	64	64	64	64	63	63	63	62	62	62	61	60	60	59	58	57	56	55	54
14 000	64	64	64	63	63	63	63	63	62	62	62	62	61	60	59	58	57	56	55	55	54
14 500	63	63	63	63	63	63	63	62	62	62	62	61	61	60	59	58	57	56	55	54	54
15 000	63	63	63	63	63	62	62	62	62	62	61	61	61	60	59	58	57	56	55	54	53
15 500	62	62	62	62	62	62	62	62	62	61	61	61	60	60	59	58	57	56	55	54	53
16 000	62	62	62	62	62	62	62	61	61	61	61	60	60	59	59	58	57	56	55	54	53
16 500	62	62	62	62	62	61	61	61	61	61	60	60	60	59	59	58	57	56	55	54	53
17 000	61	61	61	61	61	61	61	61	61	60	60	60	60	59	58	58	57	56	55	54	53
17 500	61	61	61	61	61	61	61	61	61	60	60	60	60	59	58	58	57	56	55	54	53
18 000	61	61	61	61	61	61	61	61	61	60	60	60	60	59	58	58	57	56	55	54	53
18 500	61	61	61	61	61	61	61	61	61	60	60	60	60	59	58	58	57	56	55	54	53
19 000	61	61	61	61	61	61	61	61	61	60	60	60	60	59	58	58	57	56	55	54	53
19 500	61	61	61	61	61	61	61	61	61	60	60	60	60	59	58	58	57	56	55	54	53
20 000	61	61	61	61	61	61	61	61	61	60	60	60	60	59	58	58	57	56	55	54	53

TABLE 3.5(B)
NOISE LEVELS FOR AIRBUS A320-232 DEPARTURES

Centre-line distance (DT), m	Noise levels, dB(A)																		
	Sideline distance (DS), m																		
	0	100	200	300	400	500	600	700	800	900	1000	1200	1400	1600	1800	2000	2200	2400	2600
0	***	***	***	***	***	73	71	68	66	64	63	61	59	57	55	54	53	51	50
250	***	***	***	***	***	72	69	67	65	64	62	60	58	56	55	53	52	51	50
500	***	***	***	***	***	72	69	66	64	63	61	59	58	56	55	53	52	51	50
750	***	***	***	***	***	71	68	66	64	62	61	59	57	55	54	53	51	50	49
1000	***	***	***	***	***	71	68	66	63	62	60	58	56	55	54	52	51	50	49
1250	***	***	***	***	***	70	68	65	64	63	62	60	58	56	55	53	52	51	50
1500	***	***	***	***	***	73	70	68	66	65	64	61	59	57	56	54	53	51	50
1750	***	***	***	***	***	76	73	71	68	67	65	63	60	59	57	55	54	52	51
2000	***	***	***	***	***	77	75	72	70	68	66	64	62	59	58	56	54	53	52
2250	***	***	***	***	***	78	75	73	71	69	68	65	62	60	58	57	55	54	52
2500	91	90	87	84	81	79	76	74	72	70	68	65	63	61	59	57	56	54	53
2750	89	88	86	84	81	79	76	74	72	70	69	66	64	62	60	58	56	55	53
3000	87	87	85	83	81	79	76	75	73	71	70	67	64	62	60	58	56	55	53
3250	86	85	84	83	80	78	76	75	73	71	70	67	64	62	60	58	56	55	53
3500	85	85	84	82	80	78	76	74	73	71	70	67	64	62	60	58	56	55	53
3750	85	84	83	82	80	78	76	74	73	71	69	67	64	62	60	58	57	55	53
4000	84	84	83	81	80	78	76	74	72	71	69	67	64	62	60	58	57	55	53
4250	83	83	82	81	79	78	76	74	72	71	69	67	64	62	60	58	57	55	53
4500	83	83	82	81	79	77	76	74	72	71	69	67	64	62	60	58	57	55	53
4750	82	82	81	80	79	77	75	74	72	71	69	67	64	62	60	58	57	55	53
5000	82	82	81	80	79	77	75	73	72	70	69	67	64	62	60	58	57	55	53
5500	81	81	80	79	78	76	75	73	72	70	69	66	64	62	60	58	57	55	54
6000	79	79	78	78	76	75	74	72	71	70	68	66	64	62	60	58	56	55	53
6500	74	74	73	72	71	70	69	68	67	66	66	64	62	60	59	57	55	54	53
7000	73	72	72	71	71	70	68	67	66	65	64	61	59	58	56	55	54	53	51
7500	71	71	71	70	70	69	68	67	66	65	64	61	59	57	56	54	52	51	50
8000	70	70	70	70	69	68	67	66	65	64	63	61	59	58	56	54	53	51	50
8500	69	69	69	69	68	68	67	66	65	64	63	61	59	58	56	54	53	51	50
9000	69	68	68	68	68	67	66	66	65	64	63	61	59	58	56	54	53	51	50
9500	68	68	68	67	67	66	66	65	64	63	63	61	59	57	56	54	53	52	50
10 000	67	67	67	67	66	66	65	65	64	63	62	61	59	58	56	54	53	52	50
10 500	67	67	67	67	66	66	65	65	64	63	62	61	59	58	56	55	53	52	50
11 000	67	67	67	67	66	66	65	65	64	63	62	61	59	58	56	55	53	52	51
11 500	67	67	67	66	66	66	65	65	64	63	62	61	59	58	56	55	53	52	51
12 000	67	67	66	66	66	65	65	64	64	63	62	61	59	58	56	55	53	52	51
12 500	66	66	66	66	66	65	65	64	64	63	62	61	59	58	56	55	53	52	51
13 000	66	66	66	65	65	65	64	64	63	63	62	60	59	58	56	55	53	52	51
13 500	65	65	65	65	65	64	64	63	63	62	62	60	59	57	56	55	53	52	51
14 000	64	64	64	64	64	64	63	63	62	62	61	60	59	57	56	55	53	52	51
14 500	64	64	64	64	63	63	63	62	62	61	61	60	58	57	56	55	53	52	51
15 000	63	63	63	63	63	63	62	62	62	61	61	59	58	57	56	54	53	52	51
15 500	63	63	63	63	62	62	62	61	61	61	60	59	58	57	56	54	53	52	51
16 000	62	62	62	62	62	62	61	61	61	60	60	59	58	57	55	54	53	52	51
16 500	62	62	62	62	61	61	61	61	60	60	60	59	58	56	55	54	53	52	51
17 000	61	61	61	61	61	61	61	60	60	60	59	58	57	56	55	54	53	52	51
17 500	61	61	61	61	61	60	60	60	60	59	59	58	57	56	55	54	53	52	51
18 000	60	60	60	60	60	60	60	59	59	59	59	58	57	56	55	54	53	52	51
18 500	60	60	60	60	60	60	59	59	59	59	58	57	57	56	55	54	53	52	51
19 000	60	60	60	59	59	59	59	59	59	58	58	57	56	55	54	54	53	52	51
19 500	59	59	59	59	59	59	59	59	58	58	58	57	56	55	54	53	52	51	51
20 000	59	59	59	59	59	59	58	58	58	58	57	57	56	55	54	53	52	51	50

TABLE 3.6(A)
NOISE LEVELS FOR AIRBUS A321-232 ARRIVALS

Centre-line distance (DL), m	Noise levels, dB(A)																				
	Sideline distance (DS), m																				
	0	50	100	150	200	250	300	350	400	450	500	550	600	700	800	900	1000	1100	1200	1300	1400
0	***	***	***	***	***	***	***	***	***	***	63	61	60	58	57	56	55	54	53	52	51
250	***	***	***	***	***	***	***	***	***	***	64	63	61	58	56	54	53	52	51	51	50
500	94	91	86	82	79	76	73	71	69	67	65	63	62	59	57	55	53	51	50	49	49
750	92	90	86	82	79	76	74	71	69	67	66	64	63	60	57	55	53	52	51	49	48
1000	90	89	86	82	79	76	74	72	70	68	66	65	63	60	58	56	54	53	51	50	48
1250	88	88	85	82	79	77	74	72	70	68	67	65	64	61	59	56	55	53	52	50	49
1500	87	86	84	82	79	77	74	72	70	69	67	66	64	61	59	57	55	54	52	51	49
1750	86	85	84	81	79	76	74	72	71	69	67	66	64	62	59	57	56	54	53	51	50
2000	85	84	83	81	79	76	74	72	71	69	68	66	65	62	60	58	56	54	53	51	50
2250	84	84	82	80	78	76	74	72	71	69	68	66	65	62	60	58	56	55	53	52	50
2500	83	83	82	80	78	76	74	72	71	69	68	67	65	63	60	58	57	55	54	52	51
2750	82	82	81	80	78	76	74	72	71	69	68	67	65	63	61	59	57	55	54	52	51
3000	81	81	80	79	77	76	74	72	71	69	68	67	66	63	61	59	57	56	54	53	51
3250	81	80	80	79	77	76	74	72	71	69	68	67	66	63	61	59	58	56	54	53	52
3500	80	80	79	78	77	75	74	72	71	69	68	67	66	63	61	59	58	56	55	53	52
3750	79	79	79	78	76	75	74	72	71	69	68	67	66	64	61	60	58	56	55	53	52
4000	79	79	78	77	76	75	73	72	71	69	68	67	66	64	62	60	58	57	55	54	52
4250	78	78	77	77	76	74	73	72	71	69	68	67	66	64	62	60	58	57	55	54	53
4500	78	77	77	76	75	74	73	72	70	69	68	67	66	64	62	60	58	57	55	54	53
4750	77	77	76	76	75	74	73	72	70	69	68	67	66	64	62	60	58	57	56	54	53
5000	76	76	76	75	75	74	73	71	70	69	68	67	66	64	62	60	59	57	56	54	53
5500	75	75	75	75	74	73	72	71	70	69	68	67	66	64	62	60	59	57	56	55	53
6000	75	74	74	74	73	72	72	71	70	69	68	67	66	64	62	60	59	58	56	55	54
6500	74	74	73	73	72	72	71	70	69	68	67	66	66	64	62	60	59	58	56	55	54
7000	73	73	73	72	72	71	71	70	69	68	67	66	65	64	62	60	59	58	56	55	54
7500	72	72	72	72	71	71	70	69	69	68	67	66	65	64	62	60	59	58	57	55	54
8000	71	71	71	71	71	70	70	69	68	68	67	66	65	63	62	60	59	58	57	55	54
8500	71	71	71	70	70	70	69	69	68	67	66	66	65	63	62	60	59	58	57	55	54
9000	70	70	70	70	69	69	69	68	68	67	66	65	65	63	62	60	59	58	57	55	54
9500	70	70	69	69	69	69	68	68	67	67	66	65	64	63	62	60	59	58	57	56	54
10 000	69	69	69	69	68	68	68	67	67	66	66	65	64	63	62	60	59	58	57	56	54
10 500	68	68	68	68	68	68	67	67	66	66	65	65	64	63	61	60	59	58	57	56	54
11 000	67	67	67	66	66	66	66	65	65	64	64	63	63	62	61	59	58	57	56	55	54
11 500	66	66	66	66	65	65	65	64	64	64	63	63	62	61	60	58	57	56	55	54	53
12 000	65	65	65	65	65	65	64	64	64	63	63	62	62	61	59	58	57	56	55	54	53
12 500	65	65	65	65	64	64	64	64	63	63	62	62	61	60	59	58	57	56	55	54	53
13 000	64	64	64	64	64	64	63	63	63	62	62	62	61	60	59	58	57	56	55	54	53
13 500	64	64	64	64	63	63	63	63	62	62	62	61	61	60	59	58	57	56	55	54	53
14 000	63	63	63	63	63	63	63	62	62	62	61	61	61	60	59	58	57	56	55	54	53
14 500	63	63	63	63	63	62	62	62	62	61	61	61	60	59	59	58	57	56	55	54	53
15 000	62	62	62	62	62	62	62	62	61	61	61	60	60	59	58	57	56	55	54	54	53
15 500	62	62	62	62	62	62	61	61	61	61	60	60	60	59	58	57	56	55	54	53	53
16 000	62	62	62	62	61	61	61	61	61	60	60	60	60	59	58	57	56	55	54	53	53
16 500	61	61	61	61	61	61	61	61	60	60	60	60	59	59	58	57	56	55	54	53	52
17 000	61	61	61	61	61	61	60	60	60	60	60	59	59	58	58	57	56	55	54	53	52
17 500	61	61	61	61	61	61	60	60	60	60	60	59	59	58	58	57	56	55	54	53	52
18 000	61	61	61	61	61	61	60	60	60	60	60	59	59	58	58	57	56	55	54	53	52
18 500	61	61	61	61	61	61	60	60	60	60	60	59	59	58	58	57	56	55	54	53	52
19 000	61	61	61	61	61	61	60	60	60	60	60	59	59	58	58	57	56	55	54	53	52
19 500	61	61	61	61	61	61	60	60	60	60	60	59	59	58	58	57	56	55	54	53	52
20 000	61	61	61	61	61	61	60	60	60	60	60	59	59	58	58	57	56	55	54	53	52

TABLE 3.6(B)
NOISE LEVELS FOR AIRBUS A321-232 DEPARTURES

Centre-line distance (DT), m	Noise levels, dB(A)																		
	Sideline distance (DS), m																		
	0	100	200	300	400	500	600	700	800	900	1000	1200	1400	1600	1800	2000	2200	2400	2600
0	***	***	***	***	***	76	74	71	69	68	66	64	62	60	59	57	56	55	54
250	***	***	***	***	***	75	72	70	68	67	66	63	61	60	58	57	55	54	53
500	***	***	***	***	***	75	72	69	67	66	65	63	61	59	58	56	55	54	53
750	***	***	***	***	***	74	71	69	67	65	64	62	60	59	57	56	55	54	53
1000	***	***	***	***	***	74	71	69	66	65	63	61	59	58	57	55	54	53	52
1250	***	***	***	***	***	73	71	68	66	64	63	61	59	58	56	55	54	53	52
1500	***	***	***	***	***	73	70	68	67	65	64	62	60	59	57	56	55	54	52
1750	***	***	***	***	***	75	73	71	69	67	66	64	62	60	58	57	56	54	53
2000	***	***	***	***	***	78	75	73	71	69	68	65	63	61	59	58	56	55	54
2250	***	***	***	***	***	80	77	75	73	71	69	66	64	62	60	58	57	56	55
2500	97	95	91	87	84	81	78	76	73	72	70	67	65	63	61	59	58	56	55
2750	94	93	90	87	84	81	79	77	74	73	71	68	65	63	62	60	58	57	56
3000	92	91	89	87	84	81	79	77	75	73	71	69	66	64	62	61	59	57	56
3250	90	90	88	86	84	81	79	77	75	74	72	69	67	65	63	61	59	58	56
3500	89	88	87	85	83	81	79	77	75	74	72	70	67	65	63	61	59	58	56
3750	88	88	87	85	83	81	79	77	75	74	72	70	67	65	63	61	59	58	56
4000	88	87	86	85	83	81	79	77	75	74	72	70	67	65	63	61	59	58	56
4250	87	87	86	84	82	81	79	77	75	74	72	70	67	65	63	61	59	58	56
4500	86	86	85	84	82	80	78	77	75	74	72	70	67	65	63	61	59	58	56
4750	86	86	85	84	82	80	78	77	75	73	72	69	67	65	63	61	59	58	56
5000	85	85	84	83	82	80	78	76	75	73	72	69	67	65	63	61	59	58	56
5500	84	84	84	83	81	79	78	76	75	73	72	69	67	65	63	61	59	58	56
6000	84	83	83	82	81	79	77	76	74	73	72	69	67	65	63	61	59	58	56
6500	83	82	82	81	80	78	77	75	74	73	71	69	67	65	63	61	59	58	56
7000	76	76	76	75	75	74	73	72	71	70	69	67	65	63	62	60	59	57	56
7500	75	75	75	74	73	72	71	69	68	67	66	64	63	61	60	59	57	56	55
8000	74	74	74	73	72	71	70	69	68	67	66	64	61	60	58	56	55	54	53
8500	73	73	73	72	71	71	70	69	68	67	66	63	62	60	58	56	55	53	52
9000	72	72	72	71	71	70	69	68	67	66	65	63	61	60	58	56	55	53	52
9500	71	71	71	71	70	69	69	68	67	66	65	63	61	60	58	57	55	54	52
10 000	70	70	70	70	69	69	68	68	67	66	65	63	61	60	58	57	55	54	52
10 500	70	70	69	69	69	68	68	67	66	66	65	63	61	60	58	57	55	54	53
11 000	69	69	69	69	69	68	68	67	66	65	65	63	61	60	58	57	55	54	52
11 500	69	69	69	69	68	68	67	67	66	65	64	63	61	59	58	56	55	54	52
12 000	69	69	68	68	68	67	67	66	66	65	64	63	61	59	58	56	55	54	52
12 500	68	68	68	68	68	67	67	66	65	65	64	62	61	59	58	56	55	54	52
13 000	68	68	68	67	67	67	66	66	65	64	64	62	61	59	58	56	55	54	52
13 500	67	67	67	67	67	66	66	65	65	64	63	62	60	59	58	56	55	54	52
14 000	67	67	66	66	66	66	65	65	64	64	63	62	60	59	58	56	55	54	52
14 500	66	66	66	66	66	65	65	64	64	63	63	62	60	59	57	56	55	54	53
15 000	66	66	65	65	65	65	64	64	64	63	63	61	60	59	57	56	55	54	53
15 500	65	65	65	65	65	64	64	64	63	63	62	61	60	59	57	56	55	54	53
16 000	65	65	64	64	64	64	64	63	63	62	62	61	60	58	57	56	55	54	53
16 500	64	64	64	64	64	63	63	63	62	62	62	61	60	58	57	56	55	54	53
17 000	64	64	64	63	63	63	63	62	62	62	61	60	59	58	57	56	55	54	53
17 500	63	63	63	63	63	63	62	62	62	61	61	60	59	58	57	56	55	54	53
18 000	63	63	63	63	62	62	62	62	61	61	61	60	59	58	57	56	55	54	53
18 500	62	62	62	62	62	62	62	61	61	61	61	60	59	58	57	56	55	54	53
19 000	62	62	62	62	62	62	61	61	61	61	60	59	59	58	57	56	55	54	53
19 500	62	62	62	62	61	61	61	61	61	60	60	59	58	57	56	55	54	54	53
20 000	61	61	61	61	61	61	61	61	60	60	60	59	58	57	56	55	54	53	53

TABLE 3.7(A)
NOISE LEVELS FOR AIRBUS A330-301 ARRIVALS

Centre-line distance (DL), m	Noise levels, dB(A)																				
	Sideline distance (DS), m																				
	0	50	100	150	200	250	300	350	400	450	500	550	600	700	800	900	1000	1100	1200	1300	1400
0	***	***	***	***	***	***	***	***	***	***	66	65	64	63	62	61	60	59	58	57	56
250	***	***	***	***	***	***	***	***	***	***	67	65	64	61	60	59	58	57	57	56	55
500	96	93	88	84	81	78	76	73	71	69	68	66	65	62	60	58	56	56	55	54	54
750	94	92	88	84	81	78	76	74	72	70	68	67	65	63	61	59	57	55	54	53	52
1000	92	91	87	84	81	79	76	74	72	71	69	67	66	63	61	59	57	56	55	53	52
1250	90	89	87	84	81	79	77	75	73	71	69	68	67	64	62	60	58	57	55	54	53
1500	89	88	86	84	81	79	77	75	73	71	70	68	67	64	62	60	59	57	56	54	53
1750	88	87	86	83	81	79	77	75	73	72	70	69	67	65	63	61	59	57	56	55	54
2000	87	86	85	83	81	79	77	75	73	72	70	69	68	65	63	61	59	58	57	55	54
2250	86	86	84	83	81	79	77	75	73	72	70	69	68	66	63	61	60	58	57	56	54
2500	85	85	84	82	80	78	77	75	73	72	71	69	68	66	64	62	60	59	57	56	55
2750	84	84	83	82	80	78	77	75	73	72	71	69	68	66	64	62	60	59	58	56	55
3000	83	83	82	81	80	78	76	75	73	72	71	70	68	66	64	62	61	59	58	56	55
3250	83	83	82	81	79	78	76	75	73	72	71	70	69	66	64	63	61	59	58	57	55
3500	82	82	81	80	79	78	76	75	73	72	71	70	69	66	65	63	61	60	58	57	56
3750	82	81	81	80	79	77	76	75	73	72	71	70	69	67	65	63	61	60	59	57	56
4000	81	81	80	80	78	77	76	75	73	72	71	70	69	67	65	63	61	60	59	57	56
4250	80	80	80	79	78	77	76	74	73	72	71	70	69	67	65	63	62	60	59	58	56
4500	80	80	79	79	78	77	76	74	73	72	71	70	69	67	65	63	62	60	59	58	57
4750	79	79	79	78	77	76	75	74	73	72	71	70	69	67	65	63	62	61	59	58	57
5000	79	79	78	78	77	76	75	74	73	72	71	70	69	67	65	63	62	61	59	58	57
5500	78	78	78	77	76	76	75	74	73	72	71	70	69	67	65	64	62	61	60	58	57
6000	77	77	77	76	76	75	74	73	72	71	71	70	69	67	65	64	62	61	60	59	57
6500	76	76	76	76	75	74	74	73	72	71	70	69	69	67	65	64	62	61	60	59	58
7000	75	75	75	75	74	74	73	73	72	71	70	69	68	67	65	64	63	61	60	59	58
7500	75	75	75	74	74	73	73	72	72	71	70	69	68	67	65	64	63	61	60	59	58
8000	74	74	74	74	73	73	72	72	71	70	70	69	68	67	65	64	63	61	60	59	58
8500	73	73	73	73	73	72	72	71	71	70	69	69	68	67	65	64	63	61	60	59	58
9000	73	73	73	73	72	72	71	71	70	70	69	68	68	66	65	64	63	61	60	59	58
9500	72	72	72	72	72	71	71	71	70	70	69	68	68	66	65	64	63	62	60	59	58
10 000	72	72	72	71	71	71	71	70	70	69	69	68	67	66	65	64	63	61	60	59	58
10 500	71	71	71	71	71	71	70	70	69	69	68	68	67	66	65	64	63	61	60	59	58
11 000	71	71	71	71	70	70	70	69	69	69	68	68	67	66	65	64	62	61	60	59	58
11 500	70	70	70	70	70	70	69	69	69	68	68	67	67	66	65	63	62	61	60	59	58
12 000	68	68	68	68	68	68	67	67	67	66	66	66	65	64	63	62	61	60	59	58	58
12 500	68	68	68	67	67	67	67	67	66	66	66	65	65	64	63	62	61	60	59	58	57
13 000	67	67	67	67	67	67	66	66	66	66	65	65	65	64	63	62	61	60	59	58	57
13 500	67	67	67	67	66	66	66	66	66	65	65	65	64	63	63	62	61	60	59	58	57
14 000	66	66	66	66	66	66	66	66	65	65	65	64	64	63	62	62	61	60	59	58	57
14 500	66	66	66	66	66	66	65	65	65	65	64	64	64	63	62	61	61	60	59	58	57
15 000	66	66	66	65	65	65	65	65	65	64	64	64	64	63	62	61	60	60	59	58	57
15 500	65	65	65	65	65	65	65	65	64	64	64	64	63	63	62	61	60	59	59	58	57
16 000	65	65	65	65	65	65	64	64	64	64	64	63	63	62	62	61	60	59	58	58	57
16 500	65	65	64	64	64	64	64	64	64	64	63	63	63	62	62	61	60	59	58	58	57
17 000	64	64	64	64	64	64	64	64	64	63	63	63	63	62	61	61	60	59	58	58	57
17 500	64	64	64	64	64	64	64	64	64	63	63	63	63	62	61	61	60	59	58	58	57
18 000	64	64	64	64	64	64	64	64	64	63	63	63	63	62	61	61	60	59	58	58	57
18 500	64	64	64	64	64	64	64	64	63	63	63	63	63	62	61	61	60	59	58	58	57
19 000	64	64	64	64	64	64	64	64	63	63	63	63	63	62	61	61	60	59	58	58	57
19 500	64	64	64	64	64	64	64	64	63	63	63	63	63	62	61	61	60	59	58	58	57
20 000	64	64	64	64	64	64	64	64	63	63	63	63	63	62	61	61	60	59	58	58	57

TABLE 3.7(B)
NOISE LEVELS FOR AIRBUS A330-301 DEPARTURES

Centre-line distance (DT), m	Noise levels, dB(A)																		
	Sideline distance (DS), m																		
	0	100	200	300	400	500	600	700	800	900	1000	1200	1400	1600	1800	2000	2200	2400	2600
0	***	***	***	***	***	79	76	74	72	70	69	67	65	63	61	60	59	57	56
250	***	***	***	***	***	77	75	72	71	69	68	66	64	62	61	59	58	57	56
500	***	***	***	***	***	77	74	72	70	68	67	65	63	62	60	59	58	57	55
750	***	***	***	***	***	77	74	71	69	68	67	64	63	61	60	59	57	56	55
1000	***	***	***	***	***	76	73	71	69	67	66	64	62	60	59	58	57	56	55
1250	***	***	***	***	***	76	73	71	69	67	66	64	62	60	58	57	56	55	54
1500	***	***	***	***	***	76	73	71	69	67	65	63	61	60	58	57	56	55	54
1750	***	***	***	***	***	75	73	70	68	67	66	64	62	61	59	58	57	55	54
2000	***	***	***	***	***	77	74	72	70	69	68	66	64	62	60	59	57	56	55
2250	***	***	***	***	***	80	77	74	72	71	69	67	65	63	61	60	58	57	56
2500	107	101	94	89	85	81	79	76	74	72	71	68	66	64	62	61	59	58	56
2750	102	99	94	89	86	82	80	78	75	74	72	69	67	65	63	61	60	58	57
3000	99	97	93	90	86	83	81	78	76	74	73	70	68	65	64	62	60	59	58
3250	96	95	93	89	86	84	81	79	77	75	74	71	68	66	64	63	61	59	58
3500	94	94	92	89	86	84	81	79	77	76	74	71	69	67	65	63	61	60	58
3750	93	92	91	88	86	84	82	80	78	76	75	72	70	67	65	64	62	60	59
4000	91	91	90	88	86	84	82	80	78	76	75	72	70	68	66	64	62	60	59
4250	91	90	89	87	85	83	81	80	78	76	75	72	70	68	66	64	62	60	59
4500	90	90	89	87	85	83	81	80	78	76	75	72	70	68	66	64	62	60	59
4750	90	89	88	87	85	83	81	79	78	76	75	72	70	68	66	64	62	60	59
5000	89	89	88	87	85	83	81	79	78	76	75	72	70	68	66	64	62	60	59
5500	88	88	87	86	84	83	81	79	77	76	75	72	70	68	66	64	62	60	59
6000	88	87	87	85	84	82	80	79	77	76	75	72	70	68	66	64	62	60	59
6500	87	87	86	85	83	82	80	79	77	76	74	72	70	68	66	64	62	61	59
7000	83	83	82	81	80	79	78	77	75	74	73	71	69	67	65	63	62	60	59
7500	82	82	81	80	79	78	77	75	74	73	71	69	67	65	64	62	61	59	58
8000	81	81	80	79	79	77	76	75	74	72	71	69	67	65	63	61	59	58	57
8500	80	79	79	79	78	77	76	75	73	72	71	69	67	65	63	61	60	58	57
9000	79	78	78	78	77	76	75	74	73	72	71	69	67	65	63	62	60	58	57
9500	78	78	77	77	76	76	75	74	73	72	71	69	67	65	63	62	60	59	57
10 000	77	77	76	76	76	75	74	73	72	72	71	69	67	65	63	62	60	59	57
10 500	76	76	76	75	75	74	74	73	72	71	70	68	67	65	63	62	60	59	58
11 000	75	75	75	75	74	74	73	73	72	71	70	68	67	65	63	62	60	59	58
11 500	75	75	75	74	74	74	73	72	72	71	70	68	67	65	63	62	60	59	58
12 000	75	75	74	74	74	73	73	72	72	71	70	68	67	65	63	62	61	59	58
12 500	74	74	74	74	74	73	73	72	72	71	70	68	67	65	64	62	61	59	58
13 000	74	74	74	74	74	73	73	72	71	71	70	68	67	65	64	62	61	59	58
13 500	74	74	74	74	73	73	73	72	71	71	70	68	67	65	64	62	61	59	58
14 000	74	74	74	73	73	73	72	72	71	70	70	68	67	65	64	62	61	59	58
14 500	73	73	73	73	73	72	72	71	71	70	69	68	66	65	64	62	61	59	58
15 000	73	73	73	72	72	72	71	71	70	70	69	68	66	65	63	62	61	60	58
15 500	72	72	72	72	72	71	71	70	70	69	69	68	66	65	63	62	61	60	58
16 000	72	72	72	71	71	71	70	70	70	69	69	67	66	65	63	62	61	60	58
16 500	71	71	71	71	71	70	70	70	69	69	68	67	66	65	63	62	61	60	58
17 000	71	71	70	70	70	70	70	69	69	68	68	67	66	64	63	62	61	60	58
17 500	70	70	70	70	70	69	69	69	68	68	68	67	65	64	63	62	61	59	58
18 000	70	70	70	69	69	69	69	68	68	68	67	66	65	64	63	62	61	59	58
18 500	69	69	69	69	69	69	68	68	68	67	67	66	65	64	63	62	61	59	58
19 000	69	69	69	69	68	68	68	68	67	67	67	66	65	64	63	62	60	59	58
19 500	68	68	68	68	68	68	68	67	67	67	66	66	65	64	62	61	60	59	58
20 000	68	68	68	68	68	67	67	67	67	66	66	65	64	63	62	61	60	59	58

TABLE 3.8(A)
NOISE LEVELS FOR AIRBUS A340-642 ARRIVALS

Centre-line distance (DL), m	Noise levels, dB(A)																					
	Sideline distance (DS), m																					
	0	50	100	150	200	250	300	350	400	450	500	550	600	700	800	900	1000	1100	1200	1300	1400	
0	***	***	***	***	***	***	***	***	***	***	67	65	64	62	61	60	59	57	56	55	54	
250	***	***	***	***	***	***	***	***	***	***	68	67	65	62	60	58	57	56	55	54	53	
500	97	95	90	86	83	80	77	75	73	71	69	67	66	63	61	59	57	56	54	53	52	
750	95	94	90	86	83	80	78	75	73	71	70	68	67	64	62	59	58	56	55	54	52	
1000	93	92	89	86	83	80	78	76	74	72	70	69	67	65	62	60	58	57	55	54	53	
1250	92	91	89	86	83	80	78	76	74	72	71	69	68	65	63	61	59	57	56	55	53	
1500	91	90	88	85	83	80	78	76	74	73	71	70	68	66	63	61	59	58	56	55	54	
1750	90	89	87	85	83	80	78	76	75	73	71	70	69	66	64	62	60	58	57	55	54	
2000	89	88	87	85	82	80	78	76	75	73	72	70	69	66	64	62	60	59	57	56	55	
2250	88	87	86	84	82	80	78	76	75	73	72	70	69	67	64	62	61	59	58	56	55	
2500	87	86	85	84	82	80	78	76	75	73	72	71	69	67	65	63	61	59	58	57	55	
2750	86	86	85	83	82	80	78	76	75	73	72	71	69	67	65	63	61	60	58	57	56	
3000	85	85	84	83	81	80	78	76	75	73	72	71	70	67	65	63	62	60	59	57	56	
3250	84	84	84	82	81	79	78	76	75	73	72	71	70	67	65	63	62	60	59	57	56	
3500	84	84	83	82	81	79	78	76	75	73	72	71	70	68	65	64	62	60	59	58	56	
3750	83	83	82	82	80	79	77	76	75	73	72	71	70	68	66	64	62	61	59	58	57	
4000	83	82	82	81	80	79	77	76	75	73	72	71	70	68	66	64	62	61	59	58	57	
4250	82	82	81	81	80	78	77	76	75	73	72	71	70	68	66	64	63	61	60	58	57	
4500	81	81	81	80	79	78	77	76	74	73	72	71	70	68	66	64	63	61	60	58	57	
4750	81	81	80	80	79	78	77	75	74	73	72	71	70	68	66	64	63	61	60	59	57	
5000	80	80	80	79	79	78	76	75	74	73	72	71	70	68	66	64	63	61	60	59	58	
5500	79	79	79	79	78	77	76	75	74	73	72	71	70	68	66	65	63	62	60	59	58	
6000	79	78	78	78	77	76	76	75	74	73	72	71	70	68	66	65	63	62	61	59	58	
6500	78	78	77	77	76	76	75	74	73	72	71	71	70	68	66	65	63	62	61	59	58	
7000	77	77	77	76	76	75	75	74	73	72	71	70	70	68	66	65	63	62	61	60	58	
7500	76	76	76	76	75	75	74	73	73	72	71	70	69	68	66	65	63	62	61	60	59	
8000	75	75	75	75	75	74	74	73	72	72	71	70	69	68	66	65	63	62	61	60	59	
8500	75	75	75	74	74	74	73	73	72	71	71	70	69	68	66	65	63	62	61	60	59	
9000	73	73	73	73	72	72	72	71	71	70	69	69	68	66	65	64	63	61	60	59	58	
9500	73	72	72	72	72	72	71	71	70	70	69	68	68	66	65	64	63	61	60	59	58	
10 000	72	72	72	72	71	71	71	70	70	69	69	68	67	66	65	64	62	61	60	59	58	
10 500	71	71	71	71	71	71	70	70	69	69	68	68	67	66	65	64	62	61	60	59	58	
11 000	71	71	71	71	70	70	70	69	69	69	68	68	67	66	65	63	62	61	60	59	58	
11 500	70	70	70	70	70	70	69	69	69	68	68	67	67	66	64	63	62	61	60	59	58	
12 000	70	70	70	70	69	69	69	69	68	68	67	67	66	65	64	63	62	61	60	59	58	
12 500	69	69	69	69	69	69	69	68	68	68	67	67	66	65	64	63	62	61	60	59	58	
13 000	69	69	69	69	69	68	68	68	68	67	67	66	66	65	64	63	62	61	60	59	58	
13 500	68	68	68	68	68	68	68	67	67	67	66	66	66	65	64	63	62	61	60	59	58	
14 000	68	68	68	68	68	68	67	67	67	66	66	66	65	65	64	63	62	61	60	59	58	
14 500	68	68	67	67	67	67	67	67	66	66	66	66	65	64	63	63	62	61	60	59	58	
15 000	67	67	67	67	67	67	67	66	66	66	66	65	65	64	63	62	61	61	60	59	58	
15 500	67	67	67	67	67	66	66	66	66	66	65	65	65	64	63	62	61	60	60	59	58	
16 000	66	66	66	66	66	66	66	66	65	65	65	65	64	64	63	62	61	60	59	59	58	
16 500	66	66	66	66	66	66	66	65	65	65	65	64	64	63	63	62	61	60	59	59	58	
17 000	66	66	66	66	66	65	65	65	65	65	64	64	64	63	63	62	61	60	59	58	58	
17 500	66	66	66	66	65	65	65	65	65	65	64	64	64	63	63	62	61	60	59	58	58	
18 000	66	66	66	66	65	65	65	65	65	65	64	64	64	63	63	62	61	60	59	58	58	
18 500	66	66	66	66	65	65	65	65	65	65	64	64	64	63	63	62	61	60	59	58	58	
19 000	66	66	66	66	65	65	65	65	65	65	64	64	64	63	63	62	61	60	59	58	58	
19 500	66	66	66	66	65	65	65	65	65	65	64	64	64	63	62	62	61	60	59	58	58	
20 000	66	66	66	65	65	65	65	65	65	65	64	64	64	63	62	62	61	60	59	58	58	

TABLE 3.8(B)
NOISE LEVELS FOR AIRBUS A340-642 DEPARTURES

Centre-line distance (DT), m	Noise levels, dB(A)																		
	Sideline distance (DS), m																		
	0	100	200	300	400	500	600	700	800	900	1000	1200	1400	1600	1800	2000	2200	2400	2600
0	***	***	***	***	***	77	74	72	70	68	67	64	62	60	58	57	55	54	53
250	***	***	***	***	***	76	73	71	69	67	66	64	61	60	58	56	55	54	53
500	***	***	***	***	***	75	73	70	68	66	65	63	61	59	58	56	55	54	52
750	***	***	***	***	***	75	72	70	68	66	64	62	60	58	57	56	54	53	52
1000	***	***	***	***	***	75	72	69	67	65	64	62	60	58	56	55	54	53	52
1250	***	***	***	***	***	75	72	69	67	65	64	61	59	58	56	54	53	52	51
1500	***	***	***	***	***	74	71	69	67	65	64	61	59	57	56	54	53	51	50
1750	***	***	***	***	***	74	71	69	67	65	63	61	59	57	55	54	53	52	51
2000	***	***	***	***	***	74	71	68	66	64	63	61	59	58	57	56	54	53	52
2250	***	***	***	***	***	76	73	71	68	66	65	62	61	59	58	57	55	54	53
2500	106	100	93	88	83	80	77	74	71	69	68	65	62	61	59	58	56	55	54
2750	100	98	93	88	84	81	78	76	73	71	69	66	64	62	60	59	57	56	55
3000	97	95	92	88	85	82	79	77	75	73	71	68	65	63	62	60	58	57	55
3250	94	93	91	88	85	82	80	77	75	73	72	69	66	64	62	60	59	57	56
3500	92	91	90	87	84	82	80	78	76	74	72	70	67	65	63	61	59	57	56
3750	90	90	88	86	84	82	80	78	76	74	73	70	67	65	63	61	59	57	56
4000	89	89	88	86	84	82	80	78	76	74	73	70	67	65	63	61	59	57	56
4250	89	88	87	86	84	82	80	78	76	74	73	70	67	65	63	61	59	58	56
4500	88	88	87	85	83	81	79	78	76	74	73	70	67	65	63	61	59	58	56
4750	88	87	86	85	83	81	79	77	76	74	73	70	67	65	63	61	59	58	56
5000	87	87	86	85	83	81	79	77	76	74	73	70	67	65	63	61	59	58	56
5500	86	86	85	84	82	81	79	77	75	74	73	70	67	65	63	61	59	58	56
6000	85	85	84	83	82	80	78	77	75	74	72	70	67	65	63	61	60	58	56
6500	84	84	84	83	81	80	78	77	75	74	72	70	67	65	63	61	60	58	56
7000	84	83	83	82	81	79	78	76	75	73	72	70	67	65	63	61	60	58	56
7500	79	79	79	78	77	76	75	74	73	72	71	68	66	64	63	61	59	58	56
8000	78	78	78	77	76	75	74	73	71	70	69	67	64	62	61	59	58	56	55
8500	77	77	77	76	75	75	73	72	71	70	69	67	65	63	61	59	57	56	54
9000	76	76	76	75	75	74	73	72	71	70	69	67	64	63	61	59	58	56	55
9500	75	75	75	74	74	73	72	71	70	69	68	66	64	63	61	59	58	56	55
10 000	74	74	74	74	73	73	72	71	70	69	68	66	64	63	61	59	58	56	55
10 500	73	73	73	73	72	72	71	71	70	69	68	66	64	63	61	59	58	57	55
11 000	73	73	72	72	72	71	71	70	69	68	68	66	64	62	61	59	58	57	55
11 500	72	72	72	71	71	71	70	70	69	68	67	66	64	62	61	59	58	57	55
12 000	71	71	71	71	71	70	70	69	69	68	67	65	64	62	61	59	58	57	55
12 500	71	71	70	70	70	70	69	69	68	67	67	65	64	62	61	59	58	57	55
13 000	70	70	70	70	69	69	69	68	68	67	66	65	63	62	61	59	58	57	56
13 500	70	69	69	69	69	69	68	68	67	67	66	65	63	62	61	59	58	57	56
14 000	69	69	69	69	68	68	68	67	67	66	66	64	63	62	60	59	58	57	56
14 500	68	68	68	68	68	68	67	67	66	66	65	64	63	62	60	59	58	57	56
15 000	68	68	68	68	67	67	67	66	66	66	65	64	63	61	60	59	58	57	56
15 500	67	67	67	67	67	67	66	66	66	65	65	64	62	61	60	59	58	57	56
16 000	67	67	67	67	66	66	66	66	65	65	64	63	62	61	60	59	58	57	55
16 500	66	66	66	66	66	66	65	65	65	64	64	63	62	61	60	59	58	56	55
17 000	66	66	66	66	65	65	65	65	64	64	64	63	62	61	60	59	57	56	55
17 500	65	65	65	65	65	65	65	64	64	64	63	63	62	61	59	58	57	56	55
18 000	65	65	65	65	65	64	64	64	64	63	63	62	61	60	59	58	57	56	55
18 500	65	64	64	64	64	64	64	64	63	63	63	62	61	60	59	58	57	56	55
19 000	64	64	64	64	64	64	64	63	63	63	62	62	61	60	59	58	57	56	55
19 500	64	64	64	64	63	63	63	63	63	62	62	61	61	60	59	58	57	56	55
20 000	63	63	63	63	63	63	63	63	62	62	62	61	60	60	59	58	57	56	55

TABLE 3.9(A)
NOISE LEVELS FOR AIRBUS A380-841 ARRIVALS

Centre-line distance (DL), m	Noise levels, dB(A)																				
	Sideline distance (DS), m																				
	0	50	100	150	200	250	300	350	400	450	500	550	600	700	800	900	1000	1100	1200	1300	1400
0	***	***	***	***	***	***	***	***	***	***	66	65	63	61	58	57	56	55	54	53	52
250	***	***	***	***	***	***	***	***	***	***	67	66	64	62	59	57	56	54	53	52	51
500	95	93	88	84	81	78	76	74	72	70	68	67	65	63	60	58	57	55	54	53	51
750	93	91	88	84	81	79	76	74	72	70	69	67	66	63	61	59	57	56	54	53	52
1000	91	90	87	84	81	79	77	75	73	71	69	68	67	64	62	60	58	56	55	54	52
1250	90	89	87	84	81	79	77	75	73	71	70	68	67	64	62	60	58	57	55	54	53
1500	89	88	86	84	81	79	77	75	73	72	70	69	67	65	63	61	59	57	56	55	53
1750	88	87	86	83	81	79	77	75	74	72	70	69	68	65	63	61	59	58	56	55	54
2000	87	86	85	83	81	79	77	75	74	72	71	69	68	66	63	61	60	58	57	55	54
2250	86	85	84	83	81	79	77	75	74	72	71	70	68	66	64	62	60	59	57	56	55
2500	85	85	84	82	80	79	77	75	74	72	71	70	69	66	64	62	60	59	58	56	55
2750	84	84	83	82	80	79	77	75	74	72	71	70	69	66	64	62	61	59	58	56	55
3000	84	83	83	81	80	78	77	75	74	73	71	70	69	67	65	63	61	60	58	57	55
3250	83	83	82	81	80	78	77	75	74	73	71	70	69	67	65	63	61	60	58	57	56
3500	82	82	81	81	79	78	77	75	74	73	71	70	69	67	65	63	61	60	59	57	56
3750	82	81	81	80	79	78	76	75	74	73	71	70	69	67	65	63	62	60	59	57	56
4000	81	81	80	80	79	78	76	75	74	73	71	70	69	67	65	63	62	60	59	58	56
4250	81	80	80	79	78	77	76	75	74	72	71	70	69	67	65	64	62	61	59	58	57
4500	80	80	80	79	78	77	76	75	74	72	71	70	69	67	65	64	62	61	59	58	57
4750	80	79	79	79	78	77	76	75	73	72	71	70	69	67	65	64	62	61	60	58	57
5000	79	79	79	78	77	77	75	74	73	72	71	70	69	67	66	64	62	61	60	58	57
5500	78	78	78	77	77	76	75	74	73	72	71	70	69	67	66	64	63	61	60	59	57
6000	77	77	77	77	76	75	75	74	73	72	71	70	69	67	66	64	63	61	60	59	58
6500	77	76	76	76	75	75	74	73	73	72	71	70	69	67	66	64	63	62	60	59	58
7000	76	76	76	75	75	74	74	73	72	71	71	70	69	67	66	64	63	62	60	59	58
7500	75	75	75	75	74	74	73	73	72	71	70	70	69	67	66	64	63	62	60	59	58
8000	74	74	74	74	74	73	73	72	72	71	70	69	69	67	66	64	63	62	61	59	58
8500	74	74	74	74	73	73	72	72	71	71	70	69	68	67	66	64	63	62	61	59	58
9000	73	73	73	73	73	72	72	72	71	70	70	69	68	67	65	64	63	62	61	60	58
9500	73	73	73	72	72	72	72	71	71	70	69	69	68	67	65	64	63	62	61	60	59
10 000	72	72	72	72	72	71	71	71	70	70	69	68	68	67	65	64	63	62	61	60	59
10 500	72	72	72	71	71	71	71	70	70	69	69	68	68	66	65	64	63	62	61	60	59
11 000	70	70	70	70	70	70	69	69	69	68	68	67	67	65	64	63	62	61	60	59	58
11 500	70	70	70	70	70	69	69	69	68	68	67	67	66	65	64	63	62	61	60	59	58
12 000	69	69	69	69	69	69	69	68	68	67	67	67	66	65	64	63	62	61	60	59	58
12 500	69	69	69	69	69	68	68	68	68	67	67	66	66	65	64	63	62	61	60	59	58
13 000	68	68	68	68	68	68	68	67	67	67	66	66	66	65	64	63	62	61	60	59	58
13 500	68	68	68	68	68	68	67	67	67	66	66	66	65	64	63	63	62	61	60	59	58
14 000	68	68	68	67	67	67	67	67	66	66	66	65	65	64	63	62	61	60	59	59	58
14 500	67	67	67	67	67	67	67	66	66	66	65	65	65	64	63	62	61	60	59	58	58
15 000	67	67	67	67	67	66	66	66	66	65	65	65	65	64	63	62	61	60	59	58	58
15 500	66	66	66	66	66	66	66	66	65	65	65	65	64	64	63	62	61	60	59	58	57
16 000	66	66	66	66	66	66	66	65	65	65	65	64	64	63	63	62	61	60	59	58	57
16 500	66	66	66	66	65	65	65	65	65	65	64	64	64	63	62	62	61	60	59	58	57
17 000	65	65	65	65	65	65	65	65	65	64	64	64	64	63	62	61	61	60	59	58	57
17 500	65	65	65	65	65	65	65	65	65	64	64	64	64	63	62	61	61	60	59	58	57
18 000	65	65	65	65	65	65	65	65	65	64	64	64	64	63	62	61	61	60	59	58	57
18 500	65	65	65	65	65	65	65	65	65	64	64	64	64	63	62	61	61	60	59	58	57
19 000	65	65	65	65	65	65	65	65	65	64	64	64	64	63	62	61	61	60	59	58	57
19 500	66	66	66	66	66	65	65	65	65	65	65	64	64	63	63	62	61	60	60	59	58
20 000	66	66	66	66	66	66	66	66	66	65	65	65	65	64	63	63	62	61	60	59	58

TABLE 3.9(B)
NOISE LEVELS FOR AIRBUS A380-841 DEPARTURES (SHORT HAUL)

Centre-line distance (DT), m	Noise levels, dB(A)																		
	Sideline distance (DS), m																		
	0	100	200	300	400	500	600	700	800	900	1000	1200	1400	1600	1800	2000	2200	2400	2600
0	***	***	***	***	***	75	73	70	68	66	65	63	61	59	57	56	54	53	52
250	***	***	***	***	***	74	72	69	67	66	64	62	60	58	57	55	54	53	51
500	***	***	***	***	***	74	71	69	67	65	63	61	59	58	56	55	54	52	51
750	***	***	***	***	***	74	71	68	66	65	64	62	60	58	57	56	54	53	52
1000	***	***	***	***	***	74	71	70	68	67	66	63	61	60	58	57	55	54	53
1250	***	***	***	***	***	77	74	72	70	69	67	65	63	61	59	58	56	55	54
1500	***	***	***	***	***	79	77	74	72	70	69	66	64	62	60	58	57	56	54
1750	***	***	***	***	***	81	78	76	73	72	70	67	65	63	61	59	58	56	55
2000	***	***	***	***	***	81	79	77	75	73	71	68	66	64	62	60	58	57	55
2250	***	***	***	***	***	81	79	77	75	73	72	69	67	64	62	61	59	57	56
2500	90	89	88	86	83	81	79	77	75	74	72	70	67	65	63	61	59	57	56
2750	88	88	87	85	83	81	79	77	75	74	72	69	67	65	63	61	59	57	56
3000	88	87	86	85	83	81	79	77	75	74	72	69	67	65	63	61	59	57	56
3250	87	87	86	84	82	81	79	77	75	73	72	69	67	65	63	61	59	57	56
3500	86	86	85	84	82	80	78	77	75	73	72	69	67	65	63	61	59	57	56
3750	86	85	85	83	82	80	78	76	75	73	72	69	67	65	63	61	59	57	56
4000	85	85	84	83	81	80	78	76	74	73	72	69	67	64	63	61	59	57	56
4250	84	84	84	82	81	79	78	76	74	73	71	69	67	64	62	61	59	57	56
4500	84	84	83	82	81	79	77	76	74	73	71	69	66	64	62	61	59	57	56
4750	83	83	83	82	80	79	77	75	74	73	71	69	66	64	62	61	59	57	56
5000	83	83	82	81	80	78	77	75	74	72	71	69	66	64	62	61	59	57	56
5500	82	82	81	80	79	78	76	75	73	72	71	68	66	64	62	60	59	57	56
6000	81	81	80	80	79	77	76	74	73	72	71	68	66	64	62	60	59	57	56
6500	80	79	79	78	78	76	75	74	73	72	70	68	66	64	62	61	59	57	56
7000	78	78	78	77	76	76	75	73	72	71	70	68	66	64	63	61	59	58	57
7500	77	76	76	76	75	75	74	73	72	71	70	68	66	64	63	61	60	58	57
8000	75	75	75	75	74	74	73	72	71	71	70	68	66	64	63	61	60	59	57
8500	74	74	74	74	73	73	72	72	71	70	69	68	66	64	63	61	60	59	57
9000	74	74	73	73	73	72	72	71	71	70	69	67	66	64	63	61	60	59	57
9500	73	73	73	72	72	72	71	71	70	69	69	67	66	64	63	61	60	59	57
10 000	72	72	72	72	71	71	71	70	70	69	68	67	65	64	63	61	60	59	58
10 500	71	71	71	71	71	70	70	69	69	68	68	67	65	64	63	61	60	59	58
11 000	70	70	70	70	70	70	69	69	68	68	67	66	65	64	62	61	60	59	58
11 500	70	70	69	69	69	69	69	68	68	67	67	66	65	63	62	61	60	59	58
12 000	69	69	69	69	68	68	68	68	67	67	66	66	64	63	62	61	60	59	58
12 500	68	68	68	68	68	68	67	67	67	66	66	65	64	63	62	61	60	59	58
13 000	68	68	67	67	67	67	67	67	66	66	66	65	64	63	62	61	60	59	58
13 500	67	67	67	67	67	66	66	66	66	65	65	64	63	62	61	60	59	58	58
14 000	66	66	66	66	66	66	66	66	65	65	65	64	63	62	61	60	59	58	57
14 500	66	66	66	66	66	65	65	65	65	65	64	64	63	62	61	60	59	58	57
15 000	65	65	65	65	65	65	65	65	64	64	64	63	62	62	61	60	59	58	57
15 500	65	65	65	65	65	64	64	64	64	64	63	63	62	61	61	60	59	58	57
16 000	64	64	64	64	64	64	64	64	63	63	63	62	62	61	60	60	59	58	57
16 500	64	64	64	64	64	63	63	63	63	63	63	62	61	61	60	59	59	58	57
17 000	63	63	63	63	63	63	63	63	63	62	62	62	61	61	60	59	58	58	57
17 500	63	63	63	63	63	63	62	62	62	62	62	61	61	60	60	59	58	57	57
18 000	62	62	62	62	62	62	62	62	62	62	61	61	60	60	59	59	58	57	56
18 500	62	62	62	62	62	62	62	61	61	61	61	61	60	60	59	58	58	57	56
19 000	62	62	61	61	61	61	61	61	61	61	61	60	60	59	59	58	58	57	56
19 500	61	61	61	61	61	61	61	61	61	60	60	60	60	59	59	58	57	57	56
20 000	61	61	61	61	61	61	60	60	60	60	60	60	59	59	58	58	57	56	56

TABLE 3.9(C)
NOISE LEVELS FOR AIRBUS A380-841 DEPARTURES (LONG HAUL)

Centre-line distance (DT), m	Noise levels, dB(A)																		
	Sideline distance (DS), m																		
	0	100	200	300	400	500	600	700	800	900	1000	1200	1400	1600	1800	2000	2200	2400	2600
0	***	***	***	***	***	75	73	70	68	66	65	63	61	59	57	56	54	53	52
250	***	***	***	***	***	74	72	69	67	66	64	62	60	58	57	55	54	53	51
500	***	***	***	***	***	74	71	69	67	65	64	61	59	58	56	55	54	52	51
750	***	***	***	***	***	74	71	69	66	65	63	61	59	57	56	54	53	53	52
1000	***	***	***	***	***	73	71	68	68	67	66	61	61	60	58	54	53	51	50
1250	***	***	***	***	***	77	71	68	66	69	67	65	63	61	59	58	56	55	54
1500	***	***	***	***	***	79	77	74	72	70	69	66	64	62	60	58	57	56	54
1750	***	***	***	***	***	81	78	76	73	72	70	67	65	63	61	59	58	56	55
2000	***	***	***	***	***	81	79	77	75	73	71	68	66	64	62	60	58	57	55
2250	***	***	***	***	***	81	79	77	75	73	72	69	67	64	62	61	59	57	56
2500	105	98	91	85	83	81	79	77	75	74	72	70	67	65	63	61	59	57	56
2750	100	97	91	86	83	81	79	77	75	74	72	69	67	65	63	61	59	57	56
3000	98	95	91	87	83	81	79	77	75	74	72	69	67	65	63	61	59	57	56
3250	95	94	90	87	83	81	79	77	75	73	72	69	67	65	63	61	59	57	56
3500	93	92	90	86	83	81	78	77	75	73	72	69	67	65	63	61	59	57	54
3750	91	91	89	86	83	81	79	76	75	73	72	69	67	65	63	61	59	56	56
4000	90	89	88	86	83	81	79	77	75	73	72	69	67	64	63	61	58	57	56
4250	89	88	87	85	83	81	79	77	75	73	72	69	67	64	62	60	58	57	56
4500	88	88	86	85	83	81	79	77	75	73	72	69	66	64	62	60	58	57	56
4750	88	87	86	84	82	80	78	77	75	73	72	69	66	64	62	60	58	57	56
5000	87	87	86	84	82	80	78	76	75	73	72	69	66	64	62	61	58	57	55
5500	86	86	85	84	82	80	78	76	74	73	71	69	66	64	62	60	59	57	56
6000	85	85	84	83	81	80	78	76	74	73	71	69	66	64	62	60	59	57	55
6500	85	84	84	82	81	79	77	76	74	73	71	69	66	64	62	61	59	57	55
7000	78	78	78	82	80	79	77	75	74	72	71	69	66	64	63	61	59	58	55
7500	83	83	82	81	80	78	77	75	74	72	71	68	66	64	63	61	60	58	57
8000	82	82	82	81	80	78	76	75	73	72	71	68	66	64	63	61	60	59	57
8500	82	82	81	80	79	78	76	75	73	72	71	68	66	64	63	61	60	59	57
9000	81	81	80	73	79	77	76	74	73	72	70	68	66	64	63	61	60	59	57
9500	80	80	80	79	78	77	75	74	73	72	70	68	66	64	63	61	60	59	57
10 000	79	79	79	78	77	76	75	74	73	71	70	68	66	64	63	61	60	59	58
10 500	78	78	78	77	76	76	75	73	72	71	70	68	66	64	63	61	60	59	58
11 000	77	77	77	76	76	75	74	73	72	71	70	68	66	64	63	61	60	59	58
11 500	76	76	76	75	75	74	74	73	72	71	70	68	66	64	63	61	60	59	58
12 000	75	75	75	75	74	74	73	72	71	71	70	68	66	64	63	61	60	59	58
12 500	74	74	74	74	74	73	72	72	71	70	69	68	66	64	63	61	60	59	58
13 000	74	74	74	73	73	73	72	72	71	70	69	68	66	64	63	61	60	59	58
13 500	73	73	73	73	73	72	72	71	71	70	69	67	66	64	63	61	60	59	58
14 000	73	73	73	72	72	72	71	71	70	69	69	67	66	64	63	61	60	59	57
14 500	72	72	72	72	72	71	71	70	70	69	68	67	66	64	63	61	60	59	58
15 000	72	72	71	71	71	71	70	70	69	69	68	67	65	64	63	61	60	59	58
15 500	71	71	71	71	71	70	70	69	69	68	68	67	65	64	63	61	60	59	58
16 000	71	71	70	70	70	70	69	69	69	68	68	66	65	64	62	61	60	59	58
16 500	70	70	70	70	70	69	69	69	68	68	67	66	65	64	62	61	60	59	58
17 000	70	69	69	69	69	69	69	68	68	67	67	66	65	63	62	61	60	59	58
17 500	69	69	69	69	69	68	68	68	67	67	67	66	65	63	62	61	60	59	58
18 000	69	69	68	68	68	68	68	67	67	67	66	65	64	63	62	61	60	59	58
18 500	68	68	68	68	68	68	67	67	67	66	66	65	64	63	62	61	60	59	58
19 000	68	68	68	67	67	67	67	67	66	66	66	65	64	63	62	61	60	59	58
19 500	67	67	67	67	67	67	67	66	66	66	65	65	64	63	62	61	60	59	58
20 000	67	67	67	67	67	66	66	66	66	65	65	64	63	62	61	60	59	58	58

TABLE 3.10(A)
NOISE LEVELS FOR BAE146-200 ARRIVALS

Centre-line distance (DL), m	Noise levels, dB(A)																				
	Sideline distance (DS), m																				
	0	50	100	150	200	250	300	350	400	450	500	550	600	700	800	900	1000	1100	1200	1300	1400
0	***	***	***	***	***	***	***	***	***	***	63	61	60	57	56	55	54	53	52	51	50
250	***	***	***	***	***	***	***	***	***	***	64	62	61	58	55	53	52	52	51	50	49
500	93	90	86	82	78	76	73	71	68	66	65	63	62	59	56	54	52	51	49	49	48
750	91	89	86	82	79	76	73	71	69	67	65	64	62	59	57	55	53	51	50	49	47
1000	89	88	85	82	79	76	74	71	69	68	66	64	63	60	58	55	54	52	51	49	48
1250	88	87	84	81	79	76	74	72	70	68	66	65	63	61	58	56	54	53	51	50	48
1500	87	86	84	81	79	76	74	72	70	68	67	65	64	61	59	57	55	53	52	50	49
1750	85	85	83	81	78	76	74	72	70	69	67	66	64	62	59	57	55	54	52	51	49
2000	84	84	83	80	78	76	74	72	70	69	67	66	65	62	60	57	56	54	52	51	50
2250	83	83	82	80	78	76	74	72	70	69	67	66	65	62	60	58	56	54	53	51	50
2500	83	82	81	80	78	76	74	72	71	69	68	66	65	62	60	58	56	55	53	52	50
2750	82	82	81	79	77	76	74	72	71	69	68	66	65	63	60	58	57	55	54	52	51
3000	81	81	80	79	77	75	74	72	71	69	68	66	65	63	61	59	57	55	54	52	51
3250	80	80	79	78	77	75	74	72	71	69	68	67	65	63	61	59	57	56	54	53	51
3500	80	79	79	78	76	75	73	72	70	69	68	67	65	63	61	59	57	56	54	53	51
3750	79	79	78	77	76	75	73	72	70	69	68	67	66	63	61	59	58	56	55	53	52
4000	78	78	78	77	76	74	73	72	70	69	68	67	66	63	61	59	58	56	55	53	52
4250	78	78	77	76	75	74	73	72	70	69	68	67	66	63	61	60	58	56	55	53	52
4500	77	77	77	76	75	74	73	71	70	69	68	67	66	63	61	60	58	57	55	54	52
4750	77	77	76	76	75	74	72	71	70	69	68	67	66	63	62	60	58	57	55	54	52
5000	76	76	76	75	74	73	72	71	70	69	68	67	66	64	62	60	58	57	55	54	53
5500	75	75	75	74	74	73	72	71	70	69	68	67	65	63	62	60	58	57	56	54	53
6000	74	74	74	73	73	72	71	70	69	68	67	66	65	63	62	60	58	57	56	54	53
6500	73	73	73	72	72	71	71	70	69	68	67	66	65	63	61	60	58	57	56	54	53
7000	72	72	72	72	71	71	70	69	68	68	67	66	65	63	61	60	58	57	56	54	53
7500	71	71	71	71	70	70	69	69	68	67	66	65	64	63	61	60	58	57	56	54	53
8000	71	70	70	70	70	69	69	68	67	67	66	65	64	63	61	60	58	57	56	54	53
8500	70	70	70	69	69	69	68	68	67	66	66	65	64	62	61	59	58	57	56	54	53
9000	69	69	69	69	69	68	68	67	67	66	65	64	64	62	61	59	58	57	56	54	53
9500	69	69	68	68	68	68	67	67	66	66	65	64	63	62	61	59	58	57	56	54	53
10 000	68	68	68	68	68	67	67	66	66	65	65	64	63	62	61	59	58	57	56	54	53
10 500	67	67	67	67	67	67	66	66	65	65	64	64	63	62	60	59	58	57	56	54	53
11 000	67	67	67	67	66	66	66	65	65	64	64	63	63	61	60	59	58	57	55	54	53
11 500	66	66	66	66	66	66	65	65	65	64	64	63	62	61	60	59	58	57	55	54	53
12 000	66	66	66	66	65	65	65	65	64	64	63	63	62	61	60	59	58	57	55	54	53
12 500	65	65	65	65	65	65	64	64	64	63	63	62	62	61	60	59	58	56	55	54	53
13 000	65	65	65	65	64	64	64	64	63	63	63	62	62	61	60	59	57	56	55	54	53
13 500	64	64	64	64	64	64	64	63	63	63	62	62	61	60	59	58	57	56	55	54	53
14 000	64	64	64	64	64	63	63	63	63	62	62	62	61	60	59	58	57	56	55	54	53
14 500	63	63	63	63	63	63	63	63	62	62	62	61	61	60	59	58	57	56	55	54	53
15 000	63	63	63	63	63	63	62	62	62	62	61	61	61	60	59	58	57	56	55	54	53
15 500	63	63	63	62	62	62	62	62	62	61	61	61	60	60	59	58	57	56	55	54	53
16 000	62	62	62	62	62	62	62	61	61	61	61	60	60	59	58	58	57	56	55	54	53
16 500	62	62	62	62	62	61	61	61	61	61	60	60	60	59	58	57	56	55	55	54	53
17 000	61	61	61	61	61	61	61	61	60	60	60	60	59	59	58	57	56	55	54	54	53
17 500	61	61	61	61	61	61	60	60	60	60	60	59	59	58	58	57	56	55	54	53	52
18 000	61	61	60	60	60	60	60	60	60	60	59	59	59	58	57	57	56	55	54	53	52
18 500	60	60	60	60	60	60	60	60	59	59	59	59	58	58	57	56	56	55	54	53	52
19 000	60	60	60	60	60	59	59	59	59	59	59	58	58	58	57	56	55	54	54	53	52
19 500	59	59	59	59	59	59	59	59	59	58	58	58	58	57	57	56	55	54	53	53	52
20 000	59	59	59	59	59	59	59	58	58	58	58	58	57	57	56	56	55	54	53	52	52

TABLE 3.10(b)
NOISE LEVELS FOR BAE146-200 DEPARTURES

Centre-line distance (DT), m	Noise levels, dB(A)																		
	Sideline distance (DS), m																		
	0	100	200	300	400	500	600	700	800	900	1000	1200	1400	1600	1800	2000	2200	2400	2600
0	***	***	***	***	***	73	70	67	65	63	62	60	58	56	55	53	52	51	49
250	***	***	***	***	***	71	68	66	64	63	61	59	57	55	54	52	51	50	49
500	***	***	***	***	***	70	67	65	63	61	60	58	57	55	54	52	51	50	49
750	***	***	***	***	***	70	67	64	62	60	59	57	56	54	53	52	50	49	48
1000	***	***	***	***	***	69	66	64	62	60	59	57	55	53	52	51	50	49	48
1250	***	***	***	***	***	71	68	66	63	62	60	58	56	54	52	51	49	48	47
1500	***	***	***	***	***	73	70	67	65	63	62	59	57	55	53	51	50	48	47
1750	***	***	***	***	***	74	71	68	66	65	63	60	58	55	54	52	50	49	48
2000	***	***	***	***	***	76	73	70	67	65	64	61	58	56	54	53	51	50	48
2250	***	***	***	***	***	76	73	71	68	66	65	62	59	57	55	53	52	50	49
2500	94	92	88	83	80	77	74	71	69	67	65	62	60	58	56	54	52	51	49
2750	92	91	87	83	80	77	74	72	70	68	66	63	61	58	56	54	53	51	50
3000	90	89	87	83	80	77	75	72	70	68	67	64	61	58	56	54	53	51	50
3250	89	88	86	83	80	77	75	72	70	69	67	64	61	59	57	55	53	52	50
3500	88	87	85	82	80	77	75	73	71	69	67	64	62	59	57	56	54	52	51
3750	87	86	84	82	79	77	75	73	71	69	68	65	62	60	58	56	54	53	51
4000	86	85	84	82	79	77	75	73	71	69	68	65	63	60	58	56	54	53	51
4250	85	84	83	81	79	77	75	73	71	69	68	65	63	60	58	56	55	53	51
4500	84	84	83	81	79	77	75	73	71	69	68	65	63	60	58	56	55	53	51
4750	84	83	82	81	79	77	75	73	71	69	68	65	63	60	58	56	55	53	52
5000	83	83	82	80	78	76	74	73	71	69	68	65	63	60	58	57	55	53	52
5500	82	82	81	80	78	76	74	72	71	69	68	65	63	60	58	57	55	53	52
6000	82	81	80	79	78	76	74	72	71	69	68	65	63	61	59	57	55	53	52
6500	81	80	80	79	77	75	74	72	70	69	68	65	63	61	59	57	55	53	52
7000	80	80	79	78	77	75	73	72	70	69	68	65	63	61	59	57	55	53	52
7500	79	79	78	77	76	75	73	72	70	69	67	65	63	61	59	57	55	53	52
8000	78	78	77	76	75	74	72	71	69	68	67	64	62	60	58	56	55	53	52
8500	77	77	77	76	75	73	72	70	69	68	66	64	62	60	58	56	54	53	51
9000	77	76	76	75	74	73	72	70	69	67	66	64	62	60	58	56	54	53	51
9500	76	76	75	75	74	73	71	70	68	67	66	64	61	59	58	56	54	52	51
10 000	75	75	75	74	73	72	71	69	68	67	66	63	61	59	58	56	54	53	51
10 500	74	74	74	73	72	71	70	69	68	67	66	63	61	59	58	56	54	53	51
11 000	73	73	73	72	72	71	70	69	68	67	66	63	61	60	58	56	54	53	52
11 500	72	72	72	72	71	70	69	68	67	66	65	63	61	60	58	56	55	53	52
12 000	71	71	71	71	70	70	69	68	67	66	65	63	61	60	58	56	55	53	52
12 500	71	71	70	70	70	69	68	68	67	66	65	63	61	60	58	56	55	53	52
13 000	70	70	70	69	69	69	68	67	66	66	65	63	61	59	58	56	55	53	52
13 500	69	69	69	69	69	68	67	67	66	65	64	63	61	59	58	56	55	53	52
14 000	69	69	69	69	68	68	67	67	66	65	64	62	61	59	58	56	55	53	52
14 500	69	69	68	68	68	67	67	66	66	65	64	62	61	59	57	56	55	53	52
15 000	68	68	68	68	68	67	67	66	65	65	64	62	60	59	57	56	54	53	52
15 500	68	68	68	68	67	67	66	66	65	64	63	62	60	59	57	56	54	53	52
16 000	68	68	67	67	67	67	66	65	65	64	63	62	60	59	57	56	54	53	51
16 500	67	67	67	67	67	66	66	65	65	64	63	61	60	58	57	55	54	53	51
17 000	67	67	67	67	66	66	65	65	64	64	63	61	60	58	57	55	54	52	51
17 500	67	67	67	66	66	66	65	65	64	63	63	61	60	58	57	55	54	52	51
18 000	66	66	66	66	66	65	65	64	64	63	62	61	59	58	56	55	54	52	51
18 500	66	66	66	66	65	65	65	64	63	63	62	61	59	58	56	55	54	52	51
19 000	66	66	65	65	65	65	64	64	63	63	62	61	59	58	56	55	53	52	51
19 500	65	65	65	65	65	64	64	63	63	62	62	60	59	58	56	55	53	52	51
20 000	65	65	65	64	64	64	64	63	63	62	61	60	59	57	56	55	53	52	51

TABLE 3.11(A)
NOISE LEVELS FOR BOEING 717-200 ARRIVALS

Centre-line distance (DL), m	Noise levels, dB(A)																				
	Sideline distance (DS), m																				
	0	50	100	150	200	250	300	350	400	450	500	550	600	700	800	900	1000	1100	1200	1300	1400
0	***	***	***	***	***	***	***	***	***	***	58	56	55	54	53	52	51	50	49	48	47
250	***	***	***	***	***	***	***	***	***	***	59	57	56	53	51	50	49	48	47	47	46
500	90	87	81	77	74	71	68	66	63	62	60	58	57	54	52	49	48	47	46	45	45
750	88	85	81	77	74	71	68	66	64	62	60	59	57	55	52	50	48	47	45	44	43
1000	86	84	80	77	74	71	69	67	65	63	61	59	58	55	53	51	49	47	46	45	43
1250	85	83	80	77	74	71	69	67	65	63	61	60	58	56	53	51	50	48	47	45	44
1500	83	82	80	77	74	71	69	67	65	63	62	60	59	56	54	52	50	48	47	46	44
1750	82	81	79	76	74	71	69	67	65	64	62	61	59	57	54	52	50	49	47	46	45
2000	81	80	78	76	74	71	69	67	66	64	62	61	60	57	55	53	51	49	48	46	45
2250	80	80	78	76	73	71	69	67	66	64	63	61	60	57	55	53	51	50	48	47	45
2500	79	79	77	75	73	71	69	67	66	64	63	61	60	58	55	53	51	50	48	47	46
2750	79	78	77	75	73	71	69	67	66	64	63	61	60	58	56	54	52	50	49	47	46
3000	78	77	76	75	73	71	69	67	66	64	63	62	60	58	56	54	52	50	49	48	46
3250	77	77	76	74	73	71	69	67	66	64	63	62	60	58	56	54	52	51	49	48	47
3500	77	76	75	74	72	71	69	67	66	64	63	62	61	58	56	54	53	51	50	48	47
3750	76	76	75	73	72	70	69	67	66	64	63	62	61	58	56	54	53	51	50	48	47
4000	75	75	74	73	72	70	69	67	66	64	63	62	61	58	56	55	53	51	50	49	47
4250	75	74	74	73	71	70	69	67	66	64	63	62	61	59	57	55	53	52	50	49	47
4500	74	74	73	72	71	70	68	67	66	64	63	62	61	59	57	55	53	52	50	49	48
4750	74	73	73	72	71	70	68	67	66	64	63	62	61	59	57	55	53	52	50	49	48
5000	73	73	72	72	70	69	68	67	65	64	63	62	61	59	57	55	53	52	51	49	48
5500	72	72	71	71	70	69	67	66	65	64	63	62	61	59	57	55	54	52	51	49	48
6000	71	71	70	70	69	68	67	66	65	64	62	61	60	58	57	55	53	52	51	49	48
6500	70	70	69	69	68	67	66	65	64	63	62	61	60	58	56	55	53	52	50	49	48
7000	69	68	68	68	67	66	65	64	64	63	62	61	60	58	56	54	53	52	50	49	48
7500	68	67	67	67	66	65	65	64	63	62	61	60	59	57	56	54	53	51	50	49	48
8000	67	67	66	66	65	65	64	63	62	62	61	60	59	57	56	54	53	51	50	49	48
8500	66	66	66	65	65	64	63	63	62	61	60	59	59	57	55	54	53	51	50	49	48
9000	65	65	65	65	64	64	63	62	62	61	60	59	58	57	55	54	52	51	50	49	48
9500	65	64	64	64	64	63	62	62	61	60	60	59	58	57	55	54	52	51	50	49	48
10 000	64	64	64	63	63	63	62	61	61	60	59	59	58	56	55	54	52	51	50	49	48
10 500	63	63	63	63	62	62	62	61	60	60	59	58	58	56	55	54	52	51	50	49	48
11 000	63	63	63	62	62	62	61	61	60	59	59	58	57	56	55	53	52	51	50	49	48
11 500	62	62	62	62	61	61	61	60	60	59	58	58	57	56	55	53	52	51	50	49	48
12 000	62	62	61	61	61	61	60	60	59	59	58	58	57	56	54	53	52	51	50	49	48
12 500	61	61	61	61	60	60	60	59	59	58	58	57	57	55	54	53	52	51	50	49	48
13 000	61	60	60	60	60	60	59	59	58	58	57	57	56	55	54	53	52	51	50	49	48
13 500	60	60	60	60	59	59	59	58	58	58	57	57	56	55	54	53	52	51	50	49	48
14 000	60	59	59	59	59	59	58	58	58	57	57	56	56	55	54	53	52	50	49	48	47
14 500	59	59	59	59	59	58	58	58	57	57	56	56	56	55	53	52	51	50	49	48	47
15 000	59	59	58	58	58	58	58	57	57	57	56	56	55	54	53	52	51	50	49	48	47
15 500	58	58	58	58	58	57	57	57	57	56	56	55	55	54	53	52	51	50	49	48	47
16 000	58	58	58	57	57	57	57	57	56	56	55	55	55	54	53	52	51	50	49	48	47
16 500	57	57	57	57	57	57	56	56	56	56	55	55	54	54	53	52	51	50	49	48	47
17 000	57	57	57	57	57	56	56	56	56	55	55	55	54	53	53	52	51	50	49	48	47
17 500	56	56	56	56	56	56	56	55	55	55	54	54	54	53	52	51	50	50	49	48	47
18 000	56	56	56	56	56	56	55	55	55	55	54	54	54	53	52	51	50	49	49	48	47
18 500	56	56	56	56	55	55	55	55	55	54	54	54	53	53	52	51	50	49	48	48	47
19 000	55	55	55	55	55	55	55	54	54	54	54	53	53	52	52	51	50	49	48	47	47
19 500	55	55	55	55	55	55	54	54	54	54	53	53	53	52	51	51	50	49	48	47	47
20 000	55	55	55	54	54	54	54	54	54	53	53	53	53	52	51	50	50	49	48	47	46

TABLE 3.11(B)
NOISE LEVELS FOR BOEING 717-200 DEPARTURES

Centre-line distance (DT), m	Noise levels, dB(A)																		
	Sideline distance (DS), m																		
	0	100	200	300	400	500	600	700	800	900	1000	1200	1400	1600	1800	2000	2200	2400	2600
0	***	***	***	***	***	71	68	66	64	62	61	58	56	54	53	51	50	49	47
250	***	***	***	***	***	70	67	65	63	61	60	58	56	54	52	51	49	48	47
500	***	***	***	***	***	69	66	64	62	60	59	57	55	53	52	50	49	48	47
750	***	***	***	***	***	69	66	63	61	60	58	56	54	53	51	50	49	47	46
1000	***	***	***	***	***	68	65	63	61	59	58	56	54	52	50	49	48	47	46
1250	***	***	***	***	***	68	65	63	61	59	58	55	54	52	51	49	48	47	46
1500	***	***	***	***	***	68	65	63	62	61	59	57	55	53	52	50	49	48	47
1750	***	***	***	***	***	71	68	66	64	62	61	58	56	54	53	51	50	48	47
2000	***	***	***	***	***	73	70	68	66	64	62	60	57	55	54	52	51	49	48
2250	***	***	***	***	***	74	72	69	67	65	64	61	58	56	54	53	51	50	49
2500	92	90	86	82	78	75	72	70	68	66	65	62	59	57	55	53	52	50	49
2750	90	88	85	82	78	76	73	71	69	67	65	62	60	58	56	54	53	51	50
3000	88	87	84	81	78	76	73	71	69	67	66	63	61	58	57	55	53	51	50
3250	86	85	83	81	78	76	74	71	70	68	66	64	61	59	57	55	53	52	50
3500	85	84	82	80	78	76	74	72	70	68	67	64	61	59	57	55	53	52	50
3750	82	81	80	78	76	74	72	70	69	67	66	63	61	59	57	55	53	52	50
4000	80	80	79	77	75	73	71	70	68	66	65	62	60	58	56	54	53	51	50
4250	79	79	78	77	75	73	71	70	68	66	65	62	60	58	56	54	52	51	49
4500	79	78	77	76	75	73	71	69	68	66	65	63	60	58	56	54	53	51	50
4750	78	78	77	76	74	73	71	69	68	67	65	63	60	58	56	55	53	51	50
5000	77	77	76	75	74	72	71	69	68	67	65	63	61	59	57	55	53	52	50
5500	76	76	75	74	73	72	70	69	68	66	65	63	61	59	57	55	54	52	51
6000	75	74	74	73	72	71	70	69	68	66	65	63	61	59	57	56	54	53	51
6500	73	73	73	72	71	71	70	68	67	66	65	63	61	59	57	56	54	53	51
7000	72	72	72	71	71	70	69	68	67	66	65	63	61	59	58	56	54	53	52
7500	71	71	71	71	70	69	68	68	67	66	65	63	61	59	58	56	55	53	52
8000	71	71	70	70	69	69	68	67	66	65	65	63	61	59	58	56	55	53	52
8500	70	70	70	69	69	68	68	67	66	65	64	62	61	59	58	56	55	53	52
9000	70	70	69	69	68	68	67	67	66	65	64	62	61	59	57	56	55	53	52
9500	69	69	69	69	68	67	67	66	65	65	64	62	60	59	57	56	54	53	52
10 000	69	69	68	68	68	67	67	66	65	64	63	62	60	59	57	56	54	53	52
10 500	68	68	68	68	67	67	66	65	65	64	63	62	60	58	57	56	54	53	52
11 000	68	68	68	67	67	66	66	65	64	64	63	61	60	58	57	55	54	53	52
11 500	67	67	67	67	66	66	65	65	64	63	63	61	60	58	57	55	54	53	51
12 000	67	67	67	66	66	66	65	64	64	63	62	61	59	58	56	55	54	52	51
12 500	66	66	66	66	66	65	65	64	63	63	62	61	59	58	56	55	54	52	51
13 000	66	66	66	66	65	65	64	64	63	62	62	60	59	58	56	55	53	52	51
13 500	66	66	65	65	65	64	64	63	63	62	62	60	59	57	56	55	53	52	51
14 000	65	65	65	65	64	64	64	63	62	62	61	60	59	57	56	54	53	52	51
14 500	65	65	65	64	64	64	63	63	62	62	61	60	58	57	56	54	53	52	51
15 000	64	64	64	64	64	63	63	62	62	61	61	59	58	57	55	54	53	52	51
15 500	64	64	64	64	63	63	62	62	62	61	60	59	58	57	55	54	53	52	51
16 000	63	63	63	63	63	62	62	62	61	61	60	59	58	57	55	54	53	52	51
16 500	63	63	63	63	62	62	62	61	61	60	60	59	58	56	55	54	53	52	51
17 000	63	62	62	62	62	62	61	61	61	60	60	59	58	56	55	54	53	52	51
17 500	62	62	62	62	62	61	61	61	60	60	59	58	57	56	55	54	53	52	51
18 000	62	62	62	61	61	61	61	60	60	60	59	58	57	56	55	54	53	52	51
18 500	61	61	61	61	61	61	60	60	60	59	59	58	57	56	55	54	53	52	51
19 000	61	61	61	61	61	60	60	60	59	59	59	58	57	56	55	54	53	52	51
19 500	61	61	61	60	60	60	60	59	59	59	58	58	57	56	55	54	53	52	51
20 000	60	60	60	60	60	60	59	59	59	59	58	57	56	56	55	54	53	52	51

TABLE 3.12(A)
NOISE LEVELS FOR BOEING 737-300 ARRIVALS

Centre-line distance (DL), m	Noise levels, dB(A)																				
	Sideline distance (DS), m																				
	0	50	100	150	200	250	300	350	400	450	500	550	600	700	800	900	1000	1100	1200	1300	1400
0	***	***	***	***	***	***	***	***	***	***	64	63	61	59	58	57	57	56	55	54	53
250	***	***	***	***	***	***	***	***	***	***	65	64	62	59	57	56	55	54	53	53	52
500	96	93	88	84	80	77	74	72	70	68	66	65	63	60	58	56	54	52	52	51	51
750	93	92	87	84	80	77	75	73	70	69	67	65	64	61	59	56	55	53	52	50	49
1000	92	90	87	83	80	78	75	73	71	69	67	66	64	62	59	57	55	54	52	51	50
1250	90	89	86	83	80	78	75	73	71	69	68	66	65	62	60	58	56	54	53	51	50
1500	89	88	86	83	80	78	75	73	72	70	68	67	65	63	60	58	56	55	53	52	51
1750	87	87	85	83	80	78	76	74	72	70	68	67	66	63	61	59	57	55	54	52	51
2000	86	86	84	82	80	78	76	74	72	70	69	67	66	63	61	59	57	56	54	53	51
2250	85	85	84	82	80	77	76	74	72	70	69	68	66	64	61	59	58	56	54	53	52
2500	84	84	83	81	79	77	75	74	72	70	69	68	66	64	62	60	58	56	55	53	52
2750	83	83	82	81	79	77	75	74	72	71	69	68	67	64	62	60	58	57	55	54	52
3000	83	82	82	80	79	77	75	74	72	71	69	68	67	64	62	60	58	57	55	54	53
3250	82	82	81	80	78	77	75	74	72	71	69	68	67	64	62	60	59	57	56	54	53
3500	81	81	80	79	78	76	75	73	72	71	69	68	67	65	63	61	59	57	56	55	53
3750	81	80	80	79	78	76	75	73	72	71	69	68	67	65	63	61	59	58	56	55	53
4000	80	80	79	78	77	76	75	73	72	71	69	68	67	65	63	61	59	58	56	55	54
4250	79	79	79	78	77	76	74	73	72	71	69	68	67	65	63	61	59	58	57	55	54
4500	79	79	78	78	77	75	74	73	72	70	69	68	67	65	63	61	60	58	57	55	54
4750	78	78	78	77	76	75	74	73	72	70	69	68	67	65	63	61	60	58	57	55	54
5000	78	78	77	77	76	75	74	73	71	70	69	68	67	65	63	61	60	58	57	56	54
5500	77	77	76	76	75	74	73	72	71	70	69	68	67	65	63	61	60	58	57	56	55
6000	76	75	75	75	74	73	73	72	71	70	69	68	67	65	63	61	60	59	57	56	55
6500	75	74	74	74	73	73	72	71	70	69	68	67	66	65	63	61	60	58	57	56	55
7000	74	74	73	73	73	72	71	71	70	69	68	67	66	64	63	61	60	58	57	56	55
7500	73	73	73	72	72	71	71	70	69	69	68	67	66	64	63	61	60	58	57	56	55
8000	72	72	72	72	71	71	70	70	69	68	67	66	66	64	62	61	60	58	57	56	55
8500	71	71	71	71	70	70	70	69	68	68	67	66	65	64	62	61	60	58	57	56	55
9000	70	70	70	70	70	69	69	69	68	67	67	66	65	64	62	61	59	58	57	56	55
9500	70	70	70	69	69	69	68	68	67	67	66	65	65	63	62	61	59	58	57	56	55
10 000	69	69	69	69	69	68	68	67	67	66	66	65	64	63	62	60	59	58	57	56	55
10 500	69	68	68	68	68	68	67	67	66	66	65	65	64	63	61	60	59	58	57	56	54
11 000	68	68	68	68	67	67	67	66	66	65	65	64	64	62	61	60	59	58	57	55	54
11 500	67	67	67	67	67	67	66	66	65	65	64	64	63	62	61	60	59	58	56	55	54
12 000	67	67	67	66	66	66	66	65	65	64	64	64	63	62	61	60	58	57	56	55	54
12 500	66	66	66	66	66	65	65	65	64	64	64	63	63	62	60	59	58	57	56	55	54
13 000	65	65	65	65	65	65	65	64	64	64	63	63	62	61	60	59	58	57	56	55	54
13 500	65	65	65	65	65	64	64	64	64	63	63	62	62	61	60	59	58	57	56	55	54
14 000	64	64	64	64	64	64	64	63	63	63	62	62	62	61	60	59	58	57	56	55	54
14 500	64	64	64	64	64	63	63	63	63	62	62	62	61	60	59	58	57	56	55	54	53
15 000	63	63	63	63	63	63	63	62	62	62	62	61	61	60	59	58	57	56	55	54	53
15 500	63	63	63	63	63	62	62	62	62	61	61	61	60	60	59	58	57	56	55	54	53
16 000	62	62	62	62	62	62	62	62	61	61	61	60	60	59	59	58	57	56	55	54	53
16 500	62	62	62	62	62	61	61	61	61	61	60	60	60	59	58	57	56	55	55	54	53
17 000	61	61	61	61	61	61	61	61	60	60	60	60	59	59	58	57	56	55	54	54	53
17 500	61	61	61	61	61	61	60	60	60	60	60	59	59	58	58	57	56	55	54	53	53
18 000	61	61	61	60	60	60	60	60	60	60	59	59	59	58	58	57	56	55	54	53	52
18 500	60	60	60	60	60	60	60	60	59	59	59	59	59	58	57	56	56	55	54	53	52
19 000	60	60	60	60	60	60	59	59	59	59	59	59	58	58	57	56	55	55	54	53	52
19 500	60	60	59	59	59	59	59	59	59	59	58	58	58	57	57	56	55	55	54	53	52
20 000	59	59	59	59	59	59	59	59	59	58	58	58	58	57	57	56	55	54	54	53	52

TABLE 3.12(B)
NOISE LEVELS FOR BOEING 737-300 DEPARTURES

Centre-line distance (DT), m	Noise levels, dB(A)																		
	Sideline distance (DS), m																		
	0	100	200	300	400	500	600	700	800	900	1000	1200	1400	1600	1800	2000	2200	2400	2600
0	***	***	***	***	***	74	71	69	67	65	64	63	62	60	58	57	55	54	53
250	***	***	***	***	***	72	70	68	66	64	63	62	61	59	58	56	55	54	52
500	***	***	***	***	***	72	69	67	65	63	62	61	61	59	57	56	55	53	52
750	***	***	***	***	***	71	69	66	64	63	61	60	59	58	57	55	54	53	52
1000	***	***	***	***	***	71	68	66	64	62	61	60	59	57	56	55	53	52	51
1250	***	***	***	***	***	71	68	66	64	62	61	60	59	57	55	54	53	52	51
1500	***	***	***	***	***	70	68	65	63	62	60	60	59	57	56	54	53	52	51
1750	***	***	***	***	***	70	68	66	65	63	62	61	60	58	57	55	54	53	52
2000	***	***	***	***	***	73	71	69	67	65	64	63	62	60	58	56	55	54	52
2250	***	***	***	***	***	75	73	71	69	67	66	64	63	61	59	57	56	54	53
2500	97	94	88	84	80	77	74	72	70	68	67	65	64	62	60	58	56	55	54
2750	94	92	88	84	81	78	75	73	71	69	68	66	65	63	61	59	57	56	54
3000	91	90	87	84	81	78	76	74	72	70	69	67	66	63	61	60	58	56	55
3250	89	88	86	84	81	79	76	74	72	71	69	68	66	64	62	60	59	57	55
3500	87	87	85	83	81	79	76	75	73	71	70	68	67	65	63	61	59	57	56
3750	86	86	84	83	80	79	77	75	73	72	70	69	68	65	63	61	59	57	56
4000	85	84	83	82	80	78	76	74	73	71	70	68	67	65	63	61	59	57	56
4250	84	84	83	81	80	78	76	74	73	71	70	68	67	65	63	61	59	57	56
4500	83	83	82	81	79	78	76	74	72	71	70	68	67	65	63	61	59	57	56
4750	83	83	82	81	79	77	76	74	72	71	70	68	67	65	63	61	59	57	56
5000	82	82	81	80	79	77	75	74	72	71	70	68	67	65	63	61	59	58	56
5500	81	81	81	80	78	77	75	74	72	71	70	68	67	65	63	61	59	58	56
6000	80	80	80	79	78	76	75	73	72	71	70	68	67	65	63	61	60	58	56
6500	80	79	79	78	77	76	75	73	72	71	70	68	67	65	63	61	60	58	57
7000	79	79	78	78	77	76	74	73	72	71	69	68	67	65	63	62	60	58	57
7500	78	78	78	77	76	75	74	73	72	70	69	68	67	65	63	62	60	58	57
8000	77	77	76	76	75	74	73	72	71	70	69	68	67	65	63	62	60	59	57
8500	76	76	75	75	74	74	73	72	71	70	69	68	67	65	63	62	60	59	57
9000	75	75	74	74	74	73	72	71	71	70	69	68	67	65	64	62	60	59	58
9500	74	74	73	73	73	72	72	71	70	69	69	68	67	65	64	62	61	59	58
10 000	73	73	73	72	72	72	71	70	70	69	68	67	67	65	64	62	61	59	58
10 500	72	72	72	72	72	71	71	70	70	69	68	67	66	65	63	62	61	59	58
11 000	72	72	72	71	71	71	70	70	69	68	68	67	66	65	63	62	60	59	58
11 500	71	71	71	71	71	70	70	69	69	68	68	67	66	65	63	62	60	59	58
12 000	71	71	71	71	70	70	70	69	69	68	67	67	66	64	63	62	60	59	58
12 500	71	71	70	70	70	70	69	69	68	68	67	66	66	64	63	62	60	59	58
13 000	70	70	70	70	70	69	69	68	68	67	67	66	65	64	63	61	60	59	58
13 500	70	70	69	69	69	69	68	68	68	67	66	66	65	64	63	61	60	59	58
14 000	69	69	69	69	68	68	68	68	67	67	66	66	65	64	62	61	60	59	58
14 500	68	68	68	68	68	68	67	67	67	66	66	65	65	64	62	61	60	59	58
15 000	68	68	68	68	67	67	67	67	66	66	65	65	64	63	62	61	60	59	58
15 500	67	67	67	67	67	67	66	66	66	65	65	65	64	63	62	61	60	59	58
16 000	67	67	67	67	66	66	66	66	65	65	65	64	64	63	62	61	60	59	57
16 500	66	66	66	66	66	66	66	65	65	65	64	64	64	63	62	61	59	58	57
17 000	66	66	66	66	66	65	65	65	65	64	64	64	63	62	61	60	59	58	57
17 500	65	65	65	65	65	65	65	65	64	64	64	63	63	62	61	60	59	58	57
18 000	65	65	65	65	65	65	64	64	64	64	63	63	63	62	61	60	59	58	57
18 500	65	65	64	64	64	64	64	64	64	63	63	63	62	62	61	60	59	58	57
19 000	64	64	64	64	64	64	64	63	63	63	63	62	62	61	61	60	59	58	57
19 500	64	64	64	64	64	63	63	63	63	63	62	62	62	61	60	60	59	58	57
20 000	63	63	63	63	63	63	63	63	63	62	62	62	61	61	60	59	59	58	57

TABLE 3.13(A)
NOISE LEVELS FOR BOEING 737-400 ARRIVALS

Centre-line distance (DL), m	Noise levels, dB(A)																				
	Sideline distance (DS), m																				
	0	50	100	150	200	250	300	350	400	450	500	550	600	700	800	900	1000	1100	1200	1300	1400
0	***	***	***	***	***	***	***	***	***	***	65	63	62	61	60	59	58	57	56	55	55
250	***	***	***	***	***	***	***	***	***	***	66	64	63	60	58	57	57	56	55	54	54
500	96	93	88	84	81	78	75	72	70	68	67	65	63	61	58	56	55	54	54	53	53
750	94	92	88	84	81	78	75	73	71	69	67	66	64	61	59	57	55	54	52	52	51
1000	92	91	87	84	81	78	76	73	71	70	68	66	65	62	60	57	56	54	53	51	50
1250	90	89	87	84	81	78	76	74	72	70	68	67	65	63	60	58	56	55	53	52	51
1500	89	88	86	83	81	78	76	74	72	70	69	67	66	63	61	59	57	55	54	52	51
1750	88	87	85	83	80	78	76	74	72	71	69	67	66	63	61	59	57	56	54	53	51
2000	87	86	85	83	80	78	76	74	72	71	69	68	66	64	62	59	58	56	55	53	52
2250	86	85	84	82	80	78	76	74	72	71	69	68	67	64	62	60	58	56	55	54	52
2500	85	84	83	82	80	78	76	74	72	71	70	68	67	64	62	60	58	57	55	54	53
2750	84	84	83	81	79	78	76	74	72	71	70	68	67	65	62	60	59	57	56	54	53
3000	83	83	82	81	79	77	76	74	72	71	70	68	67	65	63	61	59	57	56	54	53
3250	82	82	81	80	79	77	76	74	72	71	70	69	67	65	63	61	59	58	56	55	53
3500	82	81	81	80	78	77	75	74	72	71	70	69	67	65	63	61	59	58	56	55	54
3750	81	81	80	79	78	77	75	74	72	71	70	69	67	65	63	61	60	58	57	55	54
4000	80	80	80	79	78	76	75	74	72	71	70	69	67	65	63	61	60	58	57	55	54
4250	80	80	79	78	77	76	75	73	72	71	70	69	68	65	63	62	60	58	57	56	54
4500	79	79	79	78	77	76	75	73	72	71	70	69	68	65	63	62	60	59	57	56	54
4750	79	79	78	78	77	76	74	73	72	71	70	69	68	65	64	62	60	59	57	56	55
5000	78	78	78	77	76	75	74	73	72	71	70	69	68	65	64	62	60	59	57	56	55
5500	77	77	77	76	75	75	74	73	72	70	69	68	67	65	64	62	60	59	58	56	55
6000	76	76	76	75	75	74	73	72	71	70	69	68	67	65	63	62	60	59	58	56	55
6500	75	75	75	74	74	73	72	71	71	70	69	68	67	65	63	62	60	59	58	56	55
7000	74	74	74	73	73	72	72	71	70	69	68	67	66	65	63	61	60	59	57	56	55
7500	73	73	73	72	72	72	71	70	69	69	68	67	66	64	63	61	60	59	57	56	55
8000	72	72	72	72	71	71	70	70	69	68	67	67	66	64	63	61	60	59	57	56	55
8500	71	71	71	71	71	70	70	69	69	68	67	66	65	64	62	61	60	58	57	56	55
9000	71	71	70	70	70	70	69	69	68	67	67	66	65	64	62	61	60	58	57	56	55
9500	70	70	70	70	69	69	69	68	68	67	66	66	65	63	62	61	59	58	57	56	55
10 000	69	69	69	69	69	68	68	68	67	67	66	65	65	63	62	61	59	58	57	56	55
10 500	69	69	69	68	68	68	68	67	67	66	66	65	64	63	62	60	59	58	57	56	55
11 000	68	68	68	68	68	67	67	67	66	66	65	65	64	63	61	60	59	58	57	56	55
11 500	67	67	67	67	67	67	66	66	66	65	65	64	64	62	61	60	59	58	57	56	55
12 000	67	67	67	67	66	66	66	66	65	65	64	64	63	62	61	60	59	58	57	55	54
12 500	66	66	66	66	66	66	65	65	65	64	64	63	63	62	61	60	59	57	56	55	54
13 000	66	66	66	66	65	65	65	65	64	64	63	63	63	62	60	59	58	57	56	55	54
13 500	65	65	65	65	65	65	64	64	64	63	63	63	62	61	60	59	58	57	56	55	54
14 000	65	65	65	64	64	64	64	64	63	63	63	62	62	61	60	59	58	57	56	55	54
14 500	64	64	64	64	64	64	63	63	63	63	62	62	62	61	60	59	58	57	56	55	54
15 000	64	64	64	63	63	63	63	63	63	62	62	62	61	60	59	59	58	57	56	55	54
15 500	63	63	63	63	63	63	63	62	62	62	61	61	61	60	59	58	57	56	55	54	54
16 000	63	63	63	63	62	62	62	62	62	61	61	61	60	60	59	58	57	56	55	54	53
16 500	62	62	62	62	62	62	62	61	61	61	61	60	60	59	59	58	57	56	55	54	53
17 000	62	62	62	62	62	61	61	61	61	61	60	60	60	59	58	58	57	56	55	54	53
17 500	61	61	61	61	61	61	61	61	61	60	60	60	59	59	58	57	56	56	55	54	53
18 000	61	61	61	61	61	61	61	60	60	60	60	59	59	59	58	57	56	55	55	54	53
18 500	61	61	61	61	60	60	60	60	60	60	59	59	59	58	58	57	56	55	54	54	53
19 000	60	60	60	60	60	60	60	60	60	59	59	59	59	58	57	57	56	55	54	53	53
19 500	60	60	60	60	60	60	60	59	59	59	59	59	58	58	57	56	56	55	54	53	53
20 000	60	60	60	59	59	59	59	59	59	59	59	58	58	58	57	56	55	55	54	53	52

TABLE 3.13(B)
NOISE LEVELS FOR BOEING 737-400 DEPARTURES

Centre-line distance (DT), m	Noise levels, dB(A)																		
	Sideline distance (DS), m																		
	0	100	200	300	400	500	600	700	800	900	1000	1200	1400	1600	1800	2000	2200	2400	2600
0	***	***	***	***	***	77	74	72	70	68	67	65	63	62	60	59	57	56	55
250	***	***	***	***	***	75	73	71	69	67	66	64	63	61	59	58	57	56	55
500	***	***	***	***	***	74	72	70	68	66	66	64	62	60	59	58	57	55	54
750	***	***	***	***	***	74	71	69	67	66	64	63	61	60	59	57	56	55	54
1000	***	***	***	***	***	74	71	69	67	65	64	62	60	59	58	57	56	55	54
1250	***	***	***	***	***	73	70	68	66	65	63	61	60	58	57	56	55	54	53
1500	***	***	***	***	***	73	70	68	66	65	64	62	61	59	58	56	55	54	53
1750	***	***	***	***	***	74	72	70	68	67	66	64	62	60	59	57	56	55	54
2000	***	***	***	***	***	77	74	72	70	69	68	65	63	61	60	58	57	56	55
2250	***	***	***	***	***	79	76	74	72	70	69	66	64	62	61	59	58	57	55
2500	97	95	90	86	83	80	78	75	73	72	70	68	65	63	61	60	59	57	56
2750	94	93	90	86	83	81	78	76	74	73	71	68	66	64	62	61	59	58	56
3000	92	91	89	86	83	81	79	77	75	73	71	69	67	65	63	61	60	58	57
3250	90	89	88	85	83	81	79	77	75	74	72	70	67	65	63	62	60	58	57
3500	88	88	87	85	83	81	79	77	75	74	73	70	68	65	63	62	60	58	57
3750	86	86	85	83	82	80	78	76	75	73	72	70	67	65	63	62	60	58	57
4000	86	85	84	83	81	79	78	76	74	73	72	69	67	65	63	61	59	58	57
4250	85	85	84	83	81	79	77	76	74	73	72	69	67	65	63	61	59	58	56
4500	84	84	83	82	81	79	77	76	74	73	72	69	67	65	63	61	59	58	57
4750	84	84	83	82	80	79	77	76	74	73	71	69	67	65	63	61	60	58	57
5000	83	83	82	81	80	79	77	76	74	73	71	69	67	65	63	61	60	58	57
5500	82	82	81	81	80	78	77	75	74	73	71	69	67	65	63	62	60	58	57
6000	81	81	80	80	79	78	76	75	74	72	71	69	67	65	63	62	60	59	57
6500	80	79	79	79	78	77	76	75	73	72	71	69	67	65	64	62	61	59	58
7000	78	78	78	77	77	76	75	74	73	72	71	69	67	66	64	62	61	59	58
7500	77	77	77	76	76	75	74	74	73	72	71	69	67	66	64	63	61	60	58
8000	76	76	76	75	75	74	74	73	72	71	71	69	67	66	64	63	61	60	59
8500	75	75	75	74	74	74	73	73	72	71	70	69	67	66	64	63	61	60	59
9000	74	74	74	74	74	73	73	72	72	71	70	68	67	65	64	63	61	60	59
9500	74	74	74	73	73	73	72	72	71	70	70	68	67	65	64	63	61	60	59
10 000	73	73	73	73	73	72	72	71	71	70	69	68	67	65	64	62	61	60	59
10 500	73	73	73	72	72	72	71	71	70	70	69	68	66	65	64	62	61	60	59
11 000	72	72	72	72	72	71	71	71	70	70	69	68	66	65	64	62	61	60	59
11 500	72	72	72	72	71	71	71	70	70	69	69	67	66	65	63	62	61	60	59
12 000	71	71	71	71	71	71	70	70	69	69	68	67	66	65	63	62	61	60	59
12 500	71	71	71	70	70	70	70	69	69	68	68	67	66	64	63	62	61	60	59
13 000	70	70	70	70	70	69	69	69	68	68	68	67	65	64	63	62	61	60	59
13 500	69	69	69	69	69	69	69	68	68	68	67	66	65	64	63	62	61	60	59
14 000	69	69	69	69	69	68	68	68	68	67	67	66	65	64	63	62	61	60	59
14 500	68	68	68	68	68	68	68	67	67	67	66	66	65	64	63	62	61	60	59
15 000	68	68	68	68	68	67	67	67	67	66	66	65	64	63	62	61	60	59	59
15 500	67	67	67	67	67	67	67	67	66	66	66	65	64	63	62	61	60	59	59
16 000	67	67	67	67	67	66	66	66	66	66	65	65	64	63	62	61	60	59	58
16 500	66	66	66	66	66	66	66	66	66	65	65	64	64	63	62	61	60	59	58
17 000	66	66	66	66	66	66	66	65	65	65	65	64	63	63	62	61	60	59	58
17 500	66	66	66	66	65	65	65	65	65	65	64	64	63	62	62	61	60	59	58
18 000	65	65	65	65	65	65	65	65	64	64	64	63	63	62	61	61	60	59	58
18 500	65	65	65	65	65	65	64	64	64	64	64	63	63	62	61	60	60	59	58
19 000	64	64	64	64	64	64	64	64	64	64	63	63	62	62	61	60	60	59	58
19 500	64	64	64	64	64	64	64	64	63	63	63	63	62	61	61	60	59	59	58
20 000	64	64	64	64	64	63	63	63	63	63	63	62	62	61	61	60	59	59	58

TABLE 3.14(A)
NOISE LEVELS FOR BOEING 737-700 ARRIVALS

Centre-line distance (DL), m	Noise levels, dB(A)																				
	Sideline distance (DS), m																				
	0	50	100	150	200	250	300	350	400	450	500	550	600	700	800	900	1000	1100	1200	1300	1400
0	***	***	***	***	***	***	***	***	***	***	65	64	62	60	59	58	57	56	55	54	54
250	***	***	***	***	***	***	***	***	***	***	67	65	63	61	58	56	56	55	54	53	53
500	95	93	88	84	81	78	76	73	71	69	67	66	64	62	59	57	55	54	53	52	52
750	93	92	88	84	81	78	76	74	72	70	68	66	65	62	60	58	56	54	53	52	50
1000	91	90	87	84	81	79	76	74	72	70	69	67	66	63	61	58	57	55	54	52	51
1250	90	89	87	84	81	79	76	74	72	71	69	68	66	63	61	59	57	56	54	53	51
1500	89	88	86	83	81	79	77	75	73	71	69	68	67	64	62	59	58	56	55	53	52
1750	88	87	85	83	81	79	77	75	73	71	70	68	67	64	62	60	58	57	55	54	52
2000	87	86	85	83	81	79	77	75	73	71	70	69	67	65	62	60	59	57	55	54	53
2250	86	85	84	82	80	78	77	75	73	72	70	69	67	65	63	61	59	57	56	54	53
2500	85	85	84	82	80	78	77	75	73	72	70	69	68	65	63	61	59	58	56	55	53
2750	84	84	83	82	80	78	76	75	73	72	70	69	68	65	63	61	60	58	57	55	54
3000	83	83	82	81	80	78	76	75	73	72	70	69	68	66	63	62	60	58	57	55	54
3250	83	82	82	81	79	78	76	75	73	72	71	69	68	66	64	62	60	59	57	56	54
3500	82	82	81	80	79	78	76	75	73	72	71	69	68	66	64	62	60	59	57	56	55
3750	81	81	81	80	79	77	76	74	73	72	71	69	68	66	64	62	60	59	58	56	55
4000	81	81	80	79	78	77	76	74	73	72	71	69	68	66	64	62	61	59	58	56	55
4250	80	80	80	79	78	77	75	74	73	72	71	69	68	66	64	62	61	59	58	57	55
4500	80	80	79	79	78	76	75	74	73	72	71	69	68	66	64	63	61	59	58	57	55
4750	79	79	79	78	77	76	75	74	73	72	70	69	68	66	64	63	61	60	58	57	56
5000	79	79	78	78	77	76	75	74	73	71	70	69	68	66	64	63	61	60	58	57	56
5500	78	78	77	77	76	75	74	73	72	71	70	69	68	66	64	63	61	60	58	57	56
6000	77	76	76	76	75	74	74	73	72	71	70	69	68	66	64	63	61	60	58	57	56
6500	75	75	75	75	74	74	73	72	71	70	69	68	68	66	64	62	61	60	58	57	56
7000	74	74	74	74	73	73	72	72	71	70	69	68	67	65	64	62	61	60	58	57	56
7500	74	73	73	73	73	72	72	71	70	69	68	68	67	65	63	62	61	59	58	57	56
8000	73	73	72	72	72	71	71	70	70	69	68	67	66	65	63	62	60	59	58	57	55
8500	72	72	72	71	71	71	70	70	69	68	68	67	66	64	63	62	60	59	58	56	55
9000	71	71	71	71	70	70	70	69	69	68	67	66	66	64	63	61	60	59	58	56	55
9500	70	70	70	70	70	70	69	69	68	67	67	66	65	64	63	61	60	59	58	56	55
10 000	70	70	70	70	69	69	69	68	68	67	66	66	65	64	62	61	60	59	58	56	55
10 500	69	69	69	69	69	68	68	68	67	67	66	65	65	63	62	61	60	59	57	56	55
11 000	69	69	68	68	68	68	67	67	67	66	66	65	64	63	62	61	60	58	57	56	55
11 500	68	68	68	68	68	67	67	67	66	66	65	65	64	63	62	61	59	58	57	56	55
12 000	67	67	67	67	67	67	66	66	66	65	65	64	64	63	62	60	59	58	57	56	55
12 500	67	67	67	67	66	66	66	66	65	65	64	64	64	62	61	60	59	58	57	56	55
13 000	66	66	66	66	66	66	65	65	65	64	64	64	63	62	61	60	59	58	57	56	55
13 500	66	66	66	66	65	65	65	65	64	64	64	63	63	62	61	60	59	58	57	56	55
14 000	65	65	65	65	65	65	65	64	64	64	63	63	63	62	61	60	59	58	56	55	54
14 500	65	65	65	65	64	64	64	64	64	63	63	63	62	61	60	59	58	57	56	55	54
15 000	64	64	64	64	64	64	64	63	63	63	63	62	62	61	60	59	58	57	56	55	54
15 500	64	64	64	64	63	63	63	63	63	62	62	62	61	61	60	59	58	57	56	55	54
16 000	63	63	63	63	63	63	63	63	62	62	62	61	61	60	60	59	58	57	56	55	54
16 500	63	63	63	63	63	62	62	62	62	62	61	61	61	60	59	58	57	57	56	55	54
17 000	62	62	62	62	62	62	62	62	62	61	61	61	60	60	59	58	57	56	55	54	54
17 500	62	62	62	62	62	62	62	61	61	61	61	60	60	60	59	58	57	56	55	54	53
18 000	62	62	62	62	61	61	61	61	61	61	60	60	60	59	59	58	57	56	55	54	53
18 500	61	61	61	61	61	61	61	61	61	60	60	60	60	59	58	58	57	56	55	54	53
19 000	61	61	61	61	61	61	61	60	60	60	60	60	59	59	58	57	56	56	55	54	53
19 500	61	61	61	61	60	60	60	60	60	60	60	59	59	59	58	57	56	55	55	54	53
20 000	60	60	60	60	60	60	60	60	60	59	59	59	59	58	58	57	56	55	54	54	53

TABLE 3.14(B)
NOISE LEVELS FOR BOEING 737-700 DEPARTURES

Centre-line distance (DT), m	Noise levels, dB(A)																		
	Sideline distance (DS), m																		
	0	100	200	300	400	500	600	700	800	900	1000	1200	1400	1600	1800	2000	2200	2400	2600
0	***	***	***	***	***	77	74	72	70	68	67	65	63	62	61	59	58	57	55
250	***	***	***	***	***	75	73	71	69	67	66	64	63	61	60	58	57	56	55
500	***	***	***	***	***	74	72	69	68	66	66	64	62	61	59	58	57	56	55
750	***	***	***	***	***	74	71	69	67	65	64	63	61	60	59	58	56	55	54
1000	***	***	***	***	***	73	70	68	66	65	64	62	61	59	58	57	56	55	54
1250	***	***	***	***	***	73	70	68	66	64	63	61	60	58	57	56	55	54	53
1500	***	***	***	***	***	72	70	67	65	64	63	61	59	57	56	55	55	54	53
1750	***	***	***	***	***	72	69	67	65	64	63	62	60	58	57	56	54	53	52
2000	***	***	***	***	***	74	71	69	68	66	65	63	61	60	58	57	55	54	53
2250	***	***	***	***	***	76	74	71	70	68	67	64	62	61	59	57	56	55	54
2500	101	96	90	85	81	78	75	73	71	69	68	65	63	62	60	58	57	55	54
2750	97	94	90	86	82	79	77	74	72	70	69	66	64	62	61	59	57	56	55
3000	94	93	89	86	82	80	77	75	73	71	70	67	65	63	61	60	58	57	56
3250	92	91	88	85	83	80	78	76	74	72	70	68	65	64	62	60	59	57	56
3500	90	89	88	85	83	80	78	76	74	73	71	68	66	64	63	61	59	58	56
3750	88	88	87	85	82	80	78	76	75	73	72	69	67	65	63	61	60	58	57
4000	87	87	86	84	82	80	78	76	75	73	72	69	67	65	63	61	60	58	57
4250	86	86	85	83	81	80	78	76	74	73	71	69	67	65	63	61	59	58	56
4500	86	85	84	83	81	79	78	76	74	73	71	69	67	65	63	61	59	58	56
4750	85	85	84	83	81	79	77	76	74	73	71	69	67	65	63	61	60	58	57
5000	84	84	83	82	81	79	77	76	74	73	71	69	67	65	63	61	60	58	57
5500	83	83	82	81	80	79	77	75	74	73	71	69	67	65	63	61	60	58	57
6000	82	82	82	81	80	78	77	75	74	72	71	69	67	65	63	61	60	58	57
6500	81	81	81	80	79	78	76	75	74	72	71	69	67	65	63	62	60	58	57
7000	80	80	80	79	78	77	76	74	73	72	71	69	67	65	64	62	60	59	57
7500	79	79	78	78	77	76	75	74	73	72	71	69	67	65	64	62	61	59	58
8000	78	77	77	77	76	76	75	74	73	72	71	69	67	65	64	62	61	59	58
8500	76	76	76	76	75	75	74	73	72	71	71	69	67	66	64	63	61	60	58
9000	76	75	75	75	75	74	73	73	72	71	70	69	67	66	64	63	61	60	59
9500	75	75	74	74	74	73	73	72	72	71	70	68	67	66	64	63	61	60	59
10 000	74	74	74	74	73	73	72	72	71	71	70	68	67	65	64	63	61	60	59
10 500	74	73	73	73	73	72	72	72	71	70	70	68	67	65	64	62	61	60	59
11 000	73	73	73	73	72	72	72	71	71	70	69	68	66	65	64	62	61	60	59
11 500	73	73	72	72	72	72	71	71	70	70	69	68	66	65	64	62	61	60	59
12 000	72	72	72	72	72	71	71	70	70	69	69	67	66	65	63	62	61	60	59
12 500	72	72	72	71	71	71	71	70	70	69	69	67	66	65	63	62	61	60	58
13 000	71	71	71	71	71	71	70	70	69	69	68	67	66	65	63	62	61	59	58
13 500	71	71	71	71	70	70	70	69	69	68	68	67	66	64	63	62	61	59	58
14 000	70	70	70	70	70	70	69	69	69	68	68	67	65	64	63	62	61	59	58
14 500	70	70	70	70	69	69	69	69	68	68	67	66	65	64	63	62	61	59	58
15 000	69	69	69	69	69	69	68	68	68	67	67	66	65	64	63	62	60	59	58
15 500	69	69	69	69	68	68	68	68	67	67	67	66	65	64	63	61	60	59	58
16 000	68	68	68	68	68	68	68	67	67	67	66	66	65	64	62	61	60	59	58
16 500	68	68	68	68	68	67	67	67	67	66	66	65	64	63	62	61	60	59	58
17 000	67	67	67	67	67	67	67	67	66	66	66	65	64	63	62	61	60	59	58
17 500	67	67	67	67	67	67	66	66	66	66	65	65	64	63	62	61	60	59	58
18 000	67	67	67	67	66	66	66	66	66	65	65	64	64	63	62	61	60	59	58
18 500	66	66	66	66	66	66	66	66	65	65	65	64	63	63	62	61	60	59	58
19 000	66	66	66	66	66	66	65	65	65	65	65	64	63	62	62	61	60	59	58
19 500	66	66	66	66	65	65	65	65	65	64	64	64	63	62	61	61	60	59	58
20 000	65	65	65	65	65	65	65	65	64	64	64	63	63	62	61	60	60	59	58

TABLE 3.15(A)
NOISE LEVELS FOR BOEING 737-800 ARRIVALS

Centre-line distance (DL), m	Noise levels, dB(A)																				
	Sideline distance (DS), m																				
	0	50	100	150	200	250	300	350	400	450	500	550	600	700	800	900	1000	1100	1200	1300	1400
0	***	***	***	***	***	***	***	***	***	***	66	64	63	61	60	59	58	57	57	56	55
250	***	***	***	***	***	***	***	***	***	***	67	66	64	61	59	57	57	56	55	55	54
500	95	93	88	85	81	78	76	74	72	70	68	66	65	62	60	58	56	54	54	53	53
750	93	92	88	84	81	79	76	74	72	70	69	67	66	63	60	58	57	55	54	53	52
1000	91	90	87	84	81	79	77	75	73	71	69	68	66	64	61	59	57	56	54	53	52
1250	90	89	87	84	81	79	77	75	73	71	70	68	67	64	62	60	58	56	55	53	52
1500	89	88	86	84	81	79	77	75	73	71	70	69	67	65	62	60	58	57	55	54	53
1750	88	87	86	83	81	79	77	75	73	72	70	69	68	65	63	61	59	57	56	54	53
2000	87	86	85	83	81	79	77	75	73	72	70	69	68	65	63	61	59	58	56	55	53
2250	86	85	84	83	81	79	77	75	74	72	71	69	68	66	63	61	60	58	57	55	54
2500	85	84	84	82	80	79	77	75	74	72	71	69	68	66	64	62	60	58	57	55	54
2750	84	84	83	82	80	78	77	75	74	72	71	70	68	66	64	62	60	59	57	56	54
3000	83	83	82	81	80	78	77	75	74	72	71	70	68	66	64	62	60	59	57	56	55
3250	82	82	82	81	79	78	76	75	74	72	71	70	69	66	64	62	61	59	58	56	55
3500	82	82	81	80	79	78	76	75	73	72	71	70	69	66	64	63	61	59	58	57	55
3750	81	81	80	80	79	77	76	75	73	72	71	70	69	67	65	63	61	60	58	57	55
4000	81	80	80	79	78	77	76	75	73	72	71	70	69	67	65	63	61	60	58	57	56
4250	80	80	79	79	78	77	76	74	73	72	71	70	69	67	65	63	61	60	59	57	56
4500	79	79	79	78	78	77	75	74	73	72	71	70	69	67	65	63	62	60	59	57	56
4750	79	79	78	78	77	76	75	74	73	72	71	70	69	67	65	63	62	60	59	57	56
5000	78	78	78	77	77	76	75	74	73	72	71	70	69	67	65	63	62	60	59	58	56
5500	77	77	77	77	76	75	74	74	73	72	71	70	69	67	65	63	62	61	59	58	57
6000	77	76	76	76	75	75	74	73	72	71	70	69	68	67	65	63	62	61	59	58	57
6500	76	76	75	75	75	74	73	73	72	71	70	69	68	67	65	64	62	61	60	58	57
7000	75	75	75	74	74	74	73	72	72	71	70	69	68	67	65	64	62	61	60	58	57
7500	74	74	74	74	73	73	72	72	71	70	70	69	68	66	65	64	62	61	60	58	57
8000	74	74	73	73	73	72	72	71	71	70	69	69	68	66	65	63	62	61	60	59	57
8500	73	73	73	73	72	72	72	71	70	70	69	68	68	66	65	63	62	61	60	59	58
9000	72	72	72	72	72	71	71	71	70	69	69	68	67	66	65	63	62	61	60	59	58
9500	72	72	72	71	71	71	71	70	70	69	68	68	67	66	65	63	62	61	60	59	58
10 000	71	71	71	71	71	70	70	70	69	69	68	68	67	66	64	63	62	61	60	59	58
10 500	71	71	71	70	70	70	70	69	69	68	68	67	67	66	64	63	62	61	60	59	58
11 000	70	70	70	70	70	69	69	69	68	68	67	67	66	65	64	63	62	61	60	59	58
11 500	70	70	69	69	69	69	69	68	68	68	67	67	66	65	64	63	62	61	60	59	58
12 000	69	69	69	69	69	68	68	68	68	67	67	66	66	65	64	63	62	61	60	59	58
12 500	69	69	69	68	68	68	68	68	67	67	67	66	66	65	64	63	62	61	60	59	58
13 000	68	68	68	68	68	68	67	67	67	67	66	66	65	64	64	63	62	61	60	59	58
13 500	68	68	68	67	67	67	67	67	66	66	66	65	65	64	63	62	61	60	59	59	58
14 000	67	67	67	67	67	67	67	66	66	66	66	65	65	64	63	62	61	60	59	58	58
14 500	67	67	67	67	67	66	66	66	66	66	65	65	65	64	63	62	61	60	59	58	58
15 000	66	66	66	66	66	66	65	65	65	65	64	64	64	63	62	61	61	60	59	58	57
15 500	63	63	63	62	62	62	62	62	62	62	61	61	61	60	60	59	58	58	57	56	56
16 000	62	62	62	62	62	62	62	61	61	61	61	60	60	59	59	58	57	56	55	54	53
16 500	62	62	62	62	62	62	62	61	61	61	61	60	60	59	59	58	57	56	55	54	53
17 000	62	62	62	62	62	62	62	61	61	61	61	60	60	59	59	58	57	56	55	54	53
17 500	62	62	62	62	62	62	62	61	61	61	61	60	60	59	59	58	57	56	55	54	53
18 000	62	62	62	62	62	62	61	61	61	61	61	60	60	59	59	58	57	56	55	54	53
18 500	62	62	62	62	62	62	61	61	61	61	61	60	60	59	59	58	57	56	55	54	53
19 000	62	62	62	62	62	62	61	61	61	61	61	60	60	59	59	58	57	56	55	54	53
19 500	62	62	62	62	62	62	61	61	61	61	61	60	60	59	59	58	57	56	55	54	53
20 000	62	62	62	62	62	62	61	61	61	61	61	60	60	59	59	58	57	56	55	54	53