

MODELS FOR TEACHING TECHNIQUES AND ASSESSING MOVEMENTS IN ATHLETICS

By Günter Tidow

The author outlines the significance of what is known as the “model technique” of athletics events. He explains why model techniques were constructed and how to make use of them in training and coaching. This paper is therefore an introduction, necessary for the understanding of the two articles that follow. These are centered on the analysis sheets of the model techniques. In this issue of NSA, Günter Tidow and Eckhard Hutt illustrate the analysis sheets of the horizontal jumps; the next issue will deal with the analysis sheets of the vertical jumps. Re-printed with permission from New Studies in Athletics.

Dr. Günter Tidow is the Head of the Department of Athletics at the University of Bochum (FRG). He contributed an article on the 1985 IAAF Decathlon Scoring Tables for NSA no. 2, Vol. 4 Translated from the original German by Jurgen Schiffer

INTRODUCTION

Observing the movement behavior of athletes in track and field events, it is striking how few techniques are applied throughout the world nowadays. It would seem as if, in recent athletic history, a kind of “Motor Darwinism” has been in operation (see Tidow 1981). To meet the general demands of athletics (time minimization in the runs and distance maximization in the jumps and throws), a selection process, leading to the “survival of the fittest” techniques, has been, and probably still is, taking place.

The most recent technical innovation, the Flop, is more than twenty years old and, although Christian Schenk (GDR) the Olympic gold medalist in the Decathlon achieved a personal best of 2.27m with the straddle in Seoul, all the 1988 Olympic finalists in high jump used Fosbury’s style to clear the bar. (The Flip technique in the long jump, five years more recent than the Flop, was banned for safety reasons.)

However, despite the fact that there is a lack of technical alternatives (in only the flight phase of the long jump and the acceleration phase of the shot put are there two rival and similarly successful techniques observable), there is an abundance of individual interpretations and personal styles within each event’s basic technique.

This is why, in my opinion, the construction of so called “Model Techniques” was necessary. They provide both coaches and athletes with “set values” for technique training.

Technique training can be defined as an individual process of approaching (and finally adapting to) a given “set value” which is thought to be ideal. In the course of this process, positive performance elements are repeatedly enforced and refined. At the same time incorrect elements are eliminated and new ones are integrated.

This definition clearly indicates that in technique training the athlete’s movement sequence is assessed relative to a certain “set value”, and that the result of this assessment has to be translated or “transformed” into verbal instructions on how to proceed.

Every technique consists of various components. From the performing athlete’s point of view, a technique consists of, among other aspects, the individually specific kinesthetic, acoustic and dynamic “sensations” of his/her event. However, for the coach, it is the kinematics of the movement sequence observed to which he particularly refers to during his diagnosis and the following discussion of faults with the athlete. (It must be mentioned here that the coach’s ability to identify himself with the athlete while observing — leading to the “Carpenter Effect” probably plays an important role in detecting faults as well.).

In athletics, however, the visual perception of movements is difficult because of high angular velocities, very short presentation periods, diametrically opposed sequence couplings and acyclic movements. The use of video facilities in combination with video printers and high frequency cameras is therefore required in order to compensate for the limitations of unaided human perception. Only through the application of these aids can a complete picture of the real movement sequence be made available. Today, it is normal to examine all details of high-velocity movement phases, which cannot be observed with the naked eye, by using slow motion, still projection and unlimited repetition. Video material, therefore, is an important tool for the coach’s assessment of the athlete’s technique as well as for comparison to a “set value”. This evaluation is, of course, based on his conception of the respective “set value”.

The implication is that both the quality and precision of the optical dimension of the “set value” (and its oral or written description) are of decisive importance. Only a clear, jointly fixed goal and a mutually understood system of verbal signals guarantee that, in technique training, the athlete and coach understand one another.

Although it may sound contradictory, this means that particularly in the case of fast movement sequences (which are very difficult to observe because of their characteristic presentation and which therefore are assessed with the aid of

video), one needs corresponding static “set values”. For this purpose, the Model Techniques have been developed. Beginning with this issue, a series of “Analysis Sheets”, based on the “ideal-typical” phase structure for each event, will be presented in NSA. On each Analysis Sheet, the respective “ideal-typical” phase structure is represented by sequential figure *drawings* and written descriptions containing appropriate criteria for assessment.

By “ideal-typical”, we mean chosen technique models which, from the point of view of effectiveness and economy, represent the optimal movement behavior for the achievement of the given athletic task (*i.e.* faster times in running events or greater distances in the jumps and throws). The choice of these “ideal-typical” phase structures was based on detailed analyses of a large number of movement sequences of world-class athletes.

Since a consensus on “optimal” movement behavior has not been reached for many disciplines, it must be admitted that when applying such an inductive and “generalizing” method, subjective assessments cannot be completely excluded. Furthermore, it must be pointed out here that the very important “rhythmic dimension” of each event (see Becker 1988) cannot be represented on these “Analysis Sheets”, although the term “sheet” implies a close relationship to music which does contain set values for notes and rhythm.

Apart from the analogy “conductor- artist” versus “coach-athlete” (both referring to “sheets” and both, hopefully, pursuing an identical [motor] goal), critics may find fault with a missing element of “individualization”. The reply to this could be that Model Techniques are an attempt at making available a basis for imparting and assessing movement techniques. These “Analysis Sheets” should prevent neither the individual development from “basic technique” to “personal style” nor the use of technical variations.

If one considers further that, when selecting a “set value” for his athlete, every coach is confronted with very similar problems — when, for example, he must make his personal choice of the varied, sometimes highly individual and even faulty movements offered via film/video, picture sequence and actual observation — the objective of this NSA series on Model Techniques becomes apparent: to present standpoints and stimulate constructive criticism. If this series meets with a positive response, a further step towards the common goal of perfecting athletic movement techniques is certainly possible.

**CACC note: you will find most articles from this series available on our website: www.athleticscoaching.ca under the Sport Science page.