

THE FUNCTION TEST OF CANOE AND KAYAK STROKING BALANCE DEVICE

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This purpose of the study was to develop a balance device to be used in canoe and kayak stroke biomechanics. The balance device could be an excellent instrument for talent identification, measurement and training. We design the size of the boat on the ergometer was the same as the competition boat (Figure1). The ergometer was designed to be the same as the competitive craft (canoe/kayak) under flatwater conditions such that both sliding and rotational balance could be measured (Figure 2). In the past instruments used to assess balance (Wei-Hua Ho et al., 2000); Plagenhoef, 1979) did not simulate real stroking in combination with seat-balance. Therefore, the function test of canoe and kayak stroke ergometer with balance device for simulation on water can solve the above problems.

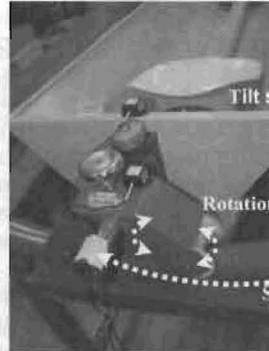
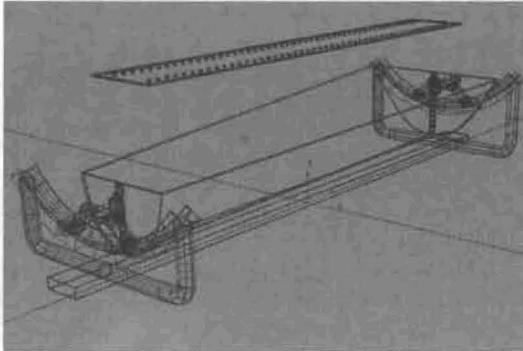


Figure 1 Balance device design chart. **Figure 2** Balance device movement type.

Ten athletes participated in the study. They stroked on the balance device with maximum effort for 30 s, 60 s and 120 s time periods. Seating balance, collected at 1000 Hz, was measured using a tilt sensor and a dynamometer placed in the front of the shaft. A Mp 150 Data Acquisition Systems and specifically developed software enabled data to be collected. Such a functional test of balance can be used in both canoeing and kayaking to supplement on-water testing. It is therefore an appropriate instrument to assist in the kinematics and kinetics analysis of canoeing/kayaking stroke mechanics.

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