

# Spikes & Spasms

The TremorAction.org Newsletter

OCTOBER 2009

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## WELCOME TO THE OCTOBER ISSUE!

### - Movement Disorders Awareness Month -

Advocacy is never-ending.  
When one Challenge ends another one begins.

October is National Movement Disorders Awareness Month! Tremor Action Network requests your participation to increase community awareness about movement disorders.

Start by taking [The Natural History of Essential Tremor](#) web based survey. Neurologist Esther Baldinger, M.D., follows up with a second survey of 45 questions that are formatted to help learn more about this movement disorder. "If more is understood about ET then ideally the issues of slowing or stopping progression could be addressed."

Participate in the University of Florida research study on essential tremor.

The October issue also introduces readers to innovative assistive technology designed by E2L Limited, reminds us of Medicare annual enrollment, highlights Mona Reeva's information on donating your time, and pays tribute to movement disorders experiences authored by individuals living with dystonia and essential tremor.

Enjoy reading Spikes & Spasms brought to you by Tremor Action Network and Sponsors

## I can't quite put my finger on it! ... why we need a new alphabet board

By Lyndon Owen, Managing Director, E2L Limited, United Kingdom

Firstly let me tell you how we design: There is a big misconception in the world of product development, and that is "more functionality means 'better'." This mentality is generally driven by the marketing men and not by the needs of the users. It also over complicates the product and, of course, justifies a higher price. Whereas a good product is one which does the job well, and design elegance is the result of what unnecessary features we can take out. To state our design philosophy more concisely "be clever, be simple."

Having a reputation for this approach, we were contacted early this year by the Speech and Language Therapy (SLT) department at Frenchay Hospital, Bristol, part of the UK's National Health Service (NHS). They invited us to enter into a joint collaborative venture to develop a new alphabet board for literate people who were unable to speak and had tremor problems. This may be due to a variety of conditions such as strokes, swallowing difficulties, tracheotomies, MND, ALS, MS, CP, cancers, and many motor control problems, or just 'jittery' hands.

The great advantage of working with the NHS is that they are needs driven, and the products they require come from direct experience of therapists on floor. What they had identified was a problem and were looking for a professional solution in the form of a commercial product.



The problem is this: Printed paper alphabet charts tend not to be durable, they slip about, they pick up dirt, people get messy, they get lost, don't work in the shower, and, above all, people are not very accurate when they point at letters. Add to this a tremor condition, such as Parkinson's, and the task of isolating a single letter by pointing at it becomes an extremely difficult task. What was needed was a solution which addressed all of these problems in the simplest possible way. The result is the FAB (Frenchay Alphabet Board).

The design requirements for the device were defined as:

### 1) Positive finger location

This is achieved by providing a smooth recessed depression over each of the letters available. A shaking finger stays in this depression because there is a little ridge all around the edge, thus limiting involuntary movement.

### 2) Non-slip

The non-slip property is a major advantage for the tremor user. Positive finger location is of little use if the chart slides around with your shaking hand. To overcome this, the FAB has a high grip neoprene rubber based (much like a mouse mat but with a stronger bond).

### 3) Spill proof

It's a fact of life that people spill coffee, drop food and pick up dirt. The use of a single continuous plastic injection moulded finger guide which is bonded to the closed-cell neoprene base ensures that no ingress of dirt is possible.



**4) Washable, hygeinic design**

A health service requirement was that the alphabet board could be washed in soap and water. Choice of materials has achieved this, but we have extended the design to tolerate 1000ppm chlorine solutions and to be resistant to alcohol wipes.

**5) Anti-microbial keypad**

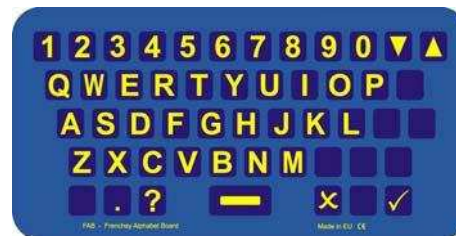
Not being content to rely on the cleaning regime alone, we have loaded the clear plastic moulding with a nanoparticle silver compound which is antimicrobial. This makes the product inherently hostile to MRSA, E. Coli, Salmonella, Listeria - this is not a coating that can wear off, but an residual property of the material.

**6) Choices of layouts**

Some people are used to the standard keyboard 'QWERTY' system whilst others prefer a matrix type of layout which lists the letters of the alphabet in order. In considering these layouts the matrix has been designed so that the vowels are listed down the left hand side. Either style has a space bar, a question mark, a full stop, and a positive and negative symbol. We have also provided an up and down symbol which can be used as "more and less," "louder, quieter," "up, down."



**MATRIX**



**QWERTY**

**7) Choices of sizes**

Alphabet boards are generally used in two different environments and as a result two different sizes were designed. "Table Top" is for use in day centres, on hospital wards, libraries, hospices, and places where the board can be placed on a fixed surface such as tables or desks. "Pocket size" is a smaller portable unit which can be easily carried in a handbag. One emerging use of the pocket size alphabet board is as a backup to much higher technology devices. If you use a Lightwriter, Dynavox, PRC, eye tracker or similar system, FAB offers an emergency solution to communication if your batteries go flat or you have a breakdown. Pocket size FAB is much more discrete, yet still offers the positive finger location.

**8) Languages**

FAB is designed to be rapidly adapted to any language. Already it is available in English, Spanish, German, French, Swedish, Finnish, Danish, Norwegian, and any character set can be supplied on request (Spanish keyboard illustrated).

To conclude, an alphabet board should be simple and fulfill all its design constraints without compromising the end user. FAB is a good example of this. Whilst the underlying decisions are complex, they should be invisible to the user.

Anyone unable to speak but has some hand movement, regardless of the extent of the tremor, can communicate more accurately, conveniently and with increased hygiene due to the rigorous application of design simplicity.



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## About the Author

Lyndon Owen is the managing director of E2L Limited; an electronic product design company and based in Monmouth, South Wales, United Kingdom. He has studied at Sheffield, Wolverhampton and Southampton universities in the UK and since 1984 has been involved with several small, high technology, startup companies. His current venture, E2L Limited was founded in 1998 in order to address product design in a radical new way. The company is nationally recognised in Wales as 'Ambassadors for Innovation' and their unique approach to product development ensures simplicity and effective solutions to a wide variety of problems. The company has a worldwide distribution network including the USA.

[www.FAB.uk.com](http://www.FAB.uk.com)

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