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Civil Aircraft Noise Control Standards

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Civil Aircraft Noise Control Standards

9 Articles Revised and Promulgated by EPA Huan-Shu-Kong-Tzu Order No. 0930083349 and MOTC Ban-Fa-Tzu No. 3B000080 on November 24, 2004

Article 1 [繁體中文]

These standards are determined pursuant to Article 9, Paragraph 3 of the Noise Control Act

Article 2 [繁體中文]

Testing of civil aircraft noise levels shall be performed in accordance with effective perceived noise (EPN), A-weighting maximum noise level, or sound exposure level (SEL) regulations in ISO-3891. The units employed are EPNdB, LAmaxdB, and SEL dB, respectively.

Article 3 [繁體中文]

Noise control standards for subsonic jet aircraft for which a prototype airworthiness certificate application was made by October 6, 1977 are shown in the following table:

Test points / Take-off weight	Weight greater than or equal to 272,000 kg	Weight less than or equal to 34,000 kg	Weight between 34,000 kg and 272,000 kg
Approach noise level	108	102	91.83+6.64 log M
Transverse noise level	108	102	91.83+6.64 log M
Take-off noise level	108	93	67.56+16.61 log M

Remarks

1. Approach noise level measurement points: starting from a point 300 meters inward from the head of the runway (the touchdown point), follow the three-dimensional glide angle and locate the point where the descent path has a vertical elevation of 120 meters (395 feet), which will be 2,000 meters beyond the head of the runway.
2. Transverse noise level measurement point: a point on a surface transverse to the aircraft take-off point and 650 meters distant from the center line of the runway.
3. Take-off noise level measurement point: a location 6.5 kilometers away from the central line of the runway starting from the point at which an aircraft begins taxiing.
4. Measurement units are EPNdB; M represents the maximum take-off weight (1,000 kg).

Article 4 [繁體中文]

Noise control standards for subsonic jet aircraft for which a prototype airworthiness certificate application was made by October 6, 1977 and where the aircraft design was modified after November 26, 1981 are shown in the following table:

Test points	Number of engines	Maximum take-off weight (kg)	Noise control standards when the take-off weight is greater than or equal to the upper limit	Minimum take-off weight (kg)	Noise control standards when the take-off weight is less than or equal to the lower limit	Noise control standards when the take-off weight is between the upper and lower limits
Approach noise level		280,000	108	35,000	101	89.03.+7.75 log M
Transverse noise level		400,000	106	35,000	97	83.87+8.51 log M
Take-off noise level	Two or less	325,000	104	48,300	93	70.62.+13.29 log M
	Three	325,000	107	43,000	93	The standard is 67.56+16.61 log M when the weight is between 34,000 kg and 66,720 kg, and 73.62+13.29 log M when between 66,720 kg and 325,000 kg
	Four or more	325,000	108	43,000	93	The standard is 67.56+16.61 log M when the weight is between 34,000 kg and 133,450 kg, and 73.62+13.29 log M when between 133,450 kg and 325,000 kg

Remarks

1. All noise level measurement points are the same as in Notes 1, 2, and 3 in Article 3.
2. Measurement units are EPNdB; M represents the maximum take-off weight (1,000 kg).

Article 5 [繁體中文]

Noise control standards for subsonic jet aircraft for which a prototype airworthiness certificate application was made after October 6, 1977 are shown in the following table:

Test points	Number of engines	Maximum take-off weight (kg)	Noise control standards when the take-off weight is greater than or equal to the upper limit	Minimum take-off weight (kg)	Noise control standards when the take-off weight is less than or equal to the lower limit	Noise control standards when the take-off weight is between the upper and lower limits
Approach noise level		280,000	105	35,000	98	86.03+7.75 log M
Transverse noise level		400,000	103	35,000	94	80.87+8.51 log M
Take-off noise level	Two or less	385,000	101	48,100	89	66.65+13.29 log M
	Three	385,000	104	28,000	89	69.65+13.29 log M
	Four or more	385,000	106	20,200	89	71.65+13.29 log M

Remarks

1. Apart from the transverse parallel distance of 450 meters, all noise level measurement points are the same as in Notes 1, 2, and 3 in Article 3.

2. Measurement units are EPNdB; M represents the maximum take-off weight (1,000 kg).

Article 6 [繁體中文]

Noise control standards for propeller aircraft are shown in the following tables in accordance with their maximum take-off weight and date of application for a prototype airworthiness certificate.

1.) Noise control standards for propeller aircraft with a maximum take-off weight greater than 5,700 kg for which a prototype airworthiness certificate application was made by December 31, 1984 are shown in the following table:

Test points	Take-off weight greater than or equal to 384,700 kg	Take-off weight less than or equal to 34,000 kg	Take-off weight between 34,000 kg and 384,700 kg
Approach noise level	105	98	87.83.83+6.64 log M
Transverse noise level	103	96	85.83.83+6.64 log M
Take-off noise level	**Take-off weight greater than or equal to 358,900 kg**	**Take-off weight less than or equal to 34,000 kg**	**Take-off weight between 34,000 kg and 358,900 kg**
	106	89	63.56.56+16.61 log M

Remarks

1. Apart from the transverse parallel distance of 450 meters, all noise level measurement points are the same as in Notes 1, 2, and 3 in Article 3.

2. Measurement units are EPNdB; M represents the maximum take-off weight (1,000 kg).

2.) Noise control standards for propeller aircraft with a maximum take-off weight in excess of 5,700 kg for which a prototype airworthiness certificate application was made from January 1, 1985 to November 17, 1988 are shown in the following table:

Test points	**Number of engines**	**Maximum take-off weight (kg)**	**Noise control standards when the take-off weight is greater than or equal to the upper limit**	**Minimum take-off weight (kg)**	**Noise control standards when the take-off weight is less than or equal to the lower limit**	**Noise control standards when the take-off weight is between the upper and lower limits**
Approach noise level		280,000	105	35,000	98	86.03+7.75 log M
Transverse noise level		400,000	103	35,000	94	80.87+8.51 log M
Take-off noise level	Two or less	385,000	101	48,100	89	66.65+13.29 log M
	Three	385,000	104	28,600	89	69.65+13.29 log M
	Four or more	385,000	106	20,200	89	71.65+13.29 log M

Remarks

1. Apart from the transverse parallel distance of 450 meters, all noise level measurement points are the same as in Notes 1, 2, and 3 in Article 3.

2. Measurement units are EPNdB; M represents the maximum take-off weight (1,000 kg).

3.) Noise control standards for propeller aircraft with a maximum take-off weight of less than 9,700 kg for which a prototype airworthiness certificate application was made by November 16, 1988 are shown in the following table:

Test points	**Take-off weight greater than or equal to 1,500 kg**	**Take-off weight less than or equal to 600 kg**	**Take-off weight between 600 kg and 1,500 kg**
noise level	80	68	68+13.33 (M-0.6)

Remarks

1. The aircraft shall pass the measurement point in level flight at an altitude of 300-10+30 meters, and pass near a vertical line above the measurement point.

2. Measurement units are LAmaxdB; M represents the maximum take-off weight (1,000 kg).

4.) Noise control standards for propeller aircraft with a maximum take-off weight greater than 9,000 kg for which a prototype airworthiness certificate application was made after November 17, 1988 are shown in the following table:

Test points	Number of engines	Maximum take-off weight (kg)	Noise control standards when the take-off weight is greater than or equal to the upper limit	Minimum take-off weight (kg)	Noise control standards when the take-off weight is less than or equal to the lower limit	Noise control standards when the take-off weight is between the upper and lower limits
Approach noise level		280,000	105	35,000	98	86.03+7.75 log M
Transverse noise level		400,000	103	35,000	94	80.87+8.51 log M
Take-off noise level	Two or less	385,000	101	48,100	89	66.65+13.29 log M
	Three	385,000	104	28,600	89	69.65+13.29 log M
	Four or more	385,000	106	20,200	89	71.65+13.29 log M

Remarks

1. Apart from the transverse parallel distance of 450 meters, all noise level measurement points are the same as in Notes 1, 2, and 3 in Article 3.

2. Measurement units are EPNdB; M represents the maximum take-off weight (1,000 kg).

5.) Noise control standards for propeller aircraft with a maximum take-off weight of less than 9,700 kg for which a prototype airworthiness certificate application was made after November 17, 1988 are shown in the following table:

Test points	Take-off weight greater than or equal to 1,400 kg	Take-off weight less than or equal to 600 kg	Take-off weight between 600 kg and 1,400 kg
noise level	88	76	83.23+32.67 log M

Remarks

1. The aircraft shall pass the measurement point in level flight at an altitude of 300-10+30 meters, and pass near a vertical line above the measurement point.

2. Measurement units are LAmaxdB; M represents the maximum take-off weight (1,000 kg).

Either standards may be applied when the situation simultaneously conforms to the conditions in Subparagraph 1 and Subparagraph 3 of the foregoing paragraph. The same when the situation simultaneously conforms to the conditions in Subparagraph 2 and Subparagraph 3 of the foregoing paragraph. The noise control standards in Paragraph 1 are not applicable to stunt, agricultural, and fire fighting propeller aircraft.

Article 7 [繁體中文]

Noise control standards for helicopters for which a prototype airworthiness certificate application has been made shall comply with the regulations in Table 1.However, noise control standards for helicopters with a maximum take-off weight of less than 2,730 kg for which a prototype airworthiness certificate application was made after November 11, 1993 may comply with the regulations of Table 2.

Table 1

Test points	Take-off weight greater than or equal to 80,000 kg	Take-off weight less than or equal to 788 kg	Take-off weight between 788 kg and 80,000 kg
Take-off noise level	109	89	90.03+9.97 log M
Approach noise level	110	90	91.03+9.97 log M
Hover noise level	108	88	89.03+9.97 log M

Remarks

1. Take-off noise level measurement point: a point 500 meters horizontally in the direction of flight and points 150 meters on either side of the ground flight path base point.

2. Approach noise level measurement points: when the aircraft's approach flight path has a 6 ‾ glide angle, the point beneath the aircraft when its altitude is 120 meters, which is 1,140 meters distant from the point of intersection with the ground. Points 150 meters on either side of the ground flight path base point.

3. Hover noise level measurement points: below the flight path of the aircraft when its altitude is 150 meters.

4. Measurement units are EPNdB; M represents the maximum take-off weight (1,000 kg).

Table 2

Test points	Take-off weight equal to 2,730 kg	Take-off weight less than or equal to 788 kg	Take-off weight between 788 kg and 2,730 kg
Hover noise level	87	82	82+3 [log (M/0.788)/log(2)]

Remarks

1. Hover noise level measurement points: below the flight path of the aircraft when its altitude is 150 meters.

2. Measurement units are SEL dB; M represents the maximum take-off weight (1,000 kg).

Article 8 [繁體中文]

Volume testing procedures and method for measuring civil aircraft noise shall be carried out in accordance with Conventions on International Civil Aviation Annex 6.

Article 9 [繁體中文]

These Standards shall take effect on the date of promulgation.

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