THOMAS FLAIRES ON THE POMMEL AND FLOOR: A CASE STUDY

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INTRODUCTION: To win bonus points, gymnasts must execute skills with creativity, virtuosity, and consistency. Creativity is demonstrated by introducing new skills, combining existing ones, or adapting skills that were initially performed in a particular apparatus to other ones. Virtuosity is expressed by executing skills with exceptional technique. The Thomas Flaires (circles performed with the legs split as shown in Figure 1) were originally introduced and performed on the pommel horse, but have since been adapted on other apparatuses including the floor exercises and parallel bars. Understanding the complexity by which consecutive Thomas Flaires are performed and what effect—if any—the different physical characteristics of the two apparatuses may impose on the execution of the skill would be valuable to coaches and gymnasts seeking to improve performance, judges evaluating gymnastics routines, and scientists studying motor skills.

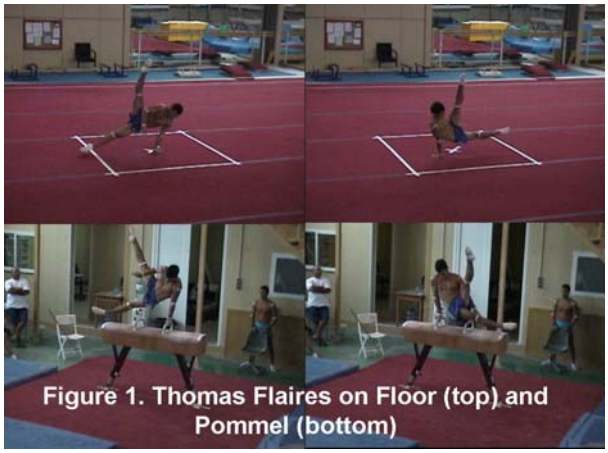
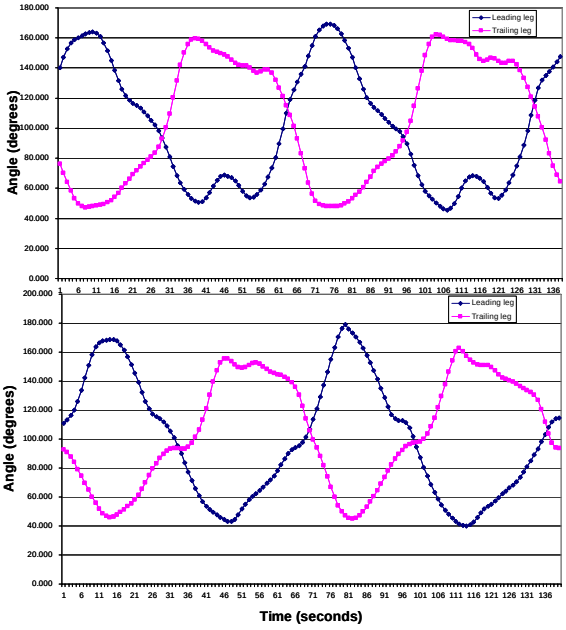


Figure 1. Thomas Flaires on Floor (top) and Pommel (bottom)

METHODS: Thomas Flaires performed by a skilled gymnast on both the floor exercises and pommel horse were videotaped utilizing two 60 Hz cameras. For each apparatus, commencing from and ending on the same point in the rear support position, two consecutive Flaires were analyzed utilizing the Ariel Performance Analysis System (APAS). The feet, hips, shoulders, and elbow joints, and both hands were digitized. Position data were smoothed by digital filtering at 7Hz.

RESULTS AND DISCUSSION: Preliminary results suggest that in both, the pommel horse and floor exercises highly skilled gymnasts execute Flaires with consistency and that the mechanics between the Flaires on the two apparatuses are very similar (Figure 2). The patterns of the hip and shoulder joint angles and linear velocity of the center of mass were similar to the patterns for "Magyar spindle in Flaires" published previously (Cuk and Karacsony, 1995). However, minor temporal differences between our data and the previous report were observed.

Figure 2. Floor (top) and Pommel (bottom) Hip Joint Range of Motion



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