

## The Impact of Motor Predispositions of Pilot-Cadets on Results in Aviation Synthetic Efficiency Test

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**Abstract :** The aim of the study is to determine the types of motor skills and their impact on achieving results while undergoing Aviation Synthetic Efficiency Test (ASET). The study involved 59 cadets, 21 years-old on average, who are studying on first year for a pilot. The average weight of the respondents is 73.8 kg. The subjects were divided into two groups by weight: up to 73.8 kg -group A (n-30) and above 73,8kg -group B (n-29). All subjects underwent the following tests: running at 40m, 100m, 1000m, 2000m, pull-ups, ASET. In both groups, the cadets were divided into two motor skills types taking into advance 40 m running, pull-ups, 2000 meters running and then subjected to do ASET. There has been shown statistically significant increase in group B in body height, weight and BMI with  $p < 0.0003$ ,  $p < 0.0001$ ,  $p < 0.0001$  compared to group A. The results indicate that the dominant motor type in all subjects is the endurance-strength model, which reached the speed  $V = 1,42\text{m/s}$  in overcoming ASET. This is confirmed by the correlation between 2000m and pull-ups  $r = 0.37$  ( $p < 0.05$ ). In group A, the results indicate that the dominant type of motor is a high-speed-endurance model (26.6%), which reached speed  $V = 1,42\text{m/s}$  in overcoming ASET. In Group B, there was type of motor speed-strength (20.6%), which reached speed of  $V = 1.45\text{m/s}$  in overcoming ASET. This confirms the correlation between ASET and pull-ups  $r = 0.56$  ( $p < 0.005$ ). Examined cadets who were having one dominant characteristic achieved worse results is ASET. The best results from all examined cadets in overcoming ASET had the type of motor endurance-strength, in group A endurance-speed model and in group B type of speed-strength

**Keywords :** ASET, Aviation Synthetic Efficiency Test, motor skills, physical tests, pilot-cadets

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