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MH/T 1067-2018

**Helicopter spray quality index and detection method
(English Translation)**

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard was proposed by the Transportation Department of the Civil Aviation Administration of China.

This standard is under the jurisdiction of the China Academy of Civil Aviation Science and Technology.

Drafting organization of this standard. The Second Research Institute of Civil Aviation Administration of China.

1 Scope

This standard specifies the performance indicators, spraying quality indicators and testing methods of helicopter spraying equipment.

This standard applies to the testing, verification and evaluation of the performance of helicopter spraying equipment and the quality of spraying operations.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article Pieces. For undated references, the latest version (including all amendments) applies to this document.

MH/T 1002.1-2016 Agricultural aviation operation quality technical index Part 1: Spraying operation
MH/T 1031-2010 Specification for performance testing of agricultural aircraft spraying equipment
MH/T 1040-2011 Measurement of spraying rate and distribution pattern of aviation spraying equipment

3 Terms and definitions

The following terms and definitions apply to this document.

Conventional spray

Spraying operations with a spray volume of not less than 30 L per hectare.

Note: Rewrite MH/T 0017-1998, definition 3.15.

Low volume spray

Spraying operations where the spray volume per hectare is greater than 5 L but less than 30 L.

Note: Rewrite MH/T 0017-1998, definition 3.16.

Ultra low volume spray Spraying operations where the spray volume per hectare is not more than 5 L.

Note: Rewrite MH/T 0017-1998, definition 3.17.

Flow rate

The amount of liquid sprayed by the spraying equipment per unit time.

Note 1: Rewrite MH/T 0017-1998, definition 7.14.

Note 2: The unit of flow is liters per minute (L/min).

Effective swath width the maximum spray width corresponding to the uniformity of the

acceptable spray distribution.

Volume median diameter VMD the volume of the sampled droplets is accumulated in the order of droplet size, and the cumulative value is the droplet diameter corresponding to 50% of the total volume of the sampled droplets.

[MH/T 0017-1998, definition 3.12.4] Note. The volume median diameter is expressed in microns (μm).

Number median diameter NMD the number of sampled droplets is accumulated in the order of droplet size, and the cumulative value is the droplet diameter corresponding to 50% of the total number of sampled droplets.

[MH/T 0017-1998, definition 3.12.3] Note. The median diameter of the quantity is expressed in microns (μm).

Droplet size spectrum the uniformity of the droplet size distribution.

Note 1: Rewrite MH/T 0017-1998, definition 3.13.

Note 2: Usually the ratio of volume median diameter to number median diameter (VMD/NMD), or the difference between 90% cumulative volume diameter and 10% cumulative volume diameter, and the ratio of the volume median diameter is expressed.

4.1 Flow

The spraying equipment developed or introduced should be used to measure the ground flow and air flow of the system before and during use. For the measurement method, see MH/T 6.5 in 1031-2010. The flow rate deviation should not be greater than 10%. The system flow requirements for different spraying methods are shown in Table 1.

4.2 Effective spray width

The effective spray width should be measured before and during use of the spraying equipment developed or introduced. For the measurement method, see Chapter 5: Common light helicopter See Appendix A for technical parameters such as effective spray width of machine spraying equipment.

4.3 Droplet diameter and droplet spectrum width

The spraying equipment developed or introduced should be measured before and during use of the droplet diameter and the width of the droplet spectrum. For the measurement method, see Chapter 5. different the droplet diameter requirements for spraying methods are shown in Table 2, and the droplet spectrum width requirements for different types of equipment and different spraying methods are shown in Table 3.

5 Quality index of spraying operation

For the quality indicators of helicopter spraying operations, see Chapter 4 of MH/T 1002.1-2016.

6.1 Detection area

It should be selected with good clearance conditions, wide field of vision, no tall obstacles, relatively horizontal ground, not less than 300 m in length, and not less than 100 m in width the area as the test site.

6.2 Meteorological conditions

When testing, the meteorological conditions of the testing area should meet the following requirements.

- a) The weather is fine and the wind speed does not exceed 4 m/s;
- b) The temperature is 20 °C~30 °C, and the relative humidity is not less than 50%;
- c) The horizontal visibility is not less than 5 km;
- d) The cloud height is not less than 1 km.

6.3 Sampling line

The setting direction of the sampling line should be perpendicular to the flying direction, and the obstacles on the surface should be avoided as much as possible when setting up. The length of the sampling line should be determined according to the test purpose degree. At least three sampling lines are set for each test item.

6.4 Samples

6.4.1

The material, specification and model of the sampling sheet should meet the requirements of the testing index, usually water-sensitive paper, thermal paper or magnesium oxide glass slides are used as sampling sheet.

6.4.2

The interval sampling method should be adopted. A sampling point is set every 1 m~5 m on the sampling line, and one or more sampling slices can be set at each point.

6.4.3

Sampling slices should be recovered 30 s after the fog drops are deposited, and sampling slices should be properly collected and stored to avoid damage and moisture.