COMMUNICATION
MATTERS

Special
Edition

UK Manufacturers
and
Suppliers
of Communication Aids

COMMUNICATION MATTERS

Editorial

Welcome to the last *Communication Matters* of 1998. This is a special issue with an entirely new and special perspective. The articles have been contributed by representatives of the manufacturers and suppliers of augmentative communication systems and assistive technology in the UK.

Communication Matters has always greatly valued its manufacturer/suppliers and commercial members, and its good relationship with them. It is thanks to the advertising in this journal - paid for by the manufacturers and suppliers - that permits production of such a substantial publication.

This special issue contains a collection of uniquely interesting articles and product news items across a wide spectrum of AAC topics. We are certain that you will find this a most absorbing Christmas and New Year read.

And finally, we urge you to read this issue quickly because you will be receiving another issue of *Communication Matters* quite soon after this one - early in 1999. This is a change in the timing of the publication of each issue but there will still be three issues per year. CM used to come out in May, August and December of each year. From 1999 onwards it will appear in February, May and September. This is more balanced timing and is aimed largely at ensuring that members who join or renew at the beginning of the year quickly receive not only a receipt but also the journal as concrete evidence that their membership is in force and up to date. It also means that if you ***don't*** receive a journal early in the year, you will be reminded that it is time to renew!

The new timing will also coincide with a slightly new format, to go with a newly international readership because *Communication Matters* has been awarded the status of 'ISAAC Affiliated Publication'. From 1999 onwards, this Journal will be offered for sale across the world to ALL members of ISAAC when they take up or renew membership.

Front cover: Peter Zein with Stephen Timms, Parliamentary Under Secretary at Social Security

Contents

DynaVox
(Sunrise Medical)
Advertisement

SUNRISE

Sunrise Medical AAC Department

The Dream Team !

Now Sunrise, they had a great dream,
To create an immaculate team,
To sell AAC,
For money – not free,
So they picked out the absolute cream!

Allison James is our own SLT,
In March, a 'Mrs' she'll be!
She'll walk down the aisle
With maximum style
Accompanied by Horace and Zoe.*

Mike McConnell's Product Specialist, keen
In the South there's no place he's not been,
He once shared a bed,
With Princess Di dressed in red,
But his whole family sat down in between!**

Jeff Harper-Smith's job is rather like Mikes,
And Formula One is something he likes,
But worried by far
How he'd drive company car,
So we gave him a pair of push bikes!

On the Helpline you'll find Carl S. White
Who is there to put problems right,
He likes a Guiness or two,
When the long day is through,
And then surfs the web all the night!

Karen Wilkes is as new as can be,
She's straight out of college, you see,
Now she's learning the ropes
From us strange looking blokes,
And she's great at making coffee!

Paul Asher would like us to say,
That he hasn't decided which way,
To take his career,
Though it would appear,
His fan club is growing each day!

That's it – the team AAC,
Except for the boss – but who's he?
He's clever and bright,
And is usually right,
But then I'm biased, 'cause it's me!

Dave Morgan

*   Horace and Zoe are Allison's family (of dogs)

** Actually happened when Princess Di met Mike's family in
     conjunction with his severely disabled son

Case Study

David and the DynaVox 2/2c

Allison James, Sunrise Medical Ltd

About David

David is a 57 years old man with cerebral palsy. He has spent most of his life in a long-stay institutionalised hospital, but now lives in the community in a staff supported house with four other gentlemen.

He attends a Day Centre twice a week and has a very active social life, which includes regular visits to a variety of his local pubs for his favourite tipple – a pint of Guiness!

Previous Communication System

David previously used no formal system of communication. He relied totally on Yes/No responses and vocalisations to express his needs.

David and his DynaVox

David received his DynaVox earlier this year. He uses it both as a communication aid and as an environmental control.

Dynavox as a Communication Aid

A set of pages has been developed specific to David and his day-to-day activities. The structure and content of these pages was determined through multi-disciplinary input.

A team of professionals and carers supporting David, including Speech & Language Therapists, Day Service Officers and Care staff, all met to decide upon the most appropriate communication messages for David, who was also involved in the discussion.

The resultant page-set is outlined below:

- **Access Method:** Linear scanning
- **Number Of Buttons Per Page:** 8 to 12
- **Total Number Of Pages:** 14
- **Structure:** 'Master' page (Figure 1) leading to a variety of topic-based pages (Figures 2 & 3)
- **Content:** Phrases and Symbols combined
- **Use Of Dynavox Functions:** David uses instant speech output (verbal cue) and only has one command button, which is currently 'shutdown'
- **Positioning Of Dynavox:** His DynaVox is mounted on his wheelchair


Figure 1 'Master' Page
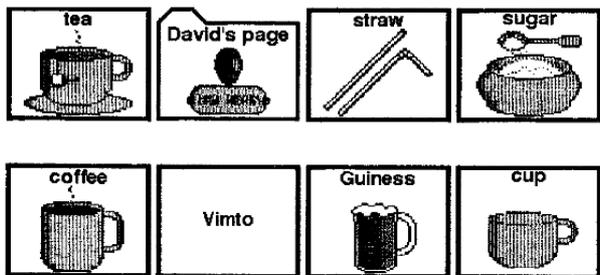
Figure 2 'Drinks' Page

Figure 3 'Me' Page

DynaVox as an Environmental Control

David's use of the in-built infrared (IR) capabilities of the DynaVox has provided him further opportunities. He can now operate a variety of electrical equipment at home independently. Pages have been developed specifically for this purpose. They follow a similar structure and format to his communication pages, as Figures 4 and 5 show.
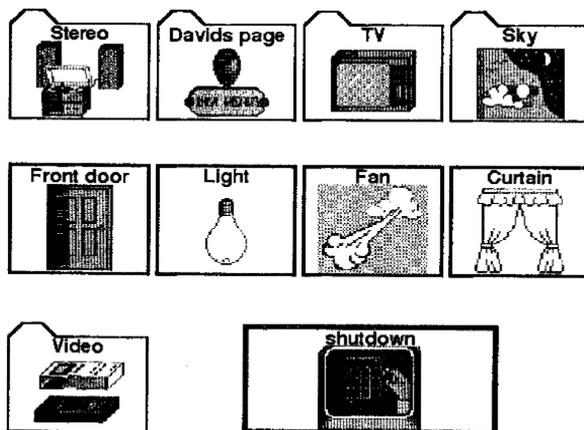
Figure 4 'Controls' Page

His DynaVox has been programmed to learn the IR codes for the remote to his television, video & stereo. He can now use his DynaVox, therefore, to turn these devices on/off, turn the volume up/down etc. Figure 5 shows how his stereo controls page is organised.
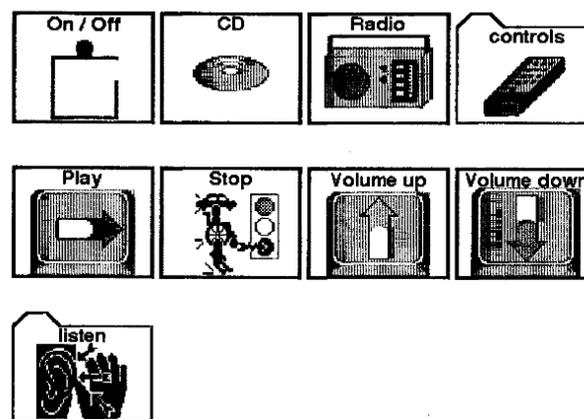
Figure 5 'Stereo' Page

His DynaVox has also been programmed with specific codes to operate other electrical items, such as his bedroom light and a fan. Some adaptations have been made within his room, so that he can also open/close his curtains via infrared. Specialist input was provided by technical support to install the equipment required.

NB: To find out more about the environmental control capabilities of DynaVox and DynaMyte devices, come to our *Promoting Independence* day in 1999 - ring for details.

SUNRISE

Implementation Issues

Some of the key areas in David's implementation plan are outlined below:

1 Communication Channels

- Regular liaison with staff both at David's house and at the Day Centre is crucial.

- Determine suitable ways of conveying information: a changing staff team has meant that exchange of information has often been difficult. Therefore, a variety of methods have been introduced, including:
  - o Formal training
  - o Regular visits - at home and at the Day Centre to monitor progress
  - o Written information sheets

2 Training

- Introductory Training day for key carers/professionals to cover basic programming techniques. The Speech and Language Therapist from Dynamic Abilities Ltd (now at Sunrise Medical Ltd) provided this training. Participants included:
  - o Two Speech and Language Therapists
  - o Two staff from David's house
  - o One rehabilitation engineer (who was responsible for co-ordination of environmental control input)

- Ongoing training has been provided in the form of visits to update staff and to provide advice/ recommendation for page-set development. This input has been provided as part of Sunrise Medical Ltd's commitment to developing a portfolio of case studies. It is hoped that this will provide an additional means of support to users and carers who are trying to establish their own page-sets.

3 Functional Use – At Home

- Focus on providing David with the opportunity to make choices Suggested areas of input include encouraging David to:
  - o Ask staff when he wants to be taken to his room ('Me' Page – shown in Figure 3)
  - o Make choices for where he wants to go in the evening (i.e. which pub he wants to go to accessible on the 'Going Out' page)
  - o Encourage David to interact with his house-mates Expressions/comments have been programmed specific to other residents

4 Functional Use – Day Centre

- Identify suitable activities at the Day Centre to provide David opportunities for social interaction with staff and his peers. Pages were developed specific to these activities: cookery, quiz, games.

David has been encouraged to use them to interact with his peers and staff, in the following ways:

- o making choices
- o initiating a response from others
- o responding to demands placed upon him

5 Ongoing Monitoring and Evaluation

- Establish the appropriateness of David's page-set through liaison with staff andd carers supporting David, and visits to home and Day Centre to observe functional use of the device.

- Evaluate appropriate content of information on each page. Questions to consider:
  - o Is the content of each page appropriate for a given situation?
  - o Are any buttons inappropriate for David's communicative environment?
  - o Is any additional information required?
  - o Evaluate the appropriateness of the positioning of buttons on each page. The positioning of buttons may need to be changed in light of their accessibility (i.e. some buttons which are frequently used by David, may be in less accessible places).
  - o Determine any difficulty staff/carers may be experiencing. Regular visits to David's house will ensure that all staff are kept up-to-date with device care and management.
  - o Monitor David's accessing method. This will need to be monitored to determine any need for change or re-assessment.

6 Monitor Environmental Control

- Monitor the effective use of the DynaVox as an environmental control. Regular home visits by representatives from Sunrise Medical Ltd will ensure that David's DynaVox and the equipment in his bedroom, is functioning appropriately.

Allison James
Sunrise Medical Ltd.

Lightwriter
(Toby Churchill)
Advertisement

Using a Communication Aid in Bed

Simon Churchill, Toby Churchill Ltd

People who use communication aids may need to be able to communicate while they are lying in bed. They may be prevented from using an electronic communication aid unless they have sufficient dexterity to hold it in a suitable position to be operated while they are lying down. For most people, communication needs in bed are relatively limited, covering subjects such as discomfort, etc, and these can generally be communicated by a range of simple alternative communication methods including facial expression, gesture, the carer asking appropriate yes/no questions, or by using an alphabet board.

More complex communication can be achieved with linear auditory scanning (this was demonstrated in the recent documentary on Jean Dominic Bauby who dictated a book called *The Diving Bell and the Butterfly* after suffering a brain stem stroke), or an ETRAN (this is a transparent board with letters of the alphabet grouped in fives or sixes and each letter of the group a different colour, the user looks at the group to indicate the group of letters they want, eg one of the A-F group, and then looks at a colour spot to say, eg "it is the green letter" among that group, e.g the letter 'C'. This involves two eye movements to select each letter and can be an extremely fast means of communication.)

All the above communication methods require the carer to be present while communication is being undertaken, which is fairly demanding on the carer's time if the communication rate is slow, as can be the case with scan users. The user cannot prepare messages in advance and replay them quickly when the carer or communication partner arrives.

There are a number of situations in which using a communication aid in bed may be needed:

1. At Home

Some people spend long periods of time in bed and may wish to have access to their communication aid while in bed.

2. In Hospices

Some people at the later stages of their condition may spend time in a hospice either in respite or long term care. These people may spend extended times in bed and wish to communicate with visitors and nursing staff.

3. In Hospital

Intensive care units (ICU or ITU)

Patients in intensive care who cannot communicate include short to medium term conditions which may affect speech. Eg, Guillain Barré and acute throat infections, and patients on ventilators since a tracheostomy tube prevents them speaking. Depending on the patient's cognitive and physical ability they may be able to use either a keyboard communication aid or one using a scanning technique operated by a single switch. These patients can then communicate easily with visitors and nursing staff, and greatly reduce the time spent by intensive care

nursing staff in communication, since messages may be prepared in advance.

The communication aid can also contain a buzzer to attract attention and this can be an alternative to the standard hospital nurse call systems which are generally unusable by patients who cannot press the standard nurse call button.

Rehabilitation Departments

Patients in long-term rehab may need a communication aid mounted over their bed.

Overbed Mount from Toby Churchill Ltd

Our overbed mount is designed to hold any of our keyboard or scanning communication aids over a bed and can also be adapted to other communication aids up to about 3 kg. It is designed to take up the minimal space around the bed to maximise the access to the patient and has wheeled castors allowing it to be quickly moved away in case of emergency, making it an ideal system for patients in Intensive Care since it creates minimal obstruction to nursing staff.. It may be adjusted to place the communication aid screen in the optimum position above the bed to avoid the user getting a stiff neck. It has a large stable base to avoid the stand toppling over accidentally on to the user.

Overbed Mount with scanning Communication Aid
operated by a single switch

Macaw / Spokesman
(Toby Churchill)
Advertisement

Fully Adjustable

Height is adjustable between the range of 900 mm (35") and 1450 mm (57") above the floor. SL35 is held on vertical pole when using Plug-in Scan Module.

Used with a scanning Lightwriter

Plug-In Scan Module (or scanning Lightwriter) positioned above user. Angle of screen is fully adjustable. Text display of SL35 can be read by communication partner.

Used with a keyboard Lightwriter

A keyboard Lightwriter may be mounted over a bed. The angle of the Lightwriter is fully adjustable. Castor wheels have brakes to prevent mount from rolling away.

Mounting Systems

Unfortunately there is no universal solution to wheelchair mounting, and there are a number of factors to consider when selecting a mounting system:

1. **Design of wheelchair**
   There is an enormous number of design of wheelchairs on the market which vary in the positions on which a mount can be attached. Examine the wheelchair to find a suitable area to mount a Wheelchair Clamp, and check that the Wheelchair Clamp will not foul the footplates from folding backwards or prevent them being lifted off. Check also that the Wheelchair mounting system will not obstruct the brake lever, or interfere with the Kerb Climber (if fitted).

2. **The wheelchair tubing**
   Wheelchairs can be made of round, oval, square or rectangular tubing, or a combination of these, and the diameter of tubing varies considerably. The MidiMount does not fit on oval, square or rectangular tubing.

3. **The weight of the communication aid**
   Heavier communication aids such as SL86 may vibrate when the wheelchair is being pushed, and need a stronger mount such as the MidiMount.

4. **How hard the user presses the communication aid keyboard**
   People who press hard on the keyboard may find the Mobilia not rigid enough, and should consider the MidiMount instead.

5. **Whether the communication aid needs to be mounted for use while the user is seated in an easy chair or lying in bed**
   The Mobilia and MidiMount are designed only for attaching to wheelchairs. The Overbed mount is designed to hold a communication aid while the user is in an easy chair or lying in bed.

6. **Whether the mount needs to be moved with the user from wheelchair to wheelchair**
   Additional MidiMount wheelchair clamps can be attached to each wheelchair and the MidiMount pole can then be quickly transferred from wheelchair to wheelchair.

7. **Whether the mount needs to be moved with the user from wheelchair to easy chair and/or bed**
   The MidiMount has an optional floor-stand for use next to an easy chair. Alternatively, the communication aid can be detached from a wheelchair mount and attached to the Overbed mount for over-bed use.

8. **Whether the user needs to be able to swing the communication aid to one side themselves to get out of the chair, or whether this will be done by the carer**
   Establish whether the user prefers the communication aid to be mounted on the left or right side of their wheelchair. This may have implications on electric wheelchairs as the mount must avoid the joystick.

9. **Requirement to detach the mount from the wheelchair to transport the wheelchair in a car boot**
   All the mounts can be removed quickly from the wheel-chair for transport, but the Mobilia mount requires the height to be reset when re-fitted.

10. **The size of your budget**

    The Mobilia is the lowest cost and suits many users, but may not be adequate for any of the above reasons.

Moving a Communication Aid between Mounts

There can be the need to move a communication aid between different locations, such as between different wheelchair, or between wheelchair, easy chair and bed, and this can cause considerable problems.

This article considers only the communication aid mounting systems supplied by Toby Churchill Ltd, but the principles apply to other models of communication aid and mounting systems.

Moving the aid from Wheelchair to Wheelchair

Additional Mobilia or MidiMount wheelchair clamps may be purchased and attached to each wheelchair. The mounting pole can then be quickly transferred from wheelchair to wheelchair. In the case of electric wheelchairs, it may be necessary to make a custom metal plate to attach the wheel-chair clamp to a suitable mounting point.

Moving the aid from Wheelchair to Easy Chair

We have had many requests to be able to transfer to communication aids between a wheelchair mount and an easy chair.

MidiMount Floor Stand

We have designed a simple floor stand which is compatible with the MidiMount wheelchair mounting system and allows the communication aid plus 'L' pole to be quickly removed from the wheelchair and transferred onto its own optional free-standing floor stand.

This floor stand provides height adjustment of the horizontal pole between 570 mm (22") and 900 mm (35") above the floor. The floor stand holds all models of keyboard and scanning Lightwriter, and all models of Macaw. It can also be adapted to hold other communication aids.

Lightwriter and 'L' pole are removed from wheelchair mount

Lightwriter and 'L' pole are then fitted into floor stand
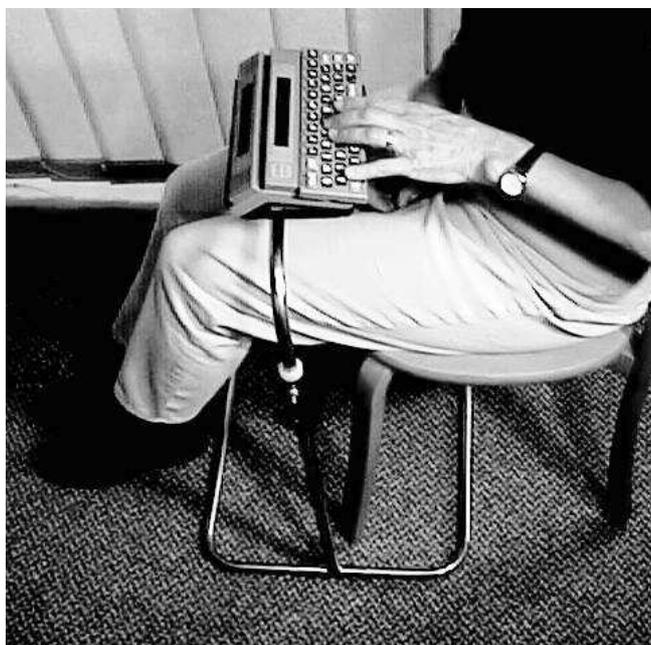
Free-standing floor stand next to easy chair. Slides under any chair. Height of the horizontal pole is adjustable between 570 mm (22") and 900 mm (35") above the floor.

Moving the aid from Overbed to Wheelchair

The communication aid may be detached from the tray of the Overbed mount and transferred into the tray of the wheelchair mount. This process is very simple to perform.

Moving the aid from Overbed to Easy Chair

The Overbed mount may alternatively be used to hold a communication aid next to an easy chair.

The Overbed mount is designed to also hold a communication aid while the user is in an easy chair. With the castor wheels attached the mount requires 90 mm (3½") clearance below a chair, alternatively the wheels may be detached requiring only 25 mm (1") clearance. Braked castor wheels prevent it from rolling away from user.

Walking Frame Mount

Some people wish to have their communication aids mounted on Rolators or Zimmer frames. We now have a mounting system which will clamp on to the frame and provides sufficient support for use by ambulatory users while still using one hand for supporting themselves. The Lightwriter is easily detached from the tray so the user can then use it when seated.

Clamps onto the top bar of the walking frame to hold aid while the user is walking. Suitable for most models of Lightwriter.

May be used by walking frame user while standing, with one hand free to steady themselves

Note: attaching a communication aid to a wheelchair will raise the centre of gravity and move the centre of gravity off-centre. This may reduce the wheelchair's stability when unoccupied which may cause the wheelchair to topple over when on a slope or when folded. It is the responsibility of the person attaching a wheelchair mount to ensure that the wheelchair's stability is not adversely affected.

Did you know?

…. that Lightwriters have been using the newer Nickel Metal Hydride (Ni-Mh) batteries for about a year now. These have the advantages over the older Nickel Cadmium (NiCad) of increased capacity (potentially longer running time of the Lightwriter) and are more environmentally friendly when it comes to disposing of them.

On the subject of charging, all of our model range (excludes Eyeblink switch) use a charger specification of **9vDC@800ma.**

Earlier Lightwriter models used a **12vAC@350ma** charger which is not suitable for later units. If you are unsure of the charger type, please contact the service department.

EASIAIDS Ltd

Peter Coxhill

Back in the early Eighties I realised that speech and occupational therapists were unaware of the range of equipment available for disabled people in general and for those with limited or no speech in particular. During my previous employment with a charity I had come in contact with various small manufacturers making innovative equipment.

I thought if I could bring the two together everybody would benefit - especially those with disabilities. I approached a couple of companies and they were more than happy for me to take their products and show them to interested professionals and to undertake assessments…and so this company was born.

After much deliberation we decided upon the name EASIAIDS. The spare bedroom was transformed into an office, and my wife agreed to undertake the paper work and telephone. We had just had our first daughter and on many occasions I would find my wife typing with the baby on her knee. It was difficult when the baby was crying, but changing a nappy with the telephone under the chin became a doddle. We also had a large Doberman who would lick my ear and try to sit on my lap – all 5 stones of her – while I was on an important telephone call.

We were invited to attend conferences, therapists' meetings and to undertake demonstrations and assessments. Enquiries came from as far afield as the Scottish Islands and Cornwall but we have always had to limit our personal assessments to a practicable driving distance. Other companies approached us and asked if we would also take on their products – and so we grew.

Our second daughter was bounced and held at the desk, while the toddler played under the desk with her Lego. We moved to larger premises, invested in computers, modems, faxes, scanners, photocopiers , and took on more staff. We now have a product range of approximately one hundred and fifty items.

Therapists appear to appreciate an independent and totally unbiased assessment, when several similar items from various different manufacturers can be tried with a client at the same time. Private individuals in their home also find it easier and more relaxed to compare equipment from different manufacturers and, if necessary, to try using an item on a 30 day trial before finally deciding on a purchase.

Hopefully we have not lost the personal touch with which we started at the beginning, even though we have expanded to cover a large area of the country. There is now no baby crying in the background. Our aims remain the same – to provide an efficient, personal service to both professionals and individuals alike.

Accessing Technology

Margaret Bullock, Techess Ltd

Techess Ltd was launched at the *Communications Matters* Symposium in Lancaster in September 1997, but the same company had previously been known as Daedalus Technologies UK. Originally the business had been formed to distribute the Daedalus Mounting system (known as DaeSSy) in the UK but, as the product range expanded and new business premises taken it seemed appropriate to make a change in name. Margaret and Ian Bullock, original proprietors, continue as Directors of Techcess Ltd.

The Daedalus Mounting system remains a major part of the business with wheelchair mountings for switches, laptops, communication and other devices as well as wheelchair accessible, fully adjustable worktables. We have supplied DaeSSy products throughout the UK and Eire and into Europe.

Photo 4
Wheelchair with blue
lower struts

Daedalus Mounting System

Techcess also supplies a wide range of switches and adaptive keyboards for all abilities from companies such as Tash and Incap as well as alternative computer access with the HeadMouse from Origin, Joysticks, TrackerBalls and Headway from Penny & Giles, amongst others.

To bring the product range full circle Techcess also supplies both high and low-tech communication devices - from simple communication boards, to KeyWi software and stand alone devices such as the Hawk family from AdamLab. Techcess is now also supplying the Cameleon from Cambridge Adaptive Communication.

Earlier this year the team was joined by Tracy Hyder who some may know as Tracy Edwards from her time at Lord Mayor Treloar. Tracy regularly visits schools and hospitals, demonstrating equipment and carrying out fittings as well as doing training with clients.

1998 has been a very busy year for Techcess and has seen a considerable and sustained growth pattern. A regular exhibitor at conferences around the country, Techcess has been seen at *Naidex, Independent Living, the Communication Matters National Symposium,* and *All Round Ability* as well as smaller events. This year of course had the *ISAAC Biennial Conference* on our doorsteps in Dublin and Techcess had a very successful time there along with visiting suppliers from North America. Once again we were able to visit *Closing the Gap* in Minneapolis in October. This was an opportunity to attend workshops and seminars on such topics as AAC and Assessments as well as to see new products and developments being introduced to the market. At the time of writing we are assessing some new items which may be brought into our product range in time for *BETT '99* in January. Watch this space!

It has always been our aim to supply the best possible products to our customers. Access to Technology for people with special needs – from mounting hardware to communication software. We are looking forward to 1999 and hope to continue to supply quality products to a widening client base. We also look forward to meeting more of you, putting faces to names, as we visit exhibitions around the country. Do come and say hello – it is always good to meet you.

Photo 5
Three keyboards

techcess ltd

7A Main Street
Market Bosworth
Nuneaton CV13 0JN
Tel: 01455-290540
Fax: 01455-292961
Email: techess@pipemedia.co.uk

Cambridge Adaptive Communication

Barnaby Perks, CAC

The History

David Mason started CAC in a garden shed ten years ago. He began by modifying PCs to be used as communication devices with Words+ software from the USA. At the time most other AAC devices were sold either as dedicated hardware or as software for mainstream PCs. The dedicated solutions were robust and functional but limited. The PC solutions were versatile but either too unwieldy or too fragile, in addition spare parts were hard to obtain in the rapidly moving PC market. David had the vision that the AAC market would ultimately take the PC route if somebody produced appropriate hardware that was robust and easy to maintain with a life span many times that of a PC. This led to the design and manufacture of CAC's own hardware – the Cameleon. This was based on market feedback and demand and was an immediate success. Five years ago CAC grew too large for David's shed and moved into a light industrial unit in Toft, just outside Cambridge. The number of people at CAC started to grow too, and so CAC started to resemble a proper company. Three years ago CAC started production of the second generation Cameleon II, an even bigger success than its predecessor. CAC became too big for its old offices and moved into purpose-built premises in January 1998.

Research & Development

New, innovative products are essential to CAC's continuing success. The company was founded on development for problem solving. Recent developments include the Barnsley Wheelchair Interface and the award winning Cameleon CV. Current developments include the QuickFire software suite and a large screen version of the Cameleon CV.

Photo 1
Bearded man holding
black box with symbols

David Mason, Smithsonian Award winner, with the Cameleon CV

Smithsonian Award

Earlier this year David went to Washington DC to receive a Smithsonian award for the Cameleon CV. The "identifies and honours men and women whose visionary use of information technology produces positive social, economic and education change". The CV and David now have a permanent place in the Smithsonian Institution's National Museum of American History.

CAC makes it into the Millennium Dome

The Department of Trade and Industry recently made the following press release:

The Cameleon CV was recently granted Millennium Products status by the Design Council after Tony Blair challenged businesses to show that Britain is the creative powerhouse of the World.

The News was announced by Trade and Industry Secretary Peter Mandelson at the CBI Conference in Birmingham on Monday 2 November.

The Cameleon CV, made in Toft near Cambridge by Cambridge Adaptive Communication offers visionary use of information technology for people with disabilities.

"This PC has been ergonomically designed for ease of use and carriage, and comes with features specifically chosen to facilitate communication for the elderly and disabled", said David Mason Chief Executive of Cambridge Adaptive Communication.

"As well as a communication tool, the Cameleon CV allows the operator to control the environment. The unit is a light and rugged PC, powered by a Pentium processor, and can be either attached to a wheelchair or used as a portable device. It allows the elderly or seriously disabled to control their environment and to communicate via speech synthesis, providing a greater measure of independence and freedom. It incorporates a full colour touch screen with embedded keyboard allowing control of the system without the need to attach a mouse or keyboard. It has internal batteries and the advanced power management gives significantly longer battery life than in available laptop computers. The integrated speech synthesis hardware allows the use of new speech synthesis software to provide improved speech facilities, including British Telecom's new Laureate English sounding (as opposed to American) synthetic speech. I am obviously delighted about the award."

He added, "It's hard to believe that we began in a garden shed and are now moving towards the Millennium Dome."

Andrew Summers, Chief Executive of the Design Council said: "We offer our warmest congratulations to David Mason of Cambridge Adaptive Communication for the selection of the Cameleon CV as a Millennium Product. We sincerely hope that the Cameleon CV will be a big success for the company and we hope that Millennium Product Status will encourage Cambridge Adaptive Communication in further innovations."

ICAN Project

CAC is a partner in a European Union sponsored project called ICAN. The purpose of the project is to develop simple methods of integrating assistive technologies to ease the job of assessors and providers and to enable interconnection of devices from a number of manufacturers. ICAN involves partners from the Netherlands, Ireland and Switzerland.

Crick Software

CAC is working with Crick Software to produce a new software suite called QuickFire. QuickFire offers scanning switch access to AAC, environmental control and wheelchair driving functions from PC, all using the popular and familiar Clicker program.
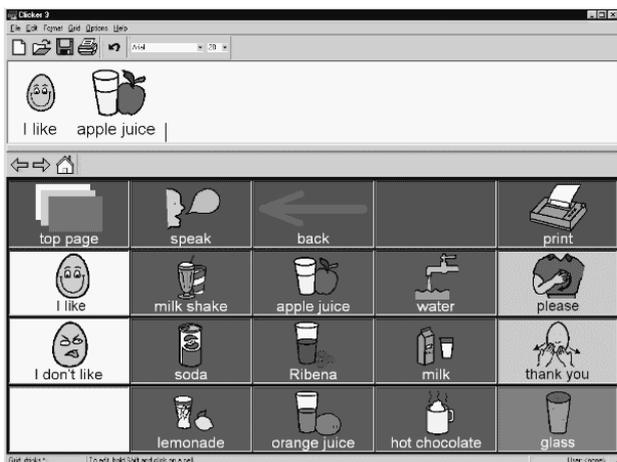
The QuickFire software suite

European Consortium for R&D

CAC belongs to a European R&D consortium with Kompagne and Handicom from the Netherlands and Igel from Germany. The idea is to ensure that new AAC products have wide appeal across national boundaries, yielding benefits for both manufacturers and users. The consortium is working together to build a large screen development of the Cameleon CV.

Export

CAC exports to the USA and Europe. This currently represents about 10% of our business and is growing all of the time.

The Products

Cameleon II A tough device with high volume sound output designed specifically for the AAC market, the Cameleon II offers all of the flexibility of a laptop PC but without the headaches of poor sound quality, constant breakages and poor supply of spare parts. Cameleons are tough enough to work in rough environments, such as when mounted on the front of a wheelchair, and are loud enough to be heard in a busy, noisy room. The Cameleon II is usually wheelchair mounted and normally runs Talking Screen (symbol based AAC) or EZ Keys (mouse and keyboard emulation plus voice synthesis), although other software can be used instead, notably QuickFire (see above) and programs available from the Foundation for Communication for the Disabled. Environmental control is easy from the Cameleon II if the optional GEWA Prog trainable infra red transmitter is fitted. The Cameleon II may be accessed through switches, touch screen (option), Origen head pointer option or mouse and keyboard.

Cameleon CV express Does all of the things that the Cameleon II can but is smaller, lighter and has internal batteries, allow-

ing it to be used as a portable device for ambulant AAC users. Advanced power management is designed to enable long life between recharges, allowing for a good day's use without interruption for battery charging.

Message Mates These are compact, robust, low cost digitised voice output devices, and enormously popular. The range of products starts with the single level 60 second Mini Message Mate and goes right up to the multi level 600 second version.

TASH CAC sells the entire range of TASH input switches and interfaces, including Buddy Buttons and Talking Buddy.

Mayer Johnson CAC sells the whole range of Mayer Johnson books and software. We stock an extensive range at our offices in Toft.

Barnsley Wheelchair Interface This allows switch access Cameleon II and CV express users to drive powered wheelchairs with the same switches. This system can be fitted to any powered wheelchair with a DX controller.

Words+ software Talking Screen and EZ Keys are the most popular AAC software on the Cameleon, and can be used on PCs.

BT Laureate software At last, a synthesised voice with an English accent! Some lobbying from CM members may even force BT to produce versions with Scots and Welsh accents.

The People

Ian Foulger, Customer Engineer Ian is David's longest serving employee. He handles sales and customer support, looks after IT at the office, and knows the Cameleon and CAC's customers better than anyone else.

Neil Hansen, Customer Engineer Neil handles sales and customer support in the north of England, Scotland and Wales. He is also CAC's software manager, and is your first port of call for any software queries.

Bernard Hawes, Accountant Bernard has been with David from the beginning, advising and keeping him on the financial straight and narrow.

James Johnston, Production James builds and tests CAC products and helps with R&D. He also does all of the clever bits.

David Mason, Proprietor David is the reason that we're all here, he started CAC ten years ago and is still at it.

Barnaby Perks, General Manager Barnaby is responsible for overall management and strategy, making everyone's life a misery.

Jonathan Pope, Production Jonathan builds and tests Cameleons. He is the most highly qualified person at CAC.

Caroline Robinson, Administration Caroline organises everybody. She makes sure that we all know what we're doing, where we should be and where everyone else is. If you phone CAC you'll usually speak to Caroline first.

Clive Sinclair, Research and Development Clive beavers away every day in his R&D lab. His imagination and ability ensure that CAC's products are always at the leading edge.

Val Sinclair, Accounts Administrator Val processes accounts, invoices customers and pays suppliers. Without her nothing can happen.

Keith Wadham, Operations Manager Keith chases orders, manages production and stock, and does all of the mechanical design work.

Harvey Whitmore, Production Harvey helps out in production whenever things get a bit too busy.

Theresa Shaw, Cleaner Theresa joined CAC recently, and what a relief! Visitors are now safe to enter the loo.

Mardis Communication Aid Systems

Karen Wilson, Mardis

Welcome to Mardis. Mardis is owned by Lancaster University, a research and teaching organisation of renown. It is a partnership with the expressed intention of developing communication aids. Mardis has two systems, both considered very good value for money: the **Orac** Communication Aid system and the **Eclipse** Communication Aid system, which was launched this summer.

The Eclipse

The Eclipse voice output communication aid is a portable system based on picture/symbol overlays with digitised speech. Although containing complex electronics. The Eclipse has been designed to maximise simplicity with flexibility for both the end user and support staff (e.g. carer, therapist, teacher, parent). This has been achieved with a 'Talking Menu' that leads the operator through the menu options. The 'Talking Menu', which is available whenever needed, means that there is no need to constantly refer to a printed user guide, and it helps to reduce the amount of re-training required.

The Eclipse can be set up to use from 2 to 128 locations and is powerful and flexible enough to be set up for 'one-hit' (single word) selection to multiple levels on chosen subjects. There are keyboard and scanning versions, with 8 or 40 minutes of recording time. The Eclipse is CE accredited and Year 2000 compliant. A detailed brochure and free demonstration are available.

Orac System

The Orac has a combination of digitised and synthesised speech within the same unit. The Orac has a reputation for being extremely functional and a good assessment tool. It is capable of going from a single word to top of the range speech sets containing up to 16,000 vocabulary items.

The Orac Communication aid is undergoing redevelopment – the new design will be launched early 1999 and will be CE marked and Year 2000 compliant.

During 1999 Mardis will be launching new products…

Watch this space!

For further information please Christine or Karen:

Mardis
Business Development Centre
Fylde Avenue, Lancaster University
Lancaster LA2 8ER
Tel: 01524-593692
Fax: 01524-848123
E mail: mardis@lancaster.ac.uk

Photo 2
Black box with pictures

The Eclipse communication aid

Eclipse in the Land of the Simmer Dim

A Case Study

The Shetland Islands are known as the 'da land o' da simmer dim' - the simmer dim being the extraordinary coppery twilight that replaces darkness in summer time (there is a famous golf tournament in Shetland that tees off at midnight, on Midsummer's Day!). And now there is an Eclipse in Shetland - not the kind that covers up the sun but the kind that comes from Mardis, and talks.

The Eclipse is being used by a teenager on a small outlying island. It takes a drive and a ferry ride to get there from the main town, Lerwick. (Next stop, Norway - Bergen is much nearer this island than Edinburgh is, and you can get a cheaper plane ticket from London to New York than to Shetland!)

Gordon is a lad who until recently was relying on the fact that family and school staff knew him well, and he used his own variety of gesture and sign to communicate. Now facing school leaving, he needs a way to communicate which can be understood by other people, especially the Social Work Department carers who will be helping him in adult life. He had not used symbols before, but seemed to learn to recognise and remember these quite well, when they were introduced.

But which communication aid?

The first imperative was a device with digitised, rather than synthetic, speech output. Although the people on this island all understand, read, and write English perfectly, and can speak it, amongst themselves they speak a dialect that sometimes sounds more Scandinavian than English. Perfect Paul is simply not up to the job!

Another priority was a device that was simple to programme and to operate. Gordon's educators and helpers were not experienced with voice output technology. They are also a very long way (and a lot of weather, in winter) from any training opportunities and from technical support.

Gordon is strictly a 'one hit-one message' user, but nonetheless needed access to a large vocabulary, not just a 32 location set up. He has good hand function and can direct select accurately on a 128 location display.

Gordon tried the **ORAC** (on loan from the CALL Centre) first. He did have success with this as a 'trainer' machine, but ultimately it was rejected. It was felt to be rather heavy, a bit old-fashioned/ unattractive to look at, and unacceptably 'fiddly' because of the external microphone and some unfriendly aspects of the disk drive operation. Programming it with more than 128 messages, using sequences and the ENTER function was found over-complicated by staff.

The **Eclipse** was tried next. The Eclipse is unusual amongst digitised devices in having a 128 location option. Its matt black slimline looks seem to go down well with a teenage user.

Though slimmer and lighter than the ORAC, its surface area was bigger than the ORAC so, needless to say, it did not fit the special mounting made for Gordon's tricycle. Back to the drawing board!

Oddly, one of the greatest technical innovations/strengths of the Eclipse turned out to be a difficult area at first. The staff had got into the habit of leaving the Orac to charge up overnight. But the Eclipse charges fully in just one hour! Funnily enough, while an overnight charge is easy to remember and cope with within school routines, a one hour charge turns out to be quite inconvenient in a school. There was a confused period when people kept getting out of step with their routine, which resulted in the Eclipse battery running down at awkward moments. Now (having been reassured by Mardis that it can do no damage) staff have decided to stick to workable routines and to leave it on charge overnight anyway, - and to leave it to shut its own charging off when full. Hopefully the battery will cope. (Using a brand new machine has its disadvantages, as there is no established track record or body of experienced users to consult.)

Programming the Vocabulary

Programming vocabulary into topic based Levels was a good way of making extensive vocabulary available without confusing staff and without requiring Gordon to sequence symbols. In the 128 layout, up to 128 Levels are available, giving a possible total of many thousands of messages. The user cannot easily change levels himself; that happens to suit Gordon.

However, it was a major hassle to make overlays for each Level. At this point, Gordon's helpers were drawing these by hand. The greatest breakthrough came when a BoardMaker 'pre-made grid' accurately designed to fit the Eclipse finally became available, recently. Versions with 128, 64, 32, 16, and 8 locations are available (you may need to delete the little square in the corner of each square if you are using direct selection and do not need the window for the scanning light). You can now download these grids (Mac or PC version) freely from the Internet, from the Mayer Johnson site: **http/:www.mayer.johnson**

Overlays are now being made on which the important people in Gordon's life stay in the same place down the two extreme left hand columns, and a set of general messages along the bottom row recur, on every overlay. (Gordon also has a low tech version of each overlay, on a pocket sized folding card (with the full set of 'masters' of each card in a photo album).

And finally, unforeseen, it turns out that the Eclipse's Talking Menu is extremely useful in this situation where all technical support can only be delivered by phone or video conferencing. Both Mardis and the CALL Centre have spent considerable time helping the local staff to sort out problems. It's much easier to work out what is going on when you can *hear* the machine itself telling you what state it's in, over the phone!

Sally Millar, CALL Centre
4 Buccleuch Place, Edinburgh EH8 9LW
Email: sally.millar@ed.ac.uk

Minspeak
The Language for Communication
David Morris, Liberator Ltd

Introduction

Since 1986, Liberator Ltd. has supplied voice output communication aids which use the Minspeak[1] system for encoding vocabulary. It has turned out to be the most successful way in which to encode vocabulary and allows users of Minspeak equipment to communicate quickly and efficiently in every communication situation whether it is a formal presentation at a Conference or just chatting to people.

Minspeak has been designed and developed for the last 20 years by Bruce Baker, an American linguist. He was studying the Mayan civilisation in which a symbol changed its meaning depending on the context in which it was found. This is similar to words in English such as a ROW, when its meaning is only known when it is placed in a specific contexts such as 'sitting in a row' or 'rowing a boat'. Bruce decided to develop this idea to allow any symbol or icon to take on any meaning depending on the context in which it was found. Minspeak is discussed in more detail below.

When Minspeak was first used in Touch and Light Talkers[2] , a lot of work had to be carried out deciding on the required vocabulary, choosing the symbols to represent it and where to position them on the overlay.

In 1989, Bruce Baker, produced the first Minspeak Application Programme (MAP)[3] known as Words Strategy[4]. MAPs have given the power of communication to the VOCAs manufactured and supplied by the Prentke Romich Company (PRC) since the early Eighties.

The Importance of Minspeak

Although Liberator supplies different types of VOCAs, the one aspect that remains constant in all of them is their ability to use Minspeak. In all the devices, this can come in the form of Language, Learning and Living (LLL) or Unity/128 or their derivatives of Stepping Stones (32-location version of LLL) and Unity/AT (32-location version of Unity/128 for the Alpha Talker).

All these MAPs are language packages which give access in their full forms to complete syntax such as verbs, past, continuous and infinitive forms of the verbs, adjectives, comparatives and superlatives as well as about 3000 words encoded in categories starting with a category icon.

Since all the symbols are on the one overlay, users of a Minspeak system have fast communication once they have learned the symbol sequences and develop motor patterns as in touch typing.

There are perhaps some readers who are unfamiliar with how a Minspeak systems works and the above description may be difficult to understand, so let's consider an example from LLL, the most used Minspeak Application Programme in the UK and Ireland:
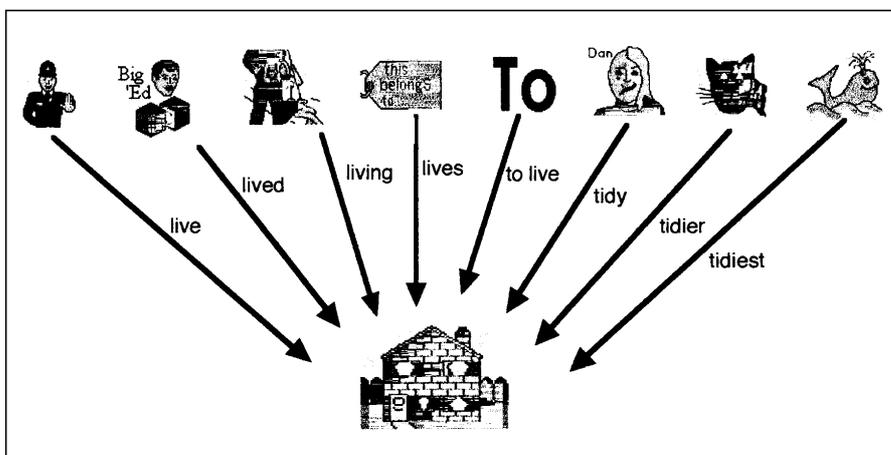

Figure 1

Figure 1 shows how the Minspeak symbols interact to encode the syntax in LLL and Stepping Stones.

In Stepping Stones, for example, the POLICEMAN starts all the present tense verbs while in LLL BIG 'ED starts the sequences for the past tense, the SWING for the -ing form, the LABEL for the -s form and the TO for the infinitive. In a similar way, the DAN icon started a category of adjectives (the letters D A N stand for 'Describes A Noun) while the comparative forms or -er forms start with TIGGER and ERNEST THE WHALE gives the superlative or -est forms. However, HOUSE itself can be used for the category of buildings as Figure 2 shows:
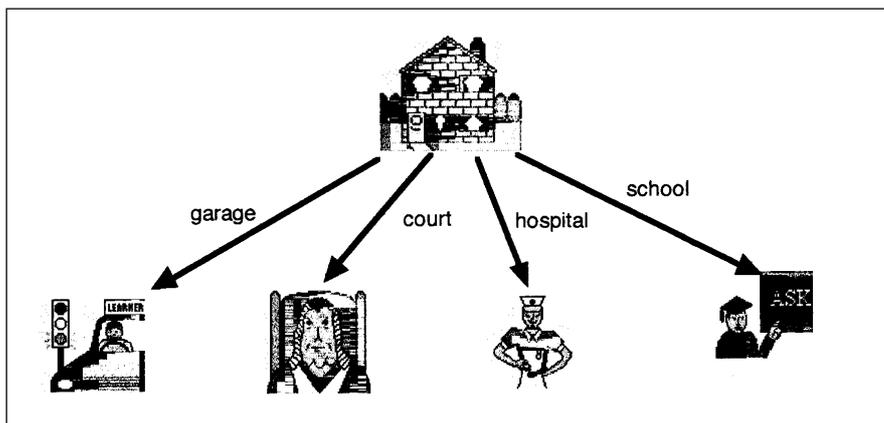

Figure 2

Minspeak and Communication

When device users learn a Minspeak programme such as LLL or Unity/128, they are learning not only to communicate using real language fast and efficiently but they are also learning about the world around them and their environment. In other words, they are learning world knowledge thus following the much quoted Wittgenstein statement:

The limits of my language are the limits of my world.

Wittgenstein (1953)

and the thesis of a Danish researcher into AAC and Aphasia:

Words are constantly changing and interacting shaping: new structures, new meanings, new contexts and new thoughts. A word contains in itself every relation of world knowledge.

Givskov (1992; 290)

In an article by Light and Lindsay in 1991, they seem to support the view that although those using AAC systems may find themselves in a 'catch 22' situation, yet it is important to give them as many opportunities as possible to acquire world knowledge:

"...a well developed (world) knowledge base appears to be a critically important prerequisite to read and write. Thus many disabled children are in a 'Catch 22': they need to be literate to acquire world knowledge; they need to have world knowledge to become literate! The impoverished world knowledge base that is typical of many children who use AAC systems must be considered to be a primary factor inhibiting their literacy development (Beukelman, 1988; Lindsay, 1989)...it is absolutely critical to provide enhanced and imaginative opportunities for acquiring world knowledge within any educational program for students who use AAC systems."

Light and Lindsay (1991)

It has been claimed a Minspeak system takes a long time to learn. This is true but often after a few weeks or months, they have learned a good core vocabulary. Some Minspeak users are still learning their system after 7 or 8 years but they have a basic vocabulary which they use every day to communicate. However, although anyone can communicate it is the quality and type of communication which is important. Those using Minspeak can chat to people about any topic anytime anywhere, answer questions spontaneously and all this without necessarily using a prestored sentence but building up sentences word by word like anyone else is able to do.

As device users learn their Minspeak system they also learn the motor patterns required to access the system. This is what makes it a fast system to use because, just as with touch typists, the user learns specific hand movements or head movements, if using an optical or infra-red headpointing system. Thus the device user forgets completely about the rationales of symbols sequences, if indeed they ever knew them!

Some Thoughts on Minspeak

It is certain there will be those reading this article who might accuse the author of some bias towards Minspeak because he works for the company which supplies the devices using Minspeak. So let's look at what Minspeak users have to say about their systems and professionals and others who attended the 6th Pittsburgh Employment Conference for Augmented Communicators held a couple of months ago.

Some comments from users of various systems on ACOLUG (Augmentative Communication Users On-Line Users' group) on the Internet are quoted overleaf.

Photo 3
Three wheelchair users
and a person standing

Peter Zein, Stuart Merdith and Gerald Masterston chatting to Russell Cross

Gina:

"I think it is important to encourage kids and adults to learn Minspeak Application Program because they could converse with their peers or people much faster. I went to a speech language pathologist, she thought the Minspeak Application Program was going to be too difficult to learn. She didn't understood the value of me using the Minspeak for developing sentences. She had me program my own sentences under icons...I was far more knowledgeable than my speech pathologist by how I organized sentences in my Liberator FOR MY NEEDS...I have taken upon myself to learn the Unity program on my own. I had my mom take a couple of sections out of the Unity binder. Then, I would study the sequences and descriptions on how the genius, Bruce Baker, came up with the sequences....I think that I am becoming more fluent by using mostly icons when I talk to people or when I'm writing in notebooks...They (her friends) agree it is a whole other language to learn and they appreciate my intelligence all-the-more." [The author has left in Gina's grammar]

Graham:

"Generally, one's first steps in most spheres of life determine the success "levels" one accomplishes. We all know, buy something cheap, a quick fix or some great bargains usually ends up being the wrong choice....I have no shares in this company nor am I trying to get in the back door but I think your child's first steps in being introduced to some device should be carefully considered. You won't be at all wrong if you choose something that uses the program Minspeak. It's AMAZING and, if he can grow up on it, expanding his vocabulary as he gets more fluent, he will end up having a Lean, Mean Talking Machine!" [As it appeared in ACOLUG]

After the Pittsburgh Employment Conference, the following comments were made:

Speech Therapist Jo Crawford:

"Most speakers had stored their messages but the critical communication came when others asked questions or made comments. Then those using Minspeak truly had the advantage and could respond with more than a nod or a signal to someone else to frame their reply."

Another, from Montana:

"By the end of the first day, I still had not heard one word from the four non-Minspeak users in my proximity, while Minspeak users were making the usual social comments throughout the presentations."

Speech Therapist Teri Madak:

"We rode in the van with Sue and another Minspeak user and were chatting together. Only later did I realise we'd all been talking in the dark"; and..."I've taught Minspeak for twelve years but never cease to be amazed at the power of the learned motor patterns."

Speech Therapist Analee Allen:

"Minspeak users could freely add spontaneous comments to their prepared messages. Users of other systems could not."

Special Educator Verda McGraw:

It was "obvious that..Minspeak made a drastic difference in the quality of communication and life for people."

Vanguard user Snoopy Botten:

"Without warning I learned I was to be a discussion leader! I was totally lost (but) got up on stage and right on the spot used Minspeak and went with the flow. I think that says a lot and was the best thing that could have happened..(and)...was as spontaneous as you can get."

Perhaps the best way to conclude an article on Minspeak is to consider again what one of it's users feel is important about it. **Graham Clarke** from South Africa used a Light Talker with his own customised overlay and then moved onto Words Strategy and now has a Liberator with Words Strategy which he accesses using an infra-red headpointer:

"...I consider it's (Minspeak) definitely THE program for non-talkers. As Braille is to the blind, and sign-language to the deaf, so must be Minspeak to non talkers...I was playing scrabble recently and had the letters N, I, C, O so I could make the word COIN but got more points if I were to use ICON. Isn't it strange - we Minspeak users use ICONS to COIN many phrases.

...the object of Minspeak is to do away with repetitive, time consuming spelling and create fluent and speedy communication. The faster one's output, the longer people are prepared to communicate with one and making your device a part of you adds to this."

David Morris, Consultant Speech & Language Therapist and VOCA Product Manager, Liberator Ltd

REFERENCES

Light, J., Lindsay P. (1991). Cognitive Science and Augmentative and Alternative Communcation. *Augementative and Alternative Communication* 7;3

Givskov, B.K. (1992). Un système de réhabilitation du langage à l'aide de l'ordinateur. *Premier Congrès Européen de Pathologie du Parole et du Langage.* Athena, Helenas 27-30 Avril 1992 pp284-294. Athens: Ellinika Grammata (In English)

Wittgenstein, L. (1953). *Philosophiche Untersuchungen.* (English Translation by Anscombe, G.: Oxford University Press, 1958)

[1] Minspeak is a trademark of Semantic Compaction Systems

[2] Touch Talker and Light Talkers are trademarks of the Prentke Romich Company

[3] Minspeak Application Programme is a trademark of Semantic Compaction Systems

[4] Words Strategy is a trademark of Semantic Compaction Systems

AAC Device Review

Gillian Rumble, VOCAtion

Vocation are very pleased to announce the launch of our first publication, the AAC Device Review. Our review was jointly authored by two Independent Consultants with many years practical experience working with AAC, Janet Larcher PhD and Gillian Rumble MRCSLT.

Our aim was to provide an overview of the devices available in the UK.

The responses so far indicate we have achieved our aim with purchases in 19 different countries as well as the UK. Responses such as "This is what I've been waiting for", "I use it everyday, its the AAC bible", and "The comments are very fair and unbiased" (and that was from a supplier!) indicate that we must be on the right track!

Who will Benefit from our Review?

We hope the ultimate beneficiary of our review will be the device user.

Our review is not only aimed at those familiar with AAC but also those who have recently dipped their toe into this fascinating but complex field. To make the information more accessible to families and untrained carers, we have included an explanation of the definitions used and included guidelines to assist in identifying the individual client's communication needs. We would hope therefore that families may find it a helpful resource following a recommendation from a CAC or their local Speech and Language Therapist. Many SLT departments, Special Schools, teaching colleges and associated professionals are using the review as a core resource.

The Review Format

The majority of dedicated augmentative communication devices available in the UK are reviewed, 34 in total, all are the current versions at time of publication. Since this is now a global market, this covers, with one or two exceptions, the AAC devices available to the English speaking world.

Communication software for computers or more peripheral systems such as voice amplifiers have not been included.

The review is printed in full colour sized to be a handy reference whether kept in a briefcase or on a shelf.

The devices are categorised by their technology into Light Tech; Mini Devices; Digitised Devices and Synthesised Devices and are colour-coded for ease of reference. The layout of each review is designed so that a section of information such as Training and Support can be quickly located and compared with another review in the same category.

Each review is structured to provide factual information and personal comments within a 1 or 2 page layout. It contains an overview of the device, describes the product features, gives details of the training and support offered by the supplier and provides technical and sourcing details. It also includes a section on strengths and weaknesses.

For anyone of an anorak disposition there's plenty of information to learn and savour!

How We Wrote the Review

All device suppliers were asked to loan their equipment for Janet and Gillian to practically test and examine all aspects of the products and support materials. This provided a unique opportunity to dedicate time and experience to jointly reviewing all aspects.

Despite their involvement in equipment loan and confirmation of technical details, care was taken ensure that the suppliers did not influence the final review of their product in any other way.

We were delighted when having seen a copy of our review, Professor Stephen Hawking agreed to write the foreword.

Each device was reviewed under the same headings and was then compared with the others in the group in terms of ease of programming, voice quality, screen clarity, etc. It was an enlightening exercise. There is an impressive range of devices available these days varying from the simple one message systems to high tech speech synthesisers with memory capacities that enable the storage of thousands of words. It would be fair to say that there was not one device that outperformed the others as all offered features that would be of benefit to individual clients. It is still a case of matching the appropriate technology with the user's needs and we hope that with this review it will be easier to compare like with like to identify the best device for the individual.

How Do I Order a Copy?

We have made every effort to keep the cost of the AAC Device Review as low as possible. The current price of £12 covers our costs of production. If you would like to purchase a copy, please send a cheque for £14 (includes £2 post and packaging) and your details to the address below.

Helping People with Disabilities to benefit from Information Technology

Paul Hawes, AbilityNet

AbilityNet is a new organisation and some readers may be unsure how, and in what circumstances, we can help. This article will explain the wide range of services that AbilityNet can offer, and how you can make use of us. I also hope to clear up the confusion that is occasionally felt about an independent charity that also supplies equipment.

The organisation was formed at the beginning of 1998 by the merger of two well-known charities in this field – The Computability Centre (TCC) and The Foundation for Communication for the Disabled (FCD). As well as the existing activities, we are creating a national network of centres that can expand our work around the country.

About The Computability Centre`

The Computability Centre (TCC) originated as the IBM Advice Centre for People with Disabilities. Five years ago, it was 'released' from IBM and became an independent charity.

TCC offers information and advice on its Freephone telephone help line. Last year they took 8,000 calls and we expect about 10,000 in 1998. This service is used by educational establishments, companies, charities, employment services and all kinds of specialists in the field of IT for people with disabilities. Most of all, however, they offer a first port of call for a very large number of individual callers looking for solutions to their problems of computer access.

TCC also offers a range of professional services, such as courses, awareness days and consultancy services for a range of business and government organisations. Like FCD, they also visit individuals to make personal recommendations.

About The Foundation for Communication for the Disabled

The Foundation (FCD) has a long history of involvement in the adaptation of standard equipment. It was formed in 1981 to handle the large number of enquiries from disabled people wishing to use the Microwriter (hands up who remembers that) as a writing tool. In the early years (before PCs and portable computers were available) FCD adapted this device to provide writing and communication systems for people with a wide range of disabilities.

FCD began to grow when PCs became widely available, and is now one of the country's leading suppliers of adapted computers. However, unlike commercial suppliers, FCD is not tied to any particular manufacturers and is free to offer advice, supply and support on a wide range of competing products.

The free assessment service offered by FCD is used by individuals, education authorities, funding charities and health service departments looking for an independent view of the various solutions available.

Services we can offer

Joining together these organisations has resulted in an impressive range of services available from a single source.

- A national Freephone advice line
- Individual assessments of computer needs
- Professional consultancy services to employers and Government departments
- Supply of pre-configured adapted computer systems
- Training and support
- Development of new ideas

Let us look at these in turn, remembering that not all of these will be directed at AAC.

The telephone advice line

This is run from our Warwick office. As mentioned above, we take a large number of calls from people wishing to know more about adaptive technology. We have a large stock of fact sheets on all aspects of special needs computing, with details of all the products that we know about, and list of suppliers for them. Many of the people ringing the advice line already have a computer or they work for organisations that use computers. For those looking for straightforward adaptations such as replacement mice or simple screen enlargers, this service is often all that is needed to get people in touch with their solution.

Other cases may be referred on, especially where the enquiry falls outside our area of expertise with computers. For example, we receive calls about CCTV systems and wheelchairs. Where appropriate, we can also take people a step further by offering a personal assessment.

Individual assessments

These are provided free of charge, although a small donation towards the cost of travel is requested. We now have 8 full time advisers who spend a large portion of their time travelling the country to give advice on adapting computers to the particular needs of individuals. These advisers are highly experienced in all areas of special needs computing, but some have particular knowledge of a certain subject, such as AAC, visual impairment, RSI/ergonomics or voice input.

Personal assessments are informal, and may be carried out at the user's home, school, college, workplace or hospital. In fact, we rather dislike the term "assessment" as it implies that we sit in judgement on the capabilities of the client. Our expertise is in adapting computers, and we work co-operatively with therapists, teachers and advisers of all sorts in arriving at a solution.

We take very seriously the need to represent the strengths and weaknesses of various products. No individual supplier is given special treatment (not even software written by our own

staff!) and we encourage commercial suppliers to treat us as customers, rather than as competitors. We like other companies to visit us and tell us how good their products are, but we always keep comparative information, and try to recommend the most appropriate solution in every case.

Professional consultancy

As well as the assessment service descried above, we offer a consultancy service that is used by different organisations in different ways:

- Some bodies (such as Employment Services) have both the funding and the statutory duty to assess people, but choose to contract it out in some areas. This often results in the same sort of assessment, but with a fee payable.

- We run our own courses on various aspects of special needs computing, normally at our Warwick centre.

- Large organisations, such as The Post Office, BT or the banks, use us to mount awareness training or seminars on specific topics for their own staff.

Supply

Where appropriate, we can also supply a ready configured system. Indeed, it is frequently the funding organisation that has asked us to carry out the assessment in the first place, hoping that we will be able to offer a one-stop-shop.

Many of our assessments end with a referral to a specialist supplier. For example, if the user requires a Braille display or a dedicated communication aid, there would be little value in our becoming involved. However, where the recommendation is for a PC, adapted with some technology that falls within our expertise, we offer three choices.

1. We can supply the complete system, ready set up with all the configuration carried out according to the assessor's report. In this case, we are responsible for sourcing all the equipment and handling any faults with the system. We also offer our complete support package, which is explained below. In this way, the client, or funder has a single point of contact, even when many different manufacturers or suppliers are involved.

2. Often, a user will already have access to a computer, or an organisation may prefer to purchase computers from a specific supplier. In this case, we can supply just the specialised software or peripherals. Clearly, in such a case our support is limited to the use of these items.

3. If a client or funder would prefer not to deal with AbilityNet at all for the supply, we will supply a complete list of all the alternative suppliers on request.

Training and support

When we supply a complete system, we also offer free telephone support for life, with unlimited access during working hours. If a problem cannot be resolved by telephone (and most can) we frequently make support calls without charge to assist the user. If an urgent problem prevents the system from being used at all, and there is no chance of visiting the locality of the user in a reasonable time, we may suggest sending the system back to us for rectification. It should be remembered that most computer 'faults' do not involve any hardware failure at all, but result from altered configurations or the installation of badly behaved software.

To prevent this from becoming too much of a hostage to fortune, we recommend an appropriate amount of training in the assessment report, and include it in our quotation for a system. Training is carried out either by our own staff or by external professional trainers, depending on the type of expertise required, or on diary commitments.

New developments

AbilityNet does not have its own products, apart from a few home-made items such as special switches, or odd items of small scale hardware when the things we need are not available commercially. However, we are involved in development in two ways.

First, we scour the computer market for new devices that may be useful to disabled computer users. Occasionally, these may need some tweaking, or some small change to use them in a way not intended by the manufacturers. A good example of this would be our use of hand held TV magnifiers in conjunction with a video grabber card to turn a computer into a very cost-effective CCTV system for partially sighted people.

Second, we have helped with fundraising and consultancy on a number of projects carried out in conjunction with other bodies. This type of arrangement has produced a number of useful devices, such as a low-cost hand-held communicator, a new type of head mouse and a cheaper way to implement environmental control in a computer based communication system.

Plans for the future

One of the reasons for the merger was to provide a starting point for a number of new centres around the country. These regional AbilityNet centres will be autonomous, but will work in co-operation and to a common set of standards. The sponsoring organisations may be from the charitable, educational or business sectors. Our first two centres have opened already, and more are in the pipeline. Those already open are:

- **Liverpool** at the Glaxo Neurological Centre, sponsored by Merseyside Inform

- **Reading** at the Microsoft campus, sponsored by Microsoft

It is hoped that centres at York and Rippon College and BT in central London will follow shortly, with centres for the Southwest and Scotland at an early stage of discussion.

Clearly, AbilityNet will be a much larger organisation and have a far higher profile than the organisations that formed it. We are determined that this will not result in any change to the personal and caring supply service of which FCD has been justly proud.

Talk:About
(Don Johnston)
Advertisement

DON JOHNSTON
special needs

Introducing the Freestyle
A Macintosh based AAC Device
Jamie Munro, Don Johnston Special Needs Ltd

I have to confess I've always had a soft spot for the Apple Macintosh. My first experience of using a personal computer was with a *Lisa,* Apple Computer's short-lived predecessor to the Macintosh, and I was immediately hooked by its simple to use graphic user interface. I began working in the computer industry in 1984 at the same time as the *Macintosh* was released and although I now use Windows based computers daily, I still have a Macintosh for my personal use.

The Macintosh has always been well served by products to enable its use by people with disabilities and in 1985 Apple became the first major computer company to form a division, the Worldwide Disability Solutions Group, specifically to look at the needs of users with disabilities. The Macintosh operating system has for many years contain two utilities for users with disabilities, EasyAccess, a keyboard utility for users with a physical disability, and CloseView, a screen magnifier for users with a visual impairment.

Since its release in 1994, synthesised and digitised speech out put has always been an integral part of the Macintosh operating system and all models of the Macintosh ever shipped have contained the sound hardware necessary.

As the interest in using computers as AAC devices has grown, the capabilities of the Macintosh, such as its ability to reproduce synthesised and digitised speech without the need for additional hardware, made the development of a Macintosh based communication device almost inevitable. The concept of the **Freestyle** was developed five years ago by Dr. Howard C. Shane, Chief Scientist at Assistive Technology, Inc (ATI). Dr. Shane is a pioneer in augmentative and alternative communication. His clinical work at Boston Children' Hospital with people of all ages and disabilities led to the ideas behind the Freestyle.

Why Choose a Macintosh-based System?

Apple Computer was one of the founders of the personal computer market and coined the term personal computer in the 1970s. The Macintosh was the first widely available personal computer with a graphic user interface when it was released in 1994 and has greatly affected the development of other personal computer operating systems since then. To date over 30 million Macintosh systems have been sold.

Despite the growth of Windows, the Macintosh remains dominant in a number of world markets, particularly in education and in design. In education, Apple remains the major manufacturer in the primary and secondary US education markets with 54% of the market. In design, the Macintosh accounts for 76% of the systems used in colour publishing (this publication was produced on a Macintosh) and 65% of the computers systems used in post-production video editing. On the Internet, 48% of web design companies use Macintosh systems and 20% of web servers are Macintosh based.

The key to the Macintosh's success has been its legendary ease of use. It was only with the release of Windows 95 that Microsoft users gained anything approaching the usability of the Macintosh operating system. Even so only 29% of Windows 95 users rated the ease of use of their system as very good to excellent compared to 78% of Macintosh users in a recent study.

Freestyle Hardware Specifications

The Freestyle measures 11.5" wide by 9.75" high by 1.875" deep and weighs 7 pounds. The stylish curved casing was designed by Frog Design, the award winning design company behind the award winning designs of the Apple IIc and Macintosh. The advanced polycarbonate plastic case walls are twice the thickness of those of a conventional portable computer and the system has rigid internal aluminium frame with separate padded support for the internal hard disk and CD ROM drive.

The screen is a large 10.4" active matrix colour display with an integral touch sensitive screen for direct access. The Freestyle is supplied preinstalled with utility software to enlarge on screen menus and window features, such as close boxes, to make them easier to use with the touch screen.

A panel on the top left of the casing covers a standard Apple ADB port for connecting external keyboards, mice and other access devices, a serial port for connecting any Apple compatible printer, a SCSI port for connecting up to 7 external SCSI devices, such as hard disks and scanners, and an external monitor port which will drive an external monitor or projection system. A monitor or projector connected to this port can either display the same image as the Freestyle's internal monitor or provide additional 'on screen' work-space.

On the right side of the Freestyle casing is an internal 12 speed CD ROM drive giving the Freestyle full multimedia capability. As well as Macintosh CD ROM titles, the CD ROM drive will also play standard audio CDs through the Freestyle's powerful speaker system.

On the left side of the Freestyle casing are ports for the optional external 3.5" floppy disk drive, and ports for both external speakers and headphones. A standard PCMCIA slot is also fitted to allow the easy addition of modems and extra hard disk storage using PCMCIA cards which simply slide into the slot. The left side also has two 3.5mm jack sockets for directly connecting standard switches. The switch sockets are

fully programmable through a simple Control Panel in the Macintosh operating system and can be set to emulate either a mouse click or any key press. This means that for most users no additional interface will be necessary as the switches can be set to drive any switch compatible Macintosh application.

Sound output is provided through two high quality speakers in the top left and right of the casing. The sound is enhanced stereo with SRS Surround Sound. The Freestyle has an internal microphone which can be used for recording sounds at CD quality or for voice activation. Between the speakers is an integral programmable infrared transmitter which can be easily programmed, once again through a simple Control Panel, to operate either any household device with an infrared handset, such as a television or stereo, or X-10 environmental control systems.

The Freestyle is compatible with the Dasssy wheelchair mounting systems and can be powered by a wheelchair battery. The 'hot swappable' internal rechargeable battery will supply about 2 hours of continual use and an additional external battery pack supplying up to 8 hours of use is available. In the UK, the standard configuration of the Freestyle includes a 750Mb internal hard disk and 64Mb of RAM and the system is based on the powerful 100MHz PowerPC 603e chip.

Accessing the Freestyle

The Freestyle is provided with Freestyle Keyboard preinstalled, an onscreen keyboard that can used either with the touchscreen or with a switch fitted in one of the Freestyle's switch ports. The keyboard can be set to either a standard QWERTY or alphabetic display and has optional speech feedback. In scanning mode, the scanning speed and scan method (either autoscan or stepscan) can be altered. If using the Freestyle with an alternative mouse device, such as the Headmouse, a dwell time can be set so that there is no need to click on the required 'key'.

Because the Freestyle is fitted with a standard Macintosh ADB port, there is a wide range of alternative keyboards and cursor control devices available. These include Origin Instruments Headmouse, TASH Mini and King keyboards and Penny and Giles range of joysticks and trackballs. An adapter is available to allow any PS2 keyboard or mouse to be connected to the ADB port.

The Freestyle is fully compatible with the Don Johnston Discover range: Discover:Switch, Discover:Board and Discover:Screen which give switch, overlay keyboard and on screen keyboard respectively. Adding a Discover:Kenx system, which provides overlay keyboard, on screen keyboard, assisted keyboard and switch access through both scanning and Morse code, the Freestyle becomes an unsurpassed and easily portable assessment system.

## What AAC software is available for the Macintosh?

However good the Macintosh operating system and the Freestyle's hardware specifications, the usefulness of the system as an AAC device depends of the quality of the software for communication available. There are two main software titles for communication available, Speaking Dynamically Pro by Mayer Johnston and Talk:About by Don Johnston. Both of these programs are only available for the Macintosh platform.

Speaking Dynamically Pro allows the easy production of multi-level communication boards with synthesised or digitised speech output that can be accessed via the touchscreen or a switch. Speaking Dynamically Pro has a wealth of powerful features such as pop-up boards, button magnification for users with low vision, combined picture and message display, auditory scanning, adjustable font sizes, word prediction and abbreviation expansion.
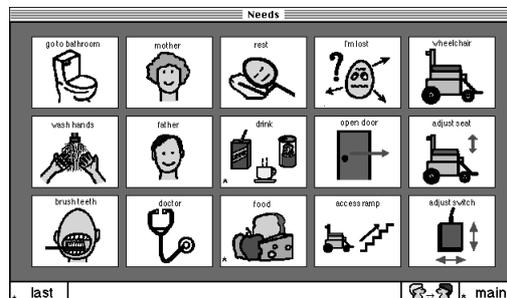
Speaking Dynamically Pro

Talk:About is a unique, text based, communication package based on research by the University of Dundee in Scotland on pragmatic social interaction. Rather than simply communicating want/needs through single words and phrases, Talk:About is designed to allow the user to initiate and carry on detailed conversations using complete stories.
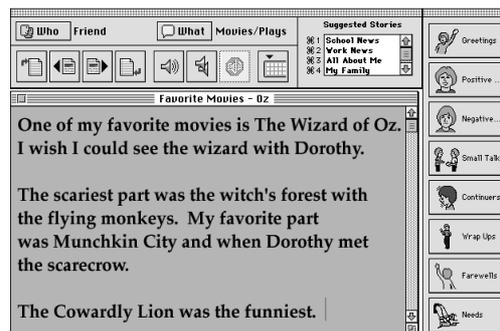
Talk:About

Other Macintosh based products can be used with the Freestyle for communication. **Discover:Screen** and **Discover:Board** can be used to create simple dynamic communication boards accessible through either touchscreen or switch. A range of symbol sets are available for use with the Discover range including Mayer Johnson's PCS, Blissymbols and DynaSims. Clicker Plus and Switch Clicker Plus are also now available for the Macintosh and can both be used to create simple dynamic communication boards.

Still Not Convinced?

If you are looking at computer based communication devices but would still prefer to have a Windows based system, then Assistive Technology are currently developing a Windows based version of the Freestyle which will be available in 1999. The current version of the Freestyle is available either with no applications software or as a complete package with installation and training based around either Talk:About or Speaking Dynamically Pro.

Essential Publications

### Speaking Up and Speaking Out! Pathways to Self-Advocacy

This pack is intended for carer, facilitators and others concerned with the advocacy needs of people with severe communication difficulties who need or use AAC. It is useful for staff development, especially for those working with adults. Developed by a special task form of Communication Matters members, the pack comprises two books. One is a comprehensive and detailed Handbook which includes case stories, discussion points and references. The other is a Practical Guide which summarises the main points of the Handbook in a series of photocopiable overheads, checklists and activities designed to help users build an advocacy plan for individuals.

Price: £30 including p&p available from **Communication Matters**

Michelle Finds a Voice

This book is a story about Michelle, a young adult with disabilities who is unable to speak or communicate effectively. A number of events cause her to feel unhappy and isolated until she and her carers are helped to overcome the communication difficulties. Various solutions are explored, including the use of signing, symbol charts and electronic communication. Michelle's story is told through pictures alone to allow each reader to make his or her own interpretation, but there is also text at the back of the book to provide one possible narrative for the pictures. The book was created by Sarah Barnett and Sheila Hollins and published by the Royal College of Psychiatrists, with financial support from Communication Matters.

Price: £10 plus £1.50 p&p from **Communication Matters**
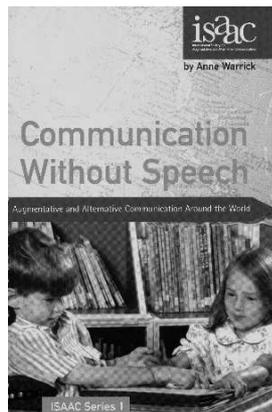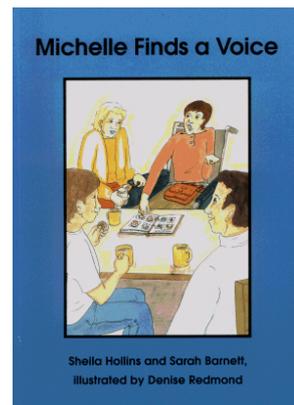
Communication Without Speech:
Augmentative and Alternative Communication Around the World

This ISAAC book, written by Anne Warrick, is a basic intro-duction to augmentative and alternative communication. It contains lots of questions and practical tips such as vocabu-lary selection, assessment, education and vocational considerations, making communication boards.

Price: £12 plus £1.50 p&p available from **Communication Matters** (also available from ACE Centre)

In Other Words (ISAAC video)

This 30 minute awareness raising video was produced in the UK by Caroline and James Gray. It is an excellent introduction to the field of AAC and would be great to show parents and students from a variety of disciplines, as well as to staff new to AAC.

Price: £10 to CM members (otherwise £15) including p&p only available from **ACE Centre (ring 01865-763508)**

Alternatively Speaking

Published three times a year, this eight page news-letter, from Augmentative Communication Inc. in the USA, contains AAC issues and in-depth reports on topics vital to the AAC community. It is written by Michael Williams, who is an AAC user and serves on ISAAC's executive committee.

Ring **Communication Matters** for an order form.

Augmentative Communication News

Published six times a year by Augmentative Com-munication Inc. in the USA, each issue contains eight pages of in-depth information on particular topics researched and written by Sarah Blackstone.

Ring **Communication Matters** for an order form.

When ordering from Communication Matters, make your cheque payable to **Communication Matters**, and send to:

COMMUNICATION *MATTERS*

c/o ACE Centre, Waynflete Road, Headington, Oxford OX3 8DD
CM Enquiries: 0870-606 5463 Email: cm@waacis.edex.co.uk