



Inside APC...

Issue No: 5 - August 2009

"eNewsletter from APC Prosthetics"



Welcome to our August newsletter.

Welcome to the 5th edition of the APC eNewsletter. Hopefully, you enjoyed last edition's information on cosmetic options for prosthetic limbs. We would also like to say a big THANK YOU for all the feedback that we have received about our previous editions.

In this edition's Team Focus the spotlight is on David Howells OAM, a founding partner of APC and one of the most highly regarded prosthetists in this country. David has been the appointed Prosthetist of the Australian Paralympic team for many years and has a strong passion for this highly specialized discipline. He will give us a brief insight into his life and also talk about different types of "Special Prostheses" in our Technology Focus.

On another note, we would like to welcome Nick Chung, a prosthetic student from Taiwan to the APC team. Nick will be with us for the rest of the year before returning home after Christmas.

*Stefan Laux
APC Prosthetics*

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Team Profile – David Howells

What is new in your life?

My wife has just written her first book so as a supporting husband I have been trying to stay out of her way by playing as much golf as possible. Also our daughter has just finished university and has won a scholarship working with The World Health Organization in India for the next four months. While it's exciting and a great opportunity, it's also a bit scary.

What do you get up to outside of work?

As mentioned I do enjoy my golf and I get away once a year to the top end for a fishing conference with a group of friends. We have been doing this for the last 10 years and it's something we really look forward to every year. Also my youngest son is playing his second year of rugby league and cricket, and I really enjoy watching him participate in team sports.

How long have you been involved in Prosthetics and Orthotics?

Thirty six years this year but let me point out I started very young!

What do you enjoy about prosthetics?

Everything! I have been the appointed Prosthetist to the Australian Paralympic Track & Field Team for the last 12 years and have worked with so many fantastic elite athletes that push you to go outside your normal boundaries of prosthetic management. In saying this, I get just as much enjoyment helping my everyday clientele achieve their goals of life after amputation, but I mostly enjoy the long term relationships you have with your clients. I have clients I have been working with for over 30 years and really they become just a part of your extended family. Also I continue to be inspired by all sorts of individuals who seem to rise above adversity.

What do you see the future bringing?

I see the future of prosthetics technically improving at such an astonishing rate with the marriage between engineers and robotics becoming more compatible but I really hope that it doesn't become a case of the "haves" and "have not's". I think the challenge for prosthetic technology is to be providing these advances to improve the quality of life through better technology for all amputees not just for those who are compensable.



Technology Focus: "Specialty Prosthesis"

Specialty Prostheses – For Specific Activities David Howells.

In this quarters newsletter I would like to talk about the type of prosthesis required to participate in activities beyond everyday walking. Specially designed prostheses are usually designed for one specific activity, such as surfing or sprinting and are generally not suitable for normal walking.

1. Below Knee



- a. **Waterproof Prosthesis:** is an exoskeletal design which consists of a hollow carbon fibre frame & a basic rubber foot. It must have two holes in the prosthesis, one below the socket and one above the ankle to allow water to enter the hollow shell to reduce the buoyancy and to allow the water to exit the prosthesis when getting out of the water.

This prosthesis is designed for swimming, showering and general water based activities. If a prosthesis for specific water activities such as scuba diving is required a Rampro active ankle might be incorporated, which allows the foot to plantar flex to 180° to incorporate a flipper for scuba diving and then return to a neutral position for walking. (<http://www.rampro.net/>)



- b. **Running Prosthesis:** incorporates a prosthetic socket attached to a carbon fibre energy returning foot commonly referred to as a blade. These feet are a special order and are made to a client's personal detail such as weight & activity level i.e. sprinting, long distance, marathon running. These prostheses are designed for the Paralympic athletes but also there are modified versions of this foot for clients who like to jog for exercise or participate in fun runs like the City to Surf etc.



- c. **Cycling Prosthesis:** Generally below knee amputees can use a bicycle without too many problems but clients who are serious about their cycling (e.g. tri-athletes) may need a specific cycling limb manufactured. This usually consists of an endoskeletal design and the use of a metal cleat instead of a foot that clips into the pedal, which allows power on the upstroke as well as the down stroke. Also the trim-lines of the socket are important to allow the range of knee motion required for cycling.

2. Above Knee



- a. **Waterproof Prosthesis:** The common above knee waterproof prosthesis is an endoskeletal design which consists of a socket incorporating a silicone liner with a pin locking system, an Aulie knee & Dynamic foot. The Aulie knee is a plastic hydraulic knee that can be used as a free swinging knee or it has a pin which can be inserted in the knee to incorporate a locking knee if you're walking down a steep boat ramp etc or you're doing an activity that requires total stability. This prosthesis can be used for the beach, swimming, showering & basic water activities. For someone who is interested just in swimming or scuba diving from a boat and doesn't need to walk, a flipper can be attached directly to the socket.



b. Running Prosthesis: It is generally not recommended to have a running prosthesis for an above knee amputee unless one is running competitively at a Paralympic level. Then it is a custom made prosthesis usually incorporating a polycentric hydraulic knee & energy returning foot.



c. Multi Purpose Above Knee Prosthesis: One of the recent innovations in Above Knee prosthetics has been a knee developed by an Above Knee Amputee Jarem Frye called the XT9. It in essence combines a mountain bike pneumatic shock absorber in a single axis knee frame. It is an energy storing knee that mimics the quadriceps muscle, which allows Above Knee amputees to participate in sporting activities such as snow skiing, snow boarding, telemark skiing, ice skating, wake boarding, skateboarding etc. It's a component I am really excited about, because it opens up so many more

options for the active above knee amputee who previously have been so limited in what recreational activities they could pursue. I must say this knee won't turn you into a great snow skier or water skier etc but if you enjoyed this activity before amputation it will allow you to return to it. You can check out the XT9 at <http://www.symbiotechusa.com/index.htm>



3. Upper Extremity



Waterproof Prosthesis: These vary greatly depending on the specific function which could be for swimming or surfing. A swimming prosthesis can be a custom made design of a hand resembling a paddle or a prosthesis incorporating a distal weight bearing design to utilize not only paddling but being able to push oneself up on a surfboard.



Upper Extremity Cycling Prosthesis: Once again these are prosthetics that are specially designed for the client depending on the amputation level i.e. above elbow, below elbow or congenital.

Upper Extremity Recreation Attachments: There are many types of attachments manufactured by an American company called TRS, who once again was developed by a below elbow amputee Bob Radocy. These can sometimes be fitted to your current prosthesis but on other occasions you may need a prosthesis made for a specific recreational activity. These photos below show attachments for Golf, Billiards and Weight lifting. You can check out more by visiting their website www.oandp.com/products/trs



Please remember all prostheses are individually made for each client, so I would encourage you to speak with your Prosthetist about your specific requirements.

LATEST NEWS

Baby Laux has arrived!



Congratulations to Stefan & Heidi
on the safe arrival of their beautiful
baby boy.

"Toby Maximilian Laux"



We want your feedback!

If you have a comment or
suggestion regarding our
newsletter, we would like to hear
from you.

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apc@apcprosthetics.com.au

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National Amputee Awareness Week
4 – 11 October 2009

(For more information please contact [Limbs4Life](http://limbs4life.com))

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