

TechLINK

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REHAB Tech

Monash Rehabilitation Technology Research Unit

Welcome to **REHAB Tech**

A resource for the prosthetic, orthotic and rehabilitative engineering industries
Monash provides a resource and expertise in the Australian Prosthetic, Orthotic and Clinical Rehabilitation Engineering industries in the areas of research, development, evaluation, validation and treatment of prosthetic and orthotic devices for the rehabilitation of quality of life of individuals with physical disabilities and associated conditions.



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Check out the *newlook* website at <http://www.monash.edu.au/rehabtech> which includes:

- Electronic version of *TechLINK*
- Downloadable *TechGUIDES*
- Research & Development Reports
- A virtual tour of *REHAB Tech*
- Regular updates

REHAB Tech PROJECT UPDATES

◆ Load Sensing Step Counter

One project which has been in development over several years at **REHAB Tech** is an activity monitor, or step counter, for use in monitoring lower limb amputee activity levels and prosthetic use outside the hospital/rehabilitation centre environment.

The previous prototype used a force sensing resistor as the sensor, combined with circuitry for signal processing and data storage. This version had a fairly limited storage capability, reducing the length of the monitoring period. It also had a disadvantage in that the sensor had to be placed very carefully in each patient's shoe, increasing the time needed to set up the device and exposing it to damage.

The current project's aim is to investigate alternative sensors and devices in an attempt to develop a step counter which can be used for long term monitoring, is fully contained within cosmesis to shield from damage, is inexpensive to make and simple to attach to a prosthesis. A further aim is to develop a step counter which is also capable of recording different load levels

on the prosthesis. This type of information could then be used to help determine safe usage periods for components subjected to different 'real life' loading conditions.

◆ Mac Reflex System Review

The Mac Reflex System was reviewed with the intention of collecting specific data related to the E-Shoe project. The System was used in a research project involving measuring the moments around the ankle when walking with different types of shoes. The information calculated with the use of the Mac Reflex 2.2 system, included two dimensional positions and the angular velocity of the ankle during walking. It may be concluded that the Mac Reflex system will prove very useful in a practical situation, in particular when results are needed in a hurry. Another feature of the system is that it can be used in a wide range of environmental conditions. However the range of movements it can measure is constrained to slower movements, due to the low camera frequency.

Please address correspondence to: The Editor- **Tech LINK**
c/o REHAB Tech, 260-294 Kooyong Road, Caulfield Vic 3162, Australia.
Telephone: +61 3 9528 1960, Facsimile: + 61 3 9528 1077, e-mail: REHAB.Tech@eng.monash.edu.au
INTERNET - <http://www.monash.edu.au/rehabtech/>

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PROSTHETIC REFRESHER COURSE at REHAB Tech

Greg Caldwell a prosthetist/orthotist from the Royal Perth Hospital has successfully completed a refresher course in Prosthetic Management at the Caulfield General Medical Centre. The course, a joint project between the Caulfield Amputee Unit and **REHAB Tech**, consisted of three weeks of intensive training in interim prosthetic management, componentry inspection and hands-on experience in the use of the CAD/CAM System. For further details please contact **REHAB Tech**.

Staff Changes at REHAB Tech

This month **REHAB Tech** farewells Stefan van Drongelen and Evert Verhagen, biomechanical engineering students from Amsterdam's Vrije University. Evert and Stefan since their arrival in March have been working on several projects including the effects and possible applications of the E-Shoe. (An extract from their study of the E-Shoe will be published in next month's newsletter.)

In Erratum TechGUIDE

The telephone number for George W Masson & Sons Pty Ltd in the current edition of the **TechGUIDE** is incorrect. Please note that the telephone number is (03) 9580 9796.

Coming Events

| | |
|--------------------------|---|
| 28 June - 3 July | 9th. Triennial ISPO World Congress, Amsterdam. Contact - CONGREX Holland: Ph: Int+31 20 626 1372. Fax: +31 20 625 9574. E-mail: ispo@congrex.nl |
| 28 - 29 August | ISPO Aust 1998 Sydney, Manly Pacific Park Royal Hotel. Contact Jean Halcrow (02) 9948 2339. Theme: <i>New management of old problems</i> |
| 16 - 18 September | Workshop in Seating & Positioning for People with Disabilities at Northcott Centre, Parramatta. Contact: Amanda Clifford (02) 9890 0100 |
| 25 - 27 October | Access Expo '98, Royal Agricultural Society Exhibition Halls, Olympic Sports Complex, Sydney. For more details: (03) 9415 1200 |

P & O Golf Day on 30 August 1998

Following the conclusion of the ISPO Conference in Sydney, a game of golf has been arranged for the Sunday, 30 August at Moore Park (15-20 mins. from airport). The first group will tee off at 12.30pm. Contact Mark Raabe on (02) 9319 6852 to reserve your spot.

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