

KEY WORD: BIOMECHANICAL/KAOSAI GALAXY/KNOCK-OUT PUNCHES

WATCHARIN PRACHSILP : THE BIOMECHANICAL ANALYSIS OF KAOSAI GALAXY'S KNOCK-OUT PUNCHES IN THE STANDING DEFENCE WORLD CHAMPIONSHIP BOXING.

THESIS ADVISOR: ASSOC PROF. THANOMWONG KRITPET, Ph.D. 116 PP.

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The purpose of this research were to analyzed kinematic variables and movement variables by using the biomechanical analysis of Kaosai Galaxy's knock-out punches in the standing defence world championship boxing. subjects were 59 knock-out punches which composed of 14 left hook, 11 right hook, 10 left uppercut, 4 right uppercut, 9 left straight, 4 right straight, 3 left swing and 4 right swing. A video tape recorder was used for collecting data. The obtained data were distance, time, velocity and acceleration of knock-out punches, analyzed in terms of means, standard deviations.

The results indicated that :

A. Kinematic variables

1. The average distance of left hook was 80.90 c.m. average time was 0.15 s., average velocity was 5.49 m/s and average acceleration was 39.92 m/s/s.
2. The average distance of right hook was 73.33 c.m. average time was 0.14 s., average velocity was 5.32 m/s, and average acceleration was 39.65 m/s/s.
3. The average distance of left uppercut was 55.23 c.m., average time was 0.15 s., average velocity was 4.27 m/s, and average acceleration was 38.32 m/s/s.
4. The average distance of right uppercut was 58.84 c.m., average time was 0.18 s., average velocity was 3.42 m/s, and average acceleration was 20.08 m/s/s.
5. The average distance of left straight was 79.25 c.m., average time was 0.18 s., average velocity was 4.59 m/s., and average acceleration was 27.80 m/s/s.
6. The average distance of right straight was 77.12 c.m., average time was 0.21 s., average velocity was 3.74 m/s., and average acceleration was 18.19 m/s/s.
7. The average distance of left swing was 122.06 c.m., average time was 0.16 s., average velocity was 7.73 m/s., and average acceleration was 51.28 m/s/s.
8. The average distance of right swing was 128.45 c.m., average time was 0.15 s., average velocity was 8.59 m/s., and average acceleration was 58.45 m/s/s.

B. Biomechanical Variables

Since Kaosai Galaxy was a left handed boxer, he must step the right foot in front of the left one, lift the right arm in front of the left one, and keep right shoulder in front of the left one. In exerting all knock-out punches, Kaosai turned trunk and hip along swinging punches. The action was the process of the second kind of wheel and axis, while the vertebra as the axis and the scapular and clavicle as the wheel. It was the mechanical disadvantage of force but the mechanical advantage in distance and velocity. While punching, he would throw his body weight from the back foot to the front one. The shoulder's weight would be thrown ahead that would make more efficiency.