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PRESS RELEASE

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Force Measurements Determine The Effect of Girth Tension on Horse Gait

Moulton College, Northampton - Using electrical systems for the measurement of mechanical forces is by no means limited to machines and laboratory based applications. In her recently completed research thesis 'Girth Tensions and their Effects on Equine Stride Characteristics', Sue Wright of Moulton College Northampton used load cells, motion sensors and GPS amongst other technologies to measure and record the tension within the girth strap used to hold the saddle in place.

The aim of the investigation was to determine if girth tension affects equine stride characteristics. The positioning and tightening of the girth strap has traditionally been based on the rider's preference or own training, in the knowledge that too loose or too tight would be dangerous to both rider and horse.

It is well known that optimum girth tension varies between the size and type of horse, the activity –racing etc and the type of girth. However there is little if any published information on girth tension and how this may affect the locomotion of the horse, that is duration, stride length and speed.

A custom designed S-type tension load cell was used to continuously monitor the tension in the girth during the period under test. The load cell was mounted almost vertically alongside the chest of the horse where unwanted torsional effects on the load cell would be at their minimum, it was fitted to the strap via rod-end bearings and a cam buckle so that minute changes to the girth tension could be made.

This was connected to a T24 telemetry module, located in a pouch on top of the saddle which transmitted the force reading wirelessly to a telemetry base station located nearby. This was plugged into a laptop that served to both power it and log the tension reading.

Extensive testing on 19 horses at 4 girth tension settings were conducted resulting in definite conclusions on the effect of girth tension on the speed, stride length, stride duration and walk.

This application is typical of the way in which Applied Measurements' custom force sensors are helping all sectors of research and development as well as solving the needs of industrial production.

For more information on our custom force sensors capabilities and other load measurement products, please contact us on 0118 9817339 or email info@appmeas.co.uk

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Note to editors: Applied Measurements Limited offers a comprehensive selection of transducers based on strain gauge technology. Our product range includes sensors to measure load, pressure, torque and displacement, in addition to other unique sensor developments and customised products.

To support the transducer range, a variety of analogue and digital instrumentation is available including high resolution, high speed and RS232/485 equipped signal conditioners and indicators. Also, portable battery powered indicators with integral data-loggers, wireless telemetry products are available, enabling us to offer complete systems with calibration traceable to UKAS standards.

For additional images of products, please contact the author.

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