



BIOMECHANICS OF THE JUMP STRIDE

The Jump Stride comprises of 4 phases

- Approach
- Take-Off
- Suspension, and
- Landing

APPROACH

The horse sees the fence, lowers and stretches the neck and head. This enables the forehand to lift, the back to round and hinds to come under the body for propulsion

The approach and take-off are very important as it pre-determines the path of the horse's centre of gravity during the air-borne or 'suspension' phase

TAKE OFF

To lift the forehand, horse must transfer the centre of gravity backwards. If the forelegs slip – hind limbs cannot generate the same lift

At the take-off we want to see hind limb synchrony (the horse altering timing of hind limb placement so they land and push off at the same time). Hind legs are placed close together in front of the fence



As the 'stand time' of the hind legs increase, the impulsion also increases. As the fences get larger the approach should be slower to allow for ideal hind leg synchrony. If the approach speed is increased the ability of the horse to display hind end synchrony is reduced, thus reducing upward impulsion.



SUSPENSION

While airborne the horse unfolds its forelimbs and prepares to land. Head and neck are raised to help change the forward rotation of the descent into a backwards rotation bringing hind limbs to the ground.





Most of the horses joints are flexed, and a good show jumper uses limb flexion to its full advantage. The centre of gravity moves back

THE LANDING

The aim of landing is to transfer the vertical movement into horizontal movement while minimising concussion to the limbs, and to prepare for the next stride

The non- lead foreleg hits the ground first at 90 degrees. It has very little deceleration effect, this is left to the lead fore that hits the ground at 68 degrees. The non-lead fore bears most of the concussive force



On landing the hind legs are brought down under the body, but not as a pair. Before the second hind leg hits the ground the opposite forelimb has already pushed off.

