Common Errors in the High Jump
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Importance of the Approach. In the high jump, nearly all faults can be traced back to the approach, particularly the curve and how well the integrity of the curve is maintained until takeoff. When considering layout and alignment, a good 10 step high jump approach shows 5 characteristics.

- Four steps on the straight, a two step transition into the curve, and a 4 steps on the curve
- A smooth transition from straight to curve (Figure 1).
- A smooth, round curve whose integrity is maintained until takeoff (Figure 1).
- The curve is comprised of about 75 degrees of a circle (Figure 2).
- A final angle of approach of about 35 degrees to the bar (Figure 3).

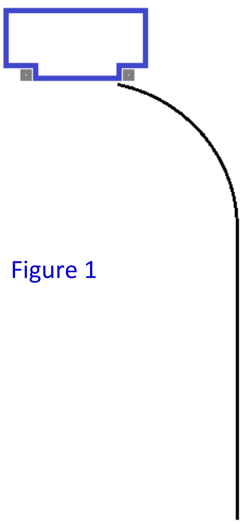

Figure 1

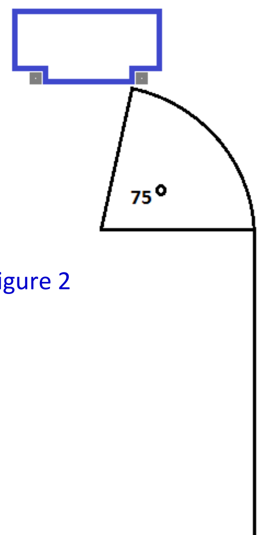

Figure 2

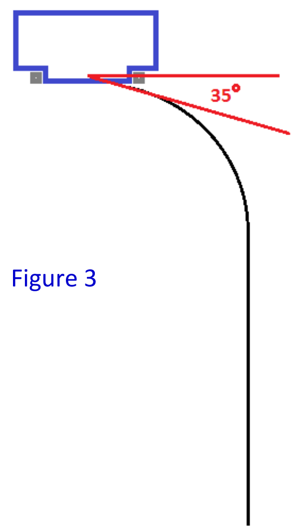

Figure 3

Common Approach Errors. Following is a list of the most common errors I encounter in the high jump approach. Nearly all are related to the quality of the approach and curve.

- **No Approach At All.** Many coaches come to me with high jump problems and when I ask them for their jumper's approach dimensions, I often get a vague response, like "well we really don't measure". No measurements means no consistency and no solutions. In fact it breeds lots of bad habits that are tough to fix later. While beyond the scope of this article, every jumper should have a measured approach and checkmark plan, as well as a triangulation system to insure consistency in measurement.

- **Incorrect Step Distribution.** In these cases, the number of steps devoted to the curve is incorrect. In a 10 step approach, the curve should be initiated on the 5th and 6th steps, with the 6th step showing all the characteristics of the curve. So, depending on your "terminology" and labeling, the curve may contain from 4-6 steps. I frequently see curves ranging in length from 2 to 10 steps. The shorter curves leave no chance to establish good curve running mechanics, and the longer curves leave no chance to develop the tangential forces needed for success in the event. The number of steps devoted to the curve should remain the same regardless of the total number of steps used in the approach (meaning the number of steps on the straight may vary).

- **Flattening the Curve.** In this error, the first 5-6 steps push the jumper to far in, forcing a harder turn initially and a flattening out of the last few steps of the curve. (Figure 4). This error can be identified by the jumper's path after takeoff being directed just behind the far standard, rather than deeper into the pit (Figure 5). The solution involves backing the jumper up so that the curve is initiated farther away, and making sure the first few steps of the approach are consistent in length.

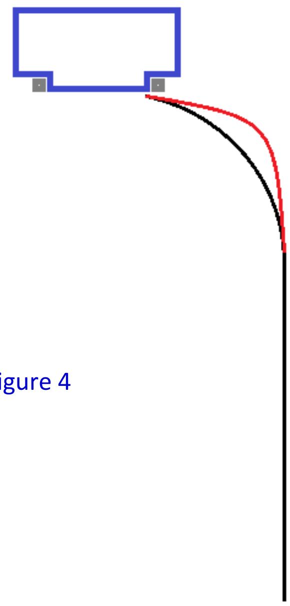

Figure 4

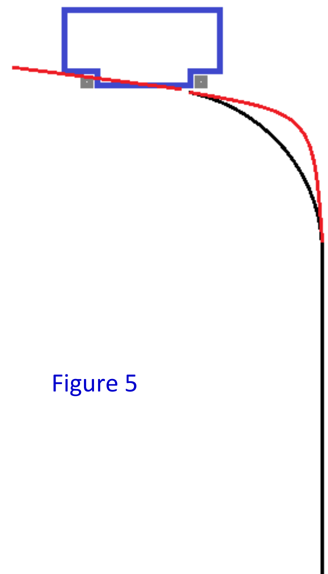

Figure 5

- **Cutting the Curve.** In this error, the jumper cuts sharply toward the pit to initiate the curve. (Figure 6). While the approach might seem technically correct, the sharp turn results in a jumper who runs a much smaller portion of a circle (only 45 degrees rather than 75 degrees), resulting in a very wide radius of the curve (Figure 7). In this case the checkmark placements are immaterial since they don't reflect the tightness of the curve. These jumpers usually must be backed up as well, but must also be taught to keep moving in a generally forward direction during the first steps of the curve. In a 10 step approach, the general direction of travel through steps 4,5,6 and even 7 is predominately forward. Often jumpers who do not drive out of the back hard make this mistake as well, since the initiation of the curve is a convenient spot to drive hard and establish momentum.

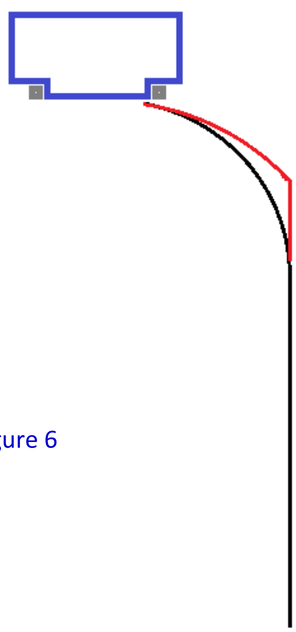

Figure 6

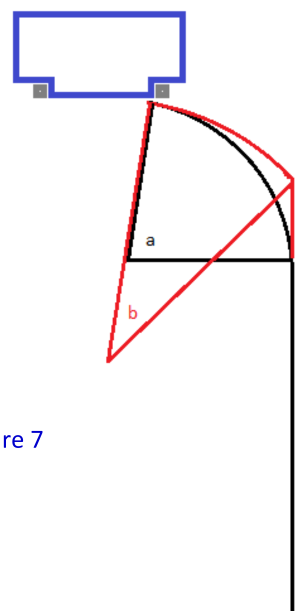

Figure 7

- **Stepping Out of the Curve.** In this mistake, the jumper steps off of the path of the curve (Figure 8). Most typically, the jumper steps wide on the penultimate step, landing the right foot to the right of the curve (for a left footed jumper). Many jumpers will step inside of the curve at takeoff, and some actually do both. Causes can be being too close to the bar or an insufficiently tight radius of the curve. Often it is simply a bad habit that must be broken. Good coaching practice involves standing behind the jumper as the curve is run. This is the best place to see missteps and deviation from the curve, and any lateral or side to side movements in the final steps should be considered a serious fault.

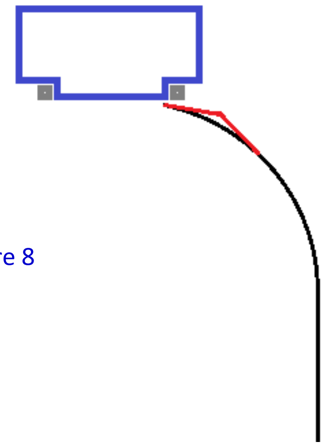

Figure 8

Takeoff and Flight Errors. Most high jump complaints I receive are characterized by problems in takeoff and flight. In any jumping event, the flight path of the jumper and rotations experienced by the jumper in flight are established while still on the ground. For this reason, in spite of their appearances, these flight and takeoff problems are rooted in the effectiveness of the approach, particularly the integrity of the curve. In fact, most high jump complaints can be linked directly to one of the problem approaches we have just discussed. Following is a list of typical, highly visible high jump errors, and their potential causes and solutions.

- **Falling on the Bar.** When the jumper falls on the bar, and the peak of flight is in front of the bar, the natural coaching tendency is to assume the jumper is taking off too far from the bar. This is never the case. Jumpers inherently refuse to take off too far away from the bar… its unnatural and unsafe. The forces that push the peak of flight in toward the pit are generated in the curve, so falling on the bar is always a curve related problem. In most cases, the curve has flattened out or ceases to exist. (Figures 4 and 6 show typical approaches associated with this problem). In the rare case that the curve looks good and this happens, it's time to adjust the approach checkmarks to tighten the curve's radius.

- **Sitting on the Bar – Failing to Arch.** When the jumper fails to layout or arch well, the natural coaching tendency is to work harder on the arch or layout. Anyone who has battled this problem in this way can attest to the futility of this plan of attack. Flight rotation is a prerequisite to a proper flight layout, so… no rotation, no arch. The rotation is produced due to the forces of the curve acting at takeoff, so in these cases, the final steps of the approach are on a straight (not curved), and are too parallel to the bar. (Nearly all bar-sitters use the approach seen in Figure 4).

- **Jumping Into the Bar.** In this situation, the natural coaching tendency is to cue the jumper to take off vertically… which might work if the problem is a simple matter of undisciplined jumping or premature flight movements. However in most cases, this isn't the case. To jump effectively, the jumper's hips must pass directly over the takeoff foot during takeoff. Jumpers who jump into the bar usually show the hips passing to the right of the takeoff foot (for a left footed jumper). This nearly always results from misalignment, resulting from the jumper stepping out of the curve. These jumpers usually show the approach shown in Figure 8).

- **Assuming Long Positions Over the Bar.** In flight, high jumpers should bring the hands to the hips and bend the knees. This shortens the body to accelerate rotations over the bar. Poor body positions result when the jumper straightens the drive knee after takeoff, creating a long, extended body position over the bar. This extended position slows the necessary rotation about the bar. In fact, error might result in an exaggerated arch, leading the coach to mistakenly believe it's good technique. In this situation, the natural coaching tendency is to cue the jumper to keep the knee up. Jumpers who straighten the knee do so inherently to slow their rotation into the bar, so these jumpers should be treated like those who jump into the bar, and the causes of this problem are the same as well, usually stepping out of the curve (as in Figure 8).

- **Traveling Along the Bar.** Some high jumpers travel down or along the bar excessively at takeoff, increasing dramatically their chances of contacting the bar. The problem is one of simple geometry… the final angle of approach is too small. The final angle between the approach and the crossbar, rather than being close to 35 degrees, is considerably less. These jumpers flatten the curve (and use approached like those in Figure 4), and should be corrected accordingly.

- **Hammock Jumping.** In this problem, the jumper initiates the layout by throwing the shoulders back at takeoff prematurely. The high jump resembles someone falling back into a bed or hammock. You can always identify the hammock jumper by their position when they hit the mat… the legs are directed toward the far side of the pit and the body is parallel to the crossbar (rather than the legs being directed toward the crossbar with the body at a right angle to it). These jumpers usually show final steps of the approach flattened and too parallel to the bar (as in Figure 4). Hammock jumpers throw the shoulders back toward the near standard during takeoff, so a good cue is to have the jumper direct the right shoulder (left footed jumper) over the bar and toward the back opposite corner of the pit during the jump.