

**Annex 2 (Relating to Article 14)**

**Standards for aircraft noise**

**Chapter 1 Aircraft to which Chapter 2 of Volume I of Annex 16 to the Convention on International Civil Aviation applies**

1-1 The standards for the noise of propeller-driven airplanes of greater than 8,618 kg maximum takeoff weight (excluding aircraft which require a runway length of 610 m or less at maximum certificated weight for airworthiness and aircraft used for agricultural or firefighting purposes) and correspond to the following aircraft shall be as specified in the following table according to the maximum takeoff weight of the aircraft.

- a. Aircraft for which an application for the first Type Certificate, etc. of the type design was received before October 6, 1977 and for which a certificate of airworthiness, etc. for the individual aircraft was first issued on or after November 26, 1981
- b. Aircraft for which an application for the first Type Certificate, etc. of the type design was received before October 6, 1977 and for which an application for the change approval in type design under Article 13, paragraph (1) of the Law or change approval etc. in type design by any foreign state, a Contracting State to the Convention on International Civil Aviation (hereinafter referred to as "change in type design, etc.") (This shall be the cases that noise level is increased by 0.1 EPNdB or more. If the cumulative increase in the noise level from the design of the first Type Certificate, etc. is clearly tracked, it is limited to the cases that the cumulative increase in the noise level is 0.3 EPNdB or more) was received on or after October 6, 1977, and for which a certificate of airworthiness, etc. for the individual aircraft was first issued before November 26, 1981

	Noise level during takeoff at the lateral measurement point	Noise level during landing at the approach measurement point	Noise level during takeoff at the takeoff measurement point
Aircraft of less than or equal to 34,000 kg maximum takeoff weight	It shall be less than or equal to 102.	It shall be less than or equal to 102.	It shall be less than or equal to 93.

Aircraft of greater than 34,000 kg and less than or equal to 272,000 kg maximum takeoff weight	It shall be the level obtained by the following formula or less. $\frac{2}{\log_{10} 2} \times \log_{10} \frac{W}{34\ 000}$ +102	It shall be the level obtained by the following formula or less. $\frac{2}{\log_{10} 2} \times \log_{10} \frac{W}{34\ 000}$ +102	It shall be the level obtained by the following formula or less. $\frac{5}{\log_{10} 2} \times \log_{10} \frac{W}{34\ 000}$ +93
Aircraft of greater than 272,000 kg maximum takeoff weight	It shall be less than or equal to 108.	It shall be less than or equal to 108.	It shall be less than or equal to 108.
<p>Remarks</p> <ol style="list-style-type: none"> <li>1. Aircraft noise levels shall be measured in EPNdB in accordance with the methods specified in Annex 16 of the International Civil Aviation Convention.</li> <li>2. Lateral measurement point means the point on a line parallel to and 650 m from the runway center line, or extended runway center line, on a straight line on a plane including the runway, where the maximum noise level is obtained during takeoff.</li> <li>3. Approach measurement point means the point on the extended center line of the runway and at a position 2,000 m from the threshold of the runway on the side which the aircraft will land in the direction opposite to the approach direction.</li> <li>4. Takeoff measurement point means the point on the center line or the extended center line of the runway and at a distance of 6,500 m from the start of roll in the direction for takeoff.</li> <li>5. The W shall be the maximum takeoff weight (in kg) of the aircraft.</li> </ol>			

- 1-2 If the noise levels at any one or two among the lateral measurement point, approach measurement point, and takeoff measurement point are exceeded the upper limit of the noise level at each measurement point in the remarks column of the table in 1-1 and meet any of the following requirements, the noise of the aircraft shall be deemed to conform to the standards, notwithstanding the standards in 1-1.
- a. Any excess of the noise level at any single point shall be less than or equal to 3 EPNdB.
  - b. The sum of excesses of the noise level shall be less than or equal to 4 EPNdB.

- c. The level obtained by summing up the noise level at each measurement point shall be less than or equal to the level obtained by summing the upper limit of the noise level at each measurement point in the remarks column of the table in 1-1.

**Chapter 2 Aircraft to which Chapter 3 of Volume I of Annex 16 to the Convention on International Civil Aviation applies**

2-1 The standards for the noise of the following aircraft (excluding aircraft which require a runway length of 610 m or less at maximum certificated weight for airworthiness and aircraft used for agricultural or firefighting purposes) shall be as specified in the following table according to the maximum takeoff weight of the aircraft.

- a. Airplanes equipped with turbojet or turbofan engines for which an application for the first Type Certificate, etc. of the type design was received before January 1, 2006
- b. Propeller-driven airplanes of greater than 8,618 kg maximum takeoff weight for which an application for the first Type Certificate, etc. of the type design was received on or after January 1, 1985 and before January 1, 2006

	Noise levels during takeoff at the lateral measurement point	Noise level during landing at the approach measurement point	Noise level during takeoff at the takeoff measurement point
Aircraft of less than or equal to 35,000 kg maximum takeoff weight	It shall be less than or equal to 94.	It shall be less than or equal to 98.	It shall be the level obtained by the following formula or less. However, if this level is less than or equal to 89, it shall be less than or equal to 89.
Aircraft of greater than 35,000 kg and less than or equal to 280,000 kg maximum takeoff weight	It shall be the level obtained by the following formula or less.	It shall be the level obtained by the following formula or less.	$A - \frac{4}{\log_{10} 2}$ $\times \log_{10} \frac{385\ 000}{W}$

	$\frac{9}{\log_{10} \frac{80}{7}}$ $\times \log_{10} \frac{W}{35\ 000}$ $+ 94$	$\frac{7}{3 \log_{10} 2}$ $\times \log_{10} \frac{W}{35\ 000}$ $+ 98$	
Aircraft of greater than 280,000 kg and less than or equal to 385,000 kg maximum takeoff weight		It shall be less than or equal to 105.	
Aircraft of greater than 385,000 kg and less than or equal to 400,000 kg maximum takeoff weight			It shall be less than or equal to A.
Aircraft of greater than 400,000 kg maximum takeoff weight	It shall be less than or equal to 103.		
<p>Remarks</p> <ol style="list-style-type: none"> <li>1. Aircraft noise levels shall be measured in EPNdB in accordance with the methods specified in Annex 16 of the International Civil Aviation Convention.</li> <li>2. Lateral measurement point means the point on a line parallel to and 450 m from the runway center line, or extended runway center line, on a straight line on a plane including the runway, where the maximum noise level is obtained during takeoff. However, for propeller-driven airplanes, it should be the point on the runway center line, or extended runway center line 650 m vertically below the climb-out flight path at full takeoff power.</li> </ol>			

3. Approach measurement point means the point on the extended center line of the runway and at a position 2,000 m from the threshold of the runway on the side which the aircraft will land in the direction opposite to the approach direction.
4. Takeoff measurement point means the point on the center line or the extended center line of the runway and at a distance of 6,500 m from the start of roll in the direction for takeoff.
5. The W shall be the maximum takeoff weight (in kg) of the aircraft.
6. A shall be 101 in the case of airplanes with two engines or less, 104 in the case of airplanes with three engines, and 106 in the case of airplanes with four engines or more.

- 2-2 If the noise levels at any one or two among the lateral measurement point, approach measurement point, and takeoff measurement point are exceeded the upper limit of the noise level at each measurement point in the remarks column of the table in 2-1 and meet any of the following requirements, the noise of the aircraft shall be deemed to conform to the standards, notwithstanding the standards in 2-1.
- a. Any excess of the noise level at any single point shall be less than or equal to 2 EPNdB.
  - b. The sum of excesses of the noise level shall be less than or equal to 3 EPNdB.
  - c. The level obtained by summing up the noise level at each measurement point shall be less than or equal to the level obtained by summing the upper limit of the noise level at each measurement point in the remarks column of the table in 2-1.

**Chapter 2-2 Aircraft to which Chapter 4 of Volume I of Annex 16 to the Convention on International Civil Aviation applies**

- 2-2-1 The standards for the noise of the following aircraft (excluding aircraft which require a runway length of 610 m or less at maximum certificated weight for airworthiness and aircraft used for agricultural or firefighting purposes) shall be as specified in the table in 2-1 according to the maximum takeoff weight of the aircraft.
- a. Airplanes equipped with turbojet or turbofan engines or propeller-driven airplanes of greater than or equal to 55,000 kg maximum takeoff weight for which an application for the first Type Certificate, etc. of the type design was received on or after January 1, 2006 and before December 31, 2017
  - b. Airplanes equipped with turbojet or turbofan engines of less than 55,000 kg maximum takeoff weight for which an application for the first Type Certificate, etc. of the type design was received on or after January 1, 2006 and before December 31, 2020
  - c. Propeller-driven airplanes of greater than 8,618 kg and less than 55,000 kg maximum takeoff weight for which an application for the first Type Certificate, etc. of the type design was received on or after January 1, 2006 and before December 31, 2020

2-2-2 Aircraft listed in 2-2-1 shall comply with the following standards.

- a. The sum of the differences at the lateral measurement point, approach measurement point and takeoff measurement point between the noise level and the corresponding upper limit of the noise level at each measurement point in the column of the remarks in the table in 2-1 shall be greater than or equal to 10 EPNdB.
- b. The sum of the differences at any two measurement points in the lateral measurement point, approach measurement point and takeoff measurement between the noise levels and the corresponding upper limit of the noise level at each measurement point in the column of the remarks in the table in 2-1 shall be greater than or equal to 2 EPNdB.

2-2-3 If aircraft is listed in 2-1 or 3-1 and is intended to be applied to 2-2-1, it shall comply with the standards of 2-2-2.

**Chapter 3 Aircraft to which Chapter 5 of Volume I of Annex 16 to the Convention on International Civil Aviation applies**

3-1 The standards for the noise of the propeller-driven airplanes of greater than 8,618 kg maximum takeoff weight (excluding aircraft which require a runway length of 610 m or less at maximum certificated weight for airworthiness and aircraft used for agricultural or firefighting purposes) for which an application for the first Type Certificate, etc. of the type design was received on or after October 6, 1977 and before January 1, 1985 shall be as specified in the following table according to the maximum takeoff weight of the aircraft.

	Noise level during takeoff at the lateral measurement point	Noise level during landing at the approach measurement point	Noise level during takeoff at the takeoff measurement point
Aircraft of less than or equal to 34,000 kg maximum takeoff weight	It shall be less than or equal to 96.	It shall be less than or equal to 98.	It shall be less than or equal to 89.
Aircraft of greater than 34,000 kg maximum takeoff weight	It shall be the level obtained by the following formula or less. However, if this level exceeds 103, it shall be less than or equal to 103.	It shall be the level obtained by the following formula or less. However, if this level exceeds 105, it shall be less than or equal to 105.	It shall be the level obtained by the following formula or less. However, if this level exceeds 106, it shall be less than or equal to 106.

	$96 + \frac{2}{\log_{10} 2}$ $\times \log_{10} \frac{W}{34\ 000}$	$98 + \frac{2}{\log_{10} 2}$ $\times \log_{10} \frac{W}{34\ 000}$	$89 + \frac{5}{\log_{10} 2}$ $\times \log_{10} \frac{W}{34\ 000}$
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**Remarks**

1. Aircraft noise levels shall be measured in EPNdB in accordance with the methods specified in Annex 16 of the International Civil Aviation Convention.
2. Lateral measurement point means the point on a line parallel to and 450 m from the runway center line, or extended runway center line, on a straight line on a plane including the runway, where the maximum noise level is obtained during takeoff.
3. Approach measurement point means the point on the extended center line of the runway and at a position 2,000 m from the threshold of the runway on the side which the aircraft will land in the direction opposite to the approach direction.
4. Takeoff measurement point means the point on the center line or the extended center line of the runway and at a distance of 6,500 m from the start of roll in the direction for takeoff.
5. The W shall be the maximum takeoff weight (in kg) of the aircraft.

- 3-2 If the noise levels at any one or two among the lateral measurement point, approach measurement point, and takeoff measurement point are exceeded the upper limit of the noise level at each measurement point in the remarks column of the table in 3-1 and meet any of the following requirements, the noise of the aircraft shall be deemed to conform to the standards, notwithstanding the standards in 3-1.
- a. Any excess of the noise level at any single point shall be less than or equal to 2 EPNdB.
  - b. The sum of excesses of the noise level shall be less than or equal to 3 EPNdB.
  - c. The level obtained by summing up the noise level at each measurement point shall be less than or equal to the level obtained by summing the upper limit of the noise level at each measurement point in the remarks column of the table in 3-1.

**Chapter 4 Aircraft to which Chapter 6 of Volume I of Annex 16 to the Convention on International Civil Aviation applies**

- 4-1 The standards for the noise of the propeller-driven airplanes or motor glider of less than or equal to 8,618 kg maximum takeoff weight (excluding aircraft used for aerobatic, agricultural or firefighting purposes) and correspond to the following aircraft shall be as specified in the following table according to the maximum takeoff weight of the aircraft.
- a. Aircraft for which an application for the first Type Certificate, etc. of the type design was received on or after January 1, 1975 and before November 17, 1988. However, if change

in type design (This shall be the cases that noise level is increased by 0.1 dB(A) or more. If the cumulative increase in the noise level from the design of the first Type Certificate, etc. is clearly tracked, it is limited to the cases that the cumulative increase in the noise level is 0.3 dB(A) or more. Hereinafter the same shall apply in this Chapter and Chapter 6.) has been made, it is limited to aircraft for which the application was received before November 17, 1988.

- b. Aircraft for which an application for the first Type Certificate, etc. of the type design was received on or after January 1, 1975 and before November 17, 1988 and an application for design change of the type design was received on or after November 17, 1988 and before November 17, 1993, and which does not conform to the noise standards in the table in 6-1.
- c. Aircraft for which an application for the first Type Certificate, etc. of the type design was received on or after November 17, 1988 and before November 17, 1993 which does not conform to the noise standards in the table in 6-1. However, if the design change of the type design has already been made, it is limited to aircraft for which the application was received before November 17, 1993.
- d. Aircraft for which an application for the first Type Certificate, etc. of the type design was received before January 1, 1975 and for which a certificate of airworthiness, etc. for the individual aircraft was first issued on or after January 1, November 26, 1980.

	Noise level in level flights overhead the measurement point
Aircraft of less than or equal to 600 kg maximum takeoff weight	It shall be less than or equal to 68.
Aircraft of greater than 600 kg and less than or equal to 1,500 kg maximum takeoff weight	It shall be the level obtained by the following formula or less. $68 + \frac{1}{75}(W - 600)$
Aircraft of greater than 1,500 kg maximum takeoff weight	It shall be less than or equal to 80.
Remarks	
<ol style="list-style-type: none"> <li>1. Aircraft noise levels shall be measured in dB(A) in accordance with the methods specified in Annex 16 of the International Civil Aviation Convention.</li> <li>2. The W shall be the maximum takeoff weight (in kg) of the aircraft.</li> </ol>	

**Chapter 5 Aircraft to which Chapter 8 of Volume I of Annex 16 to the Convention on International Civil Aviation applies**



5-1 The standards for the noise of rotorcraft (excluding rotorcraft used for agricultural, firefighting or external load-carrying purposes) and correspond to the following rotorcraft shall be as specified in the following table (if it is rotorcraft of less than or equal to 3,175 kg maximum takeoff weight, it shall be the following table or the table in 7-1) according to the maximum takeoff weight of the rotorcraft.

- a. Rotorcraft for which an application for the first Type Certificate, etc. of the type design was received on or after January 1, 1985 and before March 21, 2002.
- b. Rotorcraft for which an application for the first Type Certificate, etc. of the type design was received before March 21, 2002 and an application for design change of the type design (limited to the cases that it increases the noise level 0.3 EPNdB or more) was received on or after November 17, 1988.

	Noise level during overflight at the overflight measurement point	Noise level during landing at the approach measurement point	Noise level during takeoff at the takeoff measurement point
Rotorcraft of less than or equal to 80,000 kg maximum takeoff weight	It shall be the level obtained by the following formula or less. However, if this level is less than or equal to 88, it shall be less than or equal to 88.  $108 - \frac{3}{\log_{10} 2} \times \log_{10} \frac{80\ 000}{W}$	It shall be the level obtained by the following formula or less. However, if this level is less than or equal to 90, it shall be less than or equal to 90.  $110 - \frac{3}{\log_{10} 2} \times \log_{10} \frac{80\ 000}{W}$	It shall be the level obtained by the following formula or less. However, if this level is less than or equal to 89, it shall be less than or equal to 89.  $109 - \frac{3}{\log_{10} 2} \times \log_{10} \frac{80\ 000}{W}$
Rotorcraft of greater than 80,000 kg maximum takeoff weight	It shall be less than or equal to 108.	It shall be less than or equal to 110.	It shall be less than or equal to 109.

Remarks

1. Rotorcraft noise levels shall be measured in EPNdB in accordance with the methods specified in Annex 16 of the International Civil Aviation Convention.
2. Overflight measurement points mean that a point located on the ground 150 m vertically below the flight path of rotorcraft during overflight and two other points on the ground disposed at 150 m on both sides perpendicular to the projection line on the ground, which passes through the former measurement point, of the flight path.
3. Approach measurement points mean that a point located on the ground 120 m vertically below the flight path of rotorcraft during landing and two other points on the ground disposed at 150 m on both sides perpendicular to the projection line on the ground, which passes through the former measurement point, of the approach path.
4. Takeoff measurement points mean that a point located on the ground vertically below the flight path of rotorcraft during takeoff and 500 m horizontally in the direction of flight from the point at which transition to climbing flight is initiated, and two other points on the ground disposed at 150 m on both sides perpendicular to the projection line on the ground, which passes through the former measurement point, of the takeoff path.
5. The W shall be the maximum takeoff weight (in kg) of the rotorcraft.

- 5-2 If the noise levels at any one or two among the overflight measurement points, approach measurement point, and takeoff measurement point are exceeded the upper limit of the noise level at each measurement point in the remarks column of the table in 5-1 and meet any of the following requirements, the noise of the rotorcraft shall be deemed to conform to the standards, notwithstanding the standards in 5-1.
- a. Any excess of the noise level at any single point shall be less than or equal to 3 EPNdB.
  - b. The sum of excesses of the noise level shall be less than or equal to 4 EPNdB.
  - c. The level obtained by summing up the noise level at each measurement point shall be less than or equal to the level obtained by summing the upper limit of the noise level at each measurement point in the remarks column of the table in 5-1.
- 5-3 The standards for the noise of rotorcraft (excluding rotorcraft used for agricultural, firefighting or external load-carrying purposes) for which an application for the first Type Certificate, etc. of the type design was received on or after March 21, 2002 shall be as specified in the following table (if it is rotorcraft of less than or equal to 3,175 kg maximum takeoff weight, it shall be the following table or the table in 7-2) according to the maximum takeoff weight of the rotorcraft.

	Noise level during overflight at the overflight measurement point	Noise level during landing at the approach measurement point	Noise level during takeoff at the takeoff measurement point
Rotorcraft of less than or equal to 80,000 kg maximum takeoff weight	It shall be the level obtained by the following formula or less. However, if this level is less than or equal to 84, it shall be less than or equal to 84.  $104 - \frac{3}{\log_{10} 2} \times \log_{10} \frac{80\ 000}{W}$	It shall be the level obtained by the following formula or less. However, if this level is less than or equal to 89, it shall be less than or equal to 89.  $109 - \frac{3}{\log_{10} 2} \times \log_{10} \frac{80\ 000}{W}$	It shall be the level obtained by the following formula or less. However, if this level is less than or equal to 86, it shall be less than or equal to 86.  $106 - \frac{3}{\log_{10} 2} \times \log_{10} \frac{80\ 000}{W}$
Rotorcraft of greater than 80,000 kg maximum takeoff weight	The level shall be 104 or less.	The level shall be 109 or less.	The level shall be 106 or less.
<p>Remarks</p> <ol style="list-style-type: none"> <li>Rotorcraft noise levels shall be measured in EPNdB in accordance with the methods specified in Annex 16 of the International Civil Aviation Convention.</li> <li>Overflight measurement points mean that a point located on the ground 150 m vertically below the flight path of rotorcraft during overflight and two other points on the ground disposed at 150 m on both sides perpendicular to the projection line on the ground, which passes through the former measurement point, of the flight path.</li> <li>Approach measurement points mean that a point located on the ground 120 m vertically below the flight path of rotorcraft during landing and two other points on the ground disposed at 150 m on both sides perpendicular to the projection line on the ground, which passes through the former measurement point, of the approach path.</li> <li>Takeoff measurement points mean that a point located on the ground vertically below the flight path of rotorcraft during takeoff and 500 m horizontally in the direction of</li> </ol>			

flight from the point at which transition to climbing flight is initiated, and two other points on the ground disposed at 150 m on both sides perpendicular to the projection line on the ground, which passes through the former measurement point, of the takeoff path.

5. The W shall be the maximum takeoff weight (in kg) of the rotorcraft.

- 5-4 If the noise levels at any one or two among the overflight measurement points, approach measurement point, and takeoff measurement point are exceeded the upper limit of the noise level at each measurement point in the remarks column of the table in 5-3 and meet any of the following requirements, the noise of the rotorcraft shall be deemed to conform to the standards, notwithstanding the standards in 5-3.
- a. Any excess of the noise level at any single point shall be less than or equal to 3 EPNdB.
  - b. The sum of excesses of the noise level shall be less than or equal to 4 EPNdB.
  - c. The level obtained by summing up the noise level at each measurement point shall be less than or equal to the level obtained by summing the upper limit of the noise level at each measurement point in the remarks column of the table in 5-3.

#### **Chapter 6 Aircraft to which Chapter 10 of Volume I of Annex 16 to the Convention on International Civil Aviation applies**

- 6-1 The standards for the noise of the propeller-driven airplanes or motor gliders of less than or equal to 8,618 kg maximum takeoff weight (excluding aircraft used for aerobatic, agricultural or firefighting purposes and motor gliders which use its power only during cruising) and correspond to the following aircraft shall be as specified in the following table according to the maximum takeoff weight of the aircraft.
- a. Aircraft for which an application for the first Type Certificate, etc. of the type design was received on or after January 1, 1975 and before November 17, 1988 and an application for design change of the type design was received on or after November 17, 1988 and before November 4, 1999.
  - b. Aircraft for which an application for the first Type Certificate, etc. of the type design was received on or after November 17, 1988 and before November 4, 1999. However, if change in type design has been made, it is limited to aircraft for which the application was received before November 4, 1999.
  - c. Aircraft for which an application for the first Type Certificate, etc. of the type design was received on or after January 1, 1975 and before November 4, 1999 and an application for design change of the type design was received on or after November 4, 1999. (limited to single-engine seaplanes and amphibians, and multiengine aircraft)

- d. Aircraft for which an application for the first Type Certificate, etc. of the type design was received on or after November 4, 1999. (limited to single-engine seaplanes and amphibians, and multiengine aircraft)
- e. Aircraft for which an application for the first Type Certificate, etc. of the type design was received on or after January 1, 1975 and before November 4, 1999 and an application for design change of the type design was received on or after November 4, 1999 and before November 4, 2004, and which does not conform to the noise standards in the table in 6-2. (excluding single-engine seaplanes and amphibians, and multiengine aircraft)

	Noise level during takeoff at the takeoff measurement point
Aircraft of less than or equal to 600 kg maximum takeoff weight	It shall be less than or equal to 76.
Aircraft of greater than 600 kg and less than or equal to 1,400 kg maximum takeoff weight	It shall be the level obtained by the following formula or less. $76 + \frac{12}{\log_{10} \frac{W}{600}} \times \log_{10} \frac{W}{600}$
Aircraft of greater than 1,400 kg maximum takeoff weight	It shall be less than or equal to 88.
<b>Remarks</b> <ol style="list-style-type: none"> <li>1. Aircraft noise levels shall be measured in dB(A) in accordance with the methods specified in Annex 16 of the International Civil Aviation Convention.</li> <li>2. Takeoff measurement point means the point on the center line or the extended center line of the runway and at a distance of 2,500 m from the start of roll in the direction for takeoff.</li> <li>3. The W shall be the maximum takeoff weight (in kg) of the aircraft.</li> </ol>	

6-2 The standards for the noise of the single-engine propeller-driven airplanes or motor gliders of less than or equal to 8,618 kg maximum takeoff weight (excluding aircraft used for aerobatic, agricultural or firefighting purposes, seaplanes and amphibians, and motor gliders which use its power only during cruising) and correspond to the following aircraft

shall be as specified in the following table according to the maximum takeoff weight of the aircraft.

- a. Aircraft for which an application for the first Type Certificate, etc. of the type design was received on or after January 1, 1975 and before November 4, 1999 and an application for design change of the type design was received on or after November 4, 1999.
- b. Aircraft for which an application for the first Type Certificate, etc. of the type design was received on or after November 4, 1999.

	Noise level during takeoff at the takeoff measurement point
Aircraft of less than or equal to 570 kg maximum takeoff weight	It shall be less than or equal to 70.
Aircraft of greater than 570 kg and less than or equal to 1,500 kg maximum takeoff weight	It shall be the level obtained by the following formula or less. $70 + \frac{15}{\log_{10} \frac{50}{19}} \times \log_{10} \frac{W}{570}$
Aircraft of greater than 1,500 kg maximum takeoff weight	It shall be less than or equal to 85.
<b>Remarks</b> <ol style="list-style-type: none"> <li>1. Aircraft noise levels shall be measured in dB(A) in accordance with the methods specified in Annex 16 of the International Civil Aviation Convention.</li> <li>2. Takeoff measurement point means the point on the center line or the extended center line of the runway and at a distance of 2,500 m from the start of roll in the direction for takeoff.</li> <li>3. The W shall be the maximum takeoff weight (in kg) of the aircraft.</li> </ol>	

**Chapter 7 Aircraft to which Chapter 11 of Volume I of Annex 16 to the Convention on International Civil Aviation applies**

7-1 The standards for the noise of rotorcraft of less than or equal to 3,175 kg maximum takeoff weight (excluding rotorcraft used for agricultural, firefighting or external load-carrying

purposes and rotorcraft to which the standards for the noise in Chapter 5 applies) and correspond to the following rotorcraft shall be as specified in the following table according to the maximum takeoff weight of the rotorcraft.

- a. Rotorcraft for which an application for the first Type Certificate, etc. of the type design was received on or after November 11, 1993 and before March 21, 2002.
- b. Rotorcraft for which an application for the first Type Certificate, etc. of the type design was received before March 21, 2002 and an application for design change of the type design (limited to the cases that it increases the noise level 0.3 dB(A) or more) was received on or after November 11, 1993.

	Noise level during overflight at the overflight measurement point
Rotorcraft of less than or equal to 788 kg maximum takeoff weight	It shall be less than or equal to 82.
Rotorcraft of greater than 788 kg maximum takeoff weight	It shall be the level obtained by the following formula or less. $82 + \frac{3}{\log_{10} 2} \times \log_{10} \frac{W}{788}$
<p>Remarks</p> <ol style="list-style-type: none"> <li>1. Rotorcraft noise levels shall be measured in dB(A) in accordance with the methods specified in Annex 16 of the International Civil Aviation Convention.</li> <li>2. Overflight measurement point means that a point located on the ground 150 m vertically below the flight path of rotorcraft during overflight.</li> <li>3. The W shall be the maximum takeoff weight (in kg) of the rotorcraft.</li> </ol>	

7-2 The standards for the noise of rotorcraft of less than or equal to 3,175 kg maximum takeoff weight (excluding rotorcraft used for agricultural, firefighting or external load-carrying purposes and rotorcraft to which the standards for the noise in Chapter 5 applies) for which an application for the first Type Certificate, etc. of the type design was received on or after March 21, 2002 shall be as specified in the following table according to the maximum takeoff weight of the rotorcraft.

	Noise level during overflight at the overflight measurement point

Rotorcraft of less than or equal to 1,417 kg maximum takeoff weight	It shall be less than or equal to 82.
Rotorcraft of greater than 1,417 kg maximum takeoff weight	It shall be the level obtained by the following formula or less. $82 + \frac{3}{\log_{10}2} \times \log_{10} \frac{W}{1\ 417}$
<p>Remarks</p> <ol style="list-style-type: none"> <li>1. Rotorcraft noise levels shall be measured in dB(A) in accordance with the methods specified in Annex 16 of the International Civil Aviation Convention.</li> <li>2. Overflight measurement point means that a point located on the ground 150 m vertically below the flight path of rotorcraft during overflight.</li> <li>3. The W shall be the maximum takeoff weight (in kg) of the rotorcraft.</li> </ol>	

**Chapter 8 Aircraft to which Chapter 14 of Volume I of Annex 16 to the Convention on International Civil Aviation applies**

8-1 The standards for the noise of the following aircraft (excluding aircraft which require a runway length of 610 m or less at maximum certificated weight for airworthiness and aircraft used for agricultural or firefighting purposes) shall be as specified in the following table according to the maximum takeoff weight of the aircraft.

- a. Airplanes equipped with turbojet or turbofan engines and propeller-driven airplanes of greater than or equal to 55,000 kg maximum takeoff weight for which an application for the first Type Certificate, etc. of the type design was received on or after December 31, 2017.
- b. Airplanes equipped with turbojet or turbofan engines of less than 55,000 kg maximum takeoff weight for which an application for the first Type Certificate, etc. of the type design was received on or after December 31, 2020.
- c. Propeller-driven airplanes of greater than 8,618 kg and less than 55,000 kg maximum takeoff weight for which an application for the first Type Certificate, etc. of the type design was received on or after December 31, 2020.

	Noise level during takeoff at the lateral measurement point	Noise level during landing at the approach measurement point	Noise level during takeoff at the takeoff measurement point
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Aircraft of less than or equal to 2,000 kg maximum takeoff weight	It shall be less than or equal to 88.6.	It shall be less than or equal to 93.1.	It shall be less than or equal to 80.6.
Aircraft of greater than 2,000 kg and less than or equal to 8,618 kg maximum takeoff weight	It shall be the level obtained by the following formula or less. $\frac{27}{5 \log_{10} \frac{4\,309}{1\,000}}$ $\times \log_{10} \frac{W}{2\,000}$ + 88.6	It shall be the level obtained by the following formula or less. $\frac{49}{10 \log_{10} \frac{4\,309}{1\,000}}$ $\times \log_{10} \frac{W}{2\,000}$ + 93.1	It shall be the level obtained by the following formula or less. $89 - \frac{4}{\log_{10} 2}$ $\times \log_{10} \frac{8\,618}{W}$
Aircraft of greater than 8,618 kg and less than or equal to 35,000 kg maximum takeoff weight	It shall be less than or equal to 94.	It shall be less than or equal to 98.	It shall be the level obtained by the following formula or less. However, if this level is less than or equal to 89, it shall be less than or equal to 89.
Aircraft of greater than 35,000 kg and less than or equal to 280,000 kg maximum takeoff weight	It shall be the level obtained by the following formula or less.	It shall be the level obtained by the following formula or less.	$A - \frac{4}{\log_{10} 2}$ $\times \log_{10} \frac{385\,000}{W}$

	$\frac{9}{\log_{10} \frac{80}{7}}$ $\times \log_{10} \frac{W}{35\ 000}$ $+ 94$	$\frac{7}{3\log_{10} 2}$ $\times \log_{10} \frac{W}{35\ 000}$ $+ 98$	
Aircraft of greater than 280,000kg and less than or equal to 385,000 kg maximum takeoff weight		It shall be less than or equal to 105.	
Aircraft of greater than 385,000 kg and less than or equal to 400,000 kg maximum takeoff weight			It shall be less than or equal to A.
Aircraft of greater than 400,000 kg maximum takeoff weight	It shall be less than or equal to 103.		

Remarks

1. Aircraft noise levels shall be measured in EPNdB in accordance with the methods specified in Annex 16 of the International Civil Aviation Convention.
2. Lateral measurement point means the point on a line parallel to and 450 m from the runway center line, or extended runway center line, on a straight line on a plane including the runway, where the maximum noise level is obtained during takeoff. However, for propeller-driven airplanes, it should be the point on the runway center line, or extended runway center line 650 m vertically below the climb-out flight path at full takeoff power.
3. Approach measurement point means the point on the extended center line of the runway and at a position 2,000 m from the threshold of the runway on the side which the aircraft will land in the direction opposite to the approach direction.
4. Takeoff measurement point means the point on the center line or the extended center line of the runway and at a distance of 6,500 m from the start of roll in the direction for takeoff.
5. The W shall be the maximum takeoff weight (in kg) of the aircraft.
6. A shall be 101 in the case of airplanes with two engines or less, 104 in the case of airplanes with three engines, and 106 in the case of airplanes with four engines or more.

8-2 Aircraft listed in 8-1 shall comply with the following standards:

- a. The sum of the differences at the lateral measurement point, approach measurement point and takeoff measurement point between the noise level and the upper limit of the noise level at each measurement point in the column of the remarks in the table in 8-1 shall be greater than or equal to 17 EPNdB.
- b. The difference between the noise level at the lateral measurement point, approach measurement point and take-off measurement point and the upper limit of the noise level at each measurement point in the remarks column in the table in 8-1 shall be greater than or equal to 1 EPNdB at any of the three measurement points.

8-3 If aircraft is listed in 2-1, 2-2-1 or 3-1 and is intended to be applied to 8-1, it shall comply with the standards of 8-2.