COMPUTATION PROCEDURE OF GYROCOPTER PERFORMANCE

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Abstract: Main purpose of the thesis was to develop and test the calculation procedure of initial calculation of ultralight gyrocopter performance. Based on the data collected during the tests of the gyrocopters model fuselage in wind tunnel which was then converted for the ship in a natural size. Additionally computational model of the rotor was developed. On this basis, the most important performances of the gyro were theoretically determined for various flight phases and different configurations. Then, after creation of the timetable and full plan of the ground and flight tests, tests of the prototype Taifun gyrocopter started. Taifun gyroplane is the latest gyro model of the Aviation Artur Trendak company from Poland. It was presented on the AERO Friedrichshafen 2016 fair in Germany. The prototype performed its first flight in June 2016. The conclusions of this thesis are to enable the use of the calculation procedure for any new gyrocopter prototype in the future of the company. After comparing the calculation results and the prototype testing results important corrections can be made in the proposed calculation procedure for better compliance with a real model.

Prototype of the Taifun gyrocopter