REMOTE WORK UNITS PROJECT FOR DISABLED PEOPLE

EVALUATION STUDY

Prepared by
Department of Trade and Industry
Information Technology Division
29 Bressenden Place
LONDON SW1E 5DT

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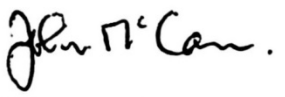
INFORMATION TECHNOLOGY

F O R E W O R D

The Remote Work Units Project has clearly demonstrated that Information Technology is providing real employment opportunities for those seeking to work from home and for disabled people with mobility problems in particular.

The number of employers (40) and disabled people (53) participating in this Evaluation Study represents the largest base of case study material on home-based employment using IT currently available in Western Europe and the United States.

The findings of this Study have relevance for employers considering remote working; for disabled people seeking home-based and paid employment; and for those whose remit it is to train and place disabled people in employment.



John McCann
Department of Trade and Industry
Information Technology Division

December 1985

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REMOTE WORK UNITS PROJECT FOR DISABLED PEOPLE
EVALUATION STUDY

SECTION ONE

1. INTERIM CONCLUSIONS AND SUMMARY

1.1 Interim Conclusions - Disabled People

Opportunities

- New home-based job opportunities for disabled people are being created
- Disabled employees can convert from on-site workers to home-based workers relatively easily
- Disabled people work as effectively as able bodied people
- Disabled people feel better if they work
- Disabled people are often highly qualified
- Disabled people have job expectations and career aspirations similar to those of other workers

Issues

- The potential of disabled people is not always fully exploited by employers
- The training needs of home-based, disabled people are not adequately provided for
- Remote management and isolation create problems
- Adequate financial rewards need to be assured

1.2 Interim Conclusions - Employers

Opportunities

- Information Technology (IT) holds many attractions for employers
- Costs associated with remote working are comparable to on-site costs
- Productivity/output levels of disabled, remote employees are good

1.2 Interim Conclusions - Employers /contd

- The potential for employers to employ remote, disabled workers has not been previously exploited
- Employers are willing to embark upon remote employment with the incentive of funding

Issues

- Remote management is not easy and expertise in this area needs to be developed
- Job and company induction training provision is inadequate
- Employer support is crucial in achieving successful remote working
- Home-based, remote working involving the use of IT is unlikely to be widespread in the short-term

1.3 Interim Conclusions - Technology

Opportunities

- IT opens up both new and 'retention' job opportunities for disabled people to work from home
- Computer equipment can be successfully operated by people with many different skills and backgrounds
- Computer equipment can be successfully operated by people with varying degrees of disability, including the most severely physically disabled, with little or no adaptation

Issues

- Software performs well but hardware less so
- The potential of the equipment is not fully exploited particularly communication possibilities
- Follow-up support from computer equipment suppliers has been found to be satisfactory
- Training in hardware operation and software applications is inadequate

1.4 Summary

Remote working is not a well tried concept (see footnote) as most people expect and do a job at a 'recognised' place of employment and not from their own home. The idea of a disabled person working from home, however, is not new. Home-based jobs for disabled people have generally tended to be in the craft industries - basket weaving and knitting are just two examples - with payment closely tied to output and have been neither highly regarded nor well paid.

The advent of microtechnology is beginning to change all this. New and worthwhile jobs which can be done at home are being created as a direct consequence of IT in the workplace and disabled people, especially those with mobility problems, are benefitting particularly from this development.

The DTI, as part of its Information Technology Awareness Programme, has been sponsoring a project (The Extended Pilot Remote Work Units Project) involving the employment of disabled people at home. Between 1983 and 85 sixty disabled people have been set up to work from home doing jobs requiring significant use of a business microcomputer and applications software. This project has now ended and shows clearly that Information Technology is indeed an employment 'enabler' for disabled people especially those confined to the home.

The overall aim of this Evaluation Study is to assess the effectiveness of the Extended Pilot Remote Work Units Project (Phase One) and, additionally

- to establish some tried and tested implementation principles and apply these to a Phase Two follow-on project (sponsored by the DTI and the European Social Fund (ESF));

- to provide the Manpower Services Commission (MSC) with a range of quantitative and qualitative information so that they may assess homeworking involving IT and how it might impact on their own employment schemes for disabled people.

1981 Labour Force Survey estimated that only 113,850 people were doing work at home for a single employer in England and Wales

Phase Two of the project (see footnote) which will run until August 1986 and will set up a further 40 home-based jobs, aims to establish operational guidelines for MSC should they adopt this kind of provision.

This Study focuses solely on the Extended Pilot Project (Phase One) and on 58 disabled people placed in a diverse range of full-time and part-time jobs spanning many skill areas. The range of job titles includes: Copy Typist, Bookkeeper, Typesetter, Tachograph Analyser, Viewdata Editor, Company Accountant, Instrument Engineer and Programmer and Trainee Programmer.

A small number of disabled people (14) were set up on a self-employed basis, but the vast majority (44) were placed in regular employment with an employer.

Data for this Study has been gathered from 40 employers and 53 disabled people. In absolute terms these numbers are small but in the context of home-based employment and IT they are significant. There seem to be few experiences of such scope throughout the the rest of Europe and the project is providing some useful indicators:

- New job opportunities are being created. Most of the participating disabled people (32 out of 41) were placed in new jobs.

- The opportunity to 'retain' employment is enhanced. One fifth (8 out of 41) were helped to retain their jobs by converting from an on-site employee to a home-based one using a microcomputer. In most instances, the transition was relatively smooth.

- IT opens up opportunities for self-employment (13 out of 41).

- Most of the employers (28 out of 39) rate output from their disabled, remote employees on a par or above that of their able-bodied employees doing similar work on-site.

- Employers feel that the cost of operating a Remote Work Unit compares favourably with the cost of having a worker on-site.

- Home-based, disabled workers say they are making a fair living from the job; that they have enhanced old skills or acquired new ones; and that being able to work has made them feel better.

Phase Two : Project is managed and implemented by IT World Limited, Asphalte House, Palace Street, London SW1E 5HS

Two significant areas of concern have been identified:

- Employers experience difficulty in managing remotely. Many say they under-estimated the amount of effort needed to integrate the employee into the team and department; to organise and supervise workloads and to manage the delivery and collection of work. Although half the remote employees (20) are located less than six miles from their employers this relatively short distance creates problems.

- The second concern - voiced by employers and employees alike - is training provision. They both feel that computer training generally is poor; that equipment suppliers are not filling the gap; and that there are difficulties attached to delivering training in the home.

There appear to be a number of important pre-requisites to establishing a successful Remote Work Unit:

- Employer commitment must be high and should not be under-estimated and should be combined with an empathy for the remote, disabled employee.

- In self-employed circumstances, worker commitment should be coupled with sound business and organisational skills.

- The disabled employee must be motivated towards working and have have a flexible and understanding attitude to fluctuating workloads and lack of direct supervision.

If commitment and understanding are present then remote working is indeed a viable proposition.

This Study contains details of jobs and skills, disabilities and management procedures and is being used to define selection criteria and implementation principles for Remote Work Units currently being set up under Phase Two.

The idea that Information Technology is an employment 'enabler' for severely disabled people who wish to work from home has been clearly demonstrated. The DTI hopes that the contents of this Study will be of use to the MSC when they themselves assess the implications of homeworking for their current employment provision for disabled people.

SECTION TWO

2. BACKGROUND TO THE EXTENDED PILOT REMOTE WORK UNITS PROJECT (PHASE ONE)

2.1 What is a Remote Work Unit?

There are essentially four basic components in a Remote Work Unit:-

- o an employer with
- o a disabled employee
- o doing a job from home
- o using a microcomputer provided by the DTI

The employer carries all the usual responsibilities - payment of wages and running costs; provision of training and organisation and supervision of work.

As a general rule, the disabled person experiences difficulty in moving around to such an extent that going to and from work on a regular basis would be impossible.

The job is done remotely with the home being the permanent place of work. The employee generally makes occasional visits to the office and the employer also calls in on the employee.

The equipment is provided by the DTI and can be broadly described as business microtechnology. It is sometimes connected to on-site equipment for data transfer. Transfer of work between the employee's home and the employer site is also achieved via post, courier or work colleagues.

In essence, a Remote Work Unit involves a disabled person carrying out a 'normal' job of work at home with the aid of a microcomputer.

2.2 How the Project Evolved

It all began in 1982 - 'The Year of Information Technology' - or 'IT 82' as it become more popularly known - and with the DTI's IT Awareness Programme designed to raise public interest in Information Technology products, applications and potential.

In the context of employment, electronic methods of handling information and producing documents were making it increasingly possible for people with limited manipulative ability to produce work.

A situation of falling computer equipment costs combined with rising costs of office space and overheads made remote employment an increasingly attractive and viable proposition.

For employers, the attraction was one of savings; for the home-bound it presented a genuine employment opportunity and for the severely physically disabled it offered a unique opportunity to become gainfully employed.

All of these factors triggered off the idea of mixing Information Technology, home-based working and disabled people resulting in the launch in November 1981 of the DTI pilot initiative for six Remote Work Units.

2.3 Scope of the Project (Extended Pilot/ Phase One)

The primary aim of this Pilot was to explore the potential for home-based working for disabled people involving microcomputing technology.

Although only six Remote Work Units were to be initially established every effort was made to include large and small employers; experienced and inexperienced users of technology; and current and new employers of disabled people. Approximately sixteen companies were approached. There was also an attempt to include as many different types of disability as six Units would allow with priority being given to those affecting mobility, e.g. Paraplegia and Tetraplegia, Multiple Sclerosis and Brittle Bone Disease. The technology focus, too, was broad and different types and models were included.

From the start the signs were good. There were willing employers to be found; suitable jobs which could be done from home with the aid of a microcomputer; and certainly skilled, disabled people looking for worthwhile, paid work. In short, the blend of IT, remote working and disabled people appeared to work.

This success encouraged the Department to extend its Pilot from six to sixty Remote Work Units and an Extended Pilot Remote Work Units Project was launched in October 1982. New aspects were incorporated into this extension. Units were to be set up in all parts of the United Kingdom and were to include opportunities for self-employment. The need to cover variety in equipment was felt to be less significant so no special efforts were made in this direction. In essence the Extended Pilot Project remained experimental so few other parameters were applied.

As the Project gathered momentum an additional group of people was included, namely disabled people already in employment. These people were in danger of losing their jobs because either they had suffered an accident or their persisting condition was deterioriating. In such circumstances, employers were disheartened at the prospect of losing an experienced and skilled worker and the chance to retain them offered through this Project provided a solution.

By the Summer of 1984, the completion date for the Extended Pilot Project, 58 Remote Work Units had been established.

2.4 Consultants to the Department of Trade and Industry

The first six Remote Work Units were set up by the DTI with help from one commerical firm of consultants. The consultancy's remit was to find willing employers and suitable disabled people, to agree equipment specifications, to acquire it and arrange for installation.

Implementation of the remaining Units became the responsibility of four independent Consultancies. Each of these firms approached the task in a different way ensuring as broad an experience as possible. For example, two consultancies concentrated on regions (one on the South West and the other on Northern Ireland); another worked formally with the MSC's Professional and Executive Recruitment Services (PER). Although their brief was wide, responsibility for approval or rejection of individual Units remained with the Department.

SECTION THREE

3. THE EVALUATION STUDY

3.1 Introduction

As the Extended Pilot Project drew to a close it was apparent that a new and viable method of working for disabled people had been established. The DTI were keen to ensure that this provision should continue so initiated discussions with the Manpower Services Commission.

The DTI and the MSC agreed that Disablement Advisory Service staff would become actively involved in setting up a further 40 Remote Work Units (under Phase Two). In this way, MSC would be able to judge for themselves the overall viability of this mode of working and to assess its implications for MSC's current schemes.

It is hoped that this practical involvement, together with these evaluation findings, will help the MSC to establish operational guidelines should they eventually encompass this kind of opportunity into their own provision.

3.2 Study Objectives

The aims of this Evaluation Study are:

- to assess the overall effectiveness of the Extended Pilot Remote Work Units Project
- to establish some implementation principles and test these in the DTI/ESF-funded, follow-on project
- to provide the MSC with a range of qualitative and quantitative information for their own assessment purposes

3.3 Methodology

The views and comments of Remote Work Unit participants were gathered via interview survey or self-complete questionnaire and collated by the DTI Project Evaluation Officer (J Hubert).

A pre-set list of the most commonly used computer applications was used to define job tasks and a further pre-set list for State Benefits.

The contents of the interview schedules and questionnaires were discussed and agreed with MSC.

EVALUATION SAMPLE

Status	Employers	Disabled People Working from Home
Employed	39*	40*
Self Employed	-	13
Totals	**39**	**53**

*1 Employer had 2 Remote Employees sharing 1 Job

The Base Figures used throughout this Study vary because:

- o some questions asked at interview were not included in the self-complete questionnaire
- o some questions were not answered
- o some questions were relevant to only one type of participant (e.g. employer) whereas others applied to more than one (e.g. employer and self-employed)
- o additional facts were taken from DTI records, e.g. location and size

EVALUATION BASE FIGURES

Data Gathered via:	Employers	Disabled People Working from Home
Interview		
Employed	23	24
Self Employed	-	4
Self-Complete Questionnaire		
Employed	16	16
Self Employed	-	9
Totals	**39**	**53**

SECTION FOUR

4. IMPLEMENTING REMOTE WORK UNITS

4.1 Introduction

The 53 Remote Work Units implemented during the Extended Pilot Project (and now evaluated) comprised the following - an employer (except in the self-employed cases), a disabled person, a job and some new technology equipment.

As a rule, three discrete but complementary processes were involved in their implementation:

- **Gaining Commitment** was the first step. Attracting both employers and disabled people to the Project and then converting this into agreement to participate.
- **A Process of Matching** followed. This involved matching employers to employees and jobs to technology.
- **Support** took many forms. From funding and procuring equipment; recruiting job candidates; to coordinating equipment installation and helping with training provision.

4.2 Gaining Commitment

An awareness campaign ran constantly throughout the life of the project. The following table shows how this was achieved and gives some insight into relative effectiveness.

Attraction to the Project
Base = 38 Employers / 53 Disabled People

The employer and disabled person became aware of this Project through:	Employers	Disabled People
	%	%
Radio	16	2
TV	3	6
Articles	10	21
MSC Network (DASM/DRO)	8	24
*Personal Contact	63	47

*Personal Contact = Friend, relative, doctor, hospital, disability group and DTI Consultants

Access to Project Information
Base = 23 Employers / 28 Disabled People

The employer and disabled person found it easy to get information on the Project	Employers	Disabled People
	%	%
Yes	82	79
No	9	21
Can't Say	9	0

On the whole, little difficulty seems to have been encountered in acquiring information about the project.

Once a Unit was set up, it sometimes generated its own publicity and played an important role in attracting others to the Project.

Publicity - Actual
Base = 23 Employers/4 Self Employed/24 Employees

It is the participant's belief that their Unit has attracted publicity	Employers	Self Employed	Employees
	%	%	%
Yes	66	50	75
No	30	50	25
Can't Say	4	0	0

Publicity - Potential
Base = 39 Employers/11 Self Employed/41 Employees

The participant would be willing to help publicise the Project	Employers	Self Employed	Employees
	%	%	%
Yes	77	73	88
No	18	27	12
Can't Say	5	0	0

Initial interest was converted into real commitment for a number of reasons.

Attraction to the Project
Base = 39 Employers/13 Self Employed/40 Employees

The participant was prompted to make further enquiries because of:	Employers	Self Employed	Employees
	%	%	%
IT Aspect	56	46	30
Employee in Mind	38	-	-
Social Aspect	23	-	-
Job Prospect	-	31	83
Business Prospect	-	54	-
Other	13	8	10

More than one reason given in some instances

4.2.1 DTI Comment

Personal contact (which included liaison with DTI consultants) seems to have been the principal method of attracting both disabled people and employers to the Project. The MSC Disablement Advisory Service network made a significant contribution and their greatest impact was on disabled people. Media coverage, too, generated some fruitful leads and although these were significant it should be pointed out that the result did not always justify the amount of effort it took.

A reasonable number of participants (4 Employers, 5 Employees and 2 Self-Employed) were responsible for generating publicity about themselves generally in the form of articles in local newspapers. More people than had actually been involved with publicity said they would be willing to be involved and this suggests that the publicity value of established Units was not been fully exploited.

Employers were principally attracted to the Project by the offer of some computer equipment whereas disabled people, not suprisingly, were drawn to it by the prospect of a job. Interestingly, though, the technology aspect held some attraction for disabled people. Most of the people set up on a self-employed basis linked attraction to business prospects - either a desire to expand a current business or to launch themselves into self-employment.

Of the 15 instances where an employer had an employee in mind, 7 involved a totally new job opportunity as opposed to 'retention of an existing employee'.

4.3 Matching up the Components

Consultants played a crucial role in converting initial interest into firm commitment and turning an idea into reality. They achieved this through a process of matching - matching the technology to jobs, matching disabled people to those jobs and ultimately to employers.

Micro/Job Match
Base = 20 Employers/4 Self Employed

The employer and the self-employed had a good idea how a micro could help the organisation/business	Employers	Self Employed
	%	%
Yes	85	50
No	10	50
Can't Say	5	0

Employer/ Employee Match
Base = 39 Employees

The employee had the job identified to him/her by:	%
Employer (retention)	21
Disabled Person Him/Herself	21
Job Centre	7
DTI Consultants	33
Other	18

Employer/Employee Match
Base = 24 Employees

The employee was satisfied with the way he/she was recruited	%
Yes	92
No	8
Can't Say	0

Base = 35 Employers / 13 Self Employed

In the participant's view it took the following number of months to get their Unit operational	Employers	Self Employed
	%	%
0 - 2	37	8
3 - 5	31	15
6 - 8	26	23
9 -12	6	54

Implementation Time - Expected
Base = 39 Employers / 13 Self Employed

In the participant's view it took as long as expected to set up their Unit	Employers	Self Employed
	%	%
Yes	28	46
No	41	39
(Longer)	(31)	(25)
(Shorter)	(10)	(14)
Can't Say	31	15

4.3.1 DTI Comment

Frequently, companies had some practical experience of computerisation and a good idea of just how a microcomputer might be applied to the job in question. In these circumstances the task of matching the technology to the job was a relatively straightforward exercise with the Consultant ensuring that short-term and longer-term equipment compatibility needs were taken account of.

Where a company had no previous experience of computing then it was the Consultant's task to translate a job specification into hardware and software requirements.

If the job were new and one with which the company had no experience, then the time-consuming task of defining job responsibilities and drawing up a job specification were

undertaken often with help from a DTI Consultant. Consultants were careful to ensure, as far as was possible, that jobs were on-going ones and not founded on 'one-off' tasks.

The process of matching job to disabled person and employee to employer ranged from relatively simple to complex. The simplest case involved a disabled person already working in a company and conversion of the job from an on-site one into a home-based one. This kind of transition was relatively straightforward, usually smooth and at most involved a change in job title and a re-definition of tasks and responsibilities.

MSC JobCentres played a direct role in matching employees to employers in 3 cases although they had attracted 13 of the disabled people ultimately set up as remote workers. This suggests that MSC field staff did not especially attempt to identify potential employers perhaps regarding this to be the role of the DTI Consultants.

Where there was a defined job but no suitable candidate, DTI Consultants invariably involved Disablement Resettlement Officers (DROs) in the search for candidates. They also turned to other sources such as personal contacts, disability organisations and job vacancy advertisements and one consultancy collaborated closely with the MSC's Professional and Executive Recruitment (PER) service to establish a candidate bank.

In a reverse situation - where there was a candidate but no identified employer and job - the following happened. The disabled person's eligibility to participate was first established and a record taken of their skills and experience. These were then matched against suitable job opportunities as and when they arose. If the candidate had particularly 'marketable' skills, like COBOL programming, then occasionally they were 'marketed' direct to potential employers. This latter method of matching people to employers and jobs though was relatively time-consuming and did not always result in success.

Once a likely 'match on paper' was made between employer/job and candidate then the disabled person was seen by a DTI Consultant who appraised skills and experiences and assessed domestic circumstances, motivation and extent of disability (this applied also to those seeking Self-Employment). The names of suitable candidates were subsequently submitted to employing organisations who retained the right to impose their own particular selection procedures, e.g. aptitiude and skill testing and medicals. It remained the employer's responsibility to interview and select. Although the selection process in some cases was quite lengthy the majority of candidates seemed quite satisfied with the way they were recruited.

More than half (24) of the Employer/Employee Units took anything from 1 to 5 months to set up - that is from company willingness to proceed to equipment installation; whereas more than half (7) of the Self-Employed Units took considerably longer to become operational. This could have something to do with the fact that several of the self-employed were launching new businesses so had to devise marketing strategies and business systems before hardware and software could be specified.

The vast majority of organisations had little, if any, experience of employing home-based workers so inevitably they were unable to say whether or not the actual time taken to establish the Unit was in line with their expectations.

4.4 Giving Support

Support during implementation came in a variety of forms and from a number of sources. From the DTI there was the finance for hardware and software and ancillary equipment, like modems and work desks, and also for consultancy. There was practical support from the Consultants, equipment suppliers and employers, too. The MSC, through their Disablement Advisory Service, provided additional and important support in the areas of training and special aids. Figures on the overall level of MSC support are, however, sparse as decisions tended to be made at local level and did not always require the involvement of the Department or its Consultants.

The following three Tables on 'Costs and Consultancy' are based on information contained in DTI files of 50 Units.

Support - Financial

Base = 37 Employer/Employee Units 13 Self-Employed Units

DTI Support Financial for IT equipment (Type of Unit)	Hardware/Software Costs		
	Highest	Lowest	Average
	£	£	£
Employer/Employee	19,900	1,800	8,100
Self-Employed	23,600	3,300	8,900

N.B. Equivalent hardware costs at 1986 prices would be significantly lower

Support - Consultancy

Base = 24 Employer/Employee Units 6 Self-Employed Units

DTI Support Consultancy (Type of Unit)	Consultancy Input					
	No. of Man Days				Highest	Lowest
	0-10	11-20	21-30	31+		
	%	%	%	%	(days)	(days)
Employer/ Employee	54	25	12	9	33	5
Self- Employed	17	83	0	0	14	8

Support - Consultancy Costs

Consultancy Fees were paid in two principal ways:

1. Fixed price/fixed term
2. Daily rate on an 'as needed' basis

Taking an average daily fee of £300 and using an average input of 12 man days per Unit consultancy costs amounted to:

For each Unit	£ 3,600
For the whole Project (58 Units)	£208,800

Support - Advice and Guidance

Base = 23 Employers

The employer needed most help and guidance with:	%
Choosing/Acquiring Hardware/Software	48
Recruiting the Employee	22
Providing Training	9
Other	13
None	17

More than one answer given in some instances

Support - Advice and Guidance
Base = 24 Employees

The employee needed most help and guidance with:	%
Using Software	38
Operating Hardware	33
Understanding Job Procedures	25
Other	13
None	21

More than one answer given in some instances

Support - Advice and Guidance
Base = 4 Self-Employed

The self-employed needed most help and guidance with:	%
Choosing/Acquiring Hardware/Software	75
Operating Hardware	75
Using Software	25
Finding Out About Training	25

More than one answer given in some instances

Support - Training Provision
Base = 40 Employers

The employer has given or plans the following training	%
Technical (Computer)	85
Job Induction	33
Company Induction	18
Other	15

More than one answer given in some instances

Support - Training Provision
Base = 13 Self-Employed

The self-employed has received or plans the following training:	%
Technical (Computer)	85
Marketing	15
Other	23

More than one answer given in some instances

Support - Training Providers
Base = 40 Employers 13 Self-Employed

Type of unit	Training has been provided by:	%
Employer/ Employee	Company	65
	Equip. Suppliers	48
	Self-Teach	38
	DTI Consultants	13
	Local Colleges	5
	Other	13
Self-Employed	Equip. Suppliers	77
	Self-Teach	54
	DTI Consultants	23
	Local Colleges	15
	Other	8

More than one answer given in some instances

Training
Base = 24 Employees / 4 Self-Employed

The disabled person considers changes are needed to the training received	Employees	Self Employed
	%	%
Yes	58	25
No	42	50
Can't Say	0	25

Support - Essential
Base = 23 Employers/24 Employees/4 Self-Employed

The participant feels all the help and advice provided was essential	Employers	Employees	Self Employed
	%	%	%
Yes	61	71	75
No	9	8	0
Can't Say	30	21	25

Support - Additional
Base = 23 Employers/24 Employees/4 Self-Employed

The partipant feels more help and advice was needed	Employers	Employees	Self Employed
	%	%	%
Yes	13	54	25
No	52	46	50
Can't Say	35	0	25

Support- From Hardware/Software Suppliers
Base= 19 Employers/24 Employees/4 Self-Employed

The participant is satisfied with equipment supplier support	Employers	Employees	Self Employed
	%	%	%
Yes	68	79	100
No	27	21	0
Can't Say	5	0	0

Support - From Employer to Employee
Base = 23 Employers

The employer has made the following amount of effort to integrate their remote worker into the organisation	%
Some	96
None	4

Support - From Employer to Employee

Base = 39 Employers

The employer believes the right level of integration has been achieved	%
Yes	77
No	10
Don't Know	13

Base = 40 Employees

The employee feels part of the team	%
Yes	67
No	25
Don't Know	8

4.4.1 DTI Comment

No overall budget limits were fixed for hardware and software expenditure because the Project was sponsored under the IT Awareness Programme which aimed to increase public awareness of technology through practical application. As such, the needs of each Unit were considered separately and budget limits fixed accordingly.

Consultancy support varied according to the needs of individuals. For Employer/Employee Units support generally amounted to work assessment, equipment specification, acquisition and installation management and help with recruitment. Only 5 Units required more than 21 days consultancy support and 4 of these were part of the first six to be set up when inevitably experience was short. Self-Employed Units had more consultancy support overall but this extra effort was often linked to drawing up business and marketing plans.

The figure of £208,000 for consultancy fees (which does not include any effort needed to market for employers) is for the whole Project and represents approximately one half of the total hardware and software expenditure.

The most sought after advice and guidance by employers was in choosing and acquiring equipment and finding an employee. These results are not really suprising though when technology and disabled employees were the two prime requirements of every Employer/Employee Unit.

About one third of employees required help with the technology - how to use the software and operate the equipment.

It is very disappointing to see that so few employers offered company induction training. This could well be something to do with the remoteness of the employee but it may also be a reflection of the rather 'laissez faire' attitude which many employers have towards training.

Job induction training fairs a little better with 13 employers out of 40 providing this. One reason why this type of training is not more widespread may be the difficulty of organising it off-site as it invariably requires contact with colleagues and seeing systems operating. It is also not generally cost effective to organise training for one person.

The main providers of training were the employers themselves (where an employee was involved) and the equipment suppliers though self-teach methods featured significantly. Undoubtedly there is some connection between this and the fact that physically disabled people are usually unable to take full advantage of locally provided training.

Over half of the employees wanted their training changed in some way. Comments mostly revolved around requiring more in-depth computer training over a longer period of time.

There was overwhelming agreement that all the help and advice provided through the Project had been essential in getting the Unit operational.

For employers help with equipment specification and acquisition and employee recruitment were high on the priority list. Approximately one-seventh of them wanted more help ("It would have helped if the consultant had reviewed more closely our company needs").

Disabled people, too, said they could have done with more help. They wanted help with training and employees in particular wanted help to improve communication between them and their employers ("Liked more support from the office in establishing priorities").

Follow-up support from the equipment suppliers was well regarded by everyone but employers were the least satisifed.

A company's responsibility to its remote, disabled employee was the same as for any of its other employees. It provided terms and conditions comparable to those of its able-bodied, on-site workers and was expected to manage the collection and delivery of work, to provide work tools and to set up a system of liaison and supervision. In general, companies also carried responsibility for maintenance and insurance of the equipment provided.

Although nearly every employer had made efforts to integrate the remote worker into their organisation, evidence from the remote workers themselves suggests that this was not always achieved.

SECTION FIVE

5. EMPLOYERS

5.1 Profile

See Appendix II for complete Employer Profiles.

Location
Base = 40 Employers

Employer location (by region)	%
London & S. East	40
South West	38
Midlands	2
North West	2
North East	0
Scotland	13
Wales	0
Northern Ireland	5

See Appendix I(a) for locations by town

Size
Base = 40 Employers

Employer size (by employee nos.)	%
Small (1 - 25)	55
Medium (26 - 250)	27
Large (251 +)	18

Size in Relation to Experiences
Base = 39 Employers

Employer size	Employers with experience in	
	Employing disabled people	Using IT
	%	%
Small (1 - 25)	43	62
Medium (26 - 250)	18	55
Large (251 +)	71	100

Type
Base = 40 Employers

Employer type (by sector)	%
Service	52
Industrial	13
Public Service	15
Voluntary	20

Type in Relation to Experiences
Base = 38 Employers

Employer sector	Employers with experience in	
	Employing disabled people	Using IT
	%	%
Service	32	79
Industrial	40	40
Public Service	50	83
Voluntary	50	38

5.2 DTI Comment

Although marketing for employers was aimed at all parts of the United Kindgom a concentration of Units in two areas resulted - in London and the South East and the South West. The higher number of employers in London and the South East and their lack in the Midlands and North East can, perhaps, be seen as a reflection of the current employment situation. The concentration in the South West has a simple explanation. One of the four consultancy firms was based in Cornwall so it was pragmatic that it should confine its efforts to that region.

No special efforts were made to attract particular types and sizes of companies. In the event, every size and most types were represented. Employers in the 'Small' category were the most prevalent as were those in the 'Service' sector.

Only 7 large companies (out of 40) participated. There may be a direct link between this and the relatively complex process of decision-making found in large organisations where decisions on manpower planning levels and capital expenditure generally have to go through several tiers of decision-making so inevitably run a greater risk of rejection.

The largest companies, as might have been expected, were the most experienced in both employing disabled people and using IT. Interestingly though small companies were more experienced in employing disabled people than medium sized ones. This discrepancy suggests perhaps that it easier for the very small company to introduce new methods and policies than it is for the somewhat larger and more structured company.

More than half of the companies operated in the Service sector and quite a high proportion (8 out of 40) were in the Voluntary sector. This outcome was probably the result of extensive, direct marketing to voluntary organisations in the hope that they would help with publicity and would also consider participation as employers. Most of the voluntary organisations which became employers had something to do with disabled people and disability.

Public Service and Voluntary sector organisations were the most experienced in employing disabled people but the picture changed in respect of IT experience. Again, Public Service organisations were the most experienced but employers in the Voluntary sector were the least experienced.

Six companies could be described as IT-based ones. In other words, founded on New Information Technologies, e.g. computer sales, software development, viewdata updating and electronic components manufacture.

A high proportion of employers (14 out of 22) said they supported disabled people in other ways. Some gave contributions to charities; others had made adaptations to the workplace for disabled on-site workers. This suggests that an employer who actively supports disabled people in some form is more likely to be amenable to the idea of employing a home-based, disabled worker than an employer who is not.

SECTION SIX

6. DISABLED PEOPLE

6.1 Profile

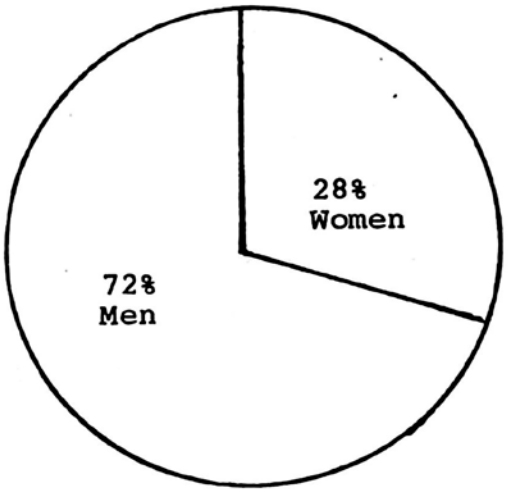
See Appendix III for complete Disabled People Profiles.

Location
Base = 53 Disabled People

Disabled person's location (by region)	%
London & S. East	38
South West	41
Midlands	2
North West	2
North East	0
Scotland	9
Wales	4
Northern Ireland	4

See Appendix I(b) for locations by town

Ratio Men : Women
Base = 53 Disabled People



Disability
Base = 53 Disabled People

25 different disabilities were included	
Most Prominent disabilities:	
Spinal Injury	36%
Multiple Sclerosis	23%

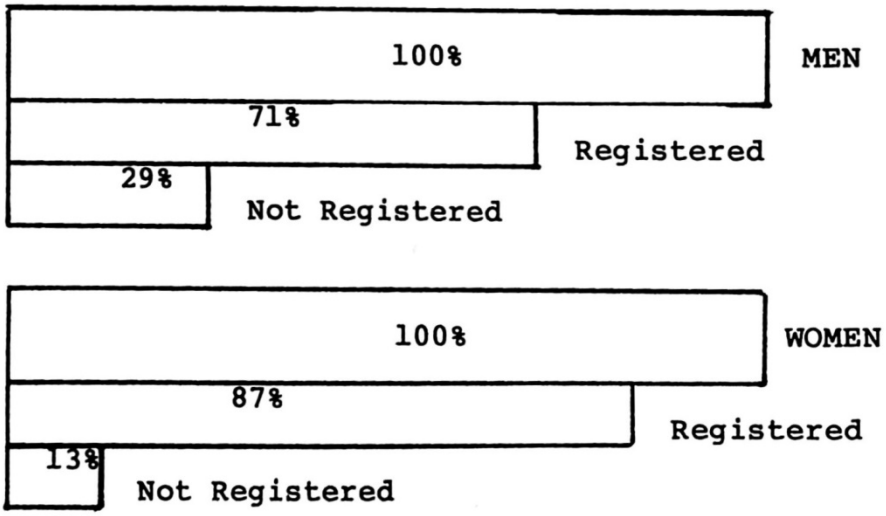
See Appendix III for full details

Disability - Level of Mobility
Base = 53 Disabled People

The disabled person uses a wheelchair	%
*Yes	72
No	28

*Not necessarily on a permanent basis

Disability - Registered Disabled
Base = 50 Disabled People



Disability - Contact with DROs
Base = 53 Disabled People

The disabled person has contact with the DRO	%
Yes	34
No	62
Can't Say	4

Disability - Contact with Disability Organisations
Base = 28 Disabled People

The disabled person has contact with a disability organisation	%
Yes	61
No	39
Can't Say	0

Disability - Benefits
Base = 29 Disabled People

The disabled person received the following benefits/ allowances before starting this job	%
Mobility	62
Sickness/Invalidity	45
Attendance	38
Supplementary	31
Rent/Rate Rebate	31
Invalidity Pension	24
Company Pension	10
Unemployment	7
Special Diet	7
Other	14

More than one type of Benefit received in most cases

Age
Base = 40 Employees / 13 Self-Employed

The disabled person's age at commencement of this job was: (in years)	Employees	Self Employed
	%	%
Up to 25	25	0
26 - 45	60	46
Over 45	15	54

Age in Relation to Previous Work Experience
Base = 53 Disabled People

Disabled person's age (in years)	Disabled persons having previous work experience	
	Some	None
	%	%
Up to 25	11	8
26 - 45	47	9
Over 45	25	0

Age in Relation to Retention of Employment
Base = 8 'Retained' Employees

Disabled person's age (in years)	Disabled employees being 'retained' in employment through this Project
	%
Up to 25	38
26 - 45	50
Over 45	12

Age in Relation to Previous Computer Awareness and Operational Skills
Base = 53 Disabled People

Disabled person's age (in years)	Disabled persons having previous experience with computers		
	Awareness	Practical	Neither
	%	%	%
Up to 25	20	70	10
26 - 45	30	57	13
Over 45	31	23	46

Age in Relation to Typing Skill
Base = 24 Disabled People

Disabled person's age (in years)	Disabled persons having previous typing/ keyboarding skill
	%
Up to 25	13
26 - 45	46
Over 45	13

Academic Attainment
Base = 53 Disabled People

Disabled person's academic attainment (by qualification)	%
CSE	8
*GCE 'O' Level	51
'A' Level	23
ONC/OND	11
HNC/HND	11
Degree	21
**Other	32

More than one qualification held in most cases

*Includes Scottish equivalents
**Includes standards set by other examining bodies, e.g. The Royal Society of Arts, Pitmans, Open University, Institute of Cost and Management Accts.

Academic Attainment in Relation to Age
Base = 53 Disabled People

Disabled person's age (in years)	Disabled persons attaining academic qualification						
	CSE	* GCE 'O'	* GCE 'A'	ONC/ OND	HNC/ HND	Degree	** Other
	%	%	%	%	%	%	%
Up to 25	40	80	40	10	10	10	80
26 - 45	0	60	27	10	10	30	50
Over 45	0	15	0	31	31	15	69

More than one qualification held in most cases

*Includes Scottish equivalents
**Includes standards set by other examining bodies, e.g. The Royal Society of Arts, Pitmans, Open University, Institute of Cost and Management Accts.

6.2 The Disabled, Remote Worker - The Employer's Perception

Three quarters of employers said they were happy with the way their remote, disabled employee was working.

Employee Work Output/Productivity
Base = 39 Employers

The employer rates the remote employee's output/ productivity as:	%
High	49
Low	8
Average	23
Can't Say	20

Employee Work Output/Productivty - Comparison
Base = 39 Employers

The employer compares the remote employee's output/ productivity with that of an able bodied on-site employees:	%
Favourably	51
Unfavourably	18
Can't Say	31

Employee Sick Leave
Base = 39 Employers

The employee has taken time off through sickness since starting this job	%
Yes	59
No	41

Employee Sick Leave - Comparison
Base = 39 Employers

The employer compares the remote employee's sick leave with that of other employees:	%
Favourably	69
Unfavourably	23
Can't Say	8

Employee Career Prospects
Base = 24 Employers

The employer believes the remote employee's career prospects within the organisation are:	%
Excellent	38
Good	17
Fair	8
Not Good	29
Can't Say	8

6.3 DTI Comment

The distribution of home-based disabled employees is closely tied to the locations of employers because most employers asked that their remote worker be located close by. (Regional variations are explained in Section 5.1).

Although considerably more disabled men (38) than women (15) participated, the split is a natural outcome of marketing as no special efforts were made to attract either sex.

Attempts were made to include as wide a range of disability as possible although there was a bias towards those people unable to get to and from a workplace on a regular basis. This explains the high proportion of spinal injury and Multiple Sclerosis cases and hence the high number of a wheelchair users.

Most disabled people had a mobility problem which was so severe they were outside the normal employment field. As such they were almost certainly outside the scope of the Disablement Resettlement Service (which accounts for why more than half said they had no contact with their DRO).

Health and Social Security benefits provision was very complex (as evidenced in the list on page 46) and the total incomes of the disabled people were generally made up from several benefits. One disabled worker, for example, received seven different benefits.

The ages of disabled workers ranged from 67 down to 17 years. Those in the 26-45 age range were placed in the bulk of the jobs (30 in all covering both employment and self-employment). This is not entirely unexpected as people in this age bracket tend to have some vocational skills and experience to offer as well as a reasonable amount of working

life ahead of them. Such people tended, therefore, to be more attractive job candidates than did younger and older people.

Although the oldest person placed in work was 67 years old this was in self-employment. As might have been expected, the self-employed were grouped in the higher age ranges with more than half over 45. The oldest person found work with an employing organisation was 56 years of age but in this case the company had themselves identified this person as a suitable candidate.

Five people placed in employment had no previous work experience although each had attained good academic qualifications. They all had GCE 'O' and/or 'A" level qualifications; one had an HND in computer studies; 3 had Open University credits in maths and science subjects; and another a Degree in Computer Sciences.

'Retained' employees accounted for one fifth of the total number of disabled employees (8 of 40). They spanned all ages with the range 26 - 45 years providing the highest number of candidates. From this it would seem that potential working life was significant in 'retaining' a disabled employee.

There is no correlation between age and computer awareness but there is between age and operational skills. Nearly three-quarters of those under 25 years of age said they had practical computer skills. These ranged from in-depth programming and word processing down to being able to operate computer games. The introduction of computers into the classroom and the rise in 'home' computers have undoubtedly had some impact. It is interesting that computer awareness and operational skills were not pre-requisites for every job (and of course this particularly applied to self-employment).

On the subject of self-employment and skills, there is a positive correlation between previous specialist skills/qualifications and current business activity (see Appendix IV for complete Self-Employed Business Profiles). For example, printing experience for a printing services business; a BSc in Mechanical Engineering for the provision of engineering design services; an Institute of Chartered Accountants qualification for a financial advisory services business.

A typing skill was significant with nearly three quarters of workers (17 of 24) saying they could type before starting the job.

Qualifications were prevalent amongst disabled workers. Only 13% possessed no qualifications at all. More than half possessed GCE 'O' levels and nearly a quarter had a degree.

The biggest proportion with GCE's at both 'O' and 'A' levels is to be found in the under 26 year old group whereas most degrees were held by those aged between 26 and 45.

It is pleasing to see so many employers are happy with the way their remote, disabled employee is working. Employee productivity/output was rated 'high' by half of the employers and just under a quarter said 'average'. In comparison with able-bodied employees doing similar work on-site, disabled workers compared favourably. Quite a few employers were unable to comment on this point probably because they had nobody else with whom to make comparisons.

At first sight, it appears that disabled employees take off quite a lot of time through illness - more than half having taken sick leave. But when compared with other employees this assumption is refuted. In one 'retention' case, whilst working on-site the employee's absences were increasing and his job was suffering. After conversion to a home-based worker his record has improved considerably. He is able to adapt his work schedule to suit his condition and as he works best in the afternoon and early evening he plans his day accordingly. His employer says that since convertion to a home-based employee his output has increased and time off through sickness is no longer necessary. In this instance, working from home has undoubtedly benefitted both the employer and the disabled employee.

Even though employees were not fully mobile and worked remotely from the mainstream of company activity, their career aspirations appeared no different from those of other workers - many wanted development, others did not (see Table in Section 8.3). What is surprising is employer reaction to career prospects. The majority indicated that their remote, disabled worker had good to excellent prospects within the company. This is, perhaps, less surprising when viewed alongside the high level of qualifications and the 'marketable' skills held by many of the home-based employees.

SECTION SEVEN

7. TECHNOLOGY

7.1 Profile

Twenty-nine different makes of business micro were provided by the Department to 57 Remote Work Units and the Table below shows this range (See Appendix VI for complete Technology Profiles). This list does not indicate models neither does it take account of micros specified in only one instance nor does it take account of additional equipment provided by employers or the self-employed themselves.

Hardware - Micros
Base = 57 Units

Make of computer supplied by DTI	%
Sirius	23
LSI	8
Apricot	6
Mimi	6
Rank Xerox	6
IBM	3
Apple	3
ICL	3
Pericom	3
Tandy	3
Sord	2
'Once Only' Micros	34

The average cost of each micro configuration (including software) was £8,344 (see Section 4.4 for further details on hardware and software costs).

Hardware - Modems/Acoustic Couplers
Base = 57 Units

Provision by DTI: 37%

Hardware - Printers
Base = 57 Units

Provision by DTI: 88%

Printers ranged from dot matrix draft quality ones to letter quality daisywheel ones

The Department supplied applications and system software. The majority of Units were supplied with commercially available applications software and 'bespoke' software was developed in only three instances.

Software - Applications Packages
Base = 57 Units

Principal packages supplied by DTI	%
Word Processing	54
Wordstar (40%)	
Other (14%)	
Accounts/Financial Planning	28
Database	26
DBase II (9%)	
Delta (10%)	
Other (7%)	
CAD/Scientific	4

More than one package supplied in some cases

In addition to basic hardware and software requirements, the Department provided 5 Units with the following special aids (see Section 4.4 for additional comment on special aids):

Hardware - Special Aids
Base = 57 Units

Type of aid provided by DTI	Quantity provided
Mouthstick	2
Shift Lock Switch	1
Suck/Blow Device	1
Voice Recognition System	1

7.2 Information Technology - The Employer's View

Employers appeared to be considerably more satisfied with the software supplied than with hardware.

Technology - Hardware Performance
Base = 39 Employers

The employer has experienced problems with the hardware	%
Yes	49
No	46
Can't Say	5

Technology - Software Satisfaction
Base = 39 Employers

The software has been capable of doing everything the employer wanted it to	%
Yes	67
No	20
Can't Say	13

Technology - Increased Awareness
Base = 23 Employers

The employer has a better grasp of what New Technology can do since setting up this Unit	%
Yes	44
No	52
Can't Say	4

Technology - Remote Employment
Base = 35 Employers

The employer considers that IT makes remote working a viable proposition for disabled and able bodied people	%
Yes	80
No	9
Can't Say	11

7.3 Information Technology - The Disabled, Remote Worker's View

Disabled people, like Employers, were more satisfied with software than with hardware.

Technology - Hardware Performance
Base = 37 Disabled People

The disabled worker has experienced problems with the hardware	%
Yes	49
No	51
Can't Say	0

Technology - Software Satisfaction
Base = 37 Disabled People

The software has been capable of doing everything the disabled worker wanted it to	%
Yes	89
No	11
Can't Say	0

Technology - Overall Performance
Base = 53 Disabled People

In the disabled worker's view the equipment has performed:	%
Very Well	60
Well	23
Not Well	15
Can't Say	2

Technology - Increased Awareness
Base = 28 Disabled People

The disabled person has a greater interest in computers and automation since starting this job	%
Yes	79
No	21
Can't Say	0

Technology - Employment of Disabled People
Base = 40 Disabled Employees

The disabled employee believes micro-computers have made it easier for disabled people to become employed	%
Yes	95
No	0
Can't Say	5

Technology - Self-Employment
Base = 13 Disabled Self-Employed

The self-employed disabled worker believes microcomputers have made it more possible for disabled people to run their own business	%
Yes	100
No	0
Can't Say	0

7.4 DTI Comment

This Project was experimental in nature so few restrictions were set on type of equipment. The only criteria imposed by the Department were that equipment had to be Information Technology-based and had to be capable of doing the job in question. This explains the fairly high number of different micros provided and the variations in cost.

Although 21 Units were supplied with communication devices and/or facilities (modems, couplers or funding for link lines) only 7 appeared to be using them. This suggests that communications facilities might not have been as integral a part of the job as at first thought. In the main, users of communication links carried out data entry and programming tasks.

Error checking and amendments often had to be done before work was submitted to the company and 'hard copy' was generally considered to be the best medium for checking. Hence the high need for printers.

The most frequently used applications software package was 'Wordstar' word processing (and this is supported by the high number of jobs involving word processing). This was followed by accounting and database software packages.

Although direct provision of special aids was minimal, the DTI funded simple software and hardware adaptations. For example, a change so that one key depression could perform a function which would normally require two simultaneous key depressions.

Hardware problems were experienced by nearly half of the employers and half of the disabled workers. Greatest difficulties seemed to be with printers (then with disk drives and modems). As printers were generally of a different manufacture from the micro, inherent incompatibility could account for this.

This Project formed part of the Department's IT Awareness Programme and appears to have made a very real contribution to that campaign. For example, nearly half of the employers said that since setting up their Remote Work Unit they had a better grasp of what IT can do; equally over three quarters of the disabled people said that they had taken a greater interest generally in computers and automation. Most of the participating disabled people wanted, in fact, to extend this interest by forming themselves into a 'user group'.

More than three quarters of employers and virtually every disabled person felt that IT made remote working a viable proposition.

SECTION EIGHT

8. REMOTE WORKING

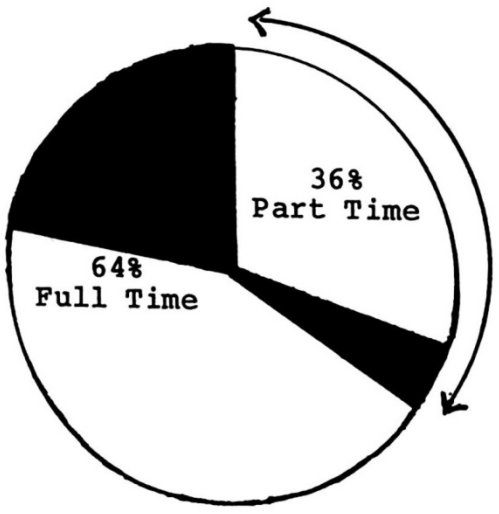
8.1 Remote Working - Job Profiles

See Appendix V for complete Job Profiles

Remote Jobs - Operational Period
Base = 51 Units

The Unit has been operating for (in months)	%
0 - 5	12
6 - 12	41
13 - 24	39
Over 24	8

Remote Working - Ratio Full : Part-Time
Base = 47 Units



Self-Employed

Remote Working - Job Titles
Base = 51 Units

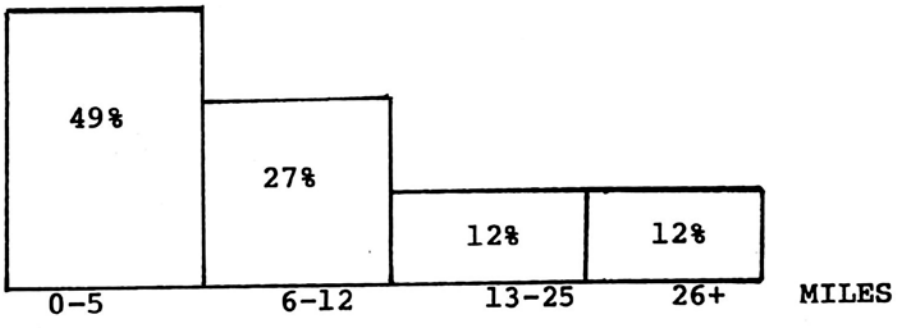
The most frequently used job title is:	%
Programmer/Trainee Programmer	9
Computer Operator	8
Word Processing Operator	6

Remote Working - Computer Applications
Base = 51 Units

The most frequent computing task is:	%
Data Preparation/Entry	82
Word Processing	63
Programming	47
Bookkeeping/Accounting	35
Graphics	32
Financial Modelling	18
Other	24

Most jobs involved more than one computerised task

Remote Working - Distance Between Employer and Employee
Base = 41 Units



Remote Working - Transferring Work
Base = 22 Units

Method of transfer between employer and employee	Hard copy	Data disk	Direct line
	%	%	%
Post	59	27	-
Co. Collection	52	23	-
Courier	23	5	-
Mainframe	-	-	5
Mini	-	-	5
Micro	-	-	23

Remote Jobs - Transferring Work
Base = 10 Units

Method of transfer between self employed and client	Hard copy	Data disk	Direct line
	%	%	%
Post	90	20	-
Client Collection	70	10	-
Courier	30	10	-
Mainframe	-	-	0
Mini	-	-	0
Micro	-	-	0

Remote Working - Holiday and Sickness Job Back-up
Base = 23 Employers / 4 Self-Employed

Back-up arrangements exist in times of holiday and sickness	Employers	Self Employed
	%	%
Yes	35	50
No	65	50

Remote Working - Home Adjustments
Base = 25 Disabled People

The employee has made accommodation/life style adjustments since starting work from home	%
Yes	40
No	60

8.2 Remote Working - The Employer's View

Remote Working - Job Expectations
Base = 23 Employers

The employer feels that the remote job has turned out more or less as expected	%
Yes	70
No	26
Can't Say	4

Remote Working - Flexibility
Base = 23 Employers

The employer believes this form of remote working has been sufficiently flexible	%
Yes	87
No	4
Can't Say	9

Remote Working - Employee Integration
Base = 23 Employers

The employer believes that getting the remote worker to feel part of the team and organisation is:	%
Very Vital	87
Not Very Vital	4
Can't Say	9

Remote Working - Costs
Base = 39 Employers

The employer believes that remote working compared with on-site working:	%
Costs More	41
Costs Less	13
Costs the Same	36
Can't Say	10

Cost Comparison in Relation to Size
Base = 39 Employers

Company size (employee nos.)	In employers' opinions remote workers compared with on-site employees:			
	Costs more	Costs less	Costs same	Can't say
	%	%	%	%
Small (1 - 25)	45	9	41	5
Medium (26 - 250)	46	18	36	0
Large (251 +)	17	17	16	50

Cost Comparison in Relation to Type
Base = 39 Employers

Company type (by sector)	In employers' opinions remote workers compared with on-site employees:			
	Costs more	Costs less	Costs same	Can't say
	%	%	%	%
Service	33	19	38	10
Industrial	40	0	40	20
Public Service	33	17	33	17
Voluntary	71	0	29	0

Remote Working - Costs/Rate for the Job
Base = 23 Employers

The employer took costs into account when setting a rate for the remote job	%
Yes	13
No	79
Don't Know	8

Remote Working - Expansion
Base = 39 Employers

The employer plans to employ more home-based workers (incl. able bodied)	%
Yes	13
No	79
Don't Know	8

Remote Working - Expansion in Relation to Size
Base = 39 Employers

Company size (employee nos.)	Employers plan to employ more home-based workers (incl. able bodied)		
	Yes	No	Don't know
	%	%	%
Small (1 - 25)	9	91	0
Medium (26 - 250)	20	60	20
Large (251 +)	14	72	14

Remote Working - Expansion in Relation to Type
Base = 39 Employers

Company type (by sector)	Employers plan to employ more home-based workers (incl. able bodied)		
	Yes	No	Don't know
	%	%	%
Service	10	80	10
Industrial	0	100	0
Public Service	16	67	16
Voluntary	29	71	0

Remote Working - Barriers
Base = 23 Employers

The employer believes confidentiality is one of the barriers to introducing remote working	%
Yes	52
No	26
Can't Say	22

Remote Working - Acceptability
Base = 35 Employers

The employer would do it all again but this time with less external support	%
Yes	80
No	9
Don't Know	11

Remote Working - Acceptability
Base = 39 Employers

The employer's feeling about having got involved in the Project is:	%
Glad	74
Sorry	8
Neutral	3
Can't Say	15

8.3 Remote Working - The Disabled, Remote Worker's View

Remote Working - Job Expectations
Base = 24 Employees / 4 Self Employed

The disabled person feels the remote job has turned out as expected	Employees	Self Employed
	%	%
Yes	58	50
No	34	50
Can't Say	8	0

Remote Working - Amount of Work
Base = 40 Employees / 12 Self Employed

The disabled worker thinks the job workload is:	Employees	Self Employed
	%	%
Just Enough	63	33
Not Enough	20	42
Too Much	10	17
Can't Say	7	8

Remote Working - Ability to Cope
Base = 40 Employees / 12 Self Employed

The disabled worker feels he/she is coping with the job:	Employees	Self Employed
	%	%
Very Well	75	58
Well Enough	15	33
Can't Say	8	9
Not So Well	2	0

Remote Working - Health
Base = 40 Employees / 12 Self Employed

The disabled worker's health has been adversely affected by this job:	Employees	Self-Employed
	%	%
No	93	92
Yes	5	0
Can't Say	2	8

Remote Working - New Skills
Base = 24 Employees / 4 Self Employed

The disabled worker has acquired new skills since starting in this job	Employees	Self-Employed
	%	%
Yes	96	100
No	4	0
Can't Say	0	0

Remote Working - Integration
Base = 40 Employees

The remote worker feels part of the company	%
Yes	68
No	25
Don't Know	7

Remote Working - Formal Liaison
Base = 24 Employees

The remote worker has a particular person within the company who keeps in touch with them	%
Yes	96
No	4

Remote Working - Liaison with Colleagues
Base = 24 Employees

The remote worker knows some work colleagues	%
Yes	92
No	8

The remote worker would like to get to know colleagues/get to know them a little better	%
Yes	33
No	58
Don't Know	9

Remote Working - Salaries/Income
Base = 40 Employees / 12 Self Employed

The disabled worker is paid a fair rate/ making a fair living from the job	Employees	Self Employed
	%	%
Yes	63	33
No	32	42
Don't Know	5	25

Remote Working - Lost State Benefits
Base = 25 Employees / 4 Self Employed

The disabled person has lost Social Security benefits and/or allowances as a direct result of taking this job	Employees	Self Employed
	%	%
Yes	72	0
No	28	100

Remote Working - Financial Hardship
Base = 40 Employees / 11 Self Employed

The disabled person suffers financial hardship as a result of doing this job	Employees	Self Employed
	%	%
Yes	13	0
No	75	91
Can't Say	12	9

Remote Working - Careers
Base = 24 Employees

The disabled employee hopes to develop a career (either with current employer or another)	%
Yes	75
No	25

Remote Working - External Contact
Base = 40 Disabled People / 12 Self Employed

The remote worker thinks someone (other than his/her employer) should keep in touch with them	Employees	Self Employed
	%	%
Yes	68	58
No	30	42
Can't Say	2	0

Remote Working - Help to Others
Base = 24 Employees / 4 Self Employed

The disabled person feels more able to help others in similar circumstances as a result of doing this job	Employees	Self Employed
	%	%
Yes	92	100
No	4	0
Can't Say	4	0

Remote Working - Acceptability
Base = 40 Employees / 13 Self Employed

The disabled person's feeling about having got involved in the Project is:	Employees	Self-Employed
	%	%
Glad	88	100
Sorry	4	0
Neutral	8	0
Can't Say	0	0

8.4 DTI Comment

The vast majority of Units had been operational for more than six months with a high proportion established for more than a year. The longest operational period was 32 months, the shortest 2 months. The views expressed in this Study are therefore based on a reasonable amount of practical experience.

The fact that most disabled people work on a full-time basis (as opposed to part-time) is another indicator that they treat their jobs seriously and do not regard them merely as something with which to occupy themselves.

Two employees regarded themselves as part-timers whereas their employers saw them as full-time workers; and the situation was reversed in two other cases. In the main, though, perceptions of employers and employees were the same.

Full-time work averaged 42 hours a week. Extreme examples were 70 hours and 20 hours. Average hours of part-time

workers were 23 with extremes of 25 and 19 hours. The self-employed on average did a 48 hour a week with a range of 84 to 25.

Over half of the disabled workers said their workload was just enough and only a very small number indicated that it was too much. Virtually every disabled worker believed they were coping well with the job and that working had not adversely affected their health. In fact, many said that working had made them feel better.

In all, 26 different job titles were used with little discrepancy between employer and employee perceptions. For example, one employee saw himself as a Tachograph Reader whereas his employer referred to him as a Tachograph Analyser. The most extreme discrepancy was an employee who described herself as a Co-ordinator/Computer Operator but the employer said Shorthand Typist. There appears to be a logical explanation for this. The employer did not have anyone else doing similar work yet operated a very rigid grading structure and the salary of this worker fell within the 'Shorthand Typist' grade.

The jobs covered a broad spectrum of skills - from basic data entry skills (Computer Operator), data manipulation skills (Word Processing Operator), to subject specialism (Programmer and Accountant). Virtually every disabled person said they had acquired new skills since starting this job. Apart from the obvious new skill of learning to operate a micro, others included understanding software applications, typesetting, programming in BASIC or COBOL, word processing, systems analysis, telephone techniques, bookkeeping and the management and organisation of data systems.

The most commonly performed task was 'Data Preparation and Entry' but this result could be a little misleading. For example, some employers were not wholly familiar with the job in question (5 employees said they were carrying out programming tasks yet their employers failed to mention this) so Employers may have used this task description imprecisely. The three principal computing tasks, excluding 'Data Preparation and Entry', were word processing, programming and bookkeeping/accounting.

A very small number of jobs (data preparation/entry 3 jobs; word processing 2 jobs; and programming 1 job) involved only that one computing task. Jobs, in the main, involved a combination of tasks like word processing with bookkeeping or bookkeeping with programming and programming with graphics.

Although the technology provided was generally capable of transmitting data over great distances half of the home-based workers lived within five miles of their employer's premises. Employers generally wanted their remote worker to be within commuting distance and said so at the time of recruitment.

Two employees, however, work successfully more than 100 miles away from their employers but they themselves are responsible for generating on-going workloads and do not require close employer involvement/supervision.

The vast majority of employers exchanged work via the open post or delivery and collection by another member of staff. Employers did not appear take full advantage of electronic means of data transfer but this was probably because not everyone had computer and/or compatible equipment on-site. Transfer of work between the self-employed and clients was similarly mainly 'hard copy' via the post.

Formal back-up arrangements in times of holiday and sickness of the remote worker did not exist for two-thirds of the jobs. Employers displayed little concern saying work could, if necessary, be carried out on-site.

Changes to accommodation and/or life style did not occur very often. Where disabled workers had made adjustments these usually involved a minimal reorganisation of furniture. Three extreme cases were "had to install heating in the conservatory and to strengthen its floors", "had to sell furniture to make room for the equipment" and "had to move house for more room".

For most employers the remote job had turned out as expected. The few who felt it had not said, from a negative standpoint: "she is much more remote than I thought" and on the positive side: "I didn't realise how much work he was able to do". For the majority of disabled people, too, the job had turned out as expected. Negative responses included statements like: "it was not as interesting as expected"; positive ones "the job was much more interesting than expected".

More than three-quarters of all employers said their remote worker was capable of meeting deadlines and coping with changing priorities. In other words, the remoteness of the employee had not caused problems. To a large extent though this could be the result of carefully organised workloads as several employers said they did not give priority work to their remote employee.

The vast majority of employers said it was important for their remote employee to feel part of the team and organisation but not everyone appeared to have achieved this. Most employers had made efforts to forge links between the organisation and the remote worker by appointing someone to keep in touch with the remote employee. It would seem though that this person was not always the best person for the job. A Departmental Manager, for example, may not have the experience to organise workflow or, more particularly, to cope with a disabled employee; someone in Personnel might be able to handle these aspects but may know very little about the job. The ideal liaison person should be someone with

both job knowledge and empathy with the remote, disabled worker. In situations where one suitable person does not exist, then responsibility is best vested in two people.

Continuing with the theme of company liaison, one-third of the remote employees said they would like to get to know their work colleagues (or get to know them a little better). Interestingly, disabled people also wanted an 'external' person to keep in touch with them. They listed:

- DTI Consultants ("just to keep in touch with someone who cares", "concerned about finance in future, don't want to become slave labour")
- DTI ("for new business and exchange of ideas", "interesting to know what DTI is doing and who to get in touch with regarding changes")
- MSC ("it's nice to know I can contact them", "they can suggest alternatives if I'm not happy")
- Suppliers ("up-date on software", "keep abreast of new technology").

It is not entirely surprising to find DTI Consultants at the top of this list because they acted as central contact points during implementation and invariably developed close relationships with disabled workers.

Most disabled people said they felt better equipped now to help others in similar circumstances. They could, they said, give advice on remote working, discuss the new technology and help others to come to terms with their disability.

Employers' opinions on costs were divided. Just under half said a remote worker cost more than an on-site worker; a tenth said they cost less and a third felt there was no difference. These answers appear to be subjective ones though because few employers appeared to keep precise figures. The smallest of companies found their remote worker the most costly and voluntary sector organisations especially so, nonetheless savings in overheads were not taken into account.

Most employees considered they were paid a fair rate for the job and one third of the self-employed felt they were making a living. Those who believed they were not remarked: "I'm paid a flat rate plus bonuses but might not be able to take advantage of bonus scheme", "the higher job skills are not reflected in my salary". Such negative comments came mainly from employees working for small companies and from those working in the service sector. This suggests a perceived (and perhaps real) exploitation but DTI consultants had the remit to ensure that employees recruited under this Project

were paid the going rate for the job.

A large number of disabled people lost benefits/allowances after starting the job but few appeared to suffer financial hardship as a result of this. If not doing this job, half of the people said they would be either unemployed or doing unpaid, voluntary work; the other half said they would seeking paid work. This says quite a lot about a disabled person's determined, yet realistic outlook. Only two people (out of 31) actually said they would like to revert back to their previous circumstances.

Very few employers, irrespective of size or type, planned to employ more home-based workers (disabled or otherwise). The problems of remote management and costs may be factors in this decision but 'confidentiality' was cited as an obstacle to introducing remote working. Most employers were glad that they had become involved and said they would do it again and with less outside support. They seemed willing to support themselves in the areas of equipment specification and recruitment. Direct financial support for the purchase of equiment was a prime attraction which employers greatly appreciated.

SECTION NINE

9. THE FUTURE

The Department of Trade and Industry funded the first phase of the Remote Work Units Project (evaluated in this document) and is currently funding (jointly with the European Social Fund) a follow-on second phase. In total, and by the end of 1986, nearly one hundred severely disabled people will have been set up in paid jobs and the Department will have spent in excess of one million pounds proving that Information Technology is indeed an employment 'enabler' for this group of people. Those whose disability prevents them from seeking work outside the home stand to benefit significantly.

It is against this background that the Department is keen to see its initiative continue and looks to the Manpower Services Commission to take the lead and extend recognition that Information Technology has a major role to play in the employment of disabled people.

This Evaluation provides useful interim guidelines on the practical issues concerned with the home-based employment of disabled people using Information Technology. These interim guidelines are currently being applied in the *Phase Two project that is still in progress and will contribute towards operational guidelines which will be published towards the end of 1986.

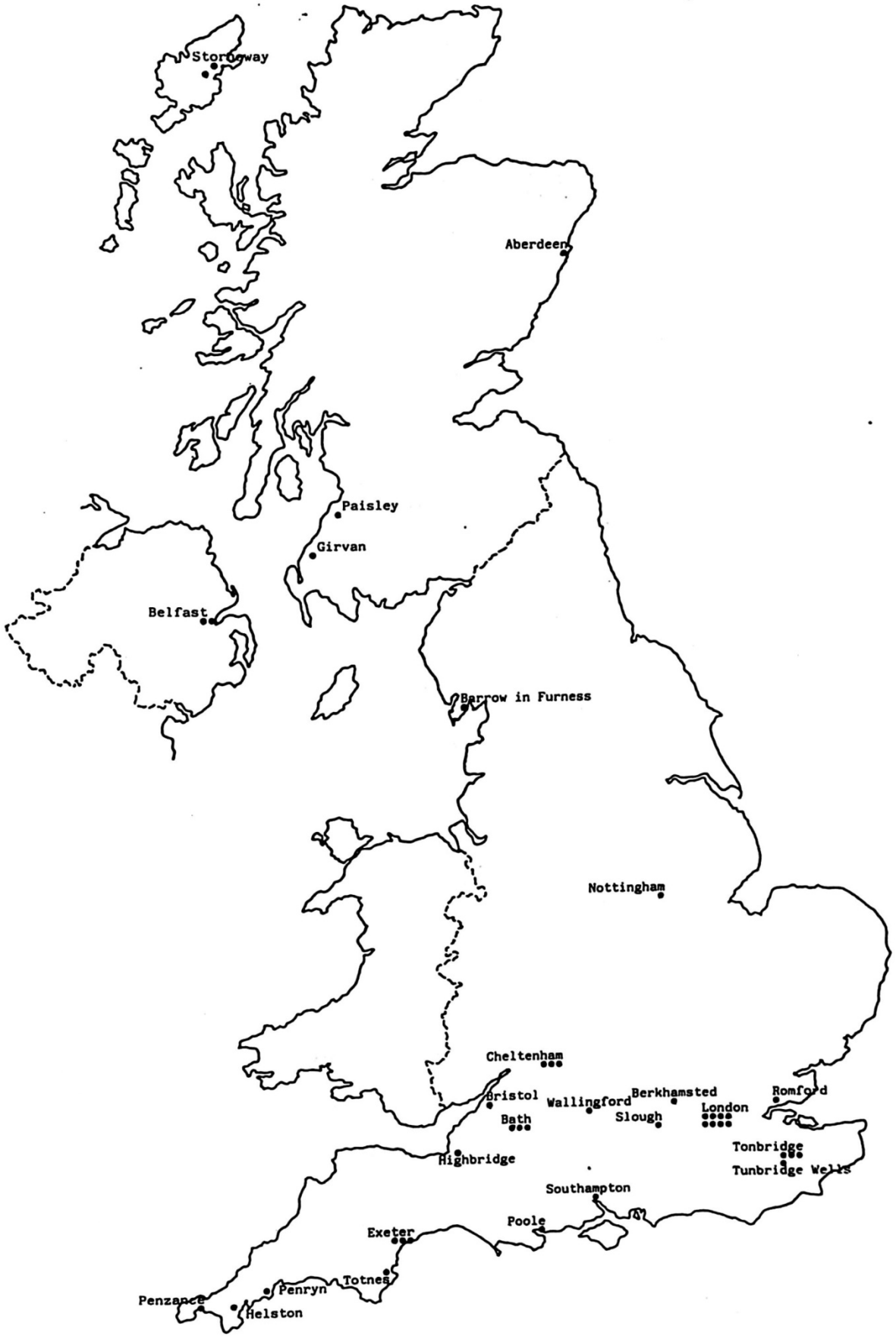
The Evaluation also gives a range of quantitative and qualitative information that will be of use to the MSC when assessing for themselves the implications of home-based working on their own permanent employment schemes for disabled people.

*Phase Two : Project is managed and implemented by IT World Limited, Asphalte House, Palace Street, London SW1E 5HS

10. APPENDICES

I(a)	Employer Locations (by town)
I(b)	Disabled People Locations (by town)
II	Employer Profiles
III	Disabled People Profiles
IV	Self Employed Business Profiles
V	Job Profiles
VI	Technology Profiles

APPENDIX I(a)
EMPLOYER LOCATIONS



APPENDIX I(b)

DISABLED PEOPLE LOCATIO

Service - Other = Professional Services
Leisure Services

Size: Small = 1 - 25 employees
Medium = 26 - 250 "
Large = 250+ "

EMPLOYER PROFILES

Size	Location	Type	Activity	Previous Experience of using IT	Previous Experience of employing disabled people	Unit No.
Small	London	Service-Retail	Mail Order	Some - Computer in office	None	1
Small	S/West	Industrial-Light	Electric Components	None	None	2
Small	Scotland	Service-Other	Printing	Some - Wordprocessing	None	3
Small	S/East	Service-Other	Professional Training & Examining Body	Some	Some	4
Small	S/East	Service-Other	Professional Training & Examining Body	Some	Some	5
Small	S/East	Service-Other	Professional Training & Examining Body	Some	Some	6
Small	N/Ireland	Service-Retail	Micro Equipment Dealers	Some - Business is computers	None	7

Size	Location	Type	Activity	Previous Experience of using IT	Previous Experience of employing disabled people	Unit No.
Small	N/Ireland	Voluntary Organisation	General Services to Community	None	Some	8
Small	S/West	Service-Other	Electronic Information Service	Some - Business is IT	Some	9
Small	S/West	Service-Other	Private Investigators & Security Consultants	Some	None	10
Small	S/East	Service-Retail	Plumbing & Heating Contractors	None	None	11
Small	S/West	Voluntary Organisation	Specialised College of Further Education providing for needs of Disabled	Some	Some	12
Small	S/West	Industrial-Light	Engineering & Construction	None	None	13
Small	S/West	Service-Other	Electronic Information Service	Some	None	14
Small	S/West	Service-Retail	Dealers in Software & Systems	Some	None	15

Size	Location	Type	Activity	Previous Experience of using IT	Previous Experience of employing disabled people	Unit No.
Small	London	Service-Other	Information Service on Hazardous Chemicals & Materials	Some	None	16
Small	S/West	Industrial-Light	Design & Construction	None	None	17
Small	S/West	Govt. - Local Authority	Health Service	Some	Some	18
Small	S/West	Service-Finance	Financial Management Consultancy	None	None	19
Small	London	Service-Other	Information Service to Disabled Community	None	Some	20
Small	London	Service-Other	Information Service on Hazardous Chemicals & Materials	Some	Some	21
Small	S/West	Voluntary Organisation	Support & Information Service for Cancer Patients	None	None	22

Size	Location	Type	Activity	Previous Experience of using IT	Previous Experience of employing disabled people	Unit No.
Medium	Scotland	Govt.- Local Authority	Education	Some - Quite Extensive	Some	23
Medium	Scotland	Service- Other	Farm Management Support Services	Some	None	24
Medium	Midlands	Service- Finance	Building Society	Some	None	25
Medium	S/East	Voluntary Organisation	Home for Disabled	Some	None	26
Medium	London	Service- Other	Professional Examining Body	Some - Business is computing	Some	27
Medium	London	Voluntary Organisation	Information Service to Disabled Community	None	Some	28
Medium	S/East	Voluntary Organisation	Hospice	None	None	29
Medium	S/West	Govt.- Central	University	Some	None	30
Medium	S/West	Govt.- Central	University	None	None	31
Medium	S/West	Service- Other	Football Club	None	None	32

Size	Location	Type	Activity	Previous Experience of using IT	Previous Experience of employing disabled people	Unit No.
Medium	S/West	Voluntary Organisation	Information Services to Disabled Community	Unknown	Unknown	33
Large	N/West	Industrial-Heavy	Shipbuilding	Some - Quite extensive	Some	34
Large	Scotland	Industrial-Heavy	Exploration	Some - Quite extensive	Some	35
Large	London	Govt.-Agency	Electricity Supply	Some - Quite extensive	Some	36
Large	S/East	Service-Other	Computing & Software Consultancy Services	Some	None	37
Large	S/East	Service-Other	Hotels, Catering	Some	Some	38
Large	S/East	Voluntary Organisation	Specialist Training Provider	Some	Some	39
Large	Scotland	Govt.-Local Authority	Health Service	Some	None	40

DISABLED PEOPLE PROFILES

FEMALE

Age	Disability	No. of Years Disabled	Registered Disabled	Wheelchair Use	Previous Qualifications	Previous Skills Technology Related	Previous Skills Other	Previous Work Experience	Unit No.
23	Spina Bifida	23	Yes	Yes	6 CSE RSA I Pitmans - Elementary Intermediate	Operatonal	Unknown	Some	6
24	Brittle Bone Disease	24	Yes	Yes	8 GCE 'O' 2 GCE 'A' CSE Grade I	None	Typing	None	27
27	Multiple Sclerosis	Unknown	Yes	No	8 GCE 'O' 2 GCE 'A' Degree	General Awareness	Typing	Some	38
30	Stills Disease	30	Yes	No	4 GCE 'O' RSA I & II Pitmans - Intermediate	Operational	Typing Type-setting	Some	4
32	Multiple Sclerosis	3	No	No	Unknown	General Awareness	Unknown	Some	19
33	Anthrodesed Ankles Carpal Tunnel Syndrome	10	Yes	Yes	Degree B.Ed Music & English	Operational	Unknown	Some	20

Age	Disability	No. of Years Disabled	Registered Disabled	Wheelchair Use	Previous Qualifications	Previous Skills Technology Related	Previous Skills Other	Previous Work Experience	Unit No.
39	Progressive Muscular Atrophy	1	Yes	Yes	Pitman	Operational	Unknown	Some	2
40	Diabetes resulting in severe de-generation of tissue & nerves	3	Yes	Yes	5 GCE 'O' RSA I & II Diploma Open Univ.- 2 credits	Operational	Unknown	Some	29
48	Cerebral Palsy	48	No	Yes	ONC - Printing Cert. of Master Craftsman	None	Printing Typing	Some	45
49	Paralysis following blood clot on spine	Unknown	Yes	Yes	3 GCE 'O'	None	Accounts	Some	43
50	Effects of Polio	48	Yes	Yes	RSA I & II	General Awareness	Unknown	Some	22
52	Rheumatoid Arthritis	5	Yes	No	College Cert. for Art/Drama	None	Typing	Some	1
55	Chronic Osteomyelitis Cancer of Cervix	12	Yes	Yes	None	None	Unknown	Some	16

Age	Disability	No. of Years Disabled	Registered Disabled	Wheelchair Use	Previous Qualifications	Previous Skills Technology Related	Previous Skills Other	Previous Work Experience	Unit No.
56	Paraplegia	3	Yes	Yes	Unknown	Operational	Unknown	Some	17
58	Effects of Polio	30	Yes	Yes	Degree	None	Unknown	Some	53
MALE									
17	Brittle Bone Disease	17	Yes	Yes	3 GCE 'O'	Operational	Unknown	None	40
20	Tetraplegia	3	Yes	Yes	6 GCE 'O' 2 GCE 'A' CSE Grade I	Operational	Unknown	Some	9
20	Paraplegia	3	No	Yes	6 GCE 'O' City & Guilds	Operational	Heating	Some	11
21	Paraplegia	2	Yes	Yes	3 GCE 'O' 4 CSE	General Awareness	Unknown	Some	14
23	Tetraplegia	5	No	Yes	3 SCE 'O' 7 SCE 'H' SUEB Stage I HND 3 Univ. Credits	Operational	Unknown	None	35
24	Congenital Deformity of Limbs	24	No	Yes	8 GCE 'O' 3 GCE 'A" Degree B.Sc (Hon) 2 Open Univ. Credits	Operational	Unknown	None	25

Age	Disability	No. of Years Disabled	Registered Disabled	Wheelchair Use	Previous Qualifications	Previous Skills Technology Related	Previous Skills Other	Previous Work Experience	Unit No.
24	Paraplegia	4	No	Yes	5 GCE 'O' OND	General Awareness	Key-boarding	Some	8
25	Quadraplegia	4	Yes	Yes	Unknown	Operational	Typing	Some	23
26	Multiple Sclerosis	2	No	Yes	13 GCE 'O' 2 GCE 'A'	Operational	Unknown	Some	31
26	Brain Damage	6	No	Yes	9 GCE 'O' 1 GCE 'A' HND	General Awareness	Unknown	Some	32
27	Disabled Below Waist with Limited Leg Movement	Unknown	Yes	Yes	7 GCE 'O' Pitmans SNC 1st	Operational	Typing	Some	37
28	Haemophilia	28	Yes	No	4 GCE 'O' SNC - Sec. Studies	Operational	Typing	Some	3
28	Effects of Polio	27	Yes	No	9 GCE 'O' 3 GCE 'A'	Operational	Typing	Some	7
28	Spinal Muscular Atrophy	28	Yes	Yes	3 GCE 'O' 4 Open Univ. Credits	Operational	Unknown	None	12
28	Spinal Injury	2	Yes	Yes	Unknown	None	Unknown	Some	15
29	Tetraplegia	2	No	Yes	7 SCE 'O' 5 SCE 'H'	Operational	Typing	Some	24

Age	Disability	No. of Years Disabled	Registered Disabled	Wheelchair Use	Previous Qualifications	Previous Skills Technology Related	Previous Skills Other	Previous Work Experience	Unit No.
29	Paraplegia	3	Yes	Yes	11 GCE 'O' 3 GCE 'A'	General Awareness	Unknown	Some	47
33	Haemophilia	33	Yes	No	ONC HNC	General Awareness	Unknown	Some	21
35	Spinal Injury	3	Yes	Yes	B.Sc.	Operational	Unknown	Some	44
35	Wolff-Parkinson-White Syndrome	17	Yes	No	10 GCE 'O' OND	None	Unknown	Some	33
36	Multiple Sclerosis	9	Yes	Yes	B.A. Hons B.Phil Open Univ. - 1 Credit	Operational	Key-boarding	Some	36
36	Tumour on Spine	21	Yes	Yes	6 GCE 'O' Degree	Operational	Typing	Some	39
37	Quadraplegia	5	Yes	Yes	Unknown	General Awareness	Unknown	Some	52
37	Congenital Deformity No Lower Torso	37	Yes	Yes	Accountancy qualification	Operational	Typing	Some	28
37	Tetraplegia	6	Yes	Yes	1 GCE 'O'	None	Unknown	Some	9
39	Quadraplegia	20	No	Yes	Degree	General Awareness	Unknown	Some	18

Age	Disability	No. of Years Disabled	Registered Disabled	Wheelchair Use	Previous Qualifications	Previous Skills Technology Related	Previous Skills Other	Previous Work Experience	Unit No.
40	Peripheral Neuropathy	8	Yes	No	ONC	General Awareness	Typing	Some	13
42	Profound Deafness	42	Yes	No	11 GCE 'O' 5 GCE 'A'	Operational	Unknown	Some	48
43	Quadraplegia	12	Yes	Yes	HNC	None	Typing	Some	26
44	Myositis Ossificans Progressiva	34	Yes	No	8 GCE 'O' 2 GCE 'A' Degree	General Awareness	Unknown	Some	46
44	Multiple Sclerosis	Unknown	Unknown	Unknown	C. Eng.	Operational	Unknown	Some	50
44	Multiple Sclerosis	9	Unknown	Unknown	Degree	Operational	Unknown	Some	30
46	Multiple Sclerosis	2	Yes	No	City & Guilds ONC HND	None	Draught-ing Marketing	Some	42
48	Tetraplegia	3	Yes	Yes	Unknown	General Awareness	Unknown	Some	51
49	Multiple Sclerosis	22	Yes	Yes	Inst. Cost & Management Accountants	General Awareness	Unknown	Some	10
51	Multiple Sclerosis	6	No	Yes	HNC	Operational	Key-boarding	Some	34

Age	Disability	No. of Years Disabled	Registered Disabled	Wheelchair Use	Previous Qualifications	Previous Skills Technology Related	Previous Skills Other	Previous Work Experience	Uni No.
54	Spinal Injury	17	No	Yes	Chartered Acct. (part qualified)	Operational	Unknown	Some	41
67	Tetraplegia	10	Unknown	Unknown	Unknown	General Awareness	Unknown	Some	49

Unknown = Not asked on self-completion questionnaire

DISABLED PEOPLE - SELF-EMPLOYED BUSINESS PROFILES

Gender	Age	Type	Activity	Previously Self-employed	Previous Computing Skills	Qualifications	Unit No.
Male	29	Service	Armaments Consultant	No	General Awareness	11 GCE 'O' 3 GCE 'A'	47
Male	35	Service	Engineering Design & Project Management Services	No	Operational	BSc Mech.Eng.	44
Male	37	Service	Building & Special-Roofing Services	Yes	General Awareness	Unknown	52
Male	42	Service	Accounting & Book-keeping Services	No	Operational	11 GCE 'O' 5 GCE 'A'	48
Male	44	Service	Tachograph Analysis Services	No	General Awareness	8 GCE 'O' 2 GCE 'A' Degree	46
Male	44	Service	Structural Analysis Services	Yes	Operational	Civil Eng.	50
Male	46	Service	Engraving	Yes	None	City & Guilds ONC Mech.Eng HND Mech.Eng	42
Male	48	Service	Farm	Yes	General Awareness	Unknown	51
Female	48	Service	Printing Services	Yes	None	ONC Printing Cert. of Master Craftsman	45

Gender	Age	Type	Activity	Previously Self-employed	Previous Computing Skills	Qualifications	Unit No.
Female	49	Service	Public House	Yes	None	3 GCE 'O'	43
Male	54	Service	Financial Services	Yes	Operational	Chart.Accountant Part qualified	41
Female	58	Service	Freelance Writer/ Broadcaster	Yes	None	Degree	53
Male	67	Service	Freelance Journalist	Yes	General Awareness	Unknown	49

JOB PROFILES (based on Employer Information)

Title	Computer Related Tasks							Full or Part time Employment	Distance between Employer & Employee - Miles	Unit No.
	WP	B/A	DP/E	Prog.	F/Mod	Graph	Other			
Copy Typist			*					(a)Not asked	0 - 5	1
Bookkeeper	*	*						(a)Not asked	0 - 5	2
Typesetter			*			*	*	Full	6 - 12	3
Word Processor Operator	*		*					Full	13 - 25	4
Word Processor Operator	*							Full	26 +	5
Word Processor Operator	*							Full	0 - 5	6
Unspecified			*	*				Full	0 - 5	7
Computer Operator	*		*					Full	6 - 12	8
Viewdata Editor	*		*	*				Full	13 - 25	(b)9
Telesoftware Consultant			*	*				Part	6 - 12	(b)9

Notes : (a) Not asked on pilot interview
(b) Two employees sharing one job

Tasks : WP = Wordprocessing
B/A = Bookkeeping/Accounts
DP/E = Data Prep./Entry
Prog. = Programming
F/Mod = Financial Modelling
Graph = Graphics

Title	Computer Related Tasks							Full or Part time Employment	Distance between Employer & Employee - Miles	Unit No.
	WP	B/A	DP/E	Prog.	F/Mod	Graph	Other			
Tachograph Analyser			*	*			*	Part	6 - 12	10
Consultant Estimator	*	*	*					Full	0 - 5	11
Computer Services Technician	*		*	*		*	*	Part	13 - 25	12
Contracts Manager	*	*	*	*		*	*	Full	0 - 5	13
Viewdata Editor	*		*				*	Full	13 - 25	14
Programmer				*				'Can't say'	0 - 5	15
Keyboard Operator	*		*					Full	0 - 5	16
Company Accountant		*	*					Part	0 - 5	17
Secretary/Convenor	*	*	*					Full	0 - 5	18
Computer Manager		*	*					Full	0 - 5	19
Computer Operator			*				*	Part	0 - 5	20
Contract Data Researcher			*					Full	0 - 5	21
Computer Operator	*		*				*	Part	13 - 25	22
Computer Resources Coordinator	*		*	*		*	*	Full	6 - 12	23

Title	Computer Related Tasks							Full or Part time Employment	Distance between Employer & Employee - Miles	Unit No.
	WP	B/A	DP/E	Prog.	F/Mod	Graph	Other			
Computer Programmer	*		*	*				Full	26 +	24
Trainee Programmer			*	*				Full	6 - 12	25
Unspecified	*	*	*	*	*			Full	0 - 5	26
Examinations Asst	*	*	*			*	*	Full	26 +	27
SW Regional Officer			*				*	Part	26 +	28
Shorthand/Typist	*	*	*				*	Full	6 - 12	29
Fellow in Business Policy			*		*		*	Part	0 - 5	30
Research Officer			*	*		*		Part	0 - 5	31
Computer Assistant			*					Part	0 - 5	32
Unspecified			- Unspecified -					Unspecified	0 - 5	33
Instrument Engineer	*			*		*	*	(a)Not asked	6 - 12	34
Programmer	*	*		*		*		Full	0 - 5	35
Programmer			*	*	*	*		Part	6 - 12	36

Note : (a) Not asked on pilot interview

Title	Computer Related Tasks							Full or Part time Employment	Distance between Employer & Employee - Miles	Unit No.
	WP	B/A	DP/E	Prog.	F/Mod	Graph	Other			
Technical Development Assistant	*		*	*			*	Part	26 +	37
Unspecified	*		*	*				Part	6 - 12	38
Computer Operator			*	*				Part	6 - 12	39
Clerical Trainee	- Unspecified -							Unspecified	0 - 5	40

TECHNOLOGY PROFILES (Equipment provided by the DTI)

Micro	*Modem/ Couplers	Printer	Software	Special Aids	Unit No.
Televideo 802 Workstation 3780 Synchronous Comms + Configuration	Yes Unspecified	Microline	BSTAM televideo format Wordstar, Mailmerge BASIC interpreter	None	1
ACT Sirius	No	Flowriter	Unknown	None	2
LSI System M-Three Model 200	No	Daisywriter Model 2000	Wordstar, Mailmerge, Spellstar, M-BASIC, Payroll, Sales, Purchase & Nominal Ledger	Mouthstick	26
Commodore PET 8032 2 disk drives 8250	No	Commodore	Unknown	None	34
---------- Provided by the Employer ----------				B&T Technology 'CID' Blow/Suck Device Kode 'SYS300' Voice Utterance Recognition System Special cable connections also tailor made micro-phone clip	35
ACT Sirius + disks	No	MT 180	Microfacts 4 ACT Multiplan	None	41

*In several cases limited to payment for line link

TECHNOLOGY PROFILES

Micro	Modem/ Couplers	Printer	Software	Special Aids	Unit No.
ACT Sirius + twin 1.2Mb disk drives & monitor	No	Epson FX100 Parallel	Wordstar, CADS 3 Analysis with enhanced graphics CADSpan, CAD Sportal 1	None	44
IBM XT Colour system SB 384 + games adaptor Intel 8087, Sysgen	No	None	Symphony, Microsoft Fortran V3.20, IBM BASIC compiler Super Chartman IV & V	None	44
CBM 8096 SK CBM 8050	No	Epson MX100 FT III	Wordcraft 96	None	16
LSI System M3 64K + VDU	No	Diablo 630	DMS Data Mangement System Wordstar & Mailmerge M-BASIC	None	27
Transam Saracen 64K Volker Craig Terminal	Yes Unspecified	Qume Sprint 9/45	dBase II, Wordstar Mailmerge TCL Basic	None	37
Pericom 7800 AA2 Microsystem 7 x 64K Screen, 12.5Mb Winchester	Yes Models 307 & 3097A Apple II link	Diablo 630	dBase II, BSTAM Comms Wordstar, Mailmerge	None	38
LSI System M3 Model 200 64K, screen	No	Daisywriter Model 2000	Wordstar, Mailmerge, Spellstar, M-BASIC	Mouthstick	26

TECHNOLOGY PROFILES

Micro	Modem/ Couplers	Printer	Software	Special Aids	Unit No.
ACT Sirius 128K RAM	No	Epson FX80	Sage Accounts	None	17
Pericom 7800 AAZ 7 64K, Screen, Floppy Disk, 1 x 12.5MB Winchester	Yes Models 307 & 3097A Apple II link	Diablo 630	dBase II, BSTAM comms, Wordstar, Mailmerge	None	38
Apricot Xi 10Mb, 9" monitor	No	Epson FX-100	Wordstar, DELTA DMS	Shift Lock Switch	18
Onyx Sundance 80, 6.7MB Winchester	No	Ricoh RP1600S	CPM Op. System, BASIC Compiler, Wordstar	None	24
Tandy 4 with twin disk drive, Veeder Root Tachograph analyser	No	Tandy DMP 2100	Tachograph analysis, Super Scripsit WP	None	46
Sord M23 P, colour monitor	Yes Unspecified	TEC FLO-40 Daisywheel	PIPS III, Sord WP	None	53
Philips word processor, viewdata terminal	Yes BT 22	Philips	BT Datel 600	None	14
Almarc Spirit 2 with hard and floppy disks, QUT 202 intelligent terminal, Multiuser MPM	Yes 212A 1200 Baud	FX 80 Matrix	WP, Insurance package, Financial and Investment Planning, Payroll	None	19
Rank 320-II	Yes Unspecified	630 Daisywheel + Matrix	Wordstar WP, DELTA DMS, Nominal Ledger	None	22

TECHNOLOGY PROFILES

Micro	Modem/ Couplers	Printer	Software	Special Aids	Unit No.
Bespoke TM3, based on DEC 11/23, disk drives, TM editing terminal, colour monitor & keyboard	Yes Unspecified	None	Bespoke multiuser	None	9
Rank Xerox 820-III	Yes Unspecified	Rank 630	M-BASIC 20, DELTA DMS, TTY Ascom, Nominal Ledger	None	28
ICL Model 25 & VDU	No	Matrix	None	None	15
ICL PC Model 36 256K + 2 VDU's	Yes Unspecified	Matrix	Wordstar & dBase II	None	8
Quadritek 1300 terminal Rapid access processor Favorit 1 contact exposure unit, 0422 plate maker Forte 36 guillotine	No	OCE 2130 Offset	None	None	45
ACT Sirius 1	No	ACT Writer 30	Wordstar, Mailmerge,	None	48
Olivetti ETV 300 CPU + dual disk drive & monitor	No	ET 21	None	None	49
CIFER 1887 with hard & floppy disks, LC 12 Digitizer	Yes Unspecified	FX 80 Printer DTC 747A Plotter	None	None	31
ACT Sirius 1 with 256K RAM + 2.4MB disks	No	ACT Writer 12	Lucas-Kienzle Fleet Management system, dBase II, Wordstar	None	10

TECHNOLOGY PROFILES

Micro	Modem/ Couplers	Printer	Software	Special Aids	Unit No.
Sord M23-3/2 FACIT tape punch	Yes Unspecified	X-Y Plotter Matrix printer	PIPS III, WP, C.n.c. & plotting software	None	13
NCR DMV	Yes 2400 MPS	Matrix	CPM 80, Wordstar, Micro-soft, PCTS-Gen	None	25
Terminal to MENTOR mini	Yes Unspecified	None	None	None	40
Apricot Xi	No	TEC 40	DELTA DMS, Wordstar, Supercalc, Superplanner	None	29
Apricot Xi	None		Barstock, Cashlink, Wordstar	None	43
ACT Sirius	No	Daisywheel	Supercalc, Silicon Office Pegasus Accounts suite, Carter-Parrett Motor Traders Package	None	7
ACT Sirius, 256k twin disk drives & VDU	No	Epson FX100	Wordstar, CAD 3	None	50
ACT Sirius, 128K RAM 1.2MB Hard Disk	Yes Unspecified	FX 80	Sage Accounts, WP, Bespoke software	None	32
Rank Xerox 820-III	Yes Unspecified	Rank 630	DELTA DMS	None	33
Apple II, twin disk drives, VDU	No	Matrix	Cash Book, Dairy Herd Management, Milk Monitor, Dataplan, Visicalc, Zardax	None	51

TECHNOLOGY PROFILES

Micro	Modem/ Couplers	Printer	Software	Special Aids	Uni No.
Apple II + disk drive screen, Prestel adaptor BBC + colour monitor twin disks, A10 interface Microtantel	Yes Unspecified	Epson FX80 + interface	Quickfile, Applewriter Macapple + interface	None	12
2 Rair Black Box 3/30A 2 Insight VDT 1/4 Terminal	No	TEC F10.40 Daisywheel Star DP515 Matrix	Compass, Wordstar	None	20
Mimi 803 + monitor	No	Epson FX80	Wordstar	None	5
Mimi 803 + monitor	No	Epson FX80	Wordstar	None	4
Mimi 803 + monitor	No	Epson FX80	Wordstar	None	6
Omnitech 2100 phototype-setter, Interpro 14RA	No	None	Unknown	None	3
ACT Sirius FX Wordcraft Wordprocessor	Yes Dacom	Epson FX100 Dot Matrix ACT Writer 30 Daisywheel	DMS + Database, Multiplan Spreadsheet, M-Plan Graphics module DMS Userlink ASSIST	None	47
TANDY model IV command unit with dual disk drive, Kombirack cutter holder & setting gauge & cutter grinder	No	Line Printer	Dahlgren Engraving system	None	42

TECHNOLOGY PROFILES

Micro	Modem/ Couplers	Printer	Software	Special Aids	Unit No.
ACT Sirius 256K 10Mb fixed disk, 1.2 floppy disk	No	Starwriter Daisywheel	Mastruct Sint Graffcom WP	None	52
Torch C68020 20Mb hard disk MC240 monitor	Yes TOMAC 7 Steebek SB1275D	No	Metrotel IPT, Metrotel PVS Unix operating system	None	23
Contractor I ASCII keyboard	No	Draft & letter quality	Mechanical program, file mainten. program, plumbing heat-loss program, Wordstar	None	11
ACT Sirius I, VDU, Internal Winchester Disk, floppy disk drive	No	ACT Writer 30 Daisywheel	SELECT WP, Delta DMS MS-DOS, CP/M-86, Microsoft BASIC-86	None	39
IBM PC Microtec colour display	No	IBM PC Graphics Hewlett Packard 8 Pen Plotter	Chartman II Business Graphics, Visicalc, DOS + BASIC extension	None	36
ACT Sirius FX	No	Epson FX100 ACT writer 30 daisywheel	DMS plus database, multiplan, M-plan	None	47
LSI System M3 64K, screen and disk drive	No	Diablo 630	Wordstar, Mailmerge, M-BASIC	None	27
2 x BBC model B, Micronet 2 monitors + 2 disk drives	Yes Unspecified	Dot Matrix	Bespoke	None	30