Abstract

Conventional skateboard trucks are currently unable to meet the challenges of the modern enthusiast. They are lacking in key performance metrics such as handling, stability, and traction. Longboard enthusiasts, whom rely heavily on handling performance, are hungry for new and innovative technology to help bring the sport to the next level. The aim of this project was to solve these problems by applying specific aspects of automotive steering geometry and best engineering practices. Three successive prototypes were designed, with the first two prototype sets being manufactured and extensively tested. The first prototype served as a proof of concept, but suffered from design and manufacturing complexities and would have been too expensive to be mass produced. Positive and negative feedback was obtained from enthusiasts which was used to design the second prototype set. More testing was done and while the second prototype set showed major improvement across all key metrics, problems still existed. A third prototype design was developed to solve the remaining problems and is currently being manufactured. Overall, the result of the project is a longboard truck system that is superior to current products in terms of stability and handling. Its simple design and ease of manufacture allow for a potentially very competitive price point. Furthermore, the new technology will be a basis for future developments and refinement much like the roller skate truck has been since the 1940s.