

HOME OFFICE SCIENCE AND **TECHNOLOGY GROUP**

DIRECTORATE OF **TELECOMMUNICATIONS** ANNUAL REVIEW 1989/90

Directorate of Telecommunications Horseferry House Dean Ryle Street LONDON SW1P 2AW

DIRECTORATE OF TELECOMMUNICATIONS

DTELS, previously known as the Home Office Directorate of Telecommunications, has been established in England and Wales since 1946. Today it is part of the Science and Technology Group of the Home Office and is increasingly operating as a trading body within the public service.

The principal activities of DTELS are the provision of high quality telecommunications installation, maintenance and engineering consultancy services to the Emergency Services in England and Wales, the Prison Service and a number of other central and local Government users.

This Annual Review is the first of its kind to be produced by DTELS. Its issue marks another step in the transition to a fully fledged commercial enterprise. In the nature of reviews of this kind much of the material reflects what was happening 6-12 months ago. The momentum and pace of change have been maintained in the first half of this financial year.

ANNUAL REVIEW 1989/90

- A year of change

Management Board Report 1989/90 The year was an eventful one for DTELS.

An era lasting over 40 years ended with the implementation of two major changes:

- the ending of the central equipment purchasing function and the transfer of the responsibility for the provision of communications equipment to the user services thus giving greater freedom of procurement.
- the introduction of commercial charging arrangements for all customers for installation and maintenance enabling customers to compare prices and exercise greater choice in the selection of services.

The new policy was recognised at the outset as requiring a wholly new approach by DTELS at all levels, involving new commercial disciplines and major changes in the organisation's culture. This review outlines some of the changes which have been introduced and our objectives for the future. It is appropriate at the outset to pay tribute to all DTELS staff who, despite the uncertainties, have responded with vigour and determination to the changes whilst continuing to deliver the quality of service for which DTELS is renowned. The 1988/89 Business Plan set clear objectives and measurable commercial goals. We are pleased to record some of the progress we have made in achieving these.

Policy and regulatory matters have been clearly separated from commercial activity by transferring Networks Branch, frequency regulation and engineering policy work to other parts of the Home Office. DTELS has thus been left free to concentrate on the efficient provision of services and the development and consolidation of its commercial position.

The reforming of the engineers remaining within DTELS into a telecommunications consultancy service was completed during the year. Work is now carried out under formal agreements with customers and a régime of project and resource control is being developed. Tight budget controls and assessment of assets and overheads is being pursued with the intention of introducing direct charging for engineering consultancy services on a competitive basis from April 1991.

- of direct charging for installation and maintenance services, a written agreement (Memorandum of Understanding) with all police and fire customers was drawn up for the first time specifying all their equipment and the grade of service to be provided. This was a major step in the process of establishing a proper contractual relationship with our customers.
- We produced a comprehensive marketing plan and strengthened the marketing team to spearhead our entry into the market place.
- 5 The WARC Frequency
 Conversion Programme, a task
 of major proportions, was
 completed five months ahead of
 schedule in July 1989. Despite
 the demands this put on our
 resources, we continued to
 meet all operational
 commitments to our customers.
- A new management accounting system, designed to improve financial management and control, was in place by the start of the year and continues to be developed as a key management tool.
- During the year we developed and introduced new measurement systems in order to assist in improving performance and to refine costing and pricing procedures.
- 8 The year saw the adoption and wider application of computerised project management techniques

previously used for the WARC programme, particularly in engineering, to ensure the delivery of projects on time and on budget.

A comprehensive programme of work was begun to introduce quality management leading to registration under the Standards BS5750 and ISO9000 – essential for commercial success.

A review of the system of supply management was taken forward in the year, a task which was given greater impetus due to difficulties with the existing system in our central stores at Bishops Cleeve. Active planning is under way for a replacement DTELS-wide system to provide centralised fault call handling, efficient resource deployment and real-time logistical information about manpower and materials usage.

The programme of management training courses, designed to help all levels of management understand and appreciate the need for change and how it can be accomplished, were taken forward. A new course to help TTE IIs in Depots deal with resource management was introduced. Customer awareness was given a high profile in all courses.



Tony Pearson Head of Directorate

Appointed Head of DTELS in July 1989. Management Experience in the Prison Service over 20 years.



Ian Aitken Head of Operations

Appointed Head of Operations in October 1986. 23 years experience in DTELS progressing through every technical grade and Department.



Nigel Finlayson Head of Finance, Manpower and Stores

Joined DTELS in June 1988. 23 years management experience throughout the Home Office.



George Davis C.Eng; MIEE Head of Marketing

Joined DTELS in June 1990 from British Telecom. Extensive experience in Engineering and marketing with BT.



John Mumford C. Eng; MIEE Head of Engineering Consultancy

Appointed Head of Engineering Consultancy in October 1989. 38 years experience in design and development fields of radio technology in the public service. Joined DTELS in 1966.



Bill Hogg ACMA Financial Controller

Joined DTELS in 1985 from GEC having spent 12 years with that company in senior positions, including Financial Director and Secretary of GEC Lamps and Lighting.



Martin Rosenhead Independent Member

Joined DTELS board in 1986 as independent adviser from the private sector.

Competing for customers

Our market strategy for the year was to retain as many of our existing customers as possible, to maximise our share of their business both for traditional and new services and to obtain business from new areas outside our traditional market.

During the year we provided services to 37 Police Forces, 44 effort was directed at Pol Fire Brigades and the majority of Prison Establishments. Although the major mark effort was directed at Pol Forces and Fire Brigades alternative markets in the

We took steps to improve our expertise in the marketing area by bringing in, on a period appointment, an experienced marketing executive from the private sector to advise us and help set up a Marketing Department. Three area marketing executives were appointed from within the Operations Group and were attached to the Area Managers offices to spearhead the marketing effort in the field. A permanent head of marketing will join the Management team early in 1990/91.

Although the major marketing effort was directed at Police Forces and Fire Brigades alternative markets in the public sector were also examined. We believe that opportunities exist more widely in the public sector for both maintenance and engineering consultancy which DTELS has the ability to provide as a broadly based service able to exploit our experience and the close relationship between operations and consultancy groups.

Objectives

Our primary objective has been, and continues to be, to consolidate DTELS as a going concern. This requires us to retain our market share of the installation and maintenance market and to develop a successful Engineering Consultancy service.

DTELS has a first class reputation with the emergency services. We intend to build on that reputation to become widely recognised as a competitive provider of high quality independent technical services to the public sector. We will continue to promote our objectivity in solving communication problems, by pursuing a policy of independence from manufacturers and suppliers of equipment and in offering a fully comprehensive range of communications services.

Above all, we shall offer services on the most cost effective and efficient basis. A primary requirement therefore is to improve our financial performance by vigorous control of costs and by seeking to maximise new business opportunities.

On the personnel front our objective is to retain sufficient of the present workforce in employment consistent with the requirements to get labour and overhead costs in balance with income and retain sufficient capacity to discharge

contractual commitments.

Should further manpower reductions become necessary DTELS will continue to deal with the problems of individuals as sympathetically as possible and seek to maximise alternative job opportunities for affected staff.

During the year DTELS senior management team was set up as a formal Management Board. The constitution is shown later in this review. Supporting the Board, the internal management structure has been changed to clarify lines of responsibility and to introduce effective accountable management.

Efficiency improvements

Drastic action has been taken to improve the competitive position of DTELS and we have been successful in containing the drop in market share following the untying of customers.

As was to be expected with the opening up of the near monopoly position our market share declined in the year. Nevertheless the large majority of our traditional customers staved with us and we also won some new customers. Some drop in volume was experienced due to reductions in the quantities of equipment which customers required to be maintained. We also suffered a contraction in the volume of installation business caused by the ending of the WARC programme and by some police garages undertaking vehicle radio installation work themselves

To combat these trends and to consolidate our position in the marketplace, a cost reduction programme was devised early in the year. Some of the measures have already been carried through. For example:

- 1 DTELS complement was reduced by 250 by the end of the year providing vital savings in costs.
- 2 At the end of the year, plans to reduce the size of Bridgend and Colwyn Bay Depots and to

effect the closure of Hannington Depot by the summer of 1990 were announced. 38 redundancies are involved in these steps but savings in staff and depot running costs will be an essential contribution to the economies necessary to enable us to compete in the open market. With the same object in mind, the Central Communications Establishment at Harrow was closed in October 1988.

- 3 Test equipment inventories have been reduced with resulting savings in depreciation charges.
- 4 Expenditure on spares was reduced reflecting increased reliability of equipment, reduced maintenance volumes and better stock and purchase controls.
- 5 Reductions in vehicle fleet operating costs and in other overheads (travelling and subsistence, training etc) have also been made.
- On the rental scheme, the ending of the central procurement function gave a saving in Central Government

average capital expenditure of some £14m per annum.

The developments described above have been taking place against a background of considerable technological change no less swift than the changes which have come upon DTELS. Maintenance of equipment in our field is increasingly becoming concerned with systems and systems integration and less with the repair of components. This requires management to have continuous regard to the need to review working practices, the skill base of the workforce as well as spares and materials requirements. We intend to demonstrate the flexibility, willingness and ability to respond to these developing circumstances.

The future

A great deal was achieved in 1989/90 but we know a great deal more remains to be done.

Price levels in the marketplace are moving below those we have traditionally charged. In the year under review we were able to meet this challenge and move our prices downwards with significant benefits to forces and brigades.

Our strategy is firmly geared to securing DTELS future. The plans for further rationalisation and change are specifically designed to achieve the cost reductions necessary to meet market price levels and to enable us to operate as a viable business.

The challenges involved in this for the whole organisation are considerable and will require us to move forward rapidly in many areas. Efficiency improvements will be required across a broad front and will require further review of manning levels, working practices, work locations and cost levels.

At the same time existing markets must be safeguarded by maintaining our high standards of service to customers. New market opportunities must be explored. Alongside all this will be the considerable effort needed to launch the

Engineering Consultancy Service as a successful business in April 1991.

Particularly important areas are the expansion of the Quality Management Programme, and the development and strengthening of our Marketing effort. This will include the development of a new name and distinctive house style moving away from the now inappropriate 'Directorate' with the creation of a more enterprising image consistent with the new DTELS organisation.

Review of activities

Operations

The Operations Group provided a wide range of radio equipment installation and maintenance services specifically developed to meet the demanding operational requirements of police forces, fire brigades, Prison Department, Regional Crime Squads, Civil Defence, and an increasing number of other customers such as Customs and Excise, Ambulance and local authority services. The Group had an income for the year of £20.2m.

It provided a 365 days a year, round the clock, service from 10 regional depots, 2 sub-depots, 3 maintenance units and 60 detachments. A fleet of 350 vehicles enabled us to provide fast response times to meet our contracted requirements reliably.

The detachments, situated in the main on police premises, provided local repair and installation facilities. Our well trained staff, backed up with the necessary spares and test equipment, provided efficient and effective first-line support to minimise the time customers' equipment and vehicles with radio faults were out of service.

Regional depots undertook the more complex and demanding aerial and fixed installation work essential for good system performance. Our maintenance units provided the specialist support required to repair modern high technology and high component density equipment such as visual display units (VDUs), personal radios and firemen's personal alerters and pagers. They are fully equipped with the latest and most sophisticated test equipment to ensure fast and effective service in a very competitive sector of the market, which requires a high volume of business and operational through put in order to recover the high level of investment.

In addition we installed and maintained:

- At remote hill top sites, sophisticated transmitters and receivers, microwave and VHF site-to-site link systems to support voice and telemetry supervisory channels. Microwave dishes and other aerials ranging from simple single dipoles to complex arrays on towers up to 100 metres in height.

- In control rooms, complex multi-channel computer based control sytems interfaced to telephone circuits, VHF and UHF channels, radio alarm decoders and external computer systems.
- In vehicles, a wide variety of mobile equipment: VHF 256 all force channel radios, UHF personal radio adaptors, VHF/ UHF repeater radios, carto-car radios and multi-channel digitally encrypted radios.
- Special installations in emergency control vehicles, helicopters, light fixed-wing aircraft, boats and covert installations are also carried out.
- In prisons, we installed and maintained large closed circuit television (CCTV) systems including cameras, lenses, monitors, video tape recorders, control desks and telemetry link systems for camera remote control.
- We also provided CCTV installation and maintenance services to police forces, fire brigades and police and fire service training establishment studios, including audio and video mixers, audio amplifiers and tape recorders.
- We carried out a large number of vehicle installations per year ranging from fire appliances to police traffic cars and motorcycles.
 Considerable expertise is required with this work to ensure the equipment is fitted

in a safe and operationally effective location. It is also essential to ensure that on board electronic vehicle systems such as electronic engine, power train and suspension management and anti-lock braking systems are not adversely affected.

Depots carried out numerous radio surveys to determine area coverage of radio schemes. This is an automated process using the latest equipment where information from a survey vehicle, fitted with a mini computer, is used to produce automatically a map of the area printed with the survey information.

Engineering Consultancy Services

The Engineering Consultancy service was formed in November when the regulatory and policy functions, formerly carried out by DTELS Engineers, were transferred elsewhere in the Home Office. It provides specialist technical advice and assistance to the Police, Fire, Prison and other Home Office related services, in the design, development and provision of radio communication equipment, ancillaries and systems.

Among the Consultancy
Services' professional and
technical staff there is varied
and extensive specialist
technical knowledge and
practical experience of the
numerous facets of modern
mobile radio systems.

The unique feature of the Consultancy Service is that it is given by an organisation that has specialised in assisting the Police and Fire Services for over forty years. It has therefore been involved from the early use of medium wavelength radio in police vehicles, through the continuing development of modern VHF equipment and on to the present compact handheld two-way radio employing microcomputer technology. It has also provided public service in other areas - in the early 1970s it played a unique rôle in the development of the use of radio and closed circuit television to enhance prison security.

The Consultancy is wholly independent of equipment manufacturers and suppliers and is therefore able to give unbiased views and assistance.

The Consultancy Service intends to follow a policy of providing advice in accordance with Home Office regulations and guidelines and can provide assistance with the following:-

- Engineering designs for new VHF radio systems and the modification and enhancement of existing systems.
- The design of aerial support structures and radio equipment accommodation.
- Complete engineering design of microwave radio multichannel fixed link systems.
- Technical assessment of

integrated communication control systems, including screen based display solutions.

- Engineering design of closed circuit television systems for site and perimeter surveillance.
- Evaluation of equipment against national and international standards, including environmental tests.
- Engineering support for technical and operational field trials.
- Post design service studies and developments.
- Technical audits and feasibility studies.

The Consultancy Service also maintains a close relationship with other Home Office Divisions and User representative bodies by direct liaison and by offering to undertake studies and work on their behalf. These, combined with other outward looking activities, enable the Consultancy to maintain a continuing awareness of requirements and trends and to retain a unique approach to traditional customers.

The Consultancy Service is available to a wide range of customers and will strive to utilise its skilled resources to the full. A broader knowledge and experience of the new market will enable the Consultancy to cross fertilise radio engineering developments and concepts to the advantage of all its customers.

Training

The range and scope of equipment maintained by DTELS and the ever increasing pace of technological development in the telecommunications field, made it vitally important for DTELS to maintain a first class in-house training capability.

Our training section located at Stanmore in Middlesex provided equipment and system familiarisation courses that ran from a 3-day grounding in microwave system techniques to one or two week courses built around individual systems. Our equipment training courses were heavily biased towards the practical requirements of the engineer or technician and consisted of both theoretical and "hands-on" work. Courses were tailored to meet individual customer requirements.

The Section also taught subjects as varied as high density soldering techniques, presentation skills, word processing and climbing aptitude and safety for aerial mast rigging. All our trainers are full time and either members or associate members of the Institute of Training and Development. In the last three years they have trained over 1500 engineers and technicians in handling new equipment introduced as a result of the WARC programme and increasing use of microwave for radio linking systems.

Investment in the latest equipment, test facilities and teaching aids is ongoing and regarded by DTELS management as vital to the future success of the organisation.

Commercial successes for the Training Section during the year have included running courses for British Telecom and a possible link up with the Telecommunications Industry Association to help that industry-wide sponsored body develop its training rôle in all aspects of technical training for the industry.

Employment review

We are fortunate to have a workforce which has the resilience and commitment to cope with far reaching changes, not least a considerable manpower reduction exercise, whilst continuing to deliver the services the customer has required.

The DTELS Trade Union Side has played a full part in this process. The Management Board is grateful for the constructive approach they have adopted and are fully alive to the considerable changes in attitude and approach called for in our new environment.

DTELS needs to retain a highly skilled labour force and will continue to pay close attention to our future training needs. In the year, DTELS joined the Telecommunications Standards Council in order that we not only may be fully in touch with industry trends on training and requirements but have the opportunity to influence training standards if necessary. In addition, skilled labour availability will be given high priority in any decisions taken in future about the location of DTELS workplaces.

Directorate of Telecommunications financial summary

Year Ended 31 March 1990		
	.0003	Notes
INCOME		
Sales	26913	1.
Activities funded by Central Government	4724	2.
	31637	
EXPENDITURE		
Staff Costs	18308	3.
Other Operational Costs	4100	
Depreciation	6263	4.
	28671	
CONTRIBUTION before interest	2966	
Interest Charges	3578	5.
NET CONTRIBUTION/(DEFICIT)	(612)	6.

Notes to Accounts

Income

Sales

Sales comprise rental, installation and maintenance of equipment and include support provided to other Home Office Divisions, principally the Prison Service and Home Defence organisation.

Telecommunications equipment on rental is being repaid over periods ranging from 7 to 15 years.

Direct charging for all
Installation and Maintenance
services was introduced on
1 April 1989. Prior to that date,
the majority of income was
derived from the Common
Police Services arrangements
through a per-capita charge on
Local Authorities.

2 Activities funded by Central Government

Central Government funded all frequency regulation and telecommunications engineering groups.

During the year, the functions of frequency regulation and general telecommunications policy matters were formed into the Radio Frequency and Communications Policy Unit (RFCPU) and transferred to F7 Division of the Home Office.

Direct charging for Telecommunications Engineering Consultancy Services is proposed from 1 April 1991.

Expenditure

- 3 Staff costs include salaries of Directorate staff, employers' national insurance and superannuation contributions, travel subsistence and staff training costs.
- Depreciation is based on straight line methods over the following periods:

Ye	ars
Buildings	20
Plant and Machinery	10
Computer Equipment	5
Motor Vehicles	. 4
Rental Equipment – Portable	7
- Mobile	10
- Fixed	15

- 5 Interest charges are notional and comprise:
- (a) Interest on rental equipment at the Public Works Loan Board long term rates prevailing at date of purchase.
- (b) Interest at the Treasury Discount Rate on the estimated replacement cost of other capital employed in trading operations.
- 6 Contribution is provided to Home Office Services for accommodations (common buildings), personnel administration, computer services, transport administration and accounting services.

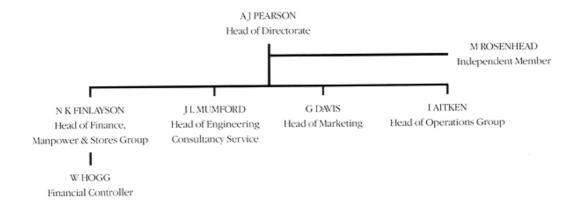
Source and application of funds

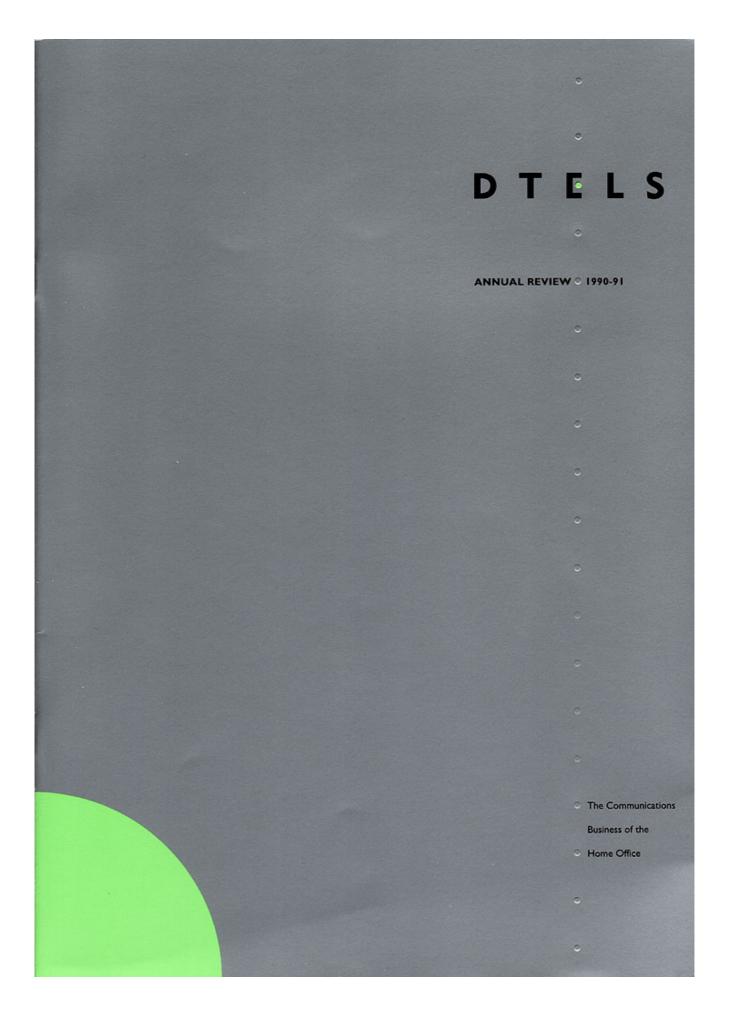
Source and application of funds

	.0003.
Operating Flows	
Contribution before interest	2966
Adjust for: Central Government funding	(4724)
Superannuation (notional)	2251
depreciation	6263
	6756
Other Sources	
Sale of Equipment	17956
Total Sources	24712
Application	
Capital Expenditure	3753
Reduction in Working Capital	(2170)
Total Applications	1583
NET CASH FLOW	23129

Management Structure

Management Board Appendix I





Nigel Finlayson

SECTION I

EXECUTIVE SUMMARY

Office" - has been established in England and Wales since

1946. Today it is part of the Science and Technology Group of
the Home Office and operates as a trading body within the
public service.

The principal activities of DTELS are the provision of high quality telecommunications installation, maintenance and engineering consultancy services, principally but not exclusively to the Emergency Services, the Prison Service and a number of other central and local Government users. Our annual review is an established feature of DTELS' annual cycle and reflects how we have developed and changed our posture from a branch of the Home Office to a public sector trading body, firmly retaining links with the Department yet functioning in an independent manner, very much responsible for our own destiny and future success.

SECTION 2

A YEAR OF

CONSOLIDATION

AND DEVELOPMENT

Management Board Report 1990/91

The last Annual Review described 1989/90 as a year of change. This year, 1990/91, has been one of achievement, confidence and clarity of purpose. Change remained a significant feature of 1990/91 evidenced by the fact that this year's review appears under our new name "DTELS" following the launch in April 1991 of a new corporate identity for the organisation including name, logo and colour scheme. This event was a fitting end to a year which saw the completion and consolidation of much of the work to transform the culture and ethos of the organisation from our Civil Service heritage to an efficient, commercially based service provider. The new corporate image demonstrates the confidence DTELS

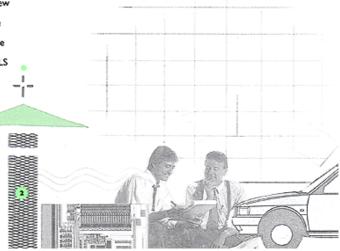
> now feels in our ability to

manage our business successfully and to compete in the market place.

1990/91 was also the year in which we laid to rest much of the uncertainty which had previously existed about DTELS' future. It was a year in which DTELS turned a corner. Particularly impressive has been the continued willingness of the work force at every level to respond to the challenge of the new environment and positively to embrace the new culture. DTELS now understands that it is a customer driven service provider, our culture reflects this and we are continually improving the cost effectiveness and efficiency of our services.

DTELS achieved a great deal in the year. Principally -

- Trading results were satisfactory with the outturn figure showing a smaller than forecast deficit on the business. All other key financial targets set for the year were either met or exceeded.
- Efficiency savings from further staff reductions of 101 were achieved.



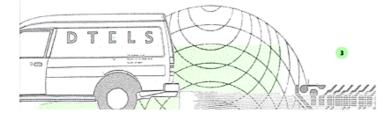


 Preparations for the assumption of devolved personnel management

responsibilities were taken forward.

- The final separation of policy from the commercially based services offered by DTELS was achieved by transferring to Emergency Planning Department the posts involved in Civil Defence radio planning activities. Recognising the importance of IT to DTELS' future development an IT Manager was appointed at a senior level to co-ordinate all aspects of IT including strategy development and the taking forward of the introduction of a computerised service management system for the whole organisation.
- A very significant achievement was the accreditation to the British Standard
 5750 for the repair of personal radios.
 The registration also covered corporate affairs. DTELS is wholly committed to the principle of Quality Management having experienced the practical and financial benefits a Quality Management programme brings.
- Considerable progress was made in identifying, recording and valuing the remaining stocks of main equipment and component spares acquired during DTELS' role prior to 1989. Large stocks of outmoded equipment were disposed of in the year and work began to reduce the component spares holdings to a level

- Four sites ceased to be major locations in the year and a number of local service centres closed following changes in the customer base.
- Good progress was maintained on the project to relocate DTELS' Headquarters out of Central London. Ministerial and Treasury approvals were obtained to a site on a new high quality business park at Ruddington, a few miles south of Nottingham. The project remains on schedule for relocation to take place in the autumn of 1992.
- Of the competitive tenders run by our traditional customers during the year, DTELS won 78% of the available business. This is an encouraging win rate and by the end of the year over 40% of the customer base was secured on long term contracts. DTELS retains a market share of over 70% for both police and fire service sectors.
- Engineering Consultancy
 completed preparations for its launch as a direct charging service on 1 April 1991 and a clear statement of aims and objectives was produced.
- Marketing Department was developed and strengthened using resources from within the Civil Service and as a result it was possible to end the arrangement with outside consultants who had been assisting in this area.





our revised perception of the real needs

The number of customers who went to tender was much as expected. However, the year saw a growing number of potential competitors enter the market. Despite the growing number of alternative suppliers DTELS maintained a satisfactory market share. Price levels to win business were as predicted lower than in 1989/90. Price was the major determinant in deciding competitive tenders although where the margins between bids were slight issues of quality and grade of service assumed a higher profile. Encouraging expressions of interest in all DTELS' services - in Operations and Consultancy - came from new markets and a number of contracts with new customers were obtained in particular among the ambulance service and local authorities.

During the year DTELS commissioned comprehensive market research into the development of the personal communications market in the UK to the end of the decade. The information will be assimilated in the coming months in order that market strategies can be developed as to the

most profitable routes to be followed.

At the end of the year DTELS served 35 police forces, 41 fire brigades, the majority of Prison Service establishments and a variety of other public and private sector customers.

Objectives

Our business objectives are designed to consolidate DTELS as a going concern. We plan to retain market share in our traditional market by offering value for money, flexibility and quality at attractive prices. We will seek long term formal contracts with all existing customers. We shall also seek to identify and win additional business in other sectors of the private mobile radio market including developing relationships with manufacturers and suppliers. The service portfolio will need to be expanded to include integrated IT and related telecommunications systems.

Our first class reputation built up over 40 years as a provider of comprehensive technical support services, will be enhanced by developing our commitment to Quality. We expand later in this review on our quality programme but accreditation to BS5750 has already been achieved for corporate registration and for personal radio repairs. We therefore intend to build on our past reputation, to become widely recognised

as a competitive provider of high quality technical services primarily but not exclusively to the public sector.

In pursuing this aim we will give prominence to the following:-

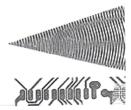
- The value placed by DTELS' customers, existing and potential, on our independence from equipment supply.
 We will continue to promote our objectivity in solving communication problems.
- Development of our capability in specified areas to ensure that skills and knowledge advance with technology, particularly in Engineering Consultancy, to provide a comprehensive range of communications services thereby providing added value to the core of the business.
- Offering services on the most cost effective and efficient basis by continuing to pursue vigorous and dynamic action to control and reduce costs.

In Personnel matters our objectives are:-

- To maintain a well trained and motivated work force; to keep labour and overhead costs in balance with income; and to maintain our capacity to discharge contractual commitments.
- To maintain and enhance the present systems of communications within DTELS. Established channels of

communication including the "Good Communications" presentations and the house magazine "Link" will be given prominence as will the circulation to all staff of publicity brochures and information about developments in DTELS. The intention is to have a well informed work force and to develop the ability of all levels of management to deal with the continuing development of DTELS' business.

- To recognise the importance of training and to adapt DTELS' training policy to take account of the developing business needs and to particularly enhance management development at junior and middle levels.
- To take over from the Home
 Office central Personnel Management
 Division devolved personnel management
 responsibility for DTELS' staff in
 accordance with agreed Home Office
 policy.
- To ensure that should staffing reductions be necessary, DTELS will follow our established policy of dealing with the problems of individuals as sympathetically as possible, seeking to maximise alternative job opportunities for affected staff.



Quality Management

During the year the decision was taken to embrace Quality Management and to undertake a programme to become formally accredited under the British Standard 5750/ISO 9000. Having assessed where DTELS and customers would obtain best benefit, work was put in hand to introduce formal Quality plans and procedures in the Maintenance Centres for the repair of personal radios. To obtain accreditation for this activity, Quality plans and procedures had to be introduced at all levels up to the Management Board, all areas of Central Stores, and into the stores areas of Maintenance Centres. Following assessment by BSI, accreditation was granted in February 1991.

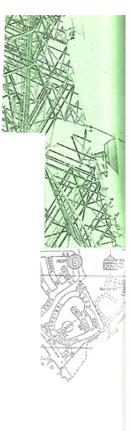
This was a tremendous achievement of which everyone who participated in the project can be justly proud. A number of important lessons were learned which underlined the wisdom of the decision to introduce Quality Management.

- In all the areas where Quality procedures were introduced the job was made easier.
- The programme revealed areas where cost reductions and improvements in efficiency could be achieved.

 Quality Management has provided an effective management tool in progressing a number of difficult issues, particularly in the area of excessive stock levels, of component spares and main equipment.

The success of Quality Management to date has determined us on a policy of becoming a total Quality organisation. As the next stage in the process we are running a pilot study in one regional service area to seek accreditation for all our activities in the region. Once the pilot study has identified the issues which have to be addressed the programme will be extended to all regional service centres with the intention of receiving accreditation for them by July 1993.

At the same time we are developing relationships with the manufacturers of the new generation of integrated control systems to seek their co-operation in obtaining registration from the British Approvals Board for Telecommunications as a Call Routing Apparatus Maintainer (BABT/CRAM).



DTELS' Statement of Quality Policy is as follows:-

"DTELS' policies laid down in our Quality Manual operate in support of the General Quality Policy of the Home Office Science and Technology Group. DTELS ensures that the services delivered are in full compliance with customer requirements at all times and provided in the most efficient manner.

The policy is fulfilled by adherence to a fully documented Quality Management System which addresses all activities within DTELS having a bearing on the Quality of Service provided to customers. The Quality Management System is in compliance with the requirements of BS5750 part 2. It is continually monitored and evaluated to identify improvements in efficiency and the services provided.

All staff in DTELS are made aware of this Quality policy and of their responsibility in ensuring that their work is of the required standards to meet the requirements of the customer."







SECTION 3

REVIEW OF

Operations

The Operations Group continued to provide a round the clock 365 days a year service specifically developed to meet the demanding operational requirements of its customers. Primarily police forces, regional crime squads, fire brigades, the Prison Service, Civil Defence, and a growing number of new customers from the water, gas and electricity industries, Customs and Excise, Ambulance and other local authority services.

From our seven regional service centres, three maintenance centres, and 50 local service centres, our national organisation with local people provided fast response times to meet customers' requirements consistently and reliably. Well trained and backed up with the necessary spares and test equipment, our staff provide efficient and effective support to minimise the time customers' equipments and systems are out of service.

During the year we continued to instal, commission and maintain a wide range of equipment and systems from a

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variety of manufacturers; from microwave aerials, sophisticated point to point linking systems supporting voice, data and telemetry, coupled to broadcast transmitters and receivers at remote hill top sites; complex integrated computer based control systems interfaced to telephone circuits, multi channel VHF and UHF systems and external computers at headquarters locations, to closed circuit television security systems, video display units (VDUs), personal radios, and a wide variety of mobile equipments.

A major programme of Regional
Crime Squad vehicle installations was
completed during the year. The
programme involved the installation and
commissioning of multi-channel digitally
encrypted radio systems covertly in a wide
variety of vehicles and on motorcycles.
Work that required considerable
expertise to ensure the equipment was
fitted safely in operationally effective
locations and that on-board electronic
vehicle systems such as electronic engine,
power train and suspension management
and anti lock braking systems were not
adversely affected.

A comprehensive quality plan for the work was drawn up in consultation with the equipment manufacturer. The plan was monitored and audited throughout and proved highly successful in ensuring these complex installations worked first time.







A similar programme is being implemented for Customs and Excise and DTELS is developing the full range of maintenance services in support of these equipments which it will be offering to customers in mid-1991.

We have also continued to expand our other services and now offer maintenance on an increased range of VDUs, to include the new PNC2 terminals, and a wider range of pagers and personal radios.

Building on the success of our Quality Management programme and our accreditation to BS575O for personal radio repairs, the long term aim is to become a total Quality organisation. For the immediate future we intend to seek registration for each of our regional service centres, their associated local service centres and all the activities they carry out. The aim will be to complete this programme on a rolling basis by 1993.

Engineering Consultancy

The Consultancy's first full year has been one of change

- in the client base
- in application of expertise
- in the range of technology.

All these changes are indicative of the new business environment into which DTELS Engineering Consultancy is moving, keeping in mind its principal aim which is:

 To provide a Radio Engineering Consultancy Service, mainly but not exclusively to the emergency services.

In pursuit of this principal aim the Consultancy has :

- built upon its established and unmatched skills in radio engineering in design and application, notably in meeting the needs of the emergency services;
- maintained its reputation for impartiality;
- maintained independence from equipment suppliers;
- offered a range of advice appropriate to the developing requirements of its clients.

This year in addition to our traditional clients, police, fire, prisons, Civil Defence and other central government users, the client base has extended into ambulance services, hospitals, public utilities and local authorities. This development of the client base is important so that the Consultancy may:

 increase the volume of its business in a competitive environment, enabling it to maintain a viable technical service to the emergency services;



 gain a broader knowledge and experience to enable cross fertilisation of radio engineering developments and concepts to the advantage of all its clients.

The development of additional expertise and technology skills is described in the following description of our organisation. The Consultancy is formed into three Groups each headed by a Principal Consultant and each with prime areas of expertise and specialist services. Varying client requirements and level of demands are met by flexibility in the use of staff and resources between groups.

Broadcast Systems Group

This Group undertakes the detailed engineering design and assessment of mobile radio systems, including the fixed, mobile and ancillary equipments.

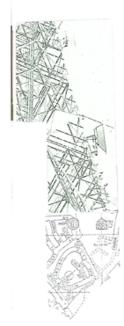
The work undertaken has ranged from advice on specific technical problems in existing systems and equipment to comprehensive technical design of new systems and technical audits of existing systems.

The specialist field support team within the Group was re-equipped with vehicles and equipment and continued to undertake physical radio surveys and technical performance audits in support of office based design and study work.

The Group continued to provide support and advice on main radio site technical management, embracing building design, aerial support structure design and site sharing agreements. This service is aimed at ensuring clients gain maximum value from what is often considerable investment in a fixed radio site.

There were significant successes in gaining commissions over an extended client base:

- A Technical Audit of a County Council new trunked radio system in order to determine the reasons for interference and lack of adequate radio coverage. The Consultancy will oversee the implementation of the recommended remedial work.
- Advice to a private water company on interim improvements to a ten year old VHF mobile radio system and a longer term replacement programme.
- A comprehensive study in conjunction with a major Fire Brigade in order to create a plan for programme improvement of radio coverage.
- Production of complete technical specifications for hand-held and fixed equipments for a number of local authorities together with subsequent assistance in selecting the appropriate equipment.





Technical Support Group's

laboratory facilities have provided a test and investigation service for a wide range of equipments including electronic items and audio equipment as well as radio equipments from VHF to millimetric frequency bands.

- Environmental tests on microwave transmitters and receivers to assess performance over an extended temperature range.
- Technical evaluations of model
 UHF base stations in order to measure
 essential parameters within the specified
 operational environment.

The Group continued to provide considerable engineering support to the Home Office Radio Frequency & Communications Planning Unit, providing practical assistance in the evaluation of emerging technology and its application in the future for the emergency services.

- Field trials of various makes of voice encryption for use on personal radio schemes.
- The setting up and maintenance of a multi-station Radio Test Area and the application of specific trials on the facility.

Support to the Prison Department and in particular the design of large closed circuit television surveillance systems has continued. The application of the expertise in this area, gained from a unique relationship with Prison

Department, was extended to other

• As a member of a consortium advised on the design of a shopping area surveillance scheme which is to include millimetric radio links back to a security control centre.

Fixed Link Systems Group

extended and diversified its skills in fixed link systems design and project engineering support assisting with their implementation.

The scope of the Group's work expanded beyond consideration of privately owned stand-alone systems to include comparisons of the full range of private and leased services technologies. The studies carried out in the year have addressed all important issues such as regulatory matters, resilience, whole-life costs and migration paths from current systems. Thus as the range of technical options available to meet a given user requirement grows the Consultancy provides assistance in clarifying them for users.

In view of the numerous developments and of the need for the Consultancy to extend and diversify its skills base this Group has been assigned the responsibility to pursue a selected programme of internal business studies. These are generally areas of new and emerging technology likely to be applied for use in the emergency services. Much

of the work has been carried out at our laboratory and antenna test range near Newmarket.

- Studies on the viability of passive reflector techniques for 50GHz short range links.
- Tests on multiplexors in order to identify key performance areas which need to be specified when they are employed within quasi-synchronous radio systems.
- Assessments of new digital codecs for speech and video.
- Consideration of the use of 60GHz radio links for CCTV.
- Studies of digital microwave equipment.

Training

During the year 65 courses were run for 340 DTELS staff. The range of courses was increased to include five new subjects:-

- Phasing and Quasi Synchronous
 Techniques
 - BS5750 the Quality System
 - Static Handling Techniques
 - Presentation Techniques
 - Costings Data Base

The content of all the courses was scrutinised to ensure that customer care aspects were addressed. The expertise of DTELS Training Centre is highly regarded and 18 courses were run for other organisations. It remains ready to assist with technical training needs; the full range of courses offered is covered in a comprehensive brochure available from DTELS. The income from this activity made a welcome contribution to the reduction of the overhead costs of Training Centre.

Militaria

The Training Centre arranges for staff to attend outside courses such as COSHH seminars, management courses, maintenance of intrinsically safe equipment, and selection interviewing. Training in marketing and sales techniques is being extended in 1991 to include Operations Area Managers, Regional Service Managers and Engineering Consultancy Senior Consultants. A second stage, which will be undertaken in-house, will cover Local Service Managers.

The Training Centre continued its involvement with the Telecommunications Vocational Standards Council in the launch of a system for issuing competence assessments. Four members of the Centre were nominated for a trial assessor training course. When this has been completed a clearer picture will emerge of any future commitment/costs/benefits of the system for DTELS.





The Training Centre is gradually moving away from specific equipment based courses. As our customers purchase a wider range of equipment, dedicated training on specific items of equipment will become impractical.

Courses will instead concentrate on the new concepts and technologies such as:-

- Digital Microwave Techniques
- Trunking and Cellular Systems
- Fibre Optic Communications

To ensure that new staff understand the position of DTELS and the environment in which it operates our induction course was improved with course notes and the introduction of new topics such as the Corporate Image, Telephone Answering Skills and Quality Management.

Where possible the contents of all courses are configured in a modular form so that they can be presented in isolation where only specific parts of a course are required. This approach will make training more flexible to the needs of DTELS.

Employee Relations

The Management Board remains committed to fostering good relations with all its staff. Formal relations with the Trade Union Side were maintained through DTELS own Whitley Council.

Where appropriate the Council delegated the discussion of particular issues to a sub-committee of the Whitley. The Trade Unions have continued to display a constructive approach towards the continued development of DTELS business and agreement was reached on single man working. Discussions also began aimed at formulating a new out of hours response scheme.

The Management Board continues to believe firmly in its responsibility to inform the staff by all available means of developments in DTELS and during the year further presentations in the Good Communications series were held. The in-house magazine "Link" continued to provide a very useful medium for communicating information not only about developments in the business but also about personalities past and present in DTELS.

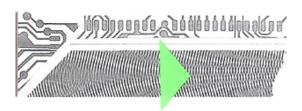
Recruitment

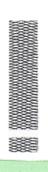
While action to reduce the complement overall continued, vacancies occurred during the year in various parts of DTELS which proved impossible to fill from internal sources. A number of recruitment exercises were carried out for staff in the Technician Grade. The results were patchy. Therefore it has been decided to expand our advertisements to highlight the radio element of the qualifications we seek.

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FINANCIAL SUMMARY

Year ended 31 March	1991	1990	
	£000	£000	Notes
ОМЕ			
Sales	21,711	26,913	I
Activities Funded By Central Government	3,160	4,724	2
	24,871	31,637	
PENDITURE			
Staff Costs	15,391	18,308	3
Other Operational Costs	2,458	4,100	
Depreciation	4,443	6,263	4
	22,292	28,671	5
CONTRIBUTION BEFORE INTEREST	2,579	2,966	
INTEREST CHARGES	(3,482)	(3,578)	6
CONTRIBUTION/(DEFICIT) AFTER INTE	REST (903)	(612)	7





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SOURCE AND

APPLICATION OF

FUNDS

	1990-91	1989-90	
	£000	€000	
PERATING FLOWS			
Contribution before interest	2,579	2,966	
Adjust for:			
Central Government Funding	(3,160)	(4,724)	
Superannuation (notional)	1,931	2,251	
Depreciation	4,443	6,263	
	5,793	6,756	
THER SOURCES:			
Sale of Equipment (Note 8)	3,385	17,956	
OTAL SOURCES	9,178	24,712	
PPLICATION			
Capital Expenditure	1,163	3,753	
Decrease in working capital	(965)	(2,170)	
Reorganisation costs	2,509		
OTAL APPLICATIONS	2,707	1,583	_
IET CASH FLOW	6,471	23,129	



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DTELS FINANCIAL SUMMARY

NOTES TO ACCOUNTS

INCOME

I. Sales

Sales comprise rental, installation and maintenance of equipment and include support provided to other Home Office Divisions, principally the Prison Service and Home Defence organisation.

Telecommunications equipment on rental is being repaid over periods ranging from 7 to 15 years.

Activities Funded by Central Government

> Central Government funded the cost of the telecommunications engineering groups, special services and the administrative costs of the rental scheme. Direct charging for Telecommunications Engineering Consultancy Services was

EXPENDITURE

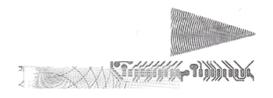
 Staff costs include salaries of DTELS staff, employers' national insurance and

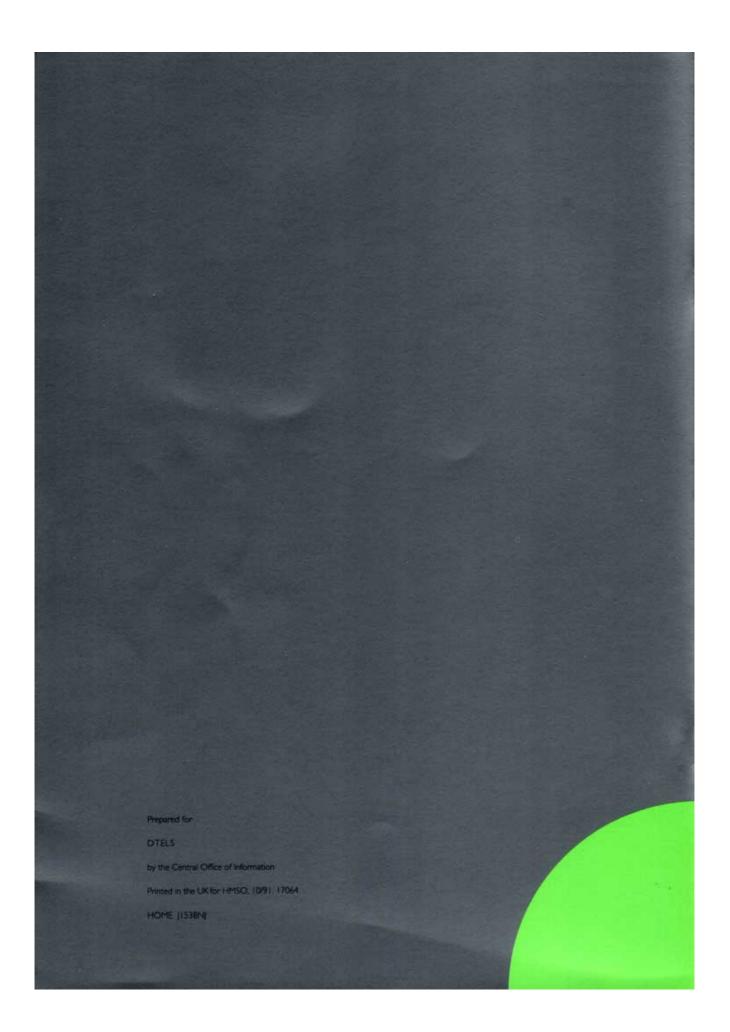
introduced from 1 April 1991.

- superannuation contributions, travel, subsistence and staff training costs.
- 4. Depreciation is based on straight line methods over the following periods:

	Years
Buildings	20
Plant and Machinery	10
Computer Equipment	5
Motor Vehicles	4
Rental Equipment	
- Portable	7
- Mobile	10
- Fixed	15

- Expenditure excludes reorganisation costs amounting to £2,509K incurred in the year as a result of rationalisation measures in Operations. (Last year NIL)
- Interest charges are notional and comprise:
 - a. Interest on rental equipment at the Public Works Loan Board long term rates prevailing at date of purchase.
 - b. Interest at the Treasury Discount Rate on the estimated replacement cost of capital employed in trading operations.
- 7. Contribution is provided to Home Office Services for accommodation (common buildings), personnel administration, computer services, transport administration and accounting services.
- 8. Receipts from sale of equipment represent mainly the exercise of rental users' options to purchase their rental equipment; the amount is excluded from the trading account.





LEGAL Statement