



MARS - Mitsubishi Electric Corp., Japan



Type 3 - Nippi Corp., Japan



FFOS - Fuji Heavy Industries, Japan



SkySurveyor - Hirobo, Japan



RMAX - Yamaha Motor Company, Japan



YH300 SL - Yanmar, Japan



RPH-1 - Fuji Heavy Industries, Japan



RobotCopter - Kawada, Japan



RMAX - Yamaha Motor Company, Japan



RMAX II - Yamaha Motor Company, Japan

CONTRIBUTING ORGANIZATIONS

Japan UAS Association

By Akira Sato



Update of UAS Activities in Japan

Nowadays, there is a growing interest in Japan in MAV (miniature air vehicle), especially among university researchers. The purpose of the research in this area relates to potential civilian applications. For example, MAVs can be used as a useful tool for disaster observation and rescue operations. Some people use rotary wing MAVs for their research. One company has already developed a co-axial rotor MAV with a weight of 23,3 grams and a rotor diameter of 13.6 cm. One university researcher is developing a quadri-rotor MAV with a length of 50cm and a weight of 300grams.

Today more than 2300 unmanned helicopters are in service in Japan for agricultural applications, and more than 12000 operators have a license for unmanned helicopters in Japan.

In 2007, about 220 new unmanned helicopters were registered and UAS sales represented approximately 30 million US dollars, including spare parts sales.

The history of unmanned helicopters goes back twenty years. Since then the Japanese farming industry has been plagued with problems like the aging of the work force and a lack of younger generation successors. In light of this situation, various kinds of unmanned helicopters were developed to spray pesticides on rice fields in Japan. In 1989 only 106 unmanned helicopters and 469 operators were registered. Each figure has increased by more than 20 times in 18 years.

The Japan UAV Association (JUAV) is the only organization representing the industries which develop, manufacture and operate unmanned aircraft systems (UAS) in Japan. JUAV revised 'Safety Standards for Commercial-Use, Unmanned, and Rotary - Wing Aircraft in Uninhabited Area' by adding autonomous unmanned helicopters to the manual operated unmanned helicopters. The old 'Safety Standards' certified the aircraft, the pilot, the mechanic, and maintenance shop only for manually operated unmanned helicopters, such as Yamaha RMAX and the Fuji RPH2. However, the new 'Safety Standards' are revised to include autonomous unmanned helicopters. Based on these standards the Yamaha RMAX G1 was certificated in January 2008.

Adding these 'Safety Standards' for Rotary - Wing Aircraft, JUAV has also established 'Safety Standards for Commercial-use, Unmanned, Fixed-Wing Aircraft (maximum take-off weight: from 20 kg to 50 kg; maximum airspeed: 70m/s or less) in uninhabited areas'.

JUAV is now examining establishment of 'Safety Standards for Smaller Commercial-use, Unmanned, Fixed-wing Aircraft (maximum take-off weight: less than 20 kg; maximum airspeed: 35m/s or less) both in uninhabited areas and in inhabited areas'.

For enhancing these Safety Standards, JUAV and JAXA (Japan Aerospace Exploration Agency) decided to collaborate and establish a Working Group (WG) to discuss standards for commercial use UAS, especially outside of segregated airspace. The goal of this working group is to establish the required standards by 2010.

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