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DEMAND

Design & Manufacture for Disability

ANNUAL REPORT 1991

DEMAND

Design and Manufacture for Disability

Registered Charity no. 1008128

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Chairman's Review



A glance at the foot of this page will reveal that DEMAND has a new chairman. During the year, John Metcalfe, a founder member and chairman since 1986, retired. He supervised the development of DEMAND from what he himself described as its enthusiastic and amateur beginnings, and he instigated our move from the original cramped and inaccessible premises in London to the well-equipped workshop we now occupy. He leaves us with a highly professional and skilled team which is well placed to take the charity forward in its work. On behalf of the Trustees I thank John for his leadership and his enormous contribution to DEMAND over the past six years.

I am pleased to report that during 1991 DEMAND produced a record number of special items of equipment for disabled adults and children. Another highlight was the wonderful Television Appeal in February by Esther Rantzen, which generated immense public interest in our work. The appeal contributed £37,000 to our income, but also caused us to receive hundreds of requests for help. Our new premises and workshop facilities enabled our staff to meet this challenge of greatly increasing our output on behalf of the disabled community.

It was also a year of innovation for DEMAND, as we introduced important new developments in equipment, particularly in the field of motorisation, for workstations, self-operated chairs and furniture. We also completed a large number of projects which helped disabled people to return to work or, in some instances, to enter employment for the first time.

Another significant milestone was the decision to market the Wolfson Stroke Chair ourselves, so enabling us to market and distribute this important aid to stroke recovery at an affordable price.

We also felt that certain products needed to be designed in such a way as to enable them to be manufactured in volume. An example is the B.P. Neuro Chair which, although very successful, was too expensive to manufacture in the large numbers needed. In 1992 we shall produce this chair at reduced cost without losing any of its facilities and innovations.

DEMAND has not of course been immune to the economic constraints of the past year. We have however improved our project management and our financial controls, and this has helped us to contain our expenses well. We have also concentrated on improving our productivity. I have already mentioned the record number of projects completed and the efforts of our designers in reducing manufacturing costs. We have also taken the opportunity, as members of staff have left, to upgrade our design and workshop team. They have responded magnificently to the challenge and I am grateful to them all.

We remain however dependent on the generosity of our many donors and friends, and I take this opportunity to thank them for their valuable support. As always, they have an open invitation to visit DEMAND to see for themselves the much-needed work which we are undertaking on behalf of disabled people.

A handwritten signature in black ink, reading "Nigel Alington".

About DEMAND

DEMAND was established in 1980 in order to meet the special needs of disabled, handicapped or infirm people, specifically by promoting the design and manufacture of appropriate furniture and equipment. Today this objective is fulfilled in two ways.

Firstly, DEMAND itself designs and manufactures furniture, especially seating, and other equipment (including play equipment for children). We produce one-off items for individuals with specific needs, as well as developing products with a general application, such as the Wolfson chair for stroke patients. In all cases the focus is on needs which are not being met by equipment produced commercially or elsewhere.

Secondly, DEMAND promotes such design and manufacture by encouraging research and assisting students to specialise in the field of disability. This is achieved primarily by our close association with the City of London Polytechnic, which has the only postgraduate course in this field in the world.

DEMAND caters for all forms of handicap, both mental and physical. These include congenital handicaps such as cerebral palsy and neurological conditions such as multiple sclerosis and Parkinson's disease. We also cater for accident victims, as well as those suffering from disabling diseases such as arthritis, polio and Alzheimer's disease.

DEMAND Television Appeal



1991 Highlights

- a record number of projects completed
- an ITV appeal by Esther Rantzen, generating enormous interest in the work of DEMAND
- the extensive introduction of motorisation to facilitate the self operation of chairs and workstations

We were delighted to be chosen by the Independent Broadcasting Authority for a Television Appeal. Only sixteen television appeals were transmitted in 1991 from a total of over 16,000 applications. We were also fortunate that Esther Rantzen, Patron, agreed to present the programme on our behalf. The fully networked appeal, produced by Frank Kilbride for Yorkshire Independent Television, was broadcast on Sunday 10 February.

The appeal featured David Smith, a Trustee of DEMAND who has multiple sclerosis. The photograph shows Esther discussing with David the benefits of the Wolfson Stroke Chair and the B.P. Neuro Chair.

Esther explained the work of DEMAND by saying "We would like to show you a brilliant idea, which like so many brilliant ideas is in fact very simple. It brings together doctors, designers and craftsmen who make furniture and equipment together to work for people who need very special designs which can completely transform their lives".

The appeal also featured little Dominic who suffers from osteoporosis – he has brittle bones which fracture easily. Esther said "previously Dominic used a chair

which didn't protect him, but DEMAND's special chair enables him to play and sit without any bruising. He's smashing! How many more are there like Dominic who desperately need a chair like this?" Esther asked, "But won't Dominic grow out of his chair?". Yes he will, but DEMAND would like to carry on supplying new equipment for all his growing needs. "There are thousands of children like Dominic and frail old people too who need the invention, skill and caring love of DEMAND, but to create those little miracles of furniture and design, they need our money".

There were over 3,000 individual donations, totalling £37,000. Most donations were between £5 and £10 and the smallest was 20p from a child. Also hundreds of requests were received from throughout the country for DEMAND's help to provide special equipment for people with a wide range of disabilities.

We are very grateful to Esther Rantzen for making the Appeal, and to Frank Kilbride who produced and directed for Yorkshire Television. We thank the staff of Napsbury Hospital for their help and assistance. Our thanks to all "our stars", Dominic Hyams and his mother Wendy, Eve and Roy Castle, Ben, John Normington and David Smith.

The Wolfson Stroke Chair

Five years of research by DEMAND resulted in a specially designed chair for use by stroke patients who require postural re-education. The unique design also enables the chair to be used for postural control in other neurological conditions.

Doctors, physiotherapists, occupational therapists and nurses from St Thomas Hospital, Westminster, the Neurological Unit of Eastern Hospital, Hackney and the Stroke Unit, St Andrews Hospital, Bow, were among medical staff from nearly 200 hospitals who contributed to the design. Prototype models were subsequently tested at nineteen of these hospitals including the London Hospital, Whitechapel and the Homerton Hospital, Hackney.

The unique positioning features of the Wolfson assist the patient to adopt a mid-line upright symmetrical posture. This helps to prevent abnormal postural patterns from developing. The postural support provided can help to alleviate physical problems which often occur after a stroke, e.g. hypertonus and contractures, asymmetry, shoulder subluxation, tissue trauma and pressure sores. Correct posture also helps to re-educate a patient's sense of awareness and sensation. Use of the chair can aid the speed of recovery, so reducing bed occupancy and the need for prolonged therapeutic services.

Regular readers of our Annual Report may know that the Wolfson was sold on license for £1450 and DEMAND received small royalty payments. Although 200 have been sold the true potential is being impeded by the high cost. The Trustees decided that DEMAND should take a major step which will benefit thousands of disabled people. Following thorough research, a marketing plan was prepared for us to manufacture and distribute the Wolfson direct. Because of generous help from the Wolfson Foundation DEMAND will distribute the chair for only £950 from January 1992. This will greatly increase the number of individuals and institutions we can help. Disabled people who have need, but cannot afford this sum, will be given a Wolfson if we can fundraise on their behalf.

The relaunch of the Wolfson took place on Thursday, 23 January 1992 at a conference, "The Role of Occupational Therapy in Stroke Rehabilitation" held at



the Royal Society of Medicine, Wimpole Street, London W1. The conference organisers agreed to us exhibiting the chair in the Exhibition area. Her Royal Highness, The Princess Royal addressed the Conference and later visited the Exhibition area. The Wolfson was demonstrated to Her Royal Highness by Lord Renton, Patron, David Smith, Trustee, and Graham Dawkins, designer.

We will be pleased to demonstrate the Wolfson to hospitals or other interested organisations to show at first hand the benefits of postural re-education which it can bring to patients recovering from a stroke. To arrange a demonstration of the Chair please telephone Ron Currell, Operations Manager of DEMAND, on 0727 825506.

The B.P. Neurological Chair

In 1989, DEMAND, with substantial donations received from BP, undertook the research and development of a chair for those suffering from neurological disorders.

With members of the medical profession involved in the care of these patients, DEMAND created a design which encompassed all their requirements. Three prototypes were manufactured and given to hospitals for extensive trials. These trials convinced DEMAND that there is a special need for a chair specifically designed for patients with neurological disorders.

Although the original design of the chair was well received by physiotherapists and patients alike, the manufacturing costs would be prohibitive. As it is DEMAND's wish to make this chair available to all who need it, we are now modifying the design to deliver the same level of treatment and comfort as the tested prototypes, but at reduced cost.

The BP NeuroChair remains a very exciting project and with the experience gained with the Wolfson chair we expect to be able to achieve our ultimate aim in providing the chair to all those who would benefit.



Reclining Wheelchair for Jack

Jack was in the Royal Navy during the War and saw action in the Mediterranean whilst serving aboard "HMS Farndale". He became paraplegic in 1948 due to polio and has spent the past 43 years confined to a wheelchair. Jack suffered from pressure sores because he was unable to adjust his sitting position. His wife Eveline, who has recently had an operation for cancer, was experiencing increased difficulty in caring for him. Jack has had several wheelchairs but none were entirely satisfactory. He was using a car seat attached to a wheelchair with two large wheels at the front and two castors at the rear to enable him to manoeuvre in confined spaces.

Eveline saw DEMAND's work on the ITV Appeal and wrote to us requesting help. A designer visited Jack and evaluated his needs.

A reclining chair, with adjustable back, seat and leg frames was constructed from steel tubing to enable it to be welded to the original wheelchair base. The large front wheels which Jack prefers were retained. The arm rests were designed to assist ease of transfer to and from the chair. The seat has a shallow profile to give support without pressure. The back recline and leg riser have customised cushions for maximum comfort and the upholstery was colour co-ordinated to the choice of Jack and Eveline.

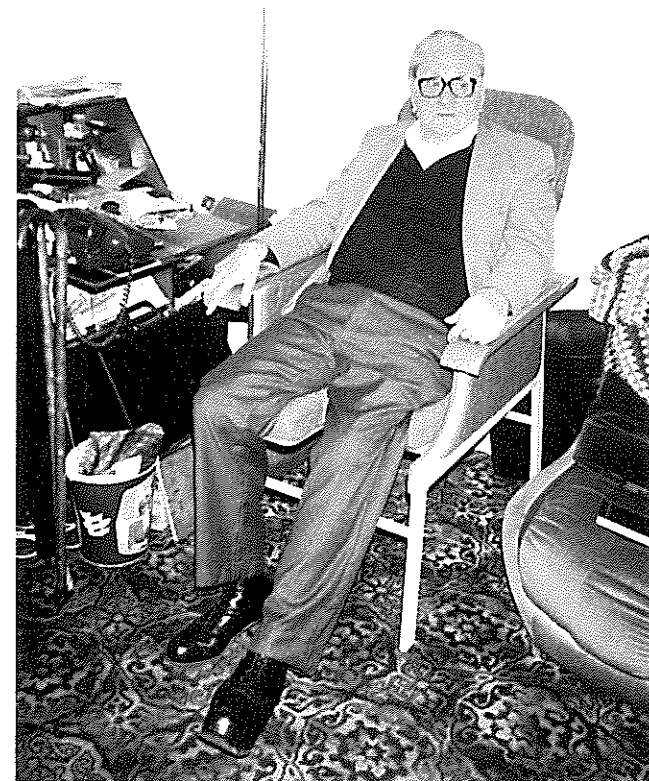


Motorised Chair for Eve

Eve has suffered from severe arthritis since childhood. She has lost a lot of her muscle tone because she is unable to take exercise. Her movements are limited and she needs crutches to move about the house. Her husband Roy is also disabled and uses a wheelchair. Eve had difficulty in sitting comfortably and so DEMAND was asked to design and make a customised chair for her. A designer visited Eve at home and used our motorised test rig to achieve improved sitting and reclining positions.

DEMAND made Eve a chair with back, seat and leg supports independently adjustable by means of electric motors. This enables her to adjust her position, without effort, to relieve the pain she frequently experiences. Getting into, and out of the chair is made easy by the motorised lifting and tilting action. The seat cushion is made from a specialised foam which shapes itself to the sitter and alleviates the pressures caused by sitting in one position for long periods.

Eve and Roy are able to look after themselves in their specially adapted bungalow. The provision of this motorised chair has greatly enhanced the quality of Eve's life. Eve and her chair were featured in the Television Appeal.



Special Chair for Alan

A senior physiotherapist approached DEMAND for help in solving Alan's "considerable seating difficulties". Alan has no movement in his left leg because of a fixed hip which has caused his thigh muscles to become wasted. He was using his hands and elbows to support his weight to manoeuvre himself to a point where he could drop into a chair. This put a considerable strain on Alan and it was damaging his domestic chair. A similar strain was put on both him and his chair when getting out.

DEMAND's test rig was taken to Alan's home and used to assess his needs. A chair was built with a strong tubular steel frame. The arms are made from beech and shaped to support Alan's weight to assist getting in and out of the chair. The chair has contoured cushions for maximum support and comfort, together with a specially shaped squab to allow Alan to position his leg comfortably.

Alan is delighted with his chair, which enables him to get in and out of it with relative ease.



Two Special Chairs for Clare

Clare, who is 11 years old, attends a Special School in Cricklewood, London. She has cerebral palsy resulting in profound mental and physical handicap. She has poor eyesight and partial loss of hearing and also suffers from epileptic fits. Clare is unable to use standard disability seating and her occupational therapist sought our help. DEMAND made a customised school chair for her. The chair has a backrest, made from shaped foam to give her good postural support, a pommel, an adjustable leg support and footrest, side fills and special armrests. It is also height and rake adjustable and is designed to allow for her future growth. The chair supports Clare in an upright position during classroom activities.



Clare also needed a chair for home use, as she had been sitting on a sofa or an adapted garden chair, supported by cushions. After consultation with her physiotherapist DEMAND built a chair incorporating the same contours and configurations as her school chair. The chair has a stylish wooden frame and the upholstery co-ordinates with her domestic surroundings. A recline mechanism allows for change of position. This chair is rake adjustable to provide an upright position for play or eating, and a recline position for resting.

Customised Chair for Sajida

Sajida has scoliosis, a pronounced sideways curvature of the spine, and is of very small stature. She is employed by the Disability Resource Association. The existing office seating was unsuitable for her as it did not give support to her back or allow for her small stature. Her Disability Advisory Service asked DEMAND to manufacture a customised chair which would give Sajida the support and comfort she needs.

We visited Sajida at her office and assessed her requirements by using the DEMAND test rig. An office chair and footstool were built appropriate to her size and weight. The chair cushions were specially contoured to match Sajida's physical shape. The chair is fully adjustable for height and seat tilt and has a separate footstool. The new chair allows Sajida to work at her standard office desk and workstations in comfort with good postural support.



Adjustable Workstations

Islington Council set up a full time Desk-top Publishing and Design course for students with disabilities. The course has the approval and part sponsorship of the European Social Fund and aims to get disabled people into employment. Customised workstations were urgently needed to meet the needs of students with variable disabilities and accommodate the computer hardware. The Cripplegate Foundation were asked to help and generously sponsored DEMAND to design and manufacture four special workstations with the following design features:-

The printer/monitor shelf and the work surface are height adjustable.

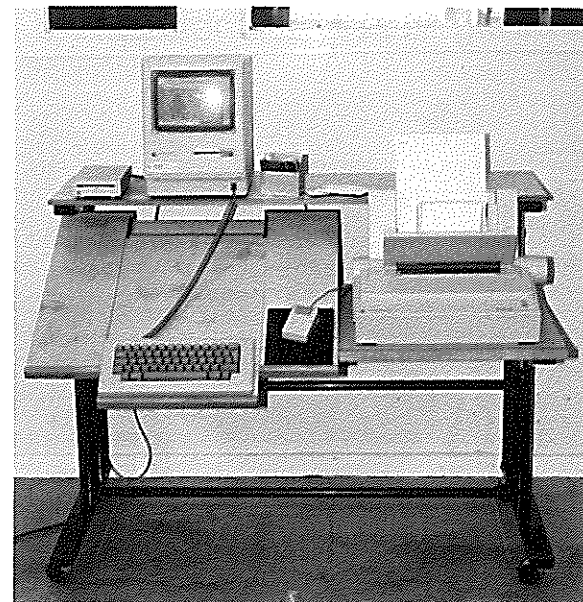
The keyboard tray is adjustable through 15 degrees, and allows wheelchair users to slide the keyboard tray close to them between the arms of their wheelchairs.

The workstation has a cable management tray which safely stows the interface and power cables.

The frame is constructed of welded box sections for durability and strength.

The working surfaces are made from plywood and trimmed with beech, and finished in multicoated durable clear lacquer.

Four large lockable castors are fitted to provide a solid base and easy manoeuvrability.

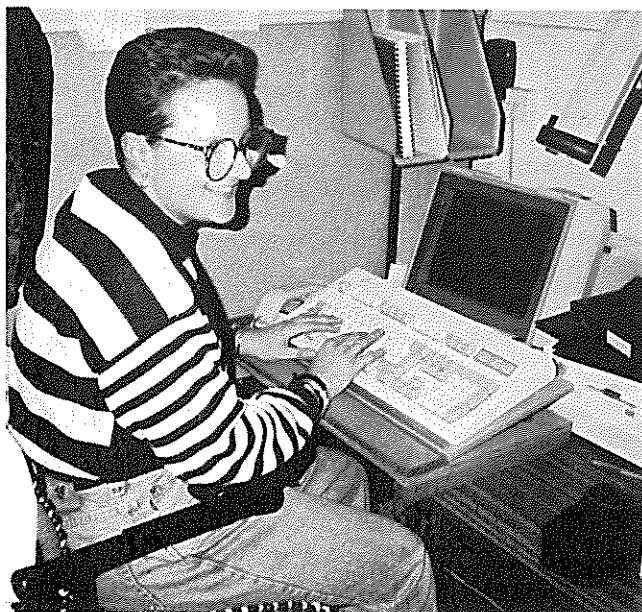


Computer Keyboard Table for Harriet

Harriet, who is 19, has juvenile rheumatoid arthritis and has little strength in her wrists and arms. She works as a receptionist at a north London Disability Resource Centre. To progress in her job she needed to develop computer skills. Because of the lack of movement and strength in her arms she was unable to operate a computer keyboard at a conventional workstation. DEMAND was approached by the Disability Advisory Service and asked if we could look at Harriet's problem.

A designer visited Harriet at her workplace, and evaluated her needs. DEMAND manufactured a computer table for her with an adjustable work surface angled through a simple roller device. Other design features are a soft padded wrist support shelf, a non-slip surface on the board and an attractive varnished wood finish.

Harriet is now able to operate her computer keyboard, positioned on the workstation, in comfort and without strain to her wrists and arms. The project has enabled Harriet to extend her computer skills and so improve her job promotional prospects.



Drawing Board for Dominic

Dominic is 3 years old. He has brittle bone disease and his arms and legs have little growth and are disproportionate to his body size due to the large numbers of fractures he has experienced. He attends the Opportunity Class within the Mandeville School, St Albans. In 1990 DEMAND made a special chair for Dominic which enables him to sit comfortably and reduces the risk of further fractures. We have also carried out adaptations to his powered wheelchair.

This year DEMAND helped Dominic with a new problem. He is very enthusiastic about drawing and painting. Due to his limited reach he needed a drawing surface that could be adjusted to a variety of angles. We made him an adjustable portable drawing board for use at home and school. He enjoys using the board and is making exceptional progress with his painting and drawing which play an important part in his self expression and educational development.

Dominic appeared in the Television Appeal on behalf of DEMAND.

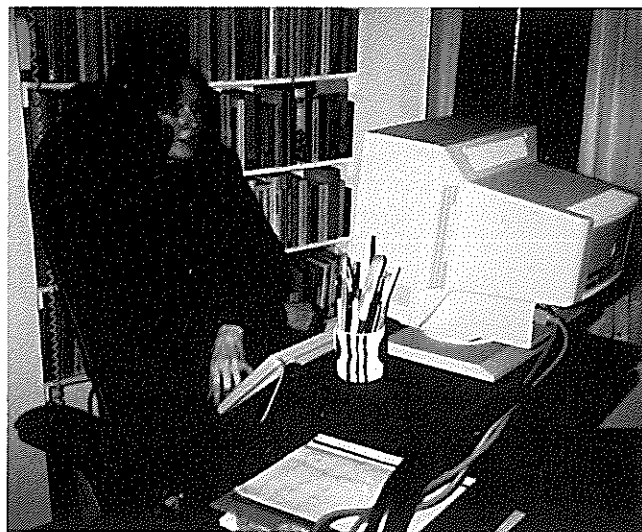


Walking Frame for Martin

Martin, who is 42 years old, suffered a severe brain injury some years ago and is now a permanent resident at the Lancome Nursing Home, New Barnet. As he became more mobile his standard walking frame proved unsuitable because he is very tall and heavily built. The frame caused him to stoop and adopt a poor postural position which also made the frame unstable.

DEMAND designed and custom built a larger and more sturdy frame to accommodate his height and weight. The new frame allows Martin to adopt a more upright position and so improves his posture. The frame has a 'pulpit' style padded area at the top on which Martin rests his arms. It has upright hand grips making it easier and safer to use.

Martin is now much more mobile because he has confidence in the frame and can move about unaided. The provision of this special frame has greatly enhanced Martin's independence and mobility.



Chair Modifications for Anne

Two years ago DEMAND designed and built a reclining chair and workstation for Anne, who suffers from chronic and extremely painful arthritis of the spine. She is an author and consequently needs to sit and work at her word processor for long periods. Her condition has progressively deteriorated and her needs have changed.

DEMAND was asked to carry out extensive modifications to the chair and workstation to re-establish her comfort whilst working. The provision of this chair enables Anne to work again in comfort at her word processor.

School Chair for Naomi

Naomi has cerebral palsy. She attends a local comprehensive school in Harpenden, and is a bright and enthusiastic pupil. However, she experienced difficulty in using the school's standard seating because of differing heights of desks and work surfaces she is required to use. This is especially so with the high tables used for domestic science and the science lessons.

Naomi's physiotherapist asked us to help. Naomi visited DEMAND for assessment and a customised school chair was designed and built for her. The chair is adjustable and has a retractable footrest which enables her feet to be positioned correctly when seated and facilitates getting in and out of it. A lockable swivel action enables her to rotate through 360 degrees.

The chair enables Naomi to participate at school on more equal terms with her classmates.



Simulator for Disabled Children

Two years ago DEMAND designed and built a playship for the Franklin Delano Roosevelt School for physically handicapped children. It was an enormous success. DEMAND's designers then looked for another project which would provide stimulating experience for disabled children and decided upon an aircraft simulator. Our research revealed that there were no simulators available that children with disabilities could use without the fear of coming to harm.

DEMAND built a scale model of the flightdeck of a Mark IV Comet. Visits were made to the RAF Museum, Hendon, to see and try the flightdeck simulators used there which are available to the general public. The "Comet" can accommodate up to four people in wheelchairs in an exciting and realistic environment. Blinds exclude all light to enable simulated flight to be experienced through a back projected computer screen. The "crew" can carry out a range of educational activities including pre-flight checks using authentic flight manuals, radio operating and flight engineering. The simulator can also be used for a range of other fly/drive experiences, including flying a helicopter or driving a racing car.

The "Comet" was presented to the Imperial Air Museum, Duxford, Cambridgeshire where it will be put on display after the fitting out is completed.



Bed Extension for Andrew

Andrew, a resident at Napsbury Hospital in London Colney, is 6'5" tall and heavily built. He has had extreme difficulty in getting comfortable in a standard hospital bed. By careful design DEMAND extended

his bed utilising the existing linen rack, already part of the bed. This modification also included an upholstered foam section to improve comfort. Andrew and his physiotherapist are extremely happy with the new bed.



Reclining Chair for Gillian

Gillian aged 39, is profoundly mentally and physically handicapped and is a permanent resident at Harperbury Hospital. She has pronounced physical deformities and has great difficulty in finding a comfortable seating position. Gillian had been using standard seating with additional loose cushions. This was unsatisfactory as good positioning was difficult to achieve and maintain for any reasonable time. Gillian's physiotherapist asked DEMAND designers to visit the Hospital and assess Gillian's seating requirements.

DEMAND made a customised chair which has a two position mechanism. This enables it to be used in a recline position for resting and an upright position for eating and other activities. The cushioning was specially shaped to accommodate Gillian's complex and asymmetrical deformities. The chair provides Gillian with a much greater degree of comfort and security.

Reclining Chair for Veronica

Veronica, who is 32, contracted polio when she was four. This severely affected her respiratory muscles causing breathing problems which have been aggravated by unsuitable seating. For the past 7 years she has been unable to stand or even sit up and has tried a number of different seats, including a reclining garden chair, in an attempt to gain relief.

Veronica contacted DEMAND after seeing the Television Appeal. She was assessed in her home and a reclining chair was built for her. The seat, back and footrest of the chair can be independently adjusted and the chair has large rear wheels for outdoor use. The cushioning was pre-tested by Veronica to ensure maximum support and comfort. It was upholstered to co-ordinate with her existing furniture. The chair enables Veronica to adjust her seating position, to obtain relief from her breathing problems, with minimal effort.



Motorised Chair/Bed for Miriam

Miriam suffers from cancer, and has had several spinal operations. She is confined to her chair and to her bed. Miriam was unable to find a chair which gave her the range of seating positions she needs to be comfortable. Her husband saw the Television Appeal and wrote to us for help.

A designer visited Miriam at her home. A motorised chair/bed was built which reclines from an upright position to a horizontal position by means of two independent motors controlled by a handset. The cushioning was designed to give her firm but comfortable postural support. The back of the chair and the footrest are independent allowing her to adjust and control her seating at the touch of a button. She can also convert the chair into a daybed. The chair was upholstered to harmonise with Miriam's existing furniture.

This motorised chair/bed has meant that Miriam does not need assistance to adjust her seating position or to lie down, which enhances her independence.

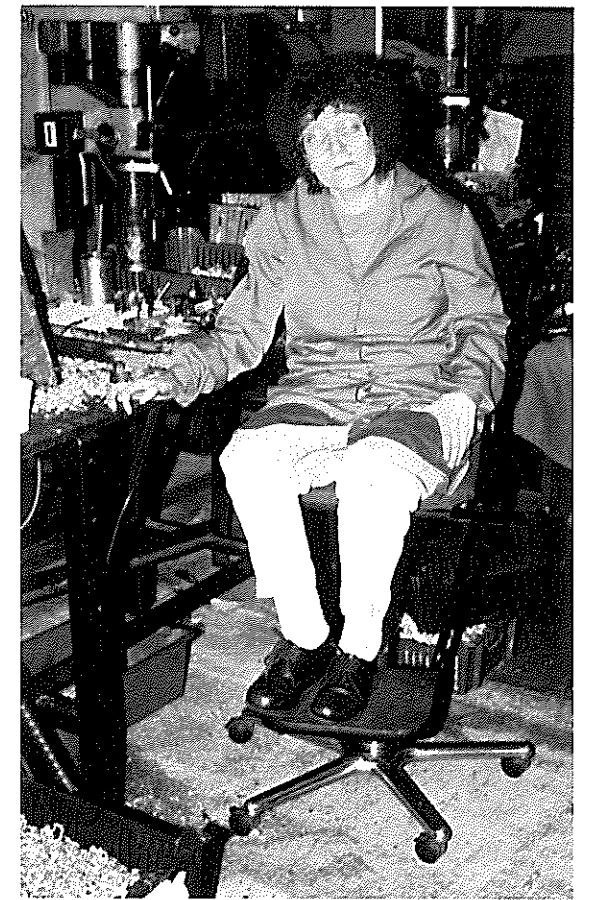


Work Stool for Karen

Karen has cerebral palsy. Her mobility is restricted but she can use her arms and hands effectively, and walks with the aid of elbow crutches. Karen works for a small engineering company operating a variety of drills and presses. All the machines vary in height and she operates them from the sitting position. Karen needed a stool which would adjust easily to suit the differing heights of the machinery.

The Disablement Advisory Service asked DEMAND to help. We visited Karen at her work and then built a stool for her. It has a back recline for increased comfort and a platform footrest for use when she is working on higher benches. The stool swivels to enable Karen to address a workstation to her left or right as well as to her front, and has lockable castors for safety.

The provision of this stool enables Karen to continue working in comfort and safety.

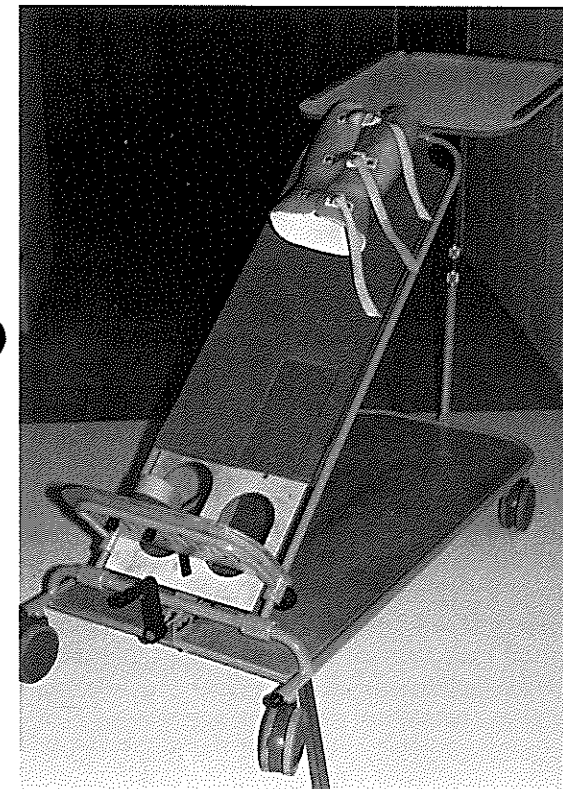


Prone Board for Kerry

Kerry, is 15 years old and suffers from athetoid spastic scoliosis resulting from cerebral palsy. She also has a deformed foot.

Five years ago DEMAND were asked by the Superintendent Paediatric Physiotherapist of Islington Health Authority to design a prone board for Kerry which would be weightbearing through her feet and which would accommodate her deformed foot. Commercially available prone boards had been found to be unsuitable. DEMAND manufactured a prone board which met her needs exactly and allowed her to work with her hands while in a prone position. Kerry has used this prone board for five years as it was designed to allow for her growth.

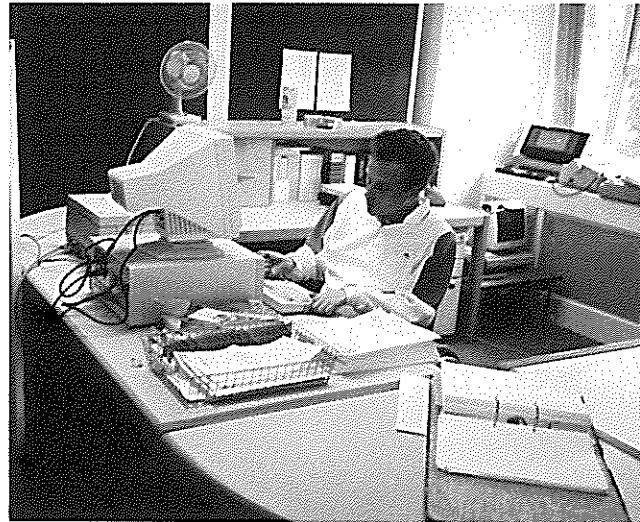
This year DEMAND was again asked to help as Kerry's needs had changed. A new prone board which incorporated a customised spinal brace has been built for her. The new board will allow for her future growth and give many years of service.



Workstation for Victor

Victor, who is 22 years old, is employed in the London Divisional Office of an international charity. He is tetraplegic following a serious road accident and has very limited function in his arms and hands. He uses wrist sticks to operate his computer keyboard.

DEMAND were asked by the Disablement Advisory Service to supply a customised work environment for Victor. Black Arrow Office Furniture Specialists most generously donated a suite of desks and workstations which DEMAND adapted to meet Victor's special requirements. The provision of this adapted equipment has enabled Victor to work effectively on his own within the charity.



Motorised Chair/Bed for Alice

Alice, who is 80, has rheumatoid arthritis and experiences severe pain in her hip joints. She cannot use her arms and hands effectively because of the pain caused by the pressure she needs to exert when she sits and stands. Alice's social worker came to DEMAND for help. A designer visited her and used our motorised test rig to achieve improved sitting and reclining positions.

DEMAND designed and made for Alice a reclining chair with adjustable back, seat and leg support which are individually motorised to enable her to make a full range of fine adjustments. The chair lifts her from a sitting position to a standing position. The arms fitted to the seatbase help her to enter and leave the chair. The cushions are made with a soft central area to reduce pressure. A motorised back recliner and leg raiser enables her to convert the chair into a comfortable bed.

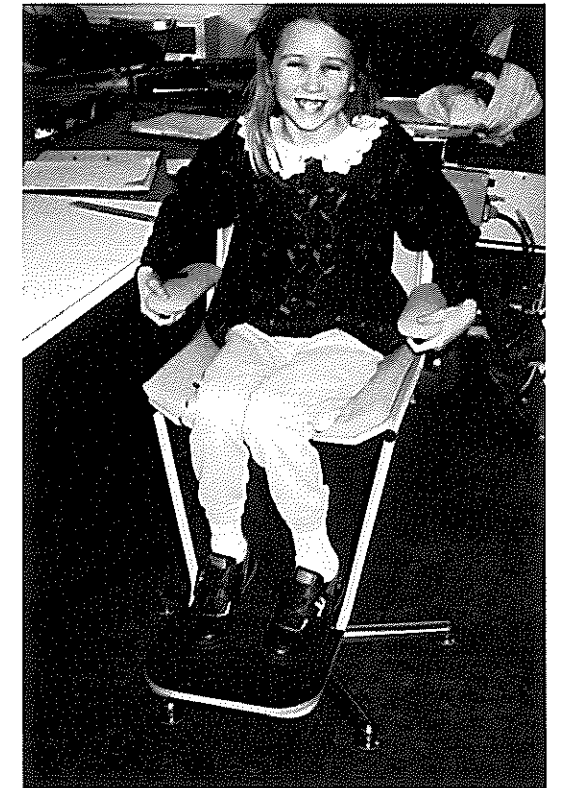
Despite her severe disability Alice is cheerful, optimistic and independent. She is able to look after herself in her self-contained flat under the watchful eye of a warden within her sheltered accommodation. This chair/bed has greatly increased the quality of her life.

Schoolchair for Rebecca

Rebecca, who is 12, has suffered since birth from ataxia telangiectasis, a chronic hereditary disease which causes the breakdown of nervous impulses from the brain. This degenerative neurological condition affects vision, speech and mobility as the brain motor control progressively decreases. The paediatric occupational therapist, who has looked after her since birth, asked DEMAND to provide a customised height-adjustable chair to enable her to take part in classroom activities.

DEMAND evaluated Rebecca's needs and a special chair was designed and built. It has variable height adjustment, a forward tilting seat and adjustable backward recline lockable in any position. Cushions, specially shaped, provide comfortable support for her back, hips and thighs. Short padded arm rests allow the chair to be moved close to work surfaces. A pentagonal base was fitted with lockable castors for safety and ease of movement between classrooms.

Despite her profound disabilities Rebecca is full of life, cheerful and desperately wants to participate in all aspects of school life.



Sofa-Bed for Doug

Doug has multiple sclerosis. In 1986 DEMAND designed and built a special sofabed which gave him good postural support when sitting and ease of transfer from his wheelchair. He could also convert the sofa into a bed himself with minimal effort.

Doug's medical condition has deteriorated and he now has less strength in his hands and arms. DEMAND modified the conversion mechanism of the sofabed to enable him to continue to operate it himself. It was also refurbished and continues to give Doug comfort and support.

DEMAND acknowledges the assistance given by:

Herbert Pepper & Rudland, accountants
Venner Shipley & Co., patent attorneys
The Disablement Advisory Service

Chair Modification for Rita

In 1987 DEMAND designed and built a special chair for Rita who has a spinal abnormality and acute arthritis. She had tried a number of commercially available chairs without success and came to DEMAND as a final hope. This year Rita came back to us for further help as her needs have progressively changed. We were able to modify her existing chair by rebuilding the front of the chair to provide improved leg support. The chair was then re-upholstered with improved contoured cushion support.

Staff Associates

Ron Currell, Operations Manager
Alan Stokes, Finance/Fundraising Manager
Beryl Cresswell, Administration
Brian McGirr, Designer
Graham Dawkins, Designer/Craftsman
David Gold, Craftsman
Frank Flanagan, Craftsman
Kelvin Scott, Craftsman
Derek Bone, Craftsman

The City of London Polytechnic and DEMAND Design Research for Disability

DEMAND continues to support students on the Postgraduate Diploma and Masters Degree courses at the City of London Polytechnic. During 1991 students and staff made visits to the Three Cedars Workshops. In some cases students were able to make visits and stay for a week at a time making full use of the machines and facilities to progress some very interesting project work.

This course, which started in association with DEMAND in 1981, over the years has developed a good reputation. It has also initiated a number of designs that have gone into production. Perhaps more importantly students, who in those early days studied as a result of DEMAND scholarships, are continuing to develop their careers in professional practice. The course organiser, Brian Boothby, often gets news from this country and abroad about past students and their activities and the benefits of their contribution to good design for people with disabilities. Both therapists and designers comment on the value of the course. Some return to give seminars and lectures in the Polytechnic.

Present times are not easy for students, especially those studying in London with high lodging expenses and travel costs. Since there are no statutory awards for postgraduate study, our students are having to seek funds from other sources and many on this course are having to take on part-time paid work to make ends meet. However they remain dedicated and tackle their projects with enthusiasm and dedication. Some of the projects completed in 1991 are described below.

ALLEN HINDE, a physiotherapist, joined the course from Guy's Hospital to carry out an investigation into the Effectiveness of Energy Reclamation Equipment and some of the Design Implications for Hydrotherapy Facilities. Having proved the running cost savings that could be made, Allen went on to prepare

recommendations for the design of hydrotherapy areas that can be taken up by architects involved in hospital building. The results of this work were published in the Journal of the Chartered Society of Physiotherapists in November 1991.

ROD ADAMS, ROBERT CARR and GAVIN JENKINS worked as a team on various problems associated with the use of wheelchairs. This involved them in such aspects as Contoured Seating and Ride Comfort through the use of damping devices to reduce vibration. A third problem was that of the design of good luggage that could be used by wheelchair users from executive cases to sports bags. Throughout, the aim was to take a functional and non-stigmatising approach.

Diploma students initiated projects in 1991 which will be submitted to examiners in 1992. They include:-

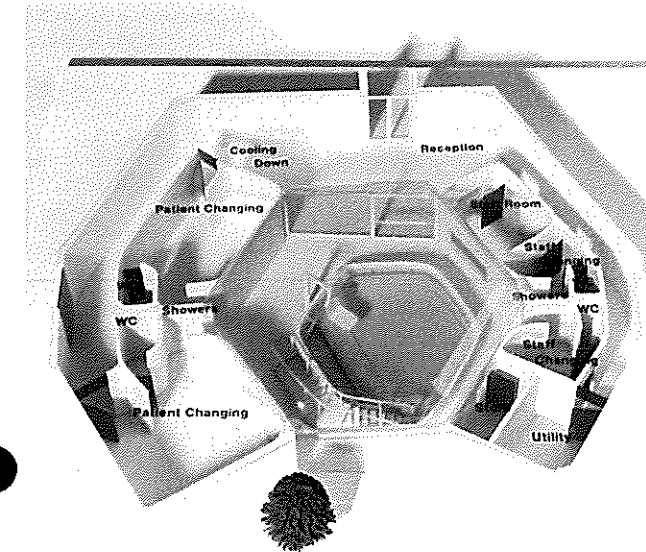
LIZ SHAW who is developing a Learning Game to benefit blind and partially sighted children. It is based on the use of smell as a stimulus and tests to date suggest it will be a valuable teaching and learning aid. Most of the production of this design will be achieved by the computer controlled router facilities available at the college.

ATTRACTA DURKIN is continuing design work on Seating Supports that will allow disabled air travellers to fly within the very strict safety regulations defined by the Civil Aviation Authority. These posture supports will be flight tested in the near future.

ROBERT ALEY, with financial support from the Spastics Society, is developing a Modular Shower for people with reduced bodily function. Some of the manufacturing of a full size test model has been carried out at the DEMAND workshops. Trials on this design will soon be under way in a hospital.

Examples of Student Work

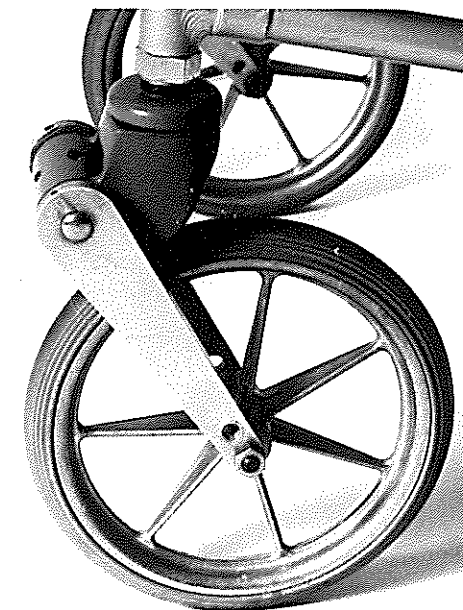
Model of recommendations for hydrotherapy pool and associated facilities.
Designed by Allen Hinde



Postural Support for disabled airline passengers giving upper trunk control.
Designed by Attracta Durkin



Experimental design for wheelchair shock absorber.
Designed by Robert Carr



Customised preformed seating system.
Designed by Roderic Adams



DEMAND

Design and Manufacture for Disability

Income and Expenditure Account for the year ended 31 December 1991

	£	1991	£	£	1990	£
INCOME						
Donations			174,328		201,002	
TV Appeal			36,586		—	
DHSS Grant			—		9,250	
Untaxed Interest			22,612		19,049	
Royalties			7,802		13,317	
Income Tax recoverable			1,283		2,837	
			<u>242,611</u>		<u>245,455</u>	
Paddy Renton Fund						
Donations and covenants	600			500		
Income Tax recoverable	167			167		
	<u>767</u>			<u>667</u>		
Less: Expenses	(3,678)			—		
Per Balance Sheet	<u>(2,911)</u>			<u>667</u>		
EXPENDITURE						
Cost of sales			8,444		—	
Student support			937		4,487	
Staff costs			121,445		118,394	
Manpower Services Commission Community Project			—		1,084	
Professional fees			3,990		11,904	
Workshop and design expenses			49,921		42,319	
Administration expenses			10,455		10,411	
Depreciation and Amortization			25,599		25,161	
			<u>220,791</u>		<u>213,760</u>	
SURPLUS			<u>21,820</u>		<u>31,695</u>	

DEMAND

Design and Manufacture for Disability

Balance Sheet 31 December 1991

	£	1991	£	£	1990	£
FIXED ASSETS (net of depreciation)						
Leasehold Property Alterations			15,803		31,606	
Tools and equipment			54,669		56,878	
			<u>70,472</u>		<u>88,484</u>	
CURRENT ASSETS						
Debtors and prepayments	7,490			13,182		
Cash and bank balances	193,974			158,194		
	<u>201,464</u>			<u>171,376</u>		
CURRENT LIABILITIES						
Creditors	38,863			45,696		
			<u>162,601</u>		<u>125,680</u>	
			<u>£233,073</u>		<u>£214,164</u>	
Represented by:						
GENERAL FUND						
Balance brought forward			191,563		159,868	
Surplus for the year			21,820		31,695	
			<u>213,383</u>		<u>191,563</u>	
PADDY RENTON FUND						
Balance brought forward	22,601			21,394		
(Deficit)/Surplus for the year	(2,911)			667		
			<u>19,690</u>		<u>22,601</u>	
			<u>£233,073</u>		<u>£214,164</u>	

Hon. Treasurer/Trustee
A. Cussins



REPORT OF THE AUDITORS TO THE TRUSTEES OF DEMAND

We have examined the annexed balance sheet and income and expenditure account which have been prepared under the historical cost convention. In our opinion, the accounts give a true and fair view of the state of the affairs of DEMAND at 31, December 1991 and of the income and expenditure for year ended on that date.

2 South Audley Street
Mayfair, London W1Y 6AJ

HERBERT PEPPER & RUDLAND
Chartered Accountants

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The Maxwell Trust
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