
Case study: Hydraulic tiller steering control

The LVVTA was presented with a vehicle (Holden Barina) with a hydraulically and electronically controlled steering system, to suit the needs of a physically disabled driver who was unable to use a conventional steering wheel.

THE ISSUE

This system meant there was no direct mechanical linkage between the steering control (in this case a tiller) and the front wheels.

The LVVTA's *Disability Adaptive Control System* Standard and *NZ Hobby Car Technical Manual* cover steering modifications.

While this tiller, or joystick, steering system met the mobility and independence needs of the vehicle owner, its innovative design was not allowed for under the existing LVVTA code. An alternative method of approval was required.

THE SOLUTION

The LVVTA's Technical Advisory Committee (TAC) is a group of technical experts, with a range of backgrounds, from certifiers to engineers to fabricators, who are charged with approving alternative design solutions that are innovative. They were asked to assess and approve this solution.

The TAC recognised that the level of complexity of the modifications on this vehicle – a combination of mechanical, electronic and hydraulic modifications – meant a document-based approval was not appropriate. A team of specialists (Technical Support Team) was therefore used to assess the vehicle and ensure it was safe and fit for purpose.

THE RESULT

The Technical Support Team inspected the vehicle, recommended some improvements (mostly around ensuring the vehicle had suitable fail-safe and hydraulic back-up systems required by regulation), and once those changes had been carried out, reported back to the TAC.

The TAC then worked with LVVTA staff, and the vehicle with its specialist control system was certified.

