The Cheetah Flex Foot

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BME 281 Second Presentation, November 28, 2012 <laurimcdee @my.uri.edu>

***Abstract*—The Cheetah Flex Foot is a lower leg prosthetic that was designed specifically for use by athletes. Its innovative technology and light weight design allows for lower leg amputee's to continue involvement in the sports and activities they enjoy.**

I. Introduction

In 1976, when Van L. Phillips was 21 years old, he lost his foot in a water skiing accident. At the time, there were no prosthetics available that were as functional and comfortable as he wanted, so as a result he was inspired to switch his studies in school to prosthetics. A year after graduation, in collaboration with an aerospace company, he began work on a carbon fiber "J-shaped" foot. Thus, "The Cheetah Flex Foot" was born. (2)

II. Methods

The Cheetah Flex Foot is made of carbon fiber and designed in the shape of a "J". It is designed for use by lower leg amputees, but is also available for use by some above-knee amputees as well. There is a socket where the remaining portion of the leg attaches, and a sole on the bottom part of the prosthetic. The Cheetah Flex Foot works so well because it was designed to mimic the function and reaction of a normal human foot and ankle. "When weight [is] applied by landing on the heel, it [is] converted into energy that literally put[s] spring into the step, simulating the spring action of the normal foot and allowing the wearer to run and jump. (2)"

III. Results

The Cheetah Flex Foot has been a very successful and innovative piece of technology. It is designed specifically for runners, and has proven to be not only effective, but extraordinary in its design. The Cheetah Flex Foot is not only a comfortable piece of technology; it also performs at a remarkably high level. Today, The Cheetah Flex Foot is worn by many professional, Olympic, and Paralympic athletes, many who hold national and international records.

IV. Discussion

The Cheetah Flex Foot is clearly a revolutionary and extraordinary invention, which has changed the lives of many athlete amputees. However, The Cheetah Flex Foot also has some disadvantages. The success of athletes who use The Cheetah Flex Foot has caused much discrepancy on whether the use of The Cheetah Flex Foot in competition gives those athletes an advantage over able bodied athletes. In 2007, after suspicions arose that the use of a prosthetic limb could cause unfair advantages over able bodied athletes, it was ruled that athletes using prosthetic limbs would not be allowed to compete in International Association of Athletics Federation (IAAF) events. Following that decision, extensive research was done by a team of scientists and the results scientifically proved that the use The Cheetah Flex Foot does not give an unfair advantage to its users. Given those results, in 2008, the Court for Arbitration of Sport (CAS) ruled that the use of prosthetic limbs in IAAF events was permitted. For the world of amputee athletes, this is huge, and opens up many doors for them to become involved in athletics in the same way able-bodied athletes would be. (1)

Although The Cheetah Flex Foot is tremendously successful in what it is designed to do, I think that it also has many opportunities for improvement in the future. The biggest area I would like to see The Cheetah Flex Foot improve is in how versatile it is. Currently, The Cheetah Flex Foot is designed specifically for use by runners. However, in the future, I would like to see the technology behind The Cheetah Flex Foot be applied for use by amputees in any athletic sport they wish to compete in. The Cheetah Flex Foot has opened up many doors for amputee athletes, and I believe that it can continue to do so throughout the future.

References

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