ICS 49.020
CCS V 35

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 43504-2023

Flight test requirements for flight performance of civil large and medium fixed-wing unmanned aircraft

民用大中型固定翼无人机飞行性能飞行试验要求

Issued on: December 28, 2023 **Implemented on: April 1, 2024**

Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC

Table of Contents

Preface I 1
1 Scope 1
2 Normative references 1
3 Terms and Definitions 1
4 General requirements 1
4:1 Test flight conditions 1
4:2 Test flight object 2
4:3 Documents and information 2
4:4 Personnel requirements 2
4:5 Testing and Modification 2
4:6 Data processing 2
4:7 Result evaluation 3
5 Detailed requirements 3
5:1 Airspeed System Calibration 3
5:2 Takeoff performance 3
5:3 Climb performance 5
5:4 Maximum flight speed 6
5:5 Minimum level flight speed 7
5:6 Ceiling 7
5:7 Battery life performance 8
5:8 Horizontal acceleration and deceleration performance 9
5:9 Hovering performance10 14
5:10 Decline performance11 14
5:11 Landing performance12 14
5:12 Task performance13 14
6 Test flight report 14

Foreword

This document complies with the provisions of GB/T 1:1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents" Drafting:

Please note that some contents of this document may involve patents, and the issuing

organization of this document does not assume the responsibility for identifying patents:

This document is proposed and coordinated by the National Aircraft Standardization Technical Committee (SAC/TC435):

This document was drafted by: China Flight Test Research Institute, China Aviation Comprehensive Technology Research Institute, China Aviation Industry Corporation Shenyang Flying Aircraft Design Institute, Xi'an Aisun Technology Group Co:, Ltd:, Aison UAV Testing Jingbian Co:, Ltd:, Aviation Industry Corporation of China Xi'an Aircraft Design Institute:

The main drafters of this document: Zhang Peitian, Yin Wenqiang, Hu Yingdong, Wu Xinlong, Shu Zhenjie, An Ran, Wang Feng, Zhang Zejing, Tang Tang, Yun Zhengping, Zhong Hai, Pan Jihui, Li Jian, He Zhengyan, Zhu Xiaoping, Shi Guichao, Wang Jiuyuan, Li Lijin, Niu Zhenzhong, Wang Wei:

Civil large and medium-sized fixed-wing UAV flight performance flight Test requirements

1 Scope

This document specifies the content, purpose, conditions, implementation, data processing and results of civil large and medium-sized fixed-wing UAV flight performance flight tests:

fruit assessment and other requirements:

This document applies to the flight performance of civilian large and medium-sized fixed-wing UAVs (hereinafter referred to as UAVs) with a maximum take-off weight of not less than 150kg:

The performance flight test, the flight performance test of pure electric UAVs and other types of UAVs shall be carried out as a reference:

2 Normative reference documents

GB/T 38152

3 Terms and definitions

The terms and definitions defined in GB/T 38152 and the following apply to this document: 3:1 After the engine is installed, its power is lost compared with the bench power:

Note: The installed power loss varies with the engine power status and the flight status of the drone: 3:2 accelerationmethod A test flight method to determine the acceleration performance, climb performance, maximum flight speed and other subjects of the UAV using horizontal acceleration: 3:3 take-offweight take-offweight The amount of fuel required to complete the mission and the total weight of the drone when effectively loaded:

Note: Unless otherwise specified, takeoff weight generally refers to the weight of the drone before the engine is started: 3:4 normal flight weightnormalflightweight Under specified conditions, the drone carries a flight weight of 50% of the fuel inside the aircraft:

4 General requirements

4:1 Test flight conditions Test flight site conditions (altitude, runway) and environmental conditions (atmospheric temperature, atmospheric pressure, atmospheric humidity, wind speed, wind direction, visibility etc:) should comply with the relevant provisions in the technical requirements for unmanned aerial vehicle systems: