

KINEMATICAL RESEARCH ON 407C OF ELITE CHINESE MALE 3-M SPRINGBOARD DIVERS

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INTRODUCTION: Diving is a dominant event of China in the 21th century. This research is to find some common features in kinematical parameters of elite diving athletes and thus to serve athlete training.

METHOD: The 407C dive was the objective of this research. Nine elite male athletes, each with three dives and the best one was digitized. One camera was applied for frontal and lateral photography of the dives, and a synchronous system was used to acquire both above-water and under-water performances. All records were put into a computer and digitized using the TJH-02 motion analysis system.

RESULTS: 1. Average swing of board bouncing was 0.420m.
2. Average swing of board pushing before the lowest point of board was 0.734m; average angles of hip, knee and ankle in the best performance were 81.0°, 85.4° and 86.8° separately at the lowest point of board.
3. After the lowest point of board, average swing of board elevating was 0.879m, average velocity of mass when taking off was 3.97m/s, average height of springing up was 0.845m and average angle of takeoff was 72.9°. 4. During the phase of springing up, the average time from somersaulting to tuck position was 0.14s; when somersaulting, the average hip and knee angles were 38.7° and 58.7°; when most tightly somersaulting, the average hip and knee angles were 28.7° and 33.6°; the average duration for the first, the second and the third circle were 0.40s, 0.33s and 0.34s separately; the average centre of mass height after somersault was 3.09m; the average hip, knee and ankle entry angles were 130.0°, 159.7° and 166.6° separately; the total time from taking off to finish was 1.53s.

CONCLUSION: All kinematical data in the research certifies that entry with splash is a key technique in diving. It reflects and will be affected by the quality of all parts before entry, including hurdle landing, takeoff, connect, somersault, open, entry and under-water performance. Four key notes, including higher jump, tighter twist, earlier open and tighter arm, are concluded and suggested to be applied in athlete training.

REFERENCES:

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